

# Positioning for Future Growth

Driving Connectivity, Innovation and Talent



Sustainability/  
Integrated Report  
**2018**



## About this Report

[GRI 102-49, 102-50, 102-51, 102-52, 102-53, 102-54, 102-56]



Singapore is the Asian gateway among ship owners and operators, and global leaders in ship management, ship broking, risk management and marine insurance.

This is the Maritime and Port Authority of Singapore's (MPA) 5<sup>th</sup> Sustainability/Integrated Report, with the inaugural edition published in year 2014. This report details MPA's sustained sustainability efforts, and new initiatives undertaken as MPA further develops the diverse maritime cluster, and promotes more efficient and sustainable shipping. The report is prepared in accordance with the Global Reporting Initiative Sustainability Reporting Standards (GRI Standards) based on the Comprehensive option. It is also aligned with the principle-based International Integrated Reporting (IR) Framework issued by the International Integrated Reporting Council (IIRC). In addition, MPA has aligned MPA's material issues and associated chapters within the report with United Nations Sustainable Development Goals.

information pertaining to all MPA's operations during the Financial Year from 1 January 2018 to 31 December 2018. Together, the two reports constitute the Integrated Report (IR).

The principles of the materiality standards of AA1000, GRI Standards, and IIRC were used to identify MPA's material sustainability issues. To be at the forefront of sustainability reporting, MPA is working towards having its Sustainability Report assured in the medium term.

There were no significant organisational changes during the current reporting period.

We welcome your feedback on this report. For any feedback or enquiries, please contact Ms Teo Kuan Yee at [teo\\_kuan\\_yee@mpa.gov.sg](mailto:teo_kuan_yee@mpa.gov.sg).

MPA's Annual Report and its Financial Report are published separately, and cover material



Further information can be found online by visiting <https://www.mpa.gov.sg>



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# What MPA Does

## Vision

A leading maritime agency driving Singapore's global maritime aspirations.

## Mission

To develop and promote Singapore as a premier global hub port and an international maritime centre, and to advance and safeguard Singapore's strategic maritime interests.

## Values

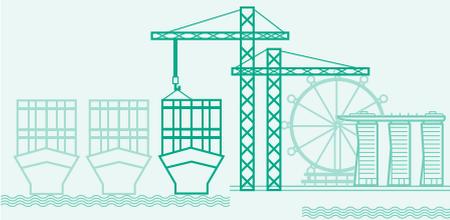
Forward Thinking, Integrity, Respect, Service Excellence, Teamwork

## Maritime Singapore

Maritime Singapore is a thriving ecosystem comprising our global hub port, shipping and maritime services. It is the place where the international community meets, and where ideas and opportunities abound.

# 1,000

Number of vessels in the Singapore port at any one time



## Global Hub Port

Singapore is a premier global hub port, connected to 600 ports in over 120 countries, giving users reliable, value-added and cost-efficient marine services and facilities. Singapore is the busiest port in the world in terms of shipping tonnage, with more than 130,000 vessel calls annually.



Credit: PSA

## International Maritime Centre (IMC)

Singapore is not only a vibrant marketplace comprising international shipping groups, commodity traders, logistics players and maritime service providers, it is also a key gateway to access business opportunities in the Asia-Pacific region.

## Advance and Safeguard Singapore's Maritime Interests

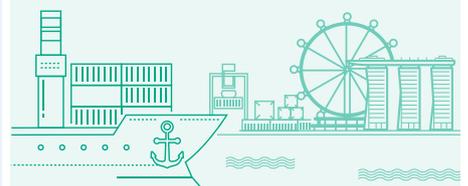
MPA advances and safeguards Singapore's strategic maritime interests on the international stage, to ensure the continued safe and open access to/from the Port of Singapore, and to create enabling factors for the competitiveness of our hub port.

## Sea Transport Industry Transformation Map (ITM)

The Sea Transport ITM builds on MPA's strategic long term plans to develop Singapore's next-generation port and strengthen our IMC, with specific initiatives to catalyse innovation, drive productivity improvements, as well as enhance the skills of the maritime workforce.

# Every 2 to 3 minutes

A ship arrives or leaves Singapore



### Port Authority and Regulator

MPA manages vessel traffic in the Singapore port while ensuring safety and security. It works with partners both locally and overseas to cooperate against piracy and armed robbery. MPA also regulates and licenses port and marine services and facilities. MPA also ensures quality pilotage, towage and bunkering services for the smooth functioning of our port operations.



### Port Planner

MPA is responsible for the safe and optimal use of sea space and waterfront land to meet future needs. Our next phase of port development is the Next Generation Port at Tuas to accommodate up to 65 million TEUs per annum.

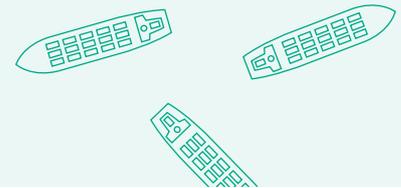


### Promoter and Developer of the Singapore Maritime Cluster

MPA constantly ensures that our fiscal and business environment, policies and schemes are pro-business, stable and competitive. MPA supports the development of maritime education and training opportunities, and collaborates with the private sector, schools and self-help groups to raise awareness of maritime career opportunities.

# 10,000

Number of tracks that can be handled by MPA's Vessel Traffic Information System simultaneously



### National Maritime Representative

MPA protects Singapore's maritime interests by ensuring that our sea lines of communication or shipping routes between ports have open and unimpeded access. We continuously build good relations with the international maritime community through various engagement programmes.

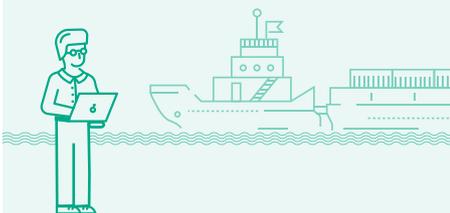
### Singapore Registry of Ships (SRS)

SRS is the 5<sup>th</sup> largest registry in the world by tonnage, and we are recognised as a responsible and quality flag administration.



# >170,000 people

Number of employees in the maritime industry in Singapore



### Innovation and Research & Development (R&D)

Singapore offers maritime enterprises a vibrant and diverse maritime innovation ecosystem. MPA has various dedicated programmes and schemes to encourage the industry and companies to conduct R&D, innovation and test bedding, and to encourage collaborations with tertiary and research institutions.

### MPA Academy

The MPA Academy, the Authority's training arm, aims to be a global learning centre for maritime and port administration. The academy's mission is to enhance the specialist skills and knowledge of MPA officers and to conduct flagship training programmes for overseas port and maritime officials.

# Chairman's Message

Maritime Singapore saw relatively good growth in 2018 even in the face of rising trade protectionism and economic challenges. I am happy to share that we maintained stable performance in 2018 with our container throughput growing by 8.7 per cent. Singapore retained its position as the world's top bunkering port, with annual bunker sales volume close to the 50 million-tonne mark.

Changes are afoot in our industry, with technology disrupting and transforming the way we operate. To continue to grow our status as a premier global hub port in the future, we must collectively address the changes that are happening in the shipping and port sector today. Much of the disruptive technological transformations are being driven by lower cost and exponential growth in technological advancements — whether it be battery technology, autonomous vessel technology, nanotechnology or Artificial Intelligence (AI).

We are transforming and digitalising too. Today, port and terminal operations are nearly fully automated. Likewise, ships are increasingly dependent on network systems, advanced communications and navigational technology to function. Going forward, we will see more port operations being automated. In the longer term, technological developments and the use of autonomous surface vessels, 3D printing, AI and drone technology will become ubiquitous in port operations.

With these imminent changes, we need to strive to ensure that Singapore continues to lead as a premier global hub port. The International Maritime Centre 2030 Advisory Committee recommended that Singapore should position herself as the premier global maritime hub for 'Connectivity, Innovation and Talent' going forward.

In addition, MPA in partnership with the industry, unions and other government agencies launched the Sea Transport Industry Transformation Map (ITM) in January 2018. The

Sea Transport ITM includes specific initiatives to catalyse innovation, drive productivity improvements, as well as enhance the skills of the maritime workforce. The aim is to grow the sector's value-add by S\$4.5 billion and create more than 5,000 good jobs by 2025.

To continue growing the maritime cluster and capturing new opportunities, MPA will strengthen the connectivity and inter-linkages of Singapore's maritime industry, build a vibrant innovation ecosystem and develop a future-ready and skilled maritime workforce.

The Maritime Transformation Programme will be a pivotal vehicle to implement the Sea Transport ITM Innovation thrust. It seeks to leverage the National Research Foundation Research, Innovation and Enterprise Funds, to grow maritime research and development capabilities and transform the sector.

Towards that goal, our annual Smart Port Challenge and Maritime Technology Acceleration Programme are initiatives that encourage collaboration with companies, technology players and start-ups. Promising solutions and technologies will be tested in the "Living Labs" across MPA, PSA and Jurong Port, as we encourage greater collaboration within the ecosystem.

As the industry regulator, MPA strives to reduce the environmental impact of shipping and related activities and to promote clean and green shipping in Singapore. Underpinning this, we were the first port to mandate the use of mass flow meters for delivering marine fuel oil in 2017 and are extending their mandatory use to the delivery of distillates with effect from 1 July 2019. We believe that it is these high industry standards that help Singapore maintain our position as the world's leading bunkering ports.

In addition, we ensure that all our practices are in line with IMO 2020 regulations. From 1 January 2020, all ships will be required to use compliant

fuel oil comprising not more than 0.5 per cent sulphur content. Also, commencing 1 March 2020, ships will not be allowed to carry non-compliant fuel oil into Singapore.

Singapore is honoured to have been elected to the Council of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) for the first time. Being a member of IALA has helped Singapore contribute to IALA's mission to provide global seafarers with the means to conduct safer and more technologically-advanced navigation.

MPA regained the top position as the most business-friendly Government agency in the 2018 Pro-Enterprise Ranking survey, as testimony to our close working relations with the industry.

2018 has been a good year for maritime developments in Singapore thanks to the commitment, adaptability and vibrancy of our industry partners. I want to take this opportunity to thank all our partners and industry stakeholders. You have truly helped Maritime Singapore achieve greater heights in 2018. It is this cohesive and enduring spirit that will continue to transform Singapore onwards to bigger, brighter milestones in 2019.

Lastly, I would like to wish farewell, on behalf of all MPA staff, to our esteemed colleague, Mr Andrew Tan, who was Chief Executive of MPA from 2014 to end 2018. Ms Quah Ley Hoon will take over as our new Chief Executive. I extend a warm welcome to her and wish her all the best in her new role.

Thank you.

**Niam Chiang Meng**

Chairman

Maritime and Port Authority of Singapore  
31 December 2018

“We maintained a stable performance in 2018 with our container throughput growing by 8.7 per cent. Singapore retained its position as the world’s top bunkering port, with annual bunker sales volume close to the 50 million-tonne mark.”



# Chief Executive's Message

Maritime Singapore has fared well in 2018 despite slower global economic growth, increasing environmental regulations as well as disruptions to various industries from new technologies. To position our maritime sector for the future, MPA launched the Sea Transport Industry Transformation Map (ITM) in January 2018. Through the four key ITM pillars, we have implemented initiatives to enable the industry to embrace technology, enhance productivity and equip our workforce with necessary skills to support the growth of a highly connected and innovative maritime ecosystem.

The Tuas Next-Generation Port is on schedule. Phase 1 of the Tuas Terminal will be completed by early next year. We have awarded the contract for Phase 2 and development work will begin in 2019.

Singapore continued to attract new and existing maritime companies to expand their operations here. Our vibrant maritime ecosystem now has over 5,000 establishments employing more than 170,000 people, and contributing about 7 per cent of Singapore's Gross Domestic Product.

After commencing its operations in Singapore in April 2018, Ocean Network Express has formed a joint venture company with PSA Singapore to operate four berths at Pasir Panjang Terminal in the first half of 2019. COSCO Shipping Ports Limited also signed a Memorandum of Understanding (MOU) with PSA Corporation Limited in November for the addition of two new berths at the COSCO-PSA Terminal in Singapore.

We have collaborated with National Research Foundation, institutes of higher learning, research institutes and industry to launch the Maritime Transformation Programme (MTP). MTP will build new capabilities and capture new growth areas for the maritime industry.

In June, MPA and the National University of Singapore also launched the Port Innovation Ecosystem Reimagined@BLOCK71 (PIER71), an industry-wide acceleration programme. Since its launch, PIER71 has signed MOUs with other technology start-up hubs, such as Rotterdam's PortXL and Denmark's Rainmaking/PIER47 as well

as maritime companies to provide start-ups with more opportunities and access to resources such as mentors and networks.

We are also seeing growing interest in 3D printing from the maritime sector. In October, PSA Corporation, National Additive Manufacturing Innovation Cluster (NAMIC) and 3D MetalForge Pte Ltd signed an MOU to establish the world's first on-site additive manufacturing (AM) production facility for port applications. The Singapore Shipping Association also signed an MOU with NAMIC to collaborate on the AM Joint Industry Programme for marine parts.

To deepen maritime R&D competencies, MPA supported the Singapore Maritime Institute in the establishment of two Centres of Excellence (CoE). The CoE in Maritime Safety, based in Singapore Polytechnic, focuses on maritime navigation and operations on-board vessels while the CoE in Modelling and Simulation for Next Generation Ports (C4NGP), taps on NUS' port modelling, simulation and optimisation capabilities to enhance our port's ability to handle increasingly complex port and maritime operations.

As a major bunkering hub and fifth largest ship registry in the world, MPA continues to prepare the industry to meet future environmental regulations such as the impending International Maritime Organization's (IMO) 0.5 per cent global limit for sulphur in fuel oil used on board ships, which will take effect from 1 January 2020. We are working closely with our bunker suppliers to ensure that there will be an adequate supply of compliant fuel oil in Singapore well in advance of 2020.

To prepare Singapore-registered ships and ships calling at our port, we have published two technical guidance booklets with SSA that detail best practices for ships to comply with the IMO 2020 regulations as well as procedures that ships have to abide by when calling at Singapore. We will also be organising various engagement sessions to address industry concerns in the run-up to 2020.

In terms of maritime safety, we ramped up our Safety@Sea Campaign by taking a more targeted approach in reaching out to various stakeholders. A new set

of eye-catching posters with updated safety messages tailored for target groups such as bridge teams, crew, ferry passengers and the pleasure craft community was produced and distributed to the industry. We are also co-funding the introduction of new buckle-type lifejackets and customised lifejacket receptacles on board MPA-licensed regional passenger ferries, making it easier for passengers to put on the lifejackets.

For the first time, Singapore was elected to the Council of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA). The four-year term membership enables Singapore to contribute further to IALA's mission of ensuring that seafarers are provided with effective and harmonised marine aids to navigation worldwide for safe navigation and protection of the environment, and going forward, e-navigation.

In the annual Pro-Enterprise Ranking survey of business customers of regulatory agencies, MPA once again clinched the top position as the most business-friendly Government agency. We are grateful to receive this award and will continue to support our customers in these challenging times.

The journey to build a strong Maritime Singapore never stops. We are fortunate to have a strong and cohesive maritime community who has been supportive of our programmes and initiatives. We will continue to engage all our stakeholders to achieve our vision to be a Global Maritime Hub for Connectivity, Innovation and Talent.

On this note, I would like to thank all MPA staff and the industry for their hard work and unstinting support during my five-year tenure. I am sure they will extend the same strong support to Ms Quah Ley Hoon when she takes over the helm on 1 January 2019.

Thank you.

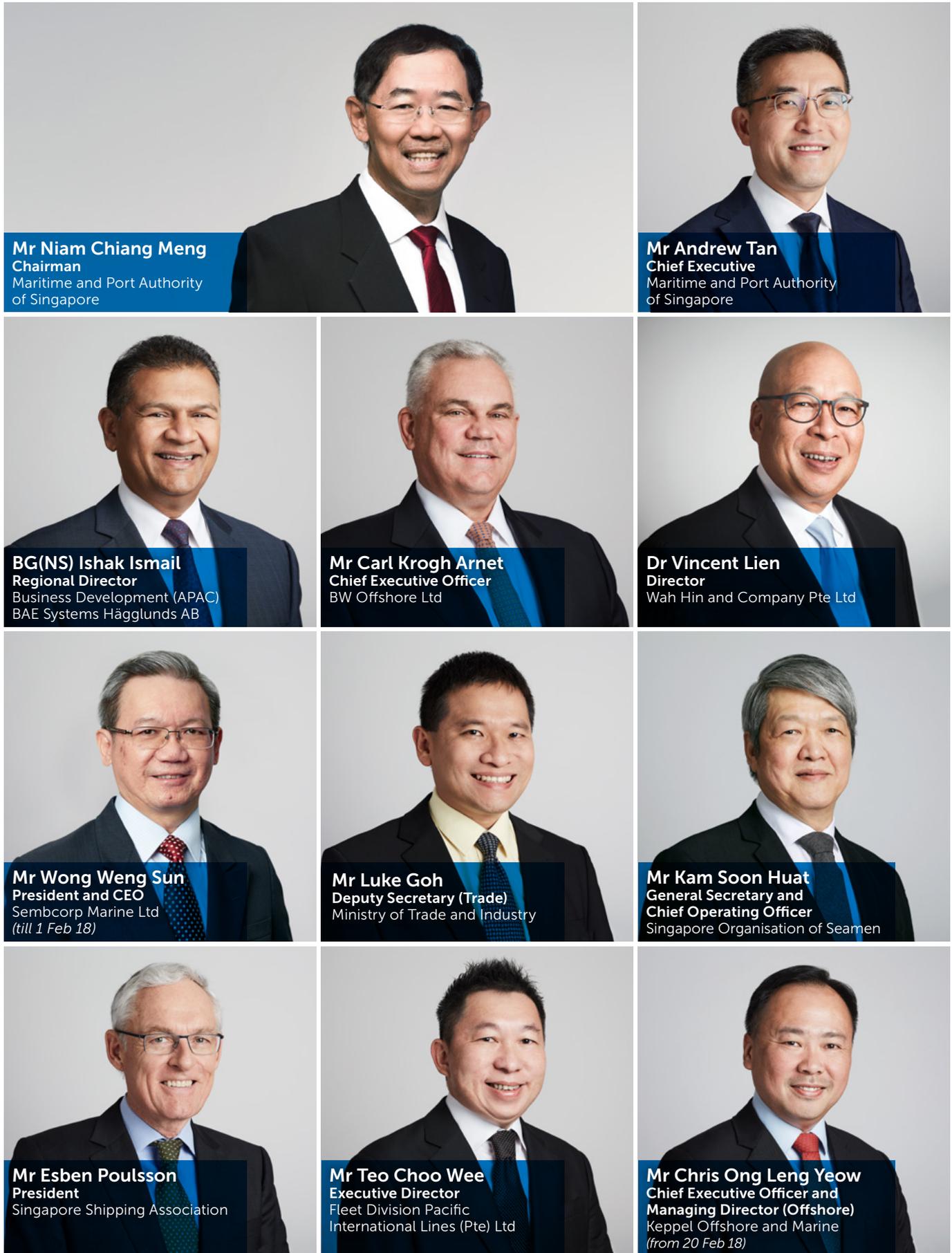
**Andrew Tan**  
Chief Executive  
Maritime and Port Authority of Singapore  
31 December 2018

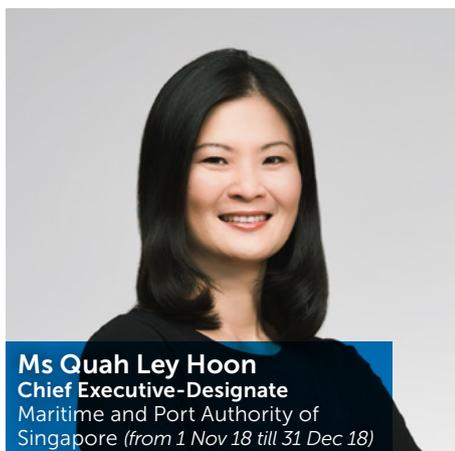
“Through the four key ITM pillars, we have implemented initiatives to enable the industry to embrace technology, enhance productivity and equip our workforce with necessary skills to support the growth of a highly connected and innovative maritime ecosystem.”



# Board of Directors

[GRI 102-18, 102-22, 102-23, 405-11]





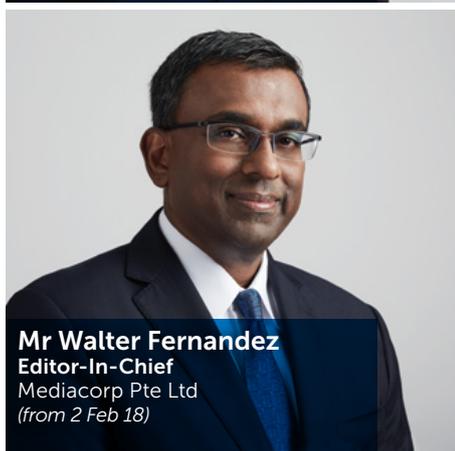
**Ms Quah Ley Hoon**  
**Chief Executive-Designate**  
 Maritime and Port Authority of Singapore (from 1 Nov 18 till 31 Dec 18)



**Mrs Quek Bin Hwee**  
**Director**  
 The HongKong and Shanghai Banking Corporation Limited



**RADM Lew Chuen Hong**  
**Chief of Navy**  
 Republic of Singapore Navy



**Mr Walter Fernandez**  
**Editor-In-Chief**  
 Medicorp Pte Ltd (from 2 Feb 18)

## Board Committees

[GRI 102-18, 102-22, 102-23, 405-1]

### Investment Committee

**Chairman**

Mr Niam Chiang Meng

**Members**

Mr Andrew Tan  
 Dr Vincent Lien  
 Mrs Quek Bin Hwee  
 Mr Wong Weng Sun (till 1 Feb 18)  
 Mr Luke Goh  
 Mr Chris Ong Leng Yeow (from 20 Feb 18)

**Secretary**

Director (Corporate Development)/CFO

### Audit Review Committee

**Chairman**

Dr Vincent Lien

**Members**

Mr Carl Arnet  
 Mr Luke Goh  
 RADM Lew Chuen Hong  
 Mrs Quek Bin Hwee

**Secretary**

Head (Internal Audit)

### Registration Committee

**Chairman**

BG(NS) Ishak Ismail

**Members**

Mr Luke Goh  
 Mr Kam Soon Huat  
 Mr Teo Choo Wee

**Secretary**

Director (Shipping)

### MINT Fund Steering Committee

**Chairman**

Mr Wong Weng Sun (till 1 Feb 18)  
 BG(NS) Ishak Ismail (from 20 Feb 18)

**Members**

Mr Andrew Tan  
 Mr Carl Arnet  
 RADM Lew Chuen Hong  
 Mr Esben Poulsson

**Industry Representative**

Prof Lui Pao Chuen  
 Advisor  
 National Research Foundation

**Secretary**

Director (Research & Technology Industry Development)

### Welfare Committee for Seamen

**Chairman**

BG(NS) Ishak Ismail (till 1 Feb 18)  
 Mr Kam Soon Huat (from 20 Feb 18)

**Members**

Mr Kam Soon Huat (till 1 Feb 18)  
 Mr Esben Poulsson  
 Mr Teo Choo Wee  
 Mr Walter Fernandez (from 20 Feb 18)

**SSA**

Capt Anuraj Singh (till 1 Feb 18)  
 Deputy General Manager  
 Maritime Human Resources  
 NYK Shipmanagement Pte Ltd

**Capt Deepak Arora (from 20 Feb 18)**

Deputy General Manager  
 Maritime Human Resources  
 NYK Shipmanagement Pte Ltd

**PSA Corporation**

Mr Lee Siak Quee (till 1 Feb 18)  
 Assistant Vice President  
 Keppel Terminal

**Mr Adrian Sim (from 20 Feb 18)**

Assistant Vice President

**Jurong Port Pte Ltd**

Capt Hemant Gupta  
 Head  
 Operations Department

**Seamen's Missions**

Rev Peter Manimuthu  
 Port Chaplain  
 Mission to Seafarers

**Rev Schmidt Christian (till 1 Feb 18)**

Port Chaplain  
 International Lutheran Seamen's Mission

**Rev Kirsten Eistrup (from 20 Feb 18)**

Port Chaplain  
 Danish Seamen's Church

**MPA**

Director (Corporate Development)/CFO  
 Director (Shipping)

**Secretary**

Deputy Director (Shipping 2) (till 1 Feb 18)  
 Assistant Director (Seafarer Management) (from 20 Feb 18)

### Senior Personnel Board

**Chairman**

Mr Niam Chiang Meng

**Members**

Mr Andrew Tan  
 BG(NS) Ishak Ismail  
 Mrs Quek Bin Hwee

**Secretary**

Director (Human Resource)

# Senior Management

[GRI 102-18, 102-20, 202-2, 405-1]

**01 Dr Parry Oei**  
Director (Port Services)

**02 Ms Ong Seok Bin**  
Director (Human Resource)

**03 Captain Kevin Wong**  
Acting Director (Operations)/  
Port Master

**04 Captain Daknashamoorthy Ganasen**  
Director (Shipping)/  
Director of Marine

**05 Ms Bernice Yeoh**  
Director (International  
Maritime Centre)

**06 Er Tham Wai Wah**  
Director (Engineering &  
Information Technology)

**07 Mr Tan Cheng Peng**  
Director (Port Policy)

**08 Mr Kenneth Lim**  
Director (Research &  
Technology and Industry  
Development)/Chief  
Technology Officer

**09 Ms Angela Png**  
Director (International)



**10 Ms Caitlin Fua**  
Director (Communications  
& Community)

**11 Mr David Foo**  
Director (Port Systems)

**12 Mr Tan Suan Jow**  
Dean (MPA Academy)/  
Director (Sustainability)

**13 Ms Yvonne Chan**  
Director (Corporate Development)/  
Chief Financial Officer

**14 Ms Quah Ley Hoon**  
Chief Executive-Designate

**15 Mr Andrew Tan**  
Chief Executive

**16 Captain M Segar**  
Assistant Chief Executive  
(Operations)

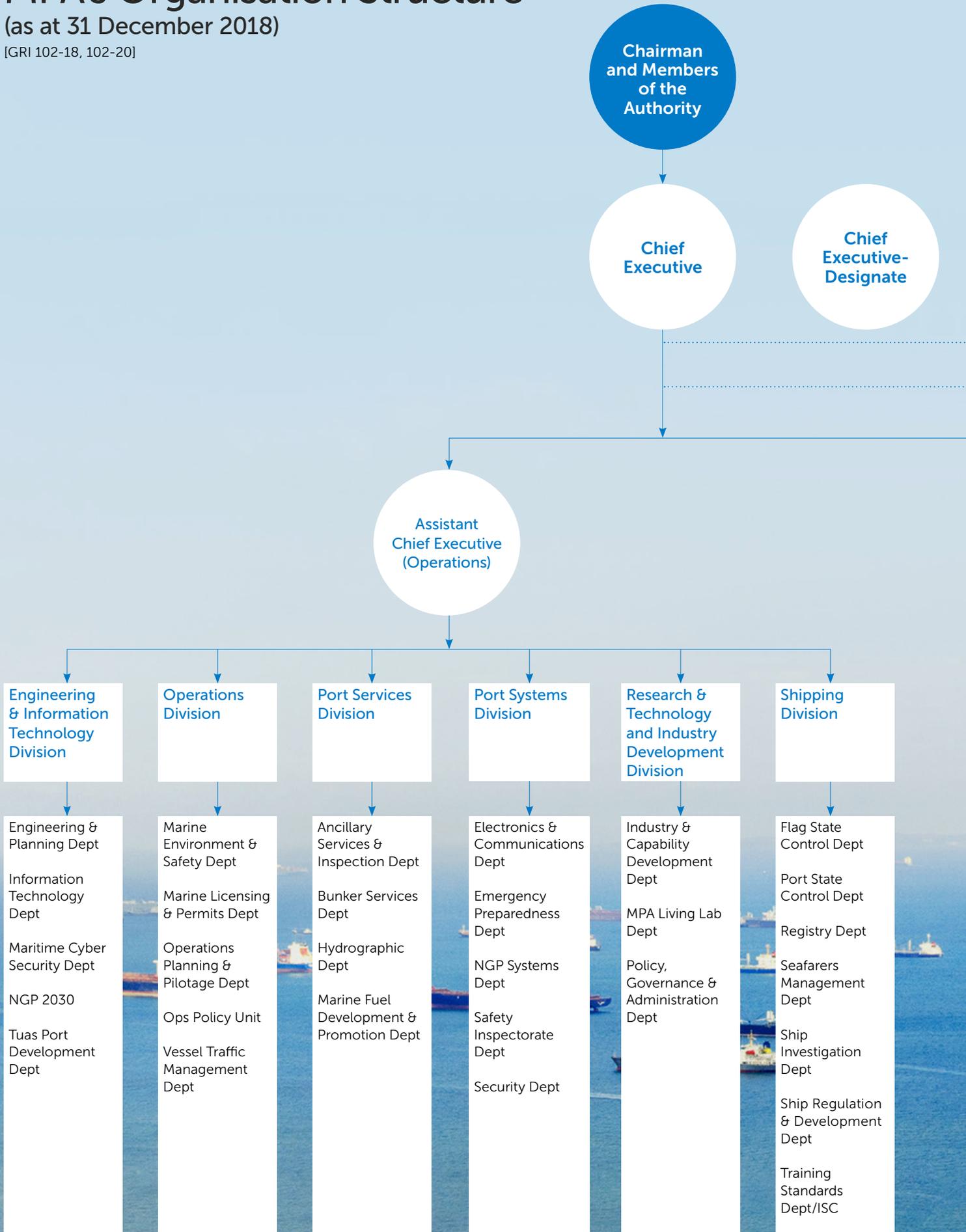
**17 Ms Tan Beng Tee**  
Assistant Chief Executive  
(Development)

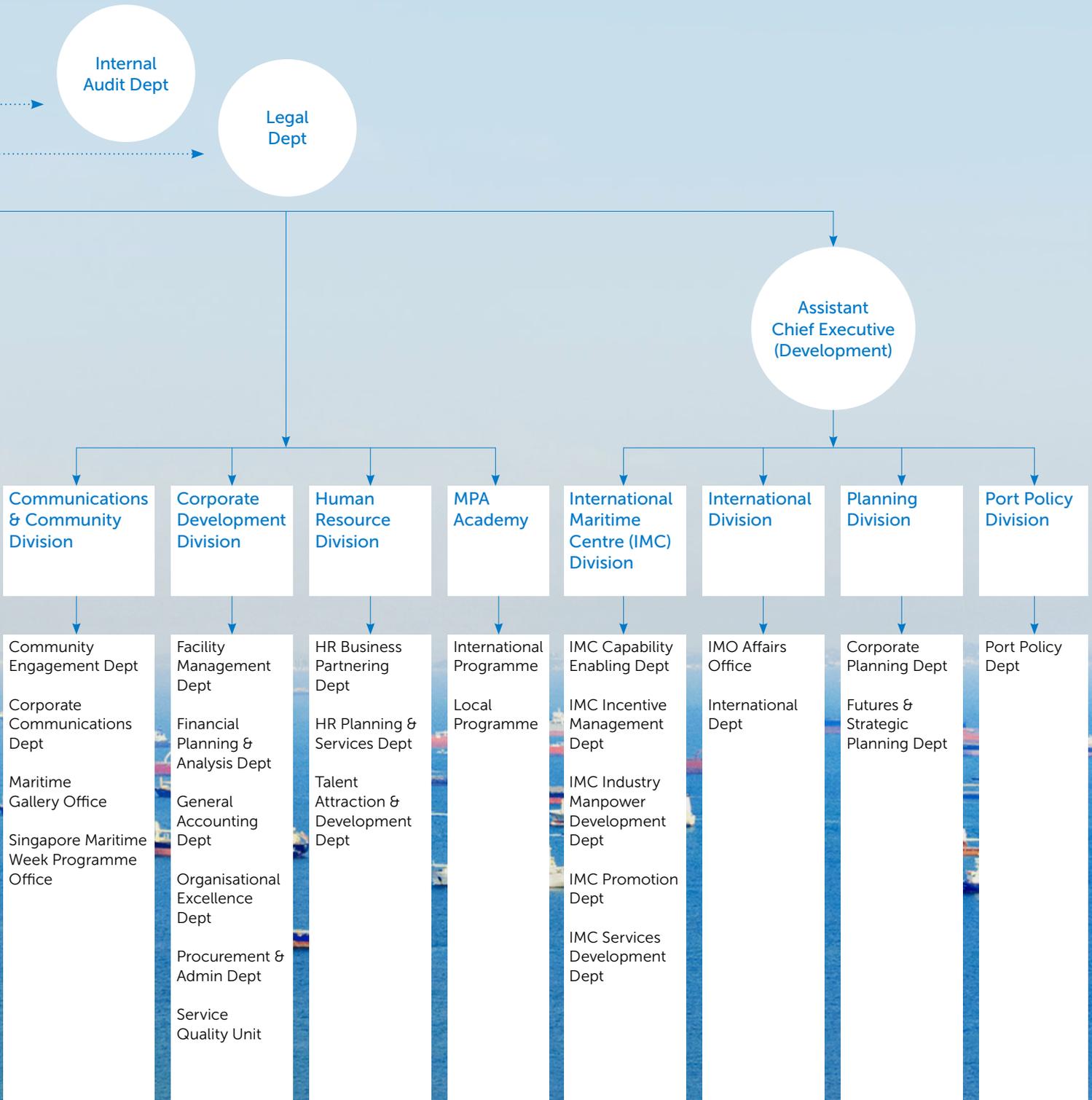


# MPA's Organisation Structure

(as at 31 December 2018)

[GRI 102-18, 102-20]





# About MPA

[GRI 102-1, 102-2, 102-3, 102-4, 102-5, 102-6, 102-7]

Established as a statutory board under the Ministry of Transport on 2 February 1996, MPA's mission is to develop Singapore as a premier global hub port, and international maritime centre, and to advance and safeguard Singapore's strategic maritime interests. MPA employs about 700 officers and is headquartered and operating solely in Singapore.

More information on MPA may be found on MPA's corporate website at [www.mpa.gov.sg](http://www.mpa.gov.sg)

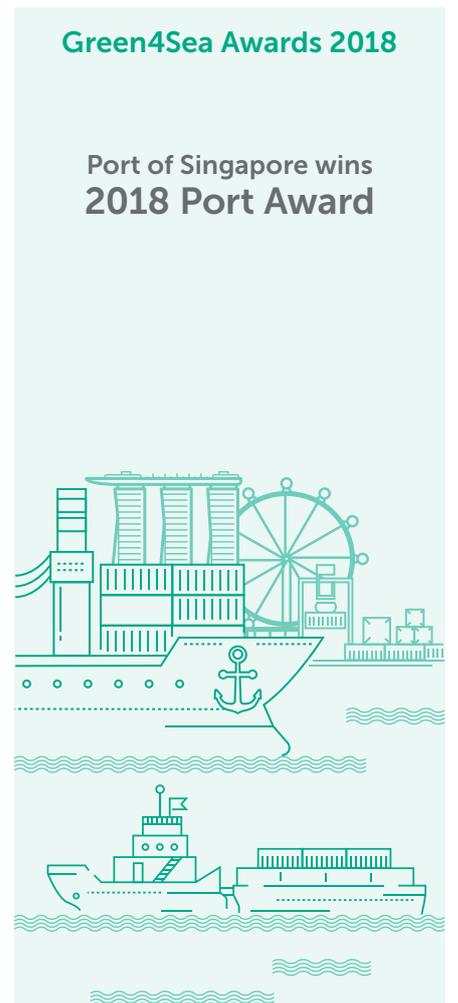
## Maritime Singapore

Maritime Singapore is a key economic sector that contributes about 7 per cent to Singapore's Gross Domestic Product, comprises more than 5,000 companies, and generates

more than 170,000 jobs. MPA's forward-looking philosophy and pro-enterprise focus in engaging and partnering the industry have significantly promoted Maritime Singapore's growth. Launched in January, the Sea Transport Industry

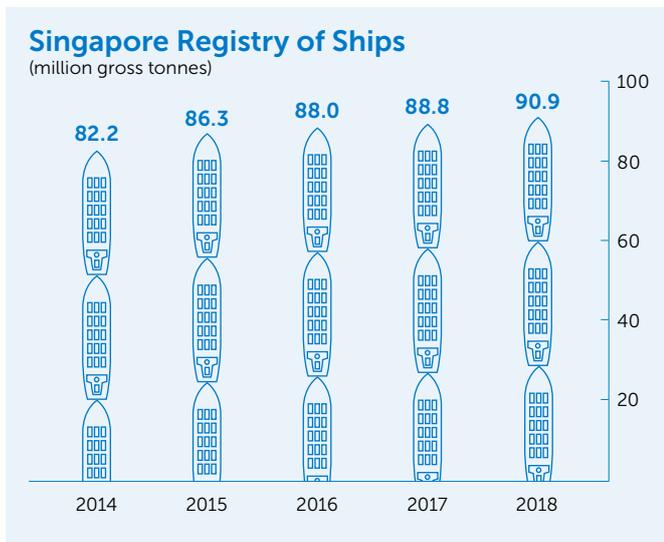
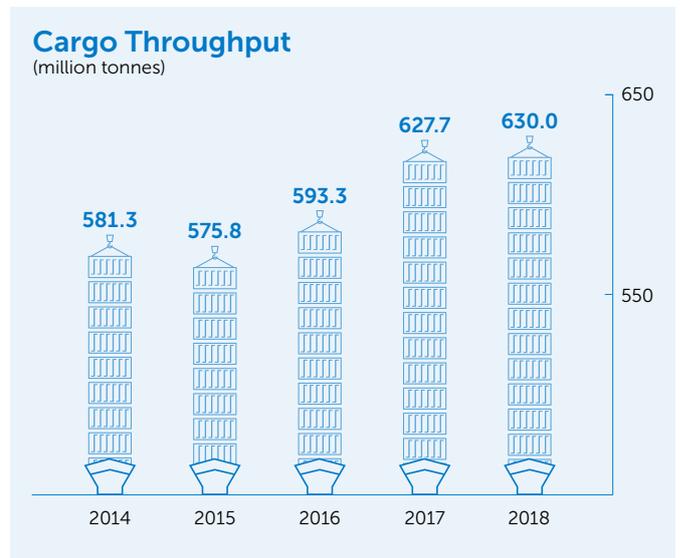
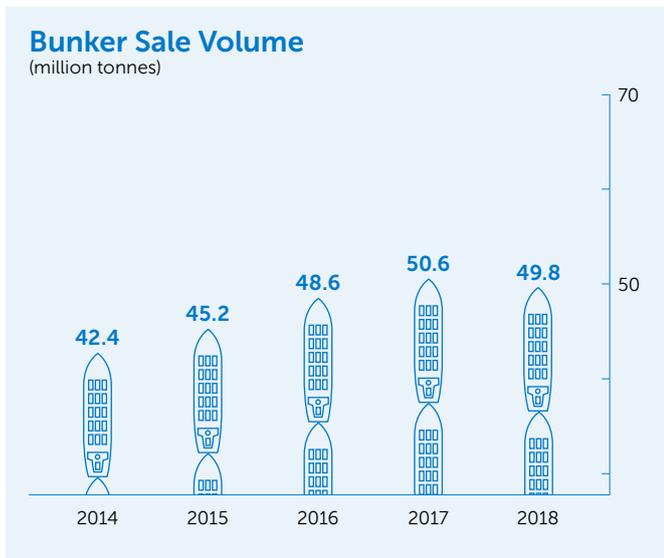
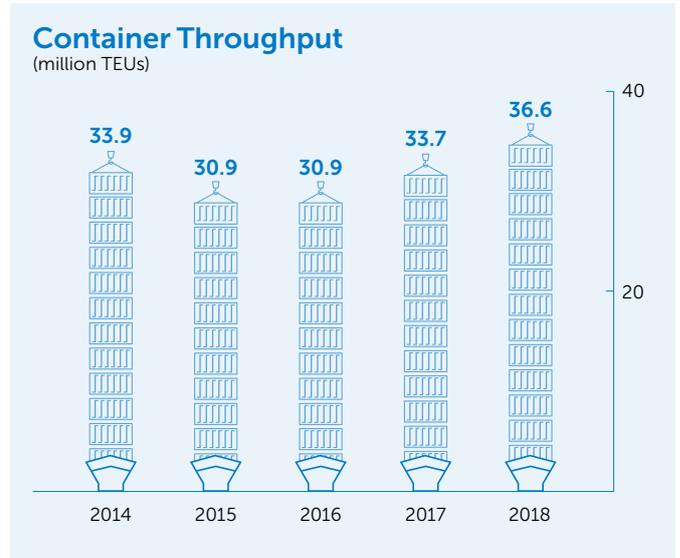
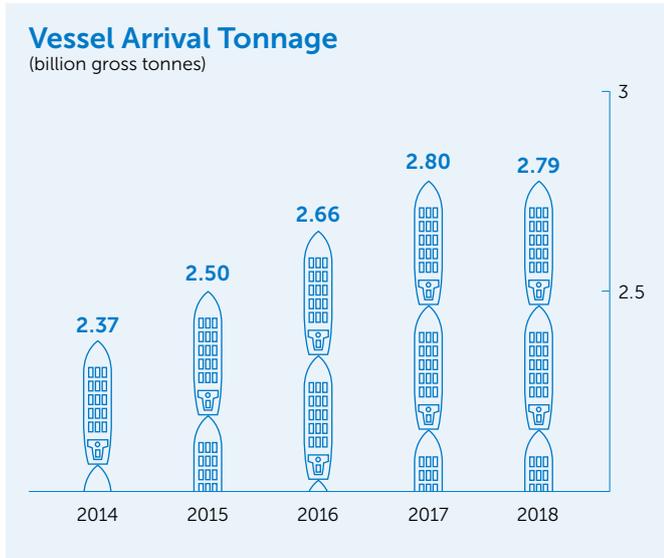
Transformation Map, led by MPA, seeks to maintain Singapore's thriving maritime industry position as a world leader, and developing Singapore as a global maritime hub for Connectivity, Innovation and Talent.

## Retaining Top Spot Internationally

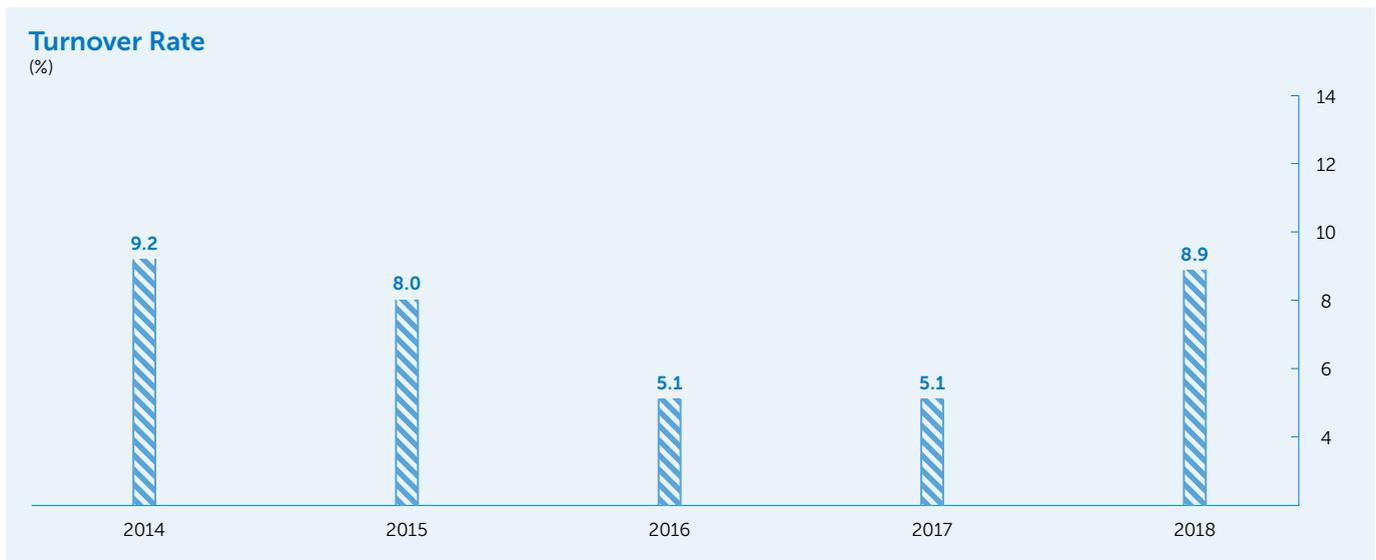
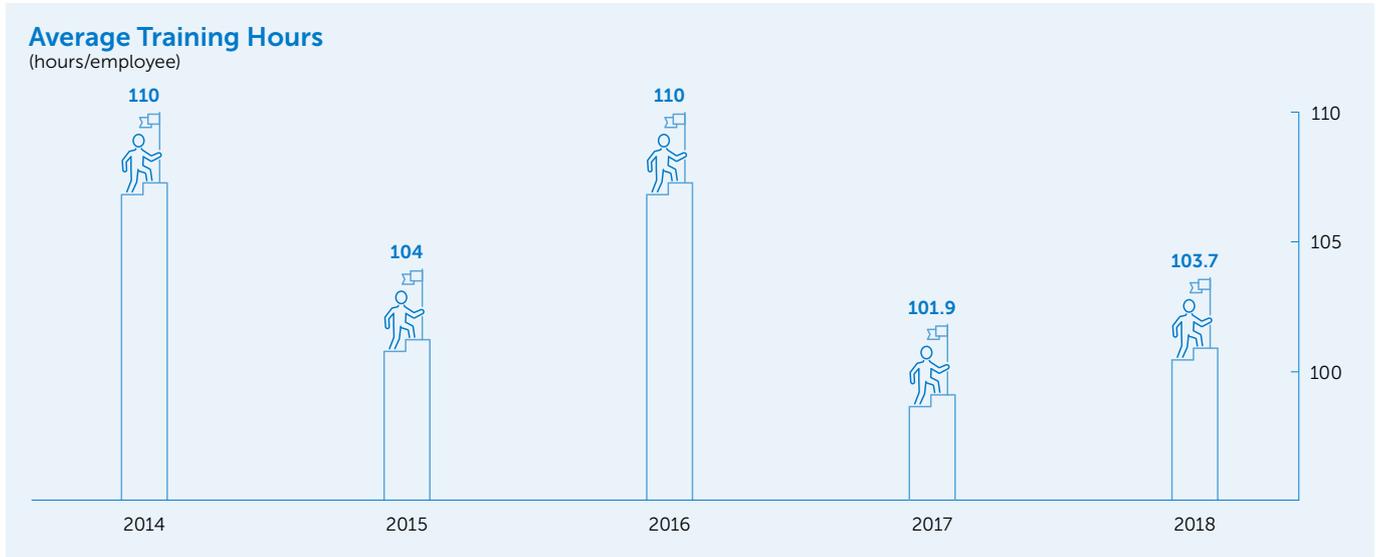


# 2018 Performance Summary

[GRI 203-1, 203-2, 302-1, 303-1, 305-2, 403-2, 404-1]



## Our People



# Environmental Sustainability

## Electricity Consumption

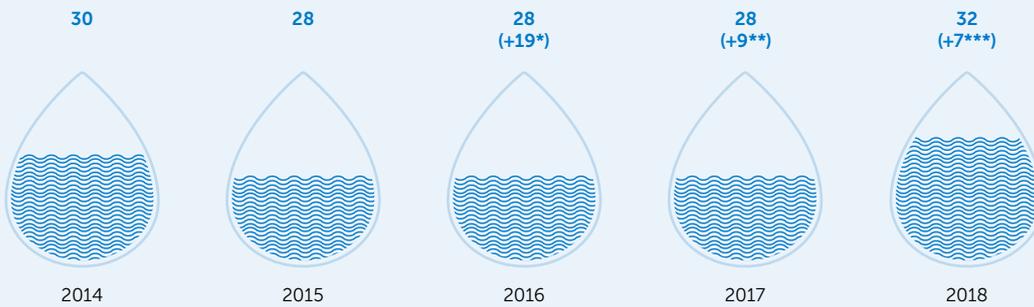
('000 kWh)



# The increase in electricity was due primarily to the construction of a new pontoon and upgrading works of landing steps at West Coast Pier, as well as lift upgrading works at Changi Point Ferry Terminal

## Water Consumption

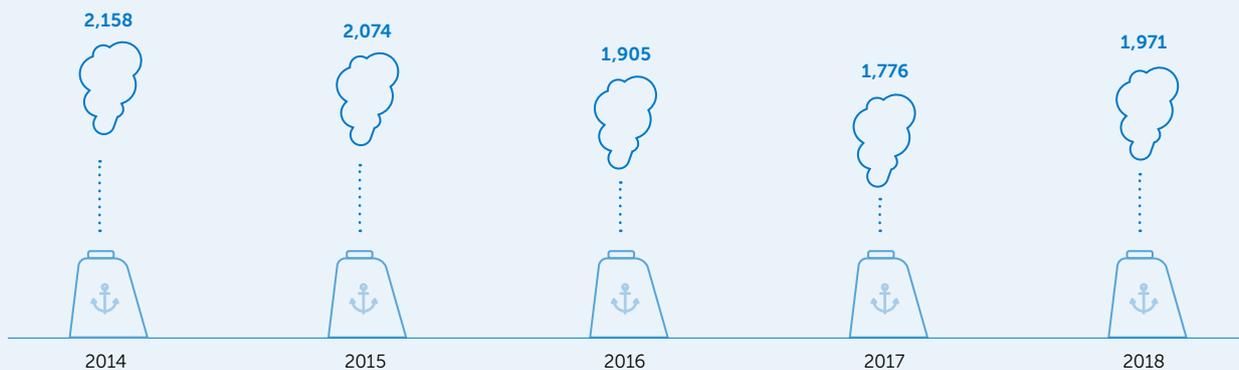
('000 cu m)



\* 19,000 cu m of water was used for scheduled facade cleaning  
 \*\* 9,000 cu m of water was used for scheduled facade cleaning  
 \*\*\* 7,000 cu m of water was used for scheduled facade cleaning

## GHG Emissions

(TCO<sub>2</sub>)



Note: Computed based on Singapore's yearly Grid Emission Factor published by Energy Market Authority

# Mapping Key Material Issues

[GRI 102-11, 102-15, 102-29, 102-32, 102-46, 102-47, 103-1, 103-2]

Sustainability objectives have consistently been integrated into MPA's operations and strategic long-term plans as MPA seeks to develop Singapore's next-generation port, and strengthen our international maritime centre.

