

# **INDAH WATER KONSORTIUM SDN BHD**

## **NATIONAL SEWERAGE COMPANY**

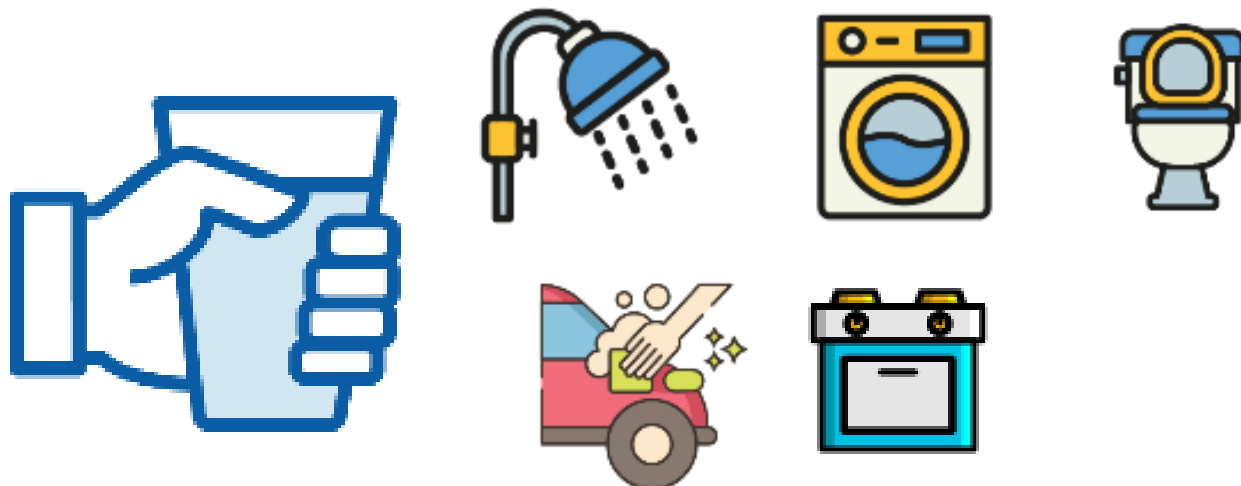
### ***Ensuring Quality & Efficient Sewerage Services***

PERSIDANGAN KE-8 NATIONAL ENVIRONMENTAL HEALTH ACTION  
PLAN (NEHAP)

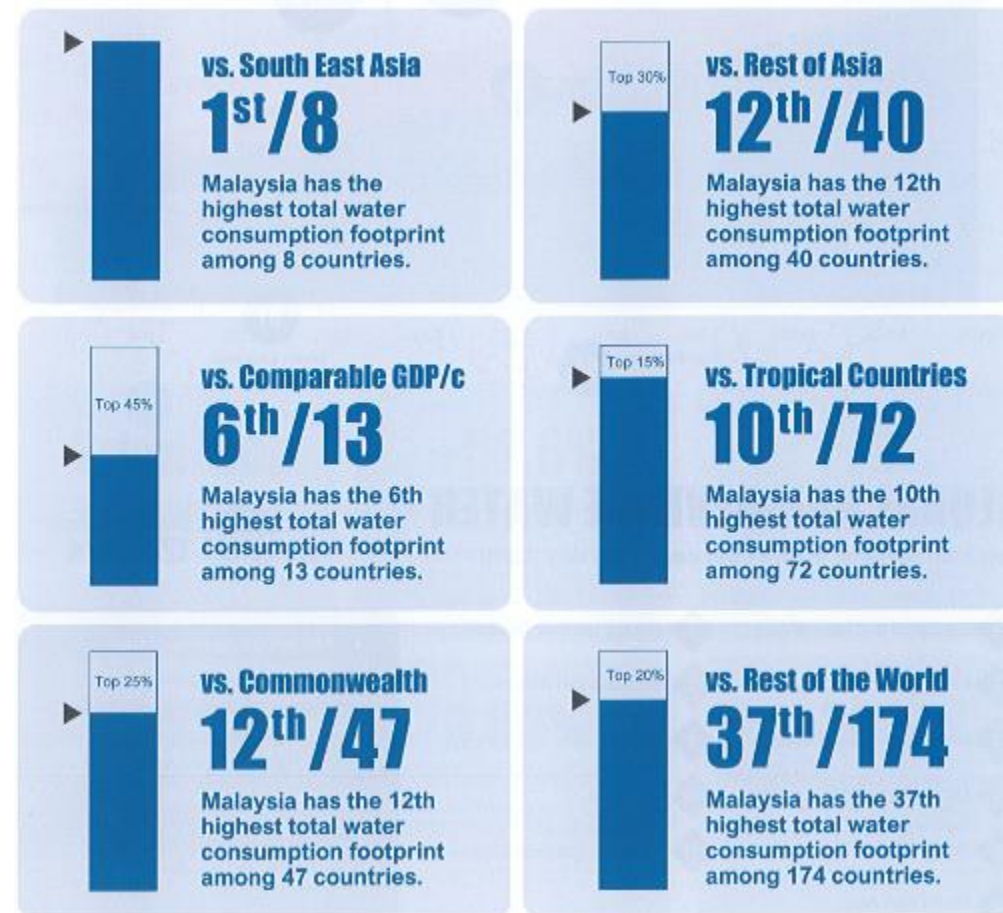
27 September 2022

A decorative graphic of a water splash or wave, rendered in shades of blue and white, flowing from the bottom right towards the center of the slide.

