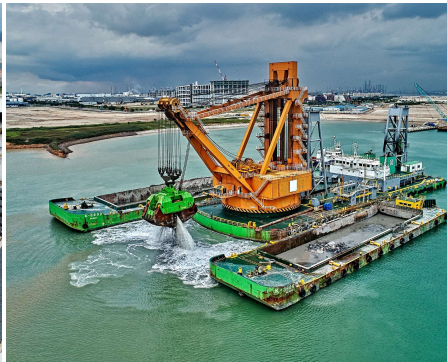


CONSTRUCTING A RESILIENT PORT OF THE FUTURE SINGAPORE'S NEXT GENERATION PORT

The World's Single Largest Container Port



IAPH 2020

SUSTAINABILITY AWARDS
RESILIENT INFRASTRUCTURE





Ms Quah Ley Hoon
Chief Executive, MPA

“

The operating environment ahead for the maritime industry will be defined by three trends - Digitalisation, Disruption and Decarbonisation. In the face of unprecedented change today, we must transform our business models and focus on our collective commitment to sustainability. Our Next-Generation Port at Tuas will provide opportunities to rise to the challenges and position us well for the future.

”

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Executive Summary

Constructing a Resilient Port of the Future, Singapore's Next Generation Port

Tuas Port, when fully developed in four phases, will be the world's single largest container port capable of handling up to 65 million TEUs annually. From planning to implementation, Tuas Port will be a resilient port. It provides a single consolidated location for Singapore's container activities, which significantly reduces inter-terminal haulage operations and GHG emissions. Finger-piers with caisson quay wall were adopted to maximise limited land and sea space while creating 115 hectares more land. Coupled with long linear berths and design depth of -23m at Chart Datum, it can accommodate mega container ships exceeding 450m in length. Above Ground Space will also be introduced, adding 240ha of space for port-related uses.

Sustainability is integral to the construction of Tuas Port. To adapt to rising sea levels, Tuas Port will have an operational platform of 5m above MSL. More than 50% of the total fill materials for Phases 1 and 2 are dredged material and excavated earth from construction projects. Reusing such materials, reduces the reliance on sand for reclamation and saves more than S\$2 billion in fill material costs.

To protect marine habitats and sensitive commercial water intakes, environmental impact assessments were conducted to establish strict Environmental Quality Objectives for compliance during the reclamation works. A S\$6 million programme was implemented to relocate impacted corals together with nature volunteers and non-governmental organisations, and the relocated corals survival rate was 80%.

Beyond the physical port, Tuas Port will be a digital and automated port. Digital innovations such as Digitalport@SG and Just-in-Time System will streamline vessel clearance processes, enable just-in-time operations and improve the turnaround time of ships in the port. Automated and electrified port equipment will improve productivity. Together with the Maritime Singapore Green Initiative, Tuas Port is well positioned to be the resilient port of the future.



A glimpse into Singapore's Next Generation Port

SINGAPORE'S NEXT GENERATION PORT

PHYSICAL



115 hectares more land created using caisson structure system



Additional 240 hectares from Above Ground Space



Resilient against rising sea-levels up to Year 2100



S\$2 billion savings through large-scale use of alternative reclamation material



26.3 km linear berths catering to all ship sizes

ENVIRONMENTAL



80% survival rate of relocated corals



Reduction of green house gases – 65 million TEUs in one location



S\$100 million committed over a 5 years period to support Maritime Singapore's Green Initiatives

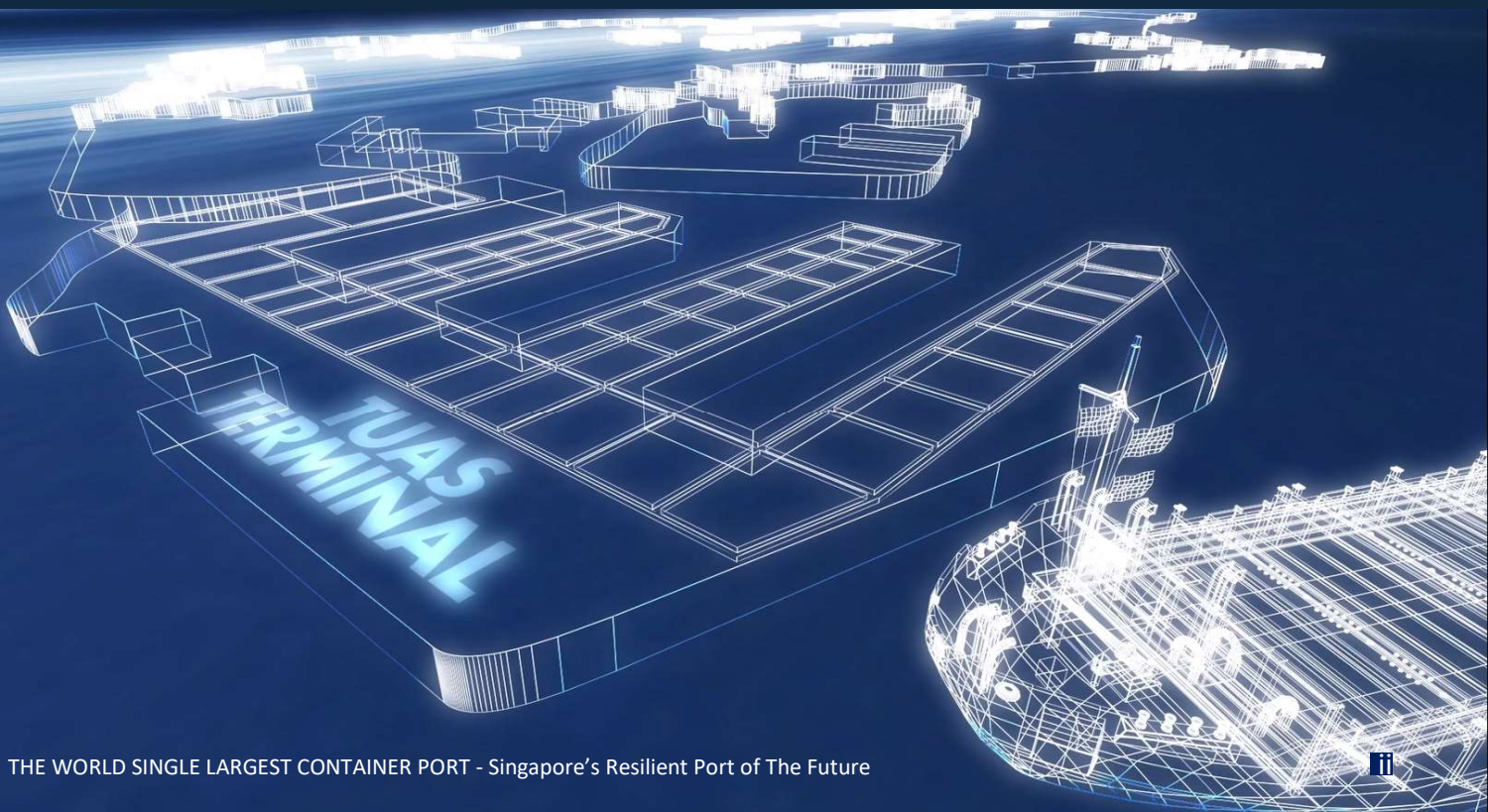
DIGITAL



100,000 man-hours saved through digital optimisation



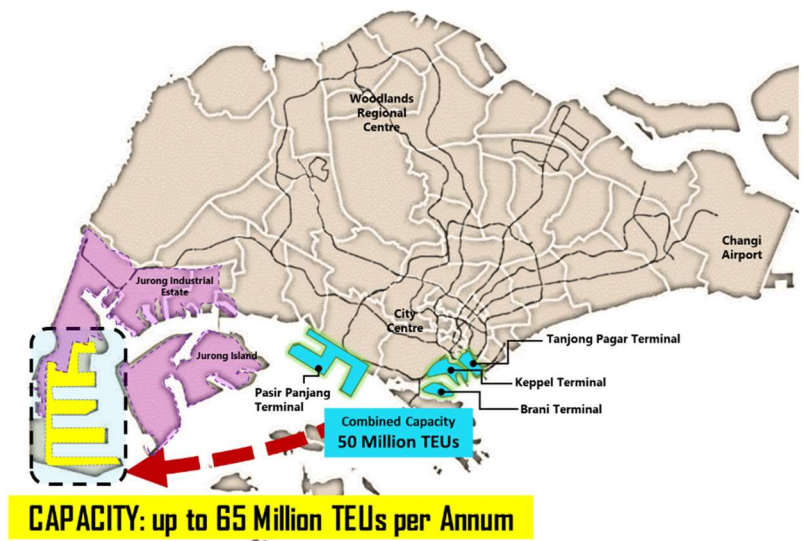
Largest **automated** port in the world



Introduction of Tuas 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. Being the busiest port in the world in terms of shipping tonnage, with more than 130,000 vessel calls annually, 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. Singapore's Next Generation at Port at Tuas, Tuas Port, is a testament to Singapore's commitment to sustaining its lead as a global hub port, and it represents our confidence in Singapore's maritime future.

The construction of Tuas Port spans four phases over 30 years. When fully developed in 2040s, it is slated to become the world's largest container terminal located in a single location, capable of handling up to 65 million twenty-foot equivalent units (TEUs) per annum, more than double the current handling capacity. 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 in one location. Work on the Tuas Port started in 2015 and is well in progress.



Tuas Port Ecosystem

Building the world’s largest container port that ticks efficiently 24-hours daily will not be complete without the co-existence of an ecosystem with the complementary supply chain development such as, warehousing, container depots and factories to aid the efficient flow of cargoes between the port and industries. To facilitate the creation of the Tuas Ecosystem, high growth trade generative industries that can leverage on being in close proximity to Tuas Port have been identified and planned to be located near to Tuas Port.





Planning and Building a Sustainable Port

Single Container Port

Consolidating all the container terminals in a single location will eliminate inter terminal haulage for better operation efficiency and reduce container traffic on public roads. Moreover, Tuas Port is in close proximity to the Jurong and Tuas industrial areas, translating into shorter haulage of import and export containers to and from Tuas Port and reduction in greenhouse gas emission. It will also free up valuable land in the city areas for higher value uses, such as commercial and residential. See Figure 1.



Figure 1: Consolidation of Terminals

Maximising Use of Land and Sea Space

Adopting a Finger-pier Configuration and Above Ground Space

Singapore has limited land and sea space and there are many competing demands for foreshore land and sea space such as port, shipyards, oil and chemical terminals, cruise passenger terminals, recreational uses among others.