## MPA's Approach to Sustainability

Integrating sustainability objectives into MPA's day-to-day operations and strategic long-term plans enables Singapore to remain well positioned as a thriving hub for maritime activities and businesses for the future.

Recognising that technology can be leveraged on to achieve more sustainable shipping, MPA is actively partnering with the industry on technological innovations to promote clean, efficient and sustainable shipping. With a view towards achieving a sustainable future for the maritime cluster, MPA began its Future-Ready efforts in 2014. Our Future-Ready Framework, comprising six external and three internal thrusts, sets MPA's longer-term strategic direction while embedding key sustainability principles. These strategies have since been expanded, and have evolved into the Sea Transport Industry Transformation Map (ITM), which was developed in close consultation

with the industry, unions and other government agencies. The ITM was launched in early January to further drive maritime industry transformation and value-add.

The MPA Sustainability Office was set up in 2014 to promote good practices, and sound governance in resource management, and environment sustainability within MPA, and the wider maritime industry in Singapore.

The Office reports directly to MPA's Chief Executive, and provides the Board with regular updates on the progress of sustainability initiatives and Key Performance Indicators (KPIs).

MPA has applied the AA1000 AccountAbility Principles Standard to identify and prioritise sustainability issues that are material to MPA and its stakeholders. The Global Reporting Initiative Sustainability Reporting Standards (GRI Standards), and the

International Integrated Reporting <IR> Framework developed by the International Integrated Reporting Council (IIRC) were also applied to determine the key material issues.

MPA's key material issues were first identified in 2014. They were reviewed at MPA's Senior Management Meeting, chaired by the Chief Executive, held in February 2018.

MPA has further enhanced our sustainability reporting. In this report, our Future-Ready thrusts and associated content chapters have been aligned to the UN Sustainable Development Goals (SDGs). Anchoring MPA's initiatives, and future development plans to the SDGs enables MPA to contribute effectively to the 2030 Agenda for Sustainable Development, an initiative to which Singapore has committed.

## Overview of 6 Key Material Issues



### Safe, Efficient and Sustainable Shipping

This material issue addresses the importance and impact of MPA's role as a driving force behind Singapore's port and maritime development. In developing Singapore as a premier global hub port and International Maritime Centre (IMC), MPA must manage multiple economic, environmental and social risks and opportunities, and use its influence to drive positive change in the industry. MPA seeks to partner the industry and other agencies to enhance safety, security and environmental protection in port waters, facilitate port operations and growth, expand the cluster of maritime ancillary services and promote maritime R&D and manpower development.



### Economic Contribution

This material issue addresses the importance and impact of MPA's role in contributing to Singapore's Future Economy. Presently, the maritime industry contributes 7% of Singapore's Gross Domestic Product and employs over 170,000 people. The launch of the Sea Transport Industry Transformation Map builds on MPA's strategic long-term plans to develop Singapore's next-generation port and strengthen our IMC. With the aim to grow the sector's value-add by S\$4.5 billion and create more than 5,000 good jobs by 2025, MPA's significant role as industry champion is critical to the success and sustained prosperity of Singapore.



### International Support and Community Engagement

This material issue addresses the importance of local and international partnerships to, and its impact on MPA by considering MPA's engagement with, and contributions to local communities, as well as initiatives to strengthen partnerships with the international maritime industry.



### Financial Sustainability

This material issue addresses the importance and impact of MPA's economic performance. As a self-funded statutory board, maintaining a competitive business and sustainable revenue are critical to MPA's long-term financial viability.



### Environmental Sustainability

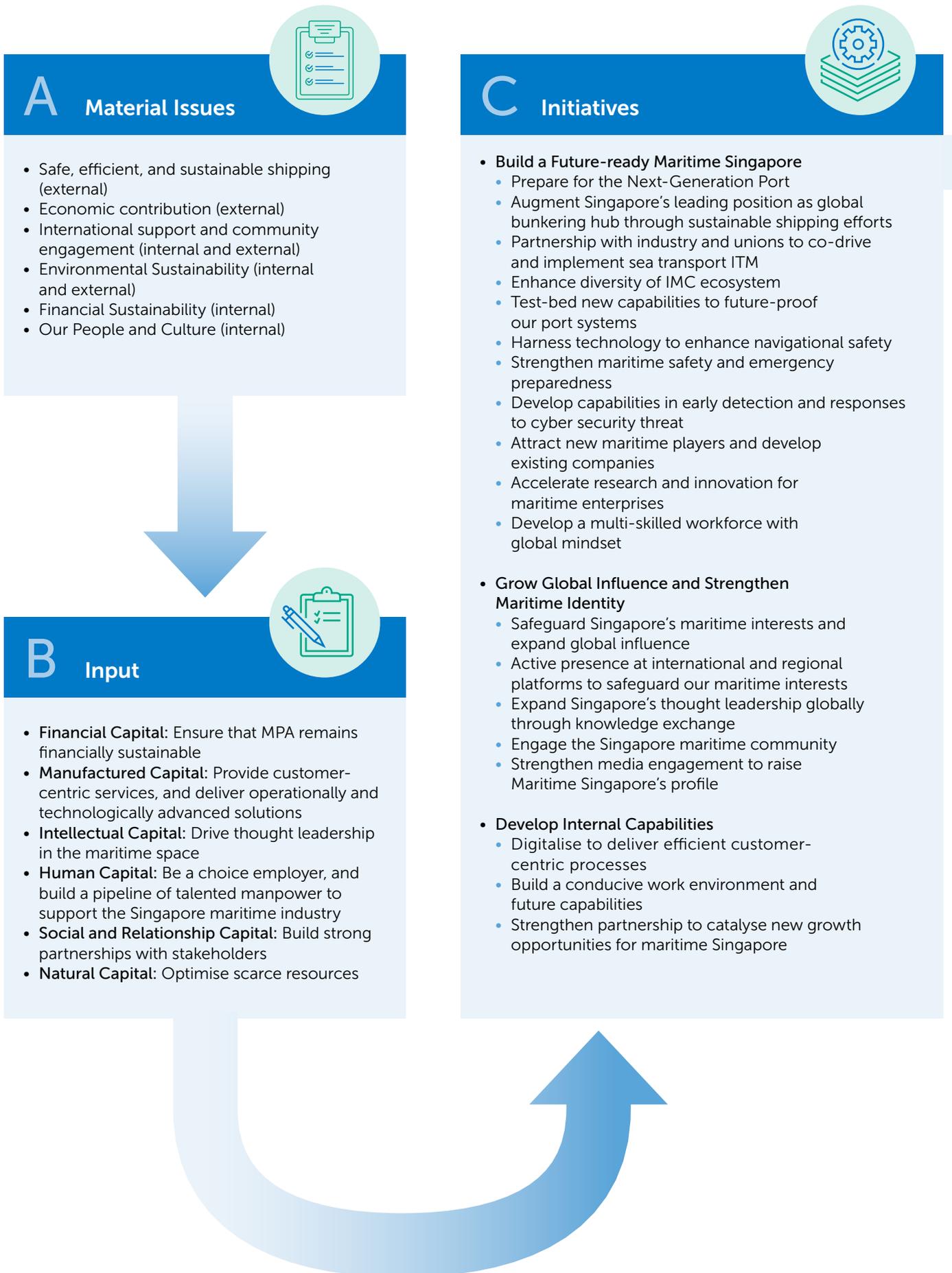
This material issue addresses the importance and impact of MPA's operations on the environment through MPA's energy and water consumption, carbon emissions, and waste generation.

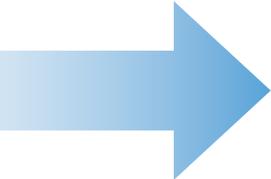


### Our People and Culture

This material issue addresses the importance and impact of maintaining a skilled and productive workforce in MPA. In meeting its current and future needs, MPA seeks to build a workplace that is rewarding and engaging, and places strong emphasis on employees' learning and development.

# MPA's Business Model – Future-Ready Framework





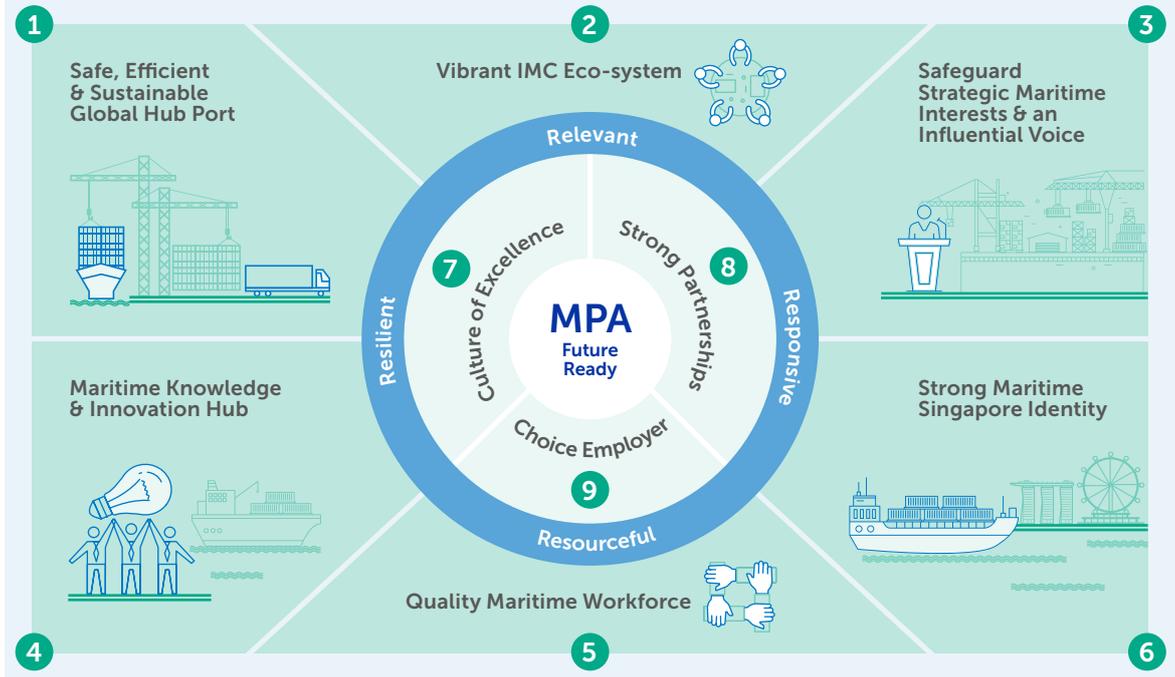
## D Outcomes

- Safe, efficient & sustainable global hub port
- Vibrant IMC eco-system
- Safeguard strategic maritime interests & an influential voice
- Maritime knowledge & innovation hub
- Quality maritime workforce
- Strong maritime Singapore identity
- Culture of excellence
- Strong partnerships
- Choice employer



## D Key Performance Indicators (KPIs) (Tracked monthly, quarterly and annually)

- Get the basics right by establishing better safety and risk management practices (1,3,5)
- Drive higher productivity in our port (all)
- Promote environmental sustainability in our port (6)
- Lead in setting industry standards (all)
- Ensure adequate port infrastructure (1,2)
- Develop the Next-Generation Port (all)
- Anchor and grow key players in the Singapore maritime eco-system (all)
- Ensure a conducive environment for maritime businesses (all)
- Be an active voice in regional and international platforms (3)
- Strengthen relationships with international counterparts, and the maritime community (3,5)
- Ensure the effective implementation of relevant international regulations and conventions (all)
- Promote maritime thought leadership (3,5)
- Encourage research and development, and nurture a culture of innovation (all)
- Drive sectoral manpower strategies (all)
- Promote maritime careers by raising the profile of maritime careers to targeted groups (4,5)
- Reinforce Singapore's position as a choice venue for major maritime events (all)
- Enhance strategic outreach and engagement (all)

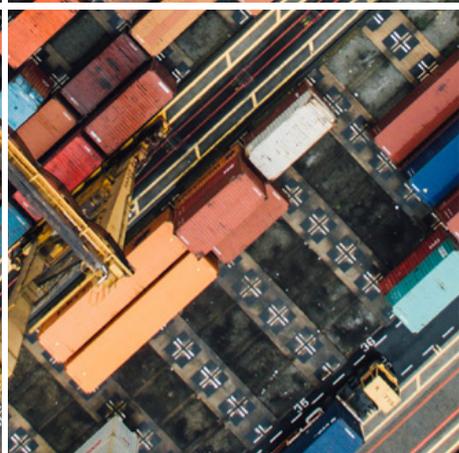
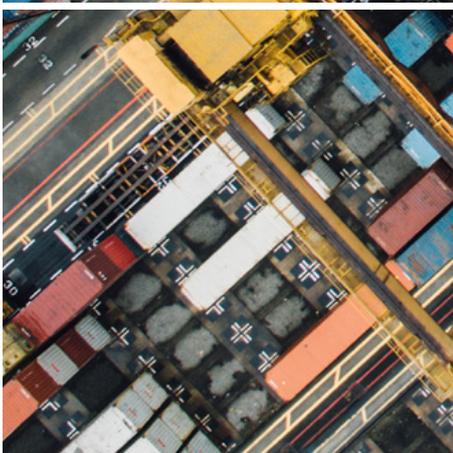
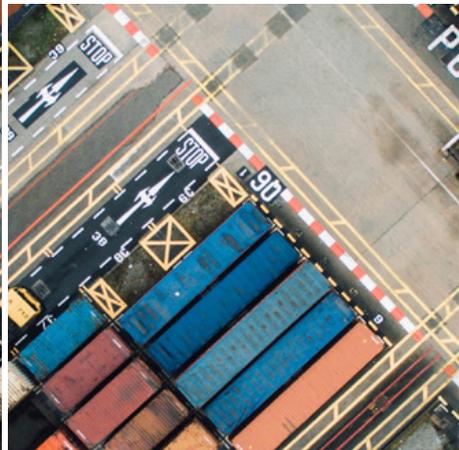


Chapter 1



# Safe, Efficient and Sustainable Global Hub Port

[GRI 102-12, 102-13, 102-15, 203-1, 203-2]



The Maritime and Port Authority of Singapore strives to drive Singapore’s port and maritime development towards developing and promoting Singapore as a premier global hub port and a leading international maritime centre. Working to advance and safeguard the country’s strategic maritime interests, it ensures the safety and security in the port, as well as the safe and optimal use of sea space and waterfront land to meet future needs.

## Efficiency

### Staying Ahead of the Competition

Singapore consistently attracts leading maritime players to use it as a node for global connections. The Singapore Registry of Ships (SRS) retained its ranking among the five largest ship registries worldwide, reflecting Singapore’s reputation as a quality flag of choice for international ship owners and operators. The total tonnage of ships under the Singapore flag climbed 2.4 per cent from 2017’s 88.8 million gross tonnage (GT) to reach 90.9 million GT in 2018.

Singapore continues to be recognised as a key global hub port in international rankings. In its general evaluation of international shipping centres, the Xinhua-Baltic International Shipping Centre Development Index 2018 which assesses and ranks the quality, breadth, and depth of global ports, saw Singapore maintain its lead for four successive years.

Testament to Singapore’s firm standing as a leading international hub port, the Thenamaris Group, a global ship management company based in Greece, set up its commercial ship management office in Singapore; so did the World Shipping Council that announced the setting up of its Asia office in Singapore.

To ensure that Jurong Port, the primary gateway for General and Bulk Cargo (GBC) provides best in class service, a benchmark study was done

by the Maritime and Port Authority of Singapore (MPA) and Jurong Port Pte Ltd (JPPL). Completed in 2018, the study ranked Jurong Port 11<sup>th</sup> out of 30 GBC ports and terminals, positioning it among the best-in-class GBC ports. JPPL also scored in terms of productivity and service quality as it was ranked among the best performers for cement handling speed, with an above average score for Berth-On-Arrival.

To ensure Singapore ships operate at a high standard of safety worldwide and perform well when inspected by foreign port authorities, MPA implemented the SRS Quality Flag Assessment Five-Year Programme. Under this programme, in addition to local inspections, MPA’s Flag State Control officers will also

conduct overseas inspection on selected Singapore ships. Ships are selected for overseas inspection based on a risk matrix, taking into account whether the ships call at Singapore. During these overseas trips, MPA officers will also take the opportunity to visit and maintain close dialogue with the local port authorities.

### Leveraging Technology for a Safe and Efficient Port

#### Vessel Traffic Information System [SDG 11.5]

To capture vessel movements more efficiently and accurately, MPA would upgrade the Vessel Traffic Information System (VTIS) in 2019. This would





Dr Lam Pin Min, Senior Minister of State, Ministry of Transport and Ministry of Health launched the Sea Transport Industry Transformation Map

include improvements to the quality of CCTV and video analytics capabilities, and expansion of the data bandwidth between the VTIS and radar stations to enhance situational awareness through ensuring high resolution radar plots.

To facilitate the real-time data transfer between shore and ships in the port, MPA would be investing S\$500,000 in the development of the VHF Data Exchange System (VDES) over the next three years. This is part of the Next Generation Vessel Traffic Management System R&D project at the MPA Living Lab.

With greater data exchange between shore and ships, predictive analysis relating to navigational safety such as traffic hotspots and collision risks could be made at shore and shared with ships. The VDES is currently being developed and prototyped. Field trials would be carried out under the MPA Living Lab from the second half of 2018 across a range of e-Navigation and digital applications.

### Maritime Incidents and Situation Awareness Systems

To help MPA monitor the status of marine incidents and provide situational awareness on the ground, Maritime Incidents and Situation

Awareness Systems (MISAS) was launched.

MISAS is equipped to identify and actively monitor resources that can be or have been activated to respond to an incident. These resources include vessels equipped with oil and chemical clean-up capabilities, nearby passenger ferries with additional capacity to evacuate passengers and fire-fighting vessels.

It can provide information on the classes and quantity of Dangerous Goods and Hazardous and Noxious Substances on board vessels. This would assist MPA to monitor the locations of these hazardous cargo and substances, thus enabling the swift response of MPA during an emergency.

In addition, MISAS can be used to monitor vessels of interest and set up geo-fences for areas of interest during peacetime.

### Gas-Free Inspection Application

MPA has sought to improve its operational efficiencies by digitalising select workflows within the organisation. In so doing, administrative processes are streamlined, reducing the manpower

and financial resources incurred. As part of its digitalisation movement, MPA created The Port Chemist, an application that links up the iPad to the existing Gas-Free System. The application enables the auto-monitoring and recording of the inspection result onto the iPad, replacing the incumbent manual inspection process. This enhanced the overall workflow of the inspection by allowing real-time information to be disseminated to all stakeholders, as well as going green for the environment.

### Installation of Very High Frequency Radio at Port Operations Control Centre

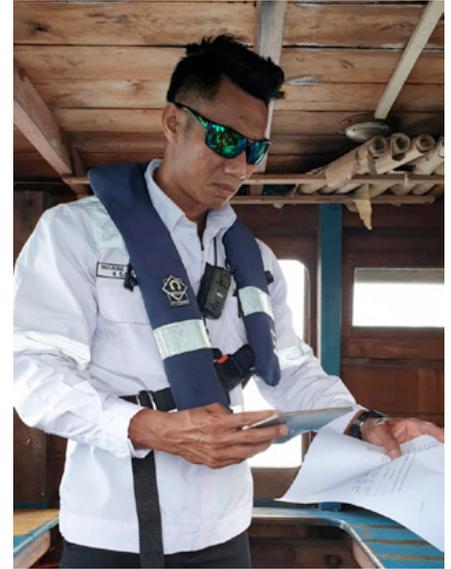
A new Very High Frequency (VHF) base station was set up at Port Operations Control Centre at PSA Vista (POCC-Vista) to supplement MPA's current VHF base stations. The new base station would provide a direct link and allows for the uninterrupted use of the VHF should there be a communication link breakage between POCC-Vista and the existing stations.

### Body-Worn Camera for Port Inspectors

Technological developments in recent years had seen breakthrough innovations in evidence gathering, one



MPA Port Chemist explaining the terms of the digital Gas-Free Certificate to the ship Master



The Body Worn Camera is donned by MPA Port Inspectors at all times during their regular inspections

of which is the body-worn camera (BWC). A BWC is a device worn on the body that records interactions between the Port Inspector (PI) and the public. The use of BWC has gained popularity among law enforcement agencies around the world as it improves accountability and enhances the accuracy of reports and testimonies.

The use of the BWC was in line with MPA's FIRST values, especially Forward Thinking, Integrity, and Service Excellence. Capitalising on the latest technological advancements, the videos recorded by the BWC could be used for training purposes to enhance MPA's service quality. The deployment of BWC was also in line with MPA's Future Ready framework in terms of Responsiveness and Resourcefulness as disputes could be resolved more efficiently.

### Next-Generation Port at Tuas

The Tuas Terminal project was created to ensure that Singapore has sufficient capacity to meet future demand for container handling facilities and maintain her reputation as a global maritime hub. Work on the Tuas port first started in 2015 and will continue to be developed in four phases over 30 years and is targeted for completion from 2040.

Set to become the largest single container terminal in the world, the entire Tuas Terminal can eventually handle up to 65 million twenty-foot equivalent units (TEUs) of cargo annually. It not only caters for future growth in container handling demand, but also accommodates the move of the city terminals to Tuas when their leases expire, thereby consolidating all the existing container handling facilities at Tuas.

The Tuas Terminal development is a crucial part of Singapore's 'Next-Generation Port Vision' to build a more efficient, intelligent and sustainable port that will meet the demands of the future.

### Development Plans for Tuas Terminal Gateway

To improve the operational efficiency of Tuas Terminal, an area of about 30 hectares (ha) within the footprint of Tuas Terminal Phase One has been identified for the development of Tuas Terminal Gateway (TTG). It includes essential facilities for terminal operations such as container gates, Immigration and Checkpoint Authority (ICA) and Singapore Customs (SC) checkpoints, Container Freight Station, transport facilities, and office spaces to support port operations.

The Master Plan for the TTG incorporating integrated facilities for ICA and SC checkpoints and integrated buildings to support Terminal operation and MPA's operational needs was completed in 2018. The TTG's Master Plan is currently being reviewed to incorporate ICA and SC's changes to requirements.

### Building a Tuas Ecosystem

The Tuas Ecosystem blueprint is currently being developed. A Tuas Ecosystem Working Group, comprising JTC Corporation, PSA, MPA, Urban Redevelopment Authority and Economic Development Board (EDB) had concluded a study to capture new economic activities and trade flows by integrating the synergy of port-related industries and locating these companies close to Tuas Port.

### Reclamation Works (Tuas Terminal Phases One and Two)

Reclamation works for the Tuas Terminal Phase One commenced in February 2015 and are on track to be completed by 2021. Phase One involves the reclamation of 294 ha of land, construction of 8.6 kilometres (km) of wharf structure, and deepening of basins and Temasek



Tuas Terminal Phase One

Fairway to minus 23 metres (m) at Chart Datum.

Fabrication of all the 221 caissons were completed in August 2018, six months ahead of schedule, and land for the first two berths was proclaimed as State land in November 2018, and to be alienated to the port operator in the second quarter of 2019. When fully operational, Tuas Terminal Phase One would have 21 berths with an annual handling capacity of about 20 million TEUs.

Reclamation works for the Tuas Terminal Phase Two project commenced in March 2018. Phase Two involves the reclamation of 387 ha of land, and construction of 8.6 km of wharf structure with designed water depths of minus 23 m at Chart Datum. Works are progressing well with 1.5 km of containment bund completed to receive dredged and excavated materials, and commencement of soil improvement works for Tuas South Boulevard Extension. When fully operational, Tuas Terminal Phase Two would add another 21 berths with an annual handling capacity of up to 21 million TEUs.

To intensify the land use within Tuas Port, a feasibility study on the development of above ground space

(AGS) at Tuas Terminal Phase Two was undertaken in 2015 and was substantially completed in 2018.

### Re-engineering of MPA Craft Inspection Process

MPA's previous Craft Inspection Process had faced issues such as the Port Inspectors' (PI) long commute between sites due to the manual booking system; the inefficient use of paper to record inspection results and the slow transmission to One Stop Document Centre (OSDC) resulting in delays to the issuance of craft license; as well as the inconvenience to the public when they need to travel all the way to OSDC for bookings which is only available during office hours.

The new online, paperless system has built-in algorithms (e.g. distance, time and complexity checks) to reduce commute between sites. The iPad-based application enables PIs to key in results which are transmitted immediately to OSDC to complete the craft licence approval process in real time.

Additional benefits include public access round the clock to book inspections. The system automatically checks the necessary set conditions and is capable to approve 100 per cent of inspections so long as conditions are met.

### Enhancement of Control Measures

As part of MPA's efforts in innovating, streamlining and improving its electronic services to facilitate the restricted entry application process, MPA implemented an e-application system for entry of ships or craft into the restricted or prohibited areas surrounding Jurong Island, Pulau Busing, Pulau Bukom, Pulau Sebarok, Shell SBM, and Sembawang Wharves on 2 July 2018.

A sense-make electronic module on the detection of vessels entering restricted and/or prohibited areas would be developed under the MPA-IBM Sense-making Analytics for Maritime Event Recognition (SAFER) project. Using real-time data from multiple sources combined with analytics-based technologies as well as predictive tools, the e-module allowed auto-detection of any anomaly or unusual behaviour of vessels or unauthorised impending entries. MPA and the security agencies concerned would be alerted for necessary on-site interception. The use of such combined sense-make and predicting capabilities would help to improve the overall security in port waters.

### Enhancement of Pilot Licensing and Monitoring System

Currently, the Pilot Licensing and Monitoring System (PLMS) captures and stores the pilots' information such as personal details, licence/class type and past incidents, in a database enabling easy retrieval. PLMS would be enhanced to capture and integrate Pilotage Service Level (PSL) data with the Database Management System. The enhancement would be carried out in phases.

Phase One of PSL monitoring and forecasting provided a one-stop display of the PSL on a daily basis for monitoring and forecasting purposes. With the data captured, MPA would be able to identify the causes of non-compliance of PSL targets by the pilotage service provider. Trend analysis of PSL may also be conducted.

# Sustainability

[SDG 7.3, 9.4]



The International Maritime Organization's 0.5 per cent global sulphur cap will take effect from January 2020

## Prepare for International Maritime Organization 2020 Fuel Oil Sulphur Limit

Come January 2020, all ships are required to use compliant fuel oil of not more than 0.5 per cent sulphur content. In addition, ships are not allowed to carry non-compliant fuel oil from March 2020.

To help prepare the industry for the International Maritime Organization (IMO) 2020 Fuel Oil Sulphur Limit, MPA developed a comprehensive action plan. It worked together with the Singapore Shipping Association (SSA) to publish two technical guidance booklets – one for Singapore-registered ships and another one for ships calling at the Port of Singapore to provide detailed guidance and best practices for ships to comply with the IMO 2020 regulations, and the requirements and procedures for ships to comply with when they call at Singapore.

Singapore being a major bunkering hub, MPA worked closely with its bunker suppliers to ensure that there

would be adequate supply of compliant fuel oil in Singapore before 2020.

## Cleaner Marine Fuel

[SDG 7.4]

MPA awarded S\$6 million to FuelNG Pte Ltd and Pavilion Gas Pte Ltd for the building of two Liquefied Natural Gas (LNG) bunker vessels, in a move that would help promote ship-to-ship LNG bunkering in Singapore. FuelNG Pte Ltd and Pavilion Gas Pte Ltd would each receive a co-funding grant of up to S\$3 million for their respective LNG bunker vessel. Slated for delivery in 2020, the vessels would be among the first of their kind in Asia. This is a significant step towards cementing Singapore's position as a leading LNG bunkering hub in the Far East, catering to large ocean-going LNG-fuelled vessels.

A greater impetus was added towards making LNG bunkering a reality as MPA also welcomed the Suez Canal Economic Zone Authority, the first member from the Middle East, into the LNG bunkering port focus group. The expansion was

formalised via a Memorandum of Understanding signing during the Singapore International Bunkering Conference and Exhibition (SIBCON) opening ceremony. MPA formed the international focus group back in 2014 to deepen cooperation and information sharing on LNG bunkering. Since then, the LNG bunkering port focus group has grown from three to 11 participants.

MPA recently joined SEA\LNG's membership coalition to further drive and align MPA's efforts with the global LNG bunkering supply chain. SEA\LNG is a global coalition of players in the LNG shipping value chain who works collaboratively to drive the widespread adoption of LNG as a marine fuel. By joining SEA\LNG, MPA hopes to foster greater confidence in the availability and reliability of LNG as a marine fuel now and in the future.

Beyond the use of LNG as a marine fuel in the Port of Singapore, MPA has allocated S\$5 million to the Green Energy Programme to support the development of other cleaner alternative marine fuels. Companies



Dr Lam Pin Min, Senior Minister of State, Ministry of Transport and Ministry of Health, giving his opening address at the 20th Singapore International Bunkering Conference and Exhibition

can tap on the fund to carry out various activities including the conduct of research and development for cleaner marine fuel solutions in Singapore.

### Sustainable Shipping

In October, MPA organised the two-day SIBCON featuring key international speakers and brought together bunkering professionals, academic experts and high-level industry executives to exchange ideas on current trends and the future of the bunker industry.

Themed “Fuelling Sustainable Shipping”, the 20<sup>th</sup> SIBCON hosted more than 1,800 participants from over 50 countries. At the event, Senior Minister of State, Dr Lam Pin Min, Ministry of Transport and Ministry of Health announced initiatives by MPA to prepare the Singapore bunker industry ahead of the International Maritime Organization’s 0.5 per cent

global sulphur cap taking effect from January 2020.

To prepare the industry for the 0.5 per cent global sulphur limit, MPA would publish an information sheet on the list of licensed bunker suppliers of low-sulphur fuels in Singapore in 2019. In addition, MPA would form a new work group with the industry to embark on an industry road mapping exercise to prepare the Singapore bunker industry for the future that would include drivers such as digitalisation, innovation, transparency and productivity in the sector.

### Quality Bunkering Services [SDG 9.5, 11.2]

#### 1. Mass Flow Metering System [SDG 7.3]

To improve bunker deliveries, MPA announced the mandatory use of mass flow metering (MFM) system for

the delivery of distillates in the Port of Singapore from 1 July 2019, following the successful implementation of MFM for marine fuel oil.

The use of the MFM system helped enhance transparency in the bunkering process, improved operational efficiency and increased the productivity of the bunker industry. MPA had commenced the acceptance tests to roll out MFM on bunker tankers for the delivery of distillates. With the successful completion of the first test in September 2018, MPA would work closely with owners to schedule acceptance tests for all distillates bunker tankers, so as to implement the mandatory use of MFM on all bunker tankers delivering distillates in 2019.

#### 2. Network of LNG-Bunker Ready Ports

MPA has been working with eleven other port authorities and maritime administration to establish a network

of LNG bunker-ready ports across the Far-East Europe and Transpacific trade routes. During the 20<sup>th</sup> SIBCON in October 2018, we welcomed the Suez Canal Economic Zone Authority - the first Middle Eastern partner in this grouping.

Thus far, the group has launched a set of harmonised LNG bunkering procedures in October 2016 to provide guidance to ports which are looking to implement LNG bunkering, and also an infographic in October 2018 on the readiness of each member of the grouping. Moving ahead, the expanded group will develop a guidance document for ports and joint roadmap with key milestones and initiatives to drive the LNG bunkering agenda.

### 3. 2<sup>nd</sup> LNG Bunkering Roundtable

Together with Poten & Partners, MPA organised its second LNG Bunkering Roundtable at the sidelines of the 20<sup>th</sup> SIBCON in October 2018. This event brought together key representatives across the international and local LNG bunkering supply chain to engage in high level conversations exploring ways to collectively drive the development LNG bunkering, especially towards ship-to-ship LNG bunkering.

### 4. Co-funding of LNG Bunkering Pilot Programme

MPA has set aside S\$18million of funds to support the building of LNG-fuelled vessels by the industry. To date, a total of \$16million has been awarded towards the building of eight vessels which includes towage vessels and bunker tankers (delivering conventional fuels).

Two of the co-funded vessels have since been delivered, both towage vessels owned by Keppel SMIT

Towage and Maju Maritime, that are presently operating in the Port of Singapore on LNG.

## Championing Sustainability Reporting

As a frontrunner in sustainability reporting in the maritime and Singapore Public sector, MPA further enhanced its sustainability programme in 2018, winning at the 2018 Sustainable Business Awards. MPA also committed itself to climate change action through taking the Climate Action SG organisational pledge.

Beyond MPA, to engage and further build a community of sustainability reporters within the maritime ecosystem, MPA extended its Sustainability Reporting Co-Funding Scheme to grantees' 2nd year reporting following industry feedback. In early 2019, MPA has also developed a Maritime Sustainability Reporting Guide, which, co-developed with industry and sustainability partners, seeks to impart new maritime sector reporters with the necessary sustainability reporting knowledge and skills. When launched later in 2019, the Guide would be the first sectoral-driven sustainability reporting guide developed in Singapore since the implementation of SGX's "comply or explain" sustainability reporting requirement, and would be amongst the first few guides developed worldwide aligned to GRI Standards' sector disclosure initiative.

# Safety

## Keeping Singapore Waters Safe

The Port of Singapore and the Singapore Strait continue to be safe. The number of major marine incidents in Singapore territorial waters remained low in 2018. There was one major accident with 847,782 vessel movements.

### SAFER

As Singapore prepares for the move to the Mega Port at Tuas, it is imperative that MPA constantly innovates and embraces new technologies to meet future demand and complement its limited resources and manpower.

Project SAFER (Sense-making Analytics For maritime Event Recognition) is a collaboration between MPA and IBM Research to develop and test-bed new analytics-based technologies to improve maritime and port operations in tandem with Singapore's steadily growing vessel traffic.

Leveraging data collected through MPA's systems to develop a maritime sense-making system, it functions to automate and reduce human error for critical tasks which previously relied heavily on manual efforts. Project SAFER has been well recognised internationally and locally – it was awarded the INFORMS Analytics Society Innovative Applications of Analytics Award and EXCEL Innovation Project Award in 2018.

## Safety@Sea

### International Safety@Sea Week 2018

Safety@Sea Week, the flagship event of the Safety@Sea Singapore campaign, was held from 18 to 22 June 2018 at the Marina Mandarin Hotel. The theme of the conference was "Towards Safer Navigation – Lessons, Insights and Trends". The conference was helmed by four keynote speakers, namely Dr Heike Deggim, Director, Maritime

Safety Division, IMO; CDR Hideki Noguchi, Chairman, e-Navigation Committee, International Association of Marine Aids to Navigation and Lighthouse Authorities; Sobantu Tilayi, Chief Operations Officer, South African Maritime Safety Authority; and Professor Lee Yeon-Seung, President and CEO, Korea Ship Safety & Technology Authority.

Three plenaries were held over two half-days with speakers from the Hong Kong Marine Department, Norwegian Coastal Administration, United States Coast Guard, German Aerospace Centre, Defence Science and Technology Agency, DSO National Laboratories and Worldwide Ferry Safety Association.

The next edition would be held from 26 to 30 August 2019. In addition to the international conference, other events would include the biennial Community of Practice Forum, and Ferry Rescue Exercise (FEREX) Observer Programme.

### Refreshed Safety@Sea Campaign

[SDG 8.8]

To promote a safety-first culture at sea, MPA unveiled the refreshed Safety@Sea Singapore Campaign in June 2018. An industry-wide effort, the campaign would feature a new set of eye-catching posters with updated safety messages tailored for a range of target groups such as bridge teams, crew, ferry passengers and the pleasure craft community.

MPA would also develop a new Safety@Sea website, a one-stop digital platform for the maritime community to get up-to-date information on events and collaterals relating to maritime safety.

These new initiatives were on top of ongoing efforts such as regular industry-wide briefing sessions to share best practices, screening of safety videos on board ferries and at passenger terminals, and regular checks on vessels to ensure the

observance of safety standards and maintenance of safety equipment.

At the launch, MPA also announced its commitment of up to S\$800,000 to co-fund the supply, installation, delivery and commissioning of new buckle-type life-jackets and customised life-jacket receptacles on board MPA-licensed regional passenger ferries, which carried 6.5 million passengers on the Singapore-Malaysia and Singapore-Indonesia routes in 2017. The new life-jackets were compliant to international standards such as the Life-Saving Appliance (LSA) Code.

Feasibility studies on these buckle-type life-jackets and customised life-jacket receptacles were carried out with regional ferry operators on board nine ferries. Results had shown that the buckle-type life-jackets were easier and faster to put on during an emergency, while the customised life-jacket receptacles, fitted under passenger seats, served to protect the equipment and reduced the time taken by passengers to access it.

### Enhanced Measures Over Festive Period

MPA has stepped up its safety checks and measures under the ambit of the Safety@Sea Singapore Campaign. MPA urged all port users and members of public travelling by ferry or cruise to exercise care when on board, and to remain vigilant and safe at sea. Passengers should also be mindful of the basic safety practices, especially during the festive peak season.

MPA's measures focused on seafarers and sea-going passengers to guard against complacency, ensure safety standards, and maintain a safety-first culture. MPA also increased the frequency of spot checks on regional ferries. These included checks on the general vessel condition, and that fire-fighting apparatus and life-saving appliances on board were in good working condition.



1. From L-R: Dr Heike Deggim, Director, Maritime Safety Division, International Maritime Organization; Mr Niam Chiang Meng, Chairman, MPA; Dr Lam Pin Min, Senior Minister of State, Ministry of Transport & Ministry of Health, Mr Andrew Tan, Chief Executive, MPA and Mr Michael Phoon, Executive Director, Singapore Shipping Association launching the opening of the conference
2. Mr Toh Ah Cheong, Executive Director of Singapore Maritime Institute signed a MOU with Mr Hee Joh Liang, Deputy Principal Development, Singapore Polytechnic (SP) to develop a new maritime research Centre of Excellence in Maritime Safety. Observing were Mr Andrew Tan, Dr Lam Pin Min and Mr Soh Wai Wah, Principal and CEO of SP



3

3. (From L-R) Mr Sebastian Koh, President, Association of Regional Ferry Operators & General Manager, Bintan Resort Ferries; Mr Mark Ko, Co-chair, MPA-Harbour Craft Safety Working Group & Executive Director, Tian San Shipping; Mr Michael Phoon, Vice-chair National Maritime Safety at Sea Council & Executive Director, Singapore Shipping Association; Mr Andrew Tan, Chief Executive MPA; Mr Peter Chew, Managing Director, PSA Marine; Capt William Francis, Chairman, Singapore Powerboat Association & Chairman MPA-Pleasure Boating Safety Working Group; and Capt Robin Foo, President, Singapore Maritime Officers' Union, at the launch of the International Safety @ Sea Week 2018
4. MPA Port Chemist inspecting a cargo tank for flammable vapour during a gas-free inspection



4

MPA's Vessel Traffic Information System had also increased the frequency of weather updates and navigational safety messages for vessels to remain alert and observe safety best practices when navigating in the busy waterways of Singapore port and the Singapore Strait.

## Emergency Response

### Joint Oil Spill Exercise

[SDG 14.2]

MPA led a multi-agency Joint Oil Spill Exercise (JOSE) 2018 on 5 October 2018 as part of the closing programme for the 20<sup>th</sup> SIBCON 2018.

More than 250 personnel from 26 agencies participated in JOSE 2018, which comprised a tabletop exercise at MPA's POCC-Vista and a seaward deployment exercise scenario near Raffles Reserved Anchorage.

The spill response teams demonstrated the deployment of equipment such as oil containment booms, spraying of dispersants from a C-130 and 10 oil spill response craft over the spill area, and recovery of the spilled oil by an innovative "Giant Octopus" skimmer system. The exercise was supported by Shell Eastern Petroleum (Pte) Ltd as the exercise partner, as well as other participating agencies who were part of the Oil Spill Contingency Plan.

The MPA aims that by 2020, marine and coastal ecosystems can be sustainably managed and protected to avoid significant adverse impact; through strengthening their resilience, and taking action for their restoration in order to achieve healthy and productive oceans.

### Malaysia-Singapore Joint Committee on the Environment Chemical Spill Exercise

[SDG 14.2]

MPA and the Marine Department of Malaysia conducted a joint chemical spill exercise along the East Johor Strait on 12 July 2018 to test the Joint Emergency Response Plan for

Chemical Spill Incidents in the East Johor Strait. The exercise is part of the bilateral cooperation programme under the Malaysia-Singapore Joint Committee on the Environment Chemical Spill Exercise.

The bilateral exercise comprised a joint tabletop exercise on 10 July 2018, followed by a full-scale ground deployment exercise which simulated a collision between a fully laden chemical tanker and a product tanker near Tajam Beacon off Pulau Ubin. The collision was simulated to lead to some 500 tonnes of Benzene spill and a gasoline-like odour detected by residents at Johor Bahru and Pulau Ubin.

MPA led Singapore's part of the joint response effort with Malaysia in areas such as spillage clean-up, environment monitoring around the affected area and evacuation procedure of injured crew members. NEA supported the exercise by monitoring the air and water quality for signs of chemical contamination near the shoreline, and exchanging information with Malaysia's Department of Environment.

In total, Singapore deployed seven vessels and 50 officers from participating agencies to support the exercise.

### Ferry Rescue Exercise 2018

[SDG 11.5]

To test the readiness of various agencies in responding to ferry mishaps in the Port of Singapore, Ferry Rescue Exercise (FEREX) 2018 was conducted on 20 September 2018. More than 100 personnel from 10 organisations took part in the multi-agency ferry rescue exercise near Kukor Buoy.

The exercise scenario involved the evacuation of 72 passengers on board a domestic ferry when she grounded and started taking in water after knocking a large underwater object. A search-and-rescue operation was also conducted for missing passengers. The Internet of Things device attached to the lifejacket was also deployed to test if Singapore's fourth generation (4G) or Long-Term Evolution (LTE) network was able to pick up the device's signal and determine the location of the man overboard quickly and accurately. Such smart devices improved agencies' response capabilities, especially under poor visibility or during hours of darkness.

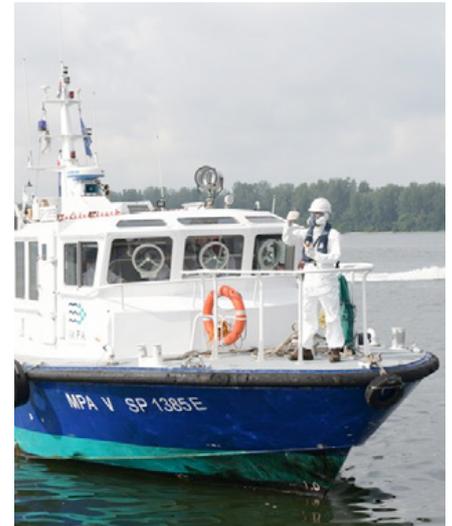
A separate tabletop exercise was held on 16 August 2018 to test the activation and notification procedures as well as operational decision-making processes in handling ferry mishaps.



