WORKPLACE SAFETY&HEALTH PROFILE 2010

MINISTRY OF MANPOWER

WSHCOUNCIL

SINGAPORE

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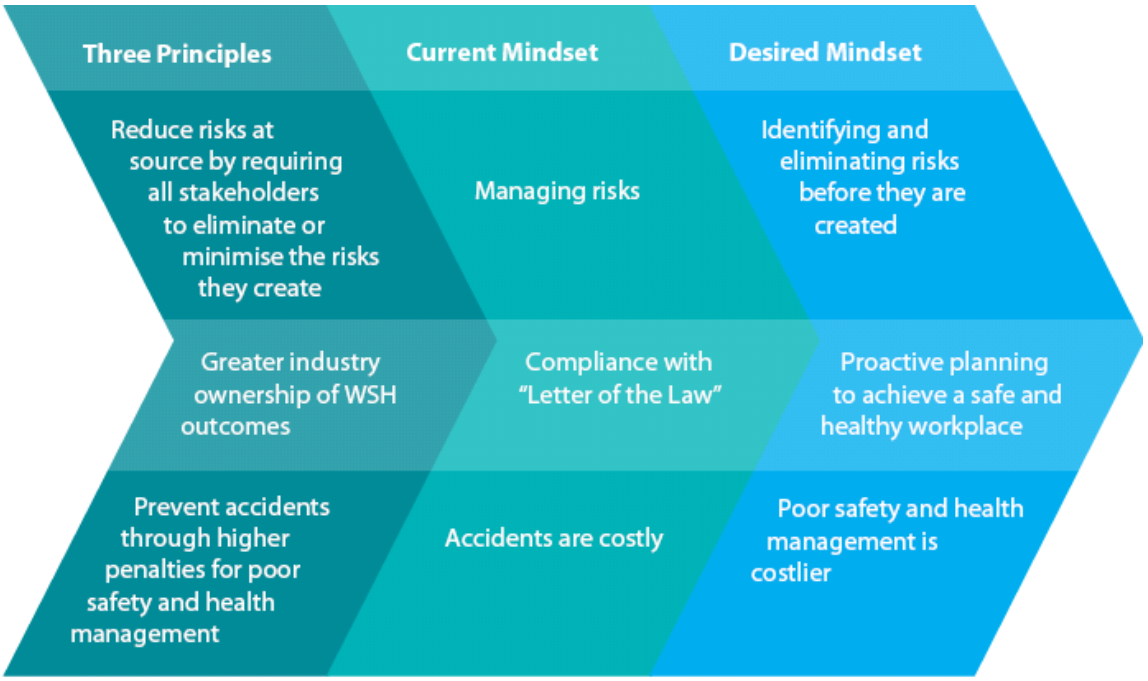
1. Workplace Safety and Health Framework

Singapore's workplace safety and health (WSH) framework guides the management of WSH by all stakeholders – the government, industry, as well as employees. The framework was designed to engender a paradigm shift and ingrain good WSH habits in all individuals at the workplace. This is enshrined in the three key principles of the framework, with risk management being the cornerstone

The **first underpinning principle** under the new framework is to eliminate or mitigate risks before they are created and not to merely accept or endure existing risks. All stakeholders in workplaces thus need to conduct risk assessments to help identify the risks and their sources, measures that should be taken to eliminate or reduce the risks and parties responsible for doing so.



In line with this principle, the parties that create risks would be held accountable for eliminating or reducing those risks. This includes occupiers, employers, suppliers, manufacturers, designers and persons at work. For instance, employers have the responsibility to put in place effective WSH management systems. Top management are expected to appoint personnel with the right skills and experience to manage WSH as well as provide them with adequate resources, training and powers to carry out their duties effectively. Architects and engineers are responsible for designing structures and buildings in construction projects that are safe to build and maintain. Manufacturers and suppliers are responsible for ensuring that the machinery they supply or maintain is safe for use in all workplaces. Workers have a responsibility to adhere to safe work practices. Every person at work has to accept responsibility for his own safety and health and for those under his charge or affected by his work.

The **second principle** of the new framework calls for greater industry ownership of WSH outcome. Industry must take greater ownership of WSH standards and outcomes to effect a cultural change in WSH from reactive to proactive in accident prevention at the workplace. Government cannot mandate improvement in safety and health. Industry must take responsibility for raising WSH standards at a practical and reasonable pace. For example, the former legislation was more prescriptive, with WSH requirements spelt out in detail. This encouraged a mindset amongst the management and its employees to simply follow the "letter of the law" and not address issues that fell beyond the legislation. Given the fast pace of technological change and differing work processes across industries, legislation would inevitably lag behind the emergence of new WSH risks. This was an unsatisfactory situation.

Under the new framework, the legislation and enforcement moved from a prescriptive orientation to a performance-based one. Nonetheless, some prescriptive measures for hazardous sectors and activities are retained. In general, the new framework will make it the responsibility of managers and workers to develop work and WSH procedures suited to their particular situations in order to achieve the desired WSH outcomes.

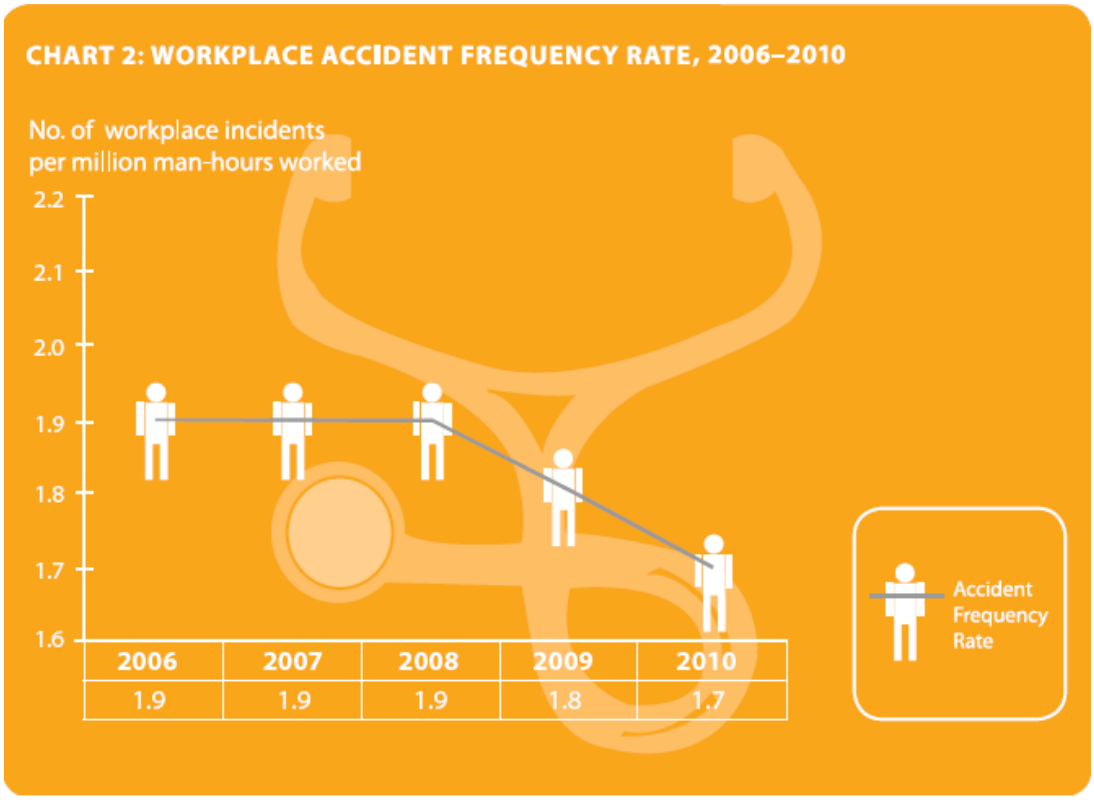
Under the former legislative regime, WSH lapses resulting in deaths and serious injuries were severely penalised but the penalties for offences were much lower in the absence of such mishaps.[1] Such a regime tends to encourage the industry to tolerate sub-optimal WSH practices until accidents occur. Hence, **the third principle** the new WSH framework seeks to effect greater financial disincentives and penalties on workplaces with unsafe practices and systems, even if accidents did not occur. This is to create an environment where all workplaces find it more cost effective to improve their WSH management systems.

[1] The former legislative regime comprised a stepped penalty regime where the maximum punishment would increase with the harm done (the penalty ranged from a $2,000 fine where no injury was caused, to a $200,000 fine with 12 months' imprisonment where the accident resulted in 2 or more fatalities).

A Target for Workplace Safety and Health

The WSH framework is an outcome of a reform undertaken by the government in 2005 to achieve quantum improvements in the safety and health of our workers. With our accident rates averaging at 1.84 industrial accidents per million man-hours worked from 2006-2010, we are striving to make incremental changes to the framework to improve our performance.

Chart 1: Accident Frequency Rate 2006 – 2010



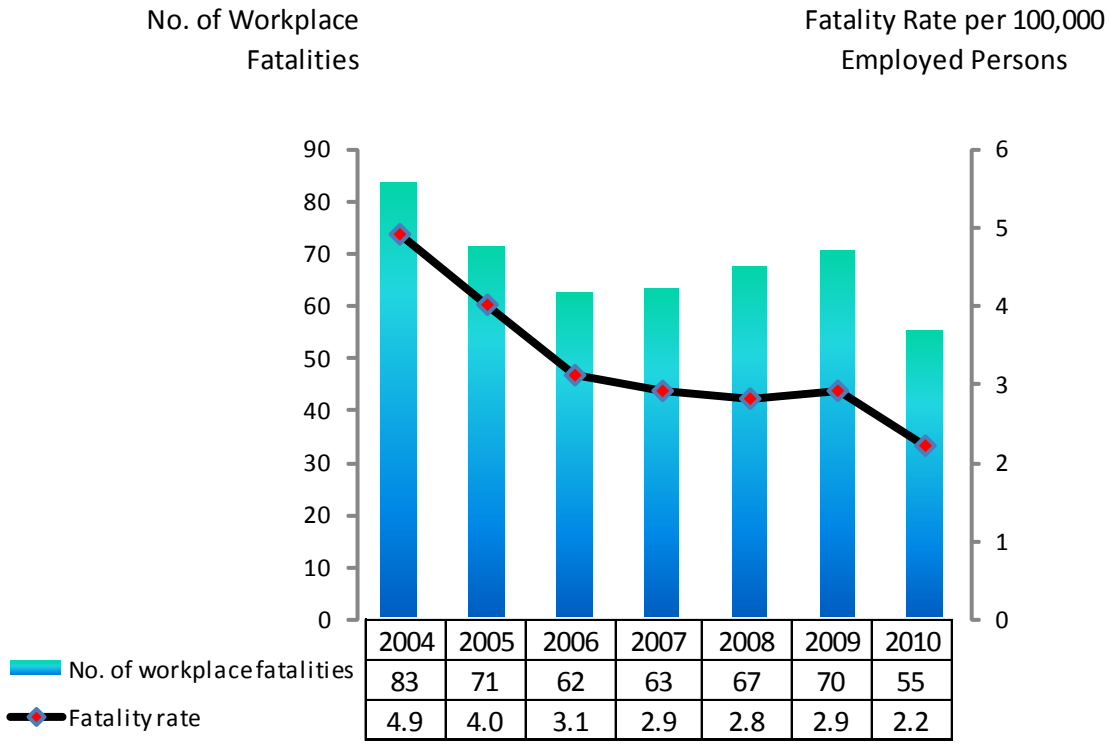
In terms of accident statistics, Singapore ranks below leading countries in WSH and most of the countries in the European Union. The target is to have less than 1.8 by 2018, and attain standards of the top ten developed countries with good WSH records.