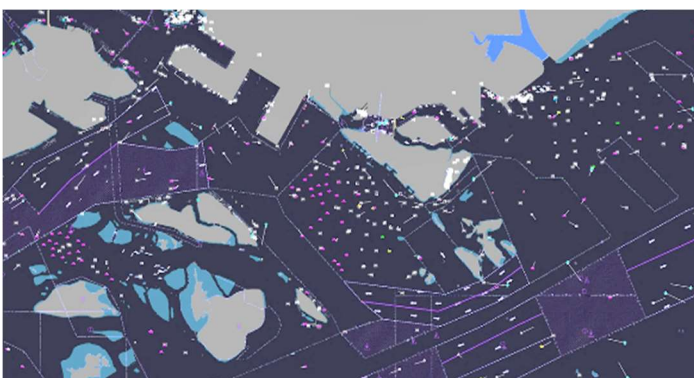


Figure 2: Simulation model for anchorage capacity

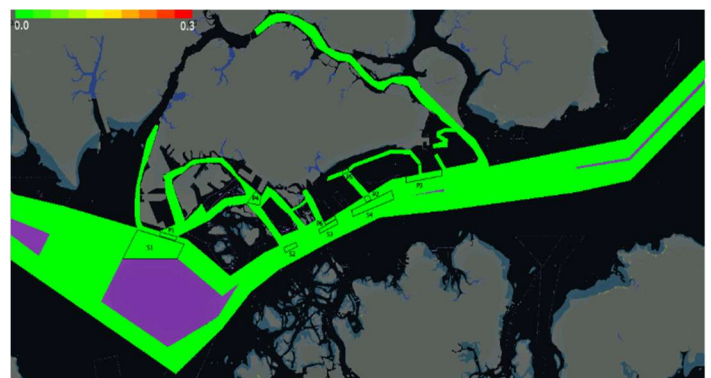


Figure 3: Simulation model for fairway capacity

Tuas Port will be constructed on reclaimed land, which puts further pressure on the limited sea space. To maximize the use of limited land and sea space, while ensuring navigational safety and adequacy of anchorage capacity, MPA with inputs from the port operator (PSA) and other government agencies adopted a finger-pier configuration that will be capable of handling up to 65 million TEUs a year; validated by simulation models (see Figure 2 and Figure 3).

The handling capacity of 65 million TEUs will be sufficient for Singapore to anchor key shipping alliances and its feeder networks, and for Singapore to be a world-leading International Maritime Centre as well as to sustain our Hub Port leadership.

To further intensify land use within the Port, Phase 2 has been future proofed for the development of an additional 240ha of Above Ground Space for industrial and other uses that are synergistic to port operations. See Figure 4. A future Utility Services Master Plan, which includes the option of a Common Services Tunnel, will also be put in place to ensure that conflict points and impact to road users and adjacent operations will be minimised when future services are being laid.

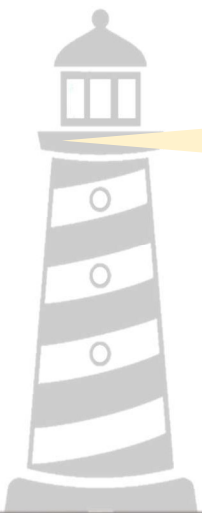


Figure 4: Concept Design of Above Ground Space

Meeting Future Ship Sizes

Tuas Port is designed to meet future ship sizes. Based on historical trends, ship sizes and size distributions have changed significantly during the past few years. It will continue to change as the number of large ships and their sizes are anticipated to increase continuously. The size of container ships and its distributions that are anticipated to call at Tuas Port are key planning parameters ensuring that the port is planned adequately to accommodate the largest container ship in the long term.

Tuas Port will have long linear berths, adequate turning basins, and designed depth of minus 23m at Chart Datum. This design, validated using simulation studies, allows maximum flexibility to accommodate largest container ship in the world of 450m in length or longer.



Use of Caisson for Port construction

During the planning of Tuas Port, a comparison study was carried out to evaluate the cost-benefits of a piled deck structure and a caisson quay wall system. After comparisons among the engineering aspects, overall construction cost as well as schedule for completion between the schemes, it was concluded that the scheme adopting the caisson quay wall system with concrete box caissons and land behind it is more cost effective than the piled deck structure. Figure 6 and Figure 5 shows the cross sections of pile-deck and typical caisson berths. The polder system was also evaluated but it requires further assessment taking into account that the current cost of construction is prohibitive. Hence, Tuas Port was designed based on the concept of caisson quay wall system.

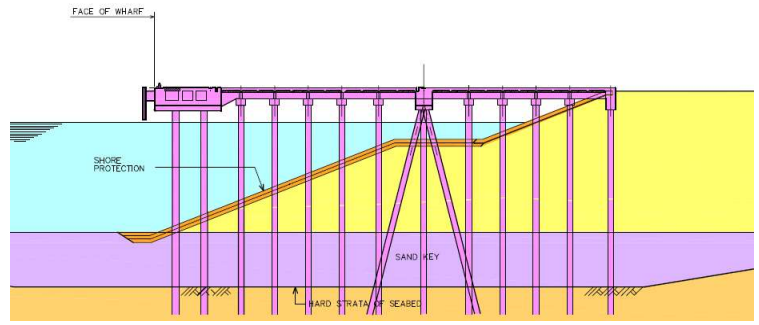


Figure 6: Cross-section of piled deck structure system

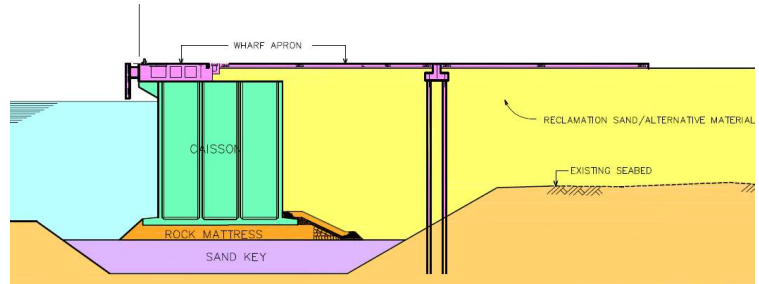


Figure 5: Cross-section of caisson structure system

The concrete box caissons were designed to cater to the varying seabed depths to retain the fill materials behind it, as well as future quay walls to resist lateral forces exerted by berthing of vessels. In addition, the concrete box caissons have to be designed such that it could also withstand the stresses due to different loadings arising from the various construction stages such as, transportation by means of floating, installation along the wharf edge or quay wall line, and preloading by surcharge during construction. It is



also designed to allow for maximum flexibility in the deployment of quay cranes capable of handling the ultra large container vessels. Figure 7 shows a typical caisson weighing up to 15,000 tons with a height of a 10-storey HDB building in Singapore.



Figure 7: Typical caisson structure

The use of caisson structure as the retaining wall for the fill materials will also serve as the container wharves for berthing of container vessels when the berths are operational. In addition, more land can be created as compared to the use of conventional pile-deck berths; some 115 hectares more land for Tuas Port Phases 1 and 2.

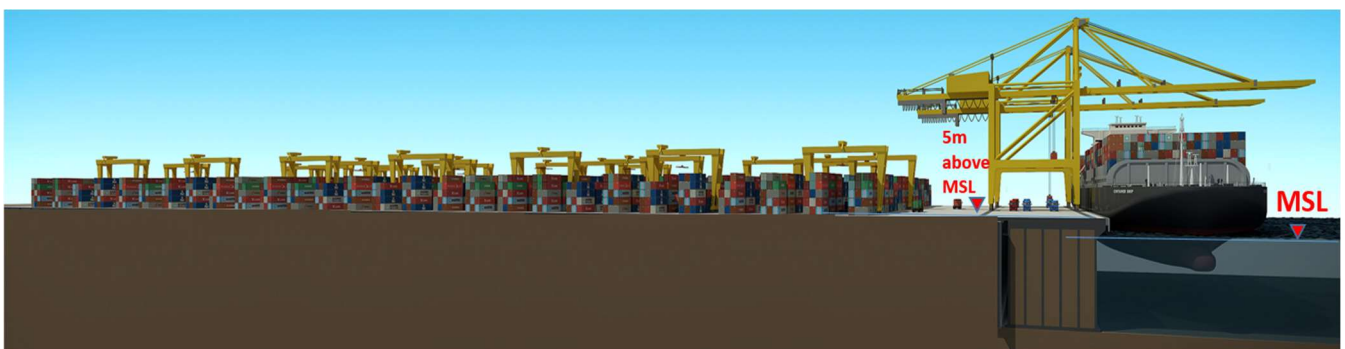
Green Efforts – Adapting to rising sea levels

Singapore is a low-lying island and is especially vulnerable to rising sea levels. To ensure that Tuas Port is designed and built to meet the challenges of rising sea levels, the Maritime and Port of Singapore Authority (MPA) together with other government agencies have been actively involved in a Coastal Adaptation Study to understand and adapt to the effects of rising seas. Figure 8 illustrates the identified flood prone areas¹.



Figure 8: Flood prone areas

Tuas Port will have an operational platform level of 5m above Mean Sea Level (MSL) to be resilient against rising sea levels up to Year 2100 based on the Study. This adaptation to climate change was reinforced by Singapore’s Prime Minister Lee Hsien Loong during his National Day Rally 2019 speech, in which he reiterated the importance of adapting to climate change – particularly on rising sea levels, and that Singapore will spend \$100 billion to do so.



¹ Figure extracted from Singapore’s Prime Minister Lee Hsien Loong’s National Day Rally 2019, CNA’s broadcast.

Sustainable Construction of Tuas Port

Conventionally, marine sand is used for reclamation projects. To reduce reliance on sand and ensure a more sustainable development, MPA looked into the use of alternative reclamation fill materials namely; dredged materials from deepening of basins and fairways, and excavated earth from land construction projects like rail tunnelling and underground station works. MPA concluded that large-scale use of alternative materials was feasible though there could be some technical challenges, which could be addressed in the reclamation design and project management.

To ensure that the reclamation schedule could be met, and to maximise the reuse of dredged marine clay, the rate at which clay is to be filled within the reclamation site is first derived. It is then checked against the expected dredging volume that would be generated daily based on the dredgers and marine equipment that would be deployed. Maximizing the use of dredged clay is only feasible when the rate of marine clay supply can meet the required filling rate to reclaim the land.



RECLAIMER

This specialised equipment is used to fill the soft dredged materials above the water surface, such as filling across the caisson wharf line.

In addition to the reuse of dredged materials generated from the reclamation projects, MPA also worked with the government agencies, which have many construction projects generating large amount of land-based excavated earth such as tunnel works for mass rapid transit and major underground road projects, to secure such earth as reclamation fill. The appointed contractors for the Tuas Port Phases 1 and 2 reclamation projects were also encouraged to source for excavated earth from private construction projects.

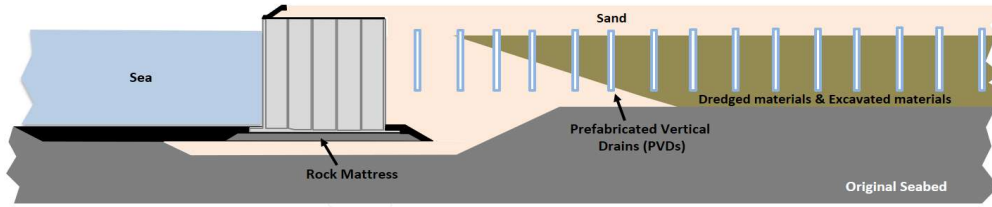


Figure 9: Placement of fill materials

Another challenge is that these recycled materials are generally soft, and they pose engineering challenges. The land filling work sequence has to be properly implemented to ensure that the designed sequence is followed strictly so as to maximize the reuse of alternative fill materials. See Figure 9 on where the dredged marine clay and excavated earth are placed to create the land.