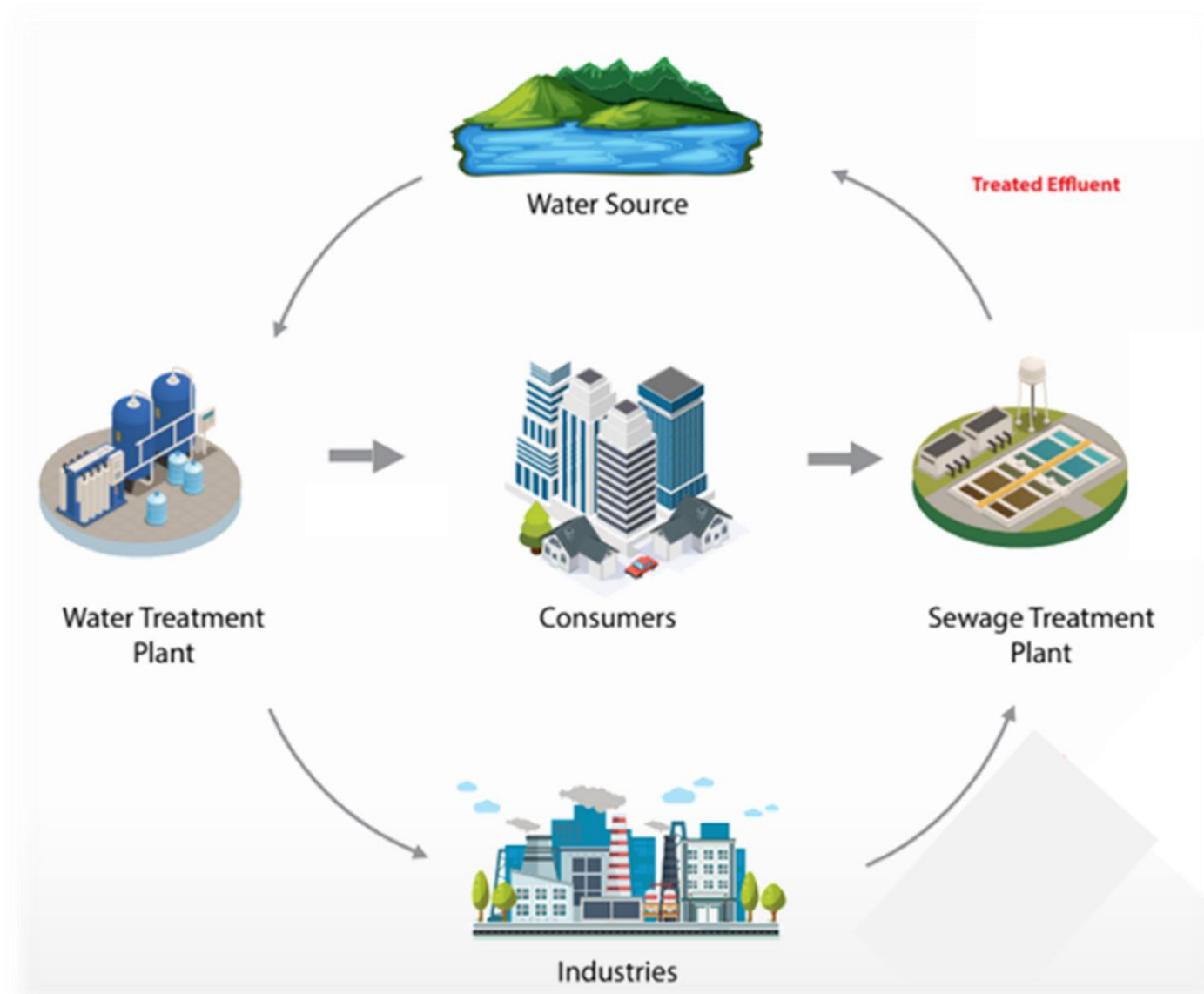
Malaysia has one of the highest water consumption footprints in the region with the consumption of 200-210 litres per capita per day.



  
 Global Average  
**140-150 l/c/d**



Once we use water, very few of us ponder on this - **where that water goes, how it's treated and how it flows back to the water source.**





Over the last 28 years, IWK has introduced modern sewerage services to Malaysians nationwide.

## OUR COVERAGE OF SERVICES

**11**  
States & 3 Federal Territories

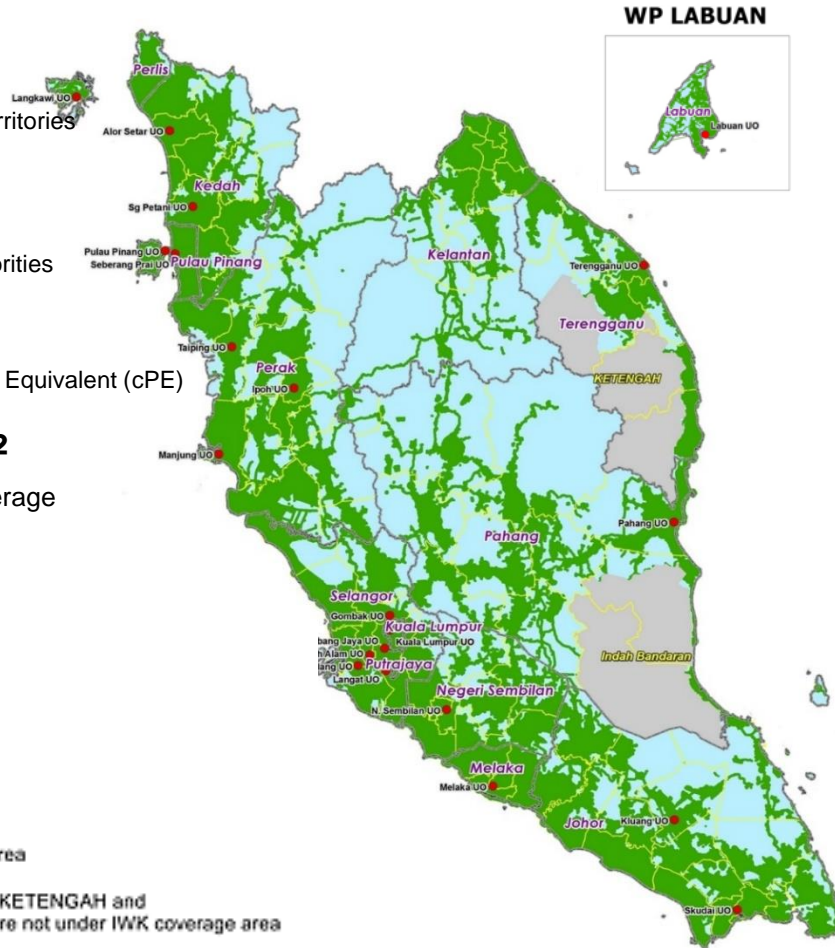
**101**  
out of 152 Local Authorities

**29.20 mil**  
Connected Population Equivalent (cPE)

**81,954 km<sup>2</sup>**  
Area of service coverage

### Legend

- Unit Office (UO)
- State Boundary
- LA Boundary
- LA Service Area
- Non LA Service Area
- Sabah, Sarawak, KETENGAH and Indah Bandaran are not under IWK coverage area



## CAPACITIES



**7,347**  
Sewage  
Treatment Plants



**1,398**  
Network  
Pump Stations



**20,820km**  
Pipelines  
Length



**1**  
Water  
Reclamation Plant

## RESOURCES



**3,404** Human Capital



**1** Research Center



**21** Unit Offices



**1** Training Center



**59** Reporting Centers



**1** Gallery



**633** Vehicles



**1** Eco Park



**5** Laboratories

Note:

1. cPE excludes individual and Communal Septic Tanks
2. As at Q2 2022

IWK offers both connected and desludging services to ensure comprehensive coverage to different types of premises and customers.

