



Metropolitan Waterworks Authority (MWA)

Status :

- State Enterprise under MWA. Act.**
- Wholly belongs to the government**
- Subject to the Ministry of Interior**

Metropolitan Waterworks Authority (MWA)

Mission :

- To assume responsibility for supplying water to customers in the Metropolitan area.

Regulator : none

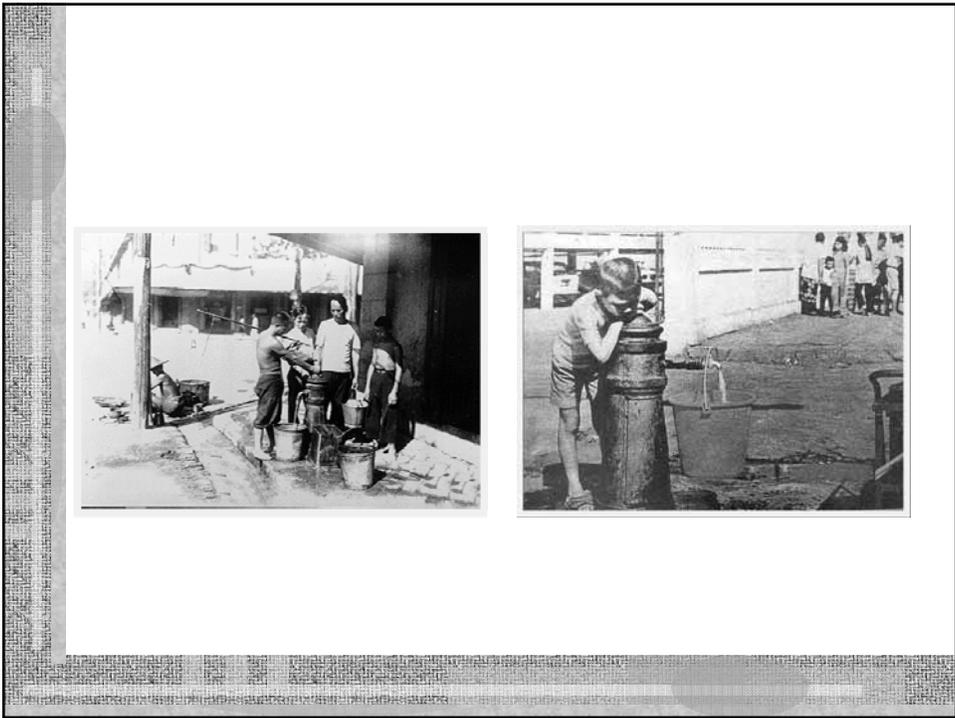
- Board of Directors
- Appointed by the cabinet

Metropolitan Waterworks Authority (MWA) Back Ground

- Establishment** : Year 1967 under MWA ACT
- Responsible Area** : 3,192 sq.km.
- Population** : approx. 3.0 millions in 1967
(approx. 8.1 millions in 2005)
- Existing Water Supply
Facilities (1967) :**
1. Sam Sen Water Treatment Plants, capacity 550,000CMD.
 2. Thonburi Water Treatment Plants, capacity 170,000 CMD.
 3. Deep Wells 150,000 CMD.
 4. Four Pipe Networks

Served Area	: 240 sq.km. (7.5 %) in 1967 1,855 sq.km. (58 %) in 2005
Population benefited from Individual connections	: 1.8 millions (60%) : 7.3 millions (90%) in 2005
Non Revenue Water (1967)	: > 50%
	-System Leakage -Illegal Connections -Public Stand Posts -Ineffective Metering -Public Use -etc.
	(apporx. 30.5 % in 2005)





Short Term Remedial Plan

- ***Construction of Deep wells***
- ***Extension of Pipe Networks***
- ***Maintenance and Repairation of Existing Facilities***

Long Term Water Supply Improvement Plan

- **Preparation of Master Plan**
- **Construction / Expansion of Raw Water System**
- **Construction of New Water Treatment Plant**
- **Construction of Water Supply Transmission system**
- **Maintenance and Repairation of Existing Facilities**
- **Construction of Distribution**
- **Pump stations and Reservoirs**