More than 250 personnel from 26 agencies took part in the Joint Oil Spill Exercise



Officers from MPA, National Environmental Agency of Singapore and Marine Department of Malaysia observing the exercise



MPA's Port Chemist getting air samples to check for residual chemical vapours

## Promoting Maritime Security

### Inaugural Maritime Security Workshop

On 22 June 2018, MPA organised the inaugural Maritime Security (MARSEC) Workshop, with the objectives of raising security awareness and promoting best practices among industry stakeholders against maritime security risks and threats. Held at Marina Mandarin Hotel, the workshop saw 130 participants from both the public and private sectors. MPA would be organising the second MARSEC forum in August 2019.

### Working with the Industry

MPA and the SSA formed a joint industry working group to further enhance the integrity and transparency of the bunker supply chain in the Port of Singapore. The working group would engage in efforts towards providing the industry with greater assurance and confidence in preventing marine fuel theft. Efforts were geared towards developing and recommending pragmatic measures both in the short and long term.

### Centre of Excellence in Maritime Safety

[SDG 11.5]

The MPA would be embarking on several new initiatives as part of

continued efforts to enhance safety at sea, especially in the Port of Singapore. A new maritime research Centre of Excellence in Maritime Safety (CEMS) would be set up by Singapore Maritime Institute and Singapore Polytechnic to enhance navigational safety. These were announced by Dr Lam Pin Min, Senior Minister of State for Ministry of Transport and Ministry of Health at the official opening of the International Safety@Sea Conference at the Marina Mandarin Hotel on 20 June 2018.

Singapore Polytechnic's CEMS would focus on research and innovations that enhance navigational safety. It would contribute to the training and development of future-ready seafarers through the use of emerging digital technologies such as augmented reality and virtual reality.

### Joint surveys of Straits of Malacca and Singapore

In 2018, the second phase of the joint hydrographic survey of the Straits of Malacca and Singapore (SOMS) by the three littoral states - Indonesia, Malaysia and Singapore, and the Malacca Strait Council of Japan, commenced. Carried out by Singapore, the second phase covered waters shallower than 30 metres within the Traffic Separation Scheme (TSS) from One Fathom Bank in the Malacca Strait

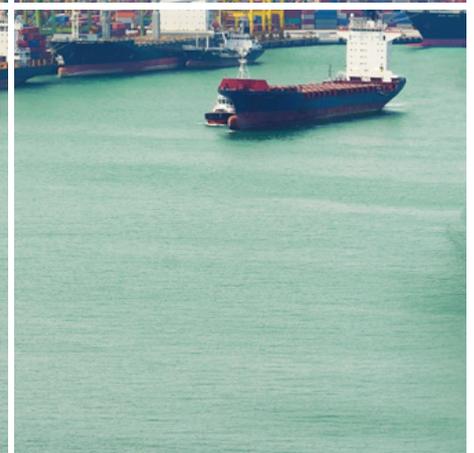
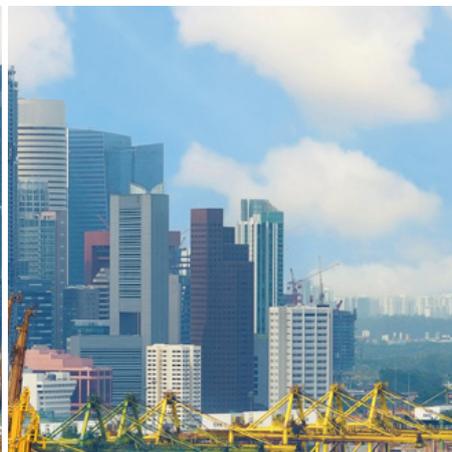
to Horsburgh Lighthouse at the eastern entrance of the Singapore Strait. This was a continuation from phase one which focused on five depth-critical areas of TSS in the SOMS. Data collected was used to produce more up-to-date and detailed electronic navigational charts to improve navigational safety and enable better voyage planning in one of the busiest waterways in the world.

Chapter 2



# Vibrant International Maritime Centre Eco-System

[GRI 102-15, 203-1, 203-2]



# Building an Attractive International Maritime Centre Cluster

Maritime Singapore is home to a diverse range of maritime businesses, with more than 5,000 maritime establishments in Singapore employing over 170,000 people. Beyond our position as a global hub port, Singapore continues to be recognised as a leading international maritime centre (IMC) by international benchmarking studies such as the Xinhua-Baltic Exchange International Shipping Centre Development Index, where we maintained top spot for the fifth successive year.

Today, Singapore has one of the highest concentrations of international shipping groups globally. More than 150 international shipping groups originating from all over the world have set up presence in Singapore and, together, they generate a local business spending of more than S\$3.5 billion annually. These groups cover diverse sectors from containers, dry bulk and tankers to offshore and LNG shipping. With the support of local and international shipowners and operators, the Singapore Registry of Ships is presently the fifth largest in the world, with the total tonnage amounting to 90.9 million gross tonnage in 2018.

In addition, Singapore has grown to be a vibrant marketplace comprising of not only shipping interests but also international commodity trading players, many of which have established their shipping operations in Singapore. The presence of these international shipping and commodity trading groups, coupled with Singapore’s leading position as a global hub port and major bunkering hub, have in turn given rise to the development of a comprehensive range of maritime commercial and technical services. These include ship finance, marine insurance, ship broking, marine surveying, as well as maritime law and arbitration.

Singapore continually works closely with industry partners to enrich the local maritime ecosystem for the international shipping community. An example is the establishment of the Singapore War Risks Mutual (SWRM) by the Singapore Shipping Association (SSA) to broaden Singapore’s marine insurance offering. Today, the SWRM has more than 750 ships in its books since it started four years ago. To enhance the diversity of maritime financing in Singapore, the second edition of the Maritime Capital Forum was held in November 2018. Organised

by MPA, industry bodies (SSA and Singapore Maritime Foundation), and commercial firms (Credit Lyonnais Securities Asia and Transport Capital), the forum serves as a platform to introduce shipping companies to private equity financial institutions.

In 2018, major shipping line Ocean Network Express (ONE) launched its global and regional headquarter in Singapore and officially commenced operations in April. ONE also entered into a strategic partnership with PSA Singapore to further enhance its terminal and vessel planning operations. As part of its strategic initiative to be situated closer to its clients and the Asian market, Wilhelmsen Ship Management made the decision to relocate its global headquarters to Singapore. The company views Singapore as an established maritime hub and intends to tap on the growing level of technology expertise to support growth of its ship management business. In addition, Singapore also welcomed Britannia Steam Ship Insurance Association Limited, the 10<sup>th</sup> member of the International Group of Protection and Indemnity Clubs, to set up an office here.



# Driving Industry Transformation

## Singapore Launches Sea Transport Industry Transformation Map

Dr Lam Pin Min, Senior Minister of State, Ministry of Transport and Ministry of Health, officially launched the Sea Transport Industry Transformation Map (ITM) at the Singapore Maritime Foundation New Year Cocktail Reception on 12 January 2018, amidst an audience of 200 maritime professionals.

Developed by MPA in partnership with the industry, unions and other government agencies, the Sea Transport ITM builds on MPA's long term strategic plans to develop Singapore's next-generation port and strengthen her IMC. It aims to facilitate industry transformation

through innovation, productivity, internationalisation and creation of quality jobs for future growth.

The key strategies laid out in the ITM include:

- Strengthening connectivity and inter-linkages
- Driving growth through productivity enhancements and innovation
- Developing a future-ready maritime workforce

The ITM aims to grow the maritime sector's real value-add by S\$4.5 billion and create more than 5,000 jobs by 2025, of which the majority will be Professionals, Managers, Executives and Technicians.

At the ITM launch, five Memorandums of Understanding were signed between MPA and various tripartite partners for the different pillars of the ITM, covering technology and human capital development, as well as digitalisation of trade documentation. This underscores the collective commitment of stakeholders in the transformation of Maritime Singapore.

Dr Lam said: "The strategies and targets set out in the ITM are undoubtedly ambitious. But with the partnership of the industry, the unions and government agencies such as SkillsFuture Singapore and Workforce Singapore, I am confident that we can reach these new heights together."



From left to right - Ms Jessie Yeo, Maritime Cluster Lead, National Trade Union Congress; Mr Andrew Tan, Chief Executive of MPA; Mr Niam Chiang Meng, Chairman of MPA; Dr Lam Pin Min, Senior Minister of State, Ministry of Transport & Ministry of Health; Mr Andreas Sohlen-Pao, Chairman of SMF, and Mr Esben Poulsson, President of Singapore Shipping Association

# Strengthening Connectivity and Inter-linkages

MPA will strengthen Singapore's connectivity to capture both physical and non-physical trade flows, thereby enabling Singapore to remain as a thriving hub for maritime activities and businesses.

To reinforce the network effects, Singapore will deepen inter-linkages within the IMC cluster by broadening the depth and range of activities, including possible co-location of existing and new maritime-related ones. MPA facilitated OSM Ship Management's set up of a Maritime Operations Centre, which provides

global real time vessel operating data to assist the team with optimal decision making.

MPA will also strengthen links with adjacent industries by promoting the growth of non-traditional players such as commodity trading firms, e-commerce companies and maritime technology enterprises. In addition, MPA will build connections with other complementary international maritime clusters through stronger business linkages, collaborations on research and development, training and education, as well as development

of new international standards and regulations that will benefit the whole industry.

In the longer term, MPA aims to foster collaboration and co-innovation across the maritime and other related sectors, such as experimenting with concepts like inter-modal logistics and setting up of a port and logistics cluster at Tuas, where a more efficient supply chain management system could be developed to enhance Singapore's attractiveness as a maritime hub.

## Driving Growth through Productivity Enhancements and Innovation

[SDG 9.5]

In the evolving maritime landscape, innovation will remain a key focus of Singapore's IMC to enable the development of future capabilities and solutions that build on emerging technologies, such as digitalisation, automation, robotics, data analytics and artificial intelligence. The issues of industry transformation and disruption were brought to the foreground during the inaugural Global Perspectives Forum, with an expert panel providing deep insights and urging companies to embrace emerging technologies and relook their processes to achieve greater efficiencies. MPA also provided support for companies to embark on innovation and productivity-driven initiatives by putting in place

an enabling environment and infrastructure. This will result in stronger alignment between public and private sector research and development (R&D) efforts.

The Maritime Transformation Programme (MTP) is a key vehicle to implement the Innovation pillar of the Sea Transport ITM. Through the provision of funding support for research projects, it deepens R&D capabilities in five focus areas. Under the MPA Living Lab, the Singapore Maritime Data Hub (SG-MDH) was developed and implemented in partnership with eight classification societies, serving to catalyse the development and test-bedding of innovative applications for the

maritime industry. In addition, Singapore supported the pilot project of deploying drones for maritime deliveries launched by Wilhelmsen Ships Service and Airbus.

MPA will continue to work with industry stakeholders to spearhead digitalisation initiatives that streamline key business processes of maritime companies. Backed by multiple agencies including MPA, Singapore Customs and Singapore Shipping Association (SSA), Pacific International Lines and IBM jointly undertook a blockchain trial to design and create an electronic bill of lading as part of an initiative to digitalise the supply chain management.

# Maritime Singapore – Global Maritime Hub for: Connectivity, Innovation and Talent

## Proposed Strategies

### 1 Expand and deepen the maritime cluster



Continue to grow the number of shipping players



Grow the shipbroking portfolio



Advance Singapore's standing as an Asian insurance and maritime legal and arbitration hub



Expand the sources of financing and attract new players



Strengthen Singapore's port and develop opportunities related to the port ecosystem

### 2 Strengthen inter-linkages and network effects



Promote physical clusters of maritime-related activities within Singapore



Enhance inter-linkages between Singapore's maritime cluster and adjacent industries (e.g. logistics and commodity trading)



Strengthen inter-linkages with other international maritime clusters

### 3 Develop a vibrant maritime innovation eco-system and promote digitalisation



Build a strong maritime cluster centred on strong alignment of innovation and R&D efforts between public and private sectors



Promote digitalisation of the maritime industry leveraging on Big Data, Internet-of-Things, and Intelligent Systems

### 4 Develop a multi-skilled maritime workforce with a global mindset



Strengthen quality of maritime education and training



Further enhance standards of professionalism of the maritime industry



Raise profile of the maritime industry to attract talent

### 5 Establish Singapore as a global maritime standard bearer



Position Singapore as a leader in existing and new areas of excellence such as port management, risk management, and safety, security and sustainability



Promote a regulatory environment that supports new innovation and standards

## Disruptions and Opportunities in the Transformation of the Maritime Industry – Global Perspectives Forum

Aligned with the Sea Transport ITM’s vision to position Singapore for future growth and in cognisance of the shifting global landscape, MPA conceptualised and organised the inaugural “Global Perspectives: The Future of Shipping” forum to raise greater awareness of changes taking place as a result of technological developments.

The highly-interactive dialogue session utilised an app-based system to aggregate questions from the audience which formed the basis for conversation among panellists. The discussion brought into focus the inevitability of disruption brought about by digitalisation and the opportunities that maritime businesses can leverage to improve business processes and stay relevant.

The Global Perspectives forum was one of the key events at the Singapore Maritime Week 2018 that featured a powerhouse panel comprising maritime veterans, industry movers and shakers.

Over 300 industry players participated in the Forum’s inaugural run, comprising CEOs, CTOs and CFOs from shipping, port and maritime sectors.



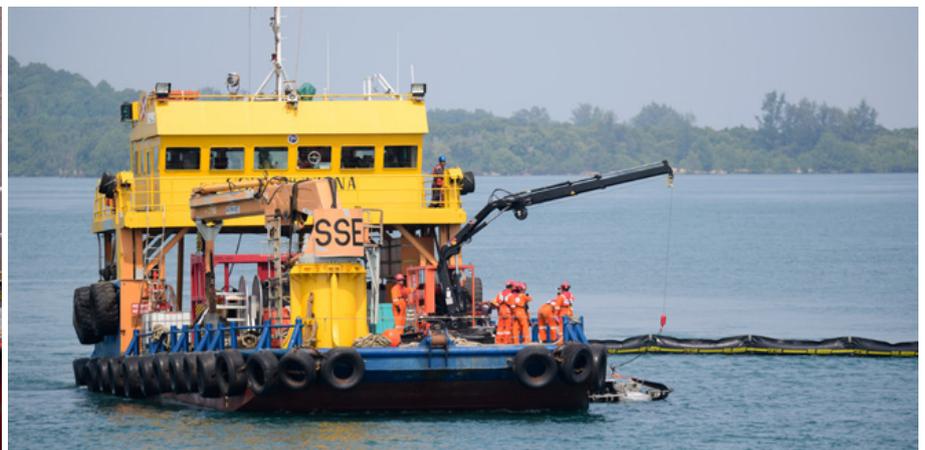
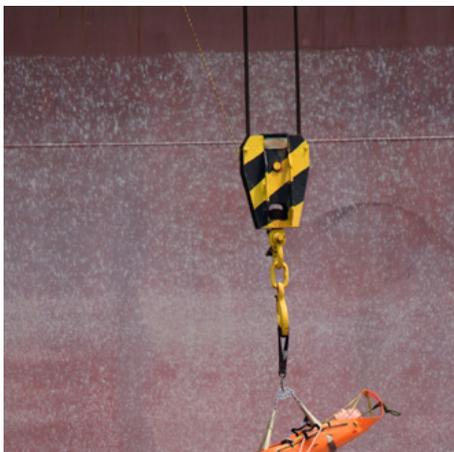
The inaugural 'Global Perspectives: The Future of Shipping' forum was held at the Fullerton Hotel on 25 April 2018 to bring together key industry players to discuss the future of shipping

Chapter 3



# Safeguard Strategic Maritime Interests and an Influential Voice

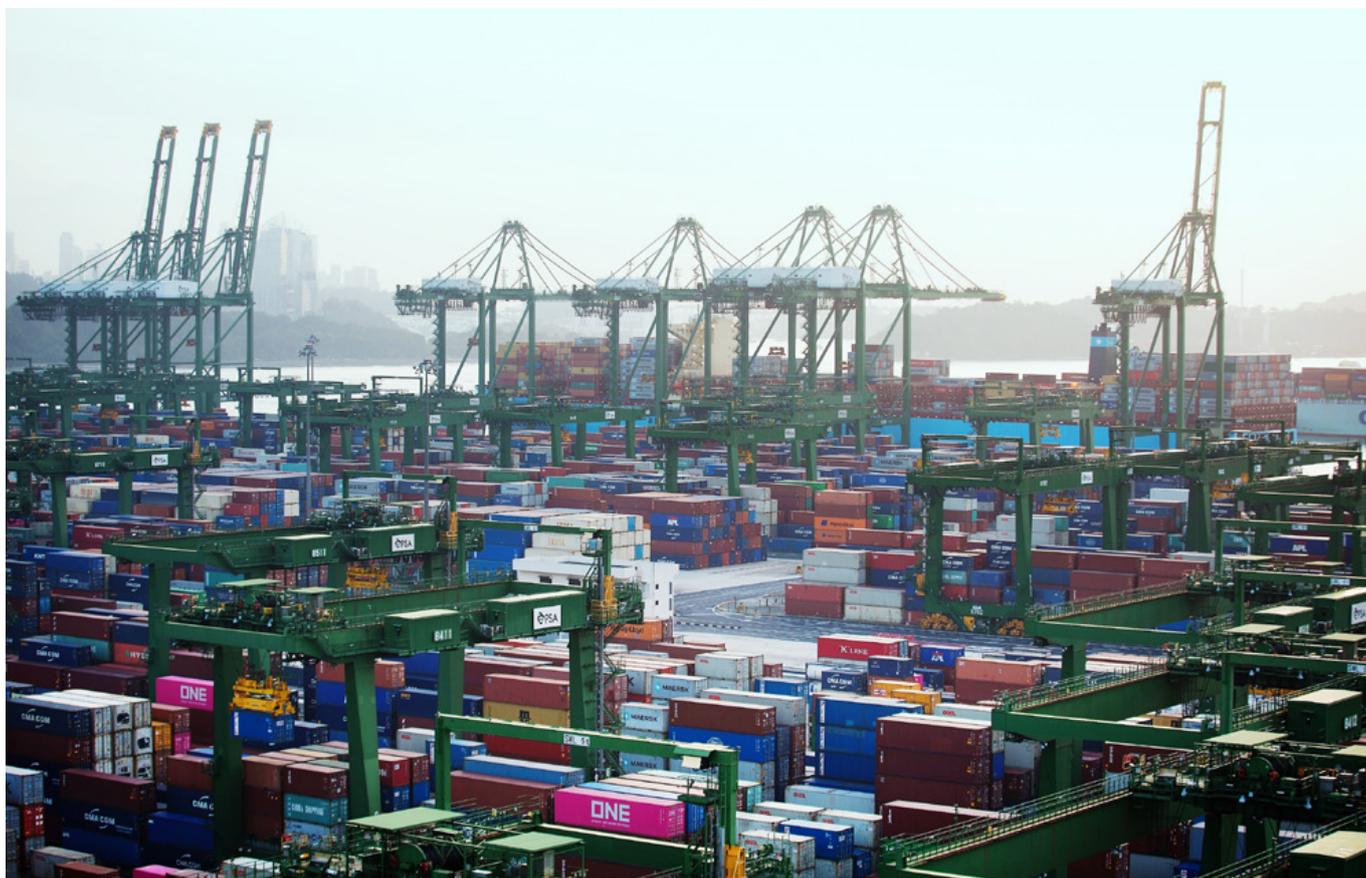
[GRI 102-12, 102-13]



Singapore is a small country highly dependent on international seaborne trade. As such, the safety, security, sustainability and efficiency of international shipping is important to her. MPA also recognises that the collective efforts of many nations and organisations are required in these aspects since shipping is global in nature. It is ready to play its part and contribute to international and regional efforts for the promotion of safe, secure, sustainable and efficient shipping.

Singapore aspires to have a strong presence and an influential voice in international maritime affairs to safeguard her maritime interests. As Singapore's lead maritime agency, MPA spearheads the nation's efforts to advance and safeguard these interests.

In the global arena, MPA actively participates in and holds leadership positions in key international bodies such as the International Maritime Organization (IMO), the International Hydrographic Organisation (IHO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the Port Authorities Roundtable, among others.



Containers at the Singapore Terminal (Photo credit: PSA)

# Maintaining an Influential Voice on the Global Stage

[SDG 17.16]



Singapore has been elected for the first time to the IALA Council during the 13th Session of the IALA General Assembly, in Incheon, the Republic of Korea

## Strong Supporter of International Association of Marine Aids to Navigation and Lighthouse Authorities

Singapore was elected to the Council of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) at the 13<sup>th</sup> Session of the IALA General Assembly on 29 May 2018, for a four-year term between 2018 and 2022.

Following MPA's election to the Council, Singapore has signed a MPA-IALA MOU in 2018 where she committed to contribute up to S\$1 million over a five-year period, from 2019 to 2023 to support capacity building efforts to further IALA's objectives of navigation safety.

Coinciding with IALA's commitment to foster the safe, economic and efficient movement of vessels for the

benefit of the international maritime community, MPA also places a strong emphasis on navigational safety, and has been supporting IALA's efforts on e-navigation development and implementation

Since being a National Member in 1972, Singapore has contributed to, and played an active role at the various IALA Committees such as the E-Navigation Committee (ENAV) and the Vessel Traffic Services Committee (VTSC), and their respective working groups.

Singapore was the first Asian State to host the Vessel Traffic Services Symposium in partnership with IALA in 2000. MPA has also co-organised and hosted various IALA workshops and courses such as the 2012 E-NAV workshop, the 2013 Regional Forum on Vessel Traffic Services, the 2015 IALA's Risk Management Course and the 2017 e-Navigation forum.

## Active Member of International Maritime Organization

Singapore maintains active involvement at the International Maritime Organization (IMO) through leadership positions in various committees and working groups, and contributes to IMO discussions on key issues, in particular the finalisation and adoption, in 2018, of an initial strategy on the reduction of greenhouse gas emissions from ships. Singapore advocates the universal and uniform implementation of IMO instruments. To date, Singapore has ratified and implemented every major IMO convention in force relating to ship safety and the prevention of pollution from ships. In addition, to commemorate the 70<sup>th</sup> anniversary of the adoption of the IMO Convention and the 20<sup>th</sup> anniversary of the IMO-Singapore MOU on Third Country Training Programme, Singapore had launched an enhanced technical co-operation and training package for the IMO and its Member States. This package comprises a mixture of fellowships, scholarships, and training courses valued at up to US\$5 million (approximately S\$6.5 million) over a period of five years to support IMO's effort in capacity building.

Singapore currently serves as Vice-Chair for the Sub-Committee on Human Element, Training and Watchkeeping. Since becoming an IMO Council Member in 1993, Singapore has chaired the IMO Council, the then Sub-Committee on Bulk Liquids and Gases, as well as the then Sub-Committee on Flag State Implementation. Singapore has also assumed the position of Vice-

Chair of the Marine Environment Protection Committee and the Maritime Safety Committee.

The IMO Maritime Ambassador Scheme was launched by the IMO in 2015 to attract more young people to join the maritime industry. IMO ambassadors from all over the world share their experience and passion about the maritime industry others, especially young people through various platforms. Ambassador Mary Seet-Cheng, who is also the MPA Special Advisor, continued to serve as the IMO Maritime Ambassador for Singapore in 2018 and participated in several initiatives to promote maritime careers amongst youth. This included media interviews to profile maritime career opportunities.

### Regional Co-operation Agreement on Combating Piracy and Armed Robbery against Ships in Asia

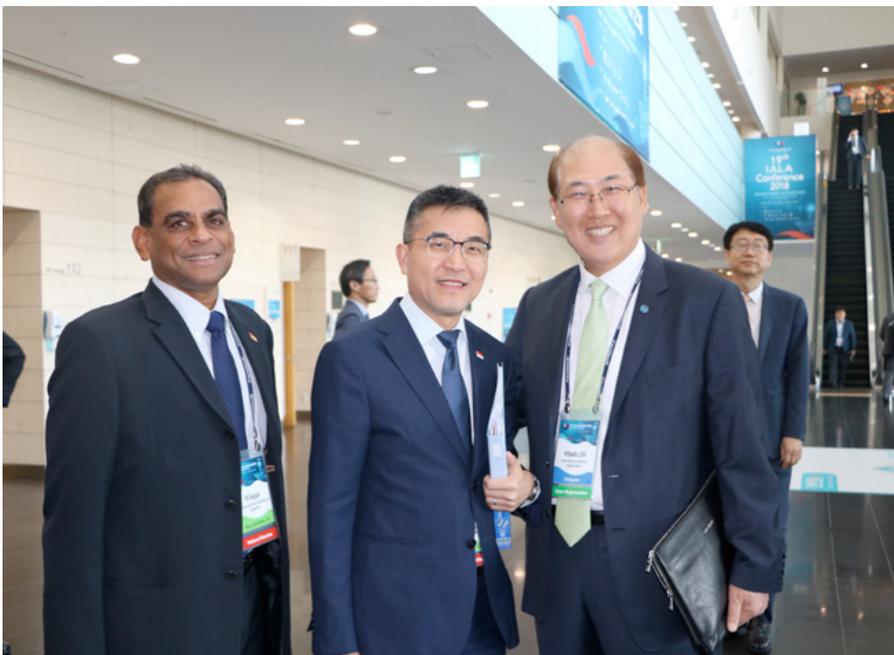
The Regional Co-operation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP) is the first government-to-government regional piracy initiative in Asia, with 20 Contracting Parties to-date. The ReCAAP Information Sharing Centre which is the operating unit of ReCAAP, is hosted in Singapore.

The 12<sup>th</sup> ReCAAP Governing Council (GC) meeting, held in Singapore from 19 to 22 March 2018, noted the good achievements made on a majority of initiatives under ReCAAP's 10-year

roadmap for the future of ReCAAP (from the years 2017 to 2027), and declared that ReCAAP had met its goal to be a Centre of Excellence for information sharing, ahead of its 2020 goal.

Among the initiatives implemented were the use of data analytics to gain deeper insights into incidents of piracy and armed robbery against ships, the introduction of new training programmes to enhance the capabilities of ReCAAP's focal points and the expansion of ReCAAP's outreach. The 12<sup>th</sup> ReCAAP GC meeting also reaffirmed ReCAAP's commitment to continue implementation of the Roadmap, and agreed to undertake periodic reviews of the Roadmap to ensure its continued relevance, with the first such review to be conducted in 2020.

Singapore remains committed to working collectively with the ReCAAP Secretariat and all ReCAAP Contracting Parties to position ReCAAP for the future, by building on its successes as a Centre for Excellence for information-sharing and as a model of regional co-operation against piracy and armed robbery against ships.



MPA Assistant Chief Executive (Operations) Captain M. Segar, MPA Chief Executive Mr Andrew Tan with IMO Secretary General Mr Lim Kitack

# Engaging Maritime Thought Leaders

[SDG 17.9, 17.16]

## Port Authorities Roundtable

The Port Authorities Roundtable (PAR) was initiated and inaugurated by MPA in 2015 with the aim to facilitate the exchange of ideas and learn best practices by allowing port authorities to engage in open sharing and discussion to address issues of common interests and seek mutually beneficial collaboration opportunities in today's evolving maritime landscape.

Held annually, the second PAR was hosted by the Port of Rotterdam Authority in 2016 and the third edition of PAR in 2017 was hosted by the Ningbo Municipal Administration Bureau. The fourth edition of PAR2018 was hosted by the Port of Long Beach, the first time PAR has been hosted by a US port.

PAR2018 saw a total of 14 participating port authorities, including Shanghai Municipal Transportation Commission, Montreal Port Authority and Barcelona Port Authority which participated for the first time. The theme for PAR2018@Long Beach was "The Port of the Future". Mr Andrew Tan, MPA's Chief Executive, delivered a presentation entitled 'Digital Strategies for Next Generation Port'. He shared about MPA's latest digitalisation initiatives in the areas of port, shipping and services. He also spoke about PIER71, MPA's Maritime Technology Acceleration Programme and MPA Living Lab as platforms to experiment with new concepts of operations.

At the sidelines of PAR2018@Long Beach, MPA and Port of Rotterdam Authority (PoR) renewed the

Memorandum of Understanding on cooperation in Information Exchange and Research and Development. Since the commencement of the MoU in 2015, MPA and PoR have been working together in key areas such as maritime cyber security,

LNG bunkering and Port Challenge/ Hackathon. The renewal of the MoU seeks to further the collaboration between MPA and PoR in port digitalisation, port services, port safety and operations and handling of autonomous vessels in port.



Heads of delegations at PAR2018@Long Beach



MPA Chief Executive Mr Andrew Tan signing the renewal of the MoU with Mr Allard Castelein, CEO, Port of Rotterdam Authority

## APEC Port Services Network

The APEC Port Services Network (APSN) is a non-profit international organisation established by the Chinese Ministry of Transport on 18 May 2008, under the auspices of the APEC Transportation Working Group. The APSN carries out work to promote the liberalisation and facilitation of trade and investment. It also enhances supply chain security by strengthening economic cooperation, capacity building, information and personnel exchange among port and port-related industries and services in Asia Pacific region. There are presently 18 APEC economies in the APSN Council.

Singapore has been a Council member since APSN's inception in 2008, helping to set the Council agenda at the bi-annual President's meetings and actively participating

in discussions at the annual Council meeting and Forum. Singapore, represented by MPA's Director (Port Policy), Mr Tan Cheng Peng, currently holds the position of 1<sup>st</sup> Vice President of the APSN Council for a two-year term between 2018 and 2019.

MPA hosted the 2018 edition of the APSN Forum and Council meetings from 13 to 16 November 2018 at Resorts World Sentosa. Themed 'Positioning Asia-Pacific Ports for the Future', the Port Connectivity Forum was attended by over 200 representatives from both the local and international maritime industry. It also commemorated APSN's 10<sup>th</sup> Year Anniversary with a series of celebratory events during the Forum's opening ceremony. Mr Niam Chiang Meng, MPA's Chairman, was the guest-of-honour at the Forum

and delivered its opening address. Distinguished speakers shared about the trends and future developments for supply chain connectivity, as well as possible strategies for ports and terminal operators to rise to future challenges. The 2018 APSN event was well received by both the local and international delegates.

In 2016, the APSN officially launched Green Ports Award System (GPAS) as the inaugural and only such award in the APEC region which recognises sustainable development efforts and commitments of ports. MPA and Jurong Port Pte Ltd (JPPL) were among the recipients of the inaugural 2016 GPAS award. MPA, JPPL and PSA Corporation Ltd were also among the recipients of the 2018 GPAS award presented at the 2018 Port Connectivity Forum.



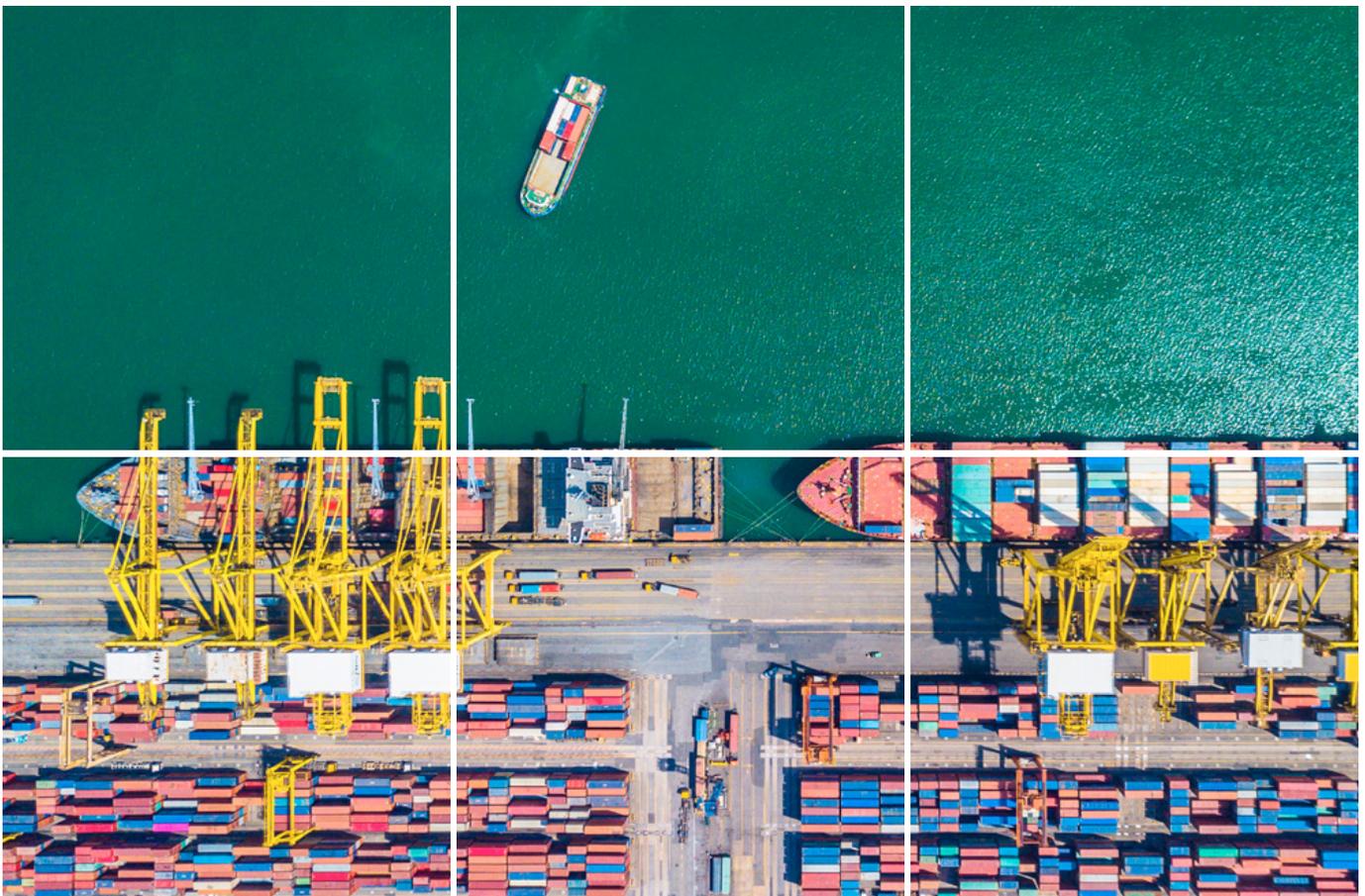
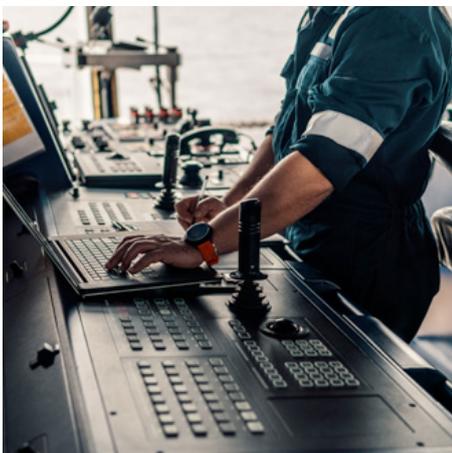
Port Connectivity Forum 2018

Chapter 4



# Maritime Knowledge and Innovation Hub

[GRI 203-1, 203-2]



MPA seeks to develop Singapore to be at the forefront of maritime research and development and technology. Such a distinction is vital in reinforcing the competitive edge of Singapore's maritime cluster, which is central to her growth as a leading maritime centre, and global hub port.

## Advancing Innovation and R&D in the Maritime Industry

[SDG 9.5]

As a master port planner, MPA constantly explores technology to improve efficiency in port operation and productivity. Ongoing efforts are invested into studying innovative concepts and solutions capitalising on the use of technology that MPA can adopt.

### Technology Facilitation and Capacity Building

#### 1. PIER71 - Port Innovation Ecosystem Reimagined @ Block71

Founded by the MPA and the National University of Singapore (NUS), through its entrepreneurial arm, NUS Enterprise, PIER71 (Port Innovation Ecosystem Reimagined at BLOCK71) aims to grow Singapore's maritime innovation ecosystem. PIER71 boosts innovation in the maritime and maritime-related industries by attracting talents, creating opportunities for the exchange of knowledge and ideas, attracting investments into start-ups and accelerating ventures. PIER71

designs and delivers programmes to uncover opportunities within the industry and supports entrepreneurs from ideation to acceleration of their ventures. PIER71 provides access to various markets, demand drivers, technology solution providers, investors and more. PIER71 also represents a budding and increasingly vibrant ecosystem of stakeholders who are keen to digitalise and create the next wave of maritime innovation.

13 start-ups from the Smart Port Challenge 2018 cohort were provided S\$50,000 grant each in seed funding from MPA. With this seed funding, these start-ups can develop and test-bed their innovative solutions with industry partners.

#### 2. Maritime Innovation Lab (MPA Living Lab Initiative)

The Maritime Innovation Lab (MIL) is part of the broader MPA Living Lab efforts and consists of both physical and digital aspects to serve as a co-creation platform for innovation. The purpose-built facility will

create an environment that enables experimentation and the test-bedding of innovative port services and intelligent ship operations. It also supports the Sea Transport Industry Transformation Map through encouraging open innovation and R&D partnerships among industry, regulator and the research and technology communities.

#### 3. Remote Inspection Techniques for Surveys

Remote inspection techniques comprising Unmanned Robotic Arm, Remote Operated Vehicles and Unmanned Aircraft System, were accepted for the conduct of surveys on board Singapore Registered Ships. When permitted, remote inspection techniques might be used to facilitate the required external and internal examinations. The adoption of remote inspection techniques such as the use of drones, enhances the safety of seafarers such as marine surveyors who do not need to put themselves in precarious positions on board ships to conduct inspections.



MPA's Port Operations Control Centre

## New Port Digital Systems

### 1. Maritime Single Window

To enhance business processes for maritime companies, a Maritime Single Window (MSW) system is being developed in two phases. MSW Phase One involves developing a single window portal for ship reporting, as well as submission of all port-related documents for vessel, immigration and port health clearance.

The tender for MSW Phase One was awarded on 24 May 2018 and is scheduled to be completed in 15 months. After completing the requirements gathering, usability testing, risk assessment analysis, and functional and technical design, the project is now in the development phase. The MSW would be rolled out in the third quarter of 2019.

MSW Phase Two involves developing a maritime services platform to act as a single shop-front for the booking of terminal and marine services. It would also open up new possibilities for collaboration between the public and private domains, that is, Government-to-Government, Government-to-Business, Business-to-Government, and Ship-to-Shore to form a maritime business ecosystem that facilitates just-in-time (JIT) operation and services. Phase Two is now in the conception phase and a separate tender would be called.

### 2. JIT Planning and Coordination System

The port value chain study on current business nature and operational processes in the Port of Singapore was completed in 2018. A workshop was organised in May 2018 and a call for proposal for JIT operations in the Port of Singapore was issued in June

2018. The proposals are currently being evaluated.

### 3. Maritime Sense Making System – SAFER Project

Pilot trials for seven modules of the SAFER Project namely, Automated Movement Detection, Infringement Analytics, Utilisation Detection, Pilot Boarding Detection, Detection of Illegal Bunkering, Entry into Prohibited Areas, and Vessel Arrival Prediction were successfully tested and validated by users in July 2018. Tenders would be called to develop five modules of SAFER Project for port operations. The SAFER project was targeted for implementation by end 2020.

### 4. Next Generation Vessel Traffic Management System

In January 2018, a consortium comprising ST Electronics Ltd and Kongsberg Norcontrol Pte Ltd was

awarded the contract to pursue the Next Generation Vessel Traffic Management System (NGVTMS) Innovation Programme and set up a NGVTMS Lab. The three-year programme at the MPA Innovation Lab, PSA Vista, commenced in February 2018. Two workshops involving the Vessel Traffic Information System operators were conducted to establish a Vessel Traffic System operation baseline and problem statements. Another outcome of the programme was a joint paper developed by MPA, ST Engineering and Agency for Science, Technology and Research's Institute for Infocomm Research on VHF data exchange mobile stations which was presented at International Association of Marine Aids to Navigation and Lighthouse Authorities' ENAV 22 in October 2018. The consortium has also commenced preliminary research and development works on the various modules under the NGVTMS programme.

## 5. Integrated Port Operations Centre

The Defence Science Technology Agency (DSTA)-MPA Joint Study on C3 architecture and infocomm infrastructure, commenced in October 2016 and concluded in July 2018. On the C3 architecture for future port operations, the study recommended developing an Integrated Port Operations C3 System (IPOC) for effective crisis and incident management.

The IPOC would integrate the four key functional areas of Command, Control, Communications, and Information and allow for the sharing of a common situational picture within MPA as well as other agencies as part of Whole-of-Government/Ministry of Transport Crisis Information Management System (CIMS) for better collaboration and coordination. MPA and DSTA are following up on the development of a proposal for the implementation of the IPOC.

Additionally, the study also proposed the key features and requirements for the NGP infocomm infrastructure, and a possible implementation roadmap. Ongoing discussions would consider the recommendations for future development.

## 6. Innovations to overcome Construction Challenges

### • Use of Controlled Modulus Columns for Container Stacking Yards

Currently, container terminals in Singapore use steel Reinforced Concrete (RC) piles to support the stacking of containers at container yards. However, once they are installed, RC piles are difficult and costly to extract or demolish, which constrains future land use when the container handling facilities are no longer required and the land is to be reallocated for other uses. It also limits changes to the container yard layout to suit new concepts of container port operations when the need arises.

MPA has been working with the Nanyang Technological University to explore innovative solutions to overcome the identified challenges. A project on the Controlled Modulus Columns (CMC) method was set up in 2018 to study the use of CMC to replace RC piles for the construction of container yards.

Using CMCs could potentially reduce construction costs, as well as provide flexibility for the future adjustment of yard layouts or changing the use of port land for other purposes. The project would be implemented in two phases — the first phase comprises developing a detailed design of CMC for the construction of container yards, and the second phase involves a pilot trial at Tuas Terminal. If the trial is successful, CMC would be used for container yard construction at Tuas Terminal Phase Two.

### • Innovative Mooring Solutions in Anchorages

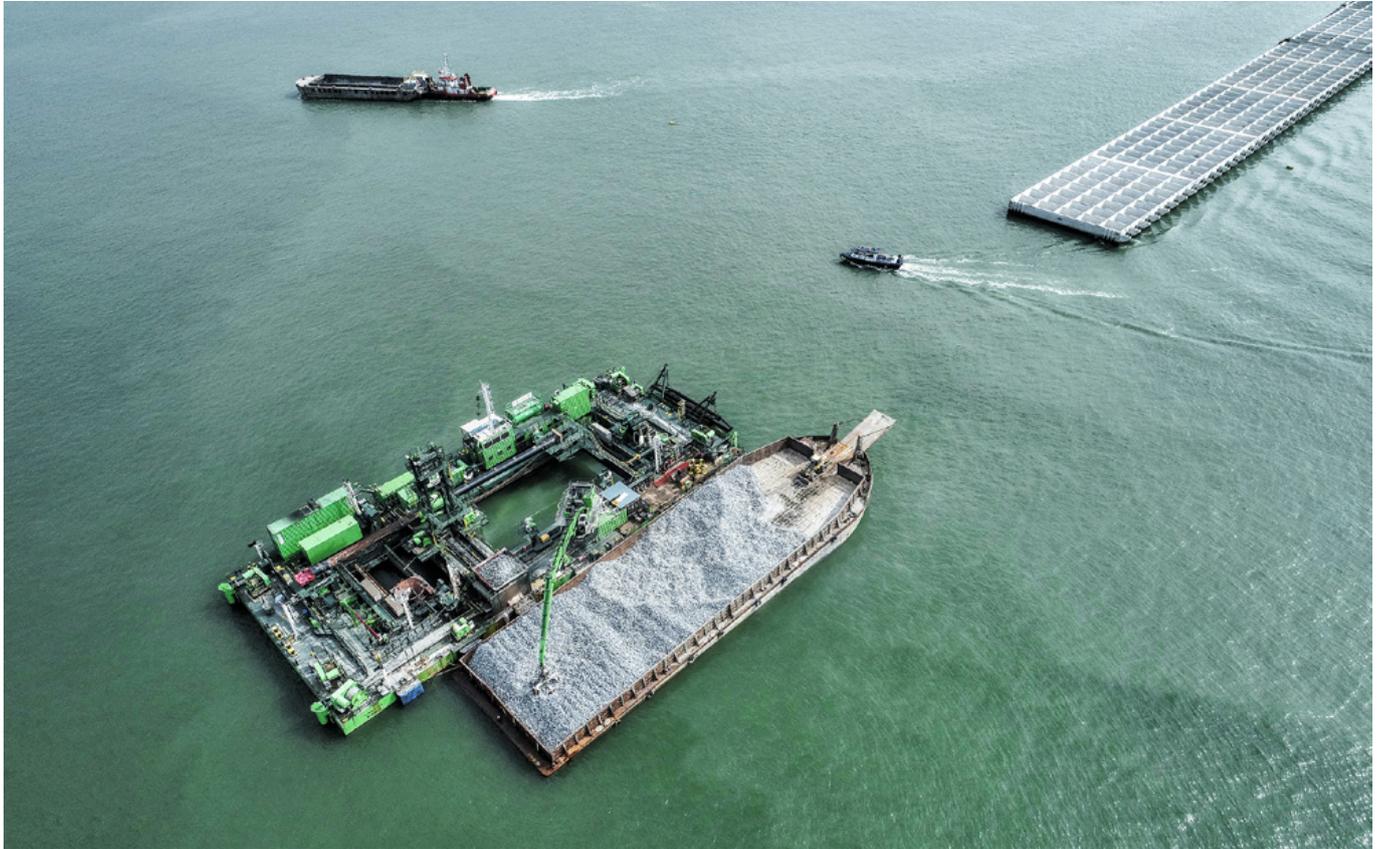
The demand for anchorage space is expected to increase as more ships call at Singapore in the future. The existing anchorage space is limited and already heavily utilised and would be insufficient to cater for future demand. Furthermore, the available sea space for anchorages would be reduced if it is used for other purposes such as land reclamation.