## CONNECTED SERVICES



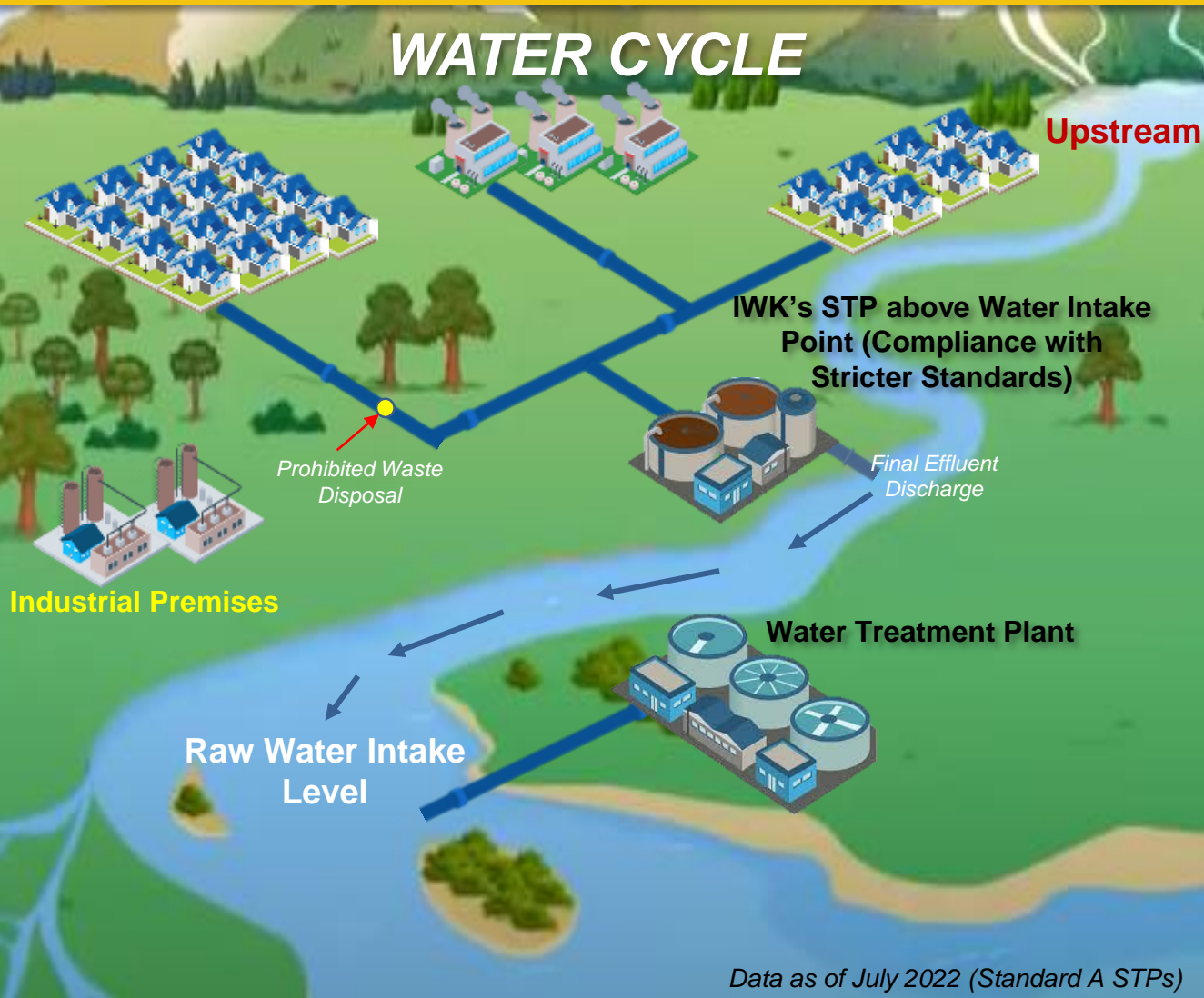
## DESLUDGING SERVICES



Sewerage services play an important role in preserving our water resources and the environment.

1,847 STPs are located upstream of water intake

## WATER CYCLE



Data as of July 2022 (Standard A STPs)

If the sewerage system is not managed properly, sewage waste cannot be disposed of in a safe manner and will lead to pollution of water resources and the environment.