As these recycled materials are soft clayey soils, which have high water content, large ground settlement is expected. In addition, the existing seabed material where the land is being reclaimed is also soft. Soil improvement using pre-fabricated vertical drains with sand surcharge is adopted to improve the recycled fill materials and the existing soft clayey seabed materials to achieve better engineering properties to support the heavy loadings from the container terminal operations and the reclaimed land could be put into use immediately. If left untreated, it will take up to 50 years for the reclaimed land to settle naturally. Figure 11 shows the soil improvement processes and Figure 10 shows the equipment used to insert the Prefabricated Vertical Drains (PVDs).

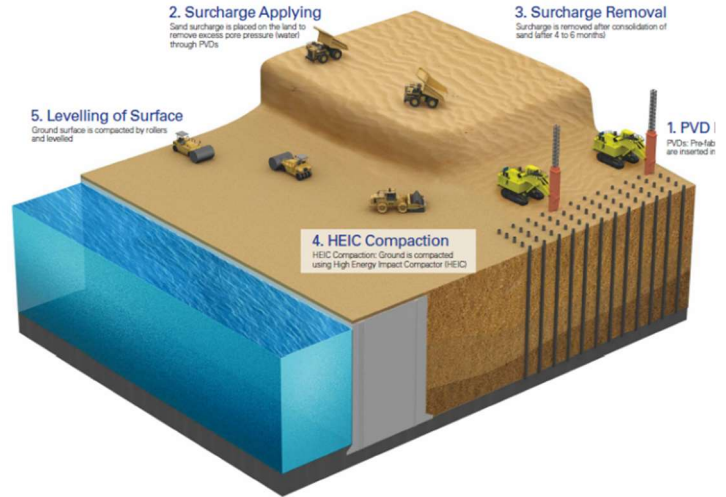


Figure 11: Soil improvement process

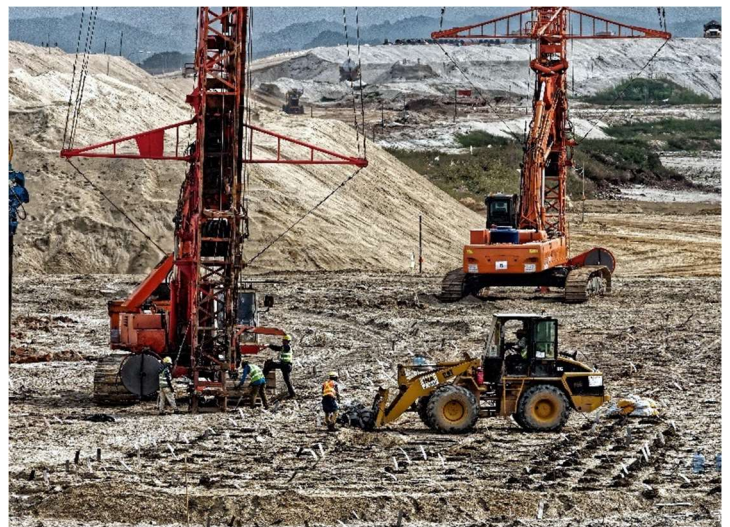


Figure 10: PVDs installation rigs

Phases 1 and 2 of Tuas Port will use 70% and 50% of recycled materials out of the total fill materials required for each phase, respectively. The large-scale reuse of dredged and excavated materials reduces the reliance on sand as reclamation fill, which is limited in supply and often the supply is being disrupted, impacting the progress of the project. This build resilience and reduces the risk from sand supply disruption, providing more certainty to the project progress.



All dredged materials generated from the projects such as dredging of basins, fairway, and sandkey (foundation for caisson sea wall) as well as excavated earth from land construction projects will be reused as fill materials, which will otherwise need to be disposed of at approved dumping grounds. Reusing such materials reduces the need for dumping grounds at sea.

The large scale reuse of dredged and excavated resulted in fill materials cost savings of more than S\$2 billion for both projects. Greater savings could be achieved as dredged and excavated materials will similarly be used as alternative fill materials for the next phases of Tuas Port construction as sustainable construction is an institutionalised commitment of MPA.

MPA SAVED > S\$2 BILLION

THROUGH THE LARGE-SCALE USE OF ALTERNATIVE MATERIALS

Grab Dredger (GD)

GDs are used to dredge the seabed; which these materials will be used as reclamation fill.



Aerodynamic and Thermal Modelling

MPA recognises the need to foster a safer and greener terminal working condition (both indoors and outdoors) with good wind ventilation, better air quality and improved thermal comfort for both environmental and energy sustainability. Together with the Institute of High Performance Computing (IHPC) and Agency for Science, Technology and Research (A*STAR), an integrated aerodynamic and thermal model was developed to ensure that the design of the terminal is green with better working conditions.

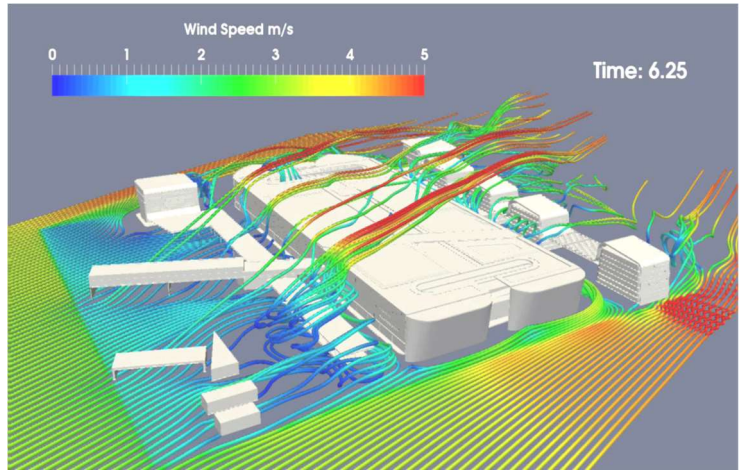


Figure 12: Airflow modelling at Tuas Port

It is an integrated microclimatic modelling framework that comprises both airflow simulation and solar irradiation simulation. This modelling tool aids in the study of wind flow and thermal comfort tailored for Tuas Port by considering key factors within and surrounding the port. These factors include climate change impact, buildings and land usage, seasonal weather conditions, surrounding coastal waters, and impact from neighbouring Jurong Island among others.

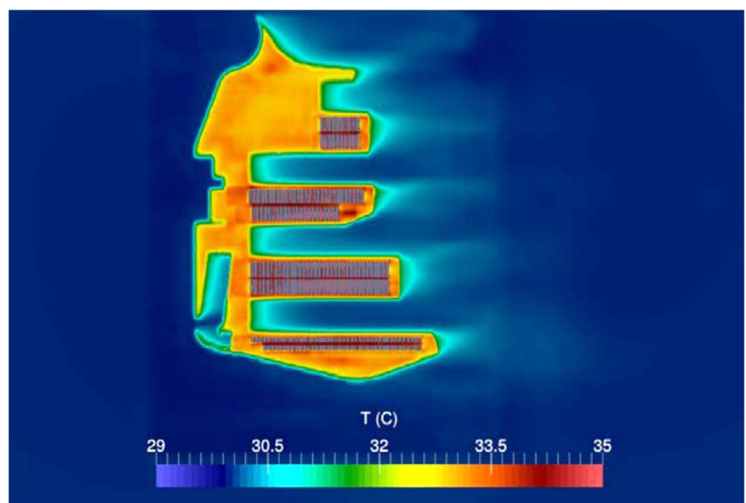
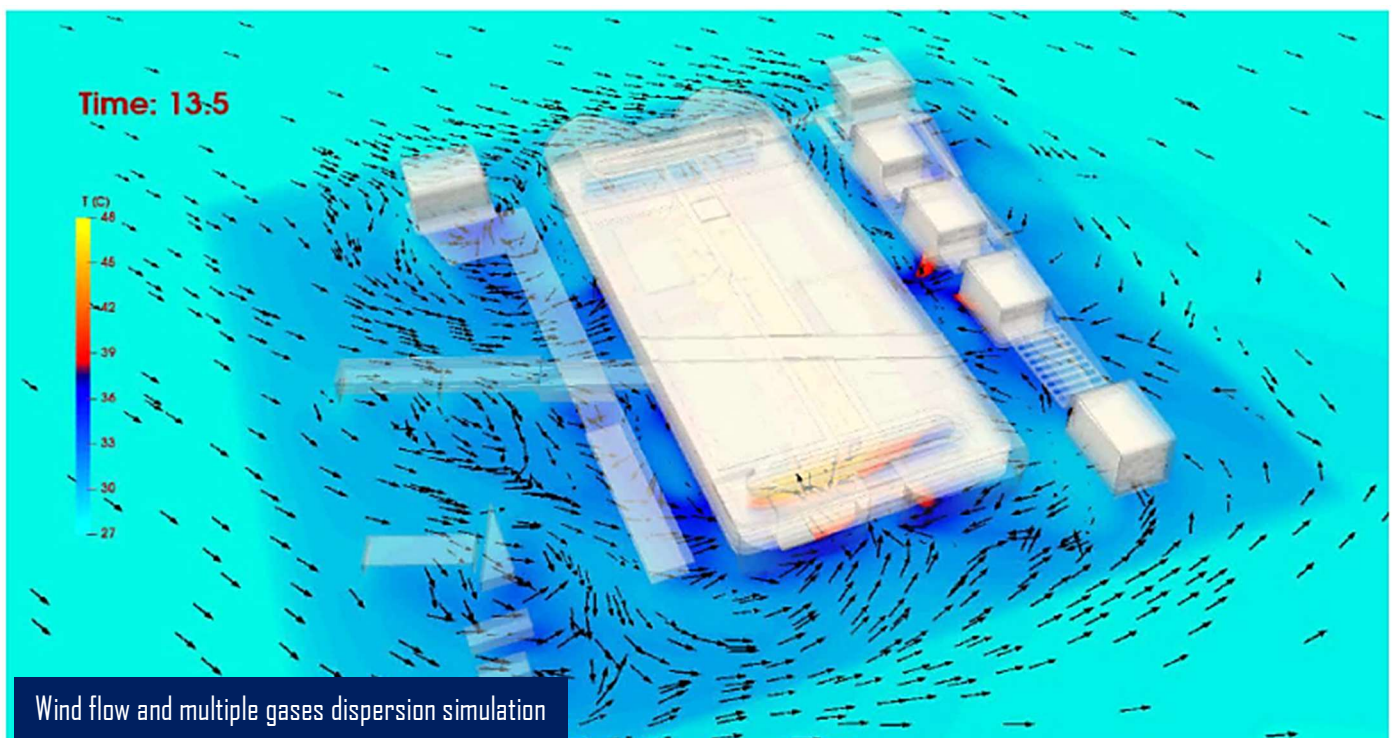


Figure 13: Thermal modelling at Tuas Port



Protection of Marine Environment

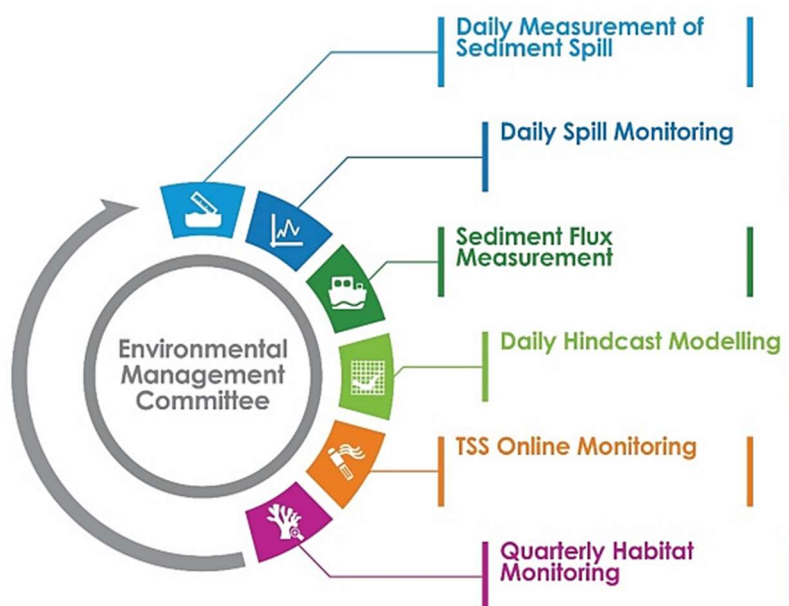
MPA is fully committed to the protection of marine environment. Climate change has led to the rise in sea temperature, which has an adverse impact on the marine ecosystem such as bleaching of corals. In the reclamation for Tuas Port, MPA has put in place mitigating measures to protect the marine environment.

