



การประปานครหลวง
METROPOLITAN WATERWORKS AUTHORITY

Annual Report 2018 Metropolitan Waterworks Authority



READY TO DIGITAL MWA TO SUSTAINABILITY



DIGITAL
MWA
กปน. ยุคดิจิทัล



READY TO DIGITAL MWA TO SUSTAINABILITY

Annual Report 2018 [Metropolitan Waterworks Authority](#)



READY INNOVATION

We are committed to managing and developing into a modern **organization** along with the development of potential and modern tools to support economic and social development.



SERVICE EXCELLENCE

We are committed to developing service, creating the availability of information systems to expand service coverage for people to use clean and safe water together with convenient and fast services.



SMART ORGANIZATION

We provide services with the commitment of **personnel**, create gear cooperation in driving the organization for service excellence and develop personnel to have various skills in order to advance into an intelligent organization.

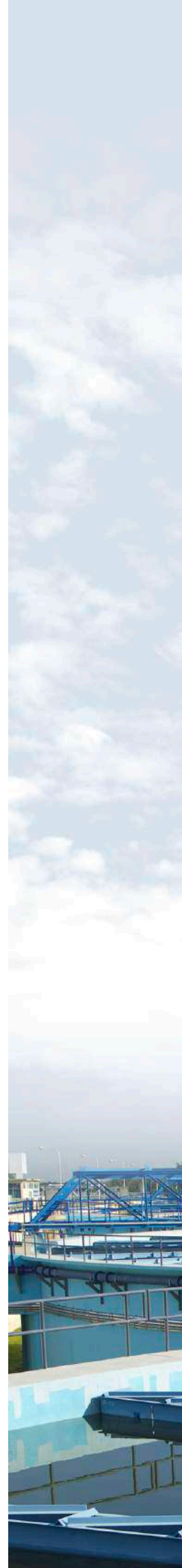


READY SUSTAINABILITY

We create sustainability for all areas, give support and take care of all aspects to support water demand in order to create happiness for our society and communities in a sustainable manner.

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DIGITAL
MWA

กปน. ยุคดิจิทัล



Ready to be “Digital MWA”

1. MWA Digital Action Plan (2017–2022)

The MWA Digital action plan (2017–2022) is a framework and guidelines for use of digital technology as a mechanism to drive to achievement of corporate objectives and goals that support MWA to be recognized as an internationally digital organization. The plan for personnel preparation has been formulated to be ready for corporate changes, such as increasing personnel's potential to enable coping with changes together with building skills in using digital technology for work. In addition, it includes digital technology plans to increase competitiveness and improve the management efficiency so that providing digital proactive services meet the needs of the customers and the public.

2. Online Bill Payment Service

The MWA has developed a new version of the customer information system (CIS), which started using on 2 May 2017. The newly developed system has supported online water payment through agents, which can accept payments from customers with overdue debts, or those with temporary suspension of water not more than 14 days. As the first online payment agent of MWA, the Big C Supercenter Public Company started its service at all 919 branches in Thailand on 19 September 2018.

3. MWA onMobile Application

MWA has developed MWA onMobile Application to be a service channel for serving customers and the public, and in the year 2018, 4 additional services were developed, consisting of

1. Receiving new connection applications
2. Receiving complaints via MWA onMobile, such as unusually high water bills, no running water, and so on
3. Scanning QR Code on water bills for payment
4. Display of unpaid electronic water bills

4. QR Code – Based Time Management

The work attendance tracking system by scanning QR Code through “My@MWA” Application is run to support the human resource work system instead of using the daily attendance sheet staff with signatures. In addition, the attendance data is integrated with the time-off system to respond to the Digital MWA policy, and the new system started on 2 May 2018 at all work units under Line of Deputy Governor (Information Technology), the units under Assistant Governor (Human Resource) and Department of Waterworks Academic Development.



5. 360-degree Leadership Competency (LC) Assessment System

The system is used for assessing the potential of management and leadership by carrying out 360-degree assessment in order to develop and strengthen personnel's capacity. The system was used to assess executives at the director level and equivalent or higher from 21 May 2018 to 29 June 2018, consisting of

1. The 4 dimensions of assessors include self-dimension, commander/supervisor dimension, subordinate dimension and colleague dimension.
2. A list of leadership competencies (LC)

6. AquaDat System

This system is used for storing important data in water treatment plants, for instance, the amount of water produced, chemical dispensing amount, electricity consumption, water quality in the water treatment plants, raw water quality, and so on. This can help reduce redundant data storage processes and increase the flexibility of data usage. There is also integration to link information related to the water production process, and this has been piloted in the production system of Bangkhen Water Treatment Plant.

7. Machine Learning (ChatBot)

MWA has conducted a study on how to apply machine learning (ChatBot) in various fields, and the results of the study can be used as guidelines to further use in automatic question answering for public service and organization staff in order to reduce the delayed service during congested hours and lessen the burden of answering questions for the agencies with insufficient staff.

8. Big Data

In response to the government policy that allows state enterprises to be pilot agencies using Big Data and Digital Transformation for driving important tasks together with collaborating in pushing for concrete results. Thus, the Digital MWA policy has used Big Data technology to increase the data value and create the Roadmap Big Data comprising the following:

1. Providing knowledge and skills for executives and corporate personnel to help them understand how to use Big Data for the organization's benefits and creating data scientists.
2. The executives are policy makers to set policies in applying Big Data technology to respond to the goals and pain points of the organization.
3. Preparing a large data analysis pilot project to increase the value of existing data in the organization by conducting an in-depth analysis to find consumers' behavior and applying the analytical results to adjust the strategy for improvement of public service.

ADD[...]SPACE Innovation

MWA has introduced a new innovation called

ADD[...]SPACE

to increase the efficiency of water meter maintenance
for maximum benefits of the people.



In addition to its main missions including exploration and procurement of raw water sources to produce and deliver water supply services in the areas of Bangkok, Nonthaburi and Samut Prakan, MWA's tasks also cover water meter service, for example, maintenance of water meters, fixing out-of-work meters, replacing a damaged meter with a new one or moving a water meter from the inappropriate location, and changing the meter when its usage period is due. **These services are to ensure the accuracy of main water measuring devices for the benefits of consumers.**

So far, the problems are often caused by operations including water meter maintenance, changing a meter following its usage period, particularly the ones with diameters of 1/2 inch and 3/4 inch, which are installed in most houses, around 90% of all water meters. This is due to the fact that the fixed installation of water meters in some areas of the operation field with space restrictions can cause the meters' joints unable to be moved. Occasionally, it is necessary to extract the cement in the work areas which may not satisfy the consumers or damage their property.

MWA has therefore developed **“water meter maintenance equipment”**
under the name **“ADD[...]SPACE”**

which is a device to increase distance and facilitate the maintenance of small water meters in some areas with limited space (unable to move water meters’ joints). The device, developed continuously for 5 models, can help increase efficiency and reduce the time in field work as well as protect water meters from damage; even more, it is another way to reduce water loss during operation.



The innovation **“ADD[...]SPACE”** won the **Golden Award** in category of Genba Kaizen, in the quality contest – Thailand Kaizen Award 2018 organized by Thai Japan Technology Promotion Association. This contest is a platform for a creative exchange along with awarding to honor those who have outstanding Kaizen works and the organizations that bring Kaizen to improve work processes, resulting in continuously higher efficiency and effectiveness.





Metropolitan Waterworks Authority (MWA)



is a state enterprise under the Ministry of interior.