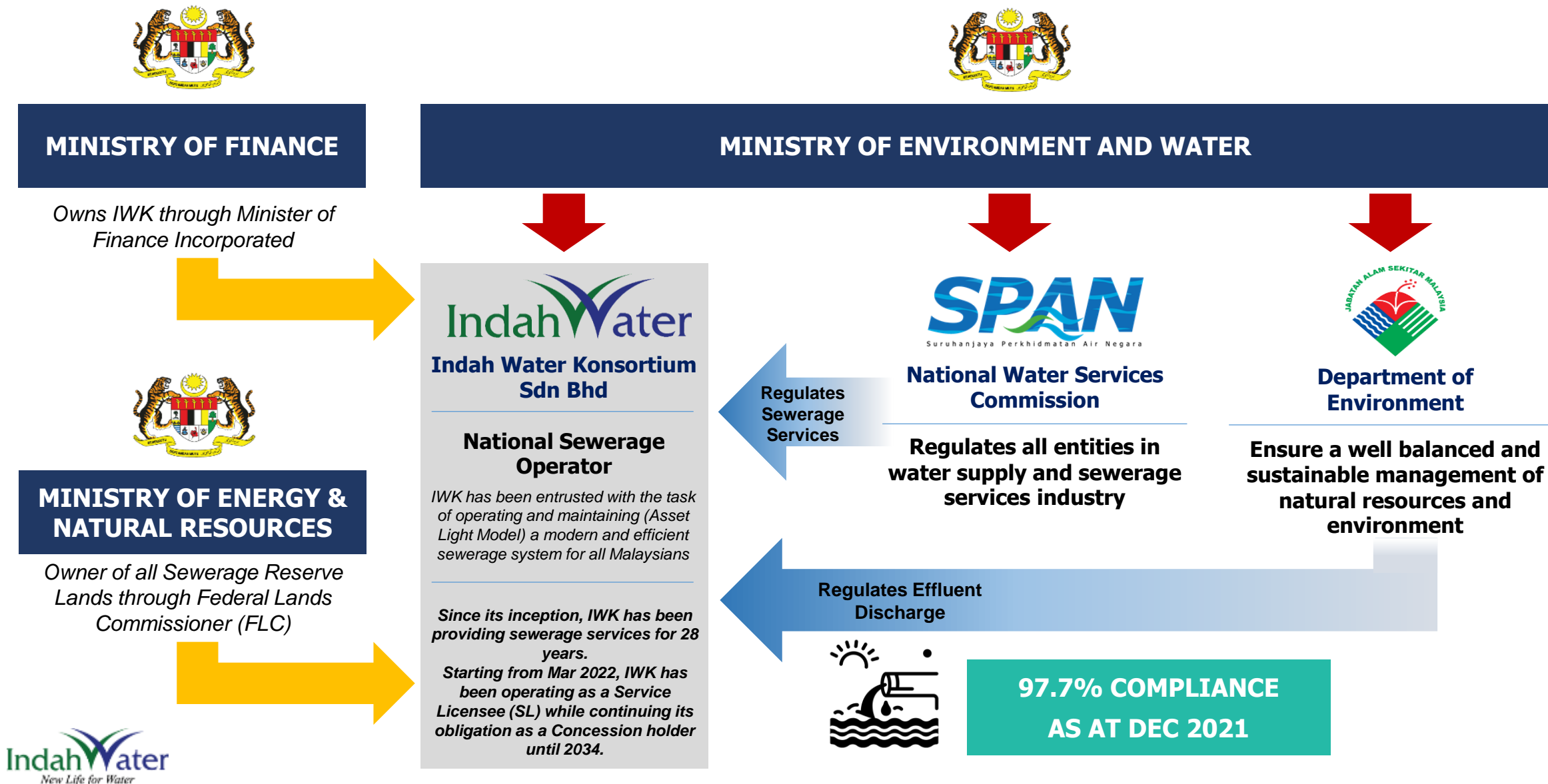


## Impacts of Pollution if the Sewerage Industry is Not Sustainable



Note: The pictures are references for cases of pollution of water resources and the environment that occur locally and abroad.

In ensuring an effective and efficient sewerage services, IWK is regulated by Suruhanjaya Perkhidmatan Air Negara (SPAN) and Department of Environment (DOE)



# Despite a high compliance level, there are still challenges that are being addressed progressively as part of IWK's strategy (1/6)



## ILLEGAL DISCHARGE

### Recurring cases of illegal discharge at IWK's STPs

There was a total of 29 illegal discharge cases at IWK's STPs reported in 2021.

Additional costs incurred for emergency treatment and containment, requires formation of surveillance teams to continuously monitor.



Incident of Illegal Discharged (ID) at manhole (GBK134)



Incident of red coloured sewage in GBK225

## Efforts & Action Taken by IWK

1. Formation of Surveillance Team at Sg Selangor, Sg Langat involving 3 Unit Offices, UO Langat, UO Gombak & UO N. Sembilan since early 2020.
2. Enhanced early warning system.
3. Introduction of manhole locking system.
4. Emergency containment of contaminated wastewater.
5. Emergency treatment (poly tank, pump set with hose), with various products for process recovery such as *Superfloc*, *CHP* and mitigate foul smell using activated carbon.
6. Liaison with various stakeholders such as SPAN, DOE, LA, AiS, LUAS etc.



Surveillance Team with 4x4 trucks equipped with sampling tools, monitoring devices, test kits, chemicals, and operations tools



Testing kits

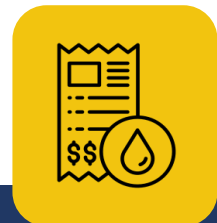


Activated carbon



Handheld Device

Despite a high compliance level, there are still challenges that are being addressed progressively as part of IWK's strategy (2/6)



### UNECONOMICAL SEWERAGE TARIFF RATE

The flat rate-based sewerage tariff structure is very low compared to international counterparts

Sewerage tariff has never been revised upward since 1994 as compared to other utility tariff such as electricity & water tariff.



### INCREASE OF OPERATIONAL COST

Increase of operational cost due to increasing number of mechanised plants and aging equipment

Increase of mechanised plants and aging equipment led to higher electricity cost and higher equipment repair cost. Electricity tariff also has been increased 3 times since 2006.

Caj bulanan IWK untuk pelanggan domestik sistem bersambung dan nyahenap cemar tidak pernah berubah



Tahun 1994

RM2-8 sebulan

- ✓ 1,043 Loji Rawatan Kumbahan Awam
- ✓ 74 Stesen Pam Kumbahan
- ✓ 2,317 km Paip Kumbahan Awam

Tahun 2022

RM2-8 sebulan

- ✓ 7,347 Loji Rawatan Kumbahan Awam
- ✓ 1,398 Stesen Pam Kumbahan
- ✓ 22,820.40 km Paip Kumbahan Awam

Caj tidak pernah berubah, walaupun kos operasi dan pengambilalihan aset pembetungan awam meningkat sejak IWK ditubuhkan pada 1994.

# Despite a high compliance level, there are still challenges that are being addressed progressively as part of IWK's strategy (3/6)



## EXPANDING COVERAGE

Ensuring greater coverage of sewerage services for both connected and septic tanks

IWK previously did not operate in Kelantan, Johor Bharu and Pasir Gudang and there are still a number of septic tanks not being desludged.

### Takeover of Public Sewerage Systems in Kelantan, MBBJ & MBPG



IWK began operations in Kelantan on 1 Jan 2021 and in MBBJ & MBPG on 1 Dec 2021

### Scheduled Desludging Implementation



Water Services Industry (Desludging Services) Regulation 2021 gazetted on 29 March 2021

### Scheduled Desludging Notice

**IndahWater**  
 INDAH WATER KONSORTIUM SEN. BHD. (211763-K)  
 Berdaftar With Director General of Public Services (Dipublikasikan)  
 No. 46, Jalan Bangsar, Bandar Utama, 47100 Petaling Jaya

**NOTIS DOMESTIK**  
 NOTIS PENGOSONGAN TANGKI SEPTIK BERJADUAL

**Tarikh Notis**  
 01 May 2021

**No. Akaun Pembentukan**  
 12345678900000

**Tarikh Pengosongan Tangki Septik**  
 01 Disember 2020

**Caj Yang Perlu Dibayar**  
 RM1,058.00

**Tarikh Akhir Pengosongan Tangki Septik**  
 31 Disember 2020

**Tunggakan (Jika Ada)**  
 RM1,058.00

**Hubungi Kami**  
 Anda boleh menetapkan tarikh dan masa untuk pengosongan tangki septik dengan menghubungi pejabat unit IWK di bawah atau menghubungi nombor talian dengan mengimbas QR QR.

