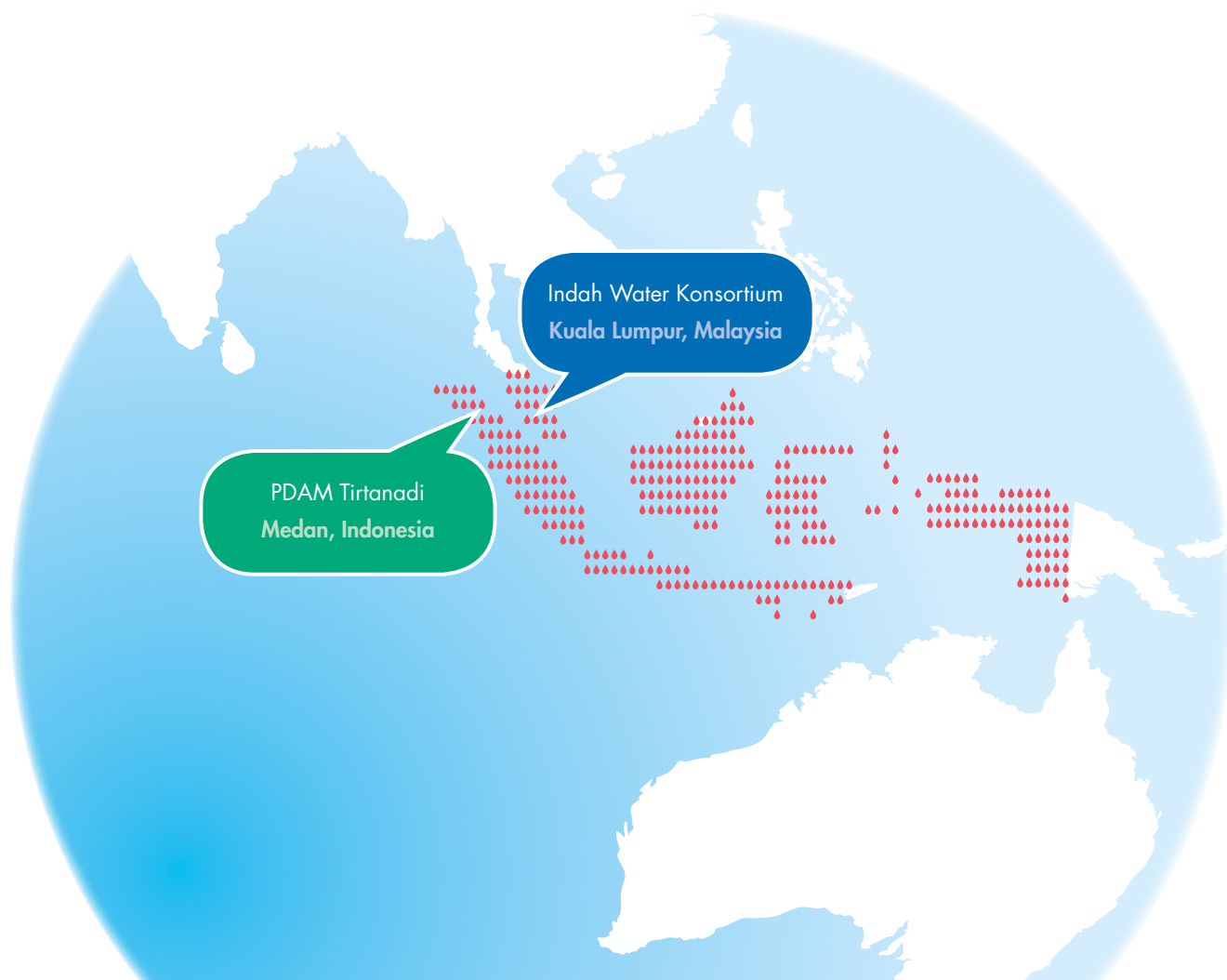


# Water Operators' Partnerships in Asia



## Case Study II



PDAM Tirtanadi  
Medan, Indonesia

Indah Water Konsortium  
Kuala Lumpur, Malaysia

Water Operators' Partnerships in Asia  
**Case Study II:** PDAM Tirtanadi and Indah Water Konsortium

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## Introduction

A water operators' partnership (WOP) is any kind of association between water or sanitation operators conducted on a non-profit basis with the aim of developing capacity. These partnerships are being promoted as a way of helping the world's public water and sanitation operators to sustainably deliver adequate water and sanitation for all.