It started its operation on 16 August 1967 under the Metropolitan Waterworks Authority Act B.E. 2510 (AD 1967)

with an obligation to provide raw water sources for waterworks activities, including producing, distributing and selling treated water in Bangkok, Nonthaburi and Samutprakarn, and running other businesses related or beneficial to the waterworks.

The Government's Statement of Direction for State Enterprises is comprised of 3 levels

- 1. Overall Policy for State Enterprises**
To be a mechanism which drives economic strategy and society of the nation based on effective operation in accordance with good governance principles.
- 2. Policy for State Enterprises in Public Utilities Sector**
To satisfy basic needs, promote improvement of citizens' quality of life and develop immovable property for the best benefits.
- 3. Policy for MWA**
To improve and expand waterworks system network for quality and adequacy in order to accommodate urbanization, and to develop related business to add value to the organization.



Vision

“To be a high performance water supply organization with excellent corporate governance and reach international standard”



Mission

- 1 Develop organization growth and sustainability
- 2 Implement water safety plan according to WHO standard by assuring the stability of water resource production and transmission
- 3 Deliver professional water supply service to reach and balance stakeholder needs
- 4 Improve people’s quality of life by expanding water services and societal responsibility all over Thailand

Values



QWATER

- Q** Quality
- W** Willingness
- A** Achievement
- T** Team
- E** Excellent Service
- R** Respect to Transparency

Message from the Chairman





This year MWA is currently in the process of implementing the 4th Issue of MWA Strategic Management Planning (2017-2021) in accordance with the development guidelines of the 20-Year National Strategic Plan (2018-2037) and the National Reform Plan. MWA has operated its work in compliance with the principles of good corporate governance, emphasized all aspects of continuous development, paid attention to the quality equally from the production and distribution systems to the consumers based on the transparent corporate policy with the heart of good governance. Furthermore, the MWA Board of Directors has pushed the organization to step forward with technology, creativity and innovation to implement the concept of Thailand 4.0 to the urban society expansion and provide the nation with a dynamic growth according to aspiration of the National Reform to drive the country with “security, prosperity and sustainability”.

MWA has developed work systems and services that are beyond expectations to integrate operations of the MWA Board of Directors according to the progressive policy with the operations of MWA executives, employees and contract workers for concrete driving. This involves production and delivery of quality water supply, extension of service area coverage to all communities on the basis of the Water Safety Plan : WSP - a water quality management plan applying risk management principles to make the water clean and safe from contaminants effectively. The plan consists of 3 main principles including protecting water sources from contamination, removing contaminants by means of clean water treatment, and preventing water from re-contaminating in the water distribution process in order to ensure that every drop of water is clean and safe with good quality.

In addition, we have implemented information technology systems to drive the organization (Digital MWA) under the concept Inno & S3, consisting of 4 strategies : upgrading to service excellence, stepping into a smart organization, creating corporate sustainability and clearly enhancing the organization of water supply innovation such as MWA onMobile Application by which a consumer can view the current month water bill and pay for it immediately, requesting for all services by only a smart card. Another innovation or the software namely “Leakage Yard on Cyber (Siang Sanor)” was created to practice detecting the sounds in leaky pipes that helps reduce water loss in the plumbing system, and it also won the International Innovation Awards in the field of service and problem solving from Enterprise Asia which has created an international reputation for the organization. Besides, the MWA Board of Directors has focused on digital service development that connects data networks to access consumers and the development of electronic financial management system (E-FMMWA) to improve MWA’s financial management system to become more modern and efficient by applying information technology in terms of budgeting, accounting, procurement, disbursement and resource management.

We are all ready and will not stop developing innovations for plumbing systems in order to deliver excellent service with convenience and speed according to the Digital MWA policy and raise the consumers’ quality of life in Thailand 4.0 era thoroughly and sustainably.

(Mr. Vullop Phringphong)

Chairman, MWA Board of Directors

Message from the Governor





The year 2018 was considered a year of strengthening and developing MWA at a very challenging level. The context of national development based on the government policy is in line with Thailand 4.0 strategy which requires innovation and digital technology as the main mechanism for development as well as the development of water supply service potential for stability and sustainability. These contexts and links can reflect the successful missions carried out all over the fiscal year, which consist of the following:

The water loss reduction considered the most important MWA's mission and the agenda of all MWA employees. Apparently, as of September 2018, the water loss rate was at 29.83%, and the MWA still aims to reduce the figure of water loss to 19% by 2021.

The Ninth Bangkok Water Supply Improvement Project is considered a continuous task during implementation. It aims to stabilize water supply production and link the western and eastern plumbing systems to ensure long-term stability of water transmission and distribution systems. The project duration is from 2017-2022 with total project investment of over 42,750 million baht.

To build confidence in water consumption, the Water Safety Plan is a mission to enhance MWA's water supply standards. The plan is intended to set the systems of monitoring, assessment and problem solving in a timely manner, beginning from the raw water system, production system, transmission and distribution systems as well as the service system. With regard to the plan implementation, the experts from the World Health Organization have collaborated with MWA to closely control and develop the direction of MWA's Water Safety Plan.

The Digital MWA policy is regarded as a mission for development consistent with the technological context that plays a role in everyday life of people at all levels. To provide convenient and fast service as well as to keep close to consumers, MWA has therefore developed MWA onMobile Application for providing services through mobile phones along with development of multiple payment channels that are fast and safe. Various systems have been continuously developed for many purposes such as damaged pipe reports and communication with the civil sector, which has received positive feedback from the public.

In addition to the above contexts, MWA has paid attention to all missions related to stakeholders, pushed forward good corporate governance policy (CG) and activities for corporate social responsibility (CSR) in order to create awareness of the organization as a giver who aims to serve society and the country forever.

Mr. Prinya Yamasamit

MWA Governor

Organization Structure



Workforce Structure

As of 30 September 2018, the Metropolitan Waterworks Authority had a total of 5,365 staff members, including 4,310 employees and 1,055 contract workers. The total expenditure on human resources was 2,935.88 million baht, consisting of 2,707.28 million baht for employee expenditure and 228.60 million* baht for expenditure on contract workers.

Workforce (person)

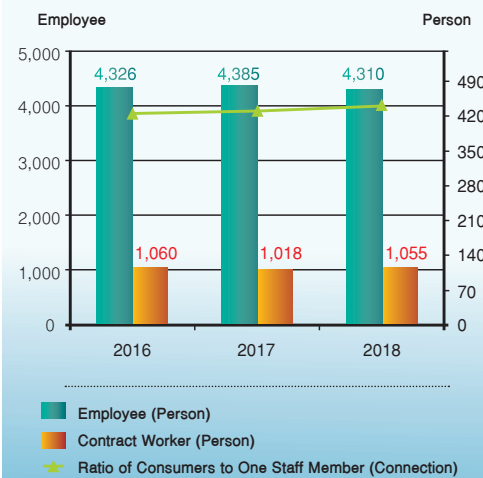
Operation Line	2018			2017		
	Employee	Contract Worker*	Total staff	Employee	Contract Worker*	Total staff
1. Governor	283	81	364	285	81	366
2. Deputy Governor (Administration)	278	70	348	283	69	352
3. Deputy Governor (Finance)	168	17	185	165	16	181
4. Deputy Governor (Eastern Services)	1,200	292	1,492	1,233	291	1,524
5. Deputy Governor (Western Services)	947	203	1,150	960	198	1,158
6. Deputy Governor (Engineering and Construction)	357	54	411	355	53	408
7. Deputy Governor (Water Production and Transmission)	864	310	1,174	880	282	1,162
8. Deputy Governor (Planning and Development)	95	17	112	99	17	116
9. Deputy Governor (Information Technology)	118	11	129	125	11	136
Total	4,310	1,055	5,365	4,385	1,018	5,403

As of 30 September 2018

* Private labor contractors

In fiscal year 2018, MWA had a total of 5,365 staff members and 2,375,490 water supply consumers, approximately considered as a ratio of 443 consumers to 1 staff member.