**Indah Water Konsortium Sen Bhd**  
 JALAN WEDRA PERSEKUTUAN,  
 LOT 12043, JALAN KONVENSyen BULATAN MITC,  
 75450 AYER KEROH, MELAKA.  
 No. Telefon : 06 222 8421  
 SMS / Whatsapp : 017 353 2507  
 Alamat Email : ibw\_southern@iwk.com.my

**Tanggungjawab Pengguna Tangki Septik**  
 Mematuhi peraturan pengosongan tangki septik secara berjadual

1. Notis ini dikeluarkan oleh IWK sebagai pemegang lesen perkhidmatan untuk pengosongan tangki septik di bawah Akta Industri Perkhidmatan Air 2006 untuk pemilik, pengurusan atau pengurus mana-mana premis yang mempunyai tangki septik untuk mengosongkan tangki septik tersebut dalam tempoh yang dinyatakan di dalam notis ini.
2. Sila nyatakan persetujuan anda untuk pengosongan tangki septik pada tarikh yang dinyatakan dengan menghubungi Pejabat Unit IWK di belakang notis ini dalam tempoh masa 14 hari dari tarikh notis ini.
3. Sekiranya tarikh pengosongan tangki septik yang dinyatakan di dalam notis ini adalah tidak bersesuaian sila hubungi pihak IWK melalui telefon/fax untuk penetapan tarikh pengosongan tangki septik yang baru.
4. Sila ambil perhatian bahawa adalah menjadi satu kesalahan dibawah Seksyen 95 Akta Industri Perkhidmatan Air 2006 dan Kaedah-Kaedah Industri Perkhidmatan Air (Perkhidmatan Nyah Hidup Comers) 2021 sekiranya pemilik, pengurusan atau pengurus mana-mana premis yang mempunyai tangki septik gagal mengosongkan tangki septik pada kekerapan seperti berikut:
  - i) satu kali setiap 24 bulan bagi tangki septik yang terletak di dalam sempadan mana-mana kawasan pihak berkuasa tempatan; dan
  - ii) satu kali setiap 36 bulan tangki septik terletak di luar sempadan mana-mana kawasan pihak berkuasa tempatan.
 Keagagalan anda untuk mematuhi peraturan di atas boleh menyebabkan denda dikenakan ke atas anda tidak melebihi RM50,000.00

**Kadar Bayaran**

KATEGORI DOMESTIK	CAJ (RM)
Rumah-bes rendah	48.00
Rumah-mamak, Kamping, Kamping Baru dan Ladang-Ladang	72.00
Domestik selain rumah-bes rendah, rumah-mamak, kamping, kamping baru dan ladang-ladang	144.00

**LAH LABI PERKHIDMATAN**

PERKHIDMATAN	CAJ (RM)
Pembayaran sambutan	100.00
Pengantar pemang tangki septik	100.00

**CONTRIBUTING TOWARDS THE GROWTH OF RENEWABLE ENERGY INDUSTRY IN MALAYSIA**  
 IndahWater

IndahWaterKonsortium | iwk\_official | @IWKComms

Despite a high compliance level, there are still challenges that are being addressed progressively as part of IWK's strategy (4/6)



## COVID-19 PANDEMIC

IWK was part of the essential services during the various PKP periods.

A learning experience for the company in preparing to carry out our national service during pandemic period.



Blockage Clearance at Penang Hospital Penang Unit Office



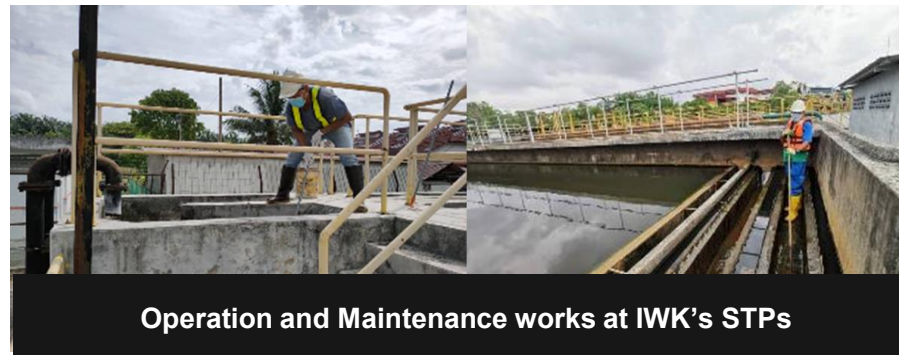
Desludging at Seremban Prison Negeri Sembilan Desludging Unit



Desludging at Muar Prison Muar Desludging Unit



Enforcement operation with SPAN (Illegal Discharge) Penang & Seberang Perai Unit Offices



Operation and Maintenance works at IWK's STPs



Research Study - Resilience of Sewerage System During Covid-19 Pandemic

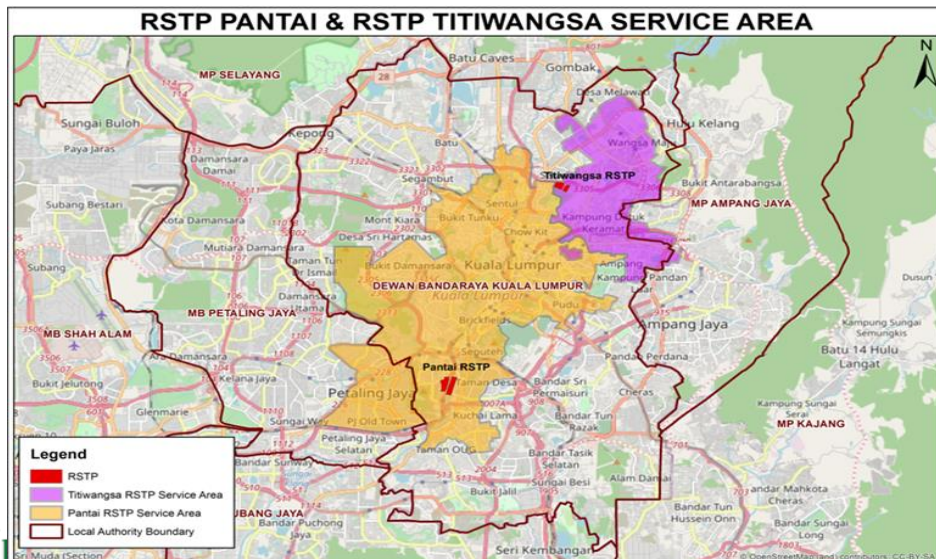
# Collaboration With Research Institutes and Universities – Wastewater-Based Epidemiology (WBE) : Sewage Surveillance to Track COVID-19