This report presents three interesting Case Studies on water operators' partnerships in Asia. The aim is to provide readable and accessible reports on WOPs in practice – how they work, and what kind of difference they make. The authors have looked at how the partnerships were set up, implemented and monitored; the changes and improvements they brought about in the partner utilities; and their impact – both achieved and anticipated – on service delivery, future investment, and replication.

These studies were conducted for the Global Water Operators' Partnerships Alliance (GWOPA), hosted by UN-HABITAT, under our obligation as the United Nations city agency to help the world meet the water and sanitation target of the Millennium Development Goals.

As part of our World Urban Campaign for better cities, we consider the partners doing this excellent and vital work as city changers making a real difference on the ground for many, many households and in many countries.

It also forms part of our remit to share and promote knowledge and understanding of water operator partnerships. Together with GWOPA's growing online database of WOP profiles, the case studies help fill the huge knowledge gap around this important and high-potential practice. They aim to shed light on how the partnerships are currently carried out, what works, what doesn't, and how they can be improved for greater impact and wider adoption.

Indeed, the WOPs (including what some refer to as public-public partnerships) are being implemented by a growing number of organizations around the world, and they vary greatly in their scope, form and content.

Those presented here are not meant to be taken as prototypes or best practices, but as a sampling of the diversity of not-for-profit partnerships possible between water and sanitation operators.

It is our fervent hope that the excellent partnerships presented here will inspire more operators to take up the practice, learn some lessons, and also help financial supporters and facilitators build more effective partnerships.

## Acknowledgements

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## Key facts

### Partners

Indah Water Konsortium – **Kuala Lumpur, Malaysia**  
PDAM Tirtanadi – **Medan, Indonesia**

### Facilitator

USAID through ECO-Asia – Waterlinks

### Approx. cost

USD 32,000

### Aim

To increase the number of households connecting to Medan's city sewerage system

### Approach

Sanitation promotion using USAID 10-Step Promotion Program Toolkit, staff training

## Key facts

Eight months

**Duration**

More than 4,000 new connections as a result of water operators' partnership

**Results**

Capacity raised in PDAM Tirtanadi to improve sanitation strategy and management on behalf of the community

**Long-term outlook**

Continuation of partnership, IWK engaging in further WOPs in Asia; PDAM Tirtanadi has adopted new practices; toolkit has been adapted for use in other Asian countries (Philippines, Vietnam)

**Success indicators**

## The background

Medan, capital North Sumatra Province, is Indonesia's fourth largest city after Jakarta, Surabaya and Bandung. The population of Greater Medan is 4.14 million.

Medan's central city wastewater system was built under two successive Asian Development Bank projects, beginning in 1984. Developed in three phases, the system serves 572,700 people. But by October 2008, the total number of household connections was still under 11,500, serving only 57,500 people. The Cemara Sewage Treatment Plant was then using only 27 per cent of its design capacity of 60,000 cubic metres per day. Despite recognition by politicians, local officials and community leaders of the need for better sanitation services, residents remained slow to connect to the wastewater system.

To increase coverage, the City Government of Medan decided to develop a new city-wide sanitation strategy. Helped by the USAID Environmental Services Program and the Asian Development Bank funded Metropolitan Sanitation Management and Health Project, Medan City set out sanitation priorities, including plans to improve Medan's wastewater system.

The City was able to finance the plan with Asian Development Bank funds earmarked by the Central Government for wastewater system improvements in ten Indonesian cities, including Medan. In 2008, the Indonesian Ministry of Public Works set aside IDR 5.0 billion (USD 600,000) to help Medan increase wastewater collection coverage. The City

Government of Medan's sanitation working group, POKJA Sanitasi, took responsibility for getting people to connect to the network. The Ministry promised further funds for Medan's wastewater system if the city could demonstrate increases in wastewater service coverage.

USAID promotes and facilitates water operators' partnerships in Asia through WaterLinks, a platform it runs in collaboration with the Asian Development Bank and the International Water Association to enable the transfer of best practices, expertise and technology through not-for-profit peer exchanges.