2. Workplace Safety and Health Statistics

2.1 Workplace Fatalities, 2004 – 2010

Since the launch of the new framework in 2005, we have made good progress towards lowering our workplace fatality rate. It has dropped from 4.9 in 2004 to 2.2 in 2010. The number of workplace fatalities reduced from 83 in 2004 to 55 in 2010(Chart 2).

Chart 2: Workplace Fatalities, 2004 – 2010
(Number and Rate per 100,000 employed persons)



	2004	2005	2006	2007	2008	2009	2010
No. of workplace fatalities	83	71	62	63	67	70	55
Fatality rate	4.9	4.0	3.1	2.9	2.8	2.9	2.2

Source: Ministry of Manpower, Singapore.

Note:

The WSH (Incident Reporting Regulations) was enacted in 2006. Prior to 2006, the Factories Act was in force and covered only industrial accidents. For comparison purposes, statistics pertaining to workplace fatalities before 2006 were estimated using work injury compensation data.

The construction sector continued to register the highest number of workplace fatalities. The marine sector reported 6 fatalities in 2010, down from 13 in 2009. For manufacturing, fatality numbers decreased to 7 in 2010, down from 11 in 2009. The logistics and transport sector saw a slight increase from 3 fatalities in 2009 to 4 in 2010.

Generally, all sectors saw a decline in their fatalities, except for the stagnation in the construction sector and the slight increase in the logistics and transport sector.

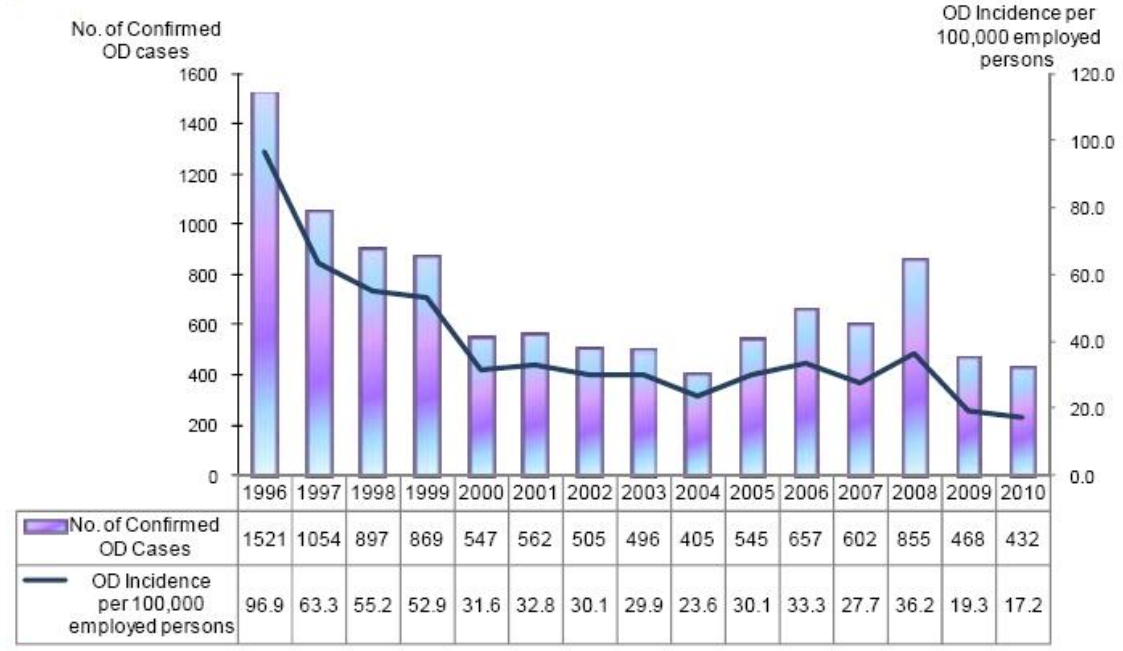
Table 1: Number of Workplace Fatalities by Industry and Type of Incident, 2010

	All sectors	Construction	Marine	Manufacturing	Landscape care and maintenance service	Logistics and transport	Water supply, sewerage and waste management	Hotels and restaurants	Other sectors
Total	**55** (70)	**32** (31)	**6** (13)	**7** (11)	**0** (1)	**4** (3)	**1** (1)	**0** (2)	**5** (8)
Falls from height^	18 (22)	10 (9)	4 (7)	0 (4)	0 (0)	2 (0)	1 (1)	0 (0)	1 (1)
Struck by moving objects	9 (6)	4 (4)	1 (0)	2 (0)	0 (0)	1 (1)	0 (0)	0 (0)	1 (1)
Struck by objects falling^ from height	6 (10)	3 (5)	1 (1)	2 (2)	0 (1)	0 (1)	0 (0)	0 (0)	0 (0)
Collapse/ failure of structure and equipment	6 (7)	6 (1)	0 (2)	0 (3)	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)
Exposure to/ contact with hazardous substances	0 (4)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (4)
Fires and explosions	2 (0)	0 (0)	0 (0)	2 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Crane-related	2 (10)	2 (8)	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
- Collapse of crane	1 (2)	1 (1)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Electrocution^	1 (1)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)	0 (0)
Oxygen deficiency in confined spaces	1 (0)	1 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Slips and trips	4 (3)	1 (0)	0 (0)	0 (0)	0 (0)	1 (0)	0 (0)	0 (1)	2 (2)
Caught in/between objects^	4 (4)	3 (3)	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Other incident types^	2 (3)	1 (1)	0 (1)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0)

2.2 Occupational Diseases, 1998 – 2009

For Occupational Diseases (OD), the number of cases confirmed saw a downward trend during the period between 1996 and 2010 (Chart 3). In 2010, 432 cases of OD were confirmed. The overall OD incidence stood at 17.2 confirmed cases per 100,000 employed persons in 2010, down from 19.3 a year ago.

Chart 3: Occupational Diseases, 1996 – 2010
(Number and Incidence per 100,000 employed persons)



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
No. of Confirmed OD Cases	1521	1054	897	869	547	562	505	496	405	545	657	602	855	468	432
OD Incidence per 100,000 employed persons	96.9	63.3	55.2	52.9	31.6	32.8	30.1	29.9	23.6	30.1	33.3	27.7	36.2	19.3	17.2

Note:
1) Number of confirmed cases are sourced from published statistics.
2) 1996-2005 figures include SSIC 942, SSIC 95 and Gassing cases. From 2006, figures exclude cases from SSIC 942 & SSIC 95 and Gassing.

Source: Ministry of Manpower, Singapore.

Noise Induced Deafness (NID) continued to be the leading type of OD. In 2010, NID accounted for 84% of all confirmed OD cases.

Table 2: Number of Confirmed ODs by Type, 2010 and 2009

Type of Occupational Diseases	2010	2009
Total	**432**	**468**
Noise-induced deafness	364	380
- Early stage	*358*	*375*
- Advanced stage	*6*	*5*
Occupational skin diseases	43	56
Excessive absorption of chemicals	15	16
Chemical poisoning	–	–
Compressed air illness	2	–
Barotrauma	1	1
Work-related musculoskeletal disorders	4	3
Mesothelioma	2	3
Occupational lung diseases	1	3
Others	0	6

2.3 Work Injury Compensation, 2010

Close to 12,300 work injury claims were awarded compensation in 2010. Two-third of the claims was made up of temporary incapacity cases (Table 3). The total amount of compensation awarded in 2010 was S$76.5 million.

Table 3: Number of Work Injury Compensation Claims and Amount Awarded by Degree of Incapacity, 2010

	Total	Temporary Incapacity [1,2]	Permanent Incapacity [1,3]	Fatal
Number of Cases Awarded Compensation	12,288	7,764	4,399	125
Amount of Compensation Awarded (S$m)	$76.51	$4.11	$61.99	$14.52

Source: Ministry of Manpower, Singapore
Note: MC wages indicated in table above may not reflect the full amount paid out to workers as these are computed based on the no. of days of MC/hospitalisation leave declared to MOM.

Note:

1 Includes Occupational Diseases.

2 Refers to injury where the incapacity is of temporary nature. Such incapacity reduces the earnings of the employee in any employment in which he was engaged at the time of his accident resulting in his temporary incapacity. The compensation covers medical costs and medical leave wages.

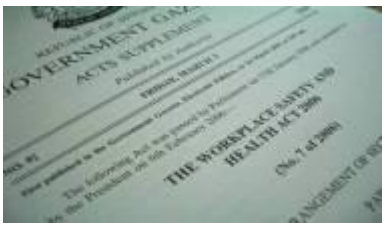
3 Refers to injury where the incapacity is of permanent nature and includes cases where it incapacitates an employee for all work which he was capable of undertaking at the time of the accident resulting in such total incapacity. Such incapacity reduces the earnings of the employee in every employment which he was able to undertake at the time of his accident. The compensation covers medical costs, medical leave wages and percentage of permanent incapacity.

3. Workplace Safety and Health Legal Framework

This section outlines the various legal instruments governing WSH in Singapore.

3.1 Workplace Safety and Health Act

In Singapore, the key legislation on WSH is provided for by the WSH Act which is administered by the Commissioner for WSH, Ministry of Manpower. Replacing the former Factories Act, the WSH Act came into effect on 1 March 2006 as the key legal instrument to effect the new WSH framework.



The Act is designed to protect employees as well as any other persons who may be affected by the work carried out at all workplaces. In its first phase of implementation, coverage of the Act was limited to high-risk workplaces such as construction worksites, shipyards and other factories i.e. those formerly covered under the former Factories Act.

The WSH Act has been extended to cover six new sectors[2] since 1 March 2008 and will be expanded to cover all workplaces by September 2011.

The Act departs from taking a prescriptive stance under the former legislation and introduces a performance-based regime. It emphasizes the importance of managing WSH proactively by requiring stakeholders to take *reasonably practicable measures* to ensure the safety and health of workers and other persons that may be affected by the work being carried out. The WSH Act also assigns liability to those who create and have management and control over WSH risks. The stakeholders include the occupiers, employers, principals, employees, manufacturers and suppliers as well as persons who erect, install or maintain equipment and machinery.

3.2 Workplace Safety and Health Subsidiary Legislation

Under the WSH Act, there are a total of 26 subsidiary legislation. 15 of them were Regulations made under the new Act. The remaining 11 subsidiary legislation made under the former Factories Act continue to be in force. Together, they constitute the legislative framework for the management of WSH in Singapore. The subsidiary legislation made under the Factories Act will be reviewed and updated before being re-enacted under the WSH Act. This is to ensure that they are in-line with the new WSH framework. The subsidiary legislation are listed and summarized in **Annex A.**

One of the key subsidiary legislation is the WSH (Risk Management) Regulations, which require employers to conduct risk assessment on the work they are undertaking and take steps to eliminate or reduce the risks that workers are exposed to. The intention of the legislation is to enshrine risk assessment as an integral part of business operations so that WSH risks are proactively reduced.