**LOCATION :**  
Public Sewerage Treatment Plants (IWK)

**Klang Valley**  
(>40% of the Peninsular COVID-19 statistic)

Received Sewage from designated COVID-19 treatment centres (HKL & PPUM) for Klang Valley areas

Centralised facilities serving large sewerage catchments of the population in Klang Valley



## RESEARCH INSTITUTES AND UNIVERSITIES



MONASH University



NEWRI



## CHALLENGES FOR COVID-19 STUDY RESEARCH

- Lack of optimized and standardized protocol for SARS-CoV-2 analysis from wastewater sample

- Limited available data to conduct a quantitative microbial risk assessment (QMRA) for SARS-CoV-2 exposure pathways

- Selection of testing sites and availability of testing laboratory

- Different sewerage treatment technologies

- Cost and benefit analysis

- Correlation on numbers of people infected in a community (virus are shed differently from each people)

- Sensitivity of testing method

Despite a high compliance level, there are still challenges that are being addressed progressively as part of IWK's strategy (5/6)



## OPTIMISATION OF SEWERAGE ASSETS

Aging equipment, requirements for compliance drive the need to optimise our assets

Challenges include timely completion during pandemic and funding.

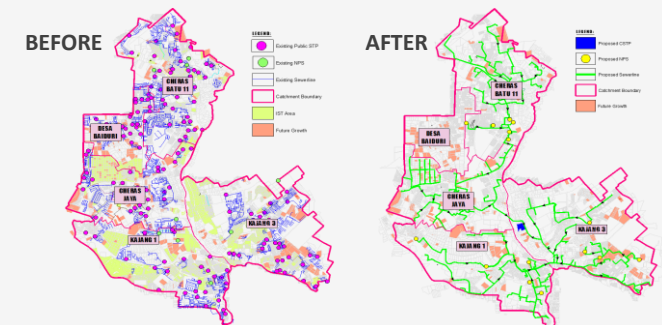


### Upgrading of STPs to Para (i) EQSR 2009



Upgrading and repair work for selected STPs has started since Nov 2020

### Rationalisation of small STPs into Regional STPs



Completion of Regional STPs has enabled smaller STPs to be rationalized.

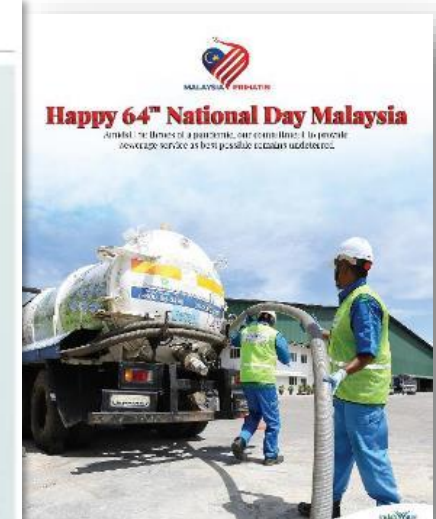
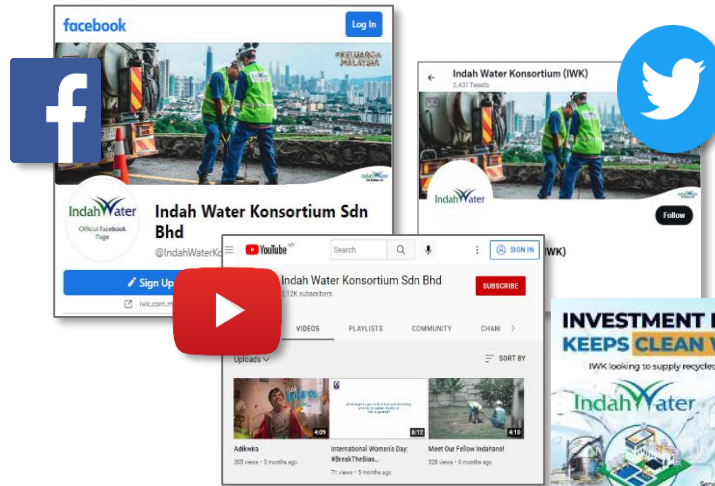
# Despite a high compliance level, there are still challenges that are being addressed progressively as part of IWK's strategy (6/6)



## PUBLIC AWARENESS

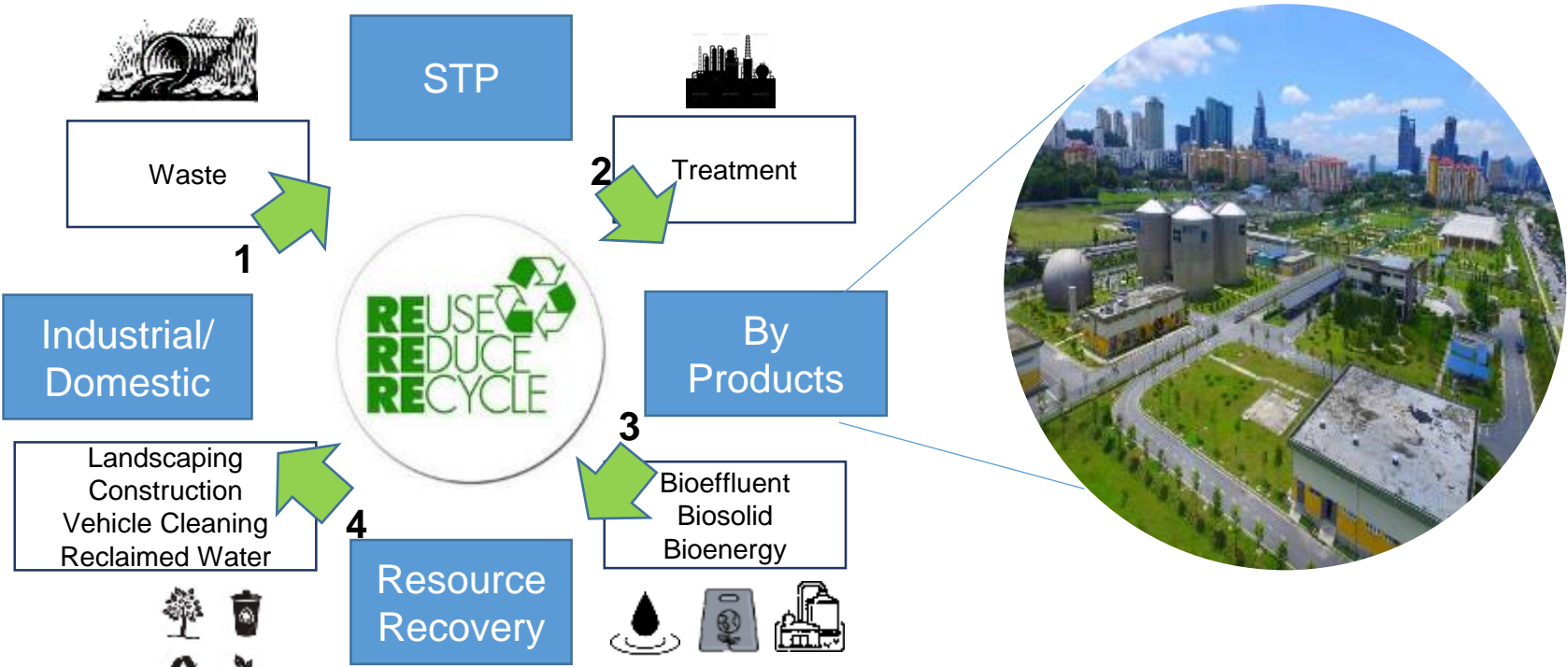
Opportunity to improve on public awareness and appreciation towards sewerage services