MPA has been working with various agencies and stakeholders to develop options to reduce the sea space required for anchorages. One of the options developed is the concept of using innovative mooring solutions, such as floating or other types of structures to reduce the space required to moor ships, thereby increasing the anchorage capacity as compared to the large swinging circle currently required for anchoring ships. It is estimated that such an innovative mooring solution could increase the anchorage capacity by more than 100 per cent. A pilot trial would be carried out to assess the operational feasibility and financial viability of the concept.

The project would be carried out in two phases. Phase One comprises the development and detailed design of innovative mooring solutions. Phase Two involves the construction of the innovative mooring solution based on the design developed in Phase One, followed by a three-year pilot trial of the mooring solution. Smaller vessels like bunker barges and suitable harbour craft would be used for the trial. In August 2018, a Request for Proposal was initiated for interested companies to submit proposals to carry out Phase Two of the project.

# Next-Generation Port at Tuas

[SDG 9.5]



Aerial view of the Tamarock

MPA, together with its consultants and contractor, actively scans and adopts construction technology and innovative construction methodologies in the reclamation of Tuas Terminal Phases One and Two. Many of such innovative initiatives have been adopted in the construction works, and among them are:

## Use of Artificial Intelligence for Site Safety and Security

One of the primary concerns in the reclamation of Tuas Terminal is the safety of workers. A series of measures have been put in place to ensure safety at site, including daily tool-box briefings for workers, risk management assessment of

the construction activities before commencement of works, and joint safety-walks by the contractor, consultants, and MPA's project team.

Full-time site safety supervision of the construction works is challenging and laborious, and there could still be 'blind spots'. Given the long coast line at the vast reclamation site, it is also challenging to ensure overall site security. To overcome these challenges, smart technology has been used to complement the supervision of site safety and security.

A trial on the use of artificial intelligence (AI) to maintain site safety was carried out with appointed AI specialist Xjera, at the scour

protection panel fabrication yard. With AI, comprising video analytics and CCTV, safety violations by workers such as the unauthorised use of heavy machinery, non-compliance of safety Personal Protective Equipment requirements, and intrusion into 'no entry' zones, could be detected instantly by the contractor's safety personnel for their follow-up action. The trial is expected to be completed in the third quarter of 2019, and if successful, would be extended to other construction activities at the site.

- **Tamarock - Multi-purpose Vessel for Construction**

Tuas Terminal Phase One is the first reclamation project in Singapore

to adopt an automated all-in-one vessel called Tamarock to perform the construction of rockmound. Innovative solutions were adopted to automate repetitive processes as well as reduce the number of vessels required to construct the rockmound which refers to part of the foundation for the caisson wharf structure.

Conventional rockmound construction method requires three vessels for the works and another vessel to carry out a bathymetric survey of the rockmound. However, multiple vessels working within a small area coupled with many crew and operators increase the risk of vessel incidents and operational risk.

The rockmound construction activities are highly repetitive for 221 caissons. To improve productivity, Tamarock, a fully automated and specially designed multi-purpose vessel with the abilities to accurately perform all these activities by itself was used. It reduces the need for multiple vessels to perform the operation. In addition, the Tamarock can do its own bathymetric survey and processing, removing the need for a separate survey vessel. The time taken to complete all the rockmound construction activities is also reduced by about 50 per cent.

- **Use of Alternative Materials for Reclamation Works**

Conventionally, marine sand is used for reclamation projects. To have a sustainable development coupled with the challenge of limited marine sand available necessitated the innovative large scale use of alternative materials as reclamation fills for the Tuas Terminal Phases One and Two reclamation works.

About 70 per cent of the total fill materials required for Tuas Terminal Phase One consists of alternative

materials; the figure is about 50 per cent for Tuas Terminal Phase Two. These materials are generated from the reclamation works itself such as marine clay from the dredging of basins and fairway, and the dredging of sandkeys for the construction of the caisson sea wall foundation as well as excavated earth from land-based construction projects. As these alternative materials are generally soft, they pose engineering challenges.

To overcome the challenges, the land-filling work sequence has to be properly implemented to ensure that the designed sequence is followed strictly to maximise the use of these alternative fill materials. In addition, large ground settlement was expected with the usage of these soft alternative materials, which contain high water content. As the existing seabed materials where the land is being reclaimed are soft, the reclaimed land has to be treated to eliminate large ground settlement due to primary consolidation, a process through which the water within the soft soils is pressed out in as short a time as possible, so that the reclaimed land could be used for the construction of container port facilities immediately. If the reclaimed land were left untreated, it would take up to 50 years for the ground to consolidate naturally.

The benefits arising from the use of alternative materials which would otherwise be disposed are that it reduced the reliance on marine sand for reclamation, and reaped substantial savings in the cost of reclamation fill materials for Tuas Terminal Phases One and Two.

# Global Leadership Training

[SDG 17.9]

## Maritime Leadership Development

MPA Academy, the training arm of MPA, was repositioned in 2014 as a full-fledged academy with a focus on global maritime leadership development. Since then, the Academy has organised several runs of its three flagship programmes, namely the Advanced Maritime Leaders' Programme, Maritime Public Leaders' Programme and Port Management Programme.

In 2018, MPA Academy organised two flagship programmes, namely the 5<sup>th</sup> Port Management Programme for 20 port masters, harbour masters and middle management personnel from maritime and port administrations across 19 countries, and the 8<sup>th</sup> Maritime Public Leaders' Programme for 23 Director-level or equivalent senior officials in maritime administrations from 17 countries.

During the Singapore Maritime Week in 2018, MPA Academy organised the 2<sup>nd</sup> Maritime Administrators' Forum in support of the International Maritime Organization (IMO) World Maritime Day theme of 'IMO 70: Our Heritage – Better Shipping for a Better Future'. The forum, which was part of Singapore's ongoing

efforts to promote global maritime leadership training, was graced by Guest-of-Honour, Mr Khaw Boon Wan, Singapore's Coordinating Minister for Infrastructure and Minister for Transport, and keynote speaker Mr Kitack Lim, Secretary-General of the IMO, and attended by leaders of maritime administrations from around the world to collaborate and exchange views with their counterparts.

MPA and the International Labour Organisation (ILO) co-organised the MPA-ILO Workshop on the Implementation and Reporting of the Maritime Labour Convention 2006 (MLC) in July 2018. The objective of the workshop was to strengthen the implementation and reporting of the MLC to promote decent work and safeguard the rights of seafarers in Southeast Asia. The workshop, which was held at the MPA Academy saw nearly 40 participants from the Association of Southeast Asian Nations (ASEAN) member states and Mongolia. The workshop participants came from government agencies, employers' organisations, and seafarers' unions that handle labour issues relating to seafarers and the MLC. The trainers for the workshop were from the ILO and MPA, including Mr Mark Lim, Principal Trainer (Technical) from the MPA Academy,

who lent his expertise to the workshop by sharing on Singapore's experience with implementing the MLC.

## Support the training needs of International Maritime Organization

MPA has been providing training to the international maritime community under the Singapore-IMO Third Country Training Programme since 1998. To date, MPA has trained more than 2,000 officials from over 90 countries from regions such as Asia, Africa, Americas, the Caribbean, Middle East and the Pacific Islands.

In 2018, a total of three regional workshops were organised in Singapore and overseas on the Safety Management System and the International Safety Management Code. Through these efforts, Singapore hopes to enhance IMO Member States' capacity to implement international maritime regulations and standards.



Participants from various regions at the opening ceremony of the 8th Maritime Public Leaders' Programme

## Maritime Cyber Security Seminar

The Maritime Cyber Security Seminar, jointly organised by the MPA and the Singapore Shipping Association on 24 April 2018, is part of MPA's efforts to promote greater awareness and knowledge sharing among industry players grappling with the growing challenges of an evolving cyber threat landscape. In line with the maritime industry's digital transformation, the focus of the seminar revolved around the theme 'Shaping the Future of a Cyber-smart Maritime Industry'.

More than 250 participants from diverse maritime backgrounds attended the seminar where 11 industry leaders and cyber security experts shared their insights on a wide range of topics including best practices for managing shipboard cyber security and the latest tools and technologies to counter the scourge of emerging cyber threats.

One of the key focal areas that MPA will drive as a sector lead for maritime cyber security is the protection of Critical Information Infrastructures. To this end, MPA has implemented a 24/7 Maritime Cybersecurity Operation

Centre on 1 November 2018 to further augment capabilities for early detection, monitoring, analysis and response to potential cyber attacks.



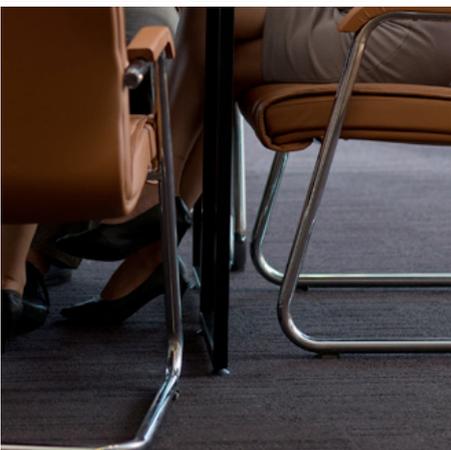
A panel of leaders and experts deliberating over the evolving cyber threat landscape during the 2nd Maritime Cyber Security Seminar

Chapter 5



# Quality Maritime Workforce

[GRI 203-2, 413-1]



Manpower is a key factor in sustaining Singapore’s competitiveness and growth as a premier Global Hub Port and leading International Maritime Centre. MPA continued to partner its key stakeholders such as industry, unions, institutes of higher learning and relevant government agencies, to develop or enhance a diverse suite of maritime education and training programmes.

## Boosting the Future-Readiness of the Maritime Workforce

[SDG 4.4, 4.7, 8.3, 8.5] [GRI 203-2]

To complement the strong drive towards innovation, MPA would continue to invest in the development of the maritime workforce. Talent remains a critical success factor in sustaining the competitiveness of Maritime Singapore and MPA is committed to building a future-ready workforce with multi-disciplinary skills and a global mindset.

The Sea Transport Industry Transformation Map (ITM) builds on MPA’s long-term maritime manpower development plans and sets the vision for the maritime industry to seize opportunities brought about by Industry 4.0. Working towards the vision, MPA and Singapore Shipping Association jointly launched the Maritime Industry Transformation Series - a series of workshops and seminars to engage the industry on the ITM.

One of these workshops conducted in March, themed ‘Enabling Industry Transformation through Human Capital Development’, saw representatives from institutes of higher learning, unions and industry deep-dive on issues and solutions relating to manpower.

Insights gleaned from the workshop were shared and discussed at the 3<sup>rd</sup> Maritime HR Forum held in April, where more than 200 industry



Participants at the Maritime HR Forum 2018

representatives and leading industry practitioners from the shipping and logistics sectors shared their insights on human resource trends and developments in the Asia-Pacific region.

To establish a comprehensive understanding of the drivers impacting on maritime manpower in Singapore, MPA conducted the 3<sup>rd</sup> Singapore Maritime Cluster Benefits and Compensation Study in 2018. The study saw record participation from more than 320 companies, which supported a robust data analysis of the workforce demographics and wage

trends in the maritime industry. The study enabled the industry to make more informed hiring and training decisions, and provided insights to help fine-tune our industry manpower development strategies.

In support of the industry transformation efforts, MPA topped up the Maritime Cluster Fund by S\$100 million in 2018 to equip our workforce with the relevant skillsets, as well as to further drive business development and productivity efforts. The Maritime Cluster Fund - Manpower Development (MCF-MD) co-funds companies and individuals



Participants at a Maritime Industry Transformation Series Seminar

seeking to develop their capabilities through training and reskilling. In 2018, close to 6,000 locals benefitted from MCF-MD co-funding.

To equip the maritime workforce with future-ready skills and enhance business capabilities, MPA, the industry and unions signed three Memorandums of Understanding (MoUs) on the Next-Generation Multipurpose Port, Next-Generation Container Port and for the Seafaring Sector. These tripartite MoUs aim to focus on joint curriculum development and structured training programmes as well as identify future competencies as jobs continue to transform.

## Building Clear Career Pathways and Maritime Talent Pool

[SDG 4.4, 8.6] [GRI 203-2, 413-1]

To build a steady pipeline of local talents to seize opportunities in the maritime industry and build a future-ready workforce, a new Specialist Diploma course in Maritime Superintendency was launched in 2018 (see box story).

In addition, a new PSA-ITE Work-Learn Technical Diploma in Port Automation Technology was also introduced to prepare ITE graduates for the complex and automated operations at the Tuas Next Generation Container Port.

As the maritime industry transits to an innovation-driven economy, skillsets and competencies would need to be updated. MPA supports skills deepening not only with the MCF but also through the national SkillsFuture initiative, such as the SkillsFuture Study Awards for Sea Transport. The award encourages early to mid-career

Singaporeans working in the maritime sector to develop and deepen specialist skills needed. In 2018, more than 40 Singaporeans were given this award.

In addition to developing a multi-skilled workforce, it is important that maritime employees possess a global mindset. The MPA Global Internship Award (GIA) provides high-achieving students with internships opportunities with international maritime companies in both the Singapore and overseas offices. The GIA was awarded to a record 45 students who undertook their internships with 30 host companies in 2018.

Targeted talent development efforts are also undertaken by the seafaring sector. Jointly sponsored by MPA, shipping companies and seafaring unions, the Tripartite Maritime

Scholarship (TMSS), aims to groom promising students to take on maritime officer roles on ocean-going merchant vessels. In 2018, 14 students were awarded the TMSS.

Through the Maritime Singapore Connect Office, MPA also aims to connect students and jobseekers to maritime opportunities, and provide Singaporeans with easy access to maritime careers, education and training opportunities.

To strengthen and build local manpower pipelines, MPA will undertake efforts to enhance existing programmes and develop new ones. This will be carried out in collaboration with industry partners on the ground to ensure that they will remain relevant to the industry as jobs and skills evolve.

## Desired Attributes



### Decisive

Takes appropriate action after studying potential outcomes in unique scenarios



### Meticulous

Pays attention to fine details and accuracy



### Analytical

Enjoys analysing things from all angles, and thinking of ways to solve problems



### Resilient

Highly adaptive to handle transformative changes



### Team player

Understands that each person is part of a larger team working together to bring about success

## Skills in Demand



### Automation Skills

Acquire systems engineering skills to play a part in new port technologies and automation efforts



### Data Analytics and Cyber Security Skills

Generate business insights, and upkeep cyber security of the fleet and automated systems



### Green Shipping Skills

Keep abreast of new developments in green shipping



### Transdisciplinary Skills

Make connections across disciplines to solve complex problems



### Leadership and Management Skills

Acquire leadership and management skills to grow Singapore as an International Maritime Centre

## Strengthening Pipeline for the Ship Management Sector – Specialist Diploma course in Maritime Superintendency

MPA worked together with industry partners – the Singapore Shipping Association, Singapore Polytechnic, Ngee Ann Polytechnic, Society of Naval Architects and Marine Engineers Singapore and DNV GL to launch a new Specialist Diploma in Maritime Superintendency. Graduates would be awarded a nationally-recognised Specialist Diploma by Singapore Polytechnic.

Through this specialist diploma funded by SkillsFuture Singapore, participants would gain relevant knowledge and technical skills to plan and coordinate operations from shore. The course would facilitate sea-to-shore transition for experienced seafarers, and career conversion for mid-careerists from relevant fields such as mechanical engineering. The first run of the specialist diploma, which took place in

October 2018, achieved a maximum class size of 40 participants.

MPA's efforts for the seafaring and shore-based sectors would continue to be closely aligned with the national SkillsFuture objective of deepening skills at all levels and support building multiple pathways to enriching and rewarding maritime careers for all.

Chapter 6



# Strong Maritime Singapore Identity

[GRI 102-43] [SDG 17.17]



As the maritime industry champion, MPA strives to build a strong Maritime Singapore identity. MPA aims to raise Maritime Singapore’s international profile, and strengthen Singapore’s global influence in the international maritime community. Ultimately, the local maritime scene thrives on a sterling Maritime Singapore brand. To recruit the next generation of young maritime talents, MPA also recognises the importance of increasing awareness and generating interest amongst the young in Singapore’s vibrant maritime industry. Through events such as MPA Learning Journeys and Clean-Up on Kayak, along with the Singapore Maritime Gallery, MPA delivers key messages tailored to engage young audiences within various target groups.

## Strengthening Maritime Singapore Identity

### Brand

To raise the awareness of Maritime Singapore among the general public, and the industry, MPA continually reaches out to them via various communication platforms. In 2018, MPA produced an infotainment programme with Mediacorp, titled “The InternShip”, to raise the profile of Maritime Singapore and maritime professionals. As part of its digital engagement efforts targeted at the youths and young adults, MPA also produced the “Little Big Things” video series and collaborated with SGAG to increase online reach as well as to correct misconceptions of Maritime Singapore.

To enhance the public’s awareness and perception of Maritime Singapore and Singapore Maritime Week 2018, MPA launched a slew of brand-enhancing initiatives, including refreshing corporate collaterals as well as advertising in both traditional media and out-of-home placements. MPA’s corporate magazine, *Singapore Nautilus* publishes up-to-date, relevant and engaging content to keep the industry current with the latest issues. Subscribers to the magazine include members of the shipping and maritime community, both locally and overseas; port and marine personnel; government agencies; as well as academic institutions. An online edition of the magazine is also available on the MPA corporate website.



## Singapore Maritime Week

MPA spearheads the annual Singapore Maritime Week (SMW), a highly anticipated international platform for the maritime industry to glean insights on the most pressing issues faced by the maritime community. The event is also an opportunity for MPA to showcase Singapore’s vibrant maritime cluster to the general public, as well as the international maritime community. Recognised for its thought leadership, and as a leading international maritime show, the number of visitors at SMW has climbed steadily since its inception in 2006. Other maritime nations have since emulated its content and format in the last few years.

Themed “Positioning for Future Growth – Driving Connectivity, Innovation and Talent”, SMW 2018 featured 19 forums and conferences, 11 networking receptions and four public outreach activities. Running from 21 to 29 April

2018, the show was attended by more than 30,000 participants, including high-level delegates such as port authorities, CEOs, industry leaders, and maritime experts. At SMW’s highly regarded events, such as the Singapore Maritime Lecture and Singapore Maritime Technology Conference, business leaders discussed the crucial factors impacting the maritime sector as well as opportunities and gaps in digital innovation and technology adoption. SMW 2018 also saw the inaugural panel discussion titled “Global Perspectives: The Future of Shipping” where panellists discussed the transformation taking place in the industry and possible disruption by players outside of the industry. 19 organisers also partnered with SMW to co-locate their events, to address topics in the areas of Liquefied Natural Gas adoption, insurance, finance and security, just to name a few.

SMW 2018 also featured various public outreach events to generate public interest in the maritime sector. The week-long SMW 2018 Exhibition, titled “Maritime Singapore. Future Ready”, was held at Suntec City and drew a sizeable crowd of 12,418 visitors. They had the opportunity to learn about the various technologies that are transforming the maritime industry such as remote pilotage and digital fleet management systems. Through interactive exhibits, visitors could learn what drives the people working in the industry and gain an insight into their career development.

The Amazing Maritime Challenge – an annual game-based half-day event designed to create a better understanding of Maritime Singapore among the participants and the general public – drew 960 registrations.



1. (Left to right) Mr René Piil Pedersen, Managing Director of A. P. Moller Singapore Pte Ltd; Mr Andrew Tan, Chief Executive of MPA; Mr Søren Skou, CEO of A.P. Møller – Maersk; Dr Lam Pin Min, Senior Minister of State Ministry of Transport and Ministry of Health; Mr Kitack Lim, Secretary-General of International Maritime Organization; Mr Andreas Sohmen-Pao, Chairman of BW Group, Chairman of Singapore Maritime Foundation (Photo credit: Ministry of Transport)
2. MPA inked a Memorandum of Intent with eight classification societies on the development of the Singapore Maritime Data Hub. The eight classification societies are (from left) Nippon Kaiji Kyokai, Korean Register of Shipping, China Classification Society, American Bureau of Shipping, Bureau Veritas, DNV GL, Lloyd’s Register of Shipping, and Registro Italiano Navale
3. Dr Lam Pin Min, Senior Minister of State, Ministry of Transport and Ministry of Health, and maritime industry leaders officiating the launch of Singapore Maritime Week 2018

4. Participants at the LNG Forum

5. At the inaugural 'Global Perspectives: The Future of Shipping' forum during SMW 2018, (from left) Moderator Mr Teymoor Nabili, Dr Martin Stopford, President of Clarkson Research; Mr Carl Schou, President and CEO of Wilhelmsen Ship Management; Mr Lim Kell Jay, Country Head of Grab Singapore, Mr Claas Durach, Regional Head of Ocean Freight, Crossborder of Lazada eLogistics, and Mr Tal Drory, Senior Manager, A.I. Multimedia, IBM Haifa Research Lab

6. Mr Søren Skou, CEO of A.P. Møller – Maersk giving his keynote lecture



7. SMW Exhibition

8. Enthusiastic participants at the Amazing Maritime Challenge

9. MPA Learning Journey (SMW Edition) drew crowds

# Community Engagement

## Singapore Maritime Dialogue

A record 400 tertiary students attended the 2018 edition of the annual Singapore Maritime Dialogue organised by MPA, which featured Senior Minister of State Ministry of Transport and Ministry of Health Dr Lam Pin Min; Mr Andrew Tan, MPA Chief Executive; and industry professionals speaking on the theme of "Building a Future-Ready Maritime Singapore".

For the first time, MPA collaborated with students from the National University of Singapore to engage and encourage their peers to participate in the dialogue. Young maritime professionals on the panel provided the participants with a better understanding of how the Sea Transport Industry Transformation Map can help maritime companies build deeper capabilities, compete more efficiently, and move into new growth areas.

## Clean-Up on Kayak

To raise public awareness of Singapore as a bustling yet responsible and sustainable port city, MPA launched the Clean-Up on Kayak initiative in 2016 with the support of local non-governmental organisations. This initiative is part of its Maritime Environmental Partnership programme. Held on 15 September 2018 in conjunction with International Coastal Clean-up Day, the event saw its highest turnout in three years, with 150 volunteers between the ages of 16 and 62, together with Dr Lam Pin Min, collecting debris in Singapore waters, and sorting and recording the 114kg of marine litter collected for data analysis.

## Underwater Clean-up Exercise

20 volunteer divers collected and sorted more than 100kg of marine trash on 8 June 2018 in an underwater clean-up exercise held in conjunction with World Oceans Day. This exercise complements MPA's Clean-Up on Kayak and aims to encourage youths to play a part in protecting the marine environment.

## Coral Monitoring Volunteer Engagement Sessions

Together with DHI Singapore and National Parks Board, MPA put together and continued to support the Coral Monitoring Volunteer Engagement Sessions, an outreach platform where diver volunteers help to raise public awareness on the importance of our marine environment.

## Singapore Maritime Gallery

The Singapore Maritime Gallery (SMG), located at Marina South Pier, tells the story of Singapore's development as a global hub port and an international maritime centre. In 2018, the gallery received a total of 33,351 visitors. Launched in September 2012, the gallery was refreshed and reopened in April 2017 to offer visitors a broader perspective of Maritime Singapore in a more engaging manner.

The gallery presented its inaugural exhibition "Sampan Girl Smiles", a showcase jointly curated by the Royal Museums Greenwich and the Institute of Ancient Chinese Ships (Ninghai Maritime Museum). The exhibition explored the advanced technique of traditional ship building through a series of black-and-white photographs by David Waters, a Royal Navy officer who visited Asia in the 1930s. Waters' collection also recorded people, customs and port cities in East Asia, including Singapore.

## MPA Learning Journeys

The MPA Learning Journeys is a programme for local educators and students from educational institutions to understand more about Maritime Singapore, through facilitated visits to restricted maritime facilities or a tour around Singapore waters. These facilities include the Integrated Simulation Centre, Raffles Lighthouse and Port Operations Control Centre. The Sea Tour provides participants an opportunity to observe the operations out at sea — such as offshore vessels and aids to navigation.

## Maritime Outreach Fund

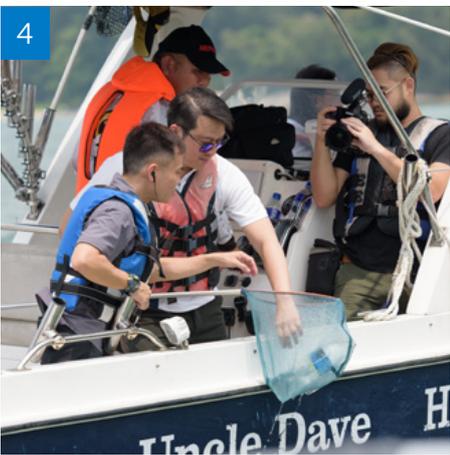
The Maritime Outreach Fund (MOF) is a public funding initiative where MPA collaborates with the community to bring maritime ideas to life. It aims to encourage ground-up development of the industry and fund projects that inspire people and help cultivate their interest in Singapore maritime. Since inception, the fund has supported projects ranging from film commissions and book publications to school competitions as well as exhibitions.

## Singapore Maritime Trails

The Singapore Maritime Trails (SMT) initiative is part of MPA's efforts to pique interest in Singapore's rich maritime heritage and excite the young in the maritime sector. Singapore has over 700 years of history in port activities. The country's rich history dates back to the early 14<sup>th</sup> century when Singapore was already a thriving seaport. SMT 1: Our Heritage, introduced in April 2014, highlights Singapore's maritime history, while SMT 2: Our Progress which began in May 2015 maps out the development and advancement of Maritime Singapore. On average, a combined total of 1,000 participants sign up for the trails monthly.



1. Dr Lam with cadets at the Singapore Maritime Dialogue
2. Student asking question during the Singapore Maritime Dialogue
3. MPA Learning Journey to Raffles Lighthouse



- 4 & 5. Clean-up on Kayak saw a huge turnout of volunteers, together with Dr Lam Pin Min (white shirt in pic. 4) who participated
6. The Singapore Maritime Gallery



Chapter 7



# Culture of Excellence



In driving Singapore’s next phase of growth as a global maritime hub, MPA understands that a culture of excellence is the lynchpin to sustain organisational excellence, and remaining agile and adaptable in an ever-changing landscape that creates new opportunities, and raises fresh challenges.

MPA’s culture of excellence has been carefully designed and built upon service, innovation and operation distinction. At the same time, sustainability strategy is underpinned by sound and robust financial, environmental, social and governance policies.

## Enhancing Customer Experience through Automation

The MPA enhanced the Ship Registry’s suite of online services to allow submission to be done online via Marinet. The submission of Maritime Labour Convention (MLC) financial security certificates can be done online via Marinet. Shipowners can submit a scanned copy or an

electronic version of the renewed financial security. Any subsequent changes to the details of the ship’s MLC financial security should also be updated to MPA via Marinet.

Robotic Processing Automation (RPA) technology has been successfully

used in recent years across various industries to automate administrative tasks. RPA is able to automate repetitive and rule-based workflows to provide fast and accurate services to meet customers’ expectations. As a quality and customer-orientated registry that aims to continuously deliver better services to shipowners, the Singapore Registry of Ships (SRS) has also started exploring the use of RPA in some of its work processes.

In 2018, MPA conducted two Proofs of Concept (POC) for two of SRS processes. It leveraged on RPA for verification checks done for the issuance of the Wreck Removal Certificate, and for the processing and issuance of the Certificates of Endorsement of foreign Certificates of Competency issued by other flag administrations and are required for seafaring officers to sail on board Singapore ships. MPA would put up a tender to build and implement an RPA solution for the two processes in 2019.



The Singapore flag has grown to become a quality flag of choice among many international ship owners and operators

MPA has been exploring the potential of using **blockchain solutions** to provide multiparty reconciliation in the registration process, and to prepare the required information in an efficient manner. Blockchain promises to allow repetitive information to be securely shared with multiple stakeholders, who can verify the authenticity of the submitted information automatically.

To learn more about the technology and explore the viability of using blockchain in the ship registration process, in 2018, MPA has partnered with Microsoft, along with shipowners and Classification Societies, to conduct two week-long "Code-with" sessions

to build a prototype version of the blockchain platform, in which "Smart Contracts" were written to allow for the submission and verification of information from the shipowner and Classification Societies. The objective is to test out whether the process of establishing trust and assurance of pertinent information for ship registration can be achieved.

MPA has also commenced the issuance of **E-certificates** to Singapore-registered ships. Implemented in phases, all Singapore-registered ships would be receiving their E-certs upon issuance of new certificates or renewal of existing

certificates. To date, about 10,000 E-certs have been issued by MPA to Singapore-registered ships. Recognised Organisations such as ABS, BV, DNV GL, CCS and ClassNK have also started issuing statutory E-certs to Singapore-registered ships on MPA's behalf.



The Maritime Blockchain Forum 2019 organised by MPA, gathered leading practitioners in blockchain to share initiatives, learning points and to demystify the blockchain technology for the maritime industry

## Sustaining Service Excellence

MPA values and strives towards driving service excellence among its people. From new staff to senior and middle managers, programmes are lined up to train its staff to understand its customers more, and to deepen its Culture of Excellence.

### Building Connections with MPA Customer Archetypes

A series of MPA customer archetypes workshops were introduced in 2018 to cascade the different MPA customer archetypes to its officers in the

customer frontline and enforcement job functions. MPA co-designed the workshop programme together with the Civil Service College, to place greater emphasis for its officers to understand the various touch points for the customer as they interact with MPA. Through the one-day workshop, its officers adopted the customers' perspective to understand the customer journey through MPA's processes, and identified opportunities for improvement to enhance customer experience.

# Sustaining Organisational Excellence



MPA Senior Management with the organising team at the end of 2018 Work Plan Seminar

## Work Plan Seminar 2018

In line with the launch of the strategic review for International Maritime Centre 2030 (IMC 2030) and Sea Transport Industry Transformation Map (ITM), the Maritime and Port Authority of Singapore’s (MPA) Work Plan Seminar 2018 was themed “Transforming the Industry through Greater Connectivity, Innovation and Talent”. It brought together several threads of work that MPA had been working on closely with the industry and unions. The event was attended by over 500 guests from both the public and private sectors, which included senior officials, industry leaders, and MPA staff.

Guest speaker Mr Lars Jensen, CEO of Seaintelligence Consulting highlighted key forces shaping the landscape of connectivity in the maritime industry, the challenges and opportunities that the industry

was facing, and how the industry could prepare itself going forward. Mr Andrew Tan, Chief Executive of MPA; Ms Tan Beng Tee, Assistant Chief Executive (Development); and Capt M Segar, Assistant Chief Executive (Operations), shared MPA’s current efforts to drive the transformation of the maritime industry. The sharing by senior management further emphasised the importance of Singapore’s strong and cohesive maritime community, which remains her key competitive advantage.

## Management Advance 2018

The annual Management Advance, together with the corporate work plan cycle, are key platforms to review plans and set the strategic direction for its work. This year’s Management Advance involved more than 100 participants, comprising MPA’s senior management and middle, and a number of younger officers.



Participants and guests from Economic Development Board and Enterprise Singapore attended the 2018 Management Advance

In line with the focus on promoting collaboration, MPA invited colleagues from the Economic Development Board and Enterprise Singapore, who worked closely with MPA to strengthen the connectivity value propositions of Singapore, to join in the advance. To set the context of the role of connectivity and the future of global trade, global strategy advisor Dr Parag Khanna was invited to speak on this topic.

Participants were tasked to work on Challenge Statements which identified potential opportunities or gaps that cut across the organisation. Participants were then invited to brainstorm and develop collaborative approaches to address these areas.

## Review of Corporate Key Performance Indicators

Against the backdrop of evolving developments in the maritime landscape and taking into consideration our long term plans - Next Generation Port 2030 (NGP2030), International Maritime Centre 2030 (IMC2030), and the Sea Transport Industry Transformation Map, MPA undertook an organisation-wide review of our Corporate KPIs to update and align our efforts.

The review was guided by MPA’s Future-Ready Framework. Engagements were held with the Divisions to identify or re-align their performance metrics against our renewed strategic focus. New KPIs were also identified to track the build-up of new strategic thrusts such as Maritime Knowledge and Innovation Hub and Strong Maritime Singapore Identity. The KPI review helped tighten the linkage between performance outcomes with our strategies and accelerate transformation of the organisation towards our long-term goals.

# MPA Values

[GRI 102-16]

MPA's FIRST Values (Forward Thinking, Integrity, Respect, Service Excellence and Teamwork) are translated into guiding policies, behaviours and practices that guides decision making and fosters the desired culture. These enable innovation, learning and the achievement of MPA's goals.

MPA Values Week is an initiative to celebrate and further instil its corporate FIRST values. Held from 5 to 9 February 2018, activities were

organised throughout the week to encourage MPA staff to focus and adopt a FIRST value each day. For instance, to exemplify the value of Forward Thinking, staff are encouraged to set long term goals, think out of the box, embrace change and innovation; and adopt a risk-taking mindset. An innovative learning journey was also organised to the National Library Board that received the Innovation Excellence Award for being innovative in its operations and services.



Innovation Learning Journey to National Library Board



Corporate Governance Briefing encourages staff to carry out duties in an ethical and professional manner



Charity Flea Market was organised where there was a sale of food items prepared by staff, and all net proceeds were donated to charity



Using clay moulding, the Service Workshop infused MPA staff with a multi-sensory experience to discover their individual approach towards service excellence, how to break silos and work collaboratively



Teambuilding Workshop for Fire Wardens to build the spirit of teamwork among participants

# Commitment to Environmental Sustainability

[SDG 12.4, 12.5] [GRI 302-1, 302-3, 302-4, 303-1, 305-1, 305-2, 305-4, 305-5]

At the same time, MPA's sustainability strategy is underpinned by its sound and robust financial, environmental, social and governance policies. MPA's sustainability commitment is recognised by its winning at the 2018 Sustainable Business Awards hosted by the Global Compact Network Singapore. MPA has also itself to taking climate change action through signing up to the Climate Action SG organisational pledge.

## Eco-Office

MPA strives to create an environmentally friendly office. It is proud to have embarked on the eco office journey and first achieved the Eco-Office certification in 2011 for its office at PSA Building. It also subsequently also achieved certification for two other office locations, Tanjong Pagar Complex and PSA Vista. The certification is awarded by the Singapore Environment Council to encourage organisations to promote environmental awareness in the workplace.

To raise the level of staff awareness about environmental sustainability, MPA's drive to promote a green office culture intensified in 2018 with the introduction of new initiatives to complement those that have been implemented earlier. There was a series of eco-themed emails that were circulated and posters with eco-messages were prominently displayed in the office.

To minimise the use of disposable cutlery, staff were encouraged to bring their own reusable cutlery, while plastic stirrers and chopsticks were no longer provided in the pantries. To reduce food waste, MPA adopted a Foodbank box. Food packaging were given a new lease of life at a workshop where staff took part in an air plant terrarium-making workshop using recycled drink cartons.

MPA also retained its five-star Happy Toilet Programme rating for the eight toilets at Tanjong Pagar Complex, and PSA Vista after a re-certification audit by the Restroom Association of Singapore.

## Paper Recycling

MPA's relentless efforts to encourage staff to reduce their usage of paper as well as to increase the paper recycling rate bore fruit in 2018 – paper recycling rose by 7.8 per cent from 2017 with 12,209kg of paper collected in 2018.

MPA also introduced new photocopiers that allowed for the collection and analysis of statistics on print volume. The statistics were shared with the departments to help them monitor their printing needs within the department. Staff was strongly encouraged to switch to modes to reduce printing, such as by reading or vetting documents on their devices; using laptops to view documents and slides during meetings; sending letters via email; and using MPA's e-filing system for sharing of documents.

A paper recycling vendor was engaged to collect the massive amount of paper to be disposed during the move of staff who were relocated from level 19 to a temporary premise, due to office renovation works.

To further reduce the use of paper, MPA decided to do away with the issue of new 2019 Office Planners for staff.



Air plant terrarium-making workshop



Staff learning how to operate the new photocopiers which allow data collection of print volume



Adoption of Food Bank Boxes placed in office pantry



Email blast on environmental message

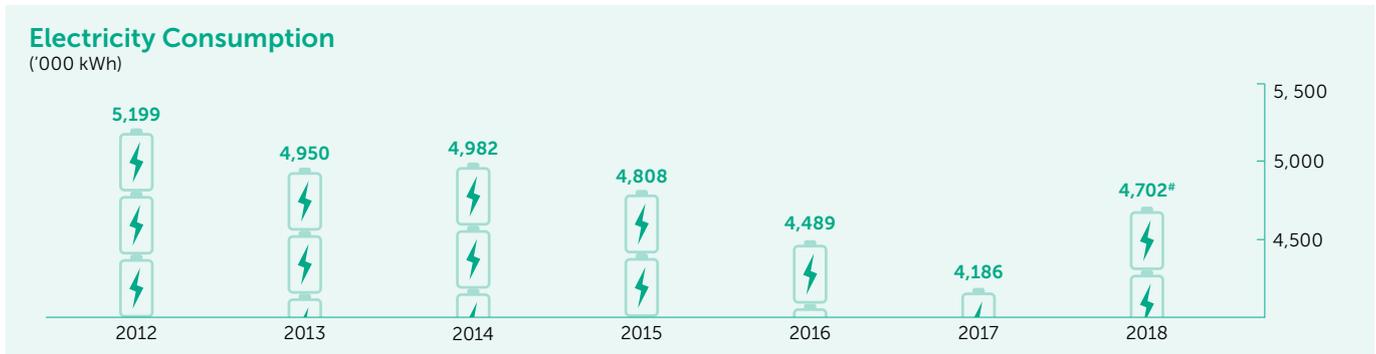
## Public Sector Taking the Lead in Environmental Sustainability

In measuring sustainability performance, MPA takes guidance from the Public Sector Taking the Lead in Environmental Sustainability (PSTLES) initiative 2.0 targets, led by the Energy Efficiency Programme Office<sup>1</sup>. Annually, MPA aims to reduce energy and water consumption by 3 per cent and 1 per cent respectively.

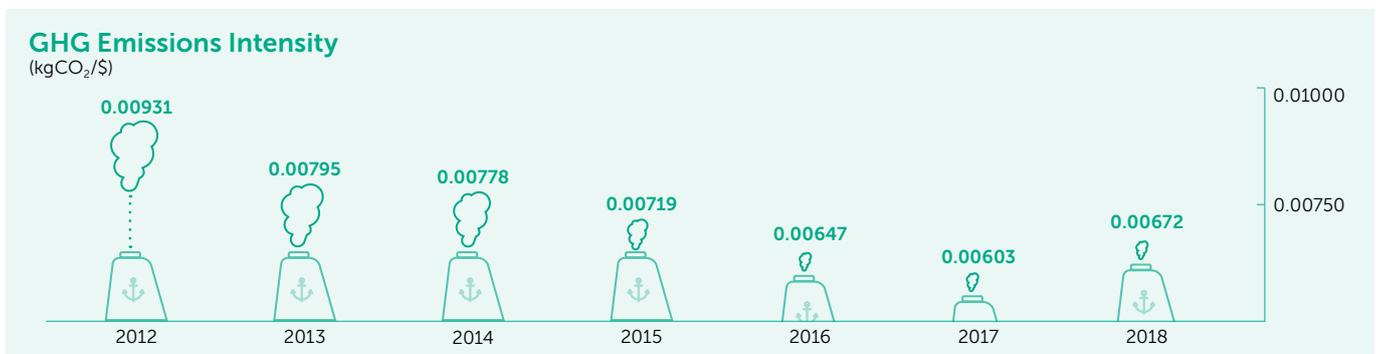
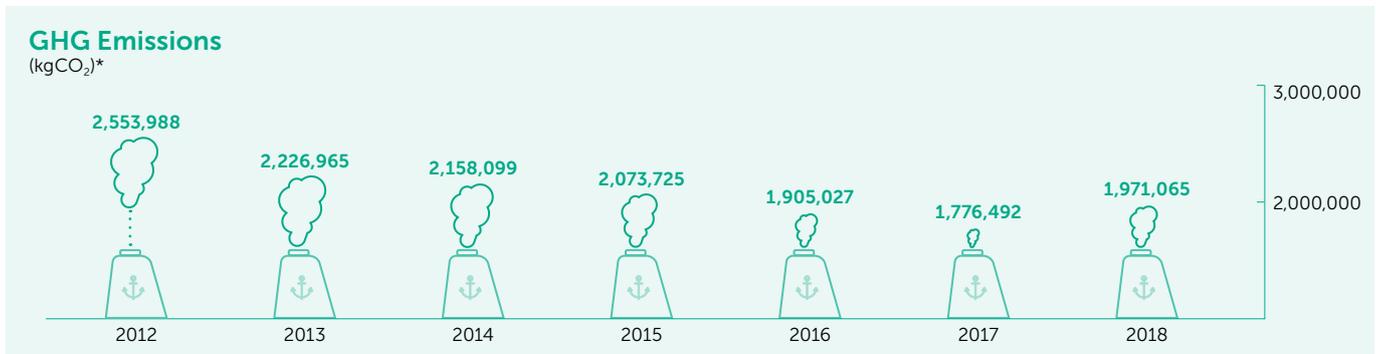
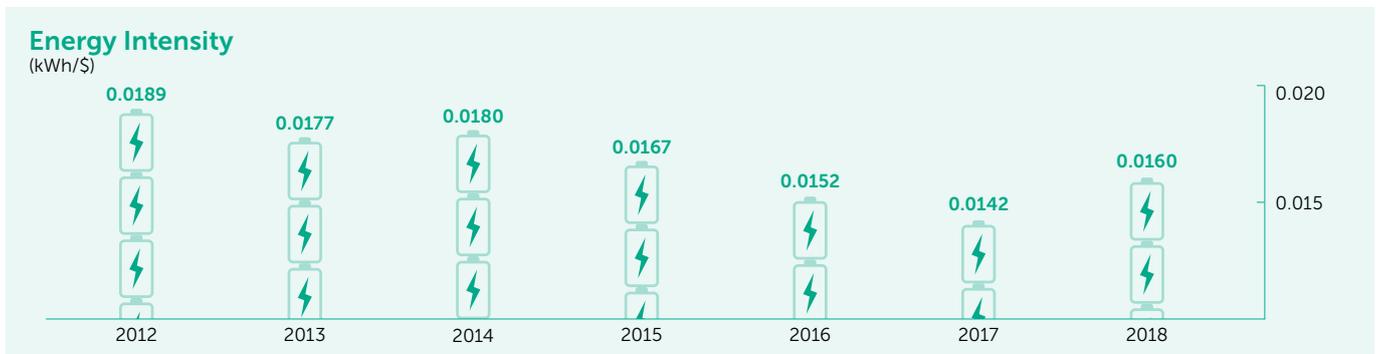
To achieve its energy efficiency targets, MPA has progressively replaced the air-conditioning system at POCC Changi and Vista with energy-saving systems that meet the Greenmark Certification. In addition, MPA has replaced the multiple split system air-conditioning systems at Maritime House Service Apartments in 2018 with an energy-saving inverter system. With these new systems, it expects to have electricity consumption reduced by three to four per cent in 2019. In 2019 and 2020, MPA will undergo an office renovation and more energy-saving lightings and air-conditioning system will be implemented. Electricity consumption is expected to reduce by two to three per cent for MPA offices at PSA Building.

<sup>1</sup> Multi-agency committee led by the National Environment Agency and the Energy Market Authority

## Energy and Emissions

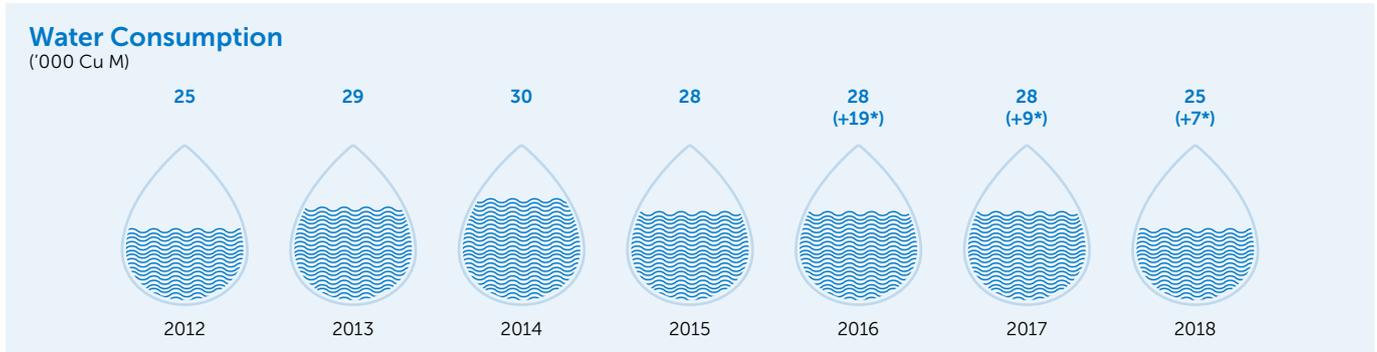


<sup>#</sup> The increase in electricity consumption due to lift upgrading work at Changi Point Ferry Terminal and new pontoon construction and upgrade works of landing steps at West Coast Pier.



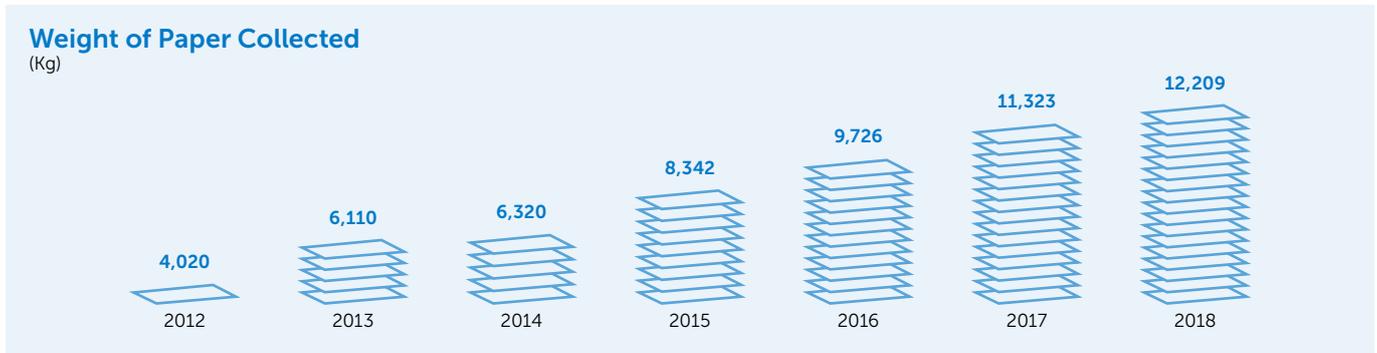
\* Calculated based on Yearly Electricity Grid Emission Factor published by the Energy Market Authority (EMA)

## Water Consumption



\* The increase for water consumption is primarily due to general façade cleaning.