Number of Staff Members and Ratio of Consumers to One Staff Member



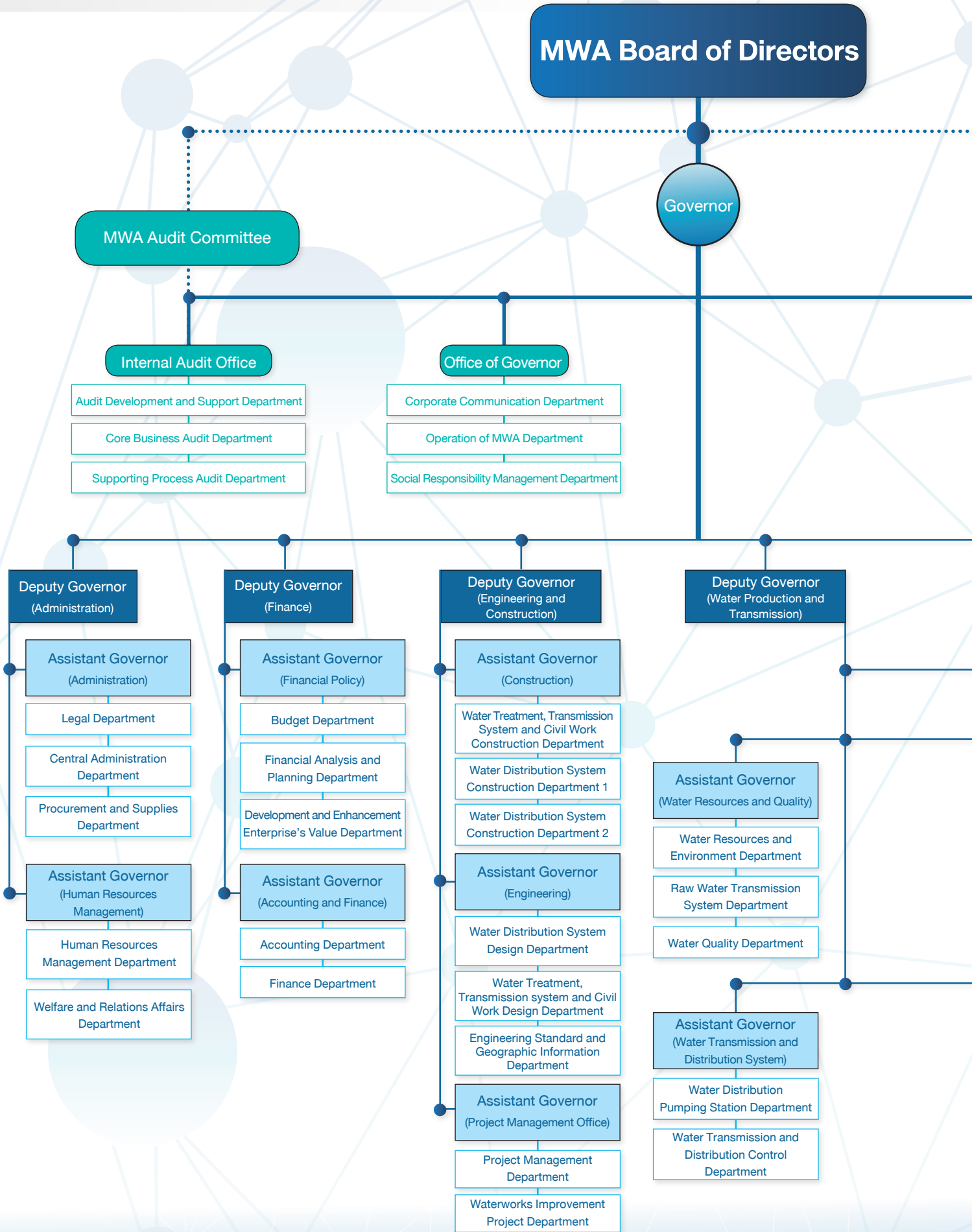
Total Expenditure on Human Resources (Million Baht)**

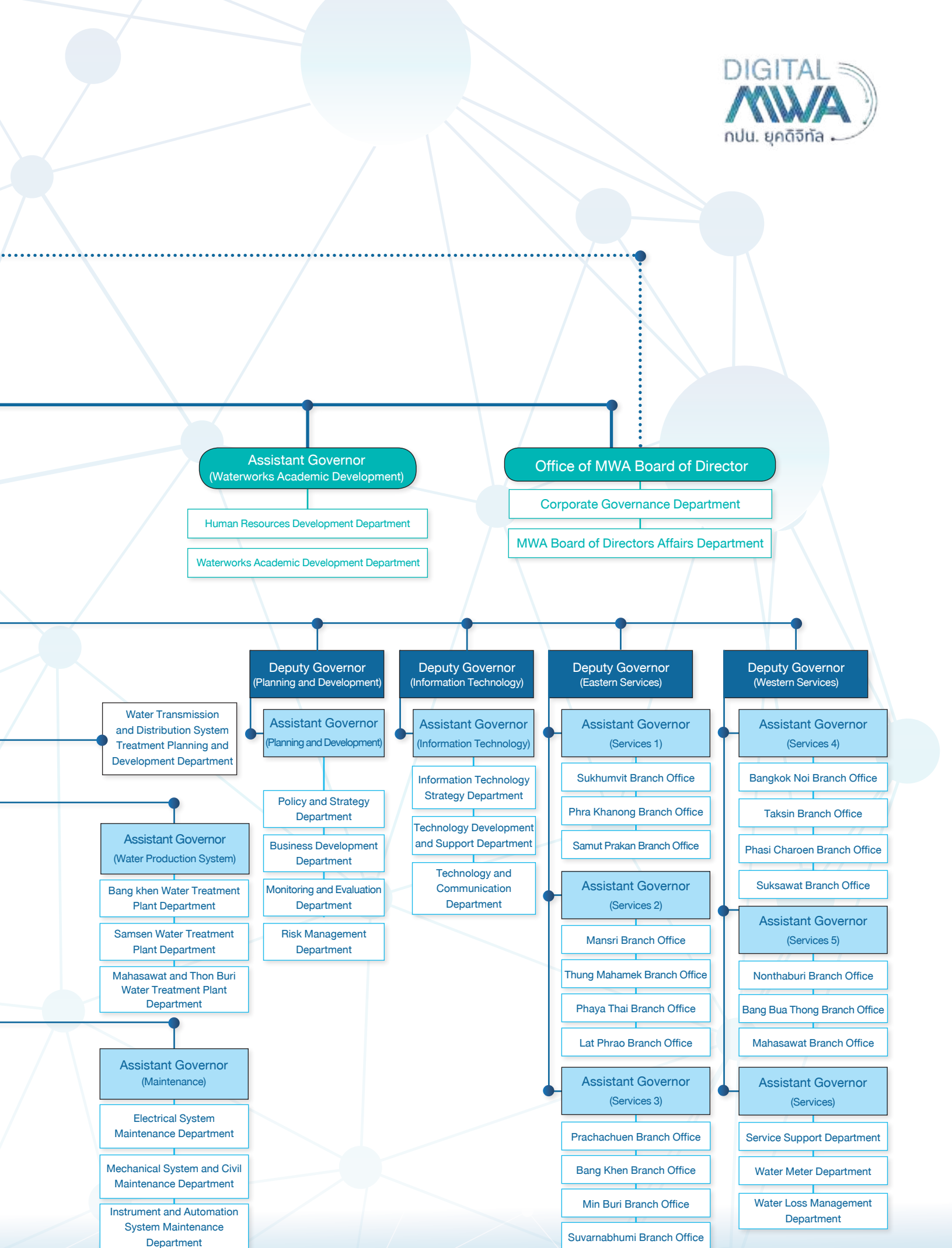
Operation Line	Employee			Contract Worker*			Total		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
1. Governor	224.95	214.57	192.72	15.65	15.71	15.34	240.61	230.28	208.06
2. Deputy Governor (Administration)	186.58	181.85	178.61	12.42	12.34	13.45	199.00	194.19	192.06
3. Deputy Governor (Finance)	118.78	111.55	109.78	2.71	2.94	2.93	121.48	114.49	112.71
4. Deputy Governor (Eastern Services)	696.52	674.03	652.82	67.58	63.39	72.04	764.10	737.42	724.86
5. Deputy Governor (Western Services)	577.56	558.68	567.23	52.66	48.85	57.47	630.22	607.53	624.70
6. Deputy Governor (Engineering and Construction)	179.53	133.96	184.13	9.65	9.51	9.56	189.18	143.47	193.69
7. Deputy Governor (Water Production and Transmission)	560.85	545.95	505.09	64.98	59.41	57.20	625.83	605.36	562.29
8. Deputy Governor (Planning and Development)	72.91	76.05	71.21	1.19	1.20	1.21	74.10	77.25	72.42
9. Deputy Governor (Information Technology)	89.6	94.08	87.67	1.76	1.87	1.85	91.37	95.95	89.52
Total	2,707.28	2,590.73	2,549.26	228.60	215.22	231.05	2,935.88	2,805.95	2,780.31