Various initiatives continuously carried out involving media, customers and public campaigns.



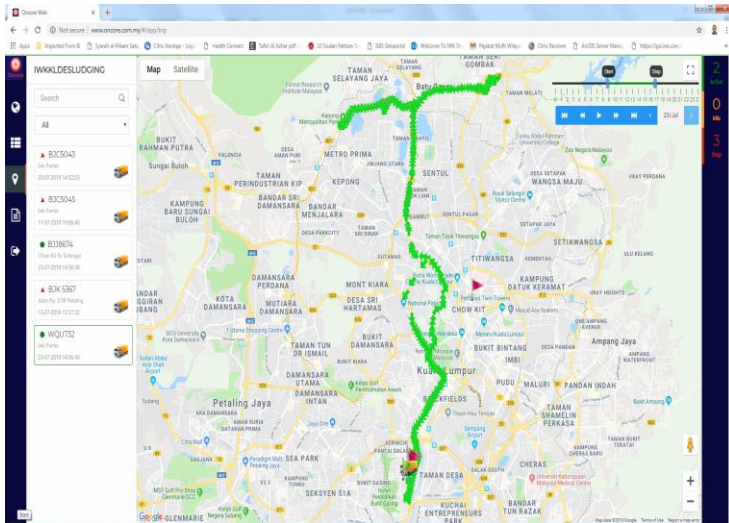
On top of the action plans highlighted earlier, IWK is also continuously enhancing its services with adoption of Green Technology

**TOWARDS SUSTAINABLE DEVELOPMENT AND ENVIRONMENT IN-LINE WITH CIRCULAR ECONOMY**



# Technology has also enables cloud computing, IoT and analytics to help enhance the operations of our sewerage systems

## Vehicle Monitoring System



## Various Systems



**AMIS**  
Asset Management Information System



**CEE**  
CEMS External Enquiry



**CERTS**  
Certification CA System (External)



**CERTS**  
Certification CA System (Internal)



**CEMS**  
CEMS - (Internal)



**CEMS**  
Customer Enquiry Management System

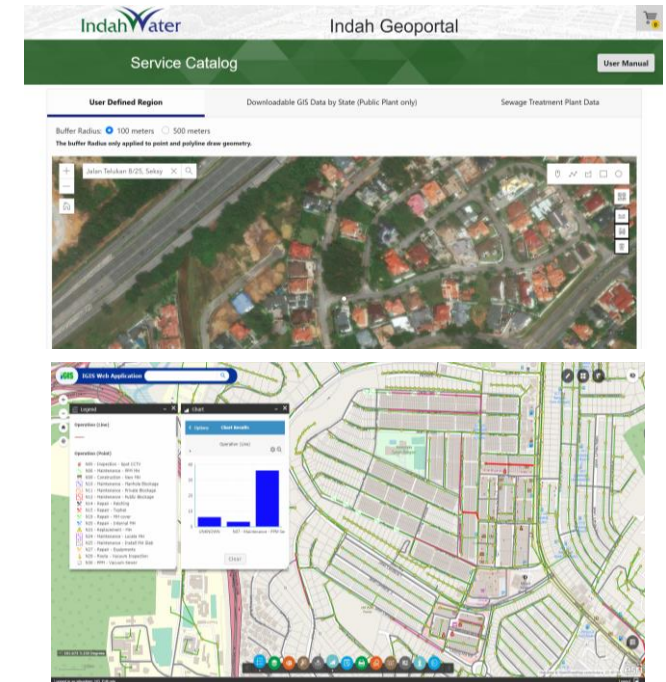


**CERTS INSPECTION**  
CERTS Mobile Inspection



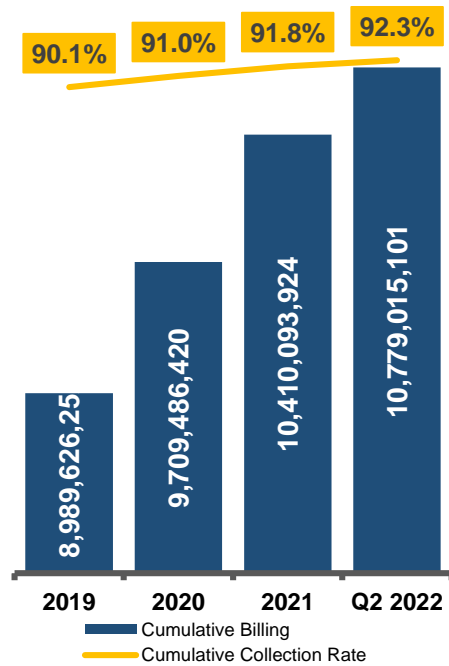
**DMS**  
DMS - (Internal)

## INDAH GEOPORTAL



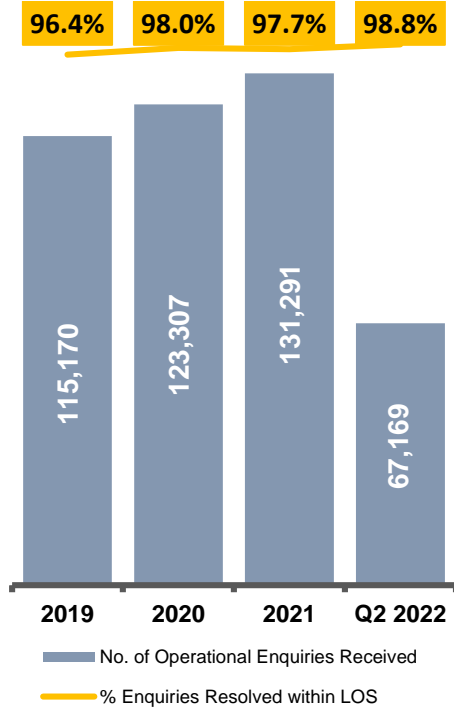
All the efforts taken have shown a positive result over the recent years in delivering efficient and effective service to the nation.