3.3 Other Relevant Legislation

Other relevant legislations that have an impact on WSH include the Environmental Protection and Management Act, Environmental Public Health Act, Radiation Protection Act and Fire Safety Act. These are administered by other government agencies. The purposes of these legislations are described in **Annex B**.

3.4 Codes of Practice & Other Guidelines

Besides legislation, Codes of Practice provide practical safety and health guidance for specific work areas. These are jointly developed by the industry and regulatory agencies under the auspices of the Standards, Productivity and Innovation Board (SPRING Singapore).

When the WSH Act came into effect on 1 March 2006, the Commissioner for WSH was authorised to approve Codes of Practice for the purpose of providing the industry with practical guidance with regard to the upkeep of safety and health standards at the workplace. With the formation of the WSH Council on 1 April 2008, the WSH Act was amended to transfer the power to issue, approve, amend, or revoke Codes of Practice to the WSH Council. The WSH Council works in close collaboration with the industry to identify areas where practical guidance is required to address improvements in WSH standards. The WSH Council will then set industry standards for these areas, which may

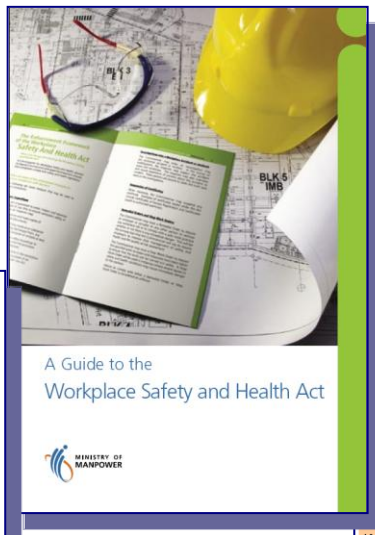
[2] Healthcare Activities, Hotels and Restaurants, Landscape Care and Maintenance Service Activities, Services Allied to Transportation of Goods, Veterinary Activities, as well as Water Supply, Sewerage and Waste Management.

include standards for WSH management systems, specific trades and operation of specific equipment.

The Ministry of Manpower and the WSH Council also issue guidelines on specific subject matters such as handling and removal of asbestos to complement regulations on the subject.

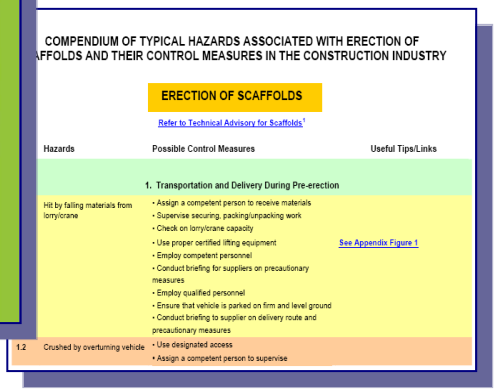
A list containing the Approved Codes of Practices (ACOP) as well as other relevant legislation and guidelines pertaining to WSH can be found in **Annex B**.

Codes of Practice



Guidelines

Risk Compendium



3.5 International Labour Organizations Conventions

As a member state of the International Labour Organisation (ILO), Singapore is committed to aligning our WSH framework with internationally recognised core labour standards. Periodic reviews of our workplace policies and laws are done to ensure alignment with observed international standards.

International Labour Organization
Promoting Decent Work for All

3.6 Work Injury Compensation Act

The government also regulates the right of employees to compensation in the event of work-related injury, death or occupational disease under the Work Injury Compensation (WIC) Act.

The WIC Act took effect on 1 April 2008 following amendments to the former Workmen's Compensation Act. The amendments extended coverage of the Act to almost

all employees[3]. Covering about 2.3 million employees, the WIC Act provides access to a simple and quick way of settling claims for work-related injuries. An employee claiming under the WIC Act is not required to prove that his employer was at fault for the accident. He only needs to show that he was injured in the course of work. The injured employee can claim from his employer medical leave wages, medical expenses incurred within one year from the date of the accident or up to a cap on $25,000, whichever is lower, and a lump-sum payment for any permanent incapacity, sustained[4]. A lump-sum payment is also payable to the dependants of an employee who met with a fatal accident at work.[5]

The work injury compensation insurance is provided by the private sector and the premiums are market-driven. It is mandatory for employers to purchase work injury compensation insurance for employees who work in sectors that face higher workplace risks. For the remainder, employers have the option of buying insurance or being self-insured. Employers will be required to pay compensation in the event of a valid claim, if they do not have insurance.

[3] Officers from the Singapore Armed Forces, uniformed personnel and domestic workers are excluded from coverage of the WIC Act.

[4] The compensation amount payable is subjected to a maximum and minimum limit as follows: Maximum limit = $180,000 x [% loss of earning capacity]; and Minimum limit = $60,000 x [% loss of earning capacity].

[5] The compensation amount payable to the dependents of a deceased employee is subjected to a maximum limit of $140,000 and minimum limit of $47,000.

4. Authorities or Bodies Responsible for Workplace Safety and Health

This section describes the regulatory agencies and industry bodies that are responsible for WSH in Singapore.

4.1 Ministry of Manpower

Legislation relating to WSH is administered by the Commissioner for Workplace Safety and Health under the Ministry of Manpower (MOM). MOM's mission is to work with employers and employees to achieve a globally competitive workforce and great workplace, for a cohesive society and a secure economic future for all Singaporeans. Ensuring that our workplaces are safe and healthy for the workforce contributes to the overall mission of creating a great workplace.

The Occupational Safety & Health Division (OSHD) is the division within MOM primarily responsible for ensuring the safety, health and welfare of the workforce.

Occupational Safety & Health Division

SAFE & HEALTHY WORKPLACE

The Division promotes WSH at the national level. It works with employers, employees and all other stakeholders including the Workplace Safety and Health Council to identify, assess, and manage WSH risks so as to eliminate death, injury and ill health.

The Division is headed by the Commissioner for WSH and is staffed by approximately 248 officers with about 158-gazetted inspectors across four departments performing various functions.

- **OSH Inspectorate**

The Inspectorate focuses on reducing safety and health risks at workplaces by conducting inspections and surveillance of workplaces, as well as issuing various licences as such for scaffolding and crane contractors and workplace safety and health officers. The Inspectorate also investigates accidents and shares lessons learnt from the accidents with the industry.

- **OSH Policy, Information and Corporate Services Department**

The Department drives the divisional efforts through sound policies & strategic planning while striving for organization excellence, and analyses and identifies emerging WSH trends and risks by leveraging on effective information systems, quality resources and astute business intelligence. The Department also supports the Division in the areas of financial management, registry and day-to-day office administration as well as ensures continuous improvement in customer responsiveness through monitoring of customer service standards.

- **OSH Specialists Department**

The Department provides specialist support in the development of WSH standards and best practices, as well as the investigation into complex accidents and occupational diseases. The Department conducts technical and scientific research, develops and implements strategies and targeted programmes for specific WSH hazards and industries. The Department also collaborates with international organisations and national institutes in projects, information exchange, visits and training.

- **Work Injury Compensation Department**

This Department administers the Work Injury Compensation system to assist injured employees and dependants of deceased employees in claiming work injury compensation. It also administers the Incident Reporting system for workplace accident, dangerous occurrence and occupational disease.

4.2 Workplace Safety and Health Council

To drive strong industry ownership of WSH outcomes, the WSH Advisory Committee (WSHAC) was formed in September 2005, comprising 14 eminent individuals, with wide industry representation, appointed by the Minister for Manpower. The role of the WSHAC was to advise MOM on WSH standards, promotion and training, as well as address the unique challenges of key industry sectors. In November 2006, the International Advisory Panel on WSH recommended an expanded scope for the WSHAC. To do this, the WSHAC would have to be evolved into a full-fledged Council with executive functions. MOM accepted the recommendation and announced in October 2007 that the WSH Council would be formed by April 2008.

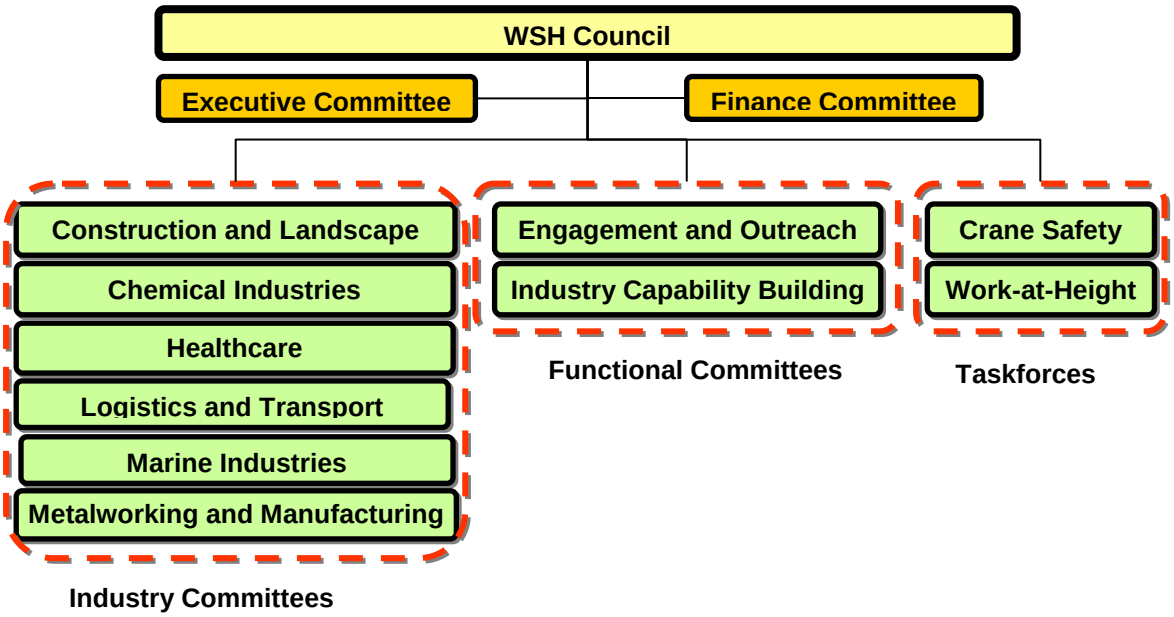
On 1 April 2008, the WSH Council was formed to take on executive powers to spearhead WSH initiatives, through the enactment of the WSH (Amendment) Act 2008. The WSH Council comprises 18 leaders from the key industry sectors (such as construction, marine, manufacturing, petrochemical, and logistics), the Government, unions and professionals from the legal, insurance and academic fields.

The WSH Council's main functions are to:

- Build the capabilities of industry to better manage WSH
- Promote safety and health at work and recognise companies with good WSH records
- Set acceptable WSH practices

A summary of the WSH Council's key initiatives under each of its main functions can be found in **Annex C**. More information on the WSH Council can be found at wshc.gov.sg.

Table 4: Six Industry, Two Functional Committees and Two Taskforces Formed Under the WSH Council



4.3 Industry Associations and Professional Bodies

Besides the tripartite partners, various industry associations and professional bodies are regularly consulted in the formulation of polices or legislation. All proposed legislations are also posted on the internet via an e-consultation portal to solicit industry and public feedback.

These associations and professional bodies are also regularly involved in co-organising various outreach programmes, seminars and workshops for the industry. A list of our regular partners can be found in **Annex D.**

4.4 Tripartite Coordination and Collaboration

A unique, co-operative tripartite mechanism amongst workers, employers and the government is long practised in Singapore. This approach has been successful in cultivating constructive workplace relations in Singapore. It has helped companies and the economy to grow, as well as create jobs for the workforce.

