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# Singapore Water Industry Nite

Virtual (Special Edition)

Guest of Honour  
Mr. Ng Chee Meng  
NTUC Secretary-General

Thursday, 2<sup>nd</sup> December 2021  
SGT 5pm to 7pm





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# Singapore Water Industry Nite

Thursday, 2<sup>nd</sup> December 2021, 5pm

Welcome Address



**Mr Chew Men Leong**  
Singapore Water Association  
President





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# Singapore Water Industry Nite

Thursday, 2<sup>nd</sup> December 2021, 5pm

Guest of Honour

**Mr Ng Chee Meng**

NTUC Secretary-General



Opening Message





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# MOU Signing

Thursday, 2<sup>nd</sup> December 2021

**Ceremony Witness:**

**Mr. Ng Chee Meng**  
NTUC Secretary-General

**Mr. Harry Seah**  
Deputy Chief Executive, PUB

**SWA Representatives:**

**Mr. Chew Men Leong**  
SWA President

**Mr. Charles Quek**  
SWA Vice-President, General Affairs

**NTUC Representatives:**

**Mr. Yeo Guat Kwang**  
Assistant Director-General

**Ms. Yeo Wan Ling**  
Director, U SME



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# MOU Signing

Thursday, 2<sup>nd</sup> December 2021

ONSITE - Photo-taking

ONLINE - Please pour yourself a glass of wine and toast with us





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# Singapore Water Industry Nite

Thursday, 2<sup>nd</sup> December 2021, 5pm

Partnering NTUC  
Training and Placement  
Ecosystem on Workforce  
Transformation.



**Mr. Gilbert Tan**

**NTUC Assistant Director-General**

**NTUC Training & Placement Director**





**#EVERY  
WORKER  
MATTERS**

**MEMBERSFIRST  
WORKERSALWAYS**

# Supporting Business & Workforce Transformation

*NTUC Training & Placement Ecosystem*





# The Labour Movement Network

## *Serving Workers, Partnering Companies*

### Unions & Associations

Evolving beyond workplace representation and protection, our unions and associations encourage working people to undergo training and skills upgrading to stay relevant in the changing labour market

### U Associates

Reaching out to working professionals and enabling them to better take on the jobs of tomorrow through professional guilds and communities

### U SME

Addressing common challenges faced by SMEs, help make workplaces and careers better for SME workers

### U FSE

Advancing the collective interests of a growing pool of freelancers and self-employed workers in Singapore

### MWC & CDE

Migrant Workers Centre (MWC) and Centre for Domestic Employees (CDE) safeguard interests of migrant workers and domestic employees in Singapore

### Social Enterprises

Generating social impact by meeting everyday needs of working people e.g. in health, eldercare, childcare, daily essentials, cooked food and financial services





# NTUC Training and Placement Ecosystem

## Supporting Companies and Workers in Business and Workforce Transformation

### Business Strategy Planning

Customised roadmap for business and workforce growth, leveraging Operation & Technology Roadmap (OTR)



### Job Matching

Attract and match suitable talent from within and across sectors, with Job Security Council (JSC) and Place-and-Train programmes



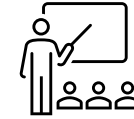
### Job Redesign

Improve productivity, upgrade jobs, and retain talent with support schemes



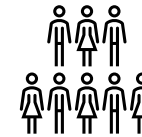
### Workforce Training

Equip talent with suitable skills in line with business needs and industry trends, enabled by customised learning solutions, LHUB Learning eXperience Platform (LXP), and funding support (NCF and UTAP)



### Leadership Development

Equip people leaders to drive business and workforce growth, with leadership programmes



Enabled by NTUC Training and Placement Ecosystem:



Training and Transformation



...with support from Government and Employers



# Partner NTUC Training and Placement –

## One-Stop Intermediary to Help Companies Transform, Better Serve Workers' Training and Job Matching Needs

### Expand and Digitalise Business

- Grow business and products
- Digitalise business
- Leaders to lead transformation

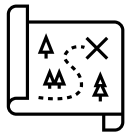
### Train and Upgrade Staff

- Equip staff with new skills
- Build learning culture

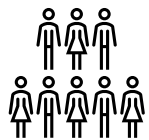
### Recruit and Retain Staff

- Hire staff for a new department
- Retain staff for specific jobs
- Release staff due to restructuring

### Embark on Company Training Committee (CTC) partnership with NTUC



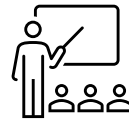
Develop 5 year business transformation roadmap, with key leaders aligned and owning growth plans



Put company leaders through a digital reboot programme, boosting confidence and gaining skills to digitalise business



Identify learning needs for current and future business needs



Put staff through online learning to upskill at work and outside of work



Develop a structured workplace learning plan



Through workforce and job redesign programme, company is able to plan for future manpower needs



Through placement programmes:

- Hired suitable staff
- Match staff to jobs in other sectors
- Retain older staff for suitable jobs



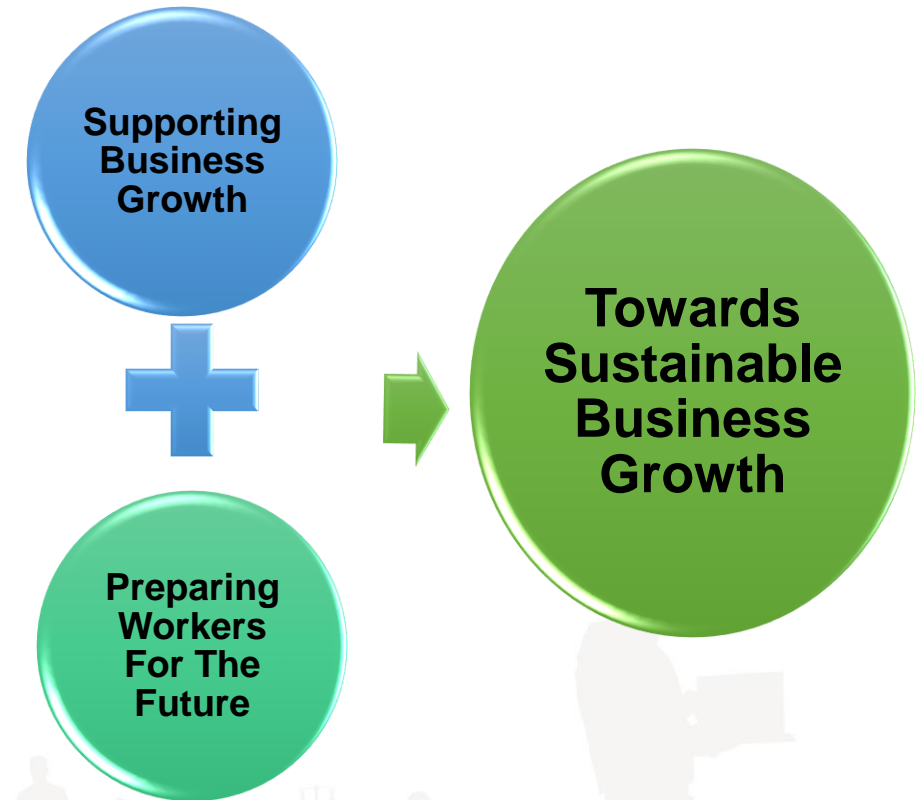
# Company Training Committee (CTC) Partnership with NTUC

## To Support Business and Workforce Growth

### Partnership between Company and NTUC to:

- **Chart roadmap** for growth and transformation
- **Strengthen capabilities** and **redesign jobs** for new and changing work
- **Upskill and prepare workforce** for business and technology requirements of today and tomorrow
- **Manage change** for holistic transformation