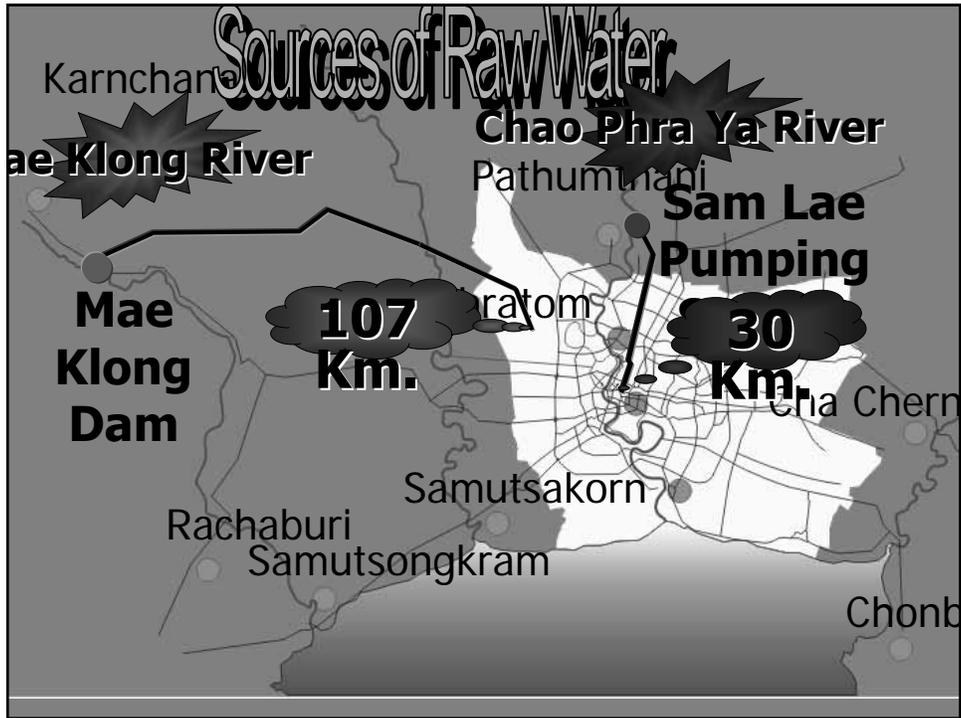
Long Term Water Supply Improvement Plan

- **Extension of Pipe Networks :**
 - **Trunk Mains**
 - **Distribution Pipelines**
- **Improvement of Water Service Facilities :**
 - **Communication Pipe (Service Pipe)**
 - **Meters**

Bangkok W.S. Projects

Objective :

To provide reliable public water supply of save water of good quality with sufficient quantity and at adequate pressure at the lowest possible cost.



Bangkok Water Supply Improvement Projects

Projects	Construction Period	Project Cost (Mil. Baht)	Area Served (Sq.Km)		Population Served (Mils.)	
				%		%
	1967		240	7.5	1.8	60
First Bangkok Water Supply Improvement	1974 - 1979	4672.9	290	9.1	2.8	46.6
Second Bangkok Water Supply Improvement	1980 - 1986	5489.6	475	14.9	3.6	54.3
Third Bangkok Water Supply Improvement	1985 - 1992	9846.1	740	23.2	5.4	75.7
Fourth Bangkok Water Supply Improvement	1991 - 2000	6706.5	1240	38.8	6.3	84.2
Fifth Bangkok Water Supply Improvement	1992 - 2002	6972	1450	45.4	6.7	86.3
Network System Improvement	1994 - 2003	4690.1	-	-	-	-
West Bank Raw Water Canal	1994 - 2002	5611.7	-	-	-	-
Sixth Bangkok Water Supply Improvement	1995 - 2003	10113	1480	46.4	6.9	86.9
Seventh Bangkok Water Supply Improvement	1999 - 2006	25177.3	1855	58.1	7.5	89.9
Eight Bangkok Water Supply Improvement	2007 - 2012	7800.0	2035	63.7	8.3	95.5