This mechanism has also proven useful in advancing WSH in Singapore. The tripartite partnership between MOM, together with Singapore National Employers Federation (SNEF) and National Trades Union Congress (NTUC), has been instrumental in bringing about close consultation and communication avenues between the government and representatives of employers and workforce on WSH issues. The formation of the WSH Council is expected to foster even greater coordination and collaboration between the regulator and the industry stakeholders.

5. Implementation of Workplace Safety and Health Strategy 2018: Mean and Tools

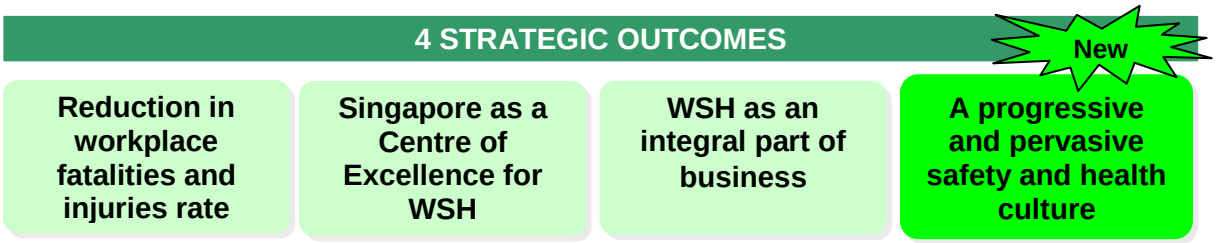
To guide the future development of programmes and initiatives, the WSH 2018 Strategy: A Strategy for Workplace Safety and Health in Singapore replaced WSH2015 – A Strategy for WSH. WSH 2018 was crafted after extensive consultation undertaken by the MOM, the former WSHAC and other industry partners.

To realise our goals of having one of the best safety records in the world, the right mindset and attitude are needed at the workplace to reinforce the importance of WSH. WSH 2018 makes explicit the need to establish a progressive and pervasive safety and health culture as one of the four Strategic Outcomes. These outcomes set out our national targets for a world-class regime in WSH, articulate the characteristics that Singapore must demonstrate to become a Centre of Excellence for WSH and describe the behaviour that stakeholders must possess for a vibrant WSH culture to be integrated as a way of life.

The WSH 2018 Strategic Map

A Progressive WSH Culture to Sustain Improvements

Industry's heightened state of awareness and alertness towards WSH has resulted in better WSH performance since 2005. To sustain WSH improvements, the right mindset and attitude is needed at workplaces to reinforce the importance of and emphasis on WSH. This will prevent complacency from setting in to the gains that have been achieved. Accordingly, in WSH 2018, the desired outcome of having a progressive and pervasive safety and health culture has been made explicit and added to the three strategic outcomes.



Strategies and Areas of Work

The strategies developed in WSH 2015 remain sound and further developed for WSH 2018. For greater effectiveness and efficiency, the detailed areas of work and initiatives would be enhanced to take into account the insights that have been gleaned during the implementation process. In addition, new areas of work have been added to better enable Singapore to realise the national vision and four strategic outcomes.

a. Adopt differentiated approaches. Firstly, as each industry sector has its own landscape and unique WSH needs and challenges, it is crucial that MOM and WSHC deepen their understanding of the different sectors. This allows programmes to be specific and targeted, and ensures that interventions are deployed through the right channels. Secondly, the management of workplace health differs from that of safety because, unlike fatalities and injuries, the onset of an occupational disease may occur long after exposure to the hazard has ceased. The causes of ill health are also multi-factorial and can include exposures to health hazards outside the work environment. This poses difficulties in assessing whether the illnesses are work-related and whether reasonably practicable measures were taken to mitigate the risks to workers.

b. Raise the stature and professionalism of WSH. WSH professionals help to manage safety and health at the workplace, and the demands placed upon them are increasing. Improving the stature and professionalism of WSH would attract the right talent to this field and enable them to better manage WSH. Management staff would also be equipped with the appropriate skills to lead WSH efforts in their organisations, so that businesses commit greater resources to safety and health.

c. Make safety and health a way of life. This area of work directly impacts the strategic outcome of establishing a progressive and pervasive safety and health culture. We need to strengthen personal individual responsibilities such that every worker displays the right attitude and behaviour in WSH. This involves inculcating safety and health as a common value in all levels of the workforce, so that all workers freely and routinely act safely on and off the job, without the need for external influences e.g. supervision or fear of being penalised.

d. Supplement enforcement efforts. More can be achieved by extending our efforts to all workplaces, especially the smaller ones. For example, we could harness external resources beyond those of MOM and WSHC by appointing third-party organisations to extend MOM's regulatory reach and WSHC's engagement efforts. To complement enforcement efforts, programmes to achieve sustained improvements would also be developed and greater on-site assistance would be offered to companies.

Further details of the initiatives can be found in the WSH 2018 Strategy.

This section outlines the implementation of the various means and tools to enforce, engage, promote as well as build capability to achieve safe and healthy workplaces. Further details are in the *WSH 2018 Strategy* document.

Strategy 1: Building Strong Capabilities to Better Manage Workplace Safety and Health

5.1 Risk Management

Risk Management is an area where we have made good progress in recent years. Organisations committed to managing risk in their business are better equipped to respond and recover from unplanned events that may have a serious impact on the business. The competency of Workplace Safety and Health Officers (WSHO) to help identify and assess risks, and prevent losses, provides for a resilient and competent organisation.

Risk Management (RM) Competency Requirement

The Risk Management competency of Workplace Safety and Health Officers (WSHO) was reviewed. As a result, since 1 March 2010, all registered WSHOs without a Specialist Diploma in WSH are required to pass a Risk Management test before they can renew their WSHO registration. The requirement was designed to ensure the competence of WSHOs in RM and RM regulations.

To prepare WSHOs for the test, a 2-day refresher “RM Course for WSH Officers” was developed and offered at Ngee Ann Polytechnic and Singapore Polytechnic.

5.2 WSH Culture

The benefits of an effective safety culture in an organisation go beyond reducing workplace injuries; it also increases morale, enhances the business reputation and attracts talent. To cultivate a shared attitude on putting safety first, organisations will need to involve everyone, show management support and integrate health and safety standards with performance standards.

Three-Stage WSH Culture Building Programme and Index

Having “A Progressive and Pervasive WSH Culture”, as articulated in the Singapore WSH 2018 vision, entails going beyond intensified efforts to enhance standards and practices. Internalising the right attitude and cultivating the right culture ultimately impact WSH performance in the long run.

With this in mind, WSHC initiated a three-stage approach for developing the WSH Culture Building Programme (CBP). The first 2 stages are dedicated to the development and refinement of the programme while the third stage is for rolling out the programme to the industry.

5.3 Competency Development

In tandem with the WSH Professionals Workforce Skills Qualification (WSQ) framework to raise the level of WSH practice in Singapore, various enhancements to the industry curriculum were introduced to enhance the WSH capability, stature and professionalism.

Training For Project Safety and Health Coordinator – Construction Sector

The Guidelines on Design for Safety in Buildings and Structures, developed by MOM in collaboration with the WSHC (Construction and Landscaping) Committee in 2008, is aimed at reducing risk at source in the construction sector. A new role, the Project Safety and Health Coordinator (PSHC), was introduced and a corresponding competency-based course was developed.

Workshop to Enhance Safety of Crane Operations (WESCO)

Initiated by MOM in collaboration with the WSHC and the National Crane Safety Taskforce, the Workshop to Enhance the Safety of Crane Operations (WESCO) curriculum aims to raise the safety competencies of personnel involved in the operation of cranes. It also provides the latest updates in WSH laws and regulations, especially the ones specifically applicable to Crane Operators.

The Workshop reinforces lessons learned from case studies of accidents involving cranes and is conducted by two authorised training providers, BCA Academy and NTUC Learning Hub.

From 1 April 2011, all crane operators will be required to attend and pass the half-day Workshop to Enhance the Safety of Crane Operations (WESCO) before they can renew their 2-year Crane Operator licences.

Container Depot Association & Enhancement Training Curriculum

Revised CDA for Safety Orientation Courses (SOCs)

WSHC streamlined and enhanced the Container Depot Association (CDA) for the Construction Safety Orientation Course (CSOC), Shipyard Safety Instruction Course (SSIC), Metalworking Safety Orientation Course (MSOC) and Oil/Petrochemical Safety Orientation Course (OPSOC). The enhancement included the standardisation of the key topics with customised sub-topics that cater to the uniqueness of each industry. The trainer requirement was also enhanced to ensure consistency and improvement to the quality of the SOC trainers.

Standards & Framework

Development of the Occupational Hygience (OH) Framework

In preparation for the development of the OH Competency Framework, a focus group discussion attended by 50 people was conducted with the aim of gathering feedback and information from the industries and relevant stakeholders on the issue of the need for industrial Occupational Hygienists. The information gathered was useful in the sculpturing of the framework downstream. WSHC will continue to work with OSHD

Specialist Department and Workforce Development Agency (WDA) on this framework development.

Development of the Process Safety Management (PSM) Framework

A proposed Process Safety Monitoring (PSM) framework using leading and lagging indicators, with a focus on both process and personnel safety, was well-received by the Committee.

The implementation of a PSM system is the pre-requisite to using the monitoring indicators. Hence, it is recommended to look into the adoption of PSM in the chemical sector, especially for Small and Medium Enterprises (SMEs). A simplified PSM Implementation Guide is proposed to help these SMEs by a sub-committee.

Enhanced Training Curriculum for Lifting Supervisors

The WSHC, in collaboration with MOM and the National Crane Safety Taskforce, undertook a thorough review of the training curriculum for the Lifting Supervisors Course to upgrade the capabilities of Lifting Supervisors. Some of the key changes in the training curriculum included enhancement of the roles and duties of Lifting Supervisors, as well as the emphasis on proper establishment and implementation of Lifting Plans for all lifting activities. As part of the revamp, the duration of the course has been extended from the current 29 hours to 32 hours. The new course which started in August 2010 will also require attendees to pass the pre-requisite Accredited Training Provider's (ATP's) rigger and signalman course before they can be eligible to attend the Lifting Supervisors course.

Comprising of both theoretical and practical aspects, the course brings supervisors through a wide range of topics, such as fall protection system, risk assessment, safe work procedures, incident investigations and emergency planning.

Safety Compliance Assistance Visits (SCAV)

The Safety Compliance Assistance Visits (SCAV) programme was launched in April 2010 to reinforce safety practices in the smaller worksites. The programme is designed to:

- Provide on-site safety training to supervisors and workers;
- Promote Work at Height (WAH) safety by disseminating educational materials and conducting on-site demonstrations; and
- Enhance WAH-related safety standards by identifying safety lapses and offering professional advice

Under the programme, engagement teams visit worksites and educate the workers about safe working practices at heights. These visits are conducted by certified WSH Professionals (Level D - Auditors) through the Association of Safety Auditing Firms (ASAF) of Singapore. The programme's primary target audiences are site employees and employer representatives that include Project Managers, Site Supervisors, Safety Officers/Co-ordinators/Supervisors and workers.

Courses

Occupational First Aid Course (OFAC) cum Automated External Defibrillator (AED) Course

As part of the continuous process of enhancing MOM safety courses and also in accordance to the WSH Act (WSHA), employers are required to develop and implement emergency response procedures which include company first aid training and its medical facilities.