## Recycling



# MPA's Awards Milestone 1996 – 2018

## 1996 – 1998

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

## 1999

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Culture of Excellence

- Singapore Quality Class (SQC)
- Choice Employer
- SAF Award for Employers

## 2000

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Best Bunkering Policy Award

### Choice Employer

- SAF Award for Employers
- Singapore Health Award 

## 2001

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Bunkering in Asia Award

### Culture of Excellence

- Singapore Quality Class (SQC)

### Choice Employer

- SAF Award for Employers
- Singapore Health Award 

## 2002

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Bunkering in Asia Award

### Maritime Knowledge & Innovation Hub

- Intelligent20 Award
- MOT Minister's Innovation Award

### Choice Employer

- People Developer

## 2003

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- CIO 100 Honourees 2003
- Enterprising Agency Award
- Intelligent20 Award
- MOT Minister's Innovation Award

## 2007

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award 

### Choice Employer

- Home Team NS Awards for Employers (Special Award)

## 2008

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Best Seaport (ASEAN)
- Environment Protection Award (Joint award with NewEarth Pte Ltd)
- Port Authority Award (Seatrade Asia Award)

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award

### Strong Maritime Singapore Identity

- Convention of the Year Award

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award 

### Choice Employer

- May Day Model Partnership Award
- Singapore Health Award 

## 2009

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award

### Strong Maritime Singapore Identity

- Trade Conference of the Year Award

### Culture of Excellence

- Singapore Quality Class (SQC)

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award 

### Choice Employer

- May Day Model Partnership Award

## 2010

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Port Authority Award (Seatrade Asia Award)
- Port of the Year Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award

### Culture of Excellence

- Community Chest Award 

## 2014

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award
- MOT VFM Achievement Award

### Quality Maritime Workforce

- International Seafarers' Welfare Awards 2014 (1 of 5 finalists)
- MPA Academy achieved accredited VTS training centre status by IALA

### Culture of Excellence

- Corporate ISO Certification
- International Best Practice Competition 2014 (Runner-up)
- Restroom Association of Singapore 4-star Happy Toilet Certification
- Team Symposium 2014 (2 Silver & 1 Bronze Awards)

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award 

### Choice Employer

- May Day Model Partnership Award

## 2015

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- MTI Innovation Award 
- MOT Minister's Innovation Award
- MOT VFM Achievement Award

### Strong Maritime Singapore Identity

- 29<sup>th</sup> International ARC Awards
- Gold Tabby Award

### Culture of Excellence

- Eco-Office Re-certification
- Happy Toilet Re-certification

- International Convention on Quality Control Circle (ICQCC) 2015 (Bronze Award)

- PEP-SBF Pro-Enterprise Award
- PS21 ExCEL Awards - Most Innovative Project/Policy (Bronze)

- PS21 Star Service Team Award
- Singapore Innovation Class

- Singapore Service Class
- Singapore Sustainability Awards 2015 (Large Enterprise)

- Singapore Environmental Achievement Awards (SEAA) 2015
- Singapore Apex CSR Awards (Small and Medium Organisations Category)
- Special Events Platinum Award
- Team Excellence Symposium 2015 (2 Gold & 4 Silver Awards)

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Green Ports Award System (GPAS)
- Top 50 Engineering Feats @ IES-SG50 Award

### Maritime Knowledge & Innovation Hub

- CAPAM International Innovations Awards (IIA) (one of the semi-finalists)
- MOT Minister's Innovation Award
- MOT VFM Achievement Award

### Choice Employer

- May Day Model Partnership Award
- NS Advocate Award
- People Developer

## 2016

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Green Ports Award System (GPAS)
- Top 50 Engineering Feats @ IES-SG50 Award

### Maritime Knowledge & Innovation Hub

- CAPAM International Innovations Awards (IIA) (one of the semi-finalists)
- MOT Minister's Innovation Award
- MOT VFM Achievement Award

### Strong Maritime Identity

- 2016 ARC Awards



Gold



Silver



Bronze



1st Place



2nd Place



3rd Place

## 2004

### Culture of Excellence

- Singapore Quality Class (SQC)
- Public Service Milestone Award

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Seatrade Award for Safety at Sea

### Maritime Knowledge & Innovation Hub

- Enterprising Agency Award
- MOT Minister's Innovation Award

### Culture of Excellence

- Community Chest Award

### Choice Employer

- MHA Award for NSmen's Employers
- SAF Award for Employers
- Singapore Health Award

## 2005

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- Enterprising Agency Award
- MOT Minister's Innovation Award

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award

## 2006

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award
- The Enterprise Challenge (TEC) Public Service Innovation Award

### Culture of Excellence

- Singapore Quality Class (SQC)

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award

## 2011

### Strong Partnerships

- PEP-SBF Pro Enterprise Award

### Choice Employer

- Honorary Member of the Minister for Defence Awards (MiDAs) League
- Singapore Health Award

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Safeguard Strategic Maritime Interests & An Influential Voice

- Norwegian Business Association (Singapore) Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award

### Culture of Excellence

- Eco-Office Certification

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award

### Choice Employer

- MHA Award for NSmen's Employers
- People Developer

## 2012

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Best Green Service Provider – Seaport

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award

### Quality Maritime Workforce

- The International Committee on Seafarers' Welfare (ICSW) Award – Drop-in Centre of the Year

### Culture of Excellence

- Community Chest Award
- Public Service Milestone Award

### Strong Partnerships

- PEP-SBF Pro Enterprise Award

### Choice Employer

- MHA Award for NSmen's Employers
- Singapore Health Award

## 2013

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award
- Environmental Campaign of the Year Award
- Port of the Year Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award
- MOT VFM Achievement Award

### Culture of Excellence

- Singapore Quality Class (SQC) Star

## 2017

### Culture of Excellence

- 6<sup>th</sup> Asia Best CSR Practices Awards 2016
- ASEAN Corporate Sustainability Summit and Awards (ACSSA) 2016
- Asia Responsible Entrepreneurship Award
- ComChest Special Events Gold Award
- Eco-Office Re-certification
- International SeaKeepers Society Asia Achievement Award
- PS21 ExCEL Award: Most Innovative Project/Policy
- PS21 Star Service Team Award
- Singapore Quality Award

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award

### Safe, Efficient & Sustainable Global Hub Port

- Best Seaport in Asia Award

### Maritime Knowledge & Innovation Hub

- MOT Minister's Innovation Award
- MOT VFM Achievement Award

### Strong Maritime Identity

- 2017 Galaxy Awards
- 23<sup>rd</sup> Annual Communicator Awards

### Culture of Excellence

- ComChest Corporate Gold Award
- Eco-Office Re-certification
- European Society for Quality Research (ESQR) Quality Achievements Awards 2017

### Culture of Excellence

- Golden Peacock Global Award for Sustainability
- International Best Practice Award Competition (IBPC) Organisation-Wide Innovation Award
- ISO 9001:2008 Corporate Re-certification
- PS21 Star Service Team Award
- Public Service Premier Award

### Strong Partnerships

- PEP-SBF Pro-Enterprise Award
- Public Sector Pro-Enterprise Initiative
- Public Sector Pro-Enterprise Initiative Award

## 2018

### Safe, Efficient & Sustainable Global Hub Port

- Maritime 2020 & LNG Asia Summits
- Green Ports Award System (GPAS)
- GREEN4SEA Awards

### Safeguard Strategic Maritime Interests & An Influential Voice

- International Seafarers' Welfare (ICSW) Awards – The Port of the Year

### Maritime Knowledge & Innovation Hub

- 6<sup>th</sup> International Best Practice Competition
- CAPAM International Innovations Awards (IIA)
- New Silk Road CEO of the Year Awards 2018

### Culture of Excellence

- Minister's Innovation Award 2018
- Caterpillar and INFORMS Analytics Society Innovative Applications in Analytics Award (IAAA)
- Charity Bronze Award
- Value-For-Money Achievement Awards
- National Day Awards 2018
- Asian Freight Logistics and Supply Chain Awards
- NTUC May Day Awards 2018
- MPA ISO 9001:2015 Corporate Re-certification

### Strong Maritime Singapore Identity

- Public Sector Transformation Awards

### Strong Partnerships

- Honorary Fellowship by the Institute of Chartered Shipbrokers
- PEP-SBF Pro-Enterprise Award

### Choice Employer

- Champions of Good 2018
- Sustainable Business Awards Singapore 2018
- 15<sup>th</sup> Annual HRM Awards 2018

# Awards Received in 2018

## 6<sup>th</sup> International Best Practice Competition - Top 10 Best Practices for the project on Accelerating Innovation in the Maritime Industry through the MPA Living Lab 12 December 2018

The International Best Practice Award Competition (IBPC) was founded by the Centre for Organisational Excellence Research (COER), the developers of the Business Performance Improvement Resource and the TRADE Best Practice Benchmarking methodology. The awards are supported by the Global Benchmarking Network to encourage the sharing of work practices to help organisations to quickly raise their performance and improve business results.

MPA was awarded Top 10 Best Practices for the project on Accelerating Innovation in the Maritime Industry through the MPA Living Lab. The 6<sup>th</sup> International Best Practice Award Competition (IBPC) was held in Abu Dhabi, UAE from 10 to 12 December 2018.

## Maritime 2020 & LNG Asia Summits - Most Extraordinary Contribution to HSE Award 27 November 2018

The LNG & Maritime Asia Awards Ceremony recognised the most outstanding achievements of both industries.

The event was supported by Gold Sponsors JXTG Nippon Oil and Energy Corporation and Diamond Gas International, Silver Sponsors Creon Capital and Singapore LNG Corporation, as well as Bronze Sponsors CMA CGM, Cleanship and Teekay, in partnership with Singapore Shipping Association.

MPA won The Most Extraordinary Contribution to HSE Award for the MPA Port Regulations and Acts on marine safety and environmental protection.

## Green Ports Award System (GPAS) 21 November 2018

The APEC Port Services Network (APSN) launched the Green Ports Award System (GPAS) in 2016 to recognise port operators and administrations who are making substantive efforts to contribute to a more sustainable port development environment. One of the objectives of the APSN is to promote green and sustainable development amongst the APEC port economies. The GPAS Award is the only such award for ports in Asia.

MPA is proud to be amongst the nine recipients of the 2018 edition of the GPAS award. MPA received the inaugural edition of the GPAS Award in 2016.

## Honorary Fellowship by the Institute of Chartered Shipbrokers 19 November 2018

An Honourary Fellowship is the highest honour bestowed by the ICS and reserved for those who have made a significant contribution to commercial shipping and provided consistent support towards the development of the Institute.

Ms Tan Beng Tee, Assistant Chief Executive (Development) of MPA has been conferred Honorary Fellowship of the Institute of Chartered Shipbrokers (ICS). Beng Tee was nominated for Honorary Fellowship consideration by the Institute's Singapore Branch in July this year and is the first woman to receive such an honour.

## Champions of Good 2018 16 November 2018

Champions of Good is part of the National Volunteer & Philanthropy Centre's Company of Good programme that exists to empower businesses to do good better.

Champions of Good is an annual recognition of companies that practise good corporate giving and are also committed to influencing and multiplying corporate giving in Singapore. A Champion of Good believes in giving back and advocates for companies to do their part to build and sustain a compassionate and collaborative society.

MPA was awarded The Champions of Good as an attestation of active charity efforts in MPA.

## PEP-SBF Pro-Enterprise Award 9 November 2018

The Pro-Enterprise Panel - Singapore Business Federation (PEP-SBF) Award 2018 recognises the efforts of government agencies in their commitment to stay pro-enterprise as well as their efforts to engage businesses to provide feedback and suggestions to improve the business environment.

The Pro-Enterprise Ranking (PER) Survey comprises five components and measures the effectiveness of current initiatives to build a pro-enterprise regulatory environment in Singapore.

MPA has regained the top ranking in the 2018 Pro-Enterprise Ranking (PER) survey (from second placing in 2017) with a Pro-Enterprise Index of 81.26. The PER Survey measures the effectiveness of current strategies and initiatives to build a pro-enterprise regulatory environment in Singapore.

## CAPAM International Innovations Awards (IIA) 24 October 2018

The Commonwealth Association of Public Administration & Management (CAPAM) 2018 International Innovations Awards (IIA) celebrate the spirit of innovation in the public service by recognising organisations that have made significant contributions to improving governance and services in the public sector. Innovation in public administration and management is demonstrated by novel or alternative means as well as replicable or adaptable solutions that generate significant incremental value to the administrative body and/or to the citizens it serves.

The IIA are held biennially with the 2018 Awards taking place on 24 October 2018 in Georgetown, Guyana.

### MPA submitted 2 projects:

#### Innovation Incubation Category:

SAFER: Sensemaking Analytics for Maritime Event Recognition (EIT Division)

#### Innovation DNA Category:

Smart Port Challenge - Supporting Innovation Incubation with Maritime Partners for Start-Ups (RTID Division)

The project on Smart Port Challenge - Supporting Innovation Incubation with Maritime Partners for Start-Ups made it to the semi-finalist round.

The Commonwealth Association of Public Administration & Management (CAPAM) 2018 International Innovations Awards (IIA) celebrate the spirit of innovation in the public service by recognising organisations that have made significant contributions to improving governance and services in the public sector. The IIA are held biennially with the 2018 Awards taking place on 24 October 2018 in Georgetown, Guyana. MPA's project on "SAFER: Sensemaking Analytics For Maritime Event Recognition" under the category of Innovation Incubation is one of three finalists in the CAPAM IIA programme.

**Charity Bronze Award**  
9 October 2018

The Charity Awards are presented to organisations and individuals who have made significant donations to Community Chest. These donations include outright donations, funds raised from events and contributions through SHARE, Community Chest’s monthly giving programme.

MPA received the Charity Bronze Award for its donations to Community Chest. MPA donated \$76,805, out of which, approximately \$17,000 is SHARE. The range for donation for Charity Bronze Award is \$50,000 - \$99,999.

**New Silk Road CEO of the Year Awards 2018**  
17 September 2018

The New Silk Road CEO of the Year Awards serve to recognise Chief Executive Officers with an outstanding record of achievement in the advancement of the international Energy industry’s interconnectivity across Asia to the Middle East. This award started in 2017 and was produced by Gulf Intelligence on behalf of the Government of Fujairah.

Chief Executive, Mr Andrew Tan, was honoured as a winner of the New Silk Road CEO of the Year Awards 2018 in the category of Ports. The New Silk Road CEO of the Year Awards which recognise distinguished industry leaders were given out at a Gala Dinner in Fujairah on Sept. 17<sup>th</sup>, 2018.

**Value-For-Money Achievement Awards**  
27 August 2018

The award recognises the Value-For-Money (VFM) efforts of the MOT SBs as well as to incentivise MOT SBs to source for projects with the potential to achieve VFM in their organisations.

**The projects are as follows:**

**Distinguished Award**

- 1) Reuse of JTC F1’s Caisson Casting Yard for MPA’s Tuas Terminal Phase 2 (Engineering & IT Division)

**Merit Award**

- 2) Service Level Enhancement Initiatives for Singapore Registry of Ships (Shipping Division)

**Minister’s Innovation Award 2018**  
13 August 2018

The Minister’s Innovation Award was inaugurated in 2002 to promote and reward innovation in Ministry of Transport (MOT) and its Statutory Boards (SB).

**The projects are as follows:**

**Distinguished Award**

- 1) TEMAROCK - Specialised multi-purpose fall-pipe pontoon (EIT Division)

**Merit Award**

- 2) Development of a Very High Frequency Data Exchange System (VDES) for Future Maritime E-Navigation (Port Systems Division)

**Good Effort!**

- 3) ARM (Automatic Rebar Machine using Robotics System) (EIT Division)
- 4) Maritime Incidents and Situation Awareness System (Operations, EIT and Port Systems Division)
- 5) PIER71 – Developing a Vibrant Maritime Innovation Ecosystem with Start-Ups (Port Systems Division)

**Special Mention**

- 3) Billing Process for Dumping & Monitoring (Corporate Development Division)
- 4) Development of e-Procurement System for MPA (Corporate Development Division)

**Good Effort**

- 5) Construction and Installation of a Beacon at Entrance of Changi Creek (Port Services Division)
- 6) Use of Drones to Augment Existing Aerial Surveillance (Port Systems Division)
- 7) To streamline the Gas-Free inspection process for bunker tankers fitted with MFM system (Operations Division)
- 8) Enhancement of Port Dues Collection for Fishing Vessels

**National Day Awards 2018**  
10 August 2018

The Singapore National Day Awards recognise individuals who have made significant contributions to public service.

**The Public Administration Medal (Bronze)**

Ms Jasmin Tan Geok Meng (IMC Division)

**The Commendation Medal**

Mr Tee Kim Chuan (Port Systems Division)

**The Efficiency Medal**

Mr Thiaku (Operations Division)

**The Long Service Medal**

Ms Ten Kumari D/O A Balbahadur / Operations Division, Mr Tan Kim Poh / Operations Division, Mr Tan Siong Koon / Port Services Division, Mr Gee Soo Hong / Operations Division, Mr Chew Kim Siong / Operations Division, Mr Kwok Chun Yin / Operations Division, Mr Phua Kwee Seng / Operations Division, Mr Tan Chee Seng / Operations Division, Mr Anwar Bin Ahmad / Corporate Development Division, Mr Liew Wei Hong / Operations Division and Mr Sumali Bin Juraimi / Operations Division

**MPA ISO 9001:2015 Corporate Re-certification**  
2 August 2018

The ISO 9001:2008 is a standard that sets out the requirements for a quality management system. This certification is conducted by accredited Certification Body auditors to provide independent assessment that MPA demonstrated consistent and effective operation of its quality system that meets the requirements of the ISO 9001:2008. There is a new standard ISO 9001:2015 and every one will have to transit to this new standard.

MPA has successfully completed the 1<sup>st</sup> year surveillance audit and transition to the ISO 9001:2015 standard on 1 and 2 August 2018. The Corporate Re-certification audit was conducted in 2017 and the certification is valid for 3 years (1 year certification and 2 years surveillance audit). In 2018, it transited to the new standard ISO 9001:2015 as part of the first year surveillance audit.

**Sustainable Business Awards Singapore 2018**  
**27 July 2018**

The 2018 Sustainable Business Awards (SBA) are the region’s leading sustainability awards organised by event company Global Initiatives in partnership with PwC. The competition entry was through an online platform.

.....  
**MPA won the Best Public Sector Service award, which is a stand alone award category in the Sustainable Business Awards (SBA) to recognise outstanding performance in sustainability in the public sector.**

MPA’s award recognises the significant progress that MPA has made on its sustainability initiatives over the years, embedded on close stakeholder partnership. MPA also began anchoring its initiatives and future development plans to the United Nations Sustainable Development Goals in 2017 in support of the 2030 Agenda for Sustainable Development.

**Asian Freight, Logistics and Supply Chain Awards**  
**15 May 2018**

The Asian Freight, Logistics and Supply Chain Awards (AFLAS) awards, organised by freight and logistics publication Asia Cargo News, honour organisations for demonstrating leadership as well as consistency in service quality, innovation, customer relationship management and reliability. They are conferred based on votes cast by readers of Asia Cargo News.

.....  
**Singapore has been crowned the “Best Seaport in Asia” for the 30<sup>th</sup> time at the 2018 AFLAS ceremony held in Shanghai on 15 May 2018. The Port of Singapore clinched the award for its leading performance on a range of criteria, including cost competitiveness, container shipping-friendliness of the fee regime, provision of suitable container shipping-related infrastructure, timely and adequate investment in new infrastructure to meet future demand and facilitation of ancillary services.**

**NTUC May Day Awards 2018**  
**5 May 2018**

The May Day Awards are bestowed on individuals and companies that have made significant contributions to the Labour Movement, or have helped further its mission to be an inclusive Labour Movement.

The Medal of Commendation (Gold) is conferred to individuals who have demonstrated a continuous track record in supporting the Labour Movement in promoting and implementing progressive workplace practices in companies.

.....  
**NTUC Central Committee has approved AUSB’s nomination for Medal of Commendation (Gold) for the NTUC May Day Awards 2018. The medal is conferred upon Chief Executive, Mr Andrew Tan for his contribution to the good Labour Management Relations (LMR), workers’ welfare and partnership with union.**

**Public Sector Transformation Awards**  
**4 July 2018**

This award ceremony celebrates and recognises public officers and agencies for their innovations and excellence in public service delivery.

The Star awards recognise public officers and agencies for service and organisational excellence. It also recognises members of the public who have been particularly helpful and understanding, and who have made significant contributions as customers.

The ExCEL Innovation Champion is to recognise officers who inject innovation and creativity into their work or who have been pivotal in promoting the ExCEL spirit within their agencies.

The ExCEL Innovation Project is to recognise projects or policies that best exemplify the ExCEL spirit as well as to affirm/commend inter-agency collaboration efforts demonstrated by the project teams.

**The winners for 2018 are :**

.....  
**Star Service Award**

Ms Han Jie Hui and Mr Ng Teck Hui

.....  
**Star Service Team Award**

MPA Emergency Operations Team

.....  
**Star Manager Award**

Mr Albert Cheng Sai Keong

.....  
**Star Customer**

Mr Andreas Sohmen-Pao and Mr Esben Poulsen

.....  
**ExCEL Innovation Champion**

Mr Tan Yanru

.....  
**ExCEL Innovation Project**

Team SAFER

**Caterpillar and INFORMS Analytics Society Innovative Applications in Analytics Award (IAAA) 15 to 17 April 2018**

The Institute For Operations Research and the Management Sciences (INFORMS) is a leading international association for Operations Research & Analytics professionals dedicated to and promoting best practices and advances in operations research, management science, and analytics to improve operation processes, decision making, and outcomes. Every year, INFORMS gives out community prizes and awards to recognise creative and unique developments, applications or combinations of analytical techniques. The purpose of the 'Innovative Applications in Analytics Award' is to promote the awareness of the value of analytics techniques in unusual applications, or in creative combination to provide unique insights and/or business values.

MPA participated as a joint applicant with IBM as the SAFER project, being among the first in the world to apply cognitive analytics and machine learning techniques to improve the safety and efficiency of port and maritime operations. The project met the criteria of the award and provided MPA with an opportunity to further profile the SAFER system at the international level.

Project SAFER won the 2<sup>nd</sup> prize in the INFORMS Innovative Application in Analytics Award (IAAA).

According to the organisers of this award, there are a total of 29 submissions for the IAAA, so being in the finals itself was already an achievement. All six finalists received the same plaque from the organisers.

**International Seafarers' Welfare (ICSW) Awards - The Port of the Year 14 March 2018**

International Seafarers' Welfare (ICSW) Awards recognise excellence in seafarers' welfare provision across the shipping industry. It gives seafarers the chance to say thank you to companies and organisations who have offered them high quality welfare services and facilities.

*Nominations are made by seafarers and nominees are invited to submit an entry describing their services/facilities. The entries are judged by a prestigious panel from the shipping industry.*

Port of Singapore was shortlisted for the Port of the Year award.

**GREEN4SEA Awards 6 March 2018**

GREEN4SEA is a pro bono project to foster Environmental Excellence and Sustainable Shipping.

The Green4Sea Awards is an international environment award, started in 2016. There are seven categories in the 2018 awards. Other than Port, there are Dry Bulk Operator, Tanker Operator, Clean Shipping, Initiative, Technology and Personality/Leadership. 2018 is the first year there is a "Port" category.

*The awards mechanism is such that MPA was nominated by 5 January 2018, and there was an online voting process which closed on 16 February 2018.*

*The award ceremony was held on 6 March 2018, at Yacht Club of Greece.*

MPA won the Green4Sea Award (Port Category).

The other nominees in the Port category are Port of Gothenburg, Port of Piraeus, Port of Rotterdam and Port of Vancouver.

Port of Singapore was nominated for focusing on four key areas for port development: Safe and Secure Port, Efficient Port, Intelligent Port, and Clean and Sustainable Port. MPA is also recognised for its efforts in encouraging the use of LNG as a marine fuel in Singapore and for making the use of MFM mandatory. The Port category attracted 1,200 votes and MPA led the score with 338 votes.

**15<sup>th</sup> Annual HRM Awards 2018 2 March 2018**

HRM Awards are widely considered throughout the industry as the pre-eminent awards for HR and nominations follow extensive research to identify top employers, HR professionals and HR practices in Singapore.

HRM Awards is Singapore's pre-eminent event for celebrating and recognising HR's best and brightest people and practices. HRM Awards is the benchmark for recognising and celebrating the creme de la creme of HR.

MPA is an official finalist for the Best Workplace Culture & Engagement (>500 Employees)

This award recognises the character and personality of an organisation - what makes it unique in terms of its values, traditions, beliefs and how the company has leveraged these to create employee engagement.

Chapter 8



# Strong Partnerships



MPA recognises that its close partnership with key stakeholders – industry players and associations, unions, and Institutes of Higher Learning (IHLs) – plays a vital role in achieving port-organisational excellence. This strong, collaborative relationship is key to sustaining and enriching Maritime Singapore as a global maritime hub of choice.

## Stakeholder Engagement

[SDG 17.17]

MPA's partnerships with its business partners are built on a strong foundation, which is continually reinforced through ongoing communication with them. MPA actively engages its key stakeholders, which include maritime enterprises, port service providers, Institutes of Higher Learning, suppliers and employees. This is evident from MPA's extensive array of Stakeholder Engagement Activities.

As a testament to its unwavering commitment to engaging its stakeholders, Singapore has been named the leading maritime hub, and top international shipping centre by the Menon Economics study and Xinhua-Baltic Index. These

accolades testify to our pro-business stance as we continue with our unflagging and conscientious efforts to forge bonds and strengthen ties with our business partners.

### PEP-SBF Pro-Enterprise Award

The Pro-Enterprise Panel – Singapore Business Federation (PEP-SBF) Awards 2018 recognises the efforts of government agencies in their commitment to stay pro-enterprise and their efforts to engage businesses to provide feedback and suggestions to improve the business environment. MPA had regained top position in the Pro-Enterprise Ranking (PER) Survey 2018 that captures businesses'

perception of the effectiveness of regulatory agencies in building a pro-enterprise regulatory environment in Singapore. MPA had a score of 81.26 per cent and was ranked highest in the Pro-Enterprise Orientation, Customer Responsiveness, Transparency and Compliance Cost components.

In line with continuing efforts to offer value-added services to customers and to be more business-friendly, MPA introduced several pro-enterprise initiatives such as schemes and incentives to provide greater business support, streamlining processes and leveraging technology to increase productivity and enhance service delivery in the areas of ship registration and port operations. Examples of service enhancements to the Singapore Registry of Ships (SRS) include the adoption of electronic certificates for SRS, introduction of 24/7 SRS service hotline and faster turnaround time for issuance of Certificate of Endorsement.

MPA has been communicating its new initiatives to stakeholders and partners at the various industry engagement platforms. In 2018, MPA also developed a three-part infographic series which provides an overview of some of the pro-enterprise initiatives that MPA has implemented or will be implementing in the year ahead. This was cascaded to all business partners to create greater awareness of MPA's pro-enterprise efforts.



Mr Andrew Tan, Chief Executive, MPA received the PEP-SBF Pro-Enterprise Award on MPA's behalf

# Greater Business Support

## 1 Establishing and expanding companies' maritime business

MPA lends assistance to different types of maritime businesses setting up and growing their footprint from Singapore.



The Maritime Sector Incentive (MSI) helps companies build and expand their maritime operations in Singapore.



Qualifying shipping enterprises enjoy automatic withholding tax exemption on qualifying payments for ship financing.

## 2 Enhancing companies' capabilities

MPA offers a suite of programmes designed to help Singapore-based maritime companies train their workforce and develop local talent, as well as to support their productivity efforts.



The Maritime Cluster Fund – Manpower Development co-funds maritime companies in the training of local staff through courses, structured training and experiential learning.



The MPA Global Internship Award enables companies to tap into top university undergraduates through an internship programme sponsored by MPA.



MPA's newly announced Global Talent Programme will enable companies to groom a pipeline of local maritime talent through structured rotations and overseas exposure.



The MCF-Productivity supports maritime companies to streamline business processes or adopt technology solutions for productivity improvement.

## 3 Enhancing business workflows and optimising business costs

MPA has in place initiatives that streamline maritime companies' business workflows and supports their business costs.

### Simplifying billing and payment processes



Paperless and cashless/ chequeless billing services



Waiver of the security deposit/ banker's guarantee requirement for qualifying entities when opening an account with MPA



Scheduled billing alerts for water sales customers

### Maintaining a cost-competitive business environment



Port dues concessions for container ships, bulk carriers, offshore support vessels, vessels handling transshipment vehicles, LNG-fuelled harbour crafts and Green Port Programme registered vessels that engage LNG-fuelled harbour crafts for port operations.



Waiver of the Maritime Welfare Fee for vessels with port stays of not more than five days.





MPA Senior Management showing their appreciation to a seafarer

## Day of Seafarers 2018

In conjunction with the 'Day of Seafarer 2018' held in June, Jurong Port, MPA, PSA, the Singapore Maritime Officers' Union (SMOU), and the Singapore Organisation of Seamen (SOS) jointly presented 600 gift hampers to ships calling at Singapore. The hampers, containing essential daily items, reached about 9,000 seafarers as an appreciation for their contributions to the maritime industry and global economy.

MPA also contributed an annual sum of S\$150,000 to support the work of various seafarers' missions to look out for seafarers' welfare when they call at Singapore's shores. The grant

was distributed to the Apostleship of the Sea, the Danish Seamen's Church, the International Lutheran Seafarers' Mission, the Mission to Seafarers Singapore, and the Norwegian Seamen's Church. The annual grant supports a wide range of welfare services for seafarers, ranging from ship visitations to counselling services and pastoral care at the mission centres.

The SOS also launched a trial for an on-demand shuttle bus service for seafarers working on board ships berthed at the Pasir Panjang Terminal. The service would shuttle seafarers between designated bus stops in Pasir Panjang Terminal and the drop-off point at Pasir Panjang Terminal

Building 1 where SOS's Seacare Drop-in Centre for International Seafarers is located. This is an additional option for seafarers, on top of the scheduled bus service. The on-demand service operates between 2pm and 10pm on weekdays (excluding public holidays) and seafarers can call +65 6778 6518 to reserve a seat.

This is part of the series of recreational activities and events to enhance the shore-based welfare facilities for seafarers, that also included MPA Learning Journeys for seafarers, Appreciation Dinner for partners in seafarers' welfare, and partnering with SOS to enhance the Pasir Panjang Terminal seafarers' centre with free Wi-Fi and on demand transportation.

## Efforts to Develop Future-Ready Seafarers

With advancements in ship technology and increased use of automation and artificial intelligence, it is important for the industry to identify new competencies and skills required to operate the next generation of ships and to ensure a sustainable pipeline of Singaporean seafarers who can keep abreast of such change.

The MPA has signed a Memorandum of Understanding (MoU) with the Singapore Shipping Association (SSA), Singapore Maritime Employers Federation (SMEF), SMOU and Singapore Organisation of Seamen

(SOS) aimed at developing human capital for the seafaring sector.

The tripartite collaboration would focus on identifying new competencies and skills required to operate the next generation of ships; enhancing the current training syllabus; and developing Singapore as a maritime training hub.

The MoU was inked at the 3<sup>rd</sup> Maritime Human Resource (HR) Forum in Singapore on 23 April 2018. The MoU signing was witnessed by over 200 senior management and HR leaders in the maritime sector, industry associations, unions, Institutes of Higher Learning and government agencies.

## SMA and WMI Cadet Selection Interviews

Each year, individuals aspiring to become Deck Officers or Marine Engineer Officers send their applications to the Singapore Maritime Academy (SMA) and Wavelink Maritime Institute (WMI). As part of the admissions process into Singapore Polytechnic, the applicants for the SMA Diploma in Nautical Studies programme had to undergo a rigorous selection process by a panel formed by industry representatives and SMA academic staff held in February 2018 to ensure that the young individuals had the right aptitude and attitude for a seafaring career. In March, applicants for the WMI Tripartite Nautical Training Award also had to undertake a stringent selection process comprising a psychometric assessment followed by interview by the WMI course trainers. In addition, WMI also conducts Family Engagement session for every intake to garner their families' full support.



MPA Chief Executive Mr Andrew Tan (3<sup>rd</sup> from left) at the MOU signing with the Singapore Shipping Association, Singapore Maritime Employers Federation, Singapore Maritime Officers' Union and Singapore Organisation of Seamen

# Strategic Partnerships with Maritime Institutes and Centres of Excellence

MPA's training arm, MPA Academy (MPAA) recognises the importance of fostering strong partnerships with established maritime institutes and centres of excellence to build upon one another's strengths. In its 13<sup>th</sup> year of continuous run, the Academy hosted 14 students of the World Maritime University's Master of Science in Maritime Affairs, with specialisation in port management from 10 countries for a field study visit in Singapore in 2018 to promote

international exchange and transfer of maritime ideas and knowledge. This partnership further strengthened both organisations' work in global maritime leadership development, training and capacity building.

MPAA initiated a scheme in 2014 to appoint maritime leaders and experienced maritime professionals as adjunct fellows and trainers to lecture at the Academy's flagship programmes and to conduct training

courses and workshops for MPA staff. In 2018, MPA Academy appointed industry veteran Mr David Chin, former Executive Director of the Singapore Maritime Foundation as its Senior Adjunct Fellow, as well as Mr Oh Bee Lock, former Head of Group Technology PSA International Pte Ltd and Former Chief Operating Officer of PSA Singapore, as our Adjunct Fellows. Collectively, the Fellows bring with them many years of valuable expertise and experience in a wide range of areas like terminal operations and technology in the port.



In its 13<sup>th</sup> year of continuous run, MPA Academy hosted 14 students of the World Maritime University's Master of Science in Maritime Affairs, with specialisation in port management from 10 countries for a field study visit in Singapore to promote international exchange and transfer of maritime ideas and knowledge



MPA Academy organised the fifth run of the Port Management Programme from 18 June to 22 June 2018. 20 maritime officials comprising port masters, harbour masters and middle managers from across Africa, Asia, Latin America, Middle East and Oceania, attended the programme

MPA has been providing technical co-operation to developing countries with Japan Coast Guard under the Japan-Singapore Partnership Programme for the 21<sup>st</sup> Century framework jointly sponsored by the Singapore Cooperation Programme and Japan International Cooperation Agency. In 2018, MPA and Japan Coast Guard jointly conducted the 11<sup>th</sup> Maritime Safety Management course for 24 senior officials from 16 countries namely the maritime administrations of Bangladesh, Cambodia, India, Indonesia, Kiribati, Lao PDR, Malaysia, Myanmar, Nepal, the Philippines, Solomon Islands, Sri Lanka, Timor-Leste, Tonga, Tuvalu, and Vietnam at the MPAA. The course equipped participants with a better awareness of maritime safety management within maritime administrations and related government agencies.

As MPA's alumni community continues to grow, MPAA organises gatherings and events that provide the alumni with meaningful, intellectual and networking opportunities. In 2018, MPA organised an alumni gathering in conjunction with Singapore Maritime Week 2018. Some 18 senior maritime officials from eight countries spanning Asia, Africa, and Oceania attended the event. The members had the opportunity to participate in key maritime events like the 2<sup>nd</sup> Maritime Administrators' Forum, 12<sup>th</sup> Singapore Maritime Lecture, Singapore Maritime Technology Conference, and the



The International Law of the Sea course conducted by the Centre for International Law of the National University of Singapore, provided participants with the background necessary to understand the international law of the sea and the regulation of international shipping

Singapore Maritime Institute Forum on next-generation maritime energy.

To enhance its outreach to the alumni, MPAA also produced and disseminated two issues of the biannual e-Newsletter titled Horizon in April and November 2018, which showcased its work, as well as stories and interviews with MPA alumni and maritime personalities.

Aside from training programmes, MPAA regularly organises thought leadership public lectures by prominent maritime industry leaders and academics to create greater awareness of the industry. In 2018, MPAA organised four talks covering a wide range of topics including maritime outlook, challenges and transformation in the maritime industry, next-generation multipurpose port, leveraging on technology in the ports and blockchain.

To address current and future trends in the maritime sector, MPA kick-started the year with the Maritime Outlook

Forum in January on insight-sharing of the year ahead. The event saw three speakers share their insights on the prospects for global trade and globalisation, the outlook for seaborne trade in key commodities vis-à-vis fleet development and the trends regarding container shipping's trade, growth and consolidation respectively. 70 CEOs and CFOs of leading maritime companies attended the forum.

MPA also organised a Fireside Chat in March with Mr Ooi Boon Hoe, Chief Executive Officer of Jurong Port (JP) and Senior Adjunct Fellow of the MPA Academy, as well as Mr Terence Moo, Chief Strategy Officer at JP. They shared JP's journey of transformation and how it would tap on opportunities for future growth as it journeys towards becoming a Next-Generation Multipurpose Port.

Given the growing drive for digitalisation in the maritime industry, it is imperative for the industry to

come together regularly to discuss and learn about the possibilities and risks involved. MPA Academy organised the inaugural Maritime Blockchain Forum in June that brought together leading practitioners in blockchain to share blockchain initiatives and learning points to encourage experimentation and collaboration.

In September, Mr Koji Sekimizu, Secretary-General Emeritus of the International Maritime Organization (IMO) and S. Rajaratnam School of International Studies (RSIS)-MPA Distinguished Visiting Fellow, was invited to share his views on what he saw as the key challenges and forces of transformation faced by stakeholders in the global maritime and shipping industry over the next 10 years. Ambassador Ong Keng Yong, Executive Deputy Chairman of the S. Rajaratnam School of International Studies, was the moderator for the lecture.

To document institutional knowledge, the Academy held oral history interviews with key maritime pioneers and maritime personalities. In 2018, MPAA completed four oral history interviews with key maritime personalities including Mr Tan Puay Hin, Chief Executive of the Singapore Logistics Association and Former Senior Advisor for Group Port Design & Connectivity of PSA International; Mr Patrick Phoon, Former Deputy Managing Director, Evergreen Shipping Agency (Singapore) Pte Ltd; Mr Michael Chia, Consultant of Impact Energy LLC and Former Chairman and Managing Director (Marine and Technology), Keppel Offshore; and Mr Heng Chiang Ngee, Former Executive Director, Singapore Maritime Institute. Their insights provided an intimate account of maritime milestones and



Secretary-General Emeritus of the International Maritime Organization Mr Koji Sekimizu sharing his views

events covering the early development of Singapore’s port, growth of the maritime cluster, construction of the ports, offshore and marine, as well as the maritime industry’s partnerships with tertiary institutes.

### The ASEAN Maritime Transport Working Group

The ASEAN Maritime Transport Working Group (MTWG) is a platform where discussions on maritime-related regional cooperation initiatives under the Kuala Lumpur Transport Strategic Plan (KLTSPP) 2016-2025 takes place, with the aim to achieve greater connectivity, efficiency, safety and sustainability in maritime transport within ASEAN. ASEAN Dialogue Partners (for instance, Japan, China, Republic of Korea), the IMO and representatives from the industry are regular participants at ASEAN MTWG meetings, apart from ASEAN member state delegations.



MPA hosted the 36th ASEAN Maritime Transport Working Group Meeting, an important platform for discussion and regional collaboration among the ASEAN member states

In 2018 under Singapore’s chairmanship, MTWG concluded several initiatives under the KLTSPP 2016-2025, more notably the ASEAN Memorandum of Understanding on the Improvement of Safety Standards and Inspection for Non-Convention Ships with ASEAN Member States, Guidelines for Safety Standards for Non-Convention Ships, Search and Rescue Standards Operation Procedures, and ASEAN Regional Oil Spill Contingency Plan.

# Stakeholder Engagement Activities in Financial Year 2018

[GRI 102-40, 102-42, 102-43, 102-44]

MPA identifies and selects stakeholder groups based on both its impact on these groups, as well as the impact that these groups have on it.

Stakeholder Category	Stakeholders	Platforms
Maritime Enterprise	Ship Owners/ Operators/ Agencies, Ship Management Companies	<ul style="list-style-type: none"> <li>• Singapore Maritime Lecture</li> <li>• International Safety@ Sea Conference &amp; Exhibition</li> <li>• Sustainability Workshop</li> <li>• Ship Managers Roundtable</li> <li>• ITM Engagement Series Jobs &amp; Skills Workshop</li> <li>• Global Maritime Forum</li> <li>• Company Visits</li> </ul>
	Maritime Service Providers	<ul style="list-style-type: none"> <li>• MPA Flag State Control (FSC) - Industry Dialogue Session</li> <li>• Industry Feedback Session with SSA</li> <li>• SRS Forum</li> <li>• Maritime Capital Forum</li> </ul>
Non-Enterprise	Shipmasters	<ul style="list-style-type: none"> <li>• Safety briefings to Regional Ferry Masters and Officers</li> </ul>
	Seafarers	<ul style="list-style-type: none"> <li>• Certificate of Competency (Special Limit) Graduation Ceremony</li> <li>• International Sportsweek for Seafarers</li> <li>• IMO Day of the Seafarer</li> <li>• Appreciation Dinner for Seafarers and Partners</li> <li>• Tripartite Maritime Manpower Taskforce for Seafaring</li> <li>• MPA Seafarer Welfare Committee</li> <li>• MPA Singapore Stranded Seafarers Fund Committee</li> <li>• Maritime Labour Convention Tripartite Working Group</li> </ul>
	Pleasure/ Harbour Craft Owners	<ul style="list-style-type: none"> <li>• Safety Briefings to Pleasure Craft Community &amp; Harbour Craft Owners</li> <li>• Harbour Craft Forum</li> <li>• MPA-Harbour Craft Safety Working Group</li> <li>• MPA-Association of Regional Ferry Operators Safety Working Group</li> </ul>
Partner	Port Terminal Operators	<ul style="list-style-type: none"> <li>• Management Lunch Meetings with Port Terminal Operators</li> <li>• Next Generation Port Security Working Group Meeting</li> <li>• National Ports and Terminals Security Committee</li> </ul>
	Service Providers for Port Services	<ul style="list-style-type: none"> <li>• Bunker Forum</li> <li>• Bunker Surveying Dialogue Session</li> <li>• Singapore International Bunkering Conference and Exhibition (SIBCON)</li> <li>• Shipboard and Pilotage Attachment Programme for Vessel Traffic Officers</li> <li>• Hydrographic Surveyors' Dialogue</li> </ul>

Stakeholder Category	Stakeholders	Platforms
Local Communities	<b>Government Agencies</b>	<ul style="list-style-type: none"> <li>• Next Generation Port Security Working Group</li> <li>• Joint Oil Spill Tabletop and Full Deployment Exercise</li> <li>• Maritime Security Forum</li> </ul>
	<b>Institutes of Higher Learning</b>	<ul style="list-style-type: none"> <li>• Singapore Maritime Dialogue</li> <li>• Maritime Public Leaders' Programme</li> <li>• MPA Global Internship Programme</li> </ul>
	<b>Unions and Private Organisations</b>	<ul style="list-style-type: none"> <li>• Union Management Lo-Hei Lunch with CE</li> <li>• Industry Consultation</li> <li>• Sea Transport Industry Transformation Map (ITM) Workshops and Seminars</li> </ul>
	<b>Public</b>	<ul style="list-style-type: none"> <li>• Singapore Maritime Trails</li> <li>• MPA Learning Journeys</li> <li>• Amazing Maritime Challenge</li> <li>• Singapore Maritime Week Exhibition</li> <li>• Singapore Maritime Gallery</li> </ul>
<b>Business Partners/Vendors</b>	<b>Contractors and Suppliers</b>	<ul style="list-style-type: none"> <li>• Vendor Engagement Event</li> <li>• Meetings/Technical Briefings</li> </ul>
<b>Internal</b>	<b>Employees</b>	<ul style="list-style-type: none"> <li>• MPA Townhall</li> <li>• MPA Values Week</li> <li>• WOW Week</li> <li>• Staff Appreciation Day</li> <li>• Appreciation Hour for Staff</li> <li>• Fun-Fit Friday</li> </ul>

Chapter 9



# Choice Employer



To prepare MPA for the transformation taking place in the industry and the operating environment, MPA embarked on a strategic organisational review in 2018. This encompassed a review of its structure, operating models and people strategies as part of MPA's Strategic Workforce Plan, to ensure it operates with the Right Organisation, Right People and Engaged People.

## Right Organisation

MPA defines the Right Organisation as one possessing necessary resources and skills to meet MPA's critical business objectives and strategies for the future.

Leadership development plays a crucial role in building a new generation of leaders to drive MPA forward into the future. Based on the MPA leadership competencies, it has customised leadership programmes to cater to different levels of leaders in MPA, covering supervisors, managers and directors. The programmes aim to equip the future leaders of MPA with competencies and skills, empowering them to motivate and bring their teams along to handle demands of the future.

To further sharpen MPA's organisational performance, MPA reviewed its Performance Management system to increase robustness and ensure that all divisions' outcomes are aligned with its organisational performance measures. MPA introduced an enhanced e-Performance Management System, as well as a revised Performance

Management Framework, aimed to drive clarity of each officer's performance to the achievement of targets derived from corporate and divisional objectives. Within this Performance Management Framework, the MPA My Development Plan (MDP) was introduced to facilitate discussions between an officer and his manager, with regards to the officer's personalised learning ambitions and plans. In order to assimilate and familiarise officers with this new process, MPA launched the Managing My Performance and Career Development training, to empower officers with tools and guides to drive their own growth and learning journey.

Amidst industry and technological developments, MPA also aims to prepare itself to support its future mode of operations. To achieve this, it launched the first phase of a review of the core capabilities of officers working on core operations work. Training plans developed to build these future core competencies and training for the officers would continue in 2019.