Environmental Impact Assessment (EIA)

Land for Tuas Port is being reclaimed within the Tuas Basin, which is surrounded by number of environmentally or economically critical features as well as coral reefs and marine eco-system. Corals around Sultan Shoal, the water quality within the Tuas Basin, and sensitive sea water intakes along western Jurong Island area are some of the key environmental receptors to be protected during the course of the reclamation works.



Prior to commencement of the reclamation works for Tuas Port, environmental impact assessments (EIA) were carried out by specialist consultant commissioned by MPA in 2012. It was to determine the impact of the marine construction activities on the surrounding marine environment as marine dredging and filling works will result in release of sediments, which may impact the environment taking into consideration the prolonged nature of the works. Also, recognizing the importance of marine habitats and sensitivity of surrounding commercial activities, strict Environmental Quality Objectives (EQO) for the marine construction activities were established for compliance by the project such as no impact on the marine intakes in the potential impact area, no impact to seagrass and mangrove among others.

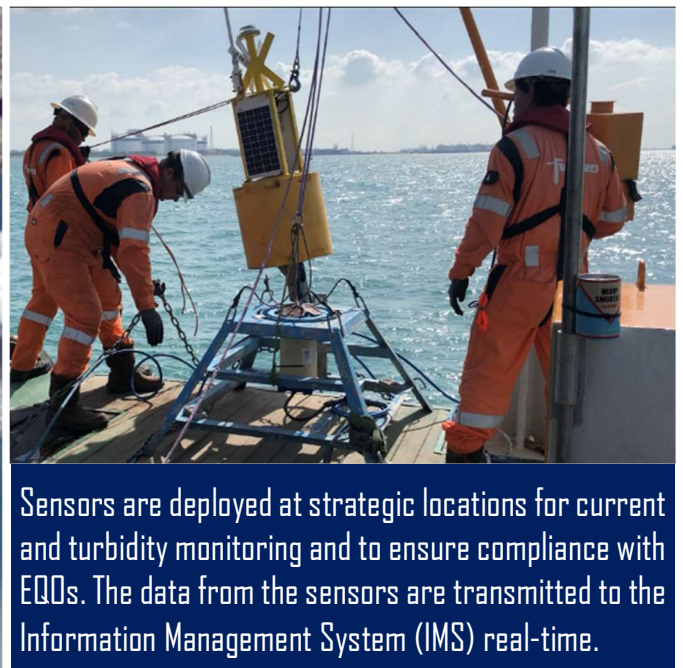
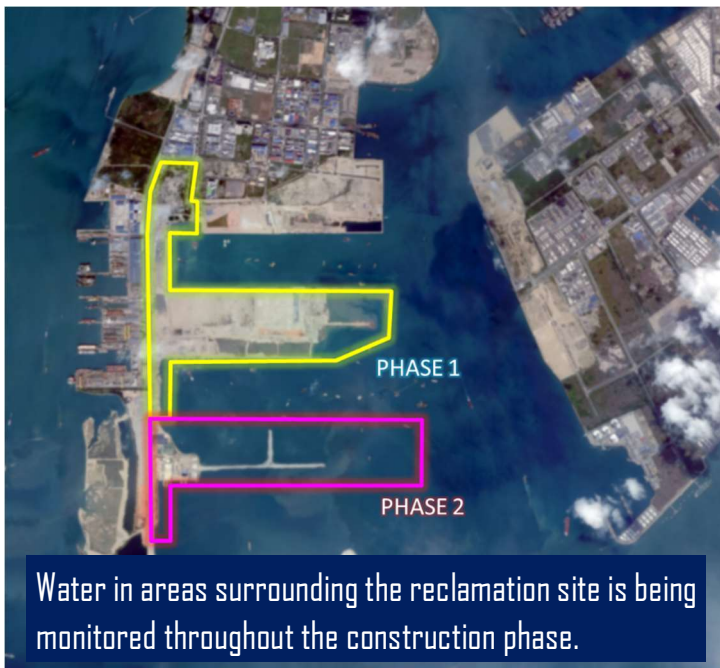
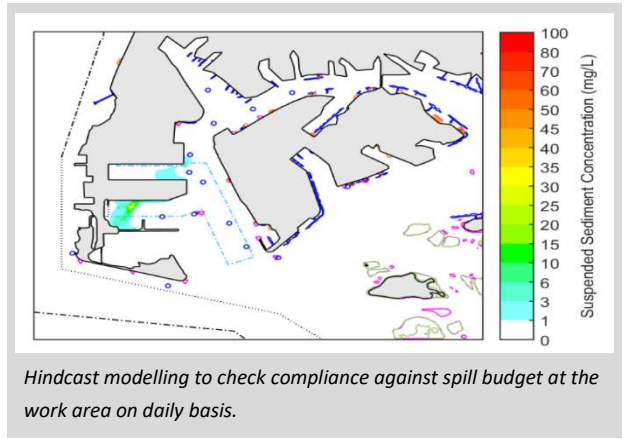
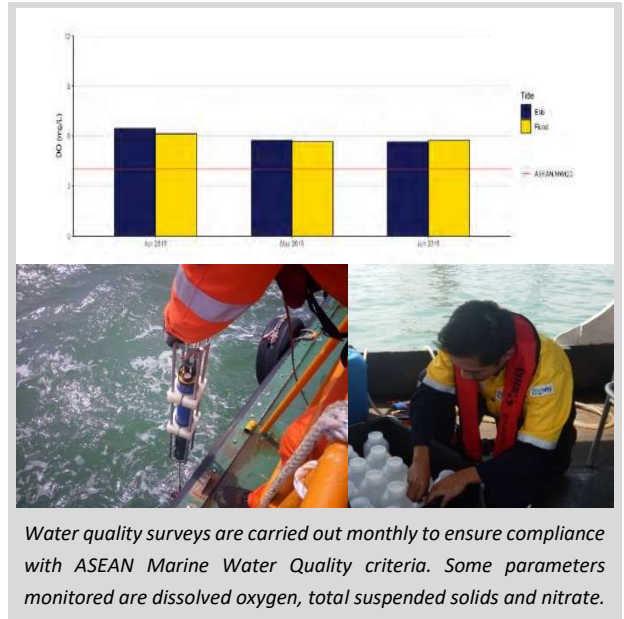


Environmental Monitoring and Management Plan

To carry out the reclamation works within the above pre-defined and approved EQO's within the reclamation period, the followings were established for the environment monitoring and management plan (EMMP), which was put in place during the reclamation works:

- Compliance assessment against spill budget targets at the work area on a daily basis;
- Real-time monitoring and compliance assessment against response limits for water intakes and reefs in close proximity to the work area; and
- Compliance assessment against results of daily hindcast modelling compared to habitat tolerance limits throughout the potential impact area

The EMMP has been able to document compliance of the works to all pre-project Environmental Quality Objectives at a level of reliability that is robust. This will minimize MPA and contractor's exposure to public complaints and liabilities associated with environmental impacts. In addition, it will allow the reclamation activities to proceed in an efficient manner, whilst ensuring protection of the environment.



Coral Relocation

Singapore’s coral reefs are home to more than 250 species of corals and habitats for a great number of marine organisms. The EIA found that the development of the Tuas Port would affect the corals around Sultan Shoal and recommended that the affected corals be relocated to avoid the loss of marine biodiversity in Singapore waters, and building resilience.

In 2014, MPA set up a S\$6 million programme to move 2,300 hard coral colonies from Sultan Shoal to the new Sisters’ Island Marine Park with participations from nature volunteers, non-governmental organisations (NGO) and the private sector. After the relocation, corals monitoring surveys were carried out and the results showed that the survival rate of these relocated corals was about 80%.



Figure 14: Caissons with roughed surface to promote coral growth

In addition, to save the 1,250-over coral fragments that broke off during the relocation, another programme was created together with the National University of Singapore called ‘Enhancing Singapore’s Coral Reef Ecosystem in a Green Port’ to grow these fragments in coral nurseries, and at the same time, assess the survivability, adaptability and evolution of the remaining corals off Tuas. The wall face of the caisson retaining structure where it will not be used for berthing of container vessels would also be constructed in a rough manner to promote coral growth. See Figure 14.

MPA also set up a Coral Relocation Volunteer Programme involving the NGOs such as the Nature Society of Singapore, Singapore Environment Council, WildSingapore and the Singapore Reef and Marine Conservation Committee. Collectively, these efforts have enabled the transplanted corals to flourish at their new homes.



Maritime Singapore Green Initiatives

As a responsible global hub port and international maritime centre, Singapore works with its stakeholders to promote sustainable shipping and green port activities. On the international front, Singapore is party to the International Maritime Organisation (IMO) conventions on ship safety and marine pollution prevention. As an active Council member of the IMO, Singapore is committed to supporting the work of the IMO to balance environmental protection and maritime safety with the need for safe, secure and efficient shipping.

MPA committed up to \$100 million over a 5-year period to support its Maritime Singapore Green Initiative. The initiative comprises the Green Ship, Green Port and Green Technology programmes.

Under these programmes, maritime companies enjoy incentives when they adopt clean and green shipping practices that exceed IMO conventions. Maritime companies also take the Maritime Singapore Green Pledge to indicate their commitment in promoting clean and sustainable shipping in Singapore. See Figure 15.



GREEN PORT PROGRAMME	GREEN SHIP PROGRAMME	GREEN ENERGY TECHNOLOGY PROGRAMME	GREEN AWARENESS PROGRAMME
Ocean-going ships calling at port	Singapore-registered ships	Industry at large	Industry at large
Encourage reduction of CO ₂	Encourage reduction of CO ₂	Promote pilot trial/ tech development for CO ₂ reduction technologies	Promote awareness of green shipping
Exceed IMO EEDI requirement Using LNG bunker fuel	Exceed IMO EEDI Requirement Adoption of LNG or alternate fuel engines	Development of green/ smart technology (eg. Electrification of harbour craft)	Promote internal carbon pricing Advanced Sustainability Reporting
Extended to Dec 2024	Extended to Dec 2024	Extended to Dec 2024	Extended to Dec 2024

Figure 15: Maritime Singapore Green Initiatives

At the international stage, MPA is an active advocate for international environmental protection at various platforms such as UNFCCC and IMO. MPA also works in close partnership with the IMO secretariat to keep track of the progress of discussion related to international shipping (e.g. GHG emissions). By keeping abreast of the latest developments on the international front, MPA is able to better advise our domestic efforts back in Singapore, be it in terms of policies or regulations.