As far back as 2005, USAID had sponsored technical assistance visits by Medan officials to Indah Water Konsortium Sdn Bhd (IWK) in Malaysia. In 2008, USAID supported a water operators' partnership agreement with IWK as mentor and PDAM Tirtanadi Provinsi Sumatera Utara, Medan's water, wastewater and sewerage service provider, as recipient. The principal objective of the partnership was to increase connections to Medan's sewerage facilities by stimulating demand for sanitation services, including willingness to pay ■



Facilities at IWK Technical Training Centre include mock sewer lines used for sewer maintenance training

## The partners

PDAM Tirtanadi is a water and sanitation service provider owned by the Provincial Government of North Sumatra in Indonesia. It was founded in 1905 as a Dutch company, initially to provide water supply services. In 1991 it was given the mandate to include wastewater services, taking over wastewater operations from the local government in 1995. The utility is responsible for providing water supply and wastewater services for Medan and nine neighbouring cities and municipalities. Both connection fees and wastewater tariffs are heavily subsidized by the City of Medan<sup>1</sup>. Bill collection efficiency is high at 97 per cent with almost all sewerage services customers also connected to PDAM Tirtanadi's water supply distribution network.

Indah Water Konsortium is Malaysia's national sewerage company. It is wholly owned and partially subsidized by the Federal Government which took it over from an unsuccessful private operation in 2000. The Ministry of Finance owns the assets under a Malaysian legal arrangement for holding corporate assets on behalf of the public. IWK operates in most states of Malaysia and is responsible for providing sewerage services for over half the country. It uses media campaigns and public outreach to increase awareness and willingness to pay among its customers. IWK has excelled in developing local and regional linkages to share best practices and has provided training to utility staff from many Asian countries.



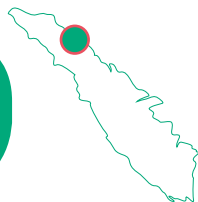
Members of Medan's Joint sanitation team, composed of PDAM and Medan City Government employees.

<sup>1</sup> Connection fees cost households IDR 100,000 (around 11 USD) with the City contributing an additional IDR1.2 million (1.55 USD). Monthly tariffs are IDR 20,000 (approx .2 USD). In total, the City of Medan subsidizes sanitation in the order of 1Billion IDR (110,000 USD) annually



## The partners

### PDAM Tirtanadi



#### Location

Medan, Indonesia

#### Population

4.14 million

#### Populations Served

57,500 (by sewerage)

#### Services

Water supply and waste water services

#### Service Area

Medan City and 9 surrounding cities

#### Ownership

Provincial Government of North Sumatra

#### Employees

29 (in sewerage division)

#### Sanitation Coverage

1% of total population

#### Assets

1 sewage treatment plant  
130 km<sup>2</sup> of sewer lines  
5 pumping stations

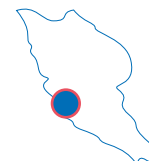
#### Service Connections

11,500 sewer connections

#### Challenges

Low waste water tariffs to cover expenses,  
Non-revenue water, services to low-income  
households, wastewater collection and services

### Indah Water Konsortium



#### Location

Kuala Lumpur, Malaysia

#### Population

28.25 million

#### Populations Served

17.5 million

#### Services

Sewerage and septage services

#### Service Area

Most states of Malaysia

#### Ownership

National Sewerage Company of Malaysia

#### Sanitation Coverage

62% of total population

#### Assets

5750 public sewage treatment plants  
13400 km<sup>2</sup> of sewer lines  
668 pumping stations

#### Special

Known for its effective awareness campaigns for  
creating sanitation demand, Model in Region

## The partnership agreement

IWK sent a team to Medan in August 2008 to assess its central wastewater system. The team found a situation very similar to that in Malaysian cities 15 years earlier, with most people's homes unconnected, sparse sewer networks, unregulated development, yet with existing wastewater collection and treatment capacities largely unutilized.

A joint work plan was developed to expand sanitation service coverage in Medan and in late 2008, IWK and PDAM Tirtanadi signed a formal memorandum to start the water operators' partnership ■

### WOP Objectives

- 1 Greater community understanding of benefits of sewerage services awareness and readiness to connect to the system.
- 2 Increased capacity of the PDAM Tirtanadi and Medan City Government staff to manage zoning priorities, government and private partnerships and scheme development.
- 3 Improved coordination with Medan City Government on enabling policies.
- 4 More sewerage customers connected – 300+ by July 2009

The water operators' partnership was implemented over an eight-month period, from December 2008 to July 2009. The partnership culminated in the formal launching of the Medan Sanitation Promotion Campaign on August 17<sup>th</sup>, 2009 in Medan.