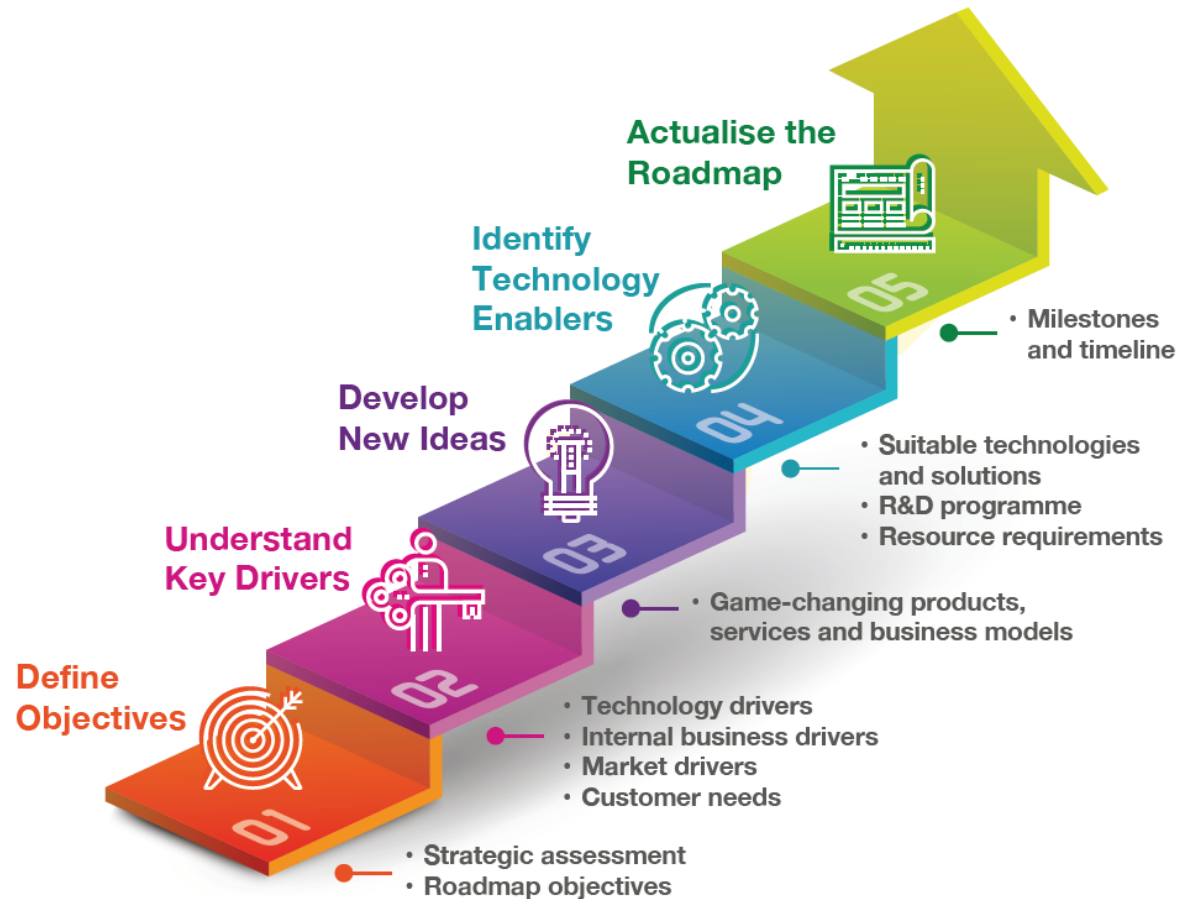
**To-date, over 700 companies have embarked on CTC partnership with NTUC.**





# Developing a Customised Business Transformation Roadmap to Support Business and Workforce Transformation

## Leveraging Operation & Technology Roadmap (OTR)



- Helps to co-create a business and workforce growth plan with **collective ownership**
- **Structured planning workshops** involving organisation leaders, facilitated by Industry Training Officers (ITOs)
- Comprise of cross-functional company management and union leaders / workers representatives
- **Fully subsidised** for companies with Company Training Committee (CTC) partnership



# Plumbing Sector Partnered NTUC Training & Placement Ecosystem

***10-year roadmap to uplift essential plumbing sector, develop career progression & training framework to upgrade workforce***

## Current Situation Facing Plumbing Industry



Lack of progressive training and professional career development pathway



Increasing requests from consumers for plumbers to be equipped with good knowledge and skills



Lack of transparency in pricing of plumbing services



Differing standards within industry due to unlicensed plumbers



COVID-19 accelerated importance of plumbing as an essential service that requires a sustainable and skilled workforce

## Workshop Objectives:

- Discuss structured training pathways to train new joiners to the sector
- Discuss plans to attract younger generation into the plumbing trade
- Identify new technology for plumbing industry
- Develop career pathways and profile plumbing job roles
- Develop ideas to move plumbing industry into Progressive Wage Model



Singapore Plumbing Society (SPS) formed CTC partnership with NTUC to enhance business and workforce capabilities for the sector

SPS is working with NTUC's Training and Placement Ecosystem and U SME on:

- Digital Reboot Programme with LHub to capture new opportunities through productivity
- ITE-e2i job portal to attract and develop skills in young Singaporean talents for the sector
- Profile plumbing sector and talents through success stories on media/social media



# Plumbing Sector Partnered NTUC Training & Placement Ecosystem

## 10-year roadmap to uplift essential plumbing sector, develop career progression & training framework to upgrade workforce



### REJUVENATING PLUMBING SECTOR

10-year plan in place to attract new entrants into plumbing trade

cna 2b Russia says US sanctions could target aviation sector, affect contracts: Ifax

"This OTR is a timely boost for the Singapore Plumbing Society as it **helps identify transformation opportunities for our industry and its workers. As owners of the roadmap, SPS plans to work with the various partners and stakeholders to develop the plumbing industry for the next 10 years, strengthen the voice for this profession and step-up initiatives to promote Singapore plumbing both locally and abroad**"

said SPS President  
Tan Wee Teck



"The plumbing industry forms an important part of Singapore's water value chain, serving as the touchpoint to customers for their residential and commercial plumbing needs. **PUB is supportive of the "Plumbing in the New Era" roadmap to upskill and drive transformation in the plumbing industry to better serve customers and enable the industry to better meet future challenges**"

said Director Water Supply  
(Network), PUB, Ridzuan Ismail



### THE STRAITS TIMES

## Road map to transform plumbing sector and attract younger locals

Calvin Yang  
Manpower Correspondent

Plumbers can soon upgrade their skills for better job opportunities in Singapore.

A 10-year operation and technology road map has been drawn up to prepare plumbing companies for the new economy, including the adoption of new technology and training for its professionals.

Yesterday, USME – the National Trades Union Congress (NTUC) unit for small and medium-sized enterprises – signed a memorandum of understanding with the Sin-

gapore Plumbing Society (SPS) and seven SMEs to transform the sector.

This comes against the backdrop of an ageing workforce in the sector. There are about 900 licensed plumbers here, of which more than three-quarters are above the age of 50, SPS president Tan Wee Teck said at the signing ceremony at the NTUC Centre in Marina Boulevard.