As of 30 September 2018

* Private labor contractors

Organization Chart





MWA Board of Directors (As of 31 October 2018)



01 Mr. Vullop Phringphong
Chairman and Independent Director

02 Mr. Nisit Jansomwong
Director

03 Professor Suwatana Chittaladakorn, Ph.D.
Independent Director

04 Mr. Wanchai Lawattanatrakul
Independent Director

05 Mr. Nattakit Tangpoonsinthana, Ph.D.
Independent Director

06 Assistant Professor Teekawuth Potapirom
Independent Director



07 Mr. Chaichana Mitrpant, Ph.D.
Independent Director

08 Mr. Thongplew Kongjun, D.Eng
Director General

09 Associate Professor Chanin Tinnachote, Ph.D.
Independent Director

10 Vice Admiral Nadaecho Kerdchoochuen
Independent Director

11 Mrs. Siriporn Luangnual
Director

12 Mr. Prinya Yamasamit
Director and MWA Governor

MWA Board of Directors

Mr. Vullop Phringphong

Position : Chairman and Independent Director

Age : 64

Education / Training :

- Bachelor of Arts (Political Sciences), University of Delhi, India
- Master of Arts (Political Science), Bowling Green State University, USA
- Chief District Officers Program (Class 31), Institute of Administration Development, Department of Provincial Administration
- High Level Senior Administration Program (Class 32), Institute of Administration Development, Department of Provincial Administration
- National Defence College of Thailand (Class 49)
- Capital Market Academy (Class 14)
- Certificate of Director Certification Program (DCP 170), Thai Institute of Directors

Work Experience :

- Chief District Officer of Ban Chang, Rayong Province
- Chief District Officer of Mueang Trat, Trat Province
- Chief District Officer of Mueang Rayong, Rayong Province
- Director of Local Finance Bureau, Department of Local Administration
- Deputy Director-General, Department of Local Administration
- The Representative of Thai Government to the Loan Negotiation with World Bank according to the Urban Development at Washington, D.C., USA
- The Representative of Thai Government to the Ministerial Meeting on Poverty Alleviation under Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) at Kathmandu, Nepal
- The Representative of Thai Government to the ASEAN Ministerial Meeting on Rural Development and Poverty Eradication (AMMRDPE) at Bandar Seri Begawan, Brunei Darussalam
- Governor of Phrae Province
- Governor of Samut Sakhon Province
- Deputy Permanent Secretary, Ministry of Interior
- Director of Provincial Electricity Authority
- Director, as the representative from Ministry of Interior, Sports Authority of Thailand
- Director-General, Department of Local Administration
- Member of National Reform Council
- Member of National Reform Steering Assembly

Present Positions :

- Chairman and Independent Director of MWA Board of Directors
- Qualified Director, the National Land Policy Committee
- Qualified Director, the Commission on Local Government Personnel Standards
- Subcommittee in Civil Service Commission about Human Resources System Development, Office of the Civil Service Commission
- Subcommittee in Public Sector Development Commission, Office of the Public Sector Development Commission

Mr. Nisit Jansomwong

Position : Director

Age : 56

Education / Training :

- Bachelor of Arts (Political Science) (First-Class Honors, Gold Medal), Chulalongkorn University
- Master of Arts (Political Science) (Excellent honors), Chulalongkorn University
- Certificate of District Chief Program (Class 41) Institute of Administration Development
- Certificate of New Public Management (Class 2) Office of the Civil Service Commission
- Advanced Certificate Course in Politics and Governance in Democratic Systems for Executive, (Class 11), Kiang Prajadhipok's Institute
- Certificate of The Joint State-Private Course (Class 23), National Defence College of Thailand
- Advanced Certificate Course in Justice Administration (Class 3). Office of Justice Affairs
- Advanced Certificate Course in Politics and Elections Development (Class 4), Office of The Election Commission of Thailand
- Certificate of Senior Budget Administrator (Class 2), Bureau of the Budget

Work Experience :

- Head of Plan and Develop the Staffing System Group, The Secretariat of the Cabinet
- Head of Social Work Group, Executive Office of the Cabinet, The Secretariat of the Cabinet
- Specialists in Strategic Development and Management Systems, Management System Development Group, The Secretariat of the Cabinet
- Director, Bureau of Strategic Development and Special Policy Monitoring, The Secretariat of the Cabinet
- Director General, Office of Policy and Planning, Office of the Permanent Secretary for Defence
- Governor of Samutprakarn Province
- Deputy Director General, Community Development Department
- Director, Center for Recovery Management System Office of the Prime Minister
- Advisor to Provincial Administration Integrity
- Deputy Director, Office of Thai Women Empowerment Funds, Office of the Prime Minister
- Chief of Inspector for Interior, Office of the Inspector for Interior
- Governor of Prachuapkhirkhan Province
- Governor of Ratchaburi Province
- Governor of Phuket Province
- Governor of Nonthaburi Province
- Deputy Permanent Secretary for Interior

Present Positions :

- Director of Metropolitan Waterworks Authority
- Director, Thailandpost Distribution Company Limited
- The Law Reform in Urgent Stage Commission
- Subcommittee of Improvement or Abrogation of Unnecessarily Burdensome Laws
- Subcommittee of Provincial Government Sector Audit and Evaluation
- Director General of Community Development Department

Professor Suwatana Chittaladakorn, Ph.D.