Scope of Ongoing Project

7th BKK. WS. Improvement Project

- 1. Expansion of Bangkhen Water Treatment Plant, 400,000 CMD.**
- 2. Expansion of Mahasawat Water Treatment Plant, 400,000 CMD.**
- 3. New Samlae Raw Water Pump Station**
- 4. Transmission Pump Station at Bangkhen**
- 5. Water Transmission Tunnel Ø2.3 – 3.4 m. diameter at the total length of 40 km.**

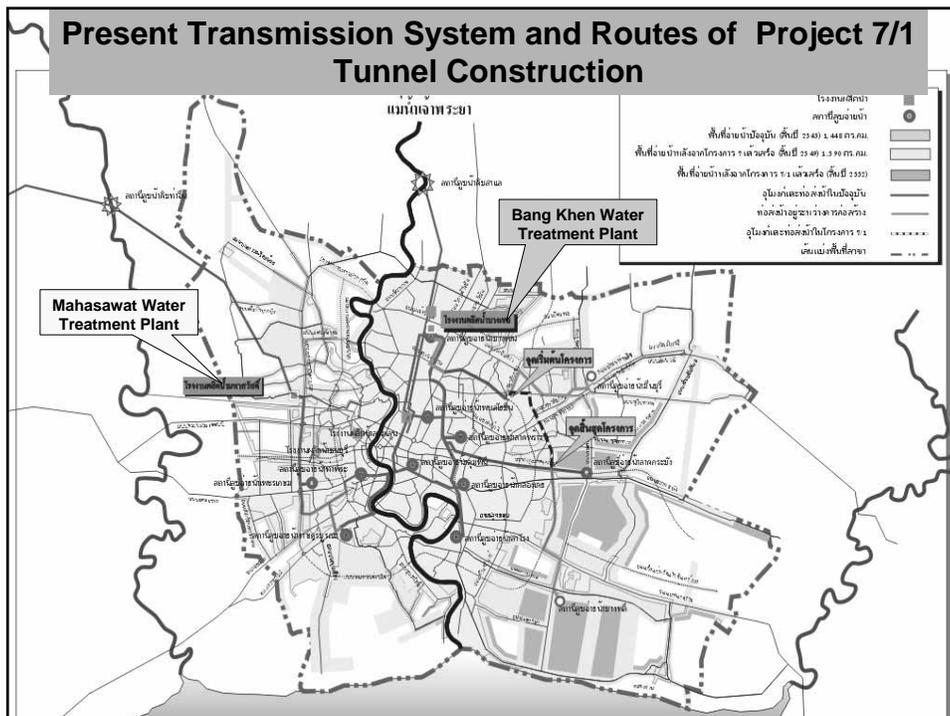
Scope of Ongoing Project

7th BKK. WS. Improvement Project

- 6. Minburi Distribution Pump Station**
- 7. Bangpli Distribution Pump Station**
- 8. Installation of Additional Pumps at Bangkhen Raw Water Pump Station and Phetkasem Distribution Pump Station**
- 9. Installation of Trunkmains and Distribution pipelines, approximately 1,000 km.**
- 10. Rehabilitation of Existing Tunnel, 14 km.**

Additional 7th BKK. WS. Improvement Project (2005 – 2008)