"If the trend continues, then you might not have enough plumbers to serve the population," he said. He acknowledged that it would not be easy to attract the young to the trade. "Traditionally, plumbing



NTUC secretary-general Ng Chee Meng (right) at the NTUC Centre for the signing of an MOU between U SME – the labour union's unit for SMEs – and the Singapore Plumbing Society as well as seven SMEs. PHOTO: NTUC

is not a choice career. People don't choose to become plumbers. But we want to change that perception," said Mr Tan, who has sought the help of industry partners to

speed up the transformation. SPS has been exploring solutions with various organisations, including NTUC, national water agency PUB and the Public Utilities Board



劳资政三方为水管工领域指定10年发展蓝图  
2021年3月24日 12:58 发布 12小时前 更新



我国劳资政三方联手针对水管工领域制定了为期10年的发展蓝图。

### 缺乏明确职业发展规划

## 劳资政合作推动水管业转型年轻化



新加坡水管协会会长陈伟德指出，水管业商业与科技运作蓝图主要目标之一是制定明确的职业规划和提供适当培训，让持有执照的水管工能胜任更高难度和专业的工作。

梁伟豪 报道  
chao@spk.com.sg

虽然持有执照的水管工月薪至少有四千元，但行业缺乏明确的职业发展规划，水管工的薪金增长也就不显著。这导致工作队伍老龄化的水管业面对请不到人的棘手问题，迫切必须吸引更多年轻人加入。

为此，来自劳资政三方的代表昨天完成水管业商业与科技运作蓝图（Operation and Technology Roadmap，简称OTR）的规划。新加坡水管协会（Singapore Plumbing Society）与全国职工总会也签署备忘录，承诺携手合作，进一步提升水管业和推动行业转型。

我国有约900名持有执照的水管工（Licensed Plumber），当中近八成超过50岁。

新加坡水管协会会长陈伟德指出，水管业商业与科技运作蓝图主要目标之一是制定明确的职业规划和提供适当培训，让持有执照的水管工能胜任更高难度和专业的工作。

他说：“目前成功考到水管工人执照就是终点。一名做了二三十年的资深水管工可能只赚取6000元至8000元的薪金。如果他们还能接受培训，攻读水利工程专业文凭课程，可能会让年轻人觉得加入这个行业也有良好职业发展前景。”

陈伟德指出，接下来的短期目标就是要让水管协会成为提供培训与学徒计划的受认证机构。

年轻水管工施能川（33岁）受访时指出，成为一名合格水管工其实并不容易，须到新加坡建

设局上课并有两年的学徒经验，才能向公用事业局提出申请，有了明确清晰的职业发展计划，不仅能吸引更多年轻人加入，本地水管业也能更好地受管制，进一步提升行业的服务水平。

他相信，公众接触到的水喉和水管工匠，大部分都没有任何执照，以致公众对水管工有所误解。其实，合格水管工主要负责设计供水设施和项目管理，不必事事亲力亲为。

也是水管公司WSJ Works董事的施能川说：“我在OTR的讨论中也建议考虑在水管工人执照之外，设立其他较基本的执照，例如为政府组屋单位进行小型维修水喉或水管等工作者，可考取较简单的技术师牌照，之后才一步步进阶。”

职总秘书黄永明昨天见证备忘录签署仪式后受访时说：“有了这些职业发展计划，将能吸引更多新加坡人加入这个行业。水管工是新加坡人能胜任的



▲职总秘书黄永明（右一）昨天见证备忘录签署仪式后，与水管协会会商互助。（全属职工总会提供）



# Jobs-Skills & Competencies Building to Bring Workers Along Transformation Journey



## Building Business

### Strategy & Road-mapping

Strategic  
Business  
Planning

Strategic  
Workforce  
Redesign

Change  
Management

### Future Competency Building

Competency and Skills  
Matrix Mapping

Learning Needs  
Analysis and  
Interventions Plan



## Building People

### Critical Core Skills (*Adaptive*)

Thinking  
Critically

Interacting with  
Others

Staying  
Relevant

### Digital/Tech-enabled Skills

Data Protection

Agile

User  
Experience

Analytics

RPA

IT Infra.

### Compliance & Safety

Workplace  
Safety & Health  
(e.g Work at Height,  
Basic Food Hygiene)

Trade Skills  
(e.g. Forklift, Safe  
Lifting)

Security & Risks  
Management



## Building Learning Culture

### Workplace Learning *Enabling Knowledge Transfer for Critical*

Develop OJT  
Blueprint

Coaching for  
Workplace  
Trainers

Mentoring  
for The  
Workplace

### Online/Self-directed Learning

LHUB Learning eXperience Platform  
(LXP)




# Digital Platform to Develop Workforce Capabilities

## Learning Experience Platform (LXP)

**LHUB GO**  
**Learn 100 & 200**  
Free access to 100/200  
programmes  
Launched during the  
circuit breaker in 2020  
**>100K Subscribers**

**CALLING ALL**  
**NTUC UNION MEMBERS**  
DEEPEN YOUR SKILLS SETS WITH 200  
FREE COURSES ON LHUB GO LEARN200.



**OPEN TO ALL LEARNERS:**  
Gain extended access to 100 free courses and  
build in-demand skills on LHUB GO LEARN100.

FIND OUT MORE AT:  
<https://www.ntuclearninghub.com/thub-go/>

ntuc LearningHub SG UNITED



**LHUBGO**  
INFINITY  
**SINGAPORE'S LARGEST**  
SUBSCRIPTION-BASED ONLINE LEARNING PLATFORM



Gain access to **75,000** bite-sized online courses and  
give your employability a booster today!

**SIGN UP NOW**



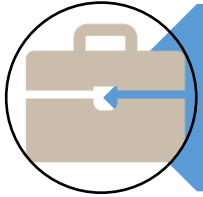
**LHUB GO Infinity**  
Subscription Based Online Learning  
Launched in Mar 2021  
**>15K Paying Subscribers**  
**and counting**  
(15 Organisations / Individuals)

**LHUB**  
**eXperience**  
**Platform**  
**(LXP)**



# NTUC Job Security Council (JSC) Network and Resources

## For Jobs Matching and Manpower Development



### Job Fairs

- e2i works with companies to periodically hold job fairs for their recruitment needs. Slots are subjected to availability.



### Virtual Career Fairs

- e2i works with companies and third-party vendors to hold specially-curated virtual career fairs on a periodic basis.



### NTUC JSC Telegram Jobs Alert

- e2i advertises companies' job vacancies by blasting them in our public chatrooms. More than 28k subscribers as of April 2021.



### Internal Referrals

- Notify our officers of available job vacancies and a suitable pool of job-ready candidates will be referred to you, on an ad-hoc basis.



*A community job fair held in July 2020*



### Manpower Development Programmes

- Connects with programmes e.g. Place-and-Train/ Professional Conversion Programmes to develop talents



# Potential Collaborations Between NTUC Training & Placement Ecosystem and SWA

## Tripartite Partnership with SWA and PUB to Chart Roadmap To Uplift Water Industry and Transform Workforce



- To co-create ideas with industry to improve operational efficiencies and outreach through digitalisation
- To explore initiatives to drive sustainability and related innovations in the Singapore water industry
- Discuss ways to deepen capabilities in innovation and safety in close partnership with the leading key public agency, PUB
- Discuss capabilities that SWA needs to develop to strengthen and grow the association to support SWA's mission in developing a vibrant and dynamic Singapore Water Industry

**#EVERY  
WORKER  
MATTERS**

**MEMBERS FIRST  
WORKERS ALWAYS**



Training and  
Transformation



Better Jobs For Life  
Employment and Employability Institute



ntuc  
LearningHub

OTC  
LABOUR LEADERSHIP  
INSTITUTE



## ***Supporting Workforce and Business Transformation With Total Training & Placement Solutions***

For more information, visit our website by scanning  
the QR code or email to [peijie\\_woo@ntuc.org.sg](mailto:peijie_woo@ntuc.org.sg)  
or [angie\\_lim@ntuc.org.sg](mailto:angie_lim@ntuc.org.sg)  
[www.bitly.com/NTUCT&T](http://www.bitly.com/NTUCT&T)



*Find out more here*



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# Singapore Water Industry Nite

Thursday, 2<sup>nd</sup> December 2021, 5pm

**Mr Allen Mak**  
ProMinent Singapore  
Business Development Director



Prominent –  
Reliable Water,  
Secured Future





The background of the slide is a photograph of a mountain range with snow-capped peaks. The mountains are reflected in a calm body of water in the foreground. The sky is a clear, light blue.