Position : Independent Director

Age : 64

Education / Training :

- Bachelor of Engineering (Irrigation Engineering), Kasetsart University
- Master of Engineering (Irrigation Engineering), Kasetsart University
- Doctor of philosophy (Irrigation Engineering), Utah State University, USA
- Good Governance for State Enterprise / Public Organization Directors & Executives Program (Class 13), King Prajadhipok's Institute

Work Experience :

- Vice-Chairman of the Sub-committee for Water Resources Management Reform, National Reform Council (NRC)
- Advisory Committee for Water Resources Management Policy Setting, Economic Department, National Council for Peace and Order (NCPO)
- Advisory and Chairman of the Sub-committee for Water Resources Engineering, the Engineering Institute of Thailand under H.M. the King's Patronage (EIT)
- Advisory and member of the Civil Engineering Committee, the Engineering Institute of Thailand under H.M. the King's Patronage (EIT)
- Member of the Expert Committee for Consideration of the Environmental Impact Assessment Analysis-Report for Government and Public-Private Partnership Transportation Projects, Nation Environmental Board
- Department Head, and the Chairman of Steering Committee for the Special Graduate Program, Department of Water Resources Engineering, Faculty of Engineering, Kasetsart University

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Special Expert in Department of Water Resources Engineering, Faculty of Engineering, Kasetsart University
- Sub-committee on Situation Analysis and Management of Water Resources, National Water Resources Board
- Advisory Board of Faculty of Engineering, Mahasarakham University
- Consultant of Working Group on Facts and Conflict Resolution of Water Resources Development Project, Ministry of Agriculture and Cooperatives
- Advisory Board of Working Group Directorate of Water Management, Office of the National Water Resources
- Committee member of Senior Engineering and Advisory Board of Civil Engineering, The Engineering Institute of Thailand Under H.M. The King's Patronage

Mr. Wanchai Lawattanatrakul

Position : Independent Director

Age : 62

Education / Training :

- Bachelor of Engineering (Civil Engineering), Chulalongkorn University
- Master of Engineering (Water Resources Development), Asian Institution of Technology
- Advanced Certificate Course in Politics and Governance in Democratic Systems for Executive (Class 6), King Prajadhipok's Institute
- Diploma of the Joint State - Private Sector Course (Class 19), National Defence College

Work Experience :

- Chief of Planning and Policy Section, Provincial Waterworks Authority
- Vice President, Planning and Business Development Department, Eastern Water Resources Development and Management Public Company Limited
- Senior Vice President, Planning and Business Development Department, Eastern Water Resources Development and Management Public Company Limited
- Chief Executive Officer, Eastern Water Resources Development and Management Public Company Limited
- Director, Global Water Systems Corporations Company Limited
- Director, Universal Utilities Company Limited
- Director, EGCOT TARA Company Limited
- Director, Eastern Hobas Pipes Company Limited
- Vice Chairman of Water Supply and Distribution Project Planning and Monitoring Subcommittee, Ministry of Natural Resources and Environment
- Director, Industrial Estate Authority of Thailand
- Director and Academic Committee, Thai Waterworks Association
- Director, Thailand Water Resources Association

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Director and Chairman of Audit Committee, SPCG Public Company Limited



Mr. Nattakit Tangpoonsinthana, Ph.D.

Position : Independent Director

Age : 54

Education / Training :

- Bachelor of Communication Arts (Mass Communication), Chulalongkorn University
- Master of Business Administration, University of North Texas, USA
- Doctor of Mass Communication (Television Administration), Chulalongkorn University
- Certificate of Director Certification Program (DCP 209), Thai Institute of Directors
- Certificate of Good Governance for State Enterprise / Public Organization Directors & Executives Program (Class 14), Public Director Institute, King Prajadhipok's Institute
- Top Executive Program in Commerce and Trade (TEPCoT) (Class 11), University of the Thai Chamber of Commerce
- Capital Market Leader Program, Capital Market Academy (CMA-24)
- Industrial Business Development and Investment Program for Top Executives, Institute of Business and Industrial Development (Class 2)

Work Experience :

- Account Director of Lintas Worldwide Advertising Company Limited (Thailand)
- Associate Director in Marketing and Sales Division, Samart Corporation Public Company Limited
- Lecturer in Department of Mass Communication, Faculty of Communication Arts, Chulalongkorn University
- Chief Marketing Officer, Thai Samsung Electronics Company Limited
- Advisor in Public Relations to Ministry of Commerce and Ministry of Labour
- Advisor to Minister of Science and Technology
- Advisor to Deputy Minister of Agriculture and Co-Operatives

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Executive Vice President of Central Group
- Executive Vice President in Marketing Line, Central Pattana Public Company Limited
- Director, Siam Rajathanee Company Limited
- Chairman of Marketing Management Group, Thailand Management Association (TMA)
- Subcommittee : Thailand National Committee on Competitive Benchmarking Development

Assistant Professor Teekawuth Potapirom

Position : Independent Director

Age : 64

Education / Training :

- Bachelor of Engineering (Civil Engineering), Kasetsart University
- Master of Science (Ocean and Fisheries Engineering), Kagawa University, Japan
- Good Governance for State Enterprise / Public Organization Directors & Executives Program (Class 13), King Prajadhipok's Institute

Work Experience :

- Lecturer in Department of Fishery Management, Faculty of Fisheries, Kasetsart University
- Assistant Professor in Department of Water Resources Engineering, Faculty of Engineering, Kasetsart University
- Advisor to Deputy Minister of Transport
- Committee of Experts to report an analysis of the environmental impacts of transportation projects with public sector or private
- Advisor to Committee in Water Resource Engineering, The Engineering Institute of Thailand under H.M. King's Patronage
- Chairman, Master of Water Resources Engineering Special Program, Faculty of Engineering, Kasetsart University
- Working Committee of Problem Solution at Maesui Dam, Chiang Rai
- Advisor to Committee in Water Resource Engineering, The Engineering Institute of Thailand Under H.M. King's Patronage

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Specialized Lecturer in Department of Water Resources Engineering, Faculty of Engineering, Kasetsart University

Mr. Chaichana Mitrpant, Ph.D.

Position : Independent Director

Age : 45

Education / Training :

- Dr. Ing. (Engineering), University Duisburg-Essen, Germany
- M.S. (Electrical Engineering), University of Michigan, U.S.A.
- B.S. (Electrical Engineering), Rice University, U.S.A.
- Certified Information Systems Security Professional: CISSP
- Advanced Certificate Course in Politics and Governance in Democratic Systems for Executive (Class 20), King Prajadhipok's Institute
- Certificate of National Security Management for Senior Executives (Class 7), National Intelligence Agency
- Certificate of Executive Development Program in 2017 (Class 9), Ministry of Finance
- Certificate of Director Certification Program (DCP 199), Thai Institute of Directors

Work Experience :

- Executive Director, Information Technology Infrastructure Security Unit, National Electronics and Computer Technology Center
- Chief, Digital Forensic and Investigation Unit, National Electronics and Computer Technology Center
- Director, Radio Frequency Identification Program, National Electronics and Computer Technology Center
- Chief, Research and Applied Encryption, National Electronics and Computer Technology Center
- Researcher Assistant, Network Technology Laboratory National Electronics and Computer Technology Center

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Deputy Executive Director, Electronic Transactions Development Agency (Public Organization)
- Independent Director of Bangkok Mass Transit Authority
- Independent Director of PTT Oil and Retail Business Company Limited

Mr. Thongplew Kongjun, D.Eng

Position : Director General

Age : 57

Education / Training :

- Bachelor of Engineering (Civil Engineering), College of Technology and Vocational Education (Thewet Campus)
- Master of Engineering (Irrigation Engineering), Kasetsart University (Kamphaengsaen Campus)
- Doctor of Engineering (Irrigation Engineering), Kasetsart University (Kamphaengsaen Campus)
- Advanced Certificate Course in Management of Public Economics for Executives, The College of Politics and Governance, Class 11, King Prajadhipok's Institute
- Advanced Course in Governing Office, Class 63, Interior College, Prince Damrong Rajanuphap Institute
- Diploma in the National Defence Course, Class 59, National Defence College

Work Experience :

- Director, Irrigation Development Institute, Royal Irrigation Department
- Director, Hydrology Division, Royal Irrigation Department
- Director, Office of Water Management and Hydrology, Royal Irrigation Department
- Deputy Director General for Operation and Maintenance, Royal Irrigation Department

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Director General, Royal Irrigation Department

Associate Professor Chanin Tinnachote, Ph.D.