# Right People

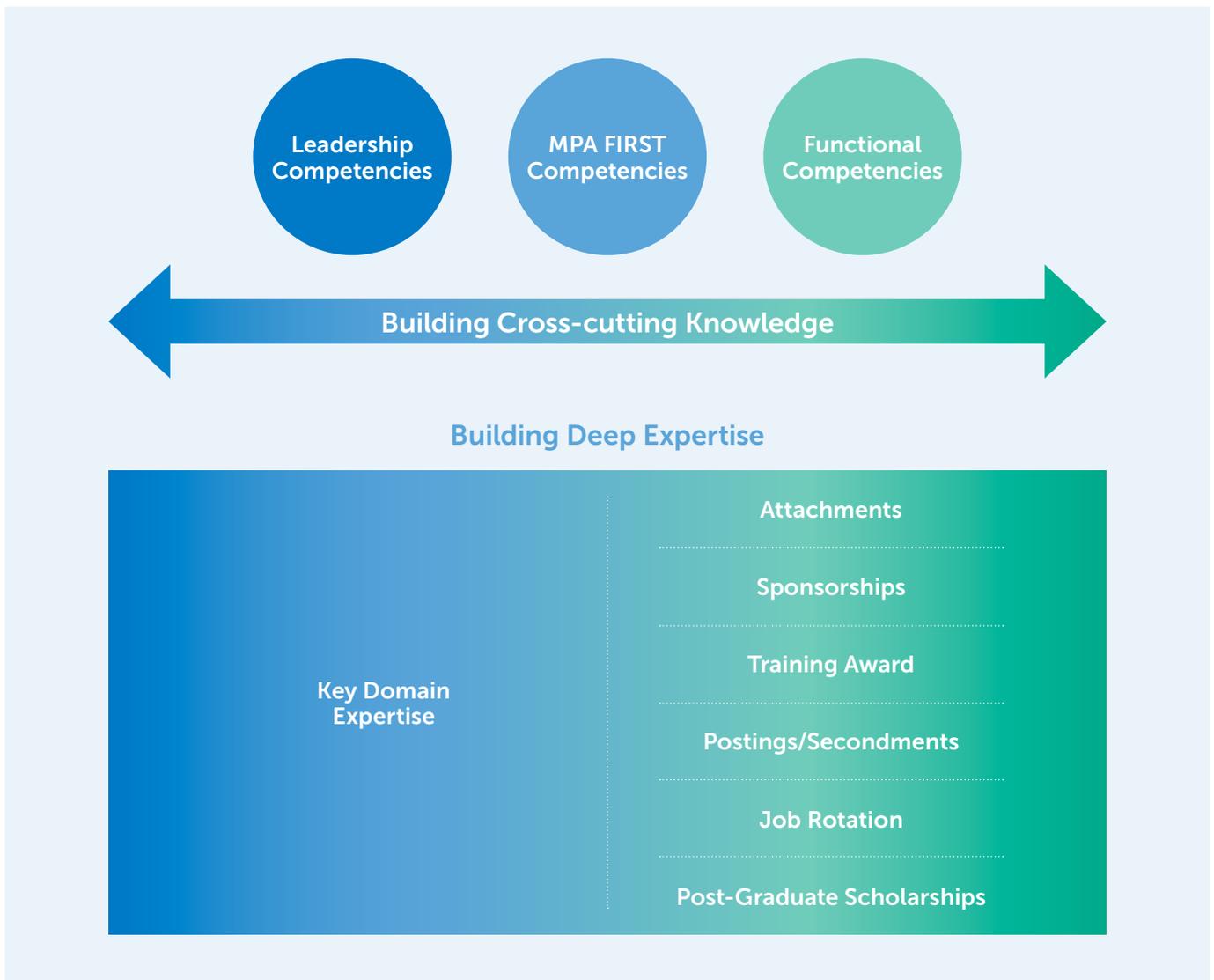
In view of the rapid technological advancements in the maritime industry, MPA implemented the Technology Learning Roadmap to build and upskill digital competencies of all officers. Courses to drive tech awareness, and utilisation of data analytics, were introduced to ensure that MPA and its people are equipped with the knowledge and skills to leverage on upcoming new technologies, and innovate to remain competitive and future-ready.

In 2018, MPA focused on refining a core, common set of competencies that govern the behaviours and drive the skills of each MPA staff, to ensure that they are future-ready.

A review of an enhanced set of MPA FIRST Competencies was completed, and 2019 would see the continued cascading of these competencies to all employees in the form of identified learning courses, to build up each core competency across MPA.

To recognise and support the development of MPA specialised personnel, Specialist Tracks were launched in July 2018, catering for MPA specialised roles for marine surveyors, hydrographers, port chemists and engineers. This focused on building deep expertise on domain-specific skillsets, and allowed for an alternate career pathway from a management track.

Complementing MPA's existing suite of classroom training would be LEARN.gov.sg, a mobile learning application platform. In November 2018, MPA participated in the Civil Service College's beta launch of LEARN.gov.sg to enable officers to access a range of learning content via a digital learning platform, in bite-sized format. With topics ranging from leadership, effective communication and digital mind-set, officers were able to pick up new knowledge and skills on the go, hence inculcating a learning and digital mind-set within MPA. In addition, it served to make learning more diverse and accessible especially for shift workers.



# Engaged People

[GRI 102-41]

Underpinning these strategic thrusts is a continuous Employee Engagement effort. Engagement efforts such as Townhall, Staff Appreciation Day, MPA Service Day and Engagement Sessions with senior management continued to be organisational mainstays to enable open communication and appreciation of our colleagues.

In 2018, MPA also successfully negotiated the MPA's Employees' Agreement with the Amalgamated Union of Statutory Board Employee (AUSBE) with several key enhancements such as increase in shift allowances, to continue competitiveness to overall rewards. As of December 2018, 57 per cent of MPA's workforce are AUSBE members.

## Staff Training

MPA Academy, the training arm of MPA plays a key role in coordinating and driving technical training of MPA staff to enhance their competencies and to be better equipped to perform their jobs. In 2018, some 350 MPA officers comprising vessel traffic officers, marine officers, marine surveyors, port inspectors, and hydrographers underwent training to sharpen their competencies.

In 2018, new courses were also organised. Among these were the

LNG Bunkering Course for the port operations and shipping officers where they learnt the fundamental knowledge of LNG bunkering operations, maintenance of equipment, emergency operations and safety, the Ship Structure and Stability Course where participants gained knowledge about structural design, aspects of strength and corrosion, as well as the International Law of the Sea Course that provided officers with the background necessary to understand the international law of the sea and the regulation of international shipping.

## Commitment to Charity Efforts

### Fundraising for Community Chest and MPA's Adopted Charities

MPA and the maritime community joined hands to raise more than S\$290,000 for the Community Chest and MPA's two adopted charities; The Salvation Army – Kids in Play Programme (KIP) and REACH Family Service Centre, at the third edition of MPA's biennale charity golf event.

About 140 MPA staff and members of the industry from 35 organisations participated in the charity golf event. The timing of the fundraising coincides with the 13<sup>th</sup> Singapore

Maritime Week and demonstrated the maritime community's contributions back to society.

Like previous fund raising efforts, all the money raised in the event went to MPA's adopted charities and Community Chest while MPA underwrites the entire cost of fund raising. With the kind addition of S\$100,000 from the Singapore Totalisator Board (Tote Board) under its 30<sup>th</sup> Anniversary celebratory scheme, the total sum raised amounted to S\$297,800.

KIP is an outreach programme targeted at children with a parent in prison and their next-of-kin, with the aim of reconnecting families even though they are staying apart. The REACH Family Service Centre, is a one-stop professional social service agency commissioned by the Ministry of Social and Family Development to serve families and individuals in Bishan, Sin Ming, Shun Fu and Thomson communities. It offers family, counselling, youth and senior services. MPA adopted KIP in 2014 and REACH Family Service Centre in 2016.

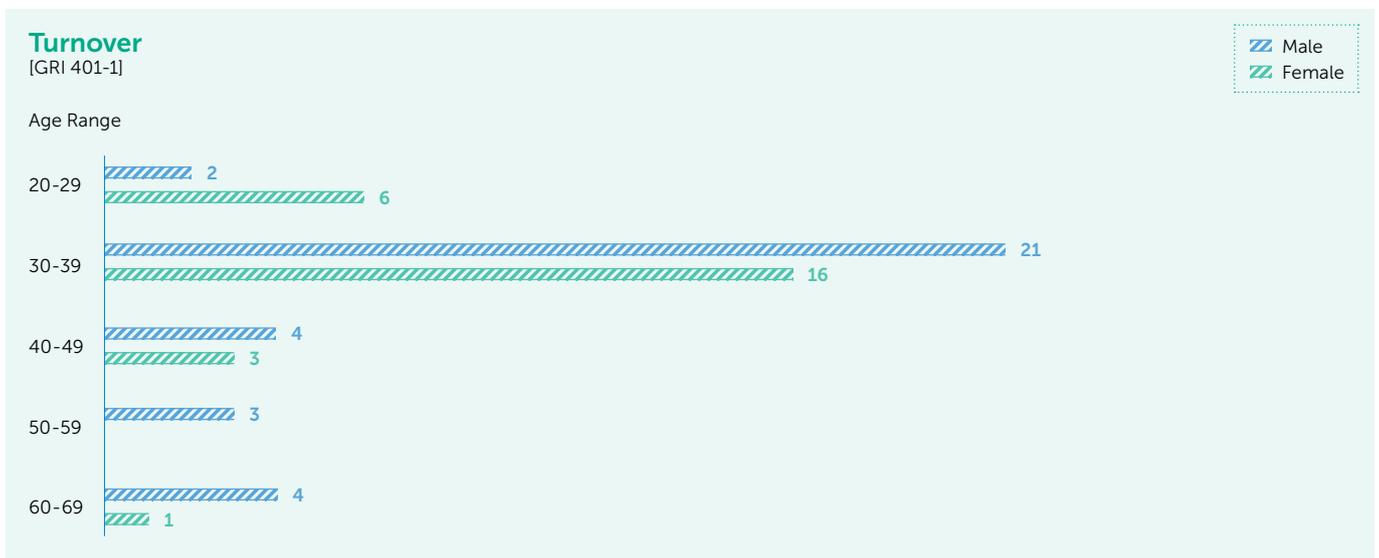
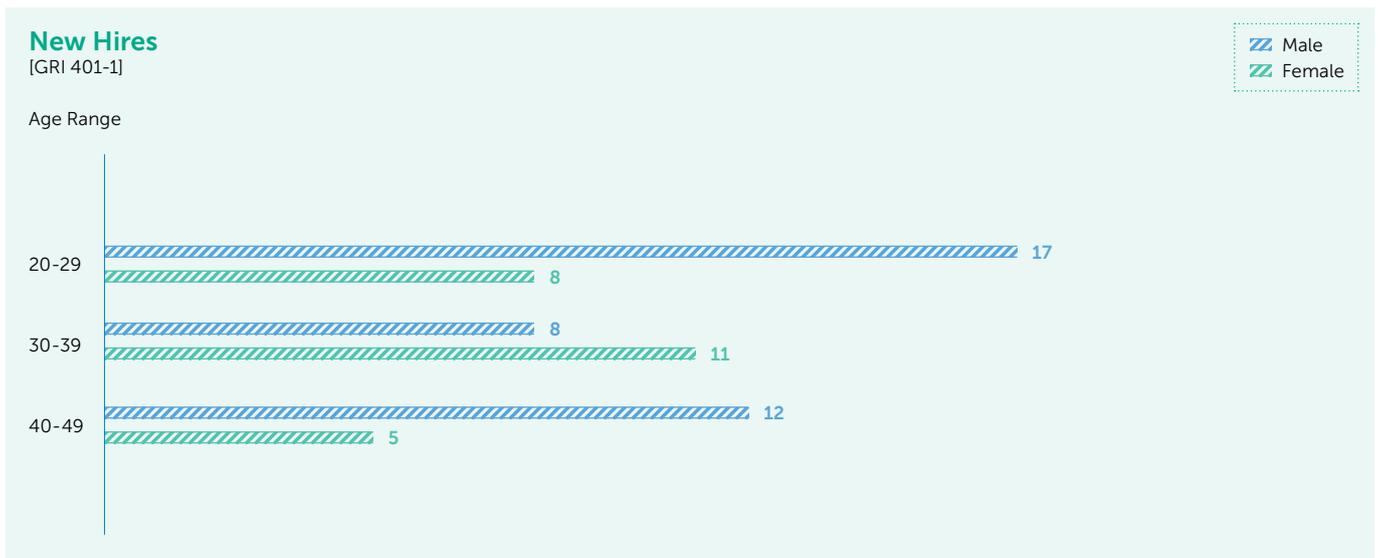
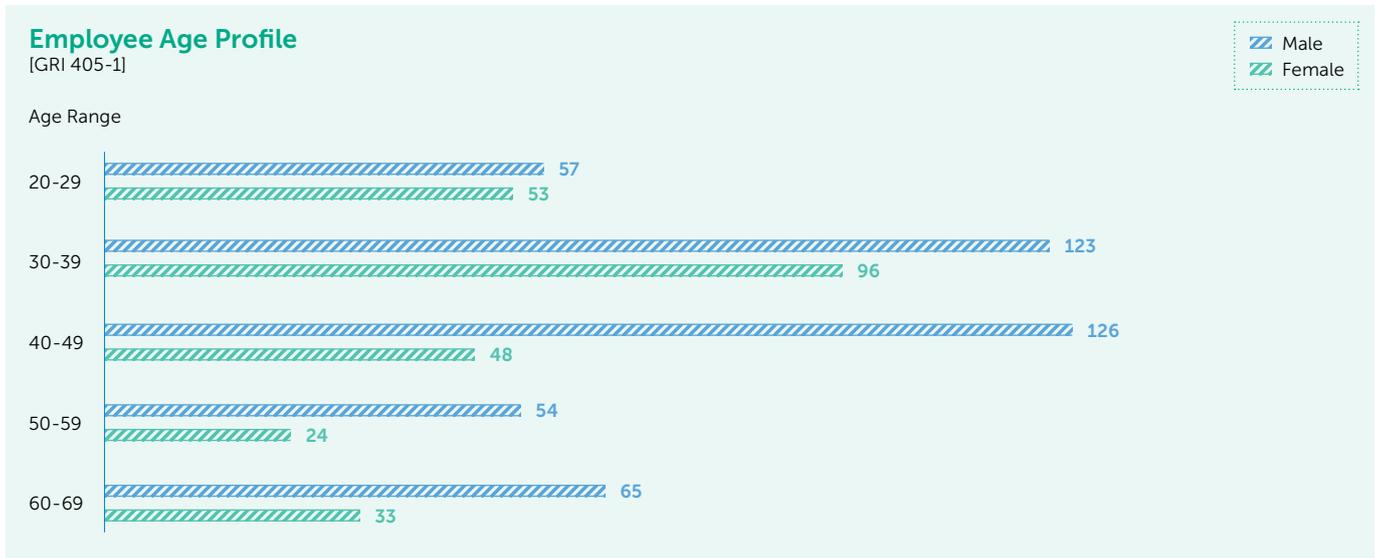


Exploring digital tools hands-on in the Technology Awareness Programme



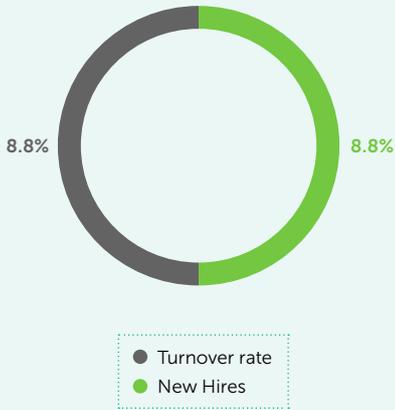
MPA Chief Executive Mr Andrew Tan on a field trip with MPA Port inspectors

## 2018 Employee Demographics



### New Hires and Turnover Rate

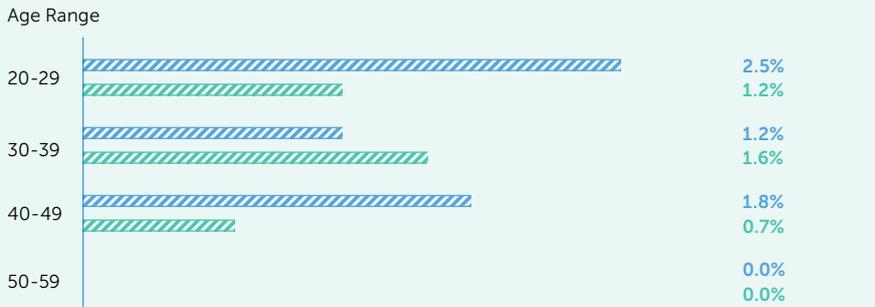
[GRI 401-1]



### Rate of New Hires by Gender and Age Group

[GRI 401-1]

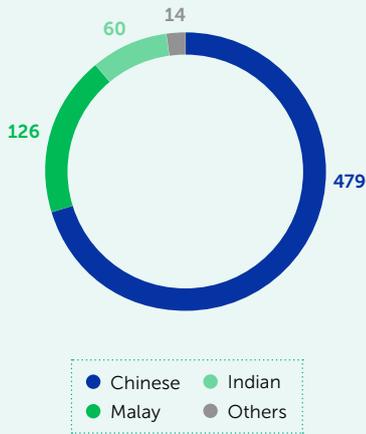
Staff Strength as at 31 December 2018: 679



(defined by no. of new hires/Staff Strength as at end of current year)

### Employee Strength by Ethnicity

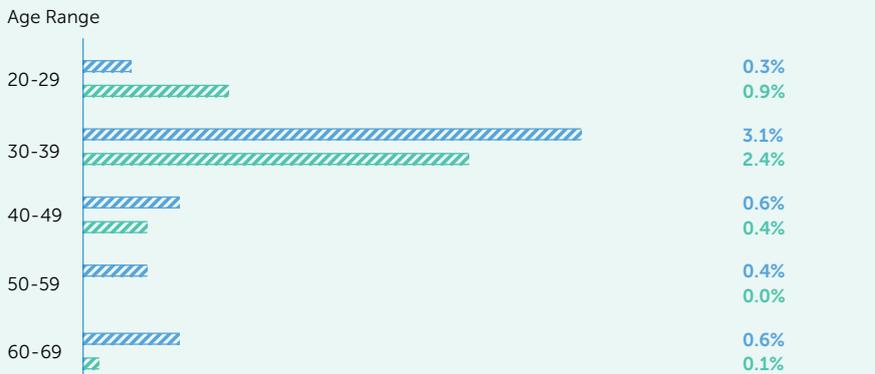
[GRI 405-1]



### Rate of Attrition by Gender and Age Group

[GRI 401-1]

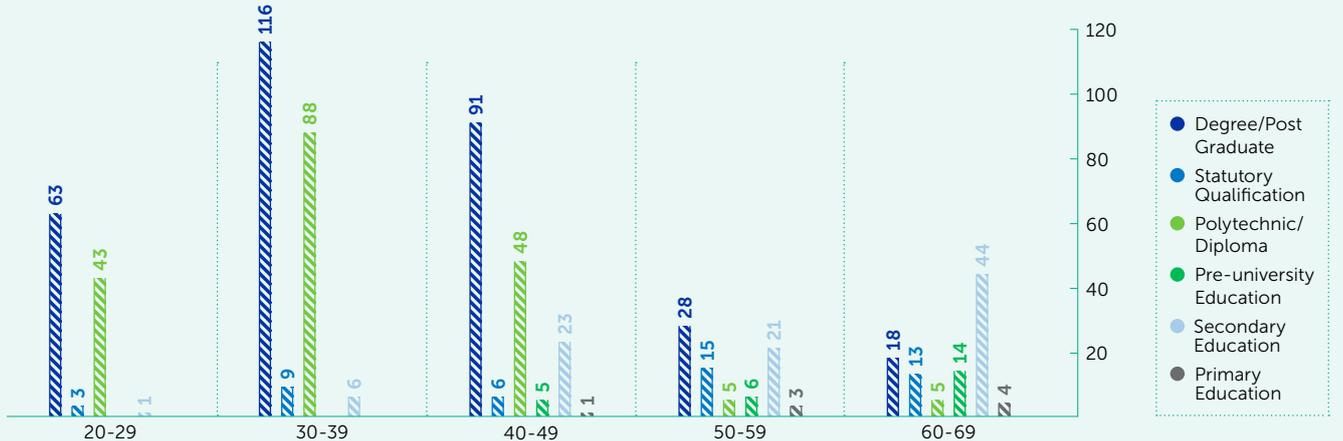
Staff Strength as at 31 December 2018: 679



(defined by no. of voluntary attrition/Staff Strength as at end of current year)

### Workforce by Education and by Age Group

[GRI 405-1]



# Glossary

Term & Abbreviation	Definition
<b>Amalgamated Union of Statutory Board Employees (AUSBE)</b>	The AUSBE looks after the interest of employees across 12 statutory boards, including MPA
<b>Classification Society</b>	An organisation that publishes its own classification rules in the design, construction and survey of ships
<b>Global Compact Network Singapore (GCNS)</b>	The local chapter of the United Nations Global Compact (UNGC) promoting the Corporate Social Responsibility (CSR) movement
<b>Global Internship Award</b>	The MPA Global Internship Award (GIA) is a fully sponsored internship programme that gives students an opportunity to intern with international maritime companies in Singapore and around the world
<b>Global Reporting Initiative (GRI)</b>	The GRI is a non-profit organisation that promotes the use of sustainability reporting in organisation to achieve sustainable development and operations
<b>Greenhouse Gas (GHG)</b>	Greenhouse gases are gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation
<b>Gross Tonnage (GT)</b>	This is a non-linear measure of a ship's overall internal volume
<b>Information Sharing Centre (ISC)</b>	The ISC is the executive unit of ReCAAP based in Singapore
<b>Integrated Reporting (IR)</b>	A concise corporate report outlining how a company organised itself to create economic value over time
<b>International Integrated Reporting Council (IIRC)</b>	A coalition of government, business and accounting professionals to develop a globally-accepted Integrated Reporting framework
<b>International Maritime Centre (IMC)</b>	A global maritime hub that provides comprehensive and high quality maritime services and support
<b>International Maritime Organization (IMO)</b>	A specialised United Nations agency that sets the global regulatory standard for the safety, security and environmental performance of international shipping
<b>Jurong Point (JP)</b>	A Singapore port operator owned by Jurong Town Corporation
<b>Littoral States</b>	Coastal states with land territory adjacent to a particular maritime area
<b>Marinet</b>	Marinet is an Internet-based e-commerce system owned by the Maritime and Port Authority of Singapore for the maritime community
<b>Maritime Cluster Fund (MCF)</b>	A fund created by MPA to facilitate the growth of Singapore's maritime industry in the key areas of business development, manpower development and productivity improvement
<b>Maritime Outreach Network (MaritimeONE)</b>	A manpower initiative by Maritime stakeholders to raise awareness on the industry and the scholarship and career opportunities available to students
<b>Maritime Singapore Green Initiative (MSGI)</b>	A voluntary initiative started by MPA in 2011 to promote clean and sustainable shipping in Singapore
<b>MARPOL Convention</b>	The International Convention for the Prevention of Pollution from Ships is the main IMO legal instrument to prevent pollution of the marine environment from accidents or operational incidents

Term & Abbreviation	Definition
<b>Mass Flow Metering (MFM)</b>	A device that measures the flow rate through a tube by mass per unit time
<b>Liquefied Natural Gas (LNG)</b>	A natural gas that has been converted to liquid form for ease of storage or transport
<b>Next-Generation Port (NGP)</b>	A new energy efficient and sustainable port that will be developed in Tuas by 2030
<b>Non-Governmental Organisation (NGO)</b>	An organisation that does not belong to the government and does not operate like a conventional for-profit business
<b>Port of Singapore</b>	The collective facilities and terminals that conduct maritime trade and handle shipping in Singapore
<b>Port State Control (PSC)</b>	The inspection of foreign ships by a national port to verify that the competency of the personnel, and the condition of the ship and its equipment comply with international conventions, and that the vessel is manned and operated in compliance with applicable international maritime law
<b>Pro-Enterprise Ranking (PER)</b>	An annual survey commissioned by the Pro-Enterprise Panel (PEP) to assess the pro-enterprise performance of government regulatory agencies in Singapore
<b>Regional Co-Operation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP)</b>	A regional government-to-government agreement that came into effect in 2006 with the purpose of promoting and enhancing cooperation against piracy and armed robbery against ships in Asia
<b>Safety@Sea Singapore</b>	Safety@Sea Singapore is an industry-wide effort to increase awareness of safe practices and inculcate a safety-first culture at sea
<b>Shipbroking</b>	Shipbroking is a financial service which forms part of the global shipping industry
<b>Singapore Maritime Institute (SMI)</b>	A joint effort by Maritime Port Authority, the Agency for Science, Technology and Research (A*STAR) and the Economic Development Board (EDB) in partnership with local Institutes of Higher Learning (IHLs) to develop strategies/programmes related to the academic, policy and R&D aspects of the maritime industry
<b>Singapore Registry of Ships (SRS)</b>	The Singapore ship registry ranked among the top five largest registries in the world
<b>Singapore Shipping Association (SSA)</b>	A Singapore maritime association that strives to enhance the competitiveness of Singapore as an international maritime centre
<b>Stevedore</b>	A person employed at a dock to load and unload ships
<b>Throughput</b>	The amount of material or items passing through a system of process
<b>Twenty-foot Equivalent Unit (TEU)</b>	A standard unit for describing a ship's cargo carrying capacity or a shipping terminal's cargo handling capacity
<b>Vessel Traffic Management System (VTMS)</b>	VTMS integrates all the assets relevant to a safe and secure management of Maritime Operations ranging from marine environment protection, traffic management to law enforcement and security at sea

# MPA's Approach to Integrated Reporting

In this fifth edition of MPA's Integrated Report IR, we have stayed the course on our IR journey. Our IR journey has enabled MPA to better understand, and refine our value creation process, thus generating greater value creation.

Being the final edition in a series of Sustainability/Integrated Reports, conceptualised with the inaugural edition in 2014, this report illustrates the significant progress that MPA has made in our sustainability journey. Many initiatives, developed through

the years, have brought tangible benefits towards the sustained relevance and competitiveness of the maritime industry. In keeping with this spirit of sustainability, MPA continues to launch new initiatives to drive the next phase of growth for the industry amidst continuing disruption and change.

The report has successfully completed the Materiality Disclosure Service. The content elements of the IR framework are articulated in the table below:

Content Elements	Where in MPA's Report
<b>A. Organisational Overview and External Environment</b>	Chairman's Message Chief Executive's Message About MPA 2018 Performance Summary
<b>B. Business Model</b>	MPA's Approach to Sustainability Mapping Key Material Issues
<b>C. Risks and Opportunities</b>	Mapping Key Material Issues Chapter 7 Culture of Excellence – Corporate Governance
<b>D. Strategy and Resource Allocation</b>	Chief Executive's Message MPA's Approach to Sustainability Mapping Key Material Issues
<b>E. Performance</b>	2018 Performance Summary FY2018 Financial Report (published separately)
<b>F. Outlook</b>	Chairman's Message Chief Executive's Message
<b>G. Basis of Preparation and Presentation</b>	About this Report Mapping Key Material Issues Statutory Board Financial Reporting Standards (FY2018 Financial Statements)

Thank you for your continued support on our sustainability journey. We look forward to receiving feedback on any areas that would be better able to serve your needs.

# GRI Standards Content Index



For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report.

## Foundation

### GRI 101: Foundation 2016

MPA has applied the GRI's Reporting Principles for defining report content and quality in preparing its sustainability report in accordance with the GRI Standards: Comprehensive option.

## General Disclosures

Disclosure	Reference(s) or Reasons for Omission
<b>GRI 102: General Disclosures 2016</b>	
<b>Organisational Profile</b>	
102-1 Name of the organisation	About MPA (Pg 14)
102-2 Activities, brands, products, and services	About MPA (Pg 14)
102-3 Location of headquarters	About MPA (Pg 14)
102-4 Location of operations	About MPA (Pg 14)
102-5 Ownership and legal form	About MPA (Pg 14)
102-6 Markets served	About MPA (Pg 14)
102-7 Scale of the organisation	About MPA (Pg 14) Choice Employer > Our People (Pg 91) MPA's Financial Report 2018
102-8 Information on employee and other workers	Choice Employer > Our People (Pg 91)
102-9 Supply Chain	Strong Partnerships > Supplier Management (Pg 82)
102-10 Significant changes to the organisation and its supply chain	There were no significant organisational changes during the reporting period
102-11 Precautionary principle and approach	Mapping Key Material Issues (Pg 18) Culture of Excellence (Pg 66)
102-12 External initiatives	Safe, Efficient & Sustainable Global Hub Port (Pg 23) Safeguard Strategic Maritime Interests & An Influential Voice (Pg 42-45)
102-13 Membership of associations	Safe, Efficient & Sustainable Global Hub Port (Pg 23-33) Safeguard Strategic Maritime Interests & An Influential Voice (Pg 42-45)
<b>Strategy</b>	
102-14 Statement from senior decision-maker	Chairman's Message (Pg 4-5) Chief Executive's Message (Pg 6-7)
102-15 Key impacts, risks, and opportunities	Chairman's Message (Pg 4-5) Chief Executive's Message (Pg 6-7) Mapping Key Material Issues (Pg 18) Safe, Efficient & Sustainable Global Hub Port (Pg 22-33) Vibrant IMC Eco-system (Pg 35-39)

## General Disclosures

Disclosure	Reference(s) or Reasons for Omission	
<b>Ethics and Integrity</b>		
102-16	Values, principles, standards, and norms of behavior	Culture of Excellence > FIRST Values (Pg 67)
102-17	Mechanisms for advice and concerns about ethics	Culture of Excellence > FIRST Values (Pg 67)
<b>Governance</b>		
102-18	Governance structure	Board of Directors/Board Committees (Pg 8-9) Senior Management (Pg 10-11) MPA's Organisation Structure (Pg 12-13)
102-19	Delegating authority	Board of Directors > Board Committees (Pg 8)
102-20	Executive-level responsibility for economic, environmental, and social topics	Senior Management (Pg 10) MPA's Organisation Structure (Pg 12)
102-21	Consulting stakeholders on economic, environmental, and social topics	Strong Partnerships > Stakeholder Engagement Activities (Pg 81-87)
102-22	Composition of the highest governance body and its committees	Board of Directors/Board Committees (Pg 8-9)
102-23	Chair of the highest governance body	Board of Directors/Board Committees (Pg 8-9) The Chairman of the MPA Board, the highest governance body, is a non-executive officer for MPA
102-24	Nominating and selecting the highest governance body	Board of Directors > Board Committees (Pg 8)
102-25	Conflicts of interest	Culture of Excellence > FIRST Values (Pg 67)
102-26	Role of highest governance body in setting purpose, values, and strategy	Board of Directors > Board Committees (Pg 8)
102-27	Collective knowledge of highest governance body	Sustainability issues have been discussed at the Board level during the reporting period, raising awareness towards economic, environmental and social issues
102-28	Evaluating the highest governance body's performance	Information unavailable – MPA does not currently measure this
102-29	Identifying and managing economic, environmental, and social impacts	Mapping Key Material Issues (Pg 18) Culture of Excellence
102-30	Effectiveness of risk management processes	Culture of Excellence
102-31	Review of economic, environmental, and social topics	Mapping Key Material Issues (Pg 18)
102-32	Highest governance body's role in sustainability reporting	Mapping Key Material Issues (Pg 18) Culture of Excellence (Pg 65)
102-33	Communicating critical concerns	Culture of Excellence (Pg 65)
102-34	Nature and total number of critical concerns	Culture of Excellence > Zero Tolerance for Corruption (Pg 65)

## General Disclosures

Disclosure		Reference(s) or Reasons for Omission
102-35	Remuneration Policies	Choice Employer > Right Organisation (Pg 91)
102-36	Process for determining remuneration	Choice Employer > Right Organisation (Pg 91)
102-37	Stakeholders' involvement in remuneration	Choice Employer > Right Organisation (Pg 91)
<b>Stakeholder Engagement</b>		
102-40	List of stakeholder groups	Strong Partnerships > Stakeholder Engagement Activities (Pg 88)
102-41	Collective bargaining agreements	Choice Employer > Engaged People (Pg 93)
102-42	Identifying and selecting stakeholders	Stakeholders are entities or individuals that can reasonably be expected to be significantly affected by MPA's activities, or whose actions can reasonably be expected to affect the ability of MPA to successfully implement its strategies and achieve its objectives. In determining key stakeholders, MPA considers their interest in sustainability, potential influence, as well as the extent to which MPA can impact them  Strong Partnerships > Stakeholder Engagement Activities (Pg 88)
102-43	Approach to stakeholder engagement	Strong Partnerships > Stakeholder Engagement Activities (Pg 88)
102-44	Key topics and concerns raised	Strong Partnerships > Stakeholder Engagement Activities (Pg 88)
<b>Reporting Practice</b>		
102-45	Entities included in the consolidated financial statements	All entities included in MPA's consolidated financial statements are covered by this report.  MPA's Financial Report 2018 > Notes to the Financial Statements (Investments in subsidiary and associated companies)
102-46	Defining report content and topic boundaries	Mapping Key Material Issues (Pg 18)
102-47	List of material topics	Mapping Key Material Issues (Pg 18)
102-48	Restatements of information	There have been no restatements from MPA's previous reports
102-49	Changes in reporting	There have been no changes to the material issues and topic boundaries from MPA's previous report
102-50	Reporting period	About this Report > Inside Front Cover
102-51	Date of most recent report (if any)	About this Report > Inside Front Cover
102-52	Reporting cycle	About this Report > Inside Front Cover
102-53	Contact point for questions regarding the report	About this Report > Inside Front Cover
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Comprehensive option
102-55	GRI content index	GRI Standards Content Index (Pg 99-113)
102-56	External assurance	About this Report > Inside Front Cover

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>Economic Performance</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 18)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 201: Economic Performance 2016</b>		
201-1	Direct economic value generated and distributed	MPA's Financial Report 2018
201-2	Financial implications and other risks and opportunities due to climate change	Information unavailable – MPA has not formally assessed the financial implications of climate change to the organisation
201-3	Defined benefit plan obligations and other retirement plans	Not applicable – benefit plan financial obligations are not relevant in the local context
201-4	Financial assistance received from government	This disclosure has been omitted as it is not applicable
<b>Market Presence</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 18)
103-2	The management approach and its component	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 202: Market Presence 2016</b>		
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Not applicable – the Ministry of Manpower (MOM) does not prescribe minimum wages for all workers in Singapore, whether local or foreign
202-2	Proportion of senior management hired from the local community	All of our Senior Management are hired locally from Singapore Senior Management (Pg 10)
<b>Indirect Economic Impact</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 18)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>GRI 203: Indirect Economic Impact 2016</b>		
203-1	Infrastructure investments and services supported	2018 Performance Summary (Pg 15) Safe, Efficient & Sustainable Global Hub Port (Pg 23-33) Vibrant IMC Eco-system (Pg 35-39) Maritime Knowledge & Innovation Hub (Pg 46-57) Strong Partnerships > Strategic Partnerships with Maritime Institutes and Centres of Excellence (Pg 85-87)
203-2	Significant indirect economic impacts	2018 Performance Summary (Pg 15) Safe, Efficient & Sustainable Global Hub Port (Pg 23-33) Vibrant IMC Eco-system (Pg 35-39) Maritime Knowledge & Innovation Hub (Pg 47-53) Quality Maritime Workforce (Pg 55-57)
<b>Procurement Practices</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 18)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 204: Procurement Practices 2016</b>		
204-1	Proportion of spending on local suppliers	Information unavailable – MPA does not currently measure this
<b>Anti-Corruption</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 18)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 205: Anti-Corruption 2016</b>		
205-1	Operations assessed for risks related to corruption	Culture of Excellence > FIRST Values (Pg 67)
205-2	Communication and training about anti-corruption policies and procedures	Culture of Excellence > FIRST Values (Pg 67)
205-3	Confirmed incidents of corruption and actions taken	Culture of Excellence > FIRST Values (Pg 67)
<b>Anti-Competitive Behaviour</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 18)

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>GRI 103: Management Approach 2016</b>		
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 206: Anti-Competitive Behaviour 2016</b>		
206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Not applicable – MPA is a Statutory Board
<b>Materials</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 301: Materials 2016</b>		
301-1	Materials used by weight or volume	The key materials used in MPA are office materials such as copier papers, toners and other stationery Culture of Excellence > Environmental Sustainability (Pg 70)
301-2	Recycled input materials used	Information unavailable – MPA does not currently measure this
301-3	Reclaimed products and their packaging materials	Not applicable – MPA does not sell products
<b>Energy</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 302: Energy 2016</b>		
302-1	Energy consumption within the organisation	2018 Performance Summary (Pg 15) Culture of Excellence > Environmental Sustainability (Pg 72)
302-2	Energy consumption outside of the organisation	Information unavailable – while MPA does not currently measure this, MPA has reported on its responsibilities and initiatives in managing the industry's energy consumption impacts Safe, Efficient & Sustainable Global Hub Port > Sustainability (Pg 22-33)
302-3	Energy intensity	Culture of Excellence > Environmental Sustainability (Pg 72)

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>GRI 302: Energy 2016</b>		
302-4	Reduction of energy consumption	Culture of Excellence > Environmental Sustainability (Pg 70) Safe, Efficient & Sustainable Global Hub Port > Sustainability (Pg 22-33)
302-5	Reductions in energy requirements of products and services	Not applicable – MPA does not sell products
<b>Water</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20-21)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20-21)
<b>GRI 303: Water 2016</b>		
303-1	Water withdrawal by source	2018 Performance Summary (Pg 15) Culture of Excellence > Environmental Sustainability (Pg 70)
303-2	Water sources significantly affected by withdrawal of water	Not applicable within MPA's organisational boundary – there are no significant withdrawals of water. MPA's water use is only for its office and is sourced from the Public Utilities Board
303-3	Water recycled and reused	Not applicable within MPA's organisational boundary – MPA does not recycle or reuse wastewater generated by its office
<b>Biodiversity</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 304: Biodiversity 2016</b>		
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Not applicable within MPA's organisational boundary – while MPA's office is not in a protected area or area of high biodiversity value outside a protected area, MPA has reported on its responsibilities and initiatives in managing the industry's biodiversity impacts
304-2	Significant impacts of activities, products, and services on biodiversity	Safe, Efficient & Sustainable Global Hub Port > Sustainability (Pg 23-33)
304-3	Habitats protected or restored	Safe, Efficient & Sustainable Global Hub Port > Sustainability (Pg 23-33)
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Not applicable within MPA's organisational boundary – MPA's operations do not affect any IUCN Red List species or national conservation list species
<b>Emissions</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>GRI 103: Management Approach 2016</b>		
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 305: Emissions 2016</b>		
305-1	Direct (Scope 1) GHG emissions	Not applicable within MPA's organisational boundary – MPA's main source of GHG emissions mainly relates to electricity consumed in its office. In addition, MPA has reported on its responsibilities and initiatives in managing the industry's GHG emissions impacts Safe, Efficient & Sustainable Global Hub Port > Sustainability (Pg 22-33)
305-2	Energy indirect (Scope 2) GHG emissions	2018 Performance Summary (Pg 15) Culture of Excellence > Environmental Sustainability (Pg 64)
305-3	Other indirect (Scope 3) GHG emissions	Information unavailable – MPA has not been able to accurately measure Scope 3 emissions
305-4	GHG emissions intensity	Culture of Excellence > Environmental Sustainability (Pg 64)
305-5	Reduction of GHG emissions	Culture of Excellence > Environmental Sustainability (Pg 64-65)
305-6	Emissions of ozone-depleting substances (ODS)	Not applicable within MPA's organisational boundary – while MPA is not a significant emitter of ODS, NOX, SOX or other significant air emissions, MPA has reported on its responsibilities and initiatives in managing the industry's air emissions impacts
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Not applicable within MPA's organisational boundary – while MPA is not a significant emitter of ODS, NOX, SOX or other significant air emissions, MPA has reported on its responsibilities and initiatives in managing the industry's air emissions impacts Safe, Efficient & Sustainable Global Hub Port > Sustainability (Pg 22-33)
<b>Effluents and Waste</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 306: Effluents and Waste 2016</b>		
306-1	Water discharge by quality and destination	Not applicable within MPA's organisational boundary – MPA does not discharge water (excluding office sewage)
306-2	Waste by type and disposal method	Culture of Excellence > Environmental Sustainability (Pg 65)
306-3	Significant spills	Not applicable within MPA's organisational boundary – while MPA's operations do not have spills, MPA has reported on its responsibilities and initiatives in managing the industry's impacts Safe, Efficient & Sustainable Global Hub Port > Sustainability (Pg 22-33)
306-4	Transport of hazardous waste	Not applicable within MPA's organisational boundary – MPA does not generate hazardous waste

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>GRI 306: Effluents and Waste 2016</b>		
306-5	Water bodies affected by water discharges and/or runoff	Not applicable within MPA's organisational boundary – MPA does not discharge water (excluding office sewage)
<b>Environmental Compliance</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 19) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 307: Environmental Compliance 2016</b>		
307-1	Non-compliance with environmental laws and regulations	MPA has not received any significant fines or non-monetary sanctions for non-compliance during the reporting period
<b>Supplier Environmental Assessment</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
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<b>Employment Practices</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
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103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 401: Employment Practices 2016</b>		
401-1	New employee hires and employee turnover	2018 Performance Summary (Pg 15) Choice Employer > Our People (Pg 92)
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Not applicable – MPA provides the same benefits to part-time workers and full-time workers

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>Labour Management Relations</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 402: Labour Management Relations 2016</b>		
402-1	Minimum notice periods regarding operational changes	When operational changes occur, MPA gives employees as much notice as possible
<b>Occupational Health and Safety</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 403: Occupational Health and Safety 2016</b>		
403-1	Workers representation in formal joint management-worker health and safety committees	All of MPA's employees are represented by MPA's Workplace Safety and Health programmes
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	2018 Performance Summary (Pg 15)
403-3	Workers with high incidence or high risk of diseases related to their occupation	MPA's workers are not involved in occupational activities who with a high incidence or high risk of specific diseases
403-4	Health and safety topics covered in formal agreements with trade unions	To better ensure the workplace safety and health of its employees, MPA re-constituted the Workplace Safety and Health Committee in 2014. The Committee is chaired by MPA's Director, Human Resource and comprises representatives from HR, the Operations Cluster, Facilities Management, and the Union. The committee meets regularly to review and update the safety plans for MPA
<b>Training and Education</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
<b>GRI 103: Management Approach 2016</b>		
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>GRI 404: Training and Education 2016</b>		
404-1	Average hours of training per year per employee	2018 Performance Summary (Pg 15)
404-2	Programmes for upgrading employee skills and transition assistance programmes	In addition to programmes for upgrading the skills of MPA's employees, MPA has also reported on its responsibilities and initiatives relating to the training and development of the industry's workforce.  Quality Maritime Workforce (Pg 54-57)  Strong Partnerships > Strategic Partnerships with Maritime Institutes and Centres of Excellence (Pg 85-87)  Choice Employer > Right People (Pg 93)
404-3	Percentage of employees receiving regular performance and career development reviews	Choice Employer > Right People (Pg 92)
<b>Diversity and Equal Opportunity</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18)  MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 405: Diversity and Equal Opportunity 2016</b>		
405-1	Diversity of governance bodies and employees	Board of Directors/Board Committees (Pg 8-9)  Senior Management (Pg 10-11)  Choice Employer > Our People (Pg 92)
405-2	Ratio of basic salary and remuneration of women to men	Information unavailable - MPA provides fair remuneration to employees that is not differentiated by gender
<b>Non-discrimination</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18)  MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 406: Non-discrimination 2016</b>		
406-1	Incidents of discrimination and corrective actions taken	MPA has not identified any substantiated incidents of discrimination during the reporting period

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>Freedom of Association and Collective Bargaining</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>Child Labour</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
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103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 408: Child Labour 2016</b>		
408-1	Operations and suppliers at significant risk for incidents of child labour	Not applicable – MPA has not identified any of its operations or suppliers considered to have significant risk for incidents of child labour or young workers exposed to hazardous work.
<b>Forced or Compulsory Labour</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 409: Forced or Compulsory Labour 2016</b>		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	Not applicable – MPA has not identified any of its operations or suppliers considered to have significant risk for incidents of forced or compulsory labour.
<b>Security Practices</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
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<b>GRI 103: Management Approach 2016</b>		
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>GRI 410: Security Practices 2016</b>		
410-1	Security personnel trained in human rights policies or procedures	Information unavailable
<b>Rights of Indigenous People</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 411: Rights of Indigenous People 2016</b>		
411-1	Incidents of violations involving rights of indigenous peoples	Not applicable – MPA's operations are only in Singapore.
<b>Human Rights Assessment</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 412: Human Rights Assessment 2016</b>		
412-1	Operations that have been subject to human rights reviews or impact assessments	Information unavailable
412-2	Employee training on human rights policies or procedures	Information unavailable
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Information unavailable
<b>Local Communities</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)

## Topic-Specific Disclosures

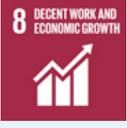
Disclosure	Reference(s) or Reasons for Omission	
<b>GRI 413: Local Communities 2016</b>		
413-1	Operations with local community engagement, impact assessments, and development programmes	All of MPA's operations include implemented local community engagement and development programmes
413-2	Operations with significant actual and potential negative impacts on local communities	All of MPA's operations seek to have a significant impact on Singapore.  MPA's mission is to develop and promote Singapore as a premier global hub port and an international maritime centre, and to advance and safeguard Singapore's strategic maritime interests
<b>Supplier Social Assessment</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
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<b>Public Policy</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
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<b>GRI 415: Public Policy 2016</b>		
415-1	Political contributions	Not applicable – MPA does not make any political contributions.
<b>Customer Health and Safety</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18)  MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 416: Customer Health and Safety 2016</b>		
416-1	Assessment of the health and safety impacts of product and service categories	Not applicable within MPA's organisational boundary – while MPA does not sell products, MPA has reported on its responsibilities and initiatives in managing the industry's
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Safe, Efficient & Sustainable Global Hub Port > Safety (Pg 22-33)

## Topic-Specific Disclosures

Disclosure		Reference(s) or Reasons for Omission
<b>Marketing and Labelling</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 417: Marketing and Labelling 2016</b>		
417-1	Requirements for product and service information and labelling	Not applicable within MPA's organisational boundary – while MPA does not sell products, MPA has reported on its responsibilities and initiatives in enhancing the public's awareness, understanding and perception of Maritime Singapore
417-2	Incidents of non-compliance concerning product and service information and labelling	Strong Maritime Singapore Identity > Brand (Pg 58-63)
<b>Customer Privacy</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
103-2	The management approach and its components	Mapping Key Material Issues > MPA's Approach to Sustainability (Pg 18) MPA's Business Model – Future-Ready Framework (Pg 20)
103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 418: Customer Privacy 2016</b>		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	MPA has not identified any substantiated complaints concerning breaches of customer privacy and losses of customer data during the reporting period.
<b>Socioeconomic Compliance</b>		
<b>GRI 103: Management Approach 2016</b>		
103-1	Explanation of the material topic and its boundary	Mapping Key Material Issues > Overview of 6 Key Material Issues (Pg 19)
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103-3	Evaluation of the management approach	MPA's Business Model – Future-Ready Framework (Pg 20)
<b>GRI 419: Socioeconomic Compliance 2016</b>		
419-1	Non-compliance with laws and regulations in the social and economic area	MPA has not received any significant fines or non-monetary sanctions for non-compliance during the reporting period.