The integration of OFAC and AED training was developed as part of the enhancement of the first aid training in the workplace. Effective since 1 July 2010, this enhancement was to enable certified Occupational First Aiders to be competent in the safe use of the AED during an emergency situation. The course is recognised by the National Resuscitation Council (NRC) as an accredited training course.

Launch of the Design for Safety – Project Health Coordinator (PSHC) Course

The Guidelines on Design for Safety in Buildings and Structures was launched in November 2008. Design for Safety (DfS) assists key stakeholders on the process of design safety and the transfer of vital safety and health information along the construction process chain.

To ensure continuity in information flow, the client should appoint a suitably qualified Project Safety and Health Coordinator (PSHC) who would be responsible for following through the project from the design stage, to the construction stage until the handover to the client for maintenance.

To address the industry's rising demand, WSHC and MOM developed the competency-based PSHC Course with support from various associations, including Real Estate Developers' Association of Singapore (REDAS), Singapore Institute of Architects, The Institution of Engineers Singapore (IES), Association of Consulting Engineers Singapore (ACES), The Singapore Contractors Association Limited (SCAL) and Singapore Institute of Surveyors and Valuers (SISV).

The WSHC (Construction & Landscape) Design for Safety sub-committee is working towards integrating the DfS concept into the syllabus of pre-employment professional courses such as architecture and engineering degree courses, as well as into project management courses at tertiary level. This has been kick-started with the Department of Architecture and the Department of Civil Engineering in National University of Singapore.

Logistics and Transport Safety Orientation Course (LTSOC)

The Logistics and Transportation Committee of the Workplace Safety and Health Council (WSHC), in collaboration with the Singapore Logistics Association (SLA), developed a basic workplace safety and health orientation course (LTSOC) for the Logistics and Transport sector. The inaugural LTSOC was launched in October 2010. The course is targeted to workers, small businesses and self-employed professionals in the logistics and transport industry.

5.4 Practical Assistance

To help industry keep up-to-date with the latest WSH initiatives and best practices, a wide array of resources including technical advisories, videos, guidebooks and special kits, are made available to businesses. Some of the guidance materials are the result of a collaborative effort amongst the stakeholders, industry associations and regulatory agencies.

5.5 Competency Delivery

Working hand-in-hand with our WSH training service providers, we ensure the effective delivery of WSH training and competency courses on a curriculum that is validated against best industry practices. This will help to add and maintain the competency of employees' host of skills and knowledge as they are expected to perform to an industry standard on a regular basis.

ATP Forum

As part of the continuing engagement effort with the Accredited Training Providers (ATP), WSHC conducted 2 forums aimed at establishing a platform for sharing of lessons learnt from previous audits conducted on ATPs. The forum also presented an opportunity to keeping ATPs abreast with the latest updates and expectations from the Ministry on training-related matters.

Guest speakers included officers from the Adult Education Network Singapore, Practicing Management Consultant Singapore, Corrupt Practices Investigation Bureau and NTUC Learning Hub.

5.6 Incident Investigation

MOM investigates into fatal workplace accidents, and other serious accidents such as dangerous occurrences and workplace accidents resulting in permanent disabilities. The investigations uncover the root cause(s) of accidents including systemic lapses. The investigation outcomes can guide the development and implementation of effective control measures and systemic interventions to prevent recurrences.

Critical findings and lessons learnt from accident investigation are disseminated to various industry stakeholders. MOM works closely with the WSH Council to come up with publications in the form of downloadable documents, travel-sized booklets and videos which are made readily available to the industry.

Strategy 2: Implementing an Effective Regulatory Framework

5.7 Legislative Review

It is our prerogative to keep up with industry development and remain relevant to its practices. Hence, the government will continue to review legislation from time to time to bring industries to better focus and implementation on standards of health and safety.

5.8 Strategic Intervention

Programme-Based Engagement

ProBE harnesses a combination of competency and awareness building efforts to help duty holders understand expectations through consistent, firm and fair engagement. In 2010, 2 key Programme-Based Engagement (ProBE) initiatives were identified to raise the standards of WSH on priority areas:

- Work at height (WAH)
- Crane safety

ProBE Priority Programme #1 in 2010: Work At Height

Falling from height generally accounted for about one-third of all workplace fatalities reported each year. The main cause of these cases was attributed to a lack of effective Fall Prevention Plan (FPP) for any work that may subject workers to the risk of falling from height.

To improve safety of WAH across workplaces, the National WAH Taskforce made 3 key recommendations:

- Building strong capabilities
- Promoting the benefits of WAH safety
- Enhancing the Intervention Framework for WAH

The Taskforce also aims to halve the current WAH fatality and injury rates by 2013, and further reduce the rates by 2018. It will also work closely with the industry to implement FPPs in all construction worksites and shipyards by 2012 and at all workplaces by 2015.

ProBE Priority Programme #2 in 2010: Crane Safety

In Singapore, we see many cranes in use in construction projects, especially in recent years during the construction sector boom. Since 2007, we have seen an increasing trend of crane-related fatalities at the workplace, increasing steadily from 4 deaths (or 6.3% of all workplace fatalities) in 2007 to a high of 10 deaths (or 14.3% of all workplace fatalities) in 2009. Investigations into these accidents revealed that the causal factors include failure to carry out Risk Assessments, lack of control and coordination of the lifting operation, and overloading of cranes by crane operators.

The National Crane Safety Taskforce is spearheading a three-pronged approach to improve standards of Crane Safety in Singapore and to reduce the occurrence of such incidents at the workplace:

- Enhancing competencies and capabilities in crane safety

- Enhancing awareness on crane safety
- Enhancing standards and practices on crane safety

Business under Surveillance

Workplaces with higher risks and those with poor safety and health performance (such as those with fatal or serious accidents) are monitored under the Business under Surveillance (BUS) programme. Under the programme, OSHD's inspectors would closely monitor the WSH performance of these establishments and conduct regular inspections. The top management of these businesses are also required to develop action plans to improve their WSH performance and report on their progress to MOM regularly. Such workplaces are given specific WSH outcomes to achieve before they are allowed to exit from the programme.

Demerit Point System

The demerit point scheme was introduced in 2000 as a means to encourage construction contractors with poor WSH records to improve on their performance. Construction companies will be warned if they accrue more than 18 demerit points across all worksites in a 12 month rolling period and if any of their worksites accrue a further 18 demerit points, the worksite will be barred from hiring of foreign workers. Contractors who have accrued Demerit points will be listed on MOM's website. This allows public and private developers to assess the performance of the contractors and use the Demerit Points as one of the considerations when awarding tenders. Construction companies will have its records cleared off the DPS scheme after demonstrating satisfactory WSH performance by ensuring that all its worksites do not accumulate any demerit points for a continuous period of 12 months.

Licensing

Licensing is an important enforcement tool MOM leverages on. Organisations or personnel who do not comply with the WSH Act, its subsidiary regulations or terms and conditions of registration, may be suspended from operating or have their licences revoked.

Cluster Operations (COP)

In 2008, to optimise the effectiveness of Division's existing enforcement tools, an enforcement approach Cluster Operations (COPS) was introduced. COPS is a workplace inspection programme in which specific clusters of workplaces are selected based on ground intelligence and inspected over a specified period of time. The selected clusters of workplaces are typically pre-announced through MOM website to encourage affected companies to take initiative to improve WSH standards prior to the inspections. Links to guidelines, technical advisories and compliance assistance tools are also provided through the WSH Council. The inspections outcomes and the common contraventions found are also shared after each operation, to facilitate companies in the detection and rectification of safety and health weaknesses at their workplaces.

5.9 Enhancing Self Regulation

In a climate of self-regulation, organisations need to integrate and internalise health and safety measures into their business activities. We endorse the support of industry and trade associations to help increase self-monitoring and ownership of processes and procedures that lead to better health and safety at the workplace.

Factory notification scheme

On 1 March 2010, the factory registration scheme was enhanced. Factories with low risk activities were no longer required to register their workplace but instead would only need to do a one-time notification to the Commissioner for Workplace Safety and Health and ensure that they have conducted a proper risk assessment before commencing operations. Higher risk factories, however, are still required to register with the Commissioner before beginning operations. For workplaces such as construction worksites, shipyards and metalworking factories, they are required to do a one time registration and ensure that their safety management system is regularly audited. For the major hazardous industries such as petrochemical plants, bulk storage terminals for toxic or flammable liquid and hazardous chemical plants, more stringent registration requirements are in place. These factories must have their process hazard analysis checked by OSHD when they apply and are required renew their certificates of registration every five years.

Safety and Health Annual Performance (SHAPe)

To assist top management to review their company's WSH performance, WSHC has developed the SHAPe programme. SHAPe provides top management with an overview of the organisation's WSH policy, planning, management programme, active and reactive performance monitoring, which aids to identify focus areas for new initiatives to be introduced or current initiatives to be reassessed. It is available online through the iWSH Portal. SHAPe is also used by construction and marine companies in Pledge for Zero programme to update their WSH statistics, safety strategies and plans for continuous improvement, safety strategies and plans to assist contractors to improve their safety performance from positive and negative lessons learnt.

MindSET

With the guidance of ASMI, participating shipyards in Marine Industry Safety Engagement Team (MIndSET) conducted mutual 'cold eye' reviews on the WSH management system and cross inspection of the workplace. Phase 1 has been completed with 6 shipyards and a post-sharing session with other ASMI members, focusing on best practices as well as areas of improvement.

Safety and Health Active Review (SHARe)

SHARe was piloted through WSHC (Construction & Landscape) Marina Bay Sub-committee in April 2010. The objective of the programme is to facilitate industry self-regulation to move towards greater ownership of WSH outcomes.
Each session is theme-based and the scope of the visitation would include:

- Observation of WSH implementation at workplaces

- Sharing best practices & knowledge
- Highlighting of unsafe act / condition
- Provision of recommendation and feedback for improvement

Marine Industries Training Centre (MITC)

The MITC was set up to be a one-stop centre in provision of relevant trade-specific and broad-based skills training for marine workers. Through contextualised training by integrating components to familiarise workers with the marine work environment, it is an optimal place for SMEs to send their workers for training. Under the auspices of ASMI, MITC has been providing training to workers across the marine sector since June 2010.

5.10 Differentiated Regulatory Approach for Workplace Health

The Workplace Health (WH) strategy aims at helping stakeholders recognise the importance of a healthy workplace and proactive measures to improve their management of WH hazards.

Targetted Intervention Programmes

Four targeted intervention programmes have been established under the WH strategy, focusing on four health hazards viz noise, chemicals, asbestos and confined spaces. The objectives of these programmes are to prevent and control these hazards at workplace, and to minimise occupational diseases and injuries from exposure to these hazards through standards setting, compliance assistance, capability building of stakeholders, engaging employees and targeted enforcement.

Noise-induced Deafness Prevention Programme

Noise-induced deafness (NID) continued to be the most prevalent occupational disease in Singapore in 2010, accounting for 84% of all occupational diseases. Workplaces where workers are exposed to excessive noise are required to implement an effective in-plant Hearing Conservation Programme (HCP) with five key components: noise monitoring, noise control, hearing protection, training and audiometric examinations, to protect the hearing of their employees. In 2010, efforts were focussed on reviewing the existing Factories (Noise) Regulations, targeted enforcement audits on high risk workplaces, identification of noisy workplaces not on our surveillance and preparing the new sectors (e.g. entertainment industry) to be covered under the new WSH (Noise) Regulations in 2011.