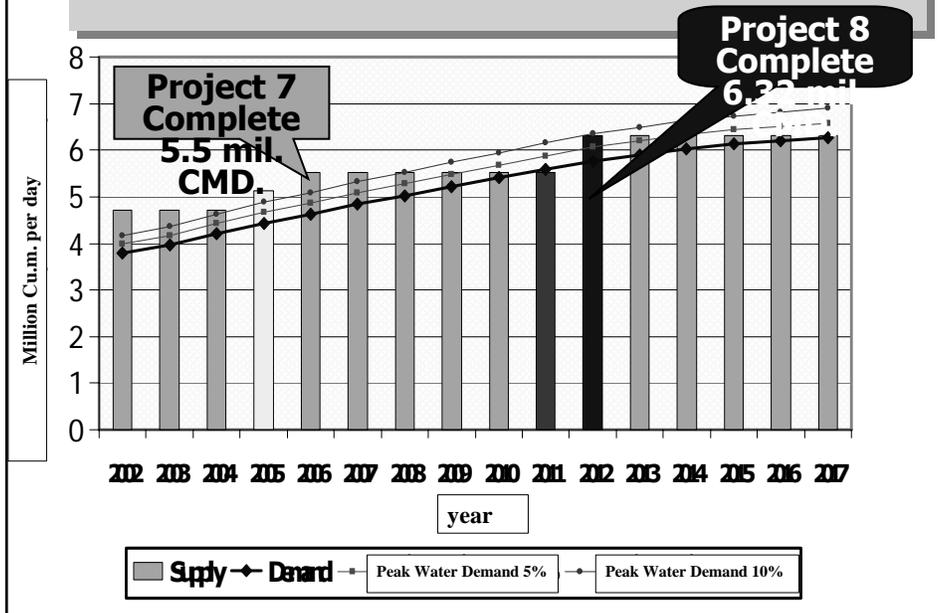
- **Water Transmission Tunnel ϕ 3.2 m., Length 13 km.**
- **Installation of one unit of pump at Bangkhen
Transmission Pump Station No.3.**
- **Installation of Pipelines, approximately 400 km.**