# UN SDGs Index

## General Disclosures

MPA alignment with the United Nations Sustainable Development Goals	Target Description	Future Ready Framework (FRF)
 <p>4 QUALITY EDUCATION</p>	<p>4.4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p> <p>4.4 By 2030, substantially increase the number of workers who have relevant skills as required by labour markets, in order for them to have decent jobs and become business owners.</p>	<p>Quality Maritime Workforce</p> <p>Strong Maritime Singapore Identity</p>
	<p>4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.</p>	<p>Quality Maritime Workforce</p>
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p>7.3 Ensure access to affordable, reliable, sustainable and modern energy for all</p> <p>7.3 By 2030, double the national rate of improvement in energy use efficiency. Reduce the rate of power utilisation by 10% compared to the baseline scenario.</p>	<p>Safe, Efficient and Sustainable Global Hub Port</p>
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>8.3 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <p>8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services.</p>	<p>Quality Maritime Workforce</p>
	<p>8.5 By 2030, achieve full and productive employment and decent work for all men and women, including for young people and persons with disabilities, and ensure equal pay for work of equal value.</p>	<p>Quality Maritime Workforce</p> <p>Choice Employer</p>
	<p>8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training.</p>	<p>Quality Maritime Workforce</p>
	<p>8.8 Protect labour rights and promote safe and secure working environments for all workers, particularly female migrant workers and workers in the informal sector.</p>	<p>Choice Employer</p>

**MPA alignment with the United Nations Sustainable Development Goals**

**Target Description**

**Future Ready Framework (FRF)**

MPA alignment with the United Nations Sustainable Development Goals	Target Description	Future Ready Framework (FRF)
 <p>Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation</p>	<p>9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.</p> <p>9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally-sound technologies and industrial processes, will all countries taking action in accordance with their respective capabilities.</p> <p>9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per one million people and public and private research and development spending.</p>	<p>Culture of Excellence</p> <p>Safe, Efficient and Sustainable Global Hub Port</p> <p>Safe, Efficient and Sustainable Global Hub Port; Vibrant IMC Eco-System Maritime knowledge and Innovation Hub</p>
 <p>Make cities and human settlements inclusive, safe, resilient and sustainable</p>	<p>11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.</p> <p>11.4 Strengthen efforts to protect and safeguard the world’s cultural and natural heritage.</p> <p>11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations.</p>	<p>Safe, Efficient and Sustainable Global Hub Port</p> <p>Safe, Efficient and Sustainable Global Hub Port</p> <p>Safe, Efficient and Sustainable Global Hub Port</p>

MPA alignment with the United Nations Sustainable Development Goals	Target Description	Future Ready Framework (FRF)	
	Ensure sustainable consumption and production patterns	12.5 By 2030, substantially reduce waste generation and increase the economic value of waste resources through prevention, reduction, recycling, reuse and recovery of energies from waste treatment.	Safe, Efficient and Sustainable Global Hub Port
	12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.	Safe, Efficient and Sustainable Global Hub Port	
	12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities.	Strong Partnerships	
	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.	Strong Maritime Singapore Identity	
	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.	Safe, Efficient and Sustainable Global Hub Port
	14.2 By 2020, sustainably manage and protect marine and coastal eco- systems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans.	Safe, Efficient and Sustainable Global Hub Port	
	14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.	Safe, Efficient and Sustainable Global Hub Port	
	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.5 Substantially reduce corruption and bribery in all their forms.	Culture of Excellence
	16.A Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime.	Safe, Efficient and Sustainable Global Hub Port	

**MPA alignment with the United Nations Sustainable Development Goals**

	<b>Target Description</b>	<b>Future Ready Framework (FRF)</b>
 <p>Strengthen the means of implementation and revitalise the global partnership for sustainable development</p>	<p>17.16 Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries.</p> <p>17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.</p>	<p>Safeguard Strategic Maritime Interests and An Influential Voice</p> <p>Safe, Efficient and Sustainable Global Hub Port</p> <p>Safeguard Strategic Maritime Interests and An Influential Voice</p> <p>Maritime knowledge and Innovation Hub</p> <p>Strong Maritime Singapore Identity Strong Partnerships</p>

# Our Contributors



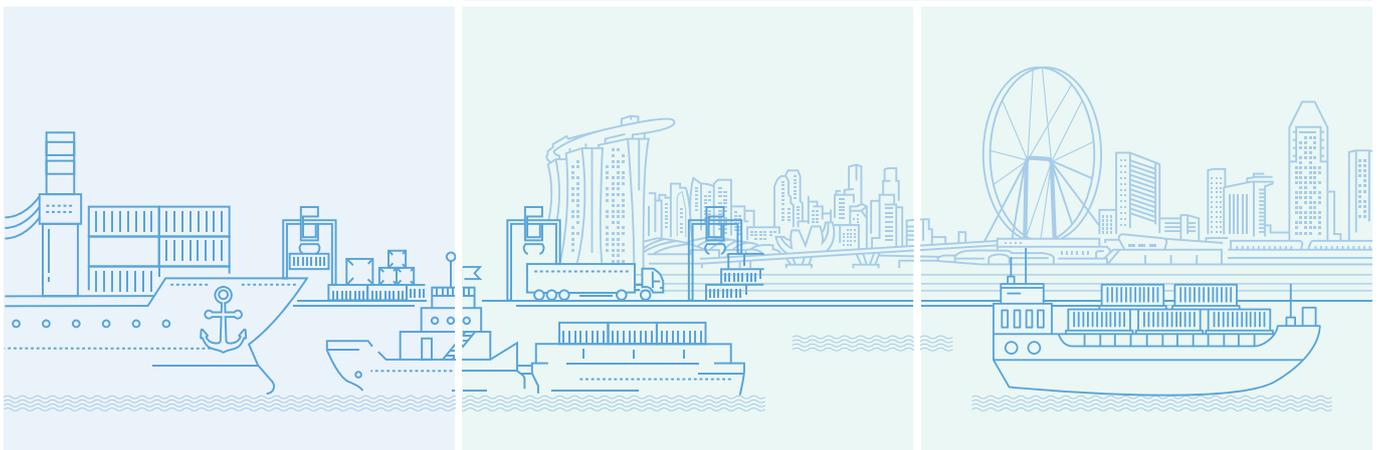
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**THE MARITIME AND PORT AUTHORITY  
OF SINGAPORE AND ITS SUBSIDIARY**

**ANNUAL FINANCIAL STATEMENTS**

**FOR THE FINANCIAL YEAR ENDED  
31 DECEMBER 2018**

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**ANNUAL REPORT**

*For the financial year ended 31 December 2018*

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**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**STATEMENT BY BOARD OF MEMBERS**

*For the financial year ended 31 December 2018*

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In the opinion of the Board of Members,

- (a) the consolidated financial statements of the Maritime and Port Authority of Singapore and its subsidiary (the "Authority") as set out on pages 7 to 64 are properly drawn up so as to present fairly, in all material respects, the state of affairs of the Authority as at 31 December 2018 and of the results of the business, changes in reserves and cash flows of the Authority for the financial year then ended in accordance with the provisions of the Public Sector (Governance) Act 2018 and the Maritime and Port Authority of Singapore Act (Cap. 170A) and Statutory Board Financial Reporting Standards; and
- (b) at the date of this statement, there are reasonable grounds to believe that the Authority will be able to pay its debts as and when they fall due.

On behalf of the Board of Members,



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**Niam Chiang Meng**  
Chairman



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**Quah Ley Hoon**  
Chief Executive and Board Member

15 March 2019

## INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE BOARD OF THE MARITIME AND PORT AUTHORITY OF SINGAPORE

### Report on the Audit of the Financial Statements

#### *Opinion*

We have audited the accompanying consolidated financial statements of the Maritime and Port Authority of Singapore and its subsidiary (the "Authority") set out on pages 7 to 64, which comprise the consolidated balance sheet as at 31 December 2018, the consolidated statement of comprehensive income, consolidated statement of changes in reserves and consolidated statement of cash flows of the Authority for the year then ended, and notes to the financial statements including a summary of significant accounting policies.

In our opinion, the consolidated financial statements of the Authority are properly drawn up in accordance with the provisions of the Public Sector (Governance) Act 2018 and the Maritime and Port Authority of Singapore Act (Cap. 170A) (the "Acts") and Statutory Board Financial Reporting Standards so as to present fairly, in all material respects, the state of affairs of the Authority as at 31 December 2018 and the results, changes in reserves and cash flows of the Authority for the year ended on that date.

#### *Basis for Opinion*

We conducted our audit in accordance with Singapore Standards on Auditing ("SSAs"). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Authority in accordance with the Accounting and Corporate Regulatory Authority ("ACRA") *Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities* ("ACRA Code") together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### *Information Other than the Financial Statements and Auditor's Report Thereon*

Management is responsible for the other information. The other information obtained at the date of this auditor's report is the Statement by Board of Members, but does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

## **INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE BOARD OF THE MARITIME AND PORT AUTHORITY OF SINGAPORE (continued)**

In connection with our audit of the financial statements, our responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

### *Responsibilities of Management and Those Charged with Governance for the Financial Statements*

Management is responsible for the preparation and fair presentation of these financial statements in accordance with the provisions of the Acts and Statutory Board Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

A statutory board is constituted based on its Acts and its dissolution requires Parliament's approval. In preparing the financial statements, management is responsible for assessing the Authority's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless there is intention to wind up the Authority or for the Authority to cease operations.

Those charged with governance are responsible for overseeing the Authority's financial reporting process.

## **INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE BOARD OF THE MARITIME AND PORT AUTHORITY OF SINGAPORE (continued)**

### *Auditor's Responsibilities for the Audit of the Financial Statements*

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Authority's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Authority to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

## **INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE BOARD OF THE MARITIME AND PORT AUTHORITY OF SINGAPORE (continued)**

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

### **Report on Other Legal and Regulatory Requirements**

#### *Opinion*

In our opinion:

- (a) the receipts, expenditure, investment of moneys and the acquisition and disposal of assets by the Authority during the year are, in all material respects, in accordance with the provisions of the Acts and the requirements of any other written law applicable to moneys of or managed by the Authority; and
- (b) proper accounting and other records have been kept, including records of all assets of the Authority whether purchased, donated or otherwise.

#### *Basis for Opinion*

We conducted our audit in accordance with SSAs. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Compliance Audit* section of our report. We are independent of the Authority in accordance with the ACRA Code together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on management's compliance.

#### *Responsibilities of Management for Compliance with Legal and Regulatory Requirements*

Management is responsible for ensuring that the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Acts. This responsibility includes implementing accounting and internal controls as management determines are necessary to enable compliance with the provisions of the Acts.

## INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF THE BOARD OF THE MARITIME AND PORT AUTHORITY OF SINGAPORE (continued)

### *Auditor's Responsibilities for the Compliance Audit*

Our responsibility is to express an opinion on management's compliance based on our audit of the financial statements. We planned and performed the compliance audit to obtain reasonable assurance about whether the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Acts.

Our compliance audit includes obtaining an understanding of the internal control relevant to the receipts, expenditure, investment of moneys and the acquisition and disposal of assets; and assessing the risks of material misstatement of the financial statements from non-compliance, if any, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Because of the inherent limitations in any accounting and internal control system, non-compliances may nevertheless occur and not be detected.



Public Accountants and  
Chartered Accountants  
Singapore

15 March 2019

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**CONSOLIDATED BALANCE SHEET**

*As at 31 December 2018*

	Note	2018 \$	2017 \$
<b>ASSETS</b>			
<b>Non-current assets</b>			
Property, plant and equipment	4	92,341,275	83,232,617
Capital work-in-progress	4	10,743,480	12,733,224
Financial assets	7	539,188,943	308,519,591
		<u>642,273,698</u>	<u>404,485,432</u>
<b>Current assets</b>			
Trade receivables	8	45,337,017	49,142,432
Deposits, prepayments and other receivables	9	15,740,866	7,748,593
Cash and cash equivalents	10	787,779,005	998,847,658
		<u>848,856,888</u>	<u>1,055,738,683</u>
<b>Total assets</b>		<u><b>1,491,130,586</b></u>	<u><b>1,460,224,115</b></u>
<b>EQUITY</b>			
<b>Capital and reserves</b>			
Establishment account	11	147,375,155	147,375,155
Equity financing account	12	3,978,616	3,978,616
Fair value reserve		-	13,604,390
Accumulated surplus		1,258,838,465	1,207,701,058
<b>Total capital and reserves</b>		<u><b>1,410,192,236</b></u>	<u><b>1,372,659,219</b></u>
<b>LIABILITIES</b>			
<b>Non-current liabilities</b>			
Employment benefits	13	422,377	422,377
Deferred capital grant	14	17,665,353	19,114,704
		<u>18,087,730</u>	<u>19,537,081</u>
<b>Current liabilities</b>			
Trade and other payables	15	40,932,479	33,126,361
Advances, deposits and unearned income	16	11,234,867	10,742,120
Provision for contribution to Consolidated Fund	21	10,683,274	24,159,334
		<u>62,850,620</u>	<u>68,027,815</u>
<b>Total liabilities</b>		<u><b>80,938,350</b></u>	<u><b>87,564,896</b></u>
<b>Total equity and liabilities</b>		<u><b>1,491,130,586</b></u>	<u><b>1,460,224,115</b></u>
Funds managed/held on behalf of others	26	3,696,622	38,830,926
Funds' net assets managed/held on behalf of others	26	(3,696,622)	(38,830,926)

*The accompanying notes form an integral part of these financial statements.*

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME**

*For the financial year ended 31 December 2018*

	Note	2018 \$	2017 \$
<b>Operating revenue</b>			
Port dues and marine services	17	281,717,731	282,073,837
Shipping services	17	6,188,376	6,328,455
Rental income	17	4,380,075	3,999,210
Training	17	807,347	898,471
Miscellaneous revenue	17	377,851	1,239,037
		<b>293,471,380</b>	<b>294,539,010</b>
<b>Operating expenditure</b>			
Staff cost	18	88,369,602	87,661,307
Depreciation of property, plant and equipment	4	18,349,814	17,623,597
Hire of marine craft and sea garbage services		12,101,870	11,576,012
Fuel, repairs and maintenance		16,424,762	14,322,868
Other operating expenses	19	73,774,577	74,625,546
		<b>209,020,625</b>	<b>205,809,330</b>
Operating surplus		84,450,755	88,729,680
Net other operating (deficit)/surplus	20	(23,118,815)	51,997,227
<b>Surplus from operations</b>		<b>61,331,940</b>	<b>140,726,907</b>
Amortisation of deferred capital grant	14	1,449,351	1,346,820
<b>Surplus before contribution to Consolidated Fund</b>		<b>62,781,291</b>	<b>142,073,727</b>
Contribution to Consolidated Fund	21	(10,683,274)	(24,159,334)
<b>Surplus for the year</b>		<b>52,098,017</b>	<b>117,914,393</b>
<b>Other comprehensive loss</b>			
<i>Items that may be reclassified subsequently to income or expenditure:</i>			
Net change in fair value of available-for-sale debt and equity securities placed by fund managers		-	(23,105,780)
Transfer to income or expenditure on sale of available-for-sale debt and equity securities placed by fund managers		-	22,050,867
Impairment loss on available-for-sale debt and equity securities placed by fund managers transferred to income or expenditure		-	759,289
<b>Other comprehensive loss for the year</b>		-	<b>(295,624)</b>
<b>Total comprehensive income for the year</b>		<b>52,098,017</b>	<b>117,618,769</b>

*The accompanying notes form an integral part of these financial statements.*

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**Consolidated Statement of Changes in Reserves**

*For the financial year ended 31 December 2018*

	<u>Establishment account</u> \$	<u>Equity financing account</u> \$	<u>Fair value reserve</u> \$	<u>Accumulated surplus</u> \$	<u>Total</u> \$
<b>2018</b>					
<b>Beginning of financial year</b>	<b>147,375,155</b>	<b>3,978,616</b>		<b>- 1,221,305,448</b>	<b>1,372,659,219</b>
<u>Total comprehensive income</u> for the year					
Surplus for the year	-	-	-	52,098,017	52,098,017
Dividends paid, representing total transaction with owners, recognised directly in equity	-	-	-	(14,565,000)	(14,565,000)
<b>End of financial year</b>	<b>147,375,155</b>	<b>3,978,616</b>		<b>- 1,258,838,465</b>	<b>1,410,192,236</b>
<b>2017</b>					
<b>Beginning of financial year</b>	<b>147,375,155</b>	<b>3,978,616</b>	<b>13,900,014</b>	<b>1,113,967,665</b>	<b>1,279,221,450</b>
<u>Total comprehensive income</u> for the year					
Surplus for the year	-	-	-	117,914,393	117,914,393
Other comprehensive loss for the year	-	-	(295,624)	-	(295,624)
Total	-	-	(295,624)	117,914,393	117,618,769
Dividends paid, representing total transaction with owners, recognised directly in equity	-	-	-	(24,181,000)	(24,181,000)
<b>End of financial year</b>	<b>147,375,155</b>	<b>3,978,616</b>	<b>13,604,390</b>	<b>1,207,701,058</b>	<b>1,372,659,219</b>
Adoption of SB-FRS 109 (Note 2.1)	-	-	(13,604,390)	13,604,390	-
<b>Balance at 1 January 2018</b>	<b>147,375,155</b>	<b>3,978,616</b>		<b>- 1,221,305,448</b>	<b>1,372,659,219</b>

*The accompanying notes form an integral part of these financial statements.*

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**CONSOLIDATED STATEMENT OF CASH FLOWS**

*For the financial year ended 31 December 2018*

	Note	2018 \$	2017 \$
<b>Cash flows from operating activities</b>			
Surplus before contribution to Consolidated Fund		<b>62,781,291</b>	142,073,727
Adjustments for:			
- Depreciation of property, plant and equipment	4	<b>18,349,814</b>	17,623,597
- Provision for employee benefits	13	<b>11,408</b>	11,505
- Amortisation of deferred capital grant	14	<b>(1,449,351)</b>	(1,346,820)
- Net (reversal)/provision of loss allowance for trade receivables	8	<b>(206,872)</b>	334,962
- Net investment loss/(gain) from funds with fund managers	20	<b>24,613,616</b>	(51,266,029)
- Interest income on bank deposits	20	<b>(2,201,017)</b>	(1,352,201)
- Net loss on disposal of property, plant and equipment	20	<b>557,394</b>	693,942
		<b>102,456,283</b>	106,772,683
Changes in working capital:			
- Trade receivables		<b>4,012,287</b>	(4,456,228)
- Deposits, prepayments and other receivables		<b>517,607</b>	1,954,211
- Trade and other payables		<b>8,123,173</b>	(4,415,521)
- Advances, deposits and unearned income		<b>492,747</b>	471,253
Cash generated from operations		<b>115,602,097</b>	100,326,398
Payment of employee benefits	13	<b>(11,408)</b>	(11,505)
Contribution paid to Consolidated Fund	21	<b>(24,159,334)</b>	(17,456,880)
<b>Net cash from operating activities</b>		<b>91,431,355</b>	82,858,013
<b>Cash flows from investing activities</b>			
(Placement)/Withdrawal of industry funds with Accountant-General's Department		<b>(70,531,949)</b>	34,169,737
Proceeds from sale of property, plant and equipment		<b>37,596</b>	18,829
Purchases of property, plant and equipment and capital work-in-progress	4	<b>(26,063,718)</b>	(15,408,711)
Deposit from withdrawal of funds with fund managers		-	(15,000,000)
Interest received		<b>2,044,966</b>	1,873,069
<b>Net cash (used in)/from investing activities</b>		<b>(94,513,105)</b>	5,652,924
<b>Cash flows from financing activities</b>			
Dividends paid		<b>(14,565,000)</b>	(24,181,000)
<b>Net cash used in financing activities</b>		<b>(14,565,000)</b>	(24,181,000)
<b>Net (decrease)/increase in cash and cash equivalents</b>		<b>(17,646,750)</b>	64,329,937
Cash and cash equivalents at beginning of financial year		<b>112,773,489</b>	48,443,552
<b>Cash and cash equivalents at end of financial year</b>	10	<b>95,126,739</b>	112,773,489

*The accompanying notes form an integral part of these financial statements.*

# THE MARITIME AND PORT AUTHORITY OF SINGAPORE AND ITS SUBSIDIARY

## NOTES TO THE FINANCIAL STATEMENTS

*For the financial year ended 31 December 2018*

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These notes form an integral part of and should be read in conjunction with the accompanying financial statements.

### 1. General information

The Maritime and Port Authority of Singapore (“MPA”) under the purview of Ministry of Transport, was established on 2 February 1996 under the Maritime and Port Authority of Singapore Act (Cap. 170A) with the merger of the following organisations:

- The National Maritime Board (NMB);
- The Marine Department (MD); and
- The regulatory departments of the Port of Singapore Authority (PSA).

MPA is domiciled in Singapore and the address of its registered office is 460 Alexandra Road, 19<sup>th</sup> Storey, PSA Building, Singapore 119963.

The principal activities of MPA include the control of vessel movements to ensure a safe and secure port, and also the regulation of the port and marine services and facilities. MPA is the champion agency to develop and promote Singapore as an International Maritime Centre. MPA also represents Singapore regionally and internationally to safeguard Singapore’s maritime interests.

The principal activities of its subsidiary and associated company are set out in Note 6.

### 2. Significant accounting policies

#### 2.1 Basis of preparation

These financial statements have been prepared in accordance with the provisions of the Public Sector (Governance) Act 2018 and the Maritime and Port Authority of Singapore Act (Cap. 170A) and Statutory Board Financial Reporting Standards (“SB-FRS”).

The financial statements have been prepared under the historical cost convention except as disclosed in the accounting policies below.

The preparation of financial statements in conformity with SB-FRS requires management to exercise its judgement in the process of applying the Authority’s accounting policies. It also requires the use of certain critical accounting estimates and assumptions. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in Note 3.

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

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**2. Significant accounting policies (continued)**

**2.1 Basis of preparation (continued)**

***Interpretations and amendments to published Standards effective in 2018***

On 1 January 2018, the Authority adopted the new or amended SB-FRS and Interpretations of SB-FRS ("INT SB-FRS") that are mandatory for application for the financial year. Changes to the Authority's accounting policies have been made as required, in accordance with the transitional provisions in the respective SB-FRS and INT SB-FRS.

The adoption of these new or amended SB-FRS and INT SB-FRS did not result in substantial changes to the Authority's accounting policies and had no material effect on the amounts reported for the current or prior financial years except as disclosed below.

***SB-FRS 109 Financial Instruments***

SB-FRS 109 introduced new requirements for (i) the classification and measurement of financial assets and financial liabilities (ii) general hedge accounting (iii) impairment requirements for financial assets.

The Authority applied SB-FRS 109 with an initial application date of 1 January 2018. The Authority has not restated the comparative information, which continues to be reported under SB-FRS 39. Effects arising from the adoption of SB-FRS 109 have been recognised directly in accumulated surplus.

The significant accounting policies for financial instruments under SB-FRS 109 are as described below.

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

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**2. Significant accounting policies (continued)**

**2.1 Basis of preparation (continued)**

***SB-FRS 109 Financial Instruments* (continued)**

The Authority has applied SB-FRS 109 to the Authority's financial statements as follows:

1) *Classification and Measurement*

- The Authority has applied the requirements of SB-FRS 109 to instruments that have not been derecognised as at 1 January 2018 and has not applied the requirements to instruments that have already been derecognised as at 1 January 2018. The classification of financial assets is based on two criteria: the Authority's business model for managing the assets and whether the instruments' contractual cash flows represent 'solely payments of principal and interest' on the principal amount outstanding. The Authority's financial assets as disclosed in Note 7 are not held within a business model whose objective is to collect contractual cash flows, nor are they held within a business model whose objective is achieved both by collecting contractual cash flows and selling financial assets. Accordingly, these financial assets are measured at fair value through profit or loss ("FVTPL") under SB-FRS 109 with effect from 1 January 2018. This is a change from the previous available-for-sale classification under SB-FRS 39. As a result of the adoption of SB-FRS 109, fair value reserve as at 31 December 2017 has been reclassified to accumulated surplus with effect from 1 January 2018.
- All other financial assets and financial liabilities (i.e. cash and cash equivalents, trade receivables, other receivables, and trade and other payables) will continue to be measured on the same basis as was adopted under SB-FRS 39, i.e. at amortised cost.

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

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**2. Significant accounting policies (continued)**

**2.1 Basis of preparation (continued)**

***SB-FRS 109 Financial Instruments*** (continued)

2) *Impairment of Financial Assets*

- SB-FRS 109 requires an expected credit loss model as opposed to an incurred credit loss model under SB-FRS 39. The expected credit loss model requires the Authority to account for expected credit losses and changes in those expected credit losses at each reporting date to reflect changes in credit risk since initial recognition of the financial assets. It is no longer necessary for a credit event to have occurred before credit losses are recognised.
- Specifically, SB-FRS 109 requires the Authority to recognise a loss allowance for expected credit losses on i) debt investments subsequently measured at amortised cost or at FVTOCI, ii) lease receivables, iii) contract assets and iv) loan commitments and financial guarantee contracts to which the impairment requirements of SB-FRS 109 apply. There are no adjustments to the loss allowance provided by the Authority due to the adoption of SB-FRS 109.

3) *Hedge accounting*

- The Authority does not apply hedge accounting.

***SB-FRS 115 Revenue from Contracts with Customers***

SB-FRS 115 supersedes the current revenue recognition guidance including SB-FRS 18 *Revenue*, SB-FRS 11 *Construction Contracts* and the related Interpretations.

The Authority's significant accounting policies for its revenue streams are disclosed in Note 2.2. Apart from providing more extensive disclosures on the Authority's revenue transactions, there has been no material impact on the financial position and/or financial performance of the Authority due to the application of SB-FRS 115.

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

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**2. Significant accounting policies (continued)**

**2.1 Basis of preparation (continued)**

***Interpretations and amendments to published Standards effective in future period***

At the date of authorisation of these financial statements, the following SB-FRS which apply to annual periods beginning on or after 1 January 2019 and relevant to the Authority was issued but not yet effective:

- SB-FRS 116 Leases

***SB-FRS 116 - Leases***

The Standard provides a comprehensive model for the identification of lease arrangements and their treatment in the financial statements of both lessees and lessors. The identification of leases, distinguishing between leases and service contracts, are determined on the basis of whether there is an identified asset controlled by the customer.

Significant changes to lessee accounting are introduced, with the distinction between operating and finance leases removed and assets and liabilities recognised in respect of all leases (subject to limited exceptions for short-term leases and leases of low value assets). The Standard maintains substantially the lessor accounting approach under the existing framework.

The Authority anticipates that the initial application of the new SB-FRS 116 may result in changes to the accounting policies relating to leases.

As at 31 December 2018, the Authority has non-cancellable operating lease commitment of \$17,180,267. The existing framework does not require the recognition of any right-of-use asset or liability for future payments of these leases; instead, certain information is disclosed as operating lease commitments. A preliminary assessment is that these arrangements will meet the definition of a lease under SB-FRS 116 and the Authority will recognise a right-of-use asset and a corresponding liability in respect of these leases unless they qualify as low value or short term leases upon application. It is currently impracticable to provide a reasonable estimable of the financial effect until the Authority completes its detailed assessment.

The Authority does not plan to early adopt the new SB-FRS 116.

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

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**2. Significant accounting policies (continued)**

**2.2 Revenue recognition**

Revenue is measured based on the consideration specified in a contract with a customer and excludes amounts collected on behalf of third parties. The Authority recognises revenue when it transfers control of a product or service to a customer. Revenue comprises the fair value of the consideration received or receivable for the rendering of services in the ordinary course of the Authority's activities. Revenue is presented net of goods and services tax, rebates and discounts.

The Authority recognises revenue when the amount of revenue and related cost can be reliably measured, it is probable that the collectability of the related receivables is reasonably assured and when the specific criteria for each of the Authority's activities are met as follows:

*(a) Port dues and marine services*

Dues, licence and permit fees, and agency fee are recognised over time as and when services are performed. Any other marine services are recognised as and when the services are completed.

*(b) Training revenue*

Training revenue are recognised over time as and when services are performed.

*(c) Shipping services*

Shipping services, which comprise registration fees and seaman engagement and discharge fees, are recognised as and when services are completed. Annual payment scheme, such as annual administrative fee, will be recognised over time as and when services are performed.

*(d) Rental income*

Rental income from operating leases (net of any incentives given to the lessees) is recognised on a straight-line basis over lease term.

*(e) Interest income*

Interest income is accrued on a time basis, by reference to the principal outstanding and at the effective interest rate applicable.

*(f) Dividend income*

Dividend income is recognised when the right to receive payment is established.

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

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**2. Significant accounting policies (continued)**

**2.3 Government grants**

Government grants received for the purchase or the construction of depreciable assets are accounted for as deferred capital grants. The deferred capital grants are amortised and charged to income or expenditure over the period necessary to match the annual depreciation charge of these assets or when the assets are disposed or written off. Where the grants relate to an expense item, they are recognised in income or expenditure over the periods necessary to match them on a systematic basis, to the costs, which they are intended to compensate.

**2.4 Group accounting**

*(a) Subsidiary*

A subsidiary is an entity over which the Authority has control. The Authority controls an entity when the Authority is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. A subsidiary is fully consolidated from the date on which control is transferred to MPA. It is deconsolidated from the date on that control ceases.

*(b) Associated company*

Associated company is an entity over which the Authority has significant influence, but not control, generally accompanied by a shareholding giving rise to voting rights of 20% and above but not exceeding 50%.

Investments in associated company is accounted for in the consolidated financial statements using the equity method of accounting less impairment losses, if any.

To the extent MPA's associated company is limited by guarantee and it does not share in their profits or losses, MPA records its contributions to associated company as grants in the consolidated statement of comprehensive income.

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY**

**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

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**2. Significant accounting policies (continued)**

**2.5 Property, plant and equipment**

*(a) Measurement*

Property, plant and equipment are initially recognised at cost and subsequently carried at cost less accumulated depreciation and accumulated impairment losses.

The cost of an item of property, plant and equipment initially recognised includes its purchase price and any cost that is directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management.

The cost of a self-constructed asset includes the cost of materials and direct labour, any other costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management, and the cost of dismantling and removing the items and restoring the site on which they are located. Purchased software that is integral to the functionality of the related equipment is capitalised as part of that equipment.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Assets previously from the former National Maritime Board, the Marine Department and the regulatory departments of the Port of Singapore Authority were taken in at their transacted cost.

Property, plant and equipment acquired and funded under Government grants are capitalised and depreciated over their useful lives. The related accretion of deferred capital grants is matched against the depreciation (please refer to Note 2.3).

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**2. Significant accounting policies (continued)**

**2.5 Property, plant and equipment (continued)**

*(b) Depreciation*

Depreciation on property, plant and equipment is calculated using the straight-line method to allocate their depreciable amounts over their estimated useful lives as follows:

	<u>Useful lives</u>
Leasehold land	Over the remaining lease periods ranging from 4 to 59 years
Building structures	5 to 39 years
Wharves, hard-standing and roads	10 to 39 years
Renovations	5 years
Plant, machinery and equipment	3 to 15 years
Vehicles	10 years
Computers	3 to 5 years
Furniture and fittings	10 years
Floating crafts	5 to 10 years

The residual values, estimated useful lives and depreciation method of property, plant and equipment are reviewed, and adjusted as appropriate, at each balance sheet date. The effects of any revision are recognised in income or expenditure when the changes arise.

*(c) Subsequent expenditure*

Subsequent expenditure relating to property, plant and equipment that has already been recognised is added to the carrying amount of the asset only when it is probable that future economic benefits associated with the item will flow to the Authority and the cost of the item can be measured reliably. All other repair and maintenance expenses are recognised in income or expenditure when incurred.

*(d) Disposal*

On disposal of an item of property, plant and equipment, the difference between the disposal proceeds and its carrying amount is recognised in income or expenditure within "Net other operating surplus".

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**2. Significant accounting policies (continued)**

**2.6 Capital work-in-progress**

Capital work-in-progress is stated at cost. Expenditure relating to the capital work-in-progress is capitalised when incurred. No depreciation is provided until the capital work-in-progress is completed and the related property, plant and equipment are available for use.

**2.7 Impairment of non-financial assets**

*Property, plant and equipment*

*Investments in subsidiary and associated company*

Property, plant and equipment and investments in subsidiary and associated company are tested for impairment whenever there is any objective evidence or indication that these assets may be impaired.

For the purpose of impairment testing, the recoverable amount (i.e. the higher of the fair value less cost to sell and the value-in-use) is determined on an individual asset basis unless the asset does not generate cash inflows that are largely independent of those from other assets. If this is the case, the recoverable amount is determined for the CGU to which the asset belongs.

If the recoverable amount of the asset (or CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or CGU) is reduced to its recoverable amount.

The difference between the carrying amount and recoverable amount is recognised as an impairment loss in income or expenditure.

An impairment loss for an asset other than goodwill is reversed only if, there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. The carrying amount of this asset is increased to its revised recoverable amount, provided that this amount does not exceed the carrying amount that would have been determined (net of any accumulated amortisation or depreciation) had no impairment loss been recognised for the asset in prior years. A reversal of impairment loss for an asset other than goodwill is recognised in income or expenditure.

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**2. Significant accounting policies (continued)**

**2.8 Financial assets**

*(a) Classification*

From 1 January 2018, the Authority classifies its financial assets in the following categories: amortised cost and fair value through profit or loss (“FVTPL”) under SB-FRS 109. The classification depends on the nature of the asset and the purpose for which the assets were acquired. The Authority determines the classification of its financial assets at initial recognition, based on SB-FRS 109’s Business Model and Contractual Cash Flows tests.

*(i) Financial Assets held at Amortised Cost*

Financial assets held at Amortised Cost comprises mainly non-derivative cash and bank balances and trade and other receivables with fixed or determinable payments that are not quoted in an active market. They are presented as current assets except for those expected to be realised later than 12 months after the balance sheet date which are presented as non-current assets. These financial assets are presented as “trade receivables” (Note 8), “other receivables” (Note 9) and “cash and cash equivalents” (Note 10) on the balance sheet.

*(ii) Financial assets held at Fair Value through Profit or Loss (“FVTPL”)*

Financial assets held at FVTPL are non-derivatives that are either classified or designated in this category. They are presented as non-current assets unless the investment matures or the Authority intends to dispose of the assets within 12 months after the balance sheet date.

The Authority’s investments in equity and debt securities, including equity and debt securities placed by fund managers, where investment performance is evaluated on a fair value (total return) basis, are classified as FVTPL financial assets.

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**2. Significant accounting policies (continued)**

**2.8 Financial assets**

*(a) Classification (continued)*

Before 1 January 2018, the Authority classified its financial assets in the following categories: loans and receivables and available-for-sale under SB-FRS 39. The classification depends on the nature of the asset and the purpose for which the assets were acquired. The Authority determines the classification of its financial assets at initial recognition.

*(i) Loans and receivables*

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They are presented as current assets except for those expected to be realised later than 12 months after the balance sheet date which are presented as non-current assets. Loans and receivables are presented as "trade receivables" (Note 8), "other receivables" (Note 9) and "cash and cash equivalents" (Note 10) on the balance sheet.

*(ii) Available-for-sale financial assets*

Financial assets, available-for-sale are non-derivatives that are either designated in this category or not classified in any of the other categories. They are presented as non-current assets unless the investment matures or the Authority intends to dispose of the assets within 12 months after the balance sheet date.

The Authority's investments in equity and debt securities, including equity and debt securities placed by fund managers, intended to be held on a continuing basis, are classified as available-for-sale financial assets.

*(b) Recognition and derecognition*

Regular way purchases and sales of financial assets are recognised on trade-date - the date on which the Authority commits to purchase or sell the asset.

Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Authority has transferred substantially all risks and rewards of ownership. On disposal of a financial asset, the difference between the carrying amount and the sale proceeds is recognised in income or expenditure. Any amount previously recognised in other comprehensive income relating to that asset is reclassified to income or expenditure.

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**2. Significant accounting policies (continued)**

**2.8 Financial assets (continued)**

*(c) Initial measurement*

From 1 January 2018, except for trade receivables measured at transaction price, at initial recognition, financial assets are measured at its fair value plus or minus, in the case of a financial asset or financial liability not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition or issue of the financial asset. Financial assets held at FVTPL are recognised at fair value.

Before 1 January 2018, financial assets were initially recognised at fair value plus transaction costs.

*(d) Subsequent measurement*

From 1 January 2018, FVTPL financial assets are subsequently carried at fair value. Trade and other receivables are subsequently carried at amortised cost using the effective interest method.

Interest and dividend income on FVTPL financial assets, and changes in fair values of FVTPL debt and equity securities are recognised in income or expenditure.

Before 1 January 2018, available-for-sale financial assets were subsequently carried at fair value. Loans and receivables were subsequently carried at amortised cost using the effective interest method.

Interest and dividend income on available-for-sale financial assets were recognised separately in income. Changes in the fair values of available-for-sale debt securities (i.e. monetary items) denominated in foreign currencies were analysed into currency translation differences on the amortised cost of the securities and other changes; the currency translation differences were recognised in income or expenditure and the other changes recognised in other comprehensive income and accumulated in the fair value reserve. Changes in fair values of available-for-sale equity securities (i.e. non-monetary items) were recognised in other comprehensive income and accumulated in the fair value reserve, together with the related currency translation differences.

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**2. Significant accounting policies (continued)**

**2.8 Financial assets (continued)**

*(e) Impairment*

From 1 January 2018, the Authority recognises a loss allowance for expected credit losses (“ECL”) on trade and other receivables. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

The Authority recognises lifetime ECL for trade receivables. The expected credit losses on these financial assets are estimated using a provision matrix based on the Authority’s historical credit loss experience, adjusted for factors that are specific to the debtors, general economic conditions and an assessment of both the current as well as the forecast direction of conditions at the reporting date, including time value of money where appropriate.

For all other financial instruments, the Authority recognises lifetime ECL when there has been a significant increase in credit risk since initial recognition. If, on the other hand, the credit risk on the financial instrument has not increased significantly since initial recognition, the Authority measures the loss allowance for that financial instrument at an amount equal to 12-month ECL. The assessment of whether lifetime ECL should be recognised is based on significant increases in the likelihood or risk of a default occurring since initial recognition instead of on evidence of a financial asset being credit-impaired at the reporting date or an actual default occurring.

*Significant increase in credit risk*

In assessing whether the credit risk on a financial instrument has increased significantly since initial recognition, the Authority compares the risk of a default occurring on the financial instrument as at the reporting date with the risk of a default occurring on the financial instrument as at the date of initial recognition. In making this assessment, the Authority considers historical loss rates for each category of customers and adjusts to reflect current and forward-looking macroeconomic factors affecting the ability of the customers to settle the receivables. The Authority has identified the credit default risk for logistics and transportation industry to be the most relevant factors, and accordingly adjusts the historical loss rates based on expected changes in these factors.

The Authority presumes that the credit risk on a financial asset has increased significantly since initial recognition when contractual payments are more than 30 days past due, unless the Authority has reasonable and supportable information that demonstrates otherwise.

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**2. Significant accounting policies (continued)**

**2.8 Financial assets (continued)**

*(e) Impairment (continued)*

The Authority assumes that the credit risk on a financial instrument has not increased significantly since initial recognition if the financial instrument is determined to have low credit risk at the reporting date. A financial instrument is determined to have low credit risk if i) the financial instrument has a low risk of default, ii) the borrower has a strong capacity to meet its contractual cash flow obligations in the near term and iii) adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil its contractual cash flow obligations.

The Authority regularly monitors the effectiveness of the criteria used to identify whether there has been a significant increase in credit risk and revises them as appropriate to ensure that the criteria are capable of identifying significant increase in credit risk before the amount becomes past due.

*Definition of default*

The Authority considers that default has occurred when a financial asset is more than 90 days past due unless the Authority has reasonable and supportable information to demonstrate that a more lagging default criterion is more appropriate.

*Credit-impaired financial assets*

A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of that financial asset have occurred.

*Write-off policy*

The Authority writes off a financial asset when there is information indicating that the counterparty is in severe financial difficulty and there is no realistic prospect of recovery, e.g. when the counterparty has been placed under liquidation or has entered into bankruptcy proceedings, or in the case of trade receivables, when the chances of recovery are remote. Financial assets written off may still be subject to enforcement activities under the Authority's recovery procedures, taking into account legal advice where appropriate. Any recoveries made are recognised in income or expenditure.

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**2. Significant accounting policies (continued)**

**2.8 Financial assets (continued)**

*(e) Impairment (continued)*

*Measurement and recognition of expected credit losses*

For financial assets, the expected credit loss is estimated as the difference between all contractual cash flows that are due to the Authority in accordance with the contract and all the cash flows that the Authority expects to receive, discounted at the original effective interest rate.

If the Authority has measured the loss allowance for a financial instrument at an amount equal to lifetime ECL in the previous reporting period, but determines at the current reporting date that the conditions for lifetime ECL are no longer met, the Authority measures the loss allowance at an amount equal to 12-month ECL at the current reporting date.

Before 1 January 2018, the Authority assessed at each balance sheet date whether there is objective evidence that a financial asset or a group of financial assets is impaired and recognises an allowance for impairment when such evidence exists.

*(i) Loans and receivables*

Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy and default or significant delay in payments are objective evidence that these financial assets are impaired.

The carrying amount of these assets is reduced through the use of an impairment allowance account which is calculated as the difference between the carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. When the asset becomes uncollectible, it is written off against the allowance account. Subsequent recoveries of amounts previously written off are recognised against the same line item in income or expenditure.

The impairment allowance is reduced through income or expenditure in a subsequent period when the amount of impairment loss decreases and the related decrease can be objectively measured. The carrying amount of the asset previously impaired is increased to the extent that the new carrying amount does not exceed the amortised cost had no impairment been recognised in prior periods.

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**2. Significant accounting policies (continued)**

**2.8 Financial assets (continued)**

*(e) Impairment (continued)*

*(ii) Available-for-sale financial assets*

In addition to the objective evidence of impairment described in Note 2.8(e)(i), a significant or prolonged decline in the fair value of an equity security below its cost is considered as objective evidence that the available-for-sale financial asset is impaired.

If any evidence of impairment exists, the cumulative loss that was recognised in other comprehensive income is reclassified to income or expenditure. The cumulative loss is measured as the difference between the acquisition cost (net of any principal repayments and amortisation) and the current fair value, less any impairment loss previously recognised as an expense. The impairment losses recognised as an expense on equity securities are not reversed through income or expenditure.

**2.9 Offsetting financial instruments**

Financial assets and liabilities are offset and the net amount reported in the balance sheet when there is a legally enforceable right to offset and there is an intention to settle on a net basis or realise the asset and settle the liability simultaneously.

**2.10 Trade and other payables**

Trade and other payables represent liabilities for goods and services provided to the Authority prior to the end of financial year which are unpaid. They are classified as current liabilities if payment is due within one year or less (or in the normal operating cycle of the business if longer). Otherwise, they are presented as non-current liabilities.

Trade and other payables are initially recognised at fair value, and subsequently carried at amortised cost using the effective interest method.

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**2. Significant accounting policies (continued)**

**2.11 Derivative financial instruments**

The Authority engages external fund managers to manage some of its surplus funds. The Authority is exposed primarily to the financial risks of foreign exchange and interest rate fluctuations on debt and equity securities and cash and cash equivalents placed by the fund managers. The fund managers also hold derivative financial instruments to manage these risks. The use of hedging instruments is governed by the Authority's investment mandate which provides guidelines on the use of financial instruments consistent with the Authority's risk management strategy.

A derivative financial instrument is initially recognised at its fair value on the date the contract is entered into and is subsequently carried at its fair value. Changes in fair value are recognised in income or expenditure.

**2.12 Fair value estimation of financial assets and liabilities**

The fair values of financial instruments traded in active markets (such as exchange-traded and over-the-counter securities and derivatives) are based on quoted market prices at the balance sheet date. The quoted market prices used for financial assets are the current bid prices; the appropriate quoted market prices for financial liabilities are the current asking prices.

The fair values of financial instruments that are not traded in an active market are determined by using valuation techniques. The Authority uses a variety of methods and makes assumptions based on market conditions that are existing at each balance sheet date. Where appropriate, quoted market prices or dealer quotes for similar instruments are used. Valuation techniques, such as discounted cash flow analysis, are also used to determine the fair values of the financial instruments.

The fair values of current financial assets and liabilities carried at amortised cost approximate their carrying amounts.

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**2. Significant accounting policies (continued)**

**2.13 Leases**

*(a) When the Authority is the lessee*

*Lessee - Operating leases*

Leases where substantially all risks and rewards incidental to ownership are retained by the lessors are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessors) are recognised in income or expenditure on a straight-line basis over the period of the lease.

Contingent rents are recognised as an expense in income or expenditure when incurred.

*(b) When the Authority is the lessor*

*Lessor - Operating leases*

Leases of leasehold land where the Authority retains substantially all risks and rewards incidental to ownership are classified as operating leases. Rental income from operating leases (net of any incentives given to the lessees) is recognised in income or expenditure on a straight-line basis over the lease term.

Initial direct costs incurred by the Authority in negotiating and arranging operating leases are added to the carrying amount of the leased assets and recognised as an expense in income or expenditure over the lease term on the same basis as the lease income.

Contingent rents are recognised as income in income or expenditure when earned.

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**NOTES TO THE FINANCIAL STATEMENTS**

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**2. Significant accounting policies (continued)**

**2.14 Provisions**

A provision is recognised when the Authority has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation and the amount has been reliably estimated.

**2.15 Employee compensation**

Employment benefits are recognised as an expense, unless the cost qualifies to be capitalised as an asset.