Position : Independent Director

Age : 56

Education / Training :

- Bachelor of Engineering (Survey Engineering), Chulalongkorn University
- Master of Science (Integrated Map and Geo-Information Production), International Institute for Aerospace Survey and Earth Sciences (ITC), The Netherlands
- Doctor of Engineering (Remote Sensing and Geographic), Asian Institute of Technology
- Certificate of Director Certification Program (DCP 201), Thai Institute of Directors
- Certificate of Advanced Audit Committee Program (AACP 18), Thai Institute of Directors
- Good Governance for State Enterprise / Public Organization Directors & Executives Program (Class 13), Public Director Institute, King Prajadhipok's Institute
- Certificate of Environmental Governance for Executive Officer (EGEO 4), Department of Environmental Quality Promotion
- Risk Management Program for Corporate Leaders (RCL 1), Thai Institute of Directors
- Driving Company Success with IT Governance (ITG 2), Thai Institute of Directors
- Financial and Fiscal Management Program for Senior Executive (Class 4), The Comptroller General's Department
- Digital CEO (Class 1), Digital Economy Promoting Agency (DEPA)

Work Experience :

- Director of Surveying and Mapping Society of Thailand
- Director of Geo-Informatics and Space Technology Development Agency (Public Organization)
- Director of Eastern Water Resources Development and Management Public Company Limited

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Director of Universal Utilities Public Company Limited
- Associate Professor in Survey Engineering, Faculty of Engineer, Chulalongkorn University

Vice Admiral Nadaecho Kerdchoochuen

Position : Independent Director

Age : 64

Education / Training :

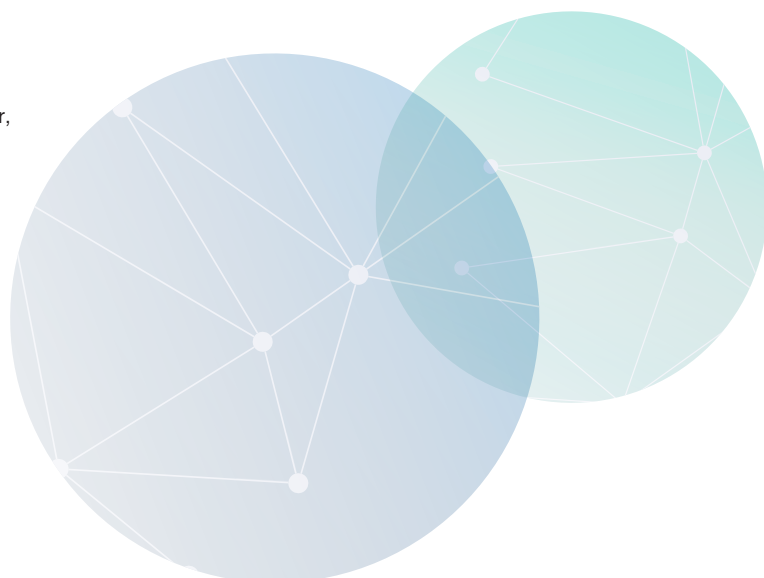
- Bachelor of Science, Royal Thai Naval Academy
- Civil Affairs School, Directorate of Civil Affairs
- Command and General Staff College
- Naval War College
- Certificate of Director Certification Program (DCP 209), Thai Institute of Directors
- Certificate of Internal Audit's Challenge in Value Adding, Federation of Accounting Professions under the Royal Patronage of His Majesty the King

Work Experience :

- Assistant Chief of Staff Sub-Division Deputy Chief of Defence Forces
- Counselor Working Group to the Prime Minister
- Naval Senior Advisor to Royal Thai Marine Corps

Present Positions :

- Independent Director of Metropolitan Waterworks Authority
- Early Retired Officer of Office of the Permanent Secretary for Defence



Mrs. Siriporn Luangnual

Position : Director

Age : 59

Education / Training :

- Bachelor of Business Administration, Ramkhamhaeng University
- Master of Business Administration, Pittsburg State University, USA
- Director Certification Program (DCP) Class 72/2006, Thai Institute of Directors
- The National Defence Course Class 55/2012, National Defence College
- Executive Program Capital Market Academy (CMA-18) (2014), Capital Market Academy
- Top Executive Program in Commerce and Trade (TEPCoT) Class 8 (2015), University of the Thai Chamber of Commerce
- Director Certification Program Update (DCPU) Class 3/2015, Thai Institute of Directors
- Chief Information Officer: CIO 26 (2015), Digital Government Development Agency
- The Executive Program in "Energy Literacy for a Sustainable Future" TEA Class 7 (2015), Thailand Energy Academy

Work Experience :

- Director, Ratchaburi Electricity Generating Company Limited
- Director of TOT Public Company Limited
- Director and Chairman of the Audit Committee, ASEAN Patash Mining Public Company Limited
- Director, Erawan Hotel Public Company Limited
- Director, Government Housing Bank
- Deputy Director, The State Enterprise Policy Office

Present Positions :

- Director of Metropolitan Waterworks Authority
- Director of Ratchaburi Electricity Generating Holding Public Company Limited
- Director of TOT Public Company Limited
- Advisor on Finance, Office of the Permanent Secretary, Ministry of Finance

Mr. Prinya Yamasamit

Position : Director and MWA Governor

Age : 58

Education / Training :

- Bachelor of Engineering (Civil Engineering), King Mongkut's Institute of Technology Thonburi
- Master of Engineering (Environmental Engineering), Chulalongkorn University
- Non-Revenue Water Management (Leakage Control), Japan International Cooperation Agency (JICA)
- High Level Metropolitan Administrator Program (Class 9), Bangkok Metropolitan Administration
- Senior Executive in Urban Development Administration Program (Metropolitan Class 4), Navamindradhiraj University
- Leadership Succession Program (LSP) (Class 6) Institute of Research and Development for Public Enterprises (IRDP)
- Good Governance for State Enterprise / Public Organization Directors & Executives Program (Class 16), King Prajadhipok's Institute

Work Experience :

- Deputy Governor (Engineering and Construction)
- Administrative Director of Metropolitan Waterworks Authority Club (Administrative Vice Chairman)
- Director of Wastewater Management Authority

Present Positions :

- Director of Metropolitan Waterworks Authority
- Governor of Metropolitan Waterworks Authority
- Chairman of Thai Waterworks Association (TWAA)

Executives

As of 31 October 2018



Mr. Prinya Yamasamit
Governor

Education

- Bachelor of Engineering (Civil Engineering), King Mongkut's Institute of Technology
- Master of Engineering (Sanitary Engineering), Chulalongkorn University
- Certificate of Non-Revenue Water Management (Leakage Control), Japan International Cooperation Agency (JICA)
- Senior Executive in Urban Development Administration Program (Metropolitan Class4), Navamindradhiraj University