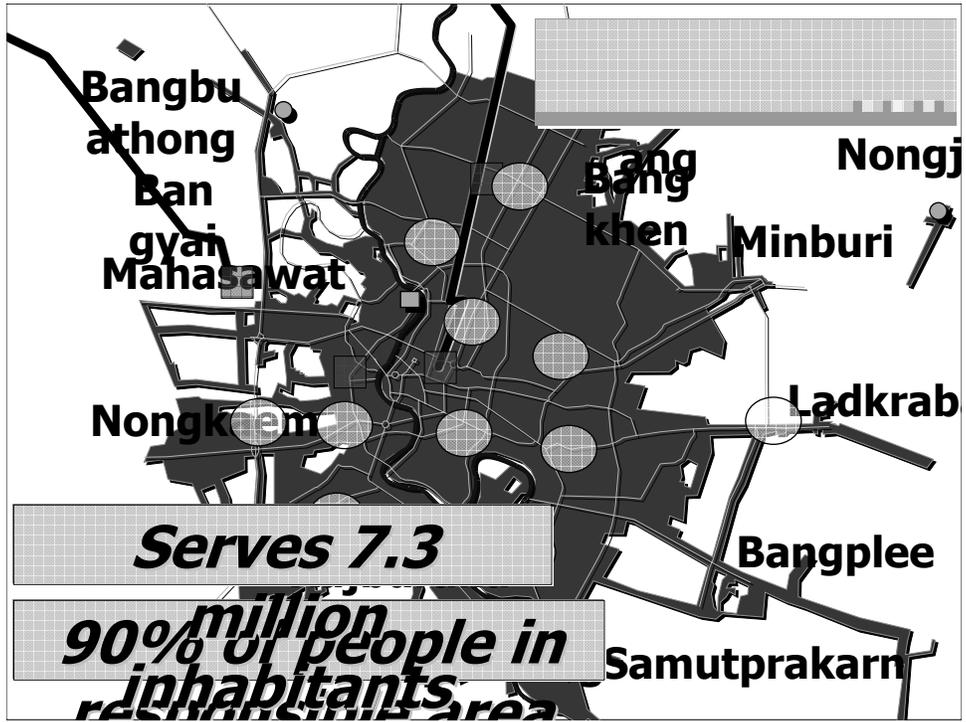


Production System, Transmission System and Trunk Mains



Water Demand and Production Capacity of MWA



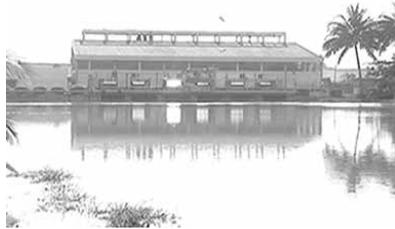
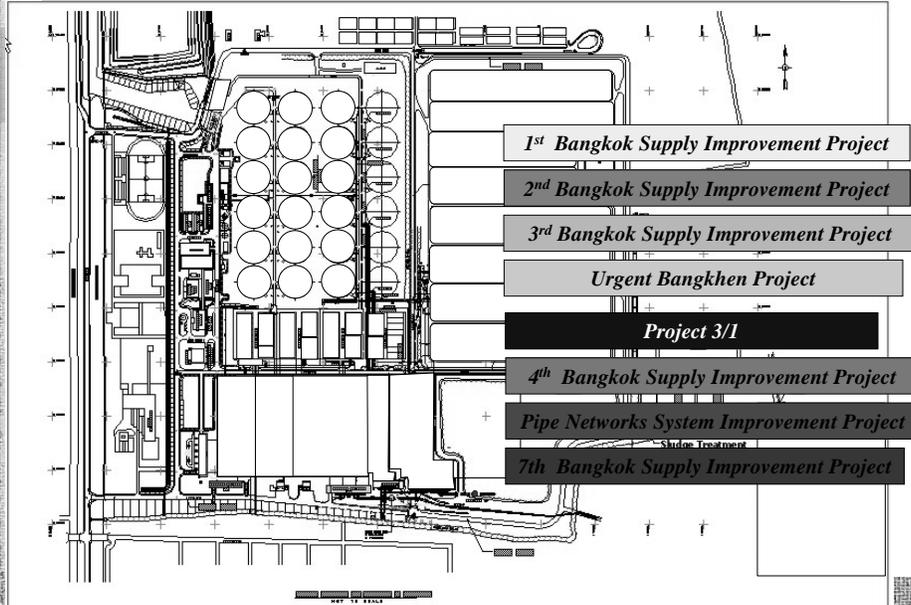