At the start of the partnership, PDAM put in place a sanitation team made up of 20 staff from PDAM Tirtanadi and 10 from five Medan City Government departments. The composition of the team supported the water operators' partnership objective of improving coordination between the Utility and the City and helped ensure the water operators' partnership was carried out with the full participation of both partners.

Most activities were conducted during visits of IWK staff to Medan. Members of the Medan Sanitation Team also participated in a study tour to IWK and its training centre in Kuala Lumpur in February 2009.

The water operators' partnership was organized chiefly around the development and implementation of a sanitation promotional campaign for Medan. IWK led the Medan team through the *Ten-Step Promotion Program Toolkit*, developed and, at the time of the water operators' partnership being field-tested, by USAID to help service providers design and carry out water, sanitation and hygiene promotion campaigns. The ten steps provided a framework for the water operators' partnership, and guided many of its activities.

An important initial event in the promotional campaign was attended by 30 participants to review Medan's wastewater management master plan, introduce the promotional toolkit and plan the proposed work. The President Director of PDAM Tirtanadi and the General Manager for Engineering and Planning of IWK signed a partnership agreement, followed by a press conference.

In addition to its support for Medan's promotional campaign, IWK helped PDAM conduct 'road sweeps' to identify priority customers for connection, and training was provided to PDAM and Medan City Staff on sewerage management and planning, development control policies, connections to public sewers, connection types, construction controls and registration of contractors laying sewer.

The Medan City Government launched its sanitation promotion campaign on 17 August 2009 to coincide with Indonesia's independence celebrations. The event attracted hundreds of residents. City workers distributed sanitation booklets, quizzed the audience on the benefits of a sewer connection and awarded prizes such as educational t-shirts to enthusiastic winners. Following public outreach after the launch, 750 households, representing about 3,500 residents, signed up for sewer connections ■

## Partnership outcomes

IWK recommended raising awareness among consumers and targeting high-income groups for connections as a first priority. Similar recommendations were made for the northern and eastern parts of the city connected to the Cemara Sewage Treatment Plant at an early stage. For eastern parts of the city, IWK advised PDAM Tirtanadi to consider using trenchless technology to connect these areas.

Based on findings during the “road sweeps” IWK suggested a more rapid cost recovery strategy with focus on new property connections and commercial premises like hotels, offices and shopping complexes which would generate a higher income for PDAM Tirtanadi than individual residential premises.

IWK provided recommendations to help Medan improve quality in local contractors’ works for sewerage pipe laying. Training for contractors was demonstrated at the IWK Training Centre in Kuala Lumpur where members of the Medan Sanitation Team observed IWK training activities in sewer laying and construction works.

Despite the financial advantages in attracting more commercial customers, the Medan team chose to focus first on individual household connections. This was a social and political decision as much as a technical one, as most of the unused sewer capacity was in areas where many houses were still unconnected. Promotional materials were developed in the local language, pre-tested and launched on Indonesian national day. Within five months of the launch, 750 additional households connected to the sewerage system, well above the target of 300 ■



Households targeted by the promotion campaign

## Impact and next steps



Grit screen and chamber at the Cemara Wastewater Treatment Plant

The partnership saw 750 households connected to the sewerage system. Then, thanks to the campaign with USAID support in 2010, another 400 households were connected. In 2011, PDAM Tirtanadi and the City of Medan reached their target of 3,000 further connections. The Medan Sanitation team worked with a local non-governmental organization with communications expertise, which trained additional promotion team members, including young Chinese people to work in Medan's Chinese communities. Radio and print media was used to support the promotion campaigns.

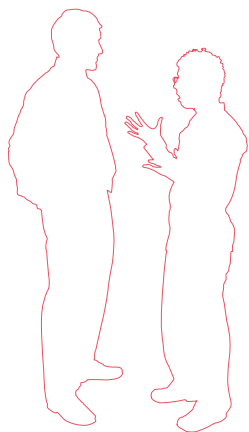
Partly as a result of the awareness campaign and the results achieved, local and central government are now more engaged in supporting sewerage development. The City Government of Medan is providing increased funds to raise awareness and demand for household connections to the sewerage system. The promotion budget was IDR 100 million in 2010 and IDR 300 million for 2011. The Ministry of Public Works has promised more funds to increase coverage for Medan's sewerage system.