# ProMinent: Experts in Metering Technology and Water Treatment

## Reliable Water, Secured Future

Allen Mak, 2nd December 2021



# MUNICIPAL WATER – 24/7/365.



With everything happening in the world, essential water cannot be disrupted. With Reliable supply of clean water, industries and lives can continue for a more Secured Future.

# PROMINENT: 1- STOP METERING TECHNOLOGY AND WATER TREATMENT SOLUTIONS PROVIDER

We provide **reliability** to our customers through product and service quality and availability.

## RELIABILITY

### Product Quality

■ Durable ■ Accurate ■ Safe



1

**Business Unit 1**  
Low Pressure Metering  
Technology



### Service Quality

■ Friendly ■ Informative ■ Prompt



3

**Business Unit 3**  
Measuring & Control  
Technology



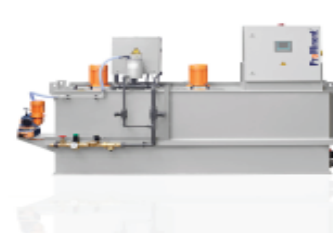
### Availability

■ Fast ■ Anytime ■ Global



4

**Business Unit 4**  
Water Treatment & Water  
Disinfection



**ProMinent®**



# WHO WE ARE WHAT WE DO

Ready  
for you.  
Anytime,  
anywhere.



## Offering

Components, Products, Systems, Spares, Services and Industry Specific Solutions



## Market

Metering Technologies and Water Treatment Solutions



## Employees

2,723



## Locations

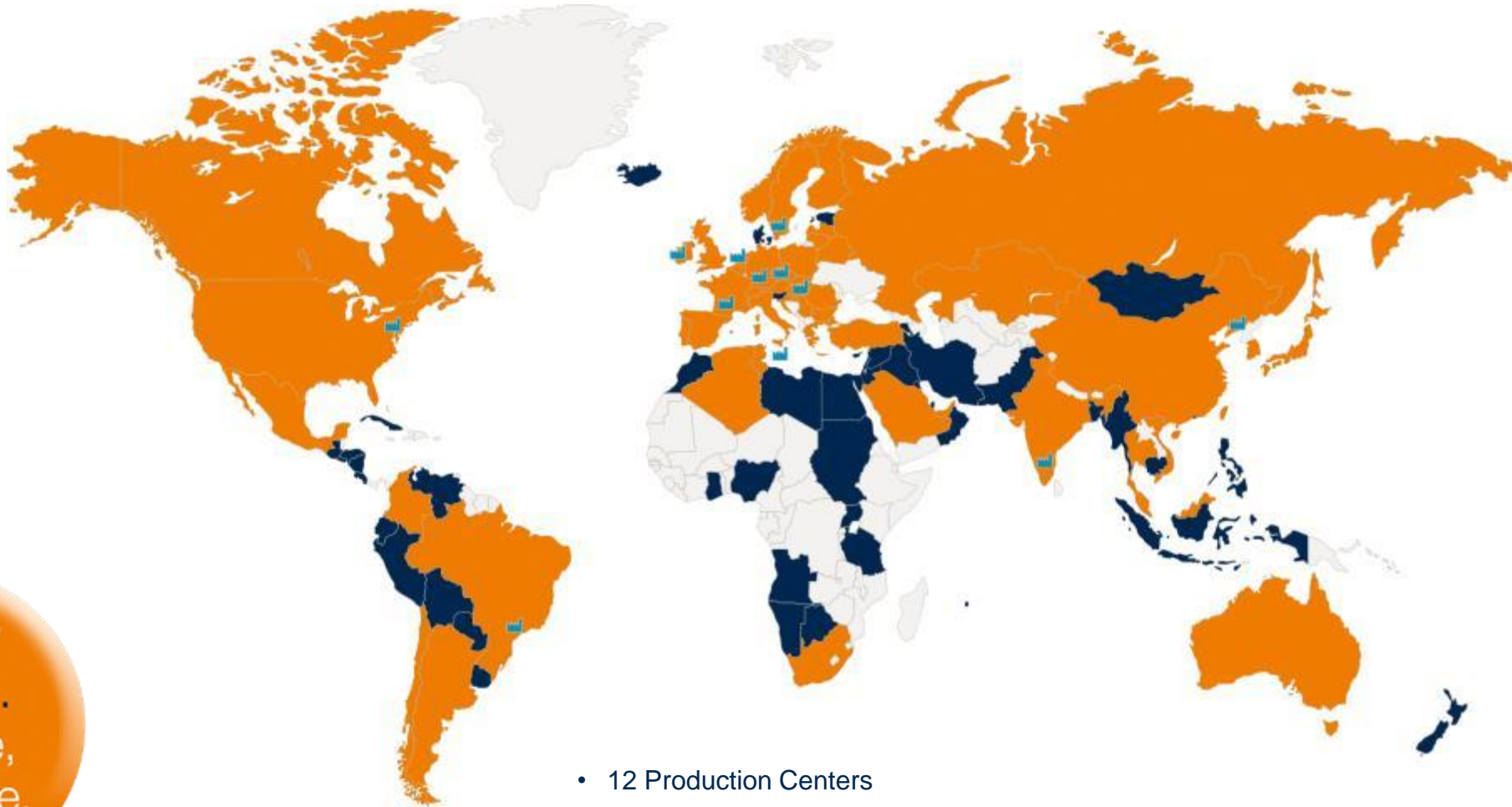
Headquarters in Heidelberg, Germany  
55 own subsidiaries, 12 production sites



## Target

More Efficiency and Safety for our customers

# WELL ESTABLISHED, WORLDWIDE AND AT HOME



Ready  
for you.  
Anytime,  
anywhere.

- 12 Production Centers
- Covered by 55 own Subsidiaries
- Covered by over 60 Distributors

**ProMinent®**



- Solenoid Pumps
- Motor Driven Metering Pumps
- Pneumatic Metering Pumps
- Precision Plunger Metering Pumps
- Peristaltic Pumps
- Chemical Transfer Pumps
- Metering Systems, Valves & Access

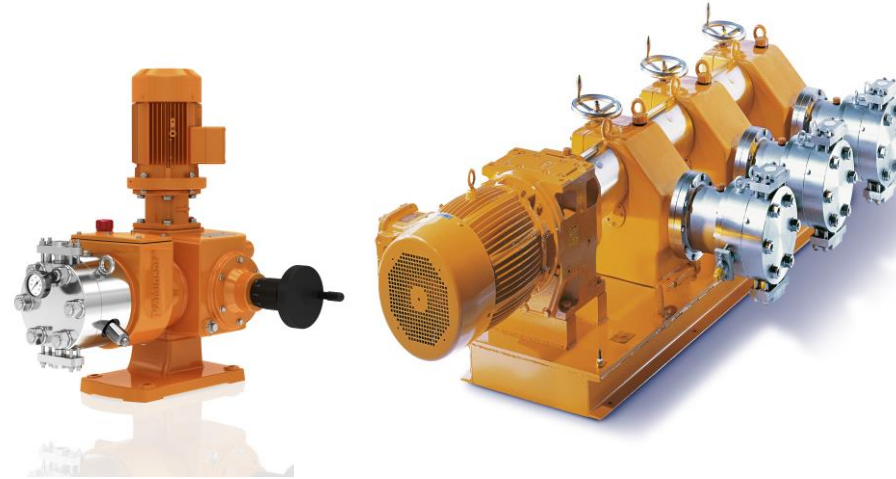


Fully Factory Assembled, Tested, “Plug and Play”  
Chemical Metering Skids



## API 675 Process Pumps:

- Hydraulic Diaphragm Metering Pumps
- Plunger Metering Pumps
- Process Metering Systems