Maritime Singapore Green Initiative: A \$100 Million Commitment to Green Shipping

MPA is committing up to \$100 million over a five-year period to support its Maritime Singapore Green Initiative. The Initiative comprises the Green Ship, Green Port and Green Technology programmes. Under these programmes, maritime companies enjoy incentives when they adopt clean and green shipping practices that exceed IMO conventions. Maritime companies also take the Maritime Singapore Green Pledge to indicate their commitment in promoting clean and sustainable shipping in Singapore.

Since its launch in 2011

- Over 100 companies have signed the Maritime Singapore Green Pledge
- 267 Singapore-flagged ships have qualified for the Green Ship programme
- More than 3,000 vessels have enjoyed port dues concessions under the Green Port programme
- 17 companies and 61 Singapore-flagged ships have participated in the Green Technology programme

LNG as the Cleaner Energy

MPA has been encouraging the adoption of cleaner fuels and issues LNG Bunker supply licenses since 2016. The first LNG truck-loading facility was launched in April 2017. To date, MPA has subsidised the building of 7 LNG fuelled vessels and 2 LNG fuelled bunker vessels through the Green Energy Program under the Maritime Green Initiative.



LNG Tug Boat

Digital Optimisation & Automation

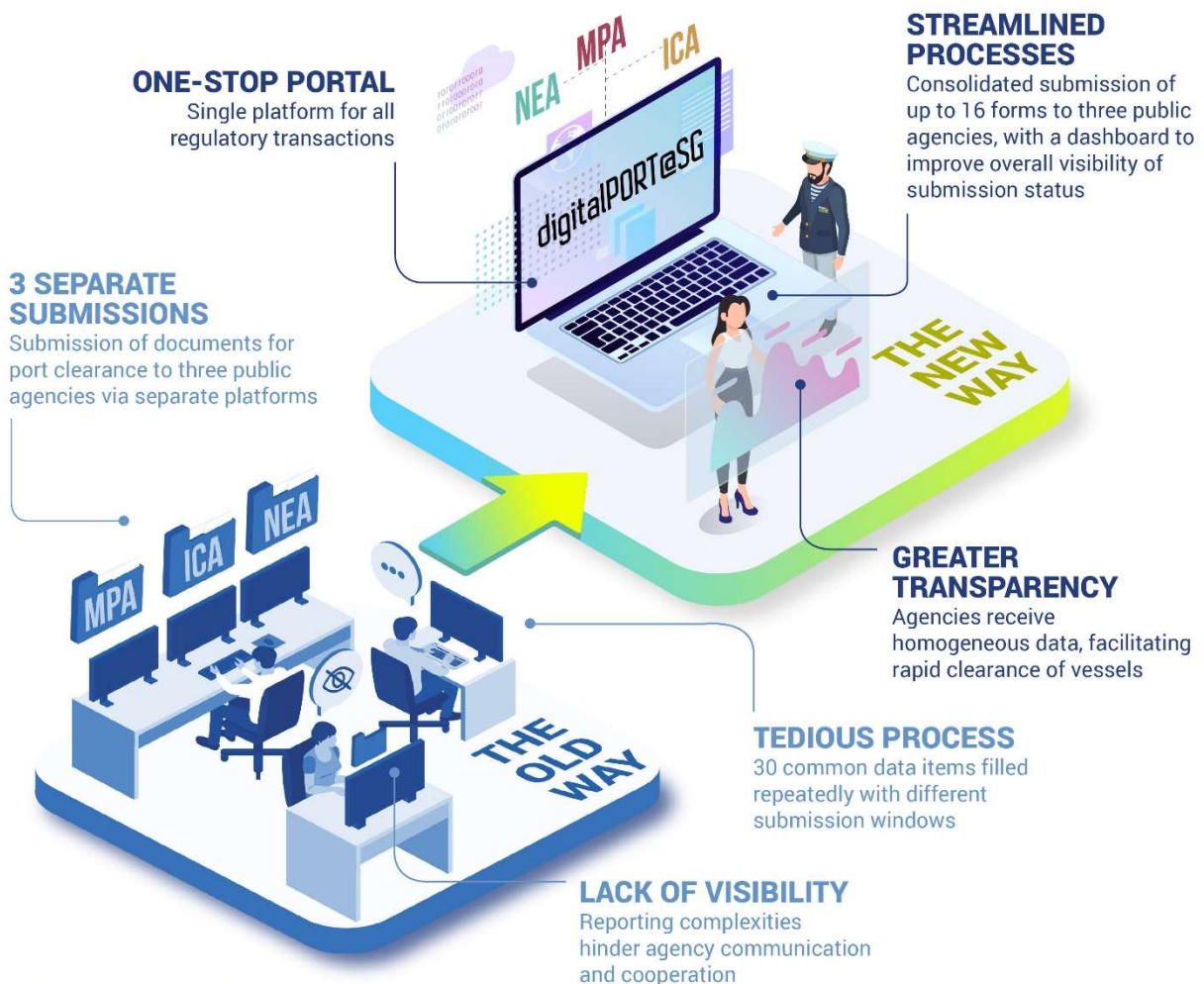
MPA has launched the NGP2030 initiative as a Whole-Of-Government effort to drive the overall master planning and development of Singapore’s port. This initiative reaffirms MPA’s commitment as a leading maritime agency to driving Singapore’s global maritime aspirations. Through a port system roadmap, MPA has initiated the development of several new digital initiatives to support and improve port operations and efficiency. These includes the DigitalPORT@SG, Singapore’s maritime single window system, and Just-In-Time (JIT) Planning and Coordination. This will enable ports users to operate more cost effectively as the number of manpower and time would reduce.

DigitalPort@SG

DigitalPORT@SG, a digital Portal for One-stop Regulatory Transactions, is Singapore’s maritime single window system that will serve as a one-stop portal for maritime regulatory and port services transactions.

A QUICK DIVE INTO DIGITALPORT@SG

MPA’s digitalPORT@SG, launched on 30th October, will enhance the efficiency, user-friendliness, and transparency of document submissions, providing one-stop clearance for vessel related transactions. This initiative is estimated to save 100,000 man hours per year in productivity.



*Portal for One-stop Regulatory Transactions

The system will be developed in two phases. Under Phase 1, users can obtain approval for all arriving and departing ships from three public agencies – MPA, the Immigration & Checkpoints Authority and the National Environment Agency – through a single portal. The portal will consolidate up to 16 separate forms into a single application. This is expected to save the shipping industry an estimated 100,000 man-hours annually. DigitalPORT@SG will also have data exchange with port community systems such as Portnet and Jurong Port Online to receive relevant information including declaration on dangerous goods (DG) operations at the port terminals.

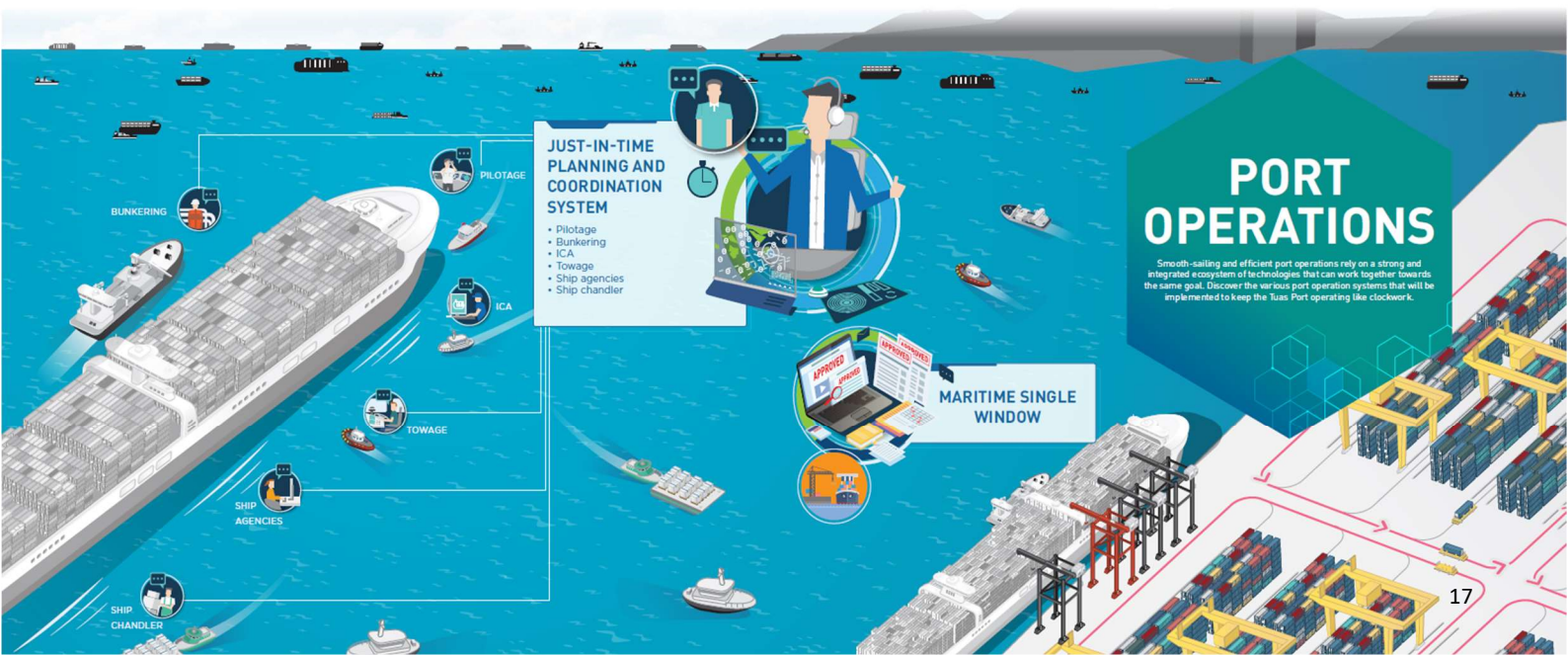
IN THE FUTURE The next phase of digitalPORT@SG will see it become a single platform not just for B2G, but also for B2B and G2G interactions.

JUST-IN-TIME Central bookings of services & vessel coordination	MARKETPLACE Use common application services	SINGLE SHOP FRONT One-stop shop to book marine services	INTER-OPERABILITY Access shared information with other ports

Under Phase 2, the system will be enhanced to also serve as a single digital shopfront for booking terminal and marine services, facilitating Just-In-Time (JIT) operations for optimal vessel passage planning within Singapore port.

Just-In-Time (JIT)

The JIT Planning and Coordination System is a common platform for JIT marine services booking to facilitate efficient sharing of information. Real-time updates on the ship’s arrival time at port, pilot boarding time on ship and berthing time at terminal will be provided via a dashboard to authorised stakeholders such as ICA, shipmasters, shipping agents, terminal operators and service providers. This will aid decision-making and allow better coordination, planning and allocation of port resources among the stakeholders. Likewise, the availability of berths, pilots, tugs, bunker barges, ship supplies and other port services could be shared in advance so that calling ships can adjust their sailing speed, route or time of arrival at various locations in port. By offering dynamic JIT planning and coordination, the JIT eases the administrative burden of port users.