PDAM Tirtanadi is now reviewing local guidelines and policy on the development of its sewerage system. It is following the IWK example of establishing standards and controls for local sewer laying contractors to ensure proper and satisfactory connections for the communities. PDAM Tirtanadi is also assessing what can be done to monitor contractors via regulation.

There is a proposal to extend the partnership to include further technical training of PDAM Tirtanadi staff at the IWK Technical Training Centre in Kuala Lumpur.

In 2010, USAID supported two more partnerships with IWK, and it is now working with Maynilad Water Services, Inc. to build sewerage capacity in the Philippine capital, Manila. IWK has also teamed up with the Vietnamese Sewerage and Drainage Company in Hai Phong to increase demand for septic tank desludging services ■

## What the Partners say



### PDAM Tirtanadi

- PDAM Tirtanadi gained experience in conducting educational and site tours such as those at PDAM Tirtanadi's Cemara Sewage Treatment Plant to increase awareness among the public and government agencies on the benefits of connecting to sewerage services;
- adopting best practices for planning and development of sewerage services and infrastructure; e.g. guidelines on connections to public sewers, sewerage planning and management concepts;
- adopting best practices for development control policies and guidelines to ensure that quality sewerage assets were built for the public; e.g. registration of contractors for sewer laying works; and using the media to attract government and public support for sewerage development activities.

### Indah Water Konsortium

- IWK learned how to use and adapt the toolkit in a new operating environment;
  - enriched the skills and knowledge of its staff and motivated them to find appropriate solutions.
- It expanded expertise in extending sewerage support in the region; enhanced its corporate social responsibility programme by contributing to developing countries outside Malaysia.

### USAID ECO-Asia

- Field-testing the Toolkit. The Medan experience was used to develop and improve the Toolkit for application elsewhere.

Good collaboration between IWK and PDAM Tirtanadi was key to the successful implementation of the partnership work plan within the eight-month project period. USAID provided the essential facilitation and technical inputs, especially the Toolkit. The Medan Sanitation Team in itself was an example of successful collaboration between local government (Medan City Government) and a water and wastewater service provider (PDAM Tirtanadi).

**The following factors were also important:**

### **Matching mentor and recipient**

IWK and PDAM Tirtanadi were well matched. IWK had had the experience of overcoming the same problems that PDAM Tirtanadi – getting people and establishments to connect to its sewerage system. IWK had more than 15 years experience in using media and public outreach campaigns to solve these problems. The earlier engagement between IWK and PDAM Tirtanadi under the USAID Environmental Services Programme gave them a better understanding of one another’s respective capabilities and problems, allowing them to develop a more appropriate joint work plan and reducing start-up time.

### **Mentor experience and training resources**

With its experience in using media and public outreach to increase customer awareness and willingness to pay, IWK was also an experienced mentor able to help other operator with similar problems. IWK’s Technical Training Centre near Kuala Lumpur provides training for managers, supervisors, contractors and operators, for the wastewater sector, including the use of new equipment and technology, and has the space and resources to accommodate external trainees as well.

### **Partner commitment**

Designated senior staff from IWK and PDAM Tirtanadi showed commitment to the water operators’ partnership. The Manager for Capacity Development coordinated the activities for IWK while the Head of Public Relations did the coordination for PDAM Tirtanadi. The Head and Deputy Head of the Sewerage Unit of PDAM Tirtanadi led the activities for the Medan Team. The Managing Director of PDAM Tirtanadi was at every key meeting. IWK availed its senior managers to mentor the Medan team; the Manager for Communications Department led the awareness promotion campaign; the Head of Engineering and Environmental Services led the master plan review and the Senior Manager of the Certification Unit presented IWK’s best practices.

### **Government support**

The Medan City Government collaborated in the Medan Sanitation Team with active members from POKJA Sanitasi, its sanitation working group, in five departments – housing settlement, planning, health, clean environment and public works. The Provincial Government of North Sumatra and the Central Government were supportive and provided funds to help ensure that all customers who are willing to connect can be connected to the sewerage network.

## Success factors

### Facilitation and funding

With special thanks to USAID, its Waterlinks partner, and the Asian Development Bank, the funding ensured success and technical support for use of the Toolkit.

### Confidence building

The IWK and Medan Sanitation Team were successful in developing a good relationship that has extended beyond the first water operators' partnership period.

### Communications

In this water operators' partnership it was a great help that there were many terms common to the Bahasa language as used in Malaysia and in Indonesia. This was important in developing communications materials and mentoring use of the Toolkit.