API 675 Process Metering Pumps  
and Chemical Injection Skids:



## Controllers, Sensors and Transmitters for:

- Reagent Free Fluoride Analyser Single and Double Validation
- pH
- Chlorine ( Free/ Total )
- Conductivity
- Turbidity
- Dissolve Oxygen

“Plug and Play” Measuring  
and Control Station



**Water Treatment Systems such as:**

Automatic Bulk Solids Storage, Preparation and Dosing Systems, e.g:

- Silos and Big Bag Systems
- Polymer
- Lime
- PAC and PACl
- Fluoride
- Magnesium Hydroxide
- Other Chemicals used in Water Treatment







Silo  
System



Vacuum Load Sodium Fluoride Saturator and  
Sodium Silicofluoride Bulk Bag System





## Water Disinfection Technologies:

- Electrolysis Systems (Salt Chlorinators)
- Chlorine Gas Systems
- Chlorine Dioxide Systems
- Ozone Systems
- UV Systems





# ProMinent® Integrated Subsidiaries in Singapore & Malaysia

ProMinent Fluid Controls (FE) Pte Ltd, Singapore and ProMinent Fluid Controls (M) Sdn Bhd, Malaysia are Integrated Entities sharing our resources of Management, HR Development, Technical Support, Engineering Facilities, etc,

- We focus on empowering our people to be the Most Reliable Solutions Provider of Product Quality, Service Quality & Availability; driven by our ISO 9001 “SQ” Quality of:
  - **Speed:** Meeting agreed deadlines, and
  - **Quality:** Doing it first time right.



ProMinent Singapore is the 1st subsidiary of ProMinent in Asia and we celebrated our 40<sup>th</sup> anniversary in 2020, while ProMinent Malaysia, celebrated its 25<sup>th</sup> Anniversary in 2021.



◀ Our People



Our Products ▶



◀ Our Services



[www.prominent.com](http://www.prominent.com)

We understand the importance of having 24/7/365 reliable water supply and are committed to ProMinent global tagline – “Ready for You, Anytime, Anywhere” to provide excellent customer services, via:



1. Service KPI dictated by ISO 9001 SQ policy of:
  - **Speed** - Responding to service request by next working day
  - **Quality** - Focus on doing it 1st time right
2. A team of well trained engineers and technicians to provide pre-sales consultation, 2D/3D drawings, documentations, FAT, trouble-shoot and after-sales services for our products and systems.
3. Ex-stock – SGD multi-million of products and spare parts for prompt servicing
4. Backup “cannibalization” program – will even strip needed parts from complete product to meet urgent needs.
5. Yearly Customers’ Satisfaction Survey to keep improving on our Services



Scan to connect with us!

ProMinent SG



**ProMinent<sup>®</sup>**

THANK YOU FOR YOUR ATTENTION

Allen Mak

Mak.allen@prominent.com



*Jointly Organised by :*



*Supported by :*



# Singapore Water Industry Nite

Thursday, 2<sup>nd</sup> December 2021, 5pm

Singapore  
International  
Water Week



**Mr. Ryan Yuen**

Managing Director, SIWW

Deputy Director, PUB InTEC Dept.







## SIWW's Value Proposition



### **SOLUTIONS & TECHNOLOGY**

Innovation and solutions in urban water management, for municipal and industrial users



### **THOUGHT LEADERSHIP**

Insights on latest trends, solutions and case studies in various thematic areas



### **GLOBAL EVENT, REGIONAL FOOTPRINT**

A global water event with strong relevance and application to Asia



### **BUSINESS & NETWORKING**

Gathering of industry, utilities and governments for business collaboration and partnerships



### **URBAN SUSTAINABILITY**

Co-located with CleanEnviro Summit to advance sustainability agenda for built urban environment



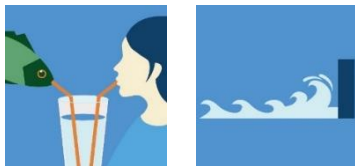
DATE	AM			PM		EVENING	
17 April (Sun)	Technical Site Visits					Jurong Island Desalination Plant Opening	
	SWA Golf @SIWW						
	TechXchange						
	Hot Issues Workshops						
18 April (Mon)	Joint Opening	Environment & Water Leaders Forum	Expo tour	Lee Kuan Yew Water Prize Lecture	WC Poster Presentation	Happy Hour @ Water Expo	Lee Kuan Yew Water Prize Award Ceremony & Banquet
		Water Convention (WC) Opening Plenary					
	Expo						
19 April (Tue)	Water Leaders Summit (WLS) Plenary 1		WLS Plenary 2	WLS Plenary 3	Utility Leaders Networking Reception	Industry Night @ Expo	
	WC Parallel Session 1		WC Parallel Session 2	WC Parallel Session 3	WC Parallel Session 4		
	Thematic & Business Forums						
	Expo						
20 April (Wed)	WC Parallel Session 5		WC Parallel Session 6	WC Parallel Session 7	WC Closing Plenary		
	Thematic & Business Forums						
	Co-located Events						
	Expo						
21 April (Thurs)	Technical Site Visits						

# SIWW2022 Highlights

## Key Thematic Areas

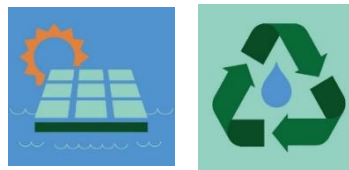
### Climate Resilience

Building resilience to impacts of climate change on urban water systems



### Resource Circularity

Embracing circular resource management to reduce water, energy and resource footprint



### Digital Water

Leveraging digital technologies across urban water cycle to achieve optimization and efficiency



#### 💧 Utility and Industry Focused Content

Look forward to a range of utility and industry focused content, with emphasis on innovation and solutions covering end-to-end of the urban water cycle. Key thematic areas include climate resilience, resource circularity and digital water.

#### 💧 On-Demand Access to SIWW2022 Content

For wider knowledge dissemination, all sessions organised during SIWW2022 will be available for on-demand viewing via SIWW+. This allows interested participants who are unable to come to Singapore to learn from the diverse content offerings.

#### 💧 Launch of SIWW+

Launching at SIWW2022, the SIWW+ digital content hub will serve as the go-to online resource library for urban water solutions and innovation with feature stories, industry news, special reports and videos.

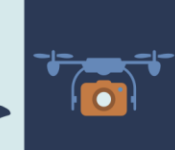
#### 💧 Value-Added Programmes for Exhibitors

Our Hosted Buyers and Distributor/Reseller Programmes allow exhibitors to build new business leads with regional trade visitors, while Product Showcase sessions offer opportunities to showcase latest products, solutions and innovation in the Expo.

#### 💧 NEWBrew Makes a Return

NEWBrew will make its comeback at SIWW2022! Brewed with NEWater, Singapore's own brand of high-grade reclaimed water, the special brew is set to return with a twist.