Automation

Besides digital optimization, plans are also put in place for more automation, intelligent control systems, and sustainable technologies at Tuas Port. Some key innovations will include the state-of-art Next Generation Vessel Traffic Management to manage the future growth of marine traffic and increasing size of ships in Singapore’s port waters. It will assist vessels to avoid congestion through early detection of congestion hot spots and advise the best route to reach the berths safely and efficiently.



Productivity and labour savings will also be key features in the design of the next generation port. Tuas Port will deploy automated port equipment such as yard cranes that can load and unload containers with precision, aided by computers, intelligent sensors and cameras and driverless electrified automated guided vehicles (AGVs) to transport containers among others. At the same time, drones will inspect port equipment and assist in troubleshooting with remote video streaming.



Organisation Profile

Mission, Vision and Values (MVV)

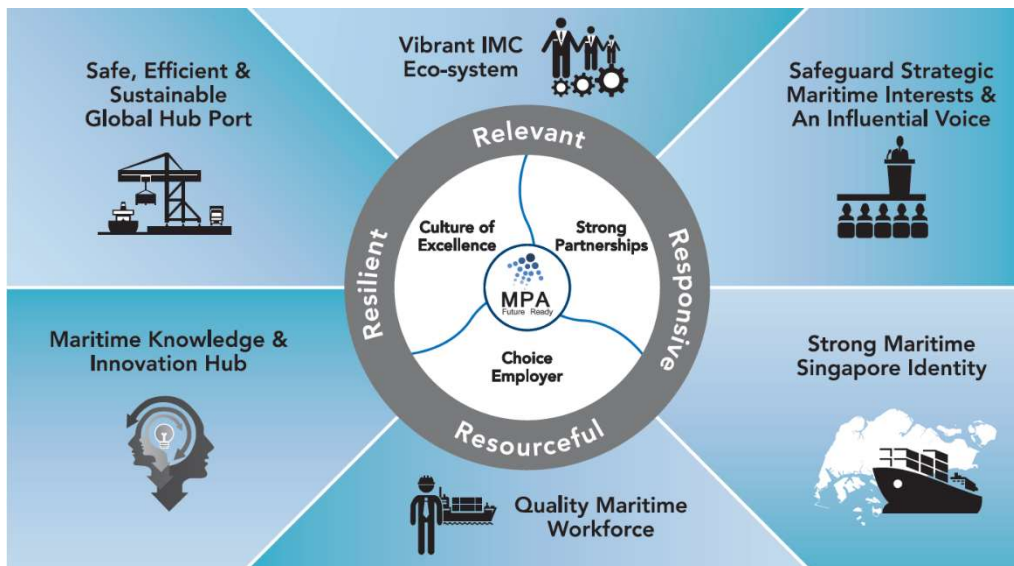


MPA was established in 1996 as a statutory board under the Ministry of Transport (MOT) to take up roles that were previously performed by the National Maritime Board, Marine Department and regulatory departments of the former Port of Singapore Authority. In 2004, MPA also took on the promotion of commercial shipping, which had previously been handled by International Enterprise Singapore.

MISSION	VISION	VALUES
<p>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.</p>	<p>MPA’s Vision is to be a Leading Maritime Agency driving Singapore’s Global Maritime Aspirations.</p>	<p>MPA’s Value is Forward Thinking, Integrity, Respect, Service Excellence and Team Work.</p>

Business Model

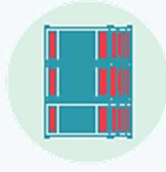
The strategic thrusts in the MPA Future Ready Framework support all of MPA’s missions.



Premier Global Hub Port



World's busiest **container transhipment** hub



More than **36.6 million** TEUs of container throughput in 2018



In 2018, vessel tonnage reached **2.79 billion Gt**



Supplied **49.8 million tonnes** of bunker in 2018



Approximately **1,000 ships** in the Port of Singapore at any one time



Awarded Best Seaport In Asia **30 Times** Asian Freight, Logistics and Supply Chain Awards



Every **2-3 mins** a ship arrives or leaves the Port of Singapore



Singapore is connected to **600 ports** in over 120 Countries

International Maritime Centre



Contributes **7%** to our nation's Gross Domestic Product (GDP)



150 international shipping groups



Over **170,000** staff in Maritime Singapore



More than **20 major** international ship broking firms



More than **5,000** maritime establishments



More than **30** local and international law firms with maritime practice



The SRS is amongst the world's **top 5 largest** ship registries



More than **20** banks offering ship financing

MAIN PRODUCTS AND SERVICES



Leadership

MPA’s Senior Management Team

MPA’s Senior Management (SM) team is led by the organisation’s Chief Executive (CE), and comprises 2 Assistant Chief Executives (ACEs) and 15 Heads of Division. The SM is accountable to the Chairman of the MPA Board and the Permanent Secretary of MOT. Together, they work closely to lead MPA while being guided by MPA’s Mission, Vision and Values.



Ms Quah Ley Hoon
Chief Executive

MPA Senior Management



Ms Tan Beng Tee
Assistant Chief Executive
(Development)



Captain M Segar
Assistant Chief Executive
(Operations)



Mrs Ong Seok Bin
Senior Director
Human Resource



Mr Kenneth Lim
Senior Director
Innovation, Technology &
Talent Development/Chief
Technology Officer



Ms Bernice Yeoh
Senior Director
Strategy & Policy



Mr Tan Hoe Soon
Senior Director
Communications &
Legal/Chief Transformation
Officer



Er Tham Wai Wah
Senior Director
Engineering & Project
Management/
Chief Engineer/Chief
Sustainability Officer



**Captain
Daknashamoorthy
Ganasen**
Senior Director
Operations & Marine Services



Mr David Foo
Senior Director
Operations Technology



Mr Tan Suan Jow
Dean of MPA Academy



Ms Cindy Sim
Director
Finance, Procurement &
Admin



Ms Caroline Goh
Director
Business Capability
Development



Ms Caitlin Fua
Director
Communications &
Community



Mr Goh Chung Hun
Director
Shipping / Marine



Ms Tan Woei Tyng
Director
International Maritime Centre



Mr Tan Cheng Peng
Director
Special Project



Ms Angela Png
Director
International/General
Counsel (Designate)



Mr Thai Low Ying-Huang
Chief Hydrographer

SM, together with the Board and MOT, collaborates actively to deploy and review MPA’s Mission, Vision and Values. Clear alignment to Whole-of-Government (WOG) Strategic Outcomes (see Figure 16) is maintained to clarify how the organisation collaborates with other public service agencies to improve stakeholder experience.

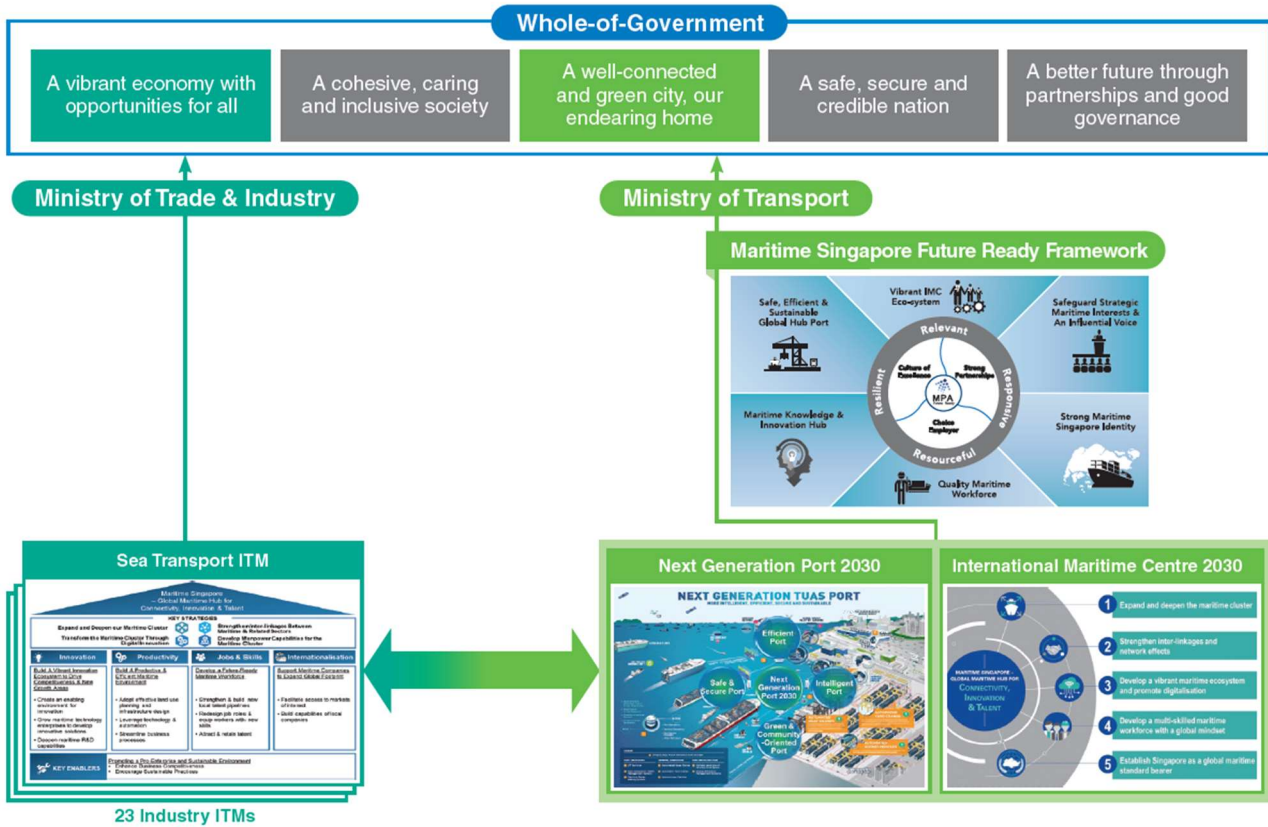


Figure 16: Alignment of MPA's mission to Whole-of-Government strategic outcome

This strategic clarity in MPA's MVV has continued to improve since its formation. See Figure 17.

	Positioning (1996-2003)	Leading (2004-2005)	Advancing (2006-2013)	Future Ready (2014 onwards)
Mission	Established upon MPA's formation in 1996	Validated and found to be relevant	Included "Advance" in mission statement Established 5P strategy Established corporate Balanced Score Card (BSC)	Validated for relevance Supported by the Future Ready Framework for strategic clarity
Vision	Developed via focus group discussions in 1997		Recrafted via SM and focus group discussions	Complemented with NGP 2030, IMC 2030 and Sea Transport ITM for more clarity
Values	Developed via focus group discussions in 1997. Established via behaviour norms and team-building	Revisited FIRST and changed "Responsibility" to "Respect" via management retreat and focus groups	Validated and found to be relevant	Validated and found to be relevant

Figure 17: Evolution of MPA's Mission, Vision and Values

The Future Ready Framework: Helping Maritime Singapore Navigate the Future

MPA's latest top-level review took place in 2014, with the then-CE leading over 350 staff to identify a new way forward for Maritime Singapore amidst an increasingly challenging environment. This review resulted in the development of the Future Ready Framework, while NGP 2030, IMC 2030 and the Sea Transport ITM were all developed to add specificities into roadmaps and facilitate execution.