*(a) Defined contribution plans*

Defined contribution plans are post-employment benefit plans under which the Authority pays fixed contributions into separate entities such as the Central Provident Fund on a mandatory, contractual or voluntary basis. The Authority has no further payment obligations once the contributions have been paid.

*(b) Pension benefits*

Provision for pensions is made for the payment of retirement benefits to pensionable officers transferred to the Authority on 2 February 1996.

The cost of pension benefit due to pensionable officers is determined based on the estimated present value of the future cash outflows to be made in respect of services provided by these pensionable officers up to the balance sheet date.

*(c) Employee leave entitlement*

Employee entitlements to annual leave are recognised when they accrue to employees. A provision is made for the estimated liability for annual leave as a result of services rendered by employees up to the balance sheet date.

**2.16 Currency translation**

*(a) Functional and presentation currency*

The financial statements are presented in Singapore Dollars, which is the functional currency of the Authority.

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**2. Significant accounting policies (continued)**

**2.16 Currency translation (continued)**

*(b) Transactions and balances*

Transactions in a currency other than Singapore Dollar (“foreign currency”) are translated into Singapore Dollars using the exchange rates at the dates of the transactions. Currency exchange differences resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at the closing rates at the balance sheet date are recognised in income or expenditure. Non-monetary items measured at fair values in foreign currencies are translated using the exchange rates at the date when the fair values are determined. Currency translation differences on these items are included in income or expenditure.

**2.17 Cash and cash equivalents**

For the purpose of presentation in the consolidated statement of cash flows, cash and cash equivalents include cash on hand, deposits with financial institutions, commercial papers, short-term bills and notes which are readily convertible to cash and are subject to an insignificant risk of change in value, and bank overdrafts, except those which are managed by the fund managers or which are placed under the Statutory Board Approved Funds with the Accountant-General’s Department. Bank overdrafts are presented as current borrowings on the consolidated balance sheet.

**2.18 Funds managed/held on behalf of others**

Funds are set up to account for contributions received from external sources for specific purposes.

The assets and liabilities of funds - Singapore Stranded Seafarers’ Fund, and agency funds held in trust for Ministry of Transport are presented as a line item at the bottom of the consolidated balance sheet of the financial statements as prescribed by SB-FRS Guidance Note 3 *Accounting and Disclosures for Trust Funds*. Income or expenditure relating to these funds are accounted for directly in these funds. Details of income, expenditure, assets and liabilities are disclosed in Note 26 to the financial statements.

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**3. Critical accounting estimates, assumptions and judgements**

Estimates, assumptions and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

**3.1 Critical accounting estimates and assumptions**

*Useful lives of property, plant and equipment*

The Authority reviews the estimated useful lives of property, plant and equipment regularly, in accordance with the accounting policy in Note 2.5, in order to determine the amount of depreciation expense to be recorded for each financial year. Changes in the expected level of use of the assets and the Authority's historical experience with similar assets after taking into account anticipated technological changes could impact the economic useful lives and the residual values of the assets, and therefore, future depreciation charges could be revised. Any changes in the economic useful lives could impact the depreciation charges and consequently affect the Authority's results. Refer to Note 4 for the carrying value of property, plant and equipment at the balance sheet date.

**3.2 Critical judgements in applying the entity's accounting policies**

*Accounting for investments in and contributions to associated company*

MPA has determined that it has significant influence over its associated company based on the voting rights of 20% and above but not exceeding 50%, held by its representatives at the board of directors of the associated company. As the associated company are incorporated as companies limited by guarantee and MPA does not share in their profits or losses, MPA has recorded the contributions of \$10,507,512 (2017: \$8,658,257) made to the associated company as grant expenditure in the consolidated statement of comprehensive income.

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**4. Property, plant and equipment**

2018	Leasehold land	Building structures	Wharves, hard-standing and roads	Renovation	Plant, machinery and equipment	Vehicles	Computers	Furniture and fittings	Floating crafts	Capital work-in-progress	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Cost											
Beginning of financial year	7,641,956	60,286,096	99,360,632	12,501,607	15,566,625	669,276	83,581,240	3,467,164	9,871,825	12,733,224	305,679,645
Additions	-	295,082	-	13,500	620,051	-	2,270,362	65,900	-	22,798,823	26,063,718
Transfers	677,874	425,986	21,017,508	-	-	-	2,667,199	-	-	(24,788,567)	-
Disposals/write-off	-	(59,400)	-	(14,515)	(1,575,645)	-	(2,756,919)	(387,438)	(4,400)	-	(4,798,317)
End of financial year	8,319,830	60,947,764	120,378,140	12,500,592	14,611,031	669,276	85,761,882	3,145,626	9,867,425	10,743,480	326,945,046
Accumulated depreciation											
Beginning of financial year	3,499,625	38,082,470	72,755,814	9,622,287	11,325,728	146,479	65,795,314	1,585,727	6,900,360	-	209,713,804
Depreciation charge	401,307	1,930,401	5,664,637	1,017,664	1,206,774	66,928	7,210,256	350,537	501,310	-	18,349,814
Disposals/write-off	-	(59,400)	-	(7,504)	(1,088,032)	-	(2,707,549)	(336,442)	(4,400)	-	(4,203,327)
End of financial year	3,900,932	39,953,471	78,420,451	10,632,447	11,444,470	213,407	70,298,021	1,599,822	7,397,270	-	223,860,291
<b>Net book value</b>	<b>4,418,898</b>	<b>20,994,293</b>	<b>41,957,689</b>	<b>1,868,145</b>	<b>3,166,561</b>	<b>455,869</b>	<b>15,463,861</b>	<b>1,545,804</b>	<b>2,470,155</b>	<b>10,743,480</b>	<b>103,084,755</b>

2017	Leasehold land	Building structures	Wharves, hard-standing and roads	Renovation	Plant, machinery and equipment	Vehicles	Computers	Furniture and fittings	Floating crafts	Capital work-in-progress	Total
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Cost											
Beginning of financial year	7,641,956	60,234,908	99,360,632	14,014,925	15,945,407	669,276	73,345,341	2,847,584	9,871,825	11,474,259	295,406,113
Additions	-	25,931	-	992,770	965,352	-	2,433,103	472,752	-	10,518,803	15,408,711
Transfers	-	25,257	-	531,142	221,319	-	8,330,428	151,692	-	(9,259,838)	-
Disposals/write-off	-	-	-	(3,037,230)	(1,565,453)	-	(527,932)	(4,864)	-	-	(5,135,179)
End of financial year	7,641,956	60,286,096	99,360,632	12,501,607	15,566,625	669,276	83,581,240	3,467,164	9,871,825	12,733,224	305,679,645
Accumulated depreciation											
Beginning of financial year	3,258,329	36,367,081	67,718,542	11,056,889	11,362,815	79,552	59,019,959	1,250,398	6,399,050	-	196,512,615
Depreciation charge	241,296	1,715,389	5,037,272	1,197,665	1,268,827	66,927	7,254,718	340,193	501,310	-	17,623,597
Disposals/write-off	-	-	-	(2,632,267)	(1,305,914)	-	(479,363)	(4,864)	-	-	(4,422,408)
End of financial year	3,499,625	38,082,470	72,755,814	9,622,287	11,325,728	146,479	65,795,314	1,585,727	6,900,360	-	209,713,804
<b>Net book value</b>	<b>4,142,331</b>	<b>22,203,626</b>	<b>26,604,818</b>	<b>2,879,320</b>	<b>4,240,897</b>	<b>522,797</b>	<b>17,785,926</b>	<b>1,881,437</b>	<b>2,971,465</b>	<b>12,733,224</b>	<b>95,965,841</b>

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**5. Capital work-in-progress**

Capital work-in-progress relates to the cost of computer systems and maritime and port projects under development. Additions during the year amounted to \$22,798,823 (2017: \$10,518,803).

**6. Investments in subsidiary and associated companies**

(a) *Subsidiary*

	2018 \$	2017 \$
Cost of investment At beginning and end of financial year	2	2

Details of the subsidiary are as follows:

<u>Name of subsidiary</u>	<u>Country of incorporation</u>	<u>Effective equity held by the Authority</u>	
		2018 %	2017 %
MPA Venture Pte. Ltd.	Singapore	100	100

The principal activity of the subsidiary is to act as a holding company to own jointly intellectual properties and manage investments in maritime technology start-ups and companies and joint ventures with partners.

(b) *Associated company*

(i) *Singapore Maritime Institute*

In January 2011, the Authority, together with Agency for Science, Technology and Research ("A\*STAR"), incorporated Singapore Maritime Institute ("SMI"), a company limited by guarantee. The principal activity of SMI is to develop strategies and programmes related to the academic, policy and research and development aspects of the maritime industry. As at 31 December 2018, the Authority had contributed a total amount of \$47,450,633 (2017: \$36,750,633) of grants to SMI (including unutilised amount of \$916,309 (2017: \$723,821)).

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**7. Financial assets**

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
<b>Non-current investments</b>		
Classified as Fair Value through Profit or Loss / Available-for-sale Securities (in 2017):		
- Quoted equity securities managed by fund managers	<b>161,179,787</b>	117,373,551
- Quoted debt securities managed by fund managers		
- Government bonds	<b>249,832,045</b>	100,523,821
- Corporate Bonds	<b>128,177,111</b>	90,622,219
	<b>539,188,943</b>	308,519,591

*Impairment Assessment of Financial Assets*

From 1 January 2018, no impairment assessment is necessary for the equity and debt securities held at fair value through profit or loss under SB-FRS 109.

The Authority manages its holding of investments in quoted equity securities on a portfolio level with the objective of ensuring long term growth of its portfolio. The objective is not to collect contractual cash flows, nor is it to collect contractual cash flows and by selling these securities. These securities have no fixed maturity or coupon rate. The fair values of these securities are based on closing quoted market prices on the last market day of the financial year.

The investment in quoted debt securities are held by the Authority for trading purposes with the objective of ensuring long term growth of its portfolio. The fair values of these securities are based on closing quoted market prices on the last market day of the financial year.

Investment income, amounting to loss of \$24,613,616 (2017: gain of \$51,266,029) have been included in income or expenditure for the year as part of "net other operating (deficit)/surplus".

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**8. Trade receivables**

	2018 \$	2017 \$
Trade receivables	45,370,833	49,501,730
Less: Loss allowance	(33,816)	(359,298)
Trade receivables - net	<u>45,337,017</u>	<u>49,142,432</u>

The Authority's exposure to credit risk arises through its trade receivables. Due to the nature of the Authority's business, credit risk is not concentrated in any specific geographical region but concentrated in many shipping companies exposed to business cyclical fluctuations.

Trade receivables are mainly denominated in Singapore Dollar, which is the Authority's functional currency.

*Impairment losses*

The average credit period on sale of goods is 30 days (2017: 30 days).

From 1 January 2018, loss allowance on trade receivables has been measured at an amount equal to lifetime expected credit losses. In addition, trade receivable is written off when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery.

The following tables detail the risk profile of trade receivables from contracts with customers based on the Authority's provision matrix for 2018, as well as the analysis of trade receivables for 2017. As the Authority's historical credit loss experience show significantly different loss patterns for different customer segments (including normal and low risk type), the provision for loss allowance based on past due status is further distinguished between the Authority's customer segment of different risk type.

	Normal risk type customers			Total \$
	ECL rate \$	Estimated total gross carrying amount at default \$	Lifetime ECL \$	
<u>2018</u>				
Current	-	43,537,319	-	43,537,319
1 - 30 days	-	163,506	-	163,506
31 - 60 days	0.8%	42,181	(325)	41,856
61 - 90 days	4.6%	16,231	(746)	15,485
> 90 days	17.8%	183,506	(32,745)	150,761
<b>Total</b>		<u>43,942,743</u>	<u>(33,816)</u>	<u>43,908,927</u>

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**8. Trade receivables (continued)**

	Low risk type customers			Total
	ECL rate	Estimated total gross carrying amount at default	Lifetime ECL	
	\$	\$	\$	\$
<u>2018</u>				
Current	-	-	-	-
1 - 30 days	-	-	-	-
31 - 60 days	-	57,244	-	57,244
61 - 90 days	-	1,333,280	-	1,333,280
> 90 days	-	37,586	-	37,586
<b>Total</b>		<b>1,428,090</b>	-	<b>1,428,090</b>

Before 1 January 2018, doubtful debt allowances for trade receivables were determined based on estimates for specific accounts as well as estimates of potential losses for aged accounts.

	2017 \$
<b>Gross receivables</b>	
Not past due	43,268,461
Past due 1 - 30 days	2,860,837
Past due 31 - 60 days	388,606
More than 60 days	2,983,826
	<u>49,501,730</u>
<b>Impairment losses</b>	
Not past due	33,526
Past due 1 - 30 days	25,901
Past due 31 - 60 days	25,950
More than 60 days	273,921
	<u>359,298</u>

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**8. Trade receivables (continued)**

The movements in credit loss allowance are as follows:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Beginning of financial year	<b>359,298</b>	111,107
Adoption on FRS 109	-	-
Beginning of financial year (Adjusted)	<b>359,298</b>	111,107
Loss allowance recognised in income or expenditure during the year on:		
- Asset originated	<b>33,816</b>	334,962
- Reversal of unutilised amounts	<b>(240,688)</b>	-
	<b>(206,872)</b>	334,962
Receivables written off as uncollectible	<b>(118,610)</b>	(86,771)
End of financial year	<b>33,816</b>	359,298

Based on historical default rate, the Authority believes that, apart from the above, no impairment allowance is necessary in respect of other trade receivables outstanding at the balance sheet date.

**9. Deposits, prepayments and other receivables**

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Deposits	<b>526,891</b>	278,316
Prepayments	<b>1,144,144</b>	1,202,863
Other receivables	<b>8,740,267</b>	1,332,396
Amount due from associate & trust funds (non-trade)	<b>916,459</b>	2,596,904
	<b>9,656,726</b>	3,929,300
Interest receivable	<b>4,413,105</b>	2,338,114
	<b>15,740,866</b>	7,748,593

Other receivables mainly comprise dividends receivable, receivables on sale of financial instruments and derivative assets.

As at the balance sheet date, other receivables and accrued interest receivable include the following items managed by fund managers:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Interest receivable	<b>3,099,310</b>	1,180,370
Receivables on sale of financial instruments	<b>2,956,234</b>	86,105
Forward foreign exchange purchases (net)	<b>4,171,110</b>	816,702
Other receivables (mainly dividend receivables and withholding tax receivables)	<b>411,897</b>	201,545
	<b>10,638,551</b>	2,284,722

The Authority has not made any allowance for ECL on the financial assets as the Authority is of the view that these are recoverable.

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**10. Cash and cash equivalents**

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Cash at bank and on hand	<b>98,696,027</b>	414,162,961
Placement with Accountant-General's Department	<b>610,942,915</b>	566,644,729
- Statutory Board Approved Funds ("SBAF")	<b>522,467,770</b>	451,935,821
- Centralised Liquidity Management Framework ("CLMF")	<b>88,475,145</b>	114,708,908
Short-term bills and notes	<b>77,088,373</b>	8,016,968
Fixed deposits	<b>1,051,690</b>	10,023,000
	<b><u>787,779,005</u></b>	<u>998,847,658</u>

For the purpose of presenting the consolidated statement of cash flows, cash and cash equivalents comprise the following:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Cash and bank balances (as above)	<b>787,779,005</b>	998,847,658
Less: Cash and cash equivalents managed by fund managers	<b>(170,184,496)</b>	(434,138,348)
Less: Placement with Accountant-General's Department ("SBAF")	<b>(522,467,770)</b>	(451,935,821)
Cash and cash equivalents per consolidated statement of cash flows	<b><u>95,126,739</u></b>	<u>112,773,489</u>

The Authority's cash and cash equivalents (excluding those managed by fund managers) are mainly denominated in Singapore Dollar, which is the Authority's functional currency.

Placement with the Accountant-General's Department comprise:

- (i) \$88,475,145 (2017: \$114,708,908) which is centrally managed by the Accountant-General's Department under the Centralised Liquidity Management Framework ("CLMF"), as set out in the Accountant-General's Circular No. 4/2009 Centralised Liquidity Management for Statutory Boards and Ministries, and
- (ii) industry funds of \$522,467,770 (2017: \$451,935,821) which is placed under the Statutory Board Approved Funds ("SBAF") and is subject to restrictions.

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**10. Cash and cash equivalents (continued)**

As at the balance sheet date, cash and cash equivalents include the following managed by fund managers:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Cash at bank and on hand	<b>92,044,433</b>	416,098,380
Short-term bills and notes	<b>77,088,373</b>	8,016,968
Fixed deposits	<b>1,051,690</b>	10,023,000
	<b><u>170,184,496</u></b>	<u>434,138,348</u>

The effective interest rates of fixed deposits with the Accountant-General's Department under the Centralised Liquidity Management (CLM) framework vary from 1.22% to 1.89% (2017: 1.21% to 1.33%) per annum ("p.a."). The maturity of CLM fixed deposits are from 1 day to 1.5 years (2017: from 1 day to 1.6 years).

The effective interest rates of cash and cash equivalents managed by fund managers are as follows:

	<b>2018</b>	<b>2017</b>
	<b>% p.a.</b>	<b>% p.a.</b>
Commercial paper	<b>1.85 to 3.14</b>	-
Short-term bills and notes	<b>(0.95) to 2.40</b>	1.21 to 1.27
Fixed deposits	<b>1.82</b>	1.15

**11. Establishment account**

The establishment account comprises the net book value of assets transferred to the Authority from the former National Maritime Board, the Marine Department and the regulatory departments of the Port of Singapore Authority.

*Capital management*

The Authority defines "capital" to include establishment account and reserves. The Board's policy is to maintain a strong capital base to safeguard the ability to meet the long-term development needs of the Authority. The Board of Directors monitors the "Net Operating Surplus/Deficit" and the "Other Operating Surplus/Deficit" on a regular basis. The Board monitors the major capital expenditure which is strategic in nature and may draw on reserves.

There were no changes in the capital management approach during the year.

The Authority is not subject to externally imposed capital requirements.

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**12. Equity financing account**

The Equity financing account refers to equity injections by the Minister for Finance (“MOF”) in its capacity as shareholder under the Capital Management Framework for statutory boards, implemented with effect from 1 September 2004.

**13. Employment benefits**

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Beginning of financial year	<b>422,377</b>	422,377
Provision made	<b>11,408</b>	11,505
Provision utilised	<b>(11,408)</b>	(11,505)
End of financial year	<b>422,377</b>	<b>422,377</b>

The Authority operates an unfunded employment benefit plan for a limited pool of employees under the provisions of the Pensions Act (Cap. 225). Benefits are payable based on the last drawn salary of the employees and the number of years of service with the Authority.

**14. Deferred capital grant**

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Beginning of financial year	<b>19,114,704</b>	20,461,524
Amortisation to income	<b>(1,449,351)</b>	(1,346,820)
End of financial year	<b>17,665,353</b>	<b>19,114,704</b>

The above represents the unamortised portion of Government grant received in connection with specific property, plant and equipment acquired by the Authority.

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**15. Trade and other payables**

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Trade payables	<b>4,424,411</b>	1,010,081
Payables on purchase of financial instruments	<b>49,273</b>	400,920
Accrued capital expenditure	<b>6,480,697</b>	1,388,251
Accrued operating expenses	<b>25,371,770</b>	25,908,322
Other payables	<b>4,606,328</b>	4,418,787
	<b><u>40,932,479</u></b>	<u>33,126,361</u>

Trade payables are mainly denominated in Singapore Dollar, which is the Authority's functional currency. Payables on purchase of financial instruments, managed by fund managers, are mainly denominated in Singapore Dollar.

Accrued operating expenses include accrual for performance bonus and group bonus of \$11,912,100 (2017: \$12,279,213) and accrued administrative fee payable to the fund managers and custodian bank amounting to \$797,577 (2017: \$762,985).

The following are the expected contractual undiscounted cash outflows of the financial liabilities, including interest payments and excluding the impact of netting agreements:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
<b>Undiscounted cash flows within 1 year</b>		
<b>Non-derivative financial liabilities</b>		
Trade and other payables	<b><u>(40,883,206)</u></b>	<u>(32,725,441)</u>

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**16. Advances, deposits and unearned income**

	2018 \$	2017 \$
Advances and deposits	5,147,743	3,918,281
Unearned operating lease income [Note (a)]	4,481,025	5,304,933
Unearned annual port dues and Maritime Welfare Fee [Note (b)]	1,606,099	1,518,906
	<u>11,234,867</u>	<u>10,742,120</u>

(a) Unearned operating lease income mainly relates to sub-lease of a property to a third party for a period of 9 years (2017: 10 years), of which payment was received in advance.

(b) Unearned annual port dues and Maritime Welfare Fee relate to specific customers under annual and 6 months port dues schemes, and the advance payments of Maritime Welfare Fee. These customers, whose ships that call frequently at the port are allowed to pay port dues on an annual or 6 months basis in advance instead of on a per call basis.

Deposits due within 1 year approximate their carrying amount of \$5,034,071 (2017: \$3,894,849).

**17. Operating revenue**

	2018 \$	2017 \$
<b>Timing of revenue recognition</b>		
<u>SB-FRS 115 revenue</u>		
Over time		
- Dues, licence & permit fees, and agency fee	184,100,188	183,784,683
- Annual Administrative Fee	1,216,149	1,000,847
- Training	807,347	898,471
At a point in time		
- Other marine services	97,617,543	98,289,154
- Shipping services	4,972,227	5,327,608
<u>Non SB-FRS 115 revenue</u>		
- Rental income	4,380,075	3,999,210
- Miscellaneous revenue	377,851	1,239,037
	<u>293,471,380</u>	<u>294,539,010</u>

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**18. Staff cost**

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Wages and salaries	<b>72,916,207</b>	72,111,111
Employer's contribution to Central Provident Fund	<b>9,845,878</b>	9,671,986
Employer's contribution to other defined benefit plans (Note 13)	<b>11,408</b>	11,505
Other benefits	<b>5,596,109</b>	5,866,705
	<b><u>88,369,602</u></b>	<u>87,661,307</u>

**19. Other operating expenses**

Included in other operating expenses are the following:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Project grants	<b>15,514,791</b>	23,486,335
Contribution to Maritime Cluster Fund projects	<b>17,695,787</b>	12,495,681
Contribution to International Organisations	<b>3,948,750</b>	4,420,974
Transport & travel	<b>1,937,321</b>	2,089,345
Rental	<b>3,192,939</b>	2,969,560
Property tax	<b>1,211,197</b>	1,184,236
Telecommunication	<b>2,313,999</b>	2,407,112
Water cost & water sales service fee	<b>1,186,132</b>	1,501,482
Utility charges	<b>1,020,128</b>	859,799
Events & publicity	<b>6,772,995</b>	5,323,490
Professional & consultancy fees	<b>9,333,177</b>	7,764,055
Other administrative expenses	<b>7,520,835</b>	8,079,374
Other miscellaneous expenses	<b>2,126,526</b>	2,044,103
	<b><u>73,774,577</u></b>	<u>74,625,546</u>

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**20. Net other operating (deficit)/surplus**

	2018 \$	2017 \$
<b>Investment (loss)/gain - net</b>		
Dividend income	4,981,248	4,894,876
Interest income	9,946,030	10,336,315
Fair value (loss)/gain on investment - realised	(2,382,240)	51,740,605
Fair value (loss)/gain on investment - unrealised	(28,076,552)	(759,289)
Loss on foreign exchange - net	(4,929,643)	(17,304,228)
One-off reversal of net cumulative unrealised fair value reserves	-	6,272,896
Other investment expenses	(4,152,459)	(3,915,146)
Investment (loss)/gain from funds with fund managers - net	(24,613,616)	51,266,029
<b>Other operating surplus - net</b>		
Interest income	2,201,017	1,352,201
(Loss)/gain on foreign exchange - net	(159,937)	44,333
Loss on disposal of property, plant and equipment - net	(557,394)	(693,942)
Others - net	11,115	28,606
Other operating surplus - net	1,494,801	731,198
	<b>(23,118,815)</b>	<b>51,997,227</b>

**21. Contribution to Consolidated Fund**

The contribution to the Consolidated Fund is made in accordance with Section 3(a) of the Statutory Corporations (Contributions to Consolidated Fund) Act (Cap. 319A). The contribution is based on 17% (2017: 17%) of the surplus for the year.

	2018 \$	2017 \$
Beginning of financial year	24,159,334	17,456,880
Amount contributed	(24,159,334)	(17,456,880)
Provision for the year	10,683,274	24,159,334
End of financial year	<b>10,683,274</b>	<b>24,159,334</b>

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**22. Financial Derivatives at Fair Value**

The Authority places its surplus funds with fund managers to manage its investment portfolio under a balanced mandate. These fund managers are given discretion in managing their portfolio, subject to the investment guidelines set out in the fund management agreements.

As part of risk management activities, the fund managers use financial derivatives for hedging purposes. The financial derivatives used include financial futures, swaps and forward foreign exchange contracts.

As at balance sheet date, the notional amounts of the financial derivatives held by the fund managers are as follows:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
<b>Notional amounts</b>		
Futures contracts		
- Gross inflow	<b>12,959</b>	41,431,798
- Gross outflow	<b>(11,041,609)</b>	(84,060,667)
Foreign currency swap and forward contracts		
- Gross inflow	<b>911,266,560</b>	166,837,891
- Gross outflow	<b>(911,266,560)</b>	(166,837,891)

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**23. Commitments**

(a) Capital commitments

Capital expenditures contracted for at the balance sheet date but not recognised in the financial statements are as follows:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Property, plant and equipment	<b><u>12,957,913</u></b>	<b><u>15,268,204</u></b>

(b) Operating lease commitments - Where the Authority is a lessee:

The Authority leases a number of office facilities under non-cancellable operating lease agreements. The leases typically run for an initial period of two years, with an option to renew the lease after that date. Lease payments are usually increased annually to reflect market rentals.

Payment recognised as an expense during the year:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Minimum lease payments under non-cancellable operating leases	<b><u>13,135,537</u></b>	<b><u>12,807,588</u></b>

The future minimum lease payables under non-cancellable operating leases contracted for at the balance sheet date but not recognised as liabilities, are as follows:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Not later than one year	<b>13,829,459</b>	12,538,867
Between one and five years	<b>3,350,808</b>	3,920,207
Later than five years	-	-
	<b><u>17,180,267</u></b>	<b><u>16,459,074</u></b>

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**23. Commitments** (continued)

(c) Operating lease commitments - Where the Authority is a lessor:

The Authority leases out rental space and buildings under non-cancellable operating leases.

During the year, the Authority recognised \$3,150,865 (2017: \$3,158,702) of rental income from non-cancellable operating leases.

The future minimum lease receivables under non-cancellable operating leases contracted for at the balance sheet date but not recognised as receivables, are as follows:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Not later than one year	<b>2,387,619</b>	1,853,818
Between one and five years	<b>3,005,674</b>	2,408,533
Later than five years	<b>2,054,581</b>	2,590,940
	<b><u>7,447,874</u></b>	<b><u>6,853,291</u></b>

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**24. Financial risk management**

*Financial risk factors*

The Authority's activities expose it to market risk (including currency risk, interest rate risk and price risk), credit risk and liquidity risk.

Risk management is integral to the whole operations of the Authority. The Authority has a system of controls in place to create an acceptable balance between the cost of risks occurring and the cost of managing the risks. The management continually monitors the Authority's risk management process to ensure that an appropriate balance between risk and control is achieved.

*Funds with fund managers*

In connection with the funds placed with fund managers, the funds placed with fund managers are exposed to a variety of financial risk: credit risk, liquidity risk and market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk).

The fund managers appointed under the balanced mandate are held responsible in achieving the investment objectives set forth in their respective fund manager agreements entered with the Authority. All income and realised capital gains are to be reinvested by the fund managers unless otherwise instructed by the Authority.

The fund managers' overall risk management programme seeks to maximise the returns derived for the level of risk to which they are exposed and seeks to minimise the potential adverse effects on the fund managers' financial performance.

A significant proportion of the Authority's security investments present a risk of loss of capital. The maximum loss of capital is represented by the carrying values of those security investments.

The management of these risks carried out by the fund managers is governed by the mandate set forth in the fund manager agreements approved by the Investment Committee of the Authority. The mandate provides written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, credit risk, the use of derivative and non-derivative financial instruments.

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*For the financial year ended 31 December 2018*

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**24. Financial risk management** (continued)

(a) Market risk

(i) *Currency risk*

The Authority invests in financial instruments and enters into transactions denominated in currencies other than its functional currency. Consequently, the Authority is exposed to risks that the exchange rate of its functional currency relative to other foreign currencies may change in a manner that has an adverse effect on the value of that portion of the Authority's assets or liabilities denominated in currencies other than the functional currency.

The financial assets managed by fund managers denominated in currencies other than the Authority's functional currency comprise the following:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
British pound sterling	<b>21,530,239</b>	7,937,409
Canadian dollar	<b>31,323,750</b>	3,875,271
Euro	<b>47,112,279</b>	7,499,432
Japanese yen	<b>19,219,828</b>	15,045,933
Swiss franc	<b>18,403,512</b>	1,852,134
United States dollar	<b>337,633,496</b>	185,786,390
Various other foreign currencies	<b>63,818,439</b>	22,726,400
	<b><u>539,041,543</u></b>	<u>244,722,969</u>

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**24. Financial risk management (continued)**

(a) Market risk (continued)

(i) *Currency risk (continued)*

At the balance sheet date, if there is a +/-5% movement in exchange rates relative to the Singapore Dollar, with all other variables held constant, the increase/(decrease) in the fair value of financial assets in income or expenditure (from 1 January 2018) / other comprehensive income and presented as fair value reserve in the consolidated statement of changes in reserves (for non-monetary assets) or income or expenditure (for monetary assets) in the consolidated statement of changes in reserves (before 1 January 2018) would be as follows:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
<b>+5% scenario</b>		
Income or expenditure	<b>26,952,077</b>	6,503,673
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	<u>-</u>	<u>5,712,429</u>
<b>-5% scenario</b>		
Income or expenditure	<b>(26,952,077)</b>	(6,503,673)
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	<u>-</u>	<u>(5,712,429)</u>

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*For the financial year ended 31 December 2018*

**24. Financial risk management (continued)**

(a) Market risk (continued)

(ii) *Interest rate risk*

Interest rate risk arises from the effects of fluctuations in the prevailing levels of market interest rates on the fair value of financial assets and liabilities and future cash flows. The Authority holds debt securities and derivatives that expose the Authority to fair value interest rate risk.

*FVTPL debt securities, managed by fund managers*

At the balance sheet date, assuming that all other variables are held constant and no loss event has occurred, a 100 basis point increase/(decrease) in the interest rate would (decrease)/increase the fair values of the financial assets in income or expenditure (from 1 January 2018)/other comprehensive income and presented as fair value reserve in the consolidated statement of changes in reserves (before 1 January 2018) by the following amounts:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
<b>+100 basis point scenario</b>		
Income or expenditure	<b>(18,295,325)</b>	-
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	-	<b>(5,696,678)</b>
	<hr/>	<hr/>
<b>-100 basis point scenario</b>		
Income or expenditure	<b>20,453,593</b>	-
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	-	<b>5,973,401</b>
	<hr/>	<hr/>

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
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**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

**24. Financial risk management (continued)**

(a) Market risk (continued)

(ii) *Interest rate risk (continued)*

At the balance sheet date, assuming that all other variables are held constant, a 100 basis point increase/(decrease) in interest rate would increase/(decrease) the interest income of the floating rate debt securities recorded in income or expenditure by the following amounts:

	2018 \$	2017 \$
<b>+100 basis point scenario</b>		
Income or expenditure	<u>166,256</u>	<u>50,507</u>
<b>-100 basis point scenario</b>		
Income or expenditure	<u>(166,256)</u>	<u>(50,507)</u>

*Derivatives (futures), managed by fund managers*

At the balance sheet date, if interest rates had been 100 basis point higher/(lower) with all other variables held constant, the increase/(decrease) in the fair values of the interest rate derivatives in the income or expenditure would be as follows:

	2018 \$	2017 \$
<b>+100 basis point scenario</b>		
Income or expenditure	<u>777,463</u>	-
<b>-100 basis point scenario</b>		
Income or expenditure	<u>(819,675)</u>	-

**THE MARITIME AND PORT AUTHORITY OF SINGAPORE  
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**24. Financial risk management (continued)**

(a) Market risk (continued)

(ii) *Interest rate risk (continued)*

The effective interest rates at balance sheet date of the debt securities held by the fund managers and the period in which they mature or reprice are as follows:

	2018 \$	2017 \$
<b>Fixed rate</b>		
Maturing in less than 1 year	35,747,047	14,001,308
Maturing between 1 to 5 years	127,972,481	134,057,199
Maturing in more than 5 years	176,318,612	38,806,538
<b>Floating rate</b>		
Repricing in less than 3 months	37,971,016	4,280,995
	<u>378,009,156</u>	<u>191,146,040</u>

(iii) *Equity price risk*

The Authority is exposed to equity price risk. This arises from investments held by the Authority for which prices in the future are uncertain. Where equity securities are denominated in currencies other than the functional currency of the Authority, the price initially expressed in foreign currency and then converted into the functional currency will also fluctuate because of changes in foreign exchange rates. Paragraph (a)(i) "Currency risk" sets out how this component of price risk is managed and measured.

The Authority's policy to manage price risk is via diversification and selection of securities and other financial instruments within specified limits set by the Investment Committee. The majority of the Authority's equity investments is publicly traded. The overall market position of these equity investments is monitored on a daily basis by the fund managers and is reviewed on a quarterly basis by the members of the Investment Committee. Compliance with the Authority's fund management mandate is reported to the members of the Investment Committee on a quarterly basis.

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*For the financial year ended 31 December 2018*

**24. Financial risk management (continued)**

(a) Market risk (continued)

(iv) Price risk

*From 1 January 2018*

At the balance sheet date, assuming that all other variables are held constant, a 5% increase/(decrease) in the underlying equity prices would increase/(decrease) the Authority's net surplus for the year by the following amounts:

	2018 \$
<b>+5% scenario</b>	
<b>Equity securities, managed by fund managers</b>	
Income or expenditure	<u>7,209,550</u>
<b>-5% scenario</b>	
<b>Equity securities, managed by fund managers</b>	
Income or expenditure	<u>(7,209,550)</u>

*Before 1 January 2018*

*Impaired available-for-sale equity securities, managed by fund managers*

At the balance sheet date, assuming that all other variables are held constant, a 5% increase/(decrease) in the underlying equity prices would increase/(decrease) the fair values of the equity securities in other comprehensive income and presented as fair value reserve in the consolidated statement of changes in reserves and income or expenditure by the following amounts:

	2017 \$
<b>+5% scenario</b>	
<b>Equity securities, managed by fund managers</b>	
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	(4,356)
Income or expenditure	<u>254,755</u>
<b>-5% scenario</b>	
<b>Equity securities, managed by fund managers</b>	
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	-
Income or expenditure	<u>(250,399)</u>

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**24. Financial risk management (continued)**

(a) Market risk (continued)

(iv) Price risk (continued)

*Available-for-sale equity securities, managed by fund managers, not impaired*

At the balance sheet date, assuming that all other variables are held constant, a 5% increase/(decrease) in the underlying equity prices would increase/(decrease) the fair values of the equity securities in other comprehensive income and presented as fair value reserve in the consolidated statement of changes in reserves and income or expenditure by the following amounts:

	2017 \$
<b>+5% scenario</b>	
<b>Equity securities, managed by fund managers</b>	
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	<u>5,618,279</u>
<b>-5% scenario</b>	
<b>Equity securities, managed by fund managers</b>	
Other comprehensive income and presented in fair value reserve in consolidated statement of changes in reserves	<u>(5,618,279)</u>

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**24. Financial risk management (continued)**

(b) Credit risk

The Authority's current credit risk grading framework comprises the following categories:

<b>Category</b>	<b>Description</b>	<b>Basis for recognising expected credit losses (ECL)</b>
Performing	The counterparty has a low risk of default and does not have any past-due amounts.	12-month ECL
Doubtful	Amount is >30 days past due or there has been a significant increase in credit risk since initial recognition.	Lifetime ECL - not credit-impaired
In default	Amount is >90 days past due or there is evidence indicating the asset is credit-impaired.	Lifetime ECL - credit-impaired
Write-off	There is evidence indicating that the debtor is in severe financial difficulty and the Authority has no realistic prospect of recovery.	Amount is written off

The table below details the credit quality of the Authority's financial assets as well as maximum exposure to credit risk by credit risk rating grades:

	Note	Internal credit rating	12-month or lifetime ECL	Gross carrying amount \$	Loss allowance \$	Net carrying amount \$
<u>2018</u>						
Trade receivable	8	(i)	Lifetime ECL (simplified approach)	45,370,833	33,816	45,337,017
Other receivables	9	(i)	Lifetime ECL (simplified approach)	10,425,612	-	10,425,612
					33,816	

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*For the financial year ended 31 December 2018*

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**24. Financial risk management (continued)**

(b) Credit risk (continued)

- (i) The Authority determines the expected credit losses on these items by using a provision matrix, estimated based on historical credit loss experience based on the past due status of the debtors, adjusted as appropriate to reflect current conditions and estimates of future economic conditions.

The Authority has adopted procedures in extending credit terms to customers and in monitoring its credit risk. The Authority only grants credit to creditworthy counterparties. Cash is held with creditworthy institutions and is subject to immaterial credit loss.

Although the Authority's credit exposure is concentrated mainly in Singapore, it has no significant concentration of credit risk with any single customer or group of customers.

*Funds with fund managers*

Credit risk is the risk that a counterparty to a financial instrument will fail to discharge an obligation or commitment that it has entered into with the Authority. The fund manager has a credit policy in place and the exposure to credit risk is monitored on an on-going basis.

At 31 December 2018, the following financial assets were exposed to credit risk: investment in debt securities, receivables on sale of financial instruments, forward foreign exchange purchases, cash and cash equivalents, derivative financial assets and other receivables. The total carrying amount of financial assets exposed to credit risk amounted to \$558,782,930 (2017: \$627,168,190).

The Authority limits its credit risk exposure in respect of investments in debt securities by restricting the fund managers to invest in debt securities that have a sound credit rating from Standard & Poor's and Moody's (at least BBB by the former or Baa2 by the latter, on the lower rating of both in the event of split ratings). Given these credit ratings, management does not expect any counterparty to fail to meet its obligations.

The maximum exposure to credit risk is represented by the carrying amount of each financial asset on the consolidated balance sheet.

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*For the financial year ended 31 December 2018*

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**24. Financial risk management (continued)**

(c) Liquidity risk

The Authority monitors its liquidity risk and maintains a level of cash and cash equivalents deemed adequate by management to finance the Authority's operations and to mitigate the effects of fluctuations in cash flows.

*Funds with fund managers*

The Authority's listed debt and equity securities are considered readily realisable, as they are listed on the major stock exchanges. The fund managers are required to comply with the restrictions and limitations as stipulated in the investment mandate. All transactions carried out by the fund managers are settled daily through the Authority's custodian of the portfolio of investments placed by fund managers.

The fund managers may periodically invest in some debt securities and derivative contracts on behalf of the Authority that are traded over the counter, which are not traded in an organised market and may be illiquid. As a result, the Authority may not be able to liquidate its investments in these instruments at an amount close to their fair value to meet its liquidity requirements or be able to respond to specific events such as the deterioration in the creditworthiness of any particular issuer.

At the balance sheet date, non-derivative financial liabilities held by the Authority are as disclosed in Note 15.

(d) Fair value measurements

The following presents assets and liabilities measured and carried at fair value and classified by level of the following fair value measurement hierarchy:

- (a) quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1);
- (b) inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices) (Level 2); and
- (c) inputs for the asset or liability that are not based on observable market data (unobservable inputs) (Level 3).

The fair value of financial instruments traded in active markets (the Authority's equity and debt securities managed by fund managers) is based on quoted market prices at the balance sheet date. The quoted market price used for financial assets held by the Authority is the current bid price. These instruments are classified as Level 1.

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**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

**24. Financial risk management** (continued)

(d) Fair value measurements (continued)

*Derivatives used by fund managers*

Futures contracts are marked to market daily using listed market prices with any gains or losses posted to the related variation margin accounts.

The fair value of forward exchange contracts is based on their listed market price and the fair value of swaps is based on quotations from independent third party vendors and sources that apply fair value techniques. These instruments are classified as Level 2.

(e) Financial instruments by category

The carrying amounts of financial assets measured at fair value are disclosed on the face of the balance sheet. The carrying amounts of financial instruments at amortised cost approximate their fair values.

The aggregate carrying amounts of loans and receivables and financial liabilities at amortised cost are as follows:

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Loans and receivables	<b>843,541,634</b>	1,053,719,118
Financial liabilities at amortised cost	<b>46,030,949</b>	36,643,722

**25. Related party transactions**

In addition to the information disclosed elsewhere in the financial statements, the following transactions took place between the Authority and related parties at terms agreed between the parties.

(a) Sales of services

	<b>2018</b>	<b>2017</b>
	<b>\$</b>	<b>\$</b>
Provision of dumping and monitoring services to Statutory Boards	<b>37,971,540</b>	37,579,440
Provision of agency and project management services to Ministry	<b>23,905,136</b>	14,941,541

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**NOTES TO THE FINANCIAL STATEMENTS**

*For the financial year ended 31 December 2018*

**25. Related party transactions (continued)**

(b) Key management personnel compensation

Key management personnel of the Authority are those persons having the authority and responsibility for planning, directing and controlling the activities of the Authority. These key management personnel comprise the Board of Members and Executive Management Team of the Authority.

Key management personnel compensation is as follows:

	<b>2018</b>	2017
	\$	\$
Salary and short-term employee benefits	<b>5,929,503</b>	5,277,229
CPF contributions	<b>277,742</b>	263,073
Directors' fees	<b>194,075</b>	185,635
	<b><u>6,401,320</u></b>	<u>5,725,937</u>

**26. Funds managed/held on behalf of others - Funds held in trust**

Funds held in trust and managed by the Authority comprise the following:

	<b>2018</b>	2017
	\$	\$
Singapore Stranded Seafarers' Fund	<b>339,539</b>	338,450
Agency funds held in trust of Ministry of Transport	<b>3,357,083</b>	28,688,062
Aids to Navigation Fund	-	9,804,414
	<b><u>3,696,622</u></b>	<u>38,830,926</u>

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*For the financial year ended 31 December 2018*

**26. Funds managed/held on behalf of others - Funds held in trust (continued)**

*Singapore Stranded Seafarers' Fund ("SSSF")*

- (a) The SSSF was set up in September 1999 (following the Authority's Board approval for its creation at an earlier board meeting in July 1999). The SSSF is managed by a Committee made up of representatives from the Authority and the unions, namely Singapore Maritime Officers' Union and Singapore Organisation of Seamen.

The Fund is humanitarian in nature. It shall be used only as a last resort when it becomes evidently clear that the ship owners concerned are no longer able to bear responsibility towards their ship crew, e.g. due to insolvency. It is used mainly to buy fuel (i.e. to run the ship's generators) and provide food and portable water to sustain the stranded ship crew onboard Singapore-registered ships stranded in Singapore or overseas, until such time they are repatriated or the dispute is settled.

- (b) The assets and liabilities of the SSSF as at 31 December are as follows:

	<b>2018</b>	2017
	\$	\$
<b>Accumulated fund</b>	<b>339,539</b>	338,450
<b>Current assets</b>		
Interest receivable	643	643
Cash and cash equivalents	<b>338,896</b>	337,807
	<b>339,539</b>	338,450

- (c) The results of the SSSF for the year ended 31 December are as follows:

	<b>2018</b>	2017
	\$	\$
Interest income	<b>1,089</b>	1,087
Surplus for the year	<b>1,089</b>	1,087
Accumulated fund as at 1 January	<b>338,450</b>	337,363
Accumulated fund as at 31 December	<b>339,539</b>	338,450

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**26. Funds managed/held on behalf of others - Funds held in trust (continued)**

*Agency funds held in trust of Ministry of Transport*

(a) On 11 March 2005, the Authority was appointed by Ministry of Transport ("MOT") as its managing agent in connection with the proposed land reclamation at Pasir Panjang Terminal Phases 3 and 4 and Tuas Port.

(b) The assets and liabilities of the agency funds held in trust as at 31 December are as follows:

	2018 \$	2017 \$
<b>Accumulated fund</b>	<b>3,357,083</b>	28,688,062
<b>Current assets</b>		
Cash at bank	2,057,060	30,571,984
Amount due from various Government bodies	7	270
GST receivable	12,271,249	13,326,125
	<b>14,328,316</b>	43,898,379
<b>Current liabilities</b>		
GST payable	(10,945,976)	(15,199,208)
Amount due to various Government bodies	(25,257)	(11,109)
<b>Net assets</b>	<b>3,357,083</b>	28,688,062

(c) The results of the agency funds held in trust for the year ended 31 December are as follows:

	2018 \$	2017 \$
Grants received	823,981,979	645,511,702
Interest income	245,662	91,362
	<b>824,227,641</b>	645,603,064
Grants disbursed	(826,109,527)	(643,276,276)
Agency fees paid/payable	(23,449,093)	(14,498,209)
Deficit for the year	(25,330,979)	(12,171,421)
Accumulated fund as at 1 January	28,688,062	40,859,483
Accumulated fund as at 31 December	<b>3,357,083</b>	28,688,062

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*For the financial year ended 31 December 2018*

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**26. Funds managed/held on behalf of others - Funds held in trust (continued)**

*Aids To Navigation Fund ("ANF")*

- (a) The Co-operative Mechanism, launched in 2007, is the key platform for the littoral States, user States, stakeholders, and the industry to exchange information, and share their perspectives on issues related to safety of navigation and environment protection in the Straits of Malacca and Singapore (SOMS). The ANF, one of three components of the Co-operative Mechanism, receives direct financial contributions from the international maritime community to maintain critical marine navigational aids in the SOMS. The 14 ANF Committee members are China, India, Japan, Republic of Korea, Saudi Arabia, United Arab Emirates, the International Foundation for Aids to Navigation (IFAN), International Maritime Organization (IMO), Malacca Straits Council, The Nippon Foundation and Witherby Publishing Group, and the three littoral States.

Singapore took over the Chairmanship of ANF on 1 January 2013 for a period of three years ending 31 December 2016, which were extended to financial year ending 31 December 2017.

The Chairmanship of ANF and net asset amounting to \$9,804,414 were transferred to Malaysia in 2018.

**27. Authorisation of financial statements**

These financial statements were authorised for issue by the Board of Members on 15 March 2019.