Management of Hazardous Chemical Programme

Given the use of hazardous chemicals across industry, and the significant number of diseases and accidents related to hazardous chemicals, it is important for all workplaces to manage the production, storage, transport, usage, handling and disposal of hazardous chemicals in a safe manner. In 2010, the WSHC started work with industry to develop guidelines to provide guidance to industry on establishing and implementing a comprehensive programme to manage hazardous chemicals at the workplace. The in-plant programme should cover the selection, procurement and inventory of chemicals, safety data sheets(SDS), labelling and warning signs, storage and transportation, risk

assessment and control, safe work procedures, personal protective equipment, workplace monitoring and medical surveillance, Information and training, emergency planning and first aid and waste disposal.

A key element of the programme is hazard communication through SDS, labeling and training. Singapore is committed to the implementation of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and has formed a multi-agency National GHS task force, co-chaired by the Ministry of Manpower and the Singapore Chemical Industry Council (SCIC) to Implement GHS in phases. The Task Force has aligned the legislative requirements under the various government agencies to be supportive of GHS, contributed to the development of the SS 586 (Singapore Standard on Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods), developed guidelines, educational material and conducted courses and seminars to raise awareness of and competency on GHS in the industry.

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National Asbestos Control Programme

The use of asbestos in construction materials buildings has been banned since 1989. There has also been no more import of raw asbestos. Current asbestos exposure arises mostly from asbestos removal work and activities affecting asbestos materials currently in place. Under the current Factories (Asbestos) Regulations, persons carrying out work involving asbestos are required to notify MOM before commencement of work. From 2008 to 2010, MOM received 592 notifications, where 72% of the work was from construction and renovation sector. The remaining notifications were from shipyards and chemical plants. The focus has been on enforcement work to ensure that sufficient control measures are in place prior to commencement of work. There is a need to raise the standards of contractors carrying out such work and the current regulations are being reviewed to enhance the regulatory regime for work involving asbestos.

Confined Space Management Programme

The Confined Space Management Programme (CSMP) aims to enhance confined space hazard management in targeted workplaces, and to prevent deaths and injuries arising from chemical poisoning and asphyxiation during confined space entry and rescue operations. CSMP was developed to help workplaces manage their confined space work. The CSMP consists of these key components: record of confined spaces, appointment of responsible personnel, risk assessment, confined space entry permit system, ventilation, emergency response planning, training and information. Since the introduction of the WSH (Confined Spaces) Regulations in 2009, there has been targeted industry engagement, compliance assistance and educational and training activities. In 2010, targeted engagement and enforcement focussed on the marine sector and on man-hole operations in telecommunication work.

Monitoring and Intelligence gathering

Occupational diseases are under-reported and there is a general lack of comprehensive data on workplace health. Key collaborations with the MOH included the co-locating of platforms for mandatory reporting of occupational diseases and infectious diseases, joint outreach activities to doctors and incorporating questions on work-relatedness into the

Singapore National Health Survey 2010. The list of occupational diseases in the WSHA and the Work Injury Compensation Act were being reviewed and updated and consultation sessions were held with doctors, employers, unions and insurers.

Strategy 3: Promoting the Benefits of WSH and Recognising Best Practices

5.11 Recognition

Workplace Safety and Health Awards

The WSH Awards aims to reward both organisations and persons for actively striving to create safer and healthier workplaces. An annual event is organised to feature their effort towards WSH and celebrate their achievements. Award winners are encouraged to share their experiences, best practices and innovative risk control solutions with their industry counterparts as part of the learning and sharing for the industry.

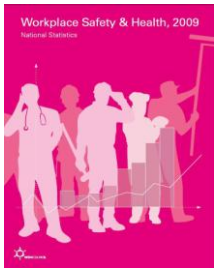
Table 7: WSH Awards Scheme

Award Title	Description
WSH bizSAFE Award	Recognise small and medium enterprises for exemplary performance and contribution to WSH.
WSH Practices Awards	Recognise companies for their efforts in eliminating or controlling WSH hazards.
WSH Developer Awards	Recognise developers who play an active role in ensuring good WSH practices among their contractors.
WSH Innovation Awards	Recognise project teams with innovative solutions which improve safety and health in the workplace.
WSH Officer Awards	Recognise registered WSH Officers who help cultivate safe and healthy workplaces in Singapore.
WSH Performance Awards	Recognises companies or organisations that have performed well in WSH through the implementation of sound safety and health management systems.
WSH Supervisor Awards	Recognise exemplary performance and valuable contributions by supervisors in cultivating safe and healthy workplaces in Singapore.
Safety and Health Award Recognition for Projects	Recognise projects or worksites that have achieved good WSH results through implementation of good safety and health management system.

5.12 Information Dissemination & Hazards Communication

The annual National Workplace Safety and Health (NWSH) Campaign is the signature WSH event which seeks to promote the WSH culture in all Singaporeans. Currently in its sixth year, the three-month event is akin to a period of sustained festivities and carnivals, with companies holding in-house activities (often with business stakeholders) to celebrate annual WSH performance and milestones, as well as to renew their pledge for WSH. These events also provide an opportunity for companies to raise awareness of both broad and specific WSH issues.

The WSH Council leads the campaign every year by bringing together the tripartite leaders to renew their pledge at each campaign launch. Each NWSH Campaign would also feature a chosen theme with activities which were then cascaded to industry-wide participation. In 2008, the campaign featured a 40-foot WSH Container exhibition which was then brought to 200,000 employees at over 100 workplaces. The container included interactive exhibits such as work hazards, ergonomics, protecting one's hearing in a noisy work environment, safe handling of chemicals and working safely at heights. In 2009, the campaign gathered a giant photo mural with the photographs of people across all industry sectors to pledge for their support for the WSH 2018 masterplan. In 2010, the WSH Council rallied the industry to affirm their commitment to WSH with their handprint along with the theme "Safety is in my hand". For 2011, the WSH Council will be reaching out to over 100,000 employers and close to 1.6 million employees on workplace safety and health, in preparation for the extension of the WSH Act to all workplaces by September 2011 with the theme "Say NO to risks at work".

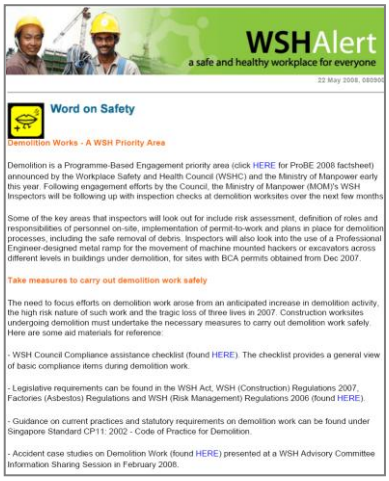


WSH reports, statistical findings, guidelines, case studies and other relevant documents are jointly published by the WSH Council and MOM. The WSH Council also leverages on a variety of platforms and tools, to provide industry stakeholders with an overview of the WSH performance at the industry and company levels, as well as for the purpose of disseminating and promoting WSH awareness.

iWSH Portal

The corporate website of the WSH Council serves both as a one-stop resource for WSH-related publications and news, as well as a platform for the delivery of services, such as for registration for events and assistance programmes. The WSH Council also maintains an email advisory service to provide specialist and customised WSH solutions and advice to address concerns raised by stakeholders and public.

WSH Bulletin



The WSH Council also disseminates the "WSH Bulletin" -a free email newsletter to broadcast WSH-related messages and generate awareness of WSH issues. Sent on average two or three times weekly, the WSH Bulletin provides an important channel in keeping the 15,000 subscribers informed of learning points from accident case studies, legislative and policy changes, and WSH conferences, seminars and courses.

WSH reports, statistical findings, guidelines, case studies and other relevant documents are jointly published by the WSH Council and MOM to provide the public with an overview of the WSH performance at the industry and company levels, as well as for the purpose of disseminating and promoting WSH awareness.

5.13 Grading of Safety and Health Management Systems

As more organisations are obliged to implement and maintain a safety and health management system, our various grading schemes in place will help the firms assess the effectiveness of their systems and to improve their WSH management.

Enhancing Standards of WSH Auditors

WSH auditors play a key role in improving WSH standards and hence it is important to maintain a pool of auditors with high standard of competency. OSHD has revised the requirements for approval of WSH auditors and is working towards a single category scheme of WSH auditors instead of the current "Open category" and "Restricted category". Existing "Restricted category" WSH auditors would be required to complete the WSQ Framework Level D and undergo observation audit assessment by OSHD before they would be considered for approval as WSH auditors under the proposed single category WSH Auditor Scheme.

Strategy 4: Developing Strong Partnerships Locally and Internationally

5.14 Inter-agency and Inter-industry Collaboration

Close collaborations among key stakeholders continue to advance the WSH agenda in Singapore. Leveraging on existing partnerships and forming new ones between the Government, unions, trade associations, developers, insurance companies, financial institutions media and the community work to achieve better WSH strategic outcomes.

5.15 Regional and International Collaboration

One of the strategic outcomes for Singapore is to be renowned as a Centre of Excellence for WSH. MOM builds and maintains network and collaboration with key international and regional WSH organizations in the areas of information sharing, standards development, research and training.

Singapore has over the years participated actively and engaged our overseas partners and contacts at various international and regional conferences, meetings and training courses as well as during visits. The organizations included the Association of Southeast Asian Nations Occupational Safety and Health Network (ASEAN-OSHNET), World Health Organization (WHO), International Labour Organization (ILO), International Association of Labour Inspection (IALI), Industrial Accident Prevention Association (IAPA), International Commission on Occupational Health (ICOH), European Agency for Safety and Health at Work, Canadian Centre for Occupational Safety and Health (CCOHS), Health and Safety Executive (HSE), US Chemical Safety Board (CSB) and many others. In addition, DOSH is also currently a Vice-president in the Executive Committee of IALI.

Singapore also organised the biennial Singapore WSH conference. The 2-day inaugural Singapore WSH conference was held in September 2010. The conference theme “Embracing Challenges, and Pushing WSH Frontiers” emphasised Singapore’s active participation in exploring avenues of raising WSH standards across the region. It brought together government and non-government bodies, businesses and safety professionals around the world towards a common goal of creating safer and healthier workplaces. The next conference will be held in 2012.

The International Advisory Panel (IAP) for Workplace Safety and Health (WSH) convenes biennially since 2006 to tap on the expertise and experience of international experts to raise WSH standards in Singapore. The terms of reference of the IAP are to advise on significant trends and developments in industrial practices that would impact on WSH in Singapore; share approaches to WSH challenges in other countries that might guide Singapore’s WSH development; and critique WSH standards, practices and the

regulatory regime in Singapore and provide advice on possible improvements to bring WSH standards in Singapore to the level of leading edge countries. There has been 2 IAP meetings and the 3rd IAP meeting will be held in November 2011.

6. The Way Forward

Since the introduction of WSH 2018 in Singapore, we have achieved significant milestones each year through the implementation of various programmes and initiatives under the strategic plan.

A New Target, A New Goal

To reduce workplace fatality rate to 1.8 (per 100,000 employed persons) by 2018

To have one of the best WSH records in the world

To ensure that we are on-track to achieve the more ambitious target set by Singapore's Prime Minister of 1.8 fatalities per 100,000 employed persons by 2018, the Ministry of Manpower and WSH Council are working together with the industry to implement WSH 2018 initiatives. By building on our past successes and driving new initiatives, Singapore hopes to achieve our aim of a safe and healthy workplace for everyone and making Singapore a country renowned for WSH best practices.