## Expo Programmes

### Adding Value to Exhibitors

- **Distributor Programme:** match exhibitors with reputable regional distributors who can represent their products in Southeast Asia region
- **Hosted Buyers Programme:** bring regional trade delegations from Southeast Asia to visit the show, and for one-to-one meetings with exhibitors
- **Product Showcase Programme:** exhibitors can book a timeslot in the Expo Solutions Stage to showcase products. Presentation will also be made available online on SIWW's digital website for international viewers.

### Creating Buzz at Expo Floor

- **Meeting Points:** 2 meeting points located in Expo for delegates, trade visitors and exhibitors to mingle and interact
- **The Stages:** Networking zones for hosting receptions and thematic workshops
- **All-day Coffee Stations:** Coffee stations located within meeting points will serve free gourmet coffee to delegates looking for their daily coffee fix
- **Happy Hour @ Water Expo:** Delegates and exhibitors will be able to relax over a mug of cold beer in the evening
- **Industry Night @ Expo:** Held jointly with CleanEnviro Summit Singapore, a networking event with F&B and light entertainment within the Expo floor





## Interested to Exhibit?

Stay connected with us:



siwwlinkedin



siww.com.sg



www.siwv.com.sg



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# Singapore Water Industry Nite

Thursday, 2<sup>nd</sup> December 2021, 5pm

**Ms Fabia Lim**

Senior Engineer, Drainage Operations Div.  
PUB, Catchment & Waterways Dept.



C&W's Technology needs,  
Smart projects and  
upcoming initiatives.





## Catchment & Waterways Department – Smart Stormwater Management

Fabia Lim  
Catchment & Waterways Department (Drainage Operations)



**MAKE  
EVERY  
DROP  
COUNT**

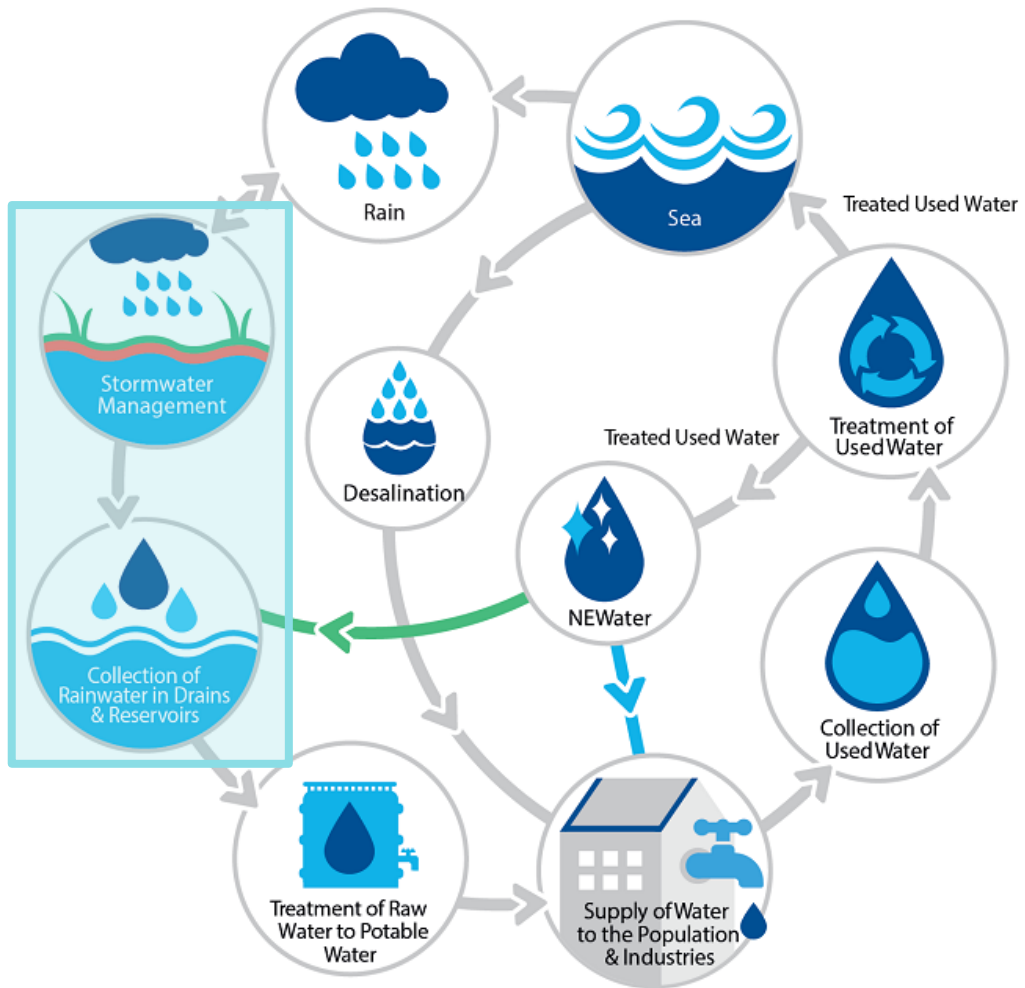
# Outline

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- ❖ CATCHMENT & WATERWAYS DEPARTMENT (CWD) ROLES & OBJECTIVES
- ❖ CWD'S CURRENT SYSTEMS & TECHNOLOGY FOR O&M
  - Real-Time Operations
  - Maintenance of MEICA
  - Autonomous Drones
- ❖ CHALLENGES AHEAD & FUTURE DEVELOPMENTS
  - Man Less & Remote Operations
  - Optimisation of Drainage Assets
  - Public Engagement



# CWD's Role and Objectives

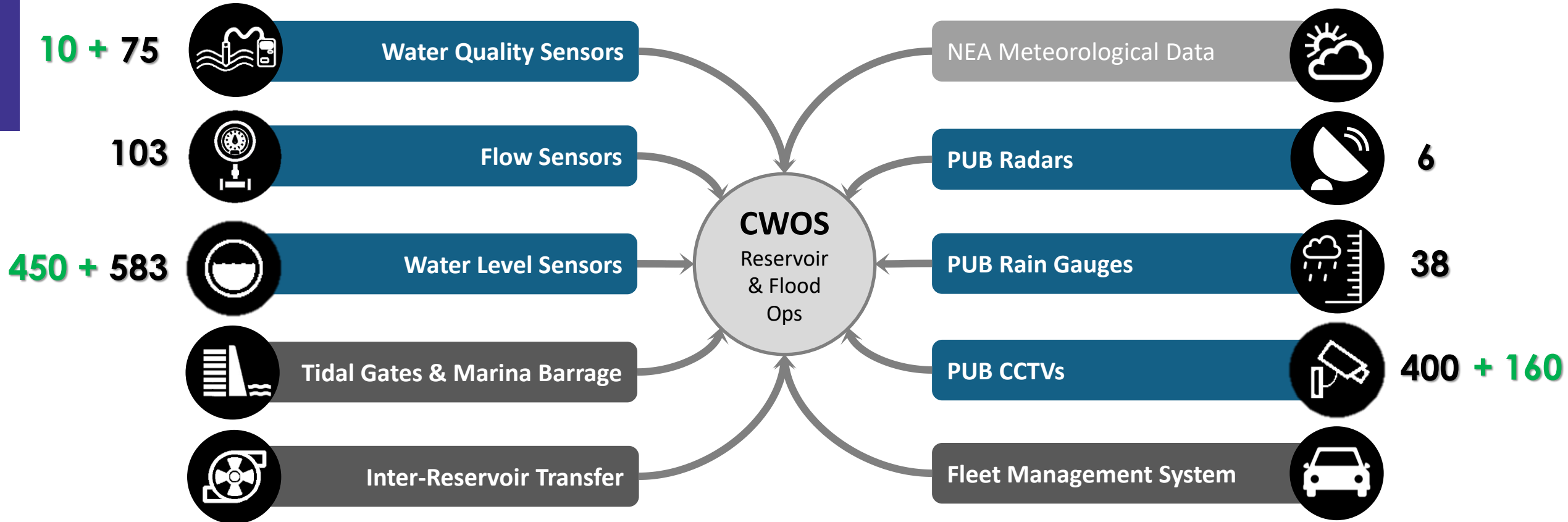


Supply Good Water.  
Reclaim Used Water.  
**Tame Storm Water.**  
Resist Rising Seas.