Charting New Directions for the Next Generation Port – NGP 2030

As preparation for the new port at Tuas, MPA launched the NGP 2030 initiative as a WOG effort to drive the overall master planning and development of Singapore's port. This initiative reaffirms MPA's commitment as a leading maritime agency to driving Singapore's global maritime aspirations.

Through a port systems roadmap, MPA has initiated the development of several new systems. These include the Just-In-Time (JIT) Planning and Coordination and the MSW system, which will allow for seamless arrivals and departures from Singapore's port, as well as potential manpower, time and cost savings for port users.



Global Maritime Hub for Connectivity, Innovation & Talent – IMC 2030

In 2017, an IMC 2030 Advisory Committee led by the Chairman of BW Group, Mr. Andreas Sohlen-Pao, submitted the IMC 2030 Strategic Review report to the Singapore Government, with a vision for Maritime Singapore to become the 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
 - Capture more market share in shipbroking sectors
 - Advance Singapore's standing as an Asian insurance and maritime legal and arbitration hub
 - Expand 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 ecosystem 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 by 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 in 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

Spearheading Transformation for Maritime Singapore – Sea Transport ITM

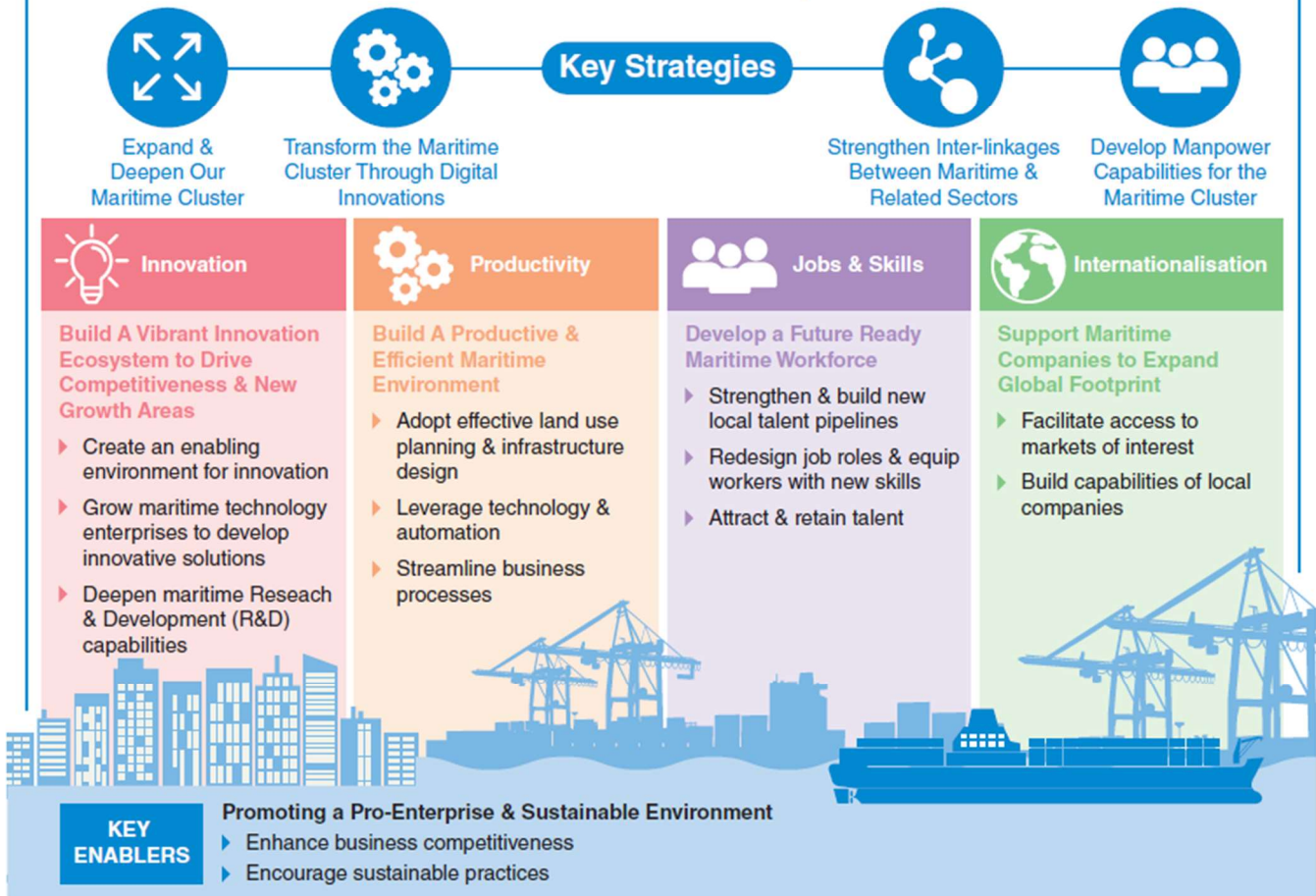
In 2018, MPA launched the Sea Transport ITM. Developed by MPA in partnership with the industry, trade associations and chambers, unions, Institutes of Higher Learning (IHLs) and other government agencies, the Sea Transport ITM serves as a blueprint for sectorial transformation over the next few years.

The Sea Transport ITM outlines strategies to embrace technology, enhance productivity and equip the maritime workforce with the necessary skills to support the growth of a more connected and innovative maritime ecosystem.

It also incorporates recommendations from the NGP 2030 Steering Committee and IMC 2030 Advisory Committee.

Successfully transforming the Sea Transport industry requires strong partnerships with key stakeholders in the ecosystem. To achieve this, MPA leverages on a tripartite partnership consisting of industry stakeholders, unions and government agencies to increase awareness, drive implementation and monitor the progress of key ITM initiatives.

GLOBAL MARITIME HUB FOR CONNECTIVITY, INNOVATION AND TALENT



MPA Engages Stakeholders to 3 Levels to Realise Its Mission.

MPA’s SM provides 3 forms of leaderships – Organisational Leadership, Industry Leadership and International Leadership. See Figure 18.

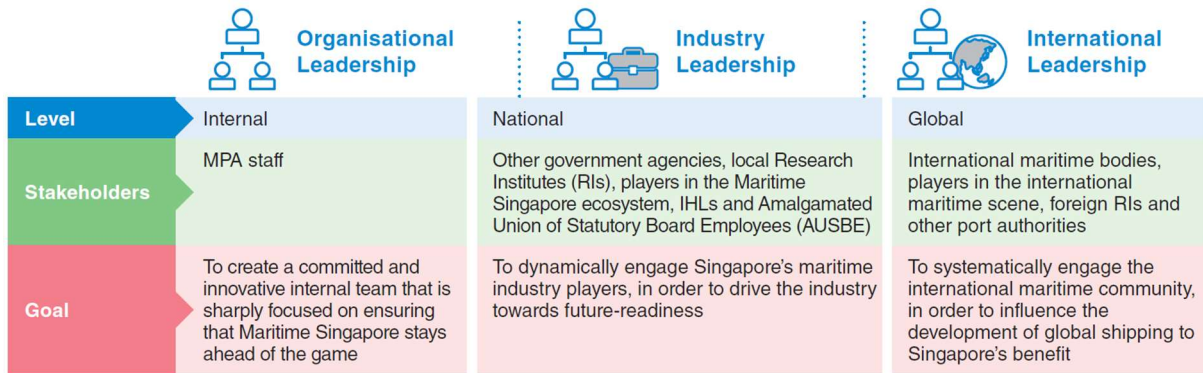


Figure 18: MPA engages stakeholders on 3 levels to realise its mission

Organisational Leadership

SM deploys a wide range of communication platforms to lead the organisation (see Table 1).

Mode	Platform	Objectives	Frequency
Electronic & Print	e-Connect Portal	Communicate MVV	Ongoing
	Line from CE	Allow CE to communicate messages related to MVV to staff	Ongoing
	Employee Engagement Survey (EES) & Pulse Survey	Capture current staff engagement level and provide opportunities to improve work environment	Annual
Face-to-Face	Workplan seminar & Management Advance	Communicate MVV, communicate and develop corporate workplans and discuss key projects	Annual
	Townhall sessions	Showcase staff initiatives & provide opportunities for open dialogue	Annual
	Values Week	Communicate & role model FIRST values	Annual
	Staff events	Provide opportunities for staff bonding	Annual
	CE’s tea/lunch sessions with staff & foundation programme for new staff	Communicate & solicit feedback on MVV & strategic focus areas, & welcome new staff	Quarterly
	Conversation with CE (new)	Communicate hot topics & solicit feedback from staff	Quarterly
	Divisional activity days & divisional dialogue sessions	Communicate & solicit feedback on MVV & strategic focus areas	Quarterly
	CE’s field trips	Communicate strategic focus areas & understand field operations	Ongoing
	Appreciation Hour	Recognise staff who have shown service excellence & excellence in other projects	Quarterly
	Festive celebrations	Communicate MVV & provide opportunities for staff bonding	4 times a year to coincide with key festivals
Future Ready brainstorming sessions	Solicit ideas regarding strategic focus areas from staff	Ad-hoc	

Table 1: Communication Platforms for Organisational Leadership

Industry Leadership

MPA’s SM employs innovative communication methods and a proactive media strategy engage with stakeholders and customers in order to create an awareness about the industry

MPA-organised Forums and Conferences: Reaching Out to Multiple Stakeholders

SMW is an annual event that reaches out to a broad spectrum of stakeholders. Since its inauguration in 2006, SMW has grown significantly and now attracts over 40,000 local and international participants per year. It supports Maritime Singapore’s vision to be a Global Maritime Hub for driving connectivity, innovation and talents through people, ideas and opportunities. It brings together regional and industry leaders, subject area experts, and other representatives from the maritime industry for a week of conferences, dialogues, exhibitions, learning journeys and social events.



and promote Maritime Singapore.

International Leadership

Singapore is a small country highly dependent on international seaborne trade. The safety, security, sustainability and efficiency of international shipping is thus important to the nation. Furthermore, shipping is global in nature; Singapore thus needs to play its part and contribute to international and regional efforts to promote safe, secure, sustainable and efficient shipping.

Maintaining an Influential Voice through IMO Council Membership

Since becoming an IMO Council Member in 1993, Singapore has chaired the IMO Council, the then Sub-Committee on Bulk Liquids and Gases and the then Sub-Committee on Flag State Implementation. Singapore has assumed the position of Vice-Chair of the Marine Environment Protection Committee, the Maritime Safety Committee and the Sub-Committee on Human Element, Training and Watchkeeping. To date, Singapore has ratified and implemented every major IMO convention in force relating to ship safety and the prevention of pollution from ships.

Singapore was re-elected to the IMO Council for a 13th consecutive term for 2018-2019, once again securing the highest number of votes in Category

C. As a Council member, Singapore will continue to work with the IMO and its member states to advance the international maritime community's efforts in navigational safety, promote efficient and sustainable shipping, and protect the marine environment.



MPA Innovation Framework

MPA's FIRST Values, especially "Forward Thinking", drive MPA's innovation culture. Both top-down and grounds-up innovation matter for MPA. The Innovation Framework has been developed to articulate MPA's approach to nurture a pro-innovation culture (see Figure 19). The framework comprises 3 key thrusts: Align, Ambition and Actions, which work in concert to innovate and create value for both internal and external stakeholders.