7. Annexes

ANNEX A

List of WSH Subsidiary Legislation

	Title of Legislation	Brief Description
1.	WSH (Composition of Offences) Regulations (Cap 354A, Rg 6)	Legislation to allow the Commissioner to compound an offence in lieu of prosecution
2.	WSH (Construction) Regulations 2007	Legislation that regulates safety and health within construction sites
3.	WSH (Exemption) Order (Cap 354A, O 1)	Legislation that exempts the Singapore Armed Forces from the provision of the Act
4.	WSH (First-Aid) Regulations (Cap 354A, Rg 4)	Legislation that mandates the need for selected workplaces to provide first-aid facilities and to appoint first-aiders
5.	WSH (General Provisions) Regulations (Cap 354A, Rg 1)	Legislation governing basic safety and health requirements within factories
6.	WSH (Incident Reporting) Regulations (Cap 354A, Rg 3)	Legislation that mandates the need for employers, occupiers and medical practitioners to report workplace incidents to the Ministry
7.	WSH (Offences and Penalties) (Subsidiary Legislation under Section 67(14)) Regulations 2006	Legislation that allows contravention of any subsidiary legislation made under the repealed Factories Act which is still in force in factories to be fined under the penalties stated in the said legislation.
8.	WSH (Workplace Safety and Health Officers) Regulations (Cap 354A, Rg 9)	Legislation that regulates the qualifications, training, registration, duties of a WSH Officer as well as mandatory appointment of WSH Officers
9.	WSH (Registration of Factories) Regulations 2008	Legislation that mandates the requirement for factories (including construction sites and shipyards) to be registered or submit a notification with the Ministry
10.	WSH (Risk Management) Regulations (Cap 354A, Rg 8)	Legislation that mandates the need for employer, self-employed person and principal to conduct risk assessment and to take steps to mitigate the risk
11.	WSH (Workplace Safety and Health Committees) Regulations 2008	Legislation that mandates the need for occupier of factories to form a WSH committee
12.	WSH (Shipbuilding And Ship-Repairing) Regulations 2008	Legislation that regulates safety and health within shipyards and onboard ships in the harbour

	Title of Legislation	Brief Description
13.	WSH (Transitional Provision) Regulations (Cap 354A, Rg 7)	Legislation that allows certain sections of the repealed Factories Act to continue to be in force
14.	WSH (Abrasive Blasting) Regulations 2008	Legislation that regulates safety and health with regard to the use of abrasive blasting
15.	Factories (Asbestos) Regulations	Legislation that regulates safety and health with regard to exposure to asbestos
16.	Factories (Certificate Of Competency — Examinations) Regulations	Legislation that regulates the competency of personnel overseeing and operating steam boilers and internal combustion engines
17.	Factories (Persons-In-Charge) Regulations	
18.	WSH (Explosive Powered Tools) Regulations 2009	Legislation that regulates safety and health with regard to the use of explosive powered tools
19.	Factories (Medical Examinations) Regulations	Legislation that mandates medical examination for persons employed in hazardous occupations
20.	Factories (Noise) Regulations 1996	Legislation that regulates safety and health with regard to exposure to excessive noise
21.	Factories (Operation Of Cranes) Regulations	Legislation that regulates the safe use of cranes, including mobile and tower cranes and the need for qualified operators, riggers, signalmen and lifting supervisors
22.	Factories (Registration and Other Services - Fees and Forms) Regulations	Legislation that regulates fees to be charged for pressure vessel inspections and approval of third party inspection agency, scaffold contractor, crane contractor and authorised examiner
23.	Factories (Safety Training Courses) Order	Legislation that mandates safety and health training courses to be undertaken by specific personnel.
24.	Factories (Scaffolds) Regulations 2004	Legislation that regulates safety and health with regard to the installation, dismantling and use of scaffolds
25.	WSH (Confined Spaces) Regulations 2009	Legislation that regulates work in confined spaces
26.	WSH (Safety & Health Management System and Auditing) Regulations 2009	Legislation that mandates the requirement for workplaces to implement safety & health management system and to conduct audit

ANNEX B

Other Legislations, Codes of Practices and Guidelines Relevant to WSH

(1) APPROVED CODES OF PRACTICE

THE SCHEDULE		
Approved Codes of Practice		*Year Published*
1.	Code of Practice for Working Safely at Height	2009
2.	SS 98: Industrial safety helmets	2005
3.	SS 473: Personal eye-protectors Part 1 - General requirements	1999
4.	SS 473: Personal eye-protectors Part 2 - Selection, use and maintenance	1999
5.	SS 508: Graphical symbols - Safety colours and safety signs Part 1 : Design principles for safety signs in workplaces and public areas	2004
6.	SS 508: Graphical symbols - Safety colours and safety signs Part 3 : Safety signs used in workplaces and public areas	2004
7.	SS 510: Code of Practice for Safety in welding and cutting (and other operations involving the use of heat) (Formerly CP 50)	2005
8.	SS 511: Code of Practice for Diving at work	2010
9.	SS 513: Personal protective equipment – Footwear Part 1: Safety footwear	2005
10.	SS 513: Personal protective equipment – Footwear Part 2: Test methods for footwear	2005
11.	SS 531: Code of Practice for Lighting of work places Part 1: Indoor	2006
12.	SS 531:Code of Practice for Lighting of work places Part 2: Outdoor	2008
13.	SS 531:Code of Practice for Lighting of work places Part 3: Lighting requirements for safety and security of outdoor work places	2008
14.	SS 536: Code of Practice for The safe use of mobile cranes (Formerly CP 37:2000)	2008
15.	SS 537: Code of Practice for Safe use of machinery Part 1: General requirements	2008
16.	SS 537: Code of Practice for Safe use of machinery Part 2: Woodworking machinery	2009
17.	SS 548: Code of Practice for Selection, use, and maintenance of respiratory protective devices (Formerly CP 74)	2009
18.	SS 549: Code of Practice for Selection, use, care and maintenance of hearing protectors (Formerly CP 76)	2009
19.	SS 550: Code of Practice for Installation, operation and maintenance of electric passenger and goods lifts (Formerly CP 2)	2009
20.	SS 553: Code of Practice for Air-conditioning and mechanical ventilation in Buildings	2009

	(Formerly CP 13)	
21.	SS 554: Code of Practice for Indoor air quality for air-conditioned buildings	2009
22.	SS 557:Code of Practice for Demolition (Formerly CP 11)	2010
23.	SS 559: Code of Practice for Safe use of tower cranes (Formerly CP 62)	2010
24.	SS 562: Code of Practice for Safety in trenches, pits and other excavated areas	2010
25.	SS 586 : Hazard communication for hazardous chemicals and dangerous goods Part 1 : Transport and storage of dangerous goods	2008
26.	SS 586 : Hazard communication for hazardous chemicals and dangerous goods Part 2 : Globally harmonised system of classification and labelling of chemicals – Singapore's adaptations	2008
27.	SS 586 : Hazard communication for hazardous chemicals and dangerous goods Part 3 : Preparation of safety data sheets (SDS)	2008
28.	CP 14: Code of Practice for Scaffolds	1996
29.	CP 20: Code of Practice for Suspended scaffolds	1999
30.	CP 23: Code of Practice for Formwork	2000
31.	CP 27: Code of Practice for Factory layout – Safety, health and welfare considerations	1999
32.	CP 63: Code of Practice for The lifting of persons in work platforms suspended from cranes	1996(2005)
33.	CP 79: Code of Practice for Safety management system for construction worksites	1999
34.	CP 84: Code of Practice for Entry into and safe working in confined spaces	2000
35.	CP 88: Code of Practice for Temporary electrical installations Part 1 : Construction and building sites	2001
36.	CP 88: Code of Practice for Temporary electrical installations Part 3: Shipbuilding and ship-repairing yards	2004
37.	CP 91: Code of Practice for Lockout procedure	2001
38.	CP 101: Code of Practice for Safe use of powered counterbalanced forklifts	2004

Note: CP - Code of Practice, SS – Singapore Standards

(2) LEGISLATION, CODES OF PRACTICES AND GUIDELINES FOR SPECIFIC WSH ISSUES

	Scope of Coverage	Legislation	Codes of Practice / Guidelines (not exhaustive)
1.	Asbestos	• Environmental Protection and Management Act (Chapter 94A)[1] • Factories (Asbestos) Regulations	• Guidelines on the Removal of Asbestos Materials in Buildings • Guidelines on the Handling of Asbestos Materials
2.	Biological	• Infectious Disease Act (Chapter 137)[2] • Private Hospitals and Medical Clinics Act (Chapter 248)[3] • Biological Agents and Toxins Act (Chapter 24A)[4]	• Singapore Biosafety Guidelines for Research on Genetically Modified Organisms[5] • School Science Laboratory Safety Regulations[6]
3.	Chemical Hazards	• WSH (General Provisions) Regulations • Environmental Protection and Management Act (Chapter 94A)[1]	• Guidelines on Prevention and Control of Chemical Hazards • Guidelines on Risk Assessment for Occupational Exposure to Harmful Chemicals • Guidelines on Solvent Degreasing • CP 61 - CP for Packaging and Containers for Hazardous Substances • SS 286 - SS on Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods
4.	Confined Space Safety	• WSH (Confined Space) Regulations	• *CP 84 - CP for Entry Into and Safe Working in Confined Spaces
5.	Construction Safety	• WSH (Construction) Regulations	• CP 11 - CP for Demolition • *CP 14 - CP for Scaffolds • *CP 20 - CP for Suspended Scaffolds • *CP 23 - CP for Formwork • SS 536 - CP for the Safe Use of Mobile Cranes • SS 515 - CP for Supervision of Structural Works • CP 62 - CP for the Safe Use of Tower Cranes • *CP 63 - CP for the Lifting of Persons in Work Platforms Suspended from Cranes

	Scope of Coverage	Legislation	Codes of Practice / Guidelines (not exhaustive)
			• *CP 88–1 - CP for Temporary Electrical Installations - Construction and Building Sites • *CP 88–3 - CP for Temporary Electrical Installations - Shipbuilding and Ship-repairing Yards
6.	Diving	-	• SS 511 - CP for Diving at Work
7.	Environmental Health and Pollution	• Environmental Protection and Management Act (Chapter 94A)[1] • Environmental Public Health Act (Chapter 95)[7] • Radiation Protection Act (Chapter 262)[8]	• CP 100 - CP for Hazardous Waste Management
8.	Ergonomics and Lighting	-	• SS 514 - CP for Office Ergonomics • CP 99 - CP for Manual Handling • SS 531– 1: CP for Lighting of Work Places, Indoor • *SS531-2 : CP for Lighting of Work Places, Outdoor • *SS531-3 : CP for Lighting of Work Places, Lighting requirements for safety and security of outdoor work places
9.	Fire Safety	• Fire Safety Act (Chapter 109A)[9] • WSH (General Provisions) Regulations	-
10.	First Aid	• WSH (First Aid) Regulations	• Guidelines on First Aid Requirements
11.	Machinery Safety	• WSH (General Provisions) Regulations	• CP 42 - CP for Guarding and Safe Use of Woodworking Machinery • *CP 91 - CP for Lockout Procedure • *SS 536 - CP for Safe Use of Mobile Cranes • *CP 62 - CP for Safe Use of Tower Cranes • CP 53 - CP for Safe Use of Industrial Robots