Safeguard our Water Resources.  
Safeguard Public Health.

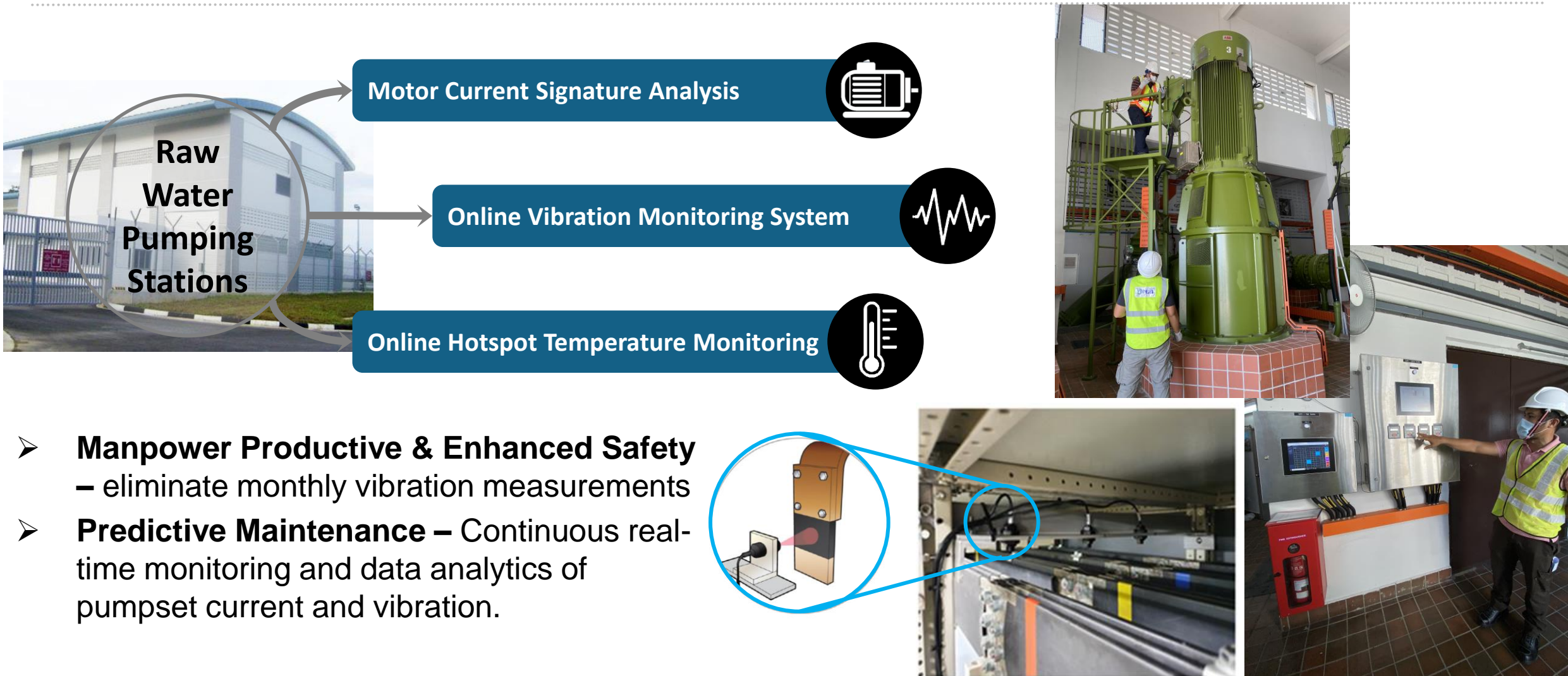
# Current Systems & Tech – Real-Time Operations



- **One-stop Operations Interface** – real-time operations data consolidated across various platforms
- **Forecast-Informed Operations** – forecasting capabilities enhances operational decisions