**COLLECTION RATE (METHOD C)**



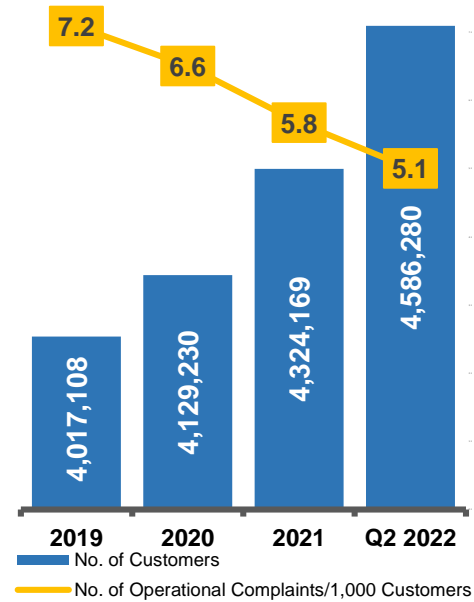
IWK managed to maintain the collection rate above 90% despite the challenging business dimensions due to the recovery phase of the COVID-19 pandemic.

**OPERATIONAL ENQUIRIES RESOLVED WITHIN LEVEL OF SERVICE (LOS)**



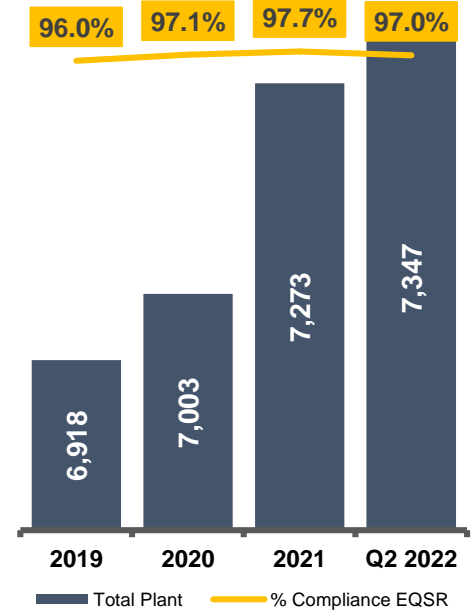
IWK has continuously provided a good service delivery to the customers by maintaining its LoS.

**NO. OF OPERATIONAL COMPLAINTS PER 1,000 CUSTOMERS**



Number of operational complaints per 1,000 customers significantly decrease despite of increasing in the number of customers.



**STP EFFLUENT COMPLIANCE PERFORMANCE**



Percentage of STP complied with DOE's effluent quality is improving every year (above 90%) despite of increasing in number of STPs.

With over 28 years of experience and expertise, IWK is now extending its services beyond public sewerage systems.

**Operation of Government Sewerage Facilities**



**Schools**

**Hospitals**

Providing the operations and maintenance services to 35 Sewage Treatment Plants under Ministry of Education

**Consultancy & Capacity Building**



Water Operators' Partnership with PDPAL Banjarmasin

Moving forward, IWK will continue to deliver efficient and effective sewerage services to the nation with an aspiration to be a sustainable company.

**01**  **FINANCIAL SUSTAINABILITY**

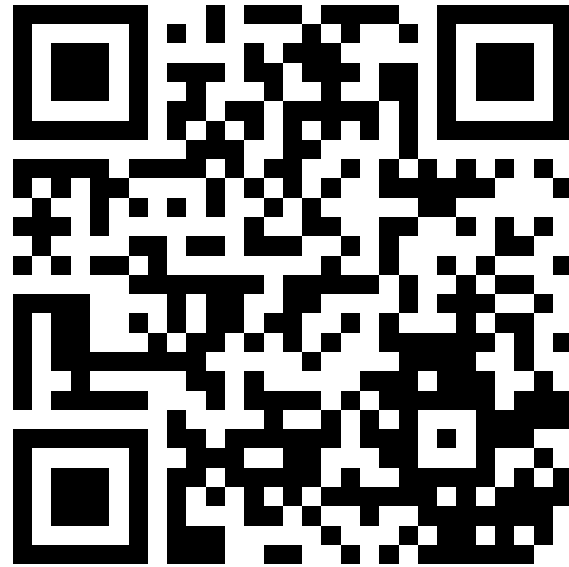
**02**  **OPERATIONAL SUSTAINABILITY**

**03**  **ENVIRONMENTAL SUSTAINABILITY**

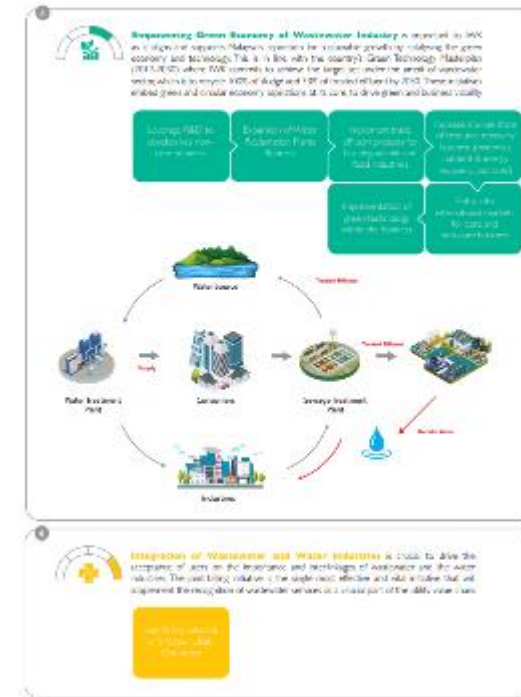
 **SUSTAINABLE DEVELOPMENT GOALS**



# Learn more about our achievements and sustainability initiatives through our Sustainability Report



The report is available for download via the code above or via <https://www.iwk.com.my/sustainability-report>



A large, dynamic splash of water in a deep blue color, moving from the top left towards the bottom right, creating a sense of motion and freshness.

# THANK YOU

**Indah Water Konsortium Sdn Bhd**

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