	Scope of Coverage	Legislation	Codes of Practice / Guidelines (not exhaustive)
			• *CP 101 - CP for Safe Use of Powered Counterbalanced Forklifts
12.	Medical Examinations	• Factories (Medical Examinations) Regulations	• Guidelines for Designated Factory Doctors
13.	Noise and Vibration	• Factories (Noise) Regulations	• Hearing Conservation Programme Guidelines • Guidelines on Noise Labelling • SS549 - CP for the Selection, Use, Care and Maintenance of Hearing Protectors • CP 99 - CP for Industrial Noise Control
14.	WSH Management Systems	-	• SS506 – 1: Occupational Safety and Health Management System – Specifications • SS506 – 2: Occupational Safety and Health Management System – General guidelines for the implementation of OSH management system • SS506 – 3: Occupational Safety and Health Management System – Requirements for the chemical industry • *CP 79 - CP for Safety Management System for Construction Worksites

Notes:

* refers to Approved Codes of Practice

[1] An Act to consolidate the laws relating to environmental pollution control, to provide for the protection and management of the environment and resource conservation, and for purposes connected therewith. (Administered by the National Environment Agency)
[2] An Act relating to quarantine and the prevention of infectious diseases. (Administered by the Ministry of Health)
[3] An Act to provide for the control, licensing and inspection of private hospitals, medical clinics, clinical laboratories and healthcare establishments, and for purposes connected therewith. (Administered by the Ministry of Health)
[4] An Act to prohibit or otherwise regulate the possession, use, import, transhipment, transfer and transportation of biological agents, inactivated biological agents and toxins, to provide for safe

practices in the handling of such biological agents and toxins. (Administered by the Ministry of Health)

[5] By the Genetic Modification Advisory Committee, Ministry of Trade and Industry.

[6] By the Ministry of Education.

[7] An Act to consolidate the law relating to environmental public health and to provide for matters connected therewith. (Administered by the National Environment Agency, Ministry of the Environment and Water Resources)

[8] An Act to control and regulate the import, export, manufacture, sale, disposal, transport, storage, possession and use of radioactive materials and irradiating apparatus, to make provision in relation to the non-proliferation of nuclear weapons and to establish a system for the imposition and maintenance of nuclear safeguards, and to provide for matters connected therewith. (Administered by the National Environment Agency, Ministry of the Environment and Water Resources)

[9] An Act to make provisions for fire safety and for matters connected therewith. (Administered by Civil Defence Force, Ministry of Home Affairs)

ANNEX C

Main Functions and Key Initiatives of the WSH Council

<table>
<tr><th>Functions</th><th>Key Initiatives</th></tr>
<tr><td>Build industry capabilities in WSH</td><td>
Manpower and Competency Curriculum

The WSH Council works closely with the WDA and MOM to build a competent WSH workforce through the WSH Professionals Workforce Skills Qualifications (WSHP WSQ) framework and WSH Trade Competency framework. Responsible for the overall development of WSH competency curriculum for competent organisations and persons, the WSH Council conducts regular reviews and audits of Accredited Training Providers to ensure high training standards.

Enterprise - Effective WSH management will improve a company's business performance and the WSH Council has introduced programmes and tools to assist enterprises in building their WSH capabilities:

• bizSAFE - A five-level programme that recognises SMEs for their effort in acquiring capabilities in risk management and WSH management systems.

• Construction Safety Audit Scoring System (ConSASS) - An independent assessment audit on the WSH management system that enables cross-comparison of worksites and contractors to better manage resources to improve safety and health at the workplace.

• Risk Management Assistance Funds (RMAF) – A co-funding assistance scheme for SMEs to implement risk management at the workplace.
</td></tr>
<tr><td>Promote safety and health at work and recognize companies with good WSH records</td><td>
To build and promote a progressive WSH culture, the WSH Council actively organizes events and programmes to raise industry participation and highlight the importance of WSH.

<table>
<tr><th>Awards and Recognition</th><th>Outreach Activities and Events</th></tr>
<tr><td>• WSH Awards
• Safety@Work Creative Awards</td><td>• National WSH Campaign
• WSH Council Forums
• Workers' Newsletter
• Workers' Dormitory Visits</td></tr>
</table>

Publications of WSH information and messages, including statistical reports and compendiums, newsletters, banners, posters, flyers and videos are available for download on our website.
</td></tr>
<tr><td>Conduct research and set acceptable WSH practices</td><td>
Research and Benchmarking - The WSH Council conducts research and environment scanning to keep abreast of both local and international WSH developments. By analysing and forecasting trends in WSH, the WSH Council helps identify emerging challenges and develop new measures to improve WSH outcomes in Singapore.

Setting Acceptable Practices - The WSH Council drives the adoption of good WSH practices with various stakeholders in the industry. The WSH Council also works in close collaboration with other standard-setting bodies to develop national WSH standards, as well as lead the development of industry guidelines, and establish approved codes of practices for the industry.
</td></tr>
</table>

ANNEX D

List of Regular Partners

Academia / Research

- A*STAR
- Nanyang Polytechnic
- National Technological University
- National University of Singapore
- Ngee Ann Polytechnic
- Singapore Institute of Technology
- Singapore Polytechnic
- Temasek Polytechnic

Employers' Organizations

- Singapore Business Federation
- Singapore Manufacturers' Federation
- Singapore National Employers Federation

Employees' Organizations

- Building Construction & Timber Industries Employees' Union
- Chemical Industries Employees Union
- Health Corporation of Singapore Staff Union
- Healthcare Services Employees' Union
- Metal Industries Workers' Union
- National Trades Union Congress
- National Transport Workers' Union
- Shipbuilding and Marine Engineering Employees' Union
- Singapore Port Workers' Union
- United Workers of Electronic and Electrical Industries
- United Workers of Petroleum Industry

Government Ministries and Statutory Boards

- Building and Construction Authority
- Health Promotion Board
- Housing and Development Board
- Jurong Town Corporation
- Land Transport Authority
- Maritime and Port Authority Singapore
- Ministry of Health
- Ministry of National Development
- National Environment Agency
- National Parks Board
- Singapore Workforce Development Agency
- SPRING Singapore (Standards, Productivity and Innovation Board)

Healthcare Institutions

- Agency for Integrated Care
- Home Nursing Foundation

- National Healthcare Group
- Singapore Health Services

Industry / Trade Associations / Society

- Access and Scaffold Industry Association
- Association of Accredited Advertising Agents (Singapore)
- Association of Aerospace Industries (Singapore)
- Association of Consulting Engineers Singapore
- Association of Process Industry
- Association of Singapore Marine Industries
- Association of Small Medium Enterprises
- Back Society of Singapore
- College of Family Physicians Singapore
- Container Depot Association (Singapore)
- Designers Association of Singapore
- Ergonomics Society of Singapore
- General Insurance Association of Singapore
- Institution of Engineers, Singapore
- National Safety Council of Singapore
- Occupational and Environmental Health Society
- Pharmaceutical Society of Singapore
- Real Estate Developers' Association of Singapore
- Singapore Association for Environmental Companies
- Singapore Association of Occupational Therapists
- Singapore Association of Pharmaceutical Industries
- Singapore Chemical Industry Council
- Singapore Contractors Association Limited
- Singapore Dental Association
- Singapore Human Resources Institute
- Singapore Institute of Architects
- Singapore Institute of Directors
- Singapore Institute of Surveyors and Valuers
- Singapore Institution of Safety Officers
- Singapore Logistics Association
- Singapore Medical Association
- Singapore Nurse Association
- Singapore Shipping Association
- Singapore Society of Occupational Health Nurses
- Singapore Transport Association (Singapore)
- Society of Acoustics
- Society of Naval Architects & Marine Engineers Singapore
- Society of Project Engineers
- The Law Society of Singapore
- The Singapore Physiotherapy Association
- Waste Management and Recycling Association of Singapore

Professional Bodies

- Board of Architect
- Singapore Medical Council
- Singapore Dental Council
- Professional Engineers Board
- Metalworking Industry Safety Promotion Committee

- National Safety Council of Singapore
- Occupational and Environmental Health Society
- Pharmaceutical Society of Singapore
- Singapore Association of Occupational Therapists
- Singapore Chemical Industry Council
- Singapore Dental Association
- Singapore Human Resources Institute
- Singapore Institute of Architects
- Singapore Institute of Directors
- Singapore Institute of Surveyors and Valuers
- Singapore Institution of Safety Officers
- Singapore Medical Association
- Singapore Nurse Association
- Singapore Society of Occupational Health Nurses
- Society of Acoustics
- Society of Naval Architects & Marine Engineers Singapore
- The Law Society of Singapore
- The Singapore Physiotherapy Association

ANNEX F

Other General Information on Singapore

(1) AREA AND POPULATION

Singapore, with an area of 712.4 km^2 is home to a population of approximately 5.1 million (population density 7,126 per km^2). The official languages are Malay (National Language), English (language of administration), Chinese (Mandarin) and Tamil.

Population Statistics, 2010/2011	Figures
Total Population[1]	5,183,700
Resident Population[2]	3,789,300
Resident Labour Force[2] (June 2010)	2,047,300
Employed Residents[2] (June 2009)	1,962,900

Source: Department of Statistics, Singapore

Notes:

1 Total population comprises Singapore citizens and non-residents. The resident population comprises Singapore citizens and permanent residents

2 Refers to Singapore residents (citizens and permanent residents) aged 15 years and over.

(2) ECONOMY

Selected Economic Indicators, 2010	Figures
Gross Domestic Product (GDP), at current market prices ($m)	303,652
Per Capita GDP ($)	59,813
Exports ($m)	478,840
Imports ($m)	423,221
Growth in Labour Productivity	10.7%
Inflation rate (%)	2.8%

Source: Department of Statistics, Singapore

Note:

All figures are in Singapore Dollars

(3) MANPOWER STATISTICS BY INDUSTRY

Employment by Industry, 2010	Figures (%)
Manufacturing	17.3
Construction	12.7
Services	69.3
Others[2]	0.6
Total	**100.0[3]**

Source: Ministry of Manpower, Singapore

Notes:

1 Business services comprises real estate & leasing, professional services and administrative & support services

2 Others comprise agriculture, fishing & mining, quarrying, utilities, sewage & waste management and activities not adequately defined.

3 Figures may not add up due to rounding.

4) PUBLIC HEALTH AND HEALTHCARE SYSTEM

Health Statistics, 2010	Figures
Life Expectancy at Birth[1] (years) - Men - Women	81.8 79.3 84.1
Infant Mortality Rate[1] (per 1000 live births)	2.0
Maternal Mortality Ratio[1] (per 100,000 live births & still-births)	0
Total Health Expenditure (% of gross domestic product)	1.4[3]
Doctors per 1,000 population	1.7[4]
Dentists per 1,000 population	0.3[4]
Nurses (including midwives) per 1,000 population	5.4[4]

Sources:

1) Ministry of Health, Singapore

Notes:

1 Preliminary Figures. Data for Life Expectancy at Birth and Infant Mortality Rate refers to Singapore Residents only

2 Measures the average achievements in a country in three basic dimensions of human development: longevity, knowledge and a decent standard of living.

3 Estimated figures as of FY2009.

4 Figures for 2009.