Work Experience

- Assistant Governor (Construction)
- Deputy Governor (Engineering and Construction)



Mrs. Lawan Chatrunchewan
Deputy Governor (Planning and Development)

Education

- Bachelor of Business Administration, Chiang Mai University
- Master of Business Administration (Management Science), Sukhothai Thammathirat Open University
- Senior Executive Certificate in Anti-Corruption Strategic Management, Office of the National Anti-Corruption Commission (NACC)
- Advanced Certificate Course in Public Economics Management for Executives, King Prajadhipok's Institute

Work Experience

- Assistant Governor (Office of MWA Board of Director)
- MWA Expert (Level 10)



Mr. Somboon Sunanthapongsak
Deputy Governor (Water Production and Transmission)

Education

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Bachelor of Business Administration (Construction Management), Sukhothai Thammathirat Open University
- Master of Business Administration, Chulalongkorn University
- Director Certification Program (Class 234), Thai Institute of Directors Association
- Joint Staff Course (Class 53), Joint War College

Work Experience

- Assistant Governor (Services 5)
- Deputy Governor (Western Services)



Mr. Kavee Areekul
Deputy Governor (Engineering and Construction)

Education

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Master of Business Administration (Business Administration), Kasetsart University
- National Defense College of Thailand (Class 58), National Defence College of Thailand
- Director Certification Program (Class 245), Thai Institute of Directors (IOD)

Work Experience

- Deputy Governor (Eastern Services)
- Director of Wastewater Management Authority



Miss Supanee Karunkittikun
Deputy Governor (Eastern Services)

Education

- Bachelor of Arts (Communication Arts), Chulalongkorn University
- Bachelor of Economics, Sukhothai Thammathirat Open University
- Master of Arts (Communication Arts), Chulalongkorn University
- Curriculum of the 5th Metropolitan Development Training Course of Executive, Institute of Metropolitan Development
- Good Governance for State Enterprise / Public Organization Directors & Executives Program (Class 18), Public Director Institute, King Prajadhipok's Institute

Work Experience

- Assistant Governor (Services 4)
- Assistant Governor (Services 1)



Education

- Bachelor of Science (Accounting), Kasetsart University
- Best practice in Human Resource Program, Thammasat University
- Kaset mini Financial Business Management Program, Kasetsart University

Work Experience

- MWA Expert Level 9
- Assistant Governor (Accounting and Finance)



Education

- Bachelor of Political Science (Public Administration), Thammasat University
- Master of Arts (Public Administration), National Institute of Development Administration (NIDA)
- The Civil Service Executive Development Program: Visionary and Moral Leadership, Office of the Civil Service Commission (OCSC)
- Executive Coaching Program, DDI-Asia/Pacific International, Ltd. (Thailand)

Work Experience

- Assistant Governor (Human Resource Management)
- Assistant Governor (Administration)



Education

- Bachelor of Science (Statistics), Ramkhamhaeng University
- Master of Business Administration (Public Management), Burapha University
- Digital Economy for Management, Institute of Research and Development (IRDPA)
- The Civil Service Executive Development Program: Visionary and Moral Leadership, Office of the Civil Service Commission (OCSC)

Work Experience

- MWA Expert Level 9
- Assistant Governor (Information Technology)



Education

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Air War College Program, Air War College
- High Level Metropolitan Administrator Program, Bangkok Metropolitan Administration

Work Experience

- Suvarnabhumi Branch Office Manager
- Assistant Governor (Services 4)



Mr. Chaiwat Vorapeboonpong
MWA Expert (Level 10)

Education

- Bachelor of Science (Chemistry), Mahidol University
- Certificate of “Senior Strategist for Anti-Corruption”, Office of the National Anti-Corruption Commission (NACC)
- Director Certification Program (Class 262), Thai Institute of Directors (IOD)

Work Experience

- Assistant Governor (Water Resources and Quality)
- Assistant Governor (Services 5)



Mr. Thamrong Buranatrakul
MWA Expert (Level 10)

Education

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Bachelor of Business Administration (Construction Management), Sukhothai Thammathirat Open University
- Master of Engineering (Environmental Engineering), Chulalongkorn University
- The Civil Service Executive Development Program : Visionary and Moral Leadership, Civil Service Training Institute
- Director Certification Program (Class 261), Thai Institute of Directors (IOD)

Work Experience

- Lat Phrao Branch Office Manager
- Assistant Governor (Water Transmission and Distribution System)



Mrs. Sranya Sinamphet
MWA Expert (Level 10)

Education

- Bachelor of Business Administration, Bangkok College
- Bachelor of Laws, Sripatum University
- Master of Arts (Policy and Social Planning), Krirk University
- Police Senior Command Course, Police College
- Local Development Administration for Sustainability, King Prajadhipok's Institute

Work Experience

- Nonthaburi Branch Office Manager
- Assistant Governor (Office of Governor)



Miss Tassanee Lerksantivong
MWA Expert (Level 10)

Education

- Bachelor of Arts (Communication Arts), Chulalongkorn University
- Leadership Succession Program, Institute of Research and Development for Public Enterprises (IRDPE)
- Chief Executive Course for Urban Development Management Program, Institute of Metropolitan Development

Work Experience

- Assistant Governor (Office of Governor)
- Assistant Governor (Services 2)



Executives (As of 1 October 2018)



1



2



3



4

Line of Governor

1. Miss Busagon Procks-anocha
Assistant Governor (Internal Audit Office)
2. Mrs. Sutanya Srisuriyachan
Assistant Governor (Waterworks Academic Development)
3. Mrs. Pimjai Sapsompong
Assistant Governor (Office of Governor)
4. Miss Suwara Thawitchasri
Assistant Governor (Office of MWA Board of Director)

Line of Deputy Governor (Administration)

1. Mr. Mongkol Kerkkittikul
Assistant Governor (Administration)
2. Mrs. Apinya Rotchanahatsadin
Assistant Governor (Human resource Management)



1



2



1



2

Line of Deputy Governor (Finance)

1. Miss Sutisa Naksen
Assistant Governor (Financial Policy)
2. Mrs. Nongluck Ratanaudomchok
Assistant Governor (Accounting and Finance)



Line of Deputy Governor (Eastern Services)

1. **Mr. Prasopsuk Somprasong**
Assistant Governor (Services 2)
2. **Mr. Marnus Changnoi**
Assistant Governor (Services 3)
3. **Mr. Saharat Porkaew**
Assistant Governor (Services 1)

Line of Deputy Governor (Western Services)

1. **Mrs. Kraitsana Tangchitwattanakorn**
Assistant Governor (Services 5)
2. **Mr. Sukit Ekatikomkit**
Assistant Governor (Services 4)
3. **Mr. Suthep Eapakorn**
Assistant Governor (Services)



Line of Deputy Governor (Engineering and Construction)

1. **Mr. Komkrit Dinnakorn na ayutthaya**
Assistant Governor (Project Management Office)
2. **Mr. Banjong Vongsa**
Assistant Governor (Construction)
3. **Mr. Pornsak Panyoi**
Assistant Governor (Engineering)



Line of Deputy Governor (Water Production and Transmission)

1. **Mr. Wichai Arayasettakron**
Assistant Governor (Water Production System)
2. **Mr. Maitri Kaewsaengtham**
Assistant Governor (Water Transmission and Distribution System)
3. **Mr. Sathaporn Sunkumnurd**
Assistant Governor (Plant Maintenance)
4. **Mr. Washirawit Powichit**
Assistant Governor (Water Resources and Quality)