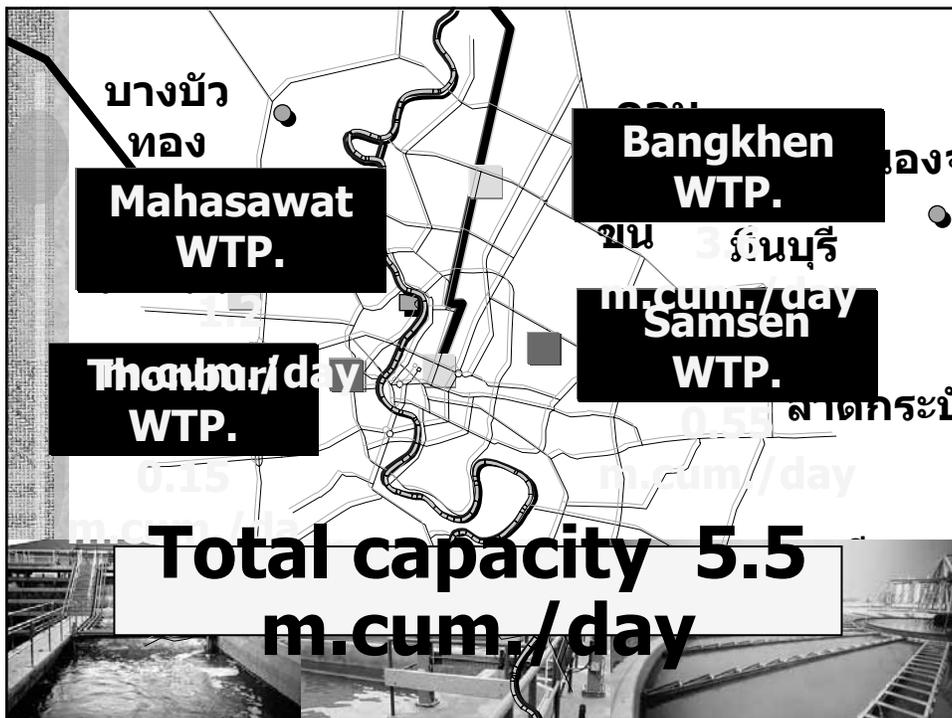
Sam Lae Pumping Station

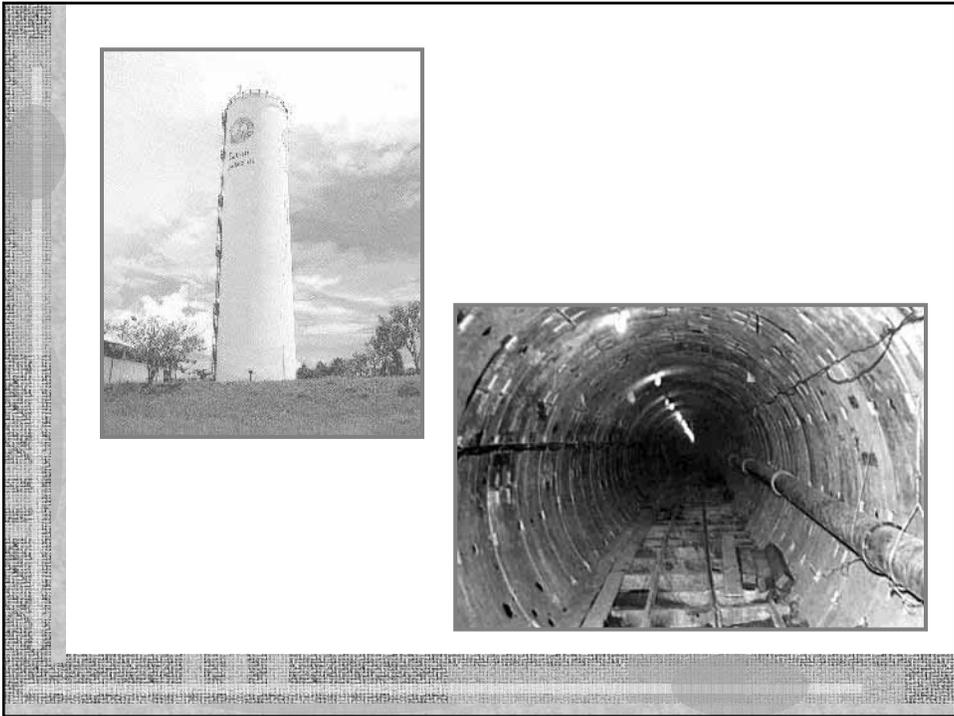


Construction in Bang-Khen Water Treatment Plant



Mahasawat Water Treatment Plant





Some of Regulator's policy

- **Make more profit**
- **100% Water Coverage**

Business Performance 2005

- **Water Coverage** 1.68 million connections
- **Average Water Production** 4.4 million cum/day
- **Non Revenue Water** 30.5 %
- **No. of officers** 4,486 persons
- **Incomes** 15,336 million Baht
- **Net Profit** 4,686 million Baht

Water TARIFFS (1999 to date)

Residence		Commerce, Government Agency, State Enterprise, Industry and others	
Volume (cu.m.)	Water Tariffs (Baht/cu.m.)	Volume (cu.m.)	Water Tariffs (Baht/cu.m.)
0-30	8.50 (Not less than 45.00 Baht)	0-10	9.50 (Not less than 90.00 Baht)
31-40	10.30	11-20	10.70
41-50	10.35	21-30	10.95
51-60	10.68	31-40	13.21
61-70	11.00	51-60	13.54
71-80	11.33	61-80	13.86
81-90	12.50	81-100	14.19
91-100	12.82	101-120	14.51
101-120	13.15	121-160	15.16
121-160	13.47	161-200	15.49
161-200	13.80	Over 200	15.81
Over 200	14.45		

Public Service Obligations (PSO)

MWA's investment strategy :

- Financial Internal Rate of Return (FIRR) should be higher than Weighted Average Cost of Capital (WACC)

For P.S.O. : (FIRR < WACC)

- Set up priority
 - 1st priority ; 3 or over connections per 100 meters of pipe length
 - 2st priority ; Lower than 3 connections per 100 meters of pipe length
- P.S.O. cost not much affected financial plan :
approx. 100 – 200 million Baht / year.