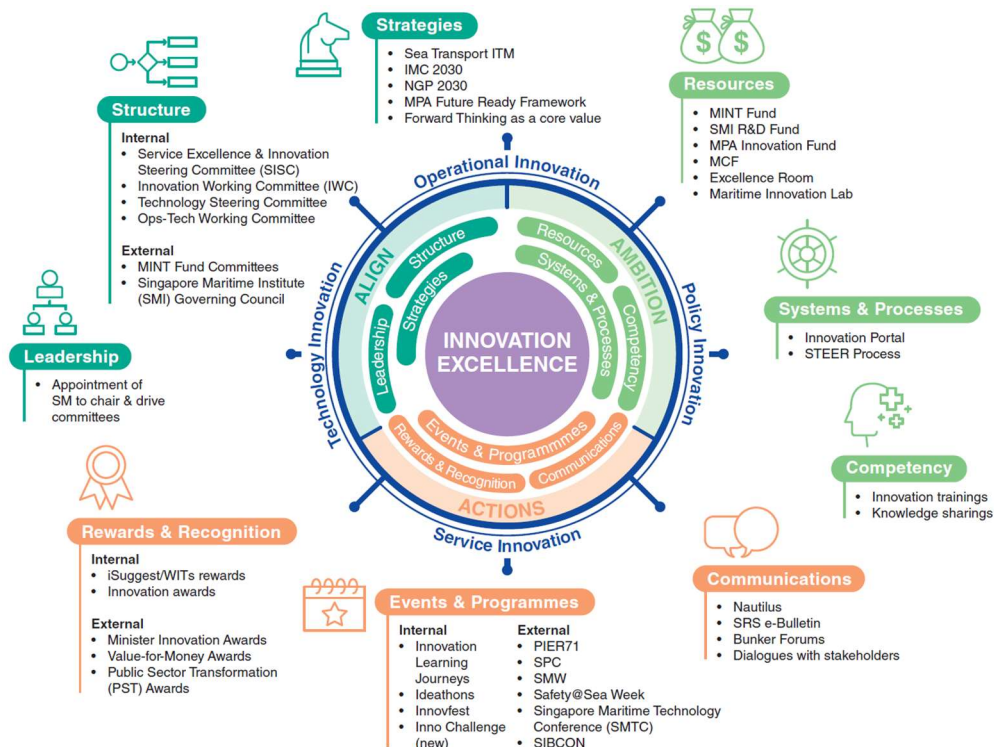


Figure 19: MPA Innovation Framework

Align: MPA drives innovation amongst its staff by providing big picture goals through master plans and key strategies. These visions and strategies are formulated and realised by dedicated committees.

Ambition: MPA enables innovation by providing staff with the tools and resources to nurture innovative ideas. These tools and resources include funding, innovation workshops, sharing of innovation stories and a structured process to review and implement ideas.

Actions: MPA strives to create an environment where creativity and innovation can flourish by engaging its staff in the innovation journey. It does this through recognition/reward schemes and innovation events, as well as by continually celebrating innovation, reinforcing its messages and communicating its Vision.

Diving Deeper into Innovation Culture – The BMW Spirit

In response to feedback provided during 2018’s EES, the BMW (Breakthroughs, Meaningful Impact and Willpower) Spirit was defined to reinforce management support for MPA’s innovation efforts, and cascade expectations on its innovation culture. The BMW Spirit (see box story on Communication to Facilitate the Embracing of Organisational Changes) was developed to remind staff of the right spirit with which to drive innovation. It was first articulated during InnovFest 2019.

Values Week 2019 - Forward Thinking Day

As part of MPA Values Week 2019, Forward Thinking Day kicked off the rest of the week’s festivities and celebrated the value of Forward Thinking. It sought to reinforce MPA’s efforts to drive a culture that supports innovation, provide a platform to promote the use of innovative solutions, and enable participants to experience, learn, understand and apply innovation.

Communication to Facilitate the Embracing of Organisational Changes

WHY?

“IF WE DO NOT **DISRUPT**, WE WILL BE **DISRUPTED**.”



CE’s Speech at InnovFest 2019

WHAT?

DISRUPT BUT...



Clarity of direction and communication is critical to help the organisation embrace change. Through InnovFest 2019, Conversation with CE and Workplan seminar 2019, CE rearticulated the Mission, key directions and ambitions of MPA. She explained the impetus for the upcoming changes and how they would be carried out. She shared that SM would be cascading the key points to the ground, and opened her doors to feedback and suggestions. As a follow up to concerns raised at the Conversation with CE, 4 work streams led by 6 Heads of Department (HODs) and sponsored by 6 different Division heads were commissioned to develop recommendations to facilitate organisational change.

HOW?

WORKFORCE TRANSFORMATION



TEAMWORK



Engages Key Stakeholders

Key stakeholders in the strategy development process

MPA engages key stakeholders through numerous platforms to keep abreast of sentiments and developments in the global maritime industry, and to solicit valuable feedback taken into consideration during strategy development. Platforms include SRS Forum, Steering Committee meetings for NGP 2030, PIER71 and MINT Fund, and also quarterly meetings with PSA Corporation (PSAC), Jurong Port Pte Ltd (JPPL) and Singapore Cruise Centre Pte Ltd.

Key stakeholders in the strategy implementation process

MPA adopts a “One MPA, One Partnership, One Maritime Singapore” approach to promote Singapore as a global hub port and IMC. MPA has been actively engaging its key stakeholders, including maritime enterprises, port service providers, IHLs, suppliers and employees to expand its reach within Maritime Singapore, enhancing the effectiveness of its strategy implementation. Table 2 lists the platforms MPA employs to include key stakeholders into the strategy implementation process.




How does MPA engage key stakeholders?	Platforms	Stakeholders
 Briefings	Safety briefings to regional ferry masters	<ul style="list-style-type: none"> • Shipmasters
	Safety briefings to pleasure craft community	<ul style="list-style-type: none"> • Pleasure/Harbour craft owners
	Maritime cyber security network	<ul style="list-style-type: none"> • Ship owners • Ship operators • Ship agencies • Ship management companies
	Corporate governance briefing	<ul style="list-style-type: none"> • Employees
 Activities	Appreciation dinner for seafarers & partners	<ul style="list-style-type: none"> • Seafarers
	Union Management Lo-Hei lunch with CE	<ul style="list-style-type: none"> • Unions • Private organisations
	Chinese New Year Lo-Hei lunch with ferry launch operators & tenants	<ul style="list-style-type: none"> • Shipping lines • Ship agencies • Ship management companies
 Meetings	Management lunch meetings with Port Terminal Operators	<ul style="list-style-type: none"> • Port Terminal Operators
	MPA-SSA meetings	<ul style="list-style-type: none"> • Ship owners • Ship operators • Ship agencies • Ship management companies
	Meetings with shipmasters	<ul style="list-style-type: none"> • Shipmasters
	Meetings with business partners/vendors	<ul style="list-style-type: none"> • Contractors • Suppliers
	Coordinated meetings with DB/JTC's soil disposal team	<ul style="list-style-type: none"> • Contractors • Suppliers

Table 2: Platforms for Stakeholders Engagement

Engaging stakeholders through NGP Working Committee

For planning and development of the Next Generation Port (NGP), it is a Whole-of-Government effort where there is a total of 3 working committee and 5 sub-committee that comprises of other government agencies and Port Operators. There are also living laboratory and centre of excellence set up with the tertiary institute to support the evaluation and selection of innovative solutions for the NGP.

Engaging stakeholders for Construction of Next Generation Port to prepare for climate change

In 2018, Building and Construction Authority of Singapore commissioned the Coastal Adaptation Study (CAS) involving multiple government agencies, including MPA to set up Coastal Protection Framework and Adaptation Options. Based on recommendation by CAS, to mitigate the threat of sea level rise, the final operational platform level of Tuas Port Phases 1 and 2 have been designed to be about 5 meters above mean sea level which will protect Tuas Port from sea level rise up to year 2100.

Measurable Impacts (Results)

MPA's Awards Milestone 1996 – 2018



Gold



Silver



Bronze



1st Place



2nd Place



3rd Place

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

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

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

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

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

- 29th 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)

Strong Partnerships

- PEP-SBF Pro-Enterprise 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

2017

Culture of Excellence

- 6th 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
- 2017 Galaxy Awards
- 23rd Annual Communicator Awards

Culture of Excellence

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

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

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

Minister's Innovation Award 2018

- Caterpillar and INFORMS Analytics Society Innovative Applications in Analytics Award (IAAA)

Culture of Excellence

- 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
- 15th Annual HRM Awards 2018

Retaining Top Spot Internationally



The Xinhua-Baltic International Shipping Centre Development Index

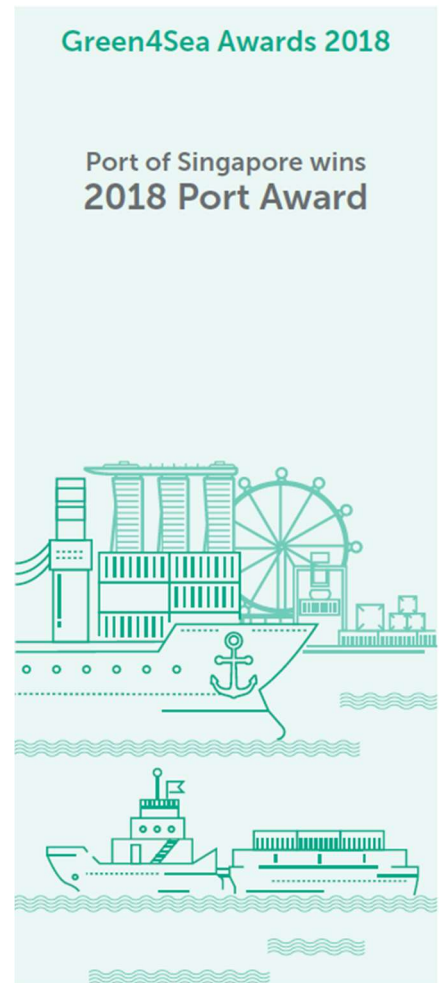
Singapore has clinched the top position in the 2018 Xinhua-Baltic International Shipping Centre Development Index for the 5th successive year.

Singapore was ranked ahead of other major shipping centres like Hong Kong, London, Shanghai, Dubai and Rotterdam. The index rates the relative performance of the world’s top 43 maritime centres annually.



The 2018 Asian Freight, Logistics and Supply Chain Award

Singapore has been crowned “Best Seaport in Asia” for the 30th time at the 2018 Asian Freight, Logistics and Supply Chain Award (AFLAS). 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.



The GREEN4SEA Awards 2018

The GREEN4SEA Awards is an international environment award that fosters Environmental Excellence and Sustainable Shipping. MPA won the GREEN4SEA Award (Port Category) in 2018. The Port of Singapore was nominated for focusing on four key port development areas: Safe and Secure Port, Efficient Port, Intelligent Port, and Clean and Sustainable Port. MPA was also recognised for its efforts in encouraging the use of LNG as a marine fuel in Singapore, and for making the use of MFMs mandatory.

Awards Received in 2018

6th 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 6th 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 HSSE 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 HSSE 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 Honorary 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. 17th, 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 Anwari 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 1st 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 30th 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 AUSBE'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.