Line of Deputy Governor (Planning and Development)

Mr. Suthirug Buchagul

Assistant Governor (Planning and Development)



Line of Deputy Governor (Information Technology)

Mrs. Kanitta Pholcharoen

Assistant Governor (Information Technology)

MWA Expert Level 9

1. Mr. Veerachai Wisepunthurungsi

MWA Expert Level 9

2. Mr. Manit Panaim

MWA Expert Level 9

3. Miss Suchima Jantrapai

MWA Expert Level 9

4. Mr. Montri Longtee

MWA Expert Level 9

5. Miss Anchalee Musigatham

MWA Expert Level 9

6. Miss Jinda Chantatamma

MWA Expert Level 9

7. Miss Wannee Wuttiwongsumpun

MWA Expert Level 9

8. Mr. Suntorn Thonggunnerd

MWA Expert Level 9



1



2



3



4



5



6



7



8



Department Directors and Equivalents (As of 1 October 2018)

Line of Governor

Miss Prapai	Kampangkeaw	Audit Development and Support Department Director
Mr. Seree	Metharwanitpong	Core Business Audit Department Director
Mr. Sinut	Sinittarnon	Operation of MWA Department Director
Mrs. Umpaisri	Thanthumwong	Supporting Process Audit Department Director
Miss Usa	Chaivanichpol	Human Resources Development Department Director
Mrs. Rachirach	Uthayo	Corporate Communication Department Director
Mrs. Suchada	Nakyoy	Auditor Level 8
Mrs. Wantanee	Chumpoo	Social Responsibility Management Department Director
Mrs. Sunisa	Piyasuwan	Waterworks Academic Development Department Director
Miss Nattaya	Bunkerd	Corporate Governance Department Director
Mrs. Nittaya	Pibul	MWA Board of Directors Affairs Department Director

Line of Deputy Governor (Administration)

Miss Sumon	Tanteeratam	Procurement and Supplies Department Director
Mrs. Suwanna	Parkros	Central Administration Department Director
Mrs. Tatrpa	Kanjanasint	Legal Department Director
Mr. Sumet	Sinthuyon	Welfare and Labor Relations Affairs Department Director
Mr. Narintorn	Mahanaka	Human Resources Management Department Director

Line of Deputy Governor (Finance)

Mrs. Wasana	Nakpiphatkul	Accounting Department Director
Mrs. Pattharaporn	Pattharasikarin	Financial Analysis and Planning Department Director
Miss Sunan	Patipanvat	Finance Department Director
Mrs. Sukontip	Ngarmwacha	Development and Enhancement Enterprise's Value Department Director
Miss Kanlaya	Wichachoocherd	Budget Department Director

Line of Deputy Governor (Eastern Services)

Mrs. Payom	Srianan	Min Buri Branch Office Manager
Mr. Kittipat	Uthikamporn	Phaya Thai Branch Office Manager
Mr. Archawan	Im-erbtham	Suvarnabhumi Branch Office Manager
Miss Amphai	Phanayuwattana	Mansri Branch Office Manager
Mr. Sarawut	Boonwong	Phra Khanong Branch Office Manager
Mrs. Duangjit	Suvanphatep	Lat Phrao Branch Office Manager
Miss Duangkamol	Rienpuech	Bang Khen Branch Office Manager
Mr. Luanchai	Kanjanasint	Sukhumvit Branch Office Manager
Mr. Chaipayorn	Rattanatanangpong	Samut Prakan Branch Office Manager
Miss Phakamas	Choakanantrakul	Thung Mahamek Branch Office Manager
Miss Jitaree	Mungkun	Prachachuen Branch Office Manager

Line of Deputy Governor (Western Services)

Miss Sompit	Nawapornchai	Nonthaburi Branch Office Manager
Mrs. Thimaporn	Wimonanupong	Water Meter Department Director
Mr. Supichete	Tavorntaveevong	Water Loss Management Department Director
Miss Sirikul	Topikul	Bang Bua Thong Branch Office Manager
Mrs. Leewan	Tankrittiwat	Service Support Department Director
Mr. Piyapong	Srisomboon	Bangkok Noi Branch Office Manager
Mr. Phichet	Wongphitak	Mahasawat Branch Office Manager
Mr. Nurach	Noisopa	Taksin Branch Office Manager
Mr. Pornchai	Mongkolkruit	Suksawat Branch Office Manager
Mr. Wimarn	Marsjaroon	Phasi Charoen Branch Office Manager

Line of Deputy Governor (Engineering and Construction)

Miss Widchuda	Liamsanguan	Project Management Department Director
Mr. Sayan	Namngern	Water Treatment and Transmission System and Civil Work Director
Mr. Adisak	Pranverapaiboon	Water Distribution System Construction Department 2 Director
Mr. Wison	Midtrapanon	Engineering Standard and Geographic Information Department Director
Mr. Chana	Pongpothakul	Water Distribution System Design Department Director
Mr. Sutthisak	Lapprasert	Waterworks Improvement Project Department Director
Mr. Dollachet	Klahan	Water Treatment, Transmission System and Civil Work Design Department Director
Mr. Arnuparp	Supapant	Water Distribution System Construction Department 1 Director

Line of Deputy Governor (Water Production and Transmission)

Mrs. Siwilai	Kitpitak	Water Resources and Environment Department Director
Mr. Somchai	Thongma	Bang Khen Water Treatment Plant Department Director
Mr. Phairot	Sonsap	Water Distribution Pumping Station Department Director
Mrs. Nisapas	Wongpat	Water Quality Department Director
Mr. Sermsak	Jansam	Water Transmission and Distribution Control Department Director
Mr. Thaveesak	Ngarmwacha	Water Transmission and Distribution System Treatment Planning Director
Mr. Pornsak	Samornkraisorakit	Samsen Water Treatment Plant Department Director
Mr. Thanapong	Kausangunsilp	Mechanical System and Civil Maintenance Department Director
Mr. Amnat	Pakros	Electrical System Maintenance Department Director
Mr. Tintapas	Kongkhanoy	Raw Water Transmission System Department Director
Mr. Sunai	Tanpanich	Mahasawat and Thon Buri Water Treatment Plant Department Director
Mr. Yongyut	Srimode	Instrument and Automation System Maintenance Department Director

Line of Deputy Governor (Planning and Development)

Miss Kornvilai	Yeawyasat	Monitoring and Evaluation Department Director
Miss Yutirat	Khampheeraphan	Business Development Department Director
Miss Suwaree	Chiawchanlikit	Policy and Strategy Department Director
Miss Orawan	Suraiman	Risk Management Department Director

Line of Deputy Governor (Information Technology)

Mrs. Maytawee	Suchartlumpung	Technology and Communication Department Director
Mrs. Pitsawast	Phapsuwan	Technology Development and Support Department Director
Mrs. Nongnuch	Wongkalasin	Information Technology Strategy Department Director

MWA Expert Level 8

Miss Punnee	Chithan	MWA Expert Level 8
Miss Siriwan	Klancharoen	MWA Expert Level 8
Miss Kanyarach	Nantanawikul	MWA Expert Level 8
Mrs. Suntaree	Akepanidtaworn	MWA Expert Level 8
Mr. Wira	Srisakunworathai	MWA Expert Level 8
Mrs. Boonbundal	Boonchuwit	MWA Expert Level 8
Mrs. Kanya	Sonsap	MWA Expert Level 8
Mr. Prawit	Sangsukcharoen	MWA Expert Level 8
Mr. Somsak	Passananon	MWA Expert Level