The ECO-Asia 10-Step WATSAN Promotion Toolkit, while still being pre-tested, was used in developing the promotion campaign and proved to be the right tool for the purpose



Elevated water tank, Medan



## Partners' contributions

Source	Type of input	Value
IWK	Professional time Use of facilities Logistics	4,821 <sup>USD</sup>
PDAM Tirtanadi	Logistics Workshop Organization Promotional material production Professional time	12,600 <sup>USD</sup>
Asian Development Bank	Facilitation support International travel Accommodation Training events	14,254 <sup>USD</sup>
<b>Total value of WOP</b>		<b>32,000<sup>USD</sup></b>

# Timeline

- USAID Eco-Asia WOP agreement

Spring 2008

- USAID regional workshop

April 2008

- Initiate discussions, field assessment, and stakeholder meetings

Aug 2008

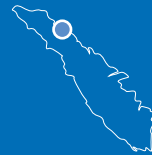


A visit to Medan



- Start of WOP
- Workshop – wastewater management master plan and 10-step toolkit introduction
- MOU signing

Dec 2008



A visit to Medan



- Training – promotion toolkit and review of plans

Feb 2009



A visit to Kuala Lumpur



- Preparation promotional campaign plan and materials

March 2009



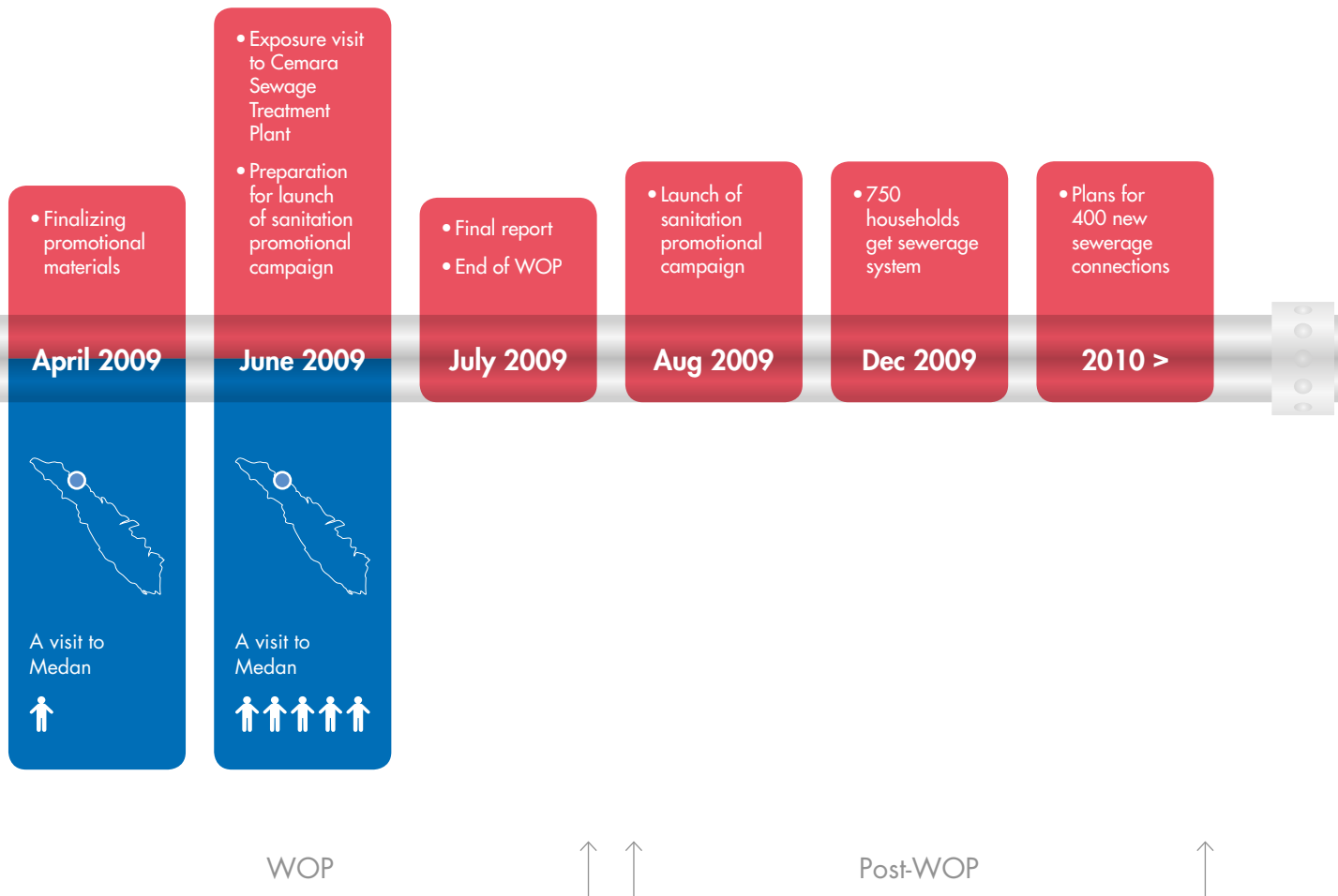
A visit to Medan



Preparation

WOP

# Timeline



This timeline is not exhaustive, but highlights some key events in the WOP.

## Sample study tour schedule

### Medan team study tour to IWK

Sanitation Promotion Planning and Training –  
Phase 1

Kuala Lumpur, Malaysia, February 3-5, 2009

### Objectives

The goal of this exchange program is for PDAM and POKJA in Medan and IWK to jointly:

- Review the sanitation master plan for Medan, IWK to provide comments;
- Review best practices derived from IWK policies and management;
- Review and conduct orientation on the 10-Step WATSAN promotion toolkit;
- Prepare initial sanitation promotion plan for Medan using the 10-step WATSAN promotion toolkit;
- Conduct observation tour at Taman Kantan Permai to understand the public awareness program of IWK;
- Review and learn from IWK's operations and maintenance issues at the Bukit Jalil Training Centre; and
- Plan for downstream activities.

### Participants

3 officials from PDAM Tirtanadi (Water Utility);  
2 officials from Medan POKJA (Medan City  
Government Sanitation Working Group)