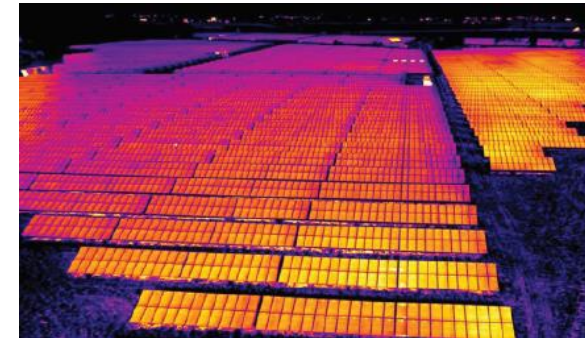


# Current Systems & Tech – Maintenance of MEICA



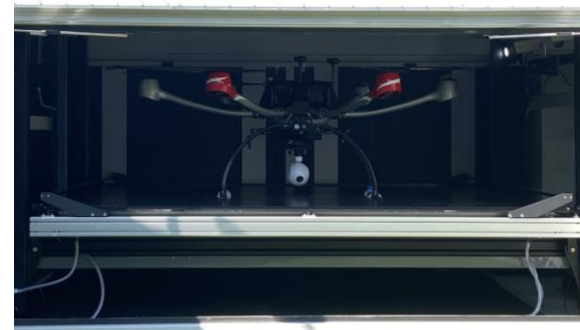
# Current Systems & Tech – Drones

## Drones for Closed Drain Inspection



## Aerial Infrared Thermal Imaging using Drones for Hotspot Detection of Floating Solar PV Arrays

## Beyond Visual Line Of Sight (BVLOS) Drones at Reservoirs



Drones

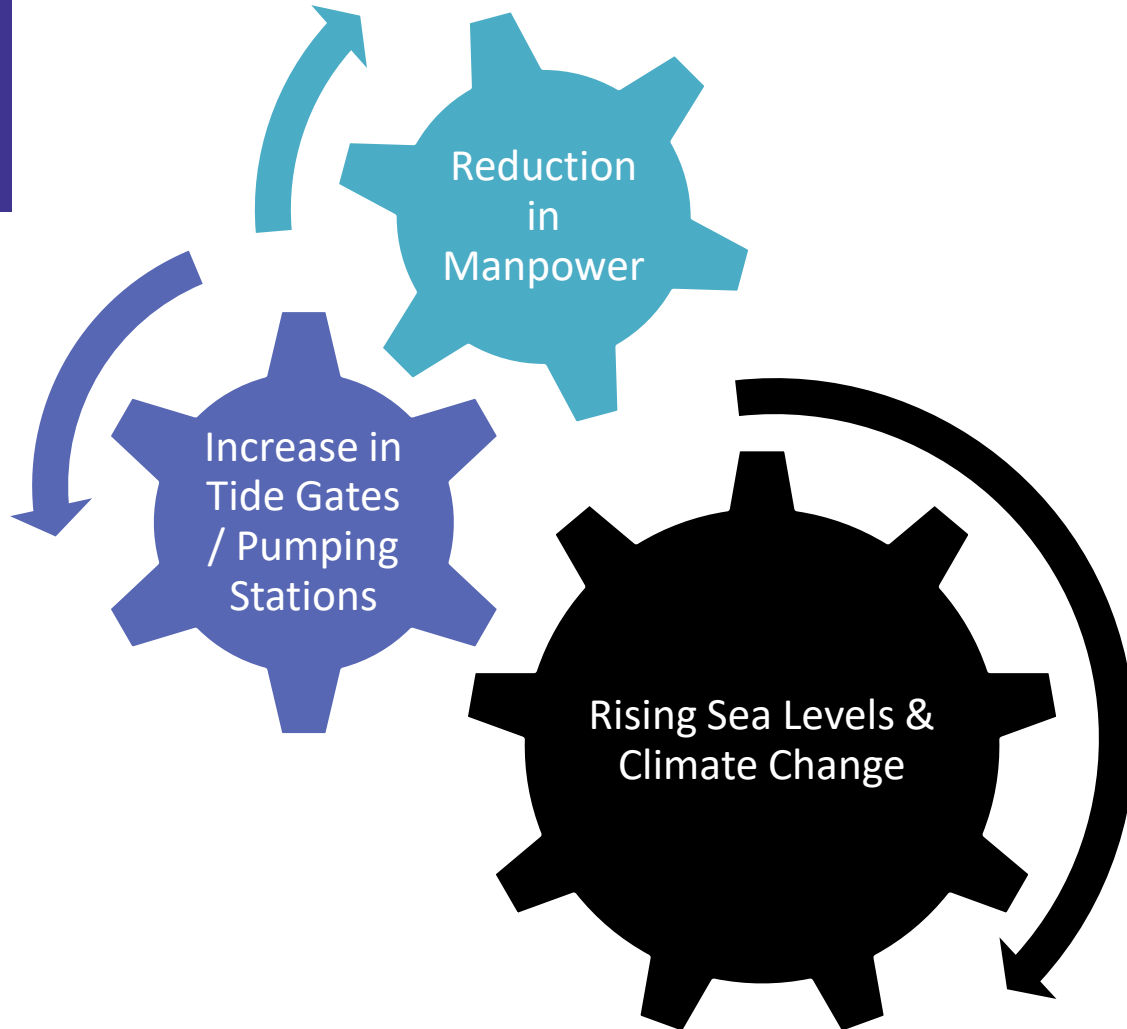
Inspection

Monitoring

Patrolling



# Challenges Ahead and Future Developments – Man Less & Remote Ops



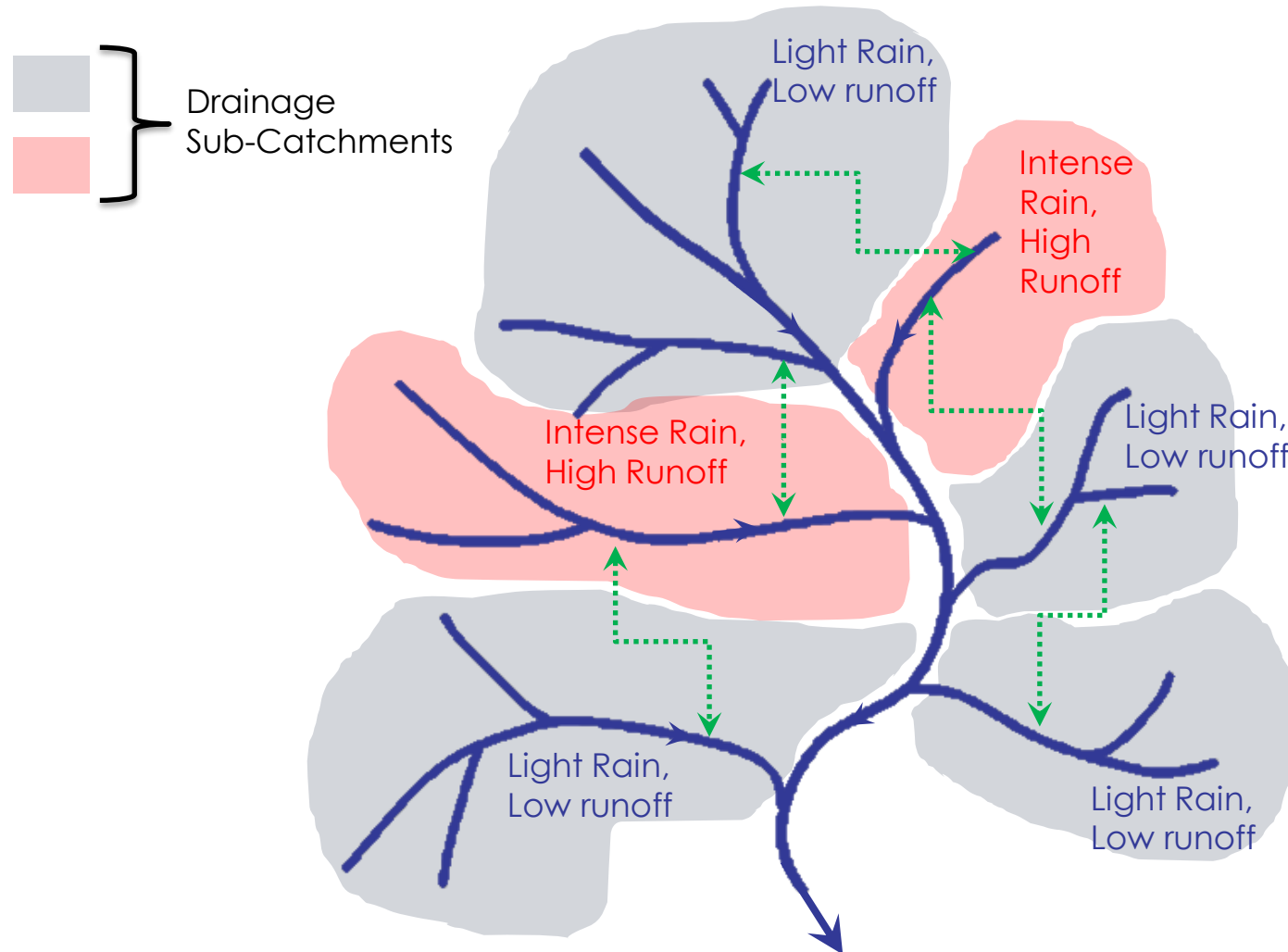
- **Man Less Operations** – reduce or even eliminate need for men to be stationed at installations for operations



- **Remote Operations** – command and control remotely from the command centre



# Challenges Ahead and Future Developments – Optimise Drainage Assets



## ➤ Constraints in Design

- Current drainage system designed to flow in a single direction with little interconnectivity
- No space for further widening / deepening of drains

## ➤ Real-Time Control of Drainage Systems

- Interconnectivity between drainage sub-systems
- “Transfer” flow, either by gravity with floodgates or pumping systems, between sub-catchments to share load on network



# Challenges Ahead and Future Developments – Public Engagement

## ➤ Increasing Public Expectations

- Information readily available at everyone's fingertips
- Social media – anything and everything that happens everyone will know and want to know instantly
- Wide variance in target audience – need to cater to different age groups




## ➤ Active Engagement of Public

- Better means to engage public and push out information and updates actively and swiftly



## Short Video of Beyond Visual Line of Sight (BVLOS) Drones

---



**BEYOND VISUAL LINE OF SIGHT  
(BVLOS) DRONES**



Thank You

MAKE  
EVERY  
DROP  
COUNT



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# Q & A





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## Post Event Survey



SCAN ME



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## Thank You