### Event Format

Moderated discussions will be held in the whole three days with lectures and case presentation demonstrating IWK's experience. A site visit will also be conducted to showcase IWK's facilities and operations.

### Language

Bahasa Malaysia/Indonesia

### Location

IWK Headquarters and Bukit Jalil Technical  
Training Centre, Kuala Lumpur

## Agenda

### Tuesday – 3 February 2009

Time	Activity
9.00 – 10.30 am	Master Plan Review
10.30 – 10.45 am	Tea break
10.45 – 1.00 pm	(continued) Master Plan Review
1.00 – 2.00 pm	Lunch
2.00 – 3.30 pm	Best Practices on IWK Policies and Management
3.30 – 3.45 pm	Tea break
3.45 – 5.00 pm	Best Practices on IWK Policies and Management
5.00 pm	End session day 1

### Wednesday – 4 February 2009

9.00 – 10.00 am	10 Steps Promotion Toolkit Review and Training Workshop Steps: 3, 4, 5, & 6
10.30 – 10.45 am	Tea break
10.45 – 1.00 pm	(Cont.) 10 Steps Promotion Toolkit Review and Training Workshop Steps: 3, 4, 5, & 6

1.00 – 2.00 pm

Lunch

2.00 – 3.30 pm

10 Steps Promotion Toolkit Review and Training Workshop  
Steps: 7, 8, 9, & 10

3.30 – 3.45 pm

Tea break

3.45 – 5.00 pm

(Cont.) 10 Steps Promotion Toolkit Review and Training Workshop  
Steps: 7, 8, 9, & 10

5.00 pm

End session day 2

### Thursday – 5 February 2009

9.00 – 10.00 am

Public Awareness Program  
Observation Tour at Tmn Kantan Permai

10.15 – 10.30 am

Tea break

10.30 – 1.00 pm

Bukit Jalil Training Centre –  
Operations & Maintenance Issues

1.00 – 2.00 pm

Lunch

2.00 – 3.30 pm

Summary

3.30 – 3.45 pm

Tea break

5.00 pm

End of training



Kuala Lumpur

Medan





## Abstract

Water Operators' Partnerships (WOPs) are peer support relationships between two or more water or sanitation operators, carried out on a not-for-profit basis in the objective of capacity development. This is one of a series of three impact-oriented case studies conducted on WOPs in Asia. It is intended for water and sanitation service providers, governments, development banks, donors, WOPs facilitators and all who are interested in gaining a better understanding of this solidarity-based approach to helping public operators improve their capacity to sustainably deliver water and sanitation services for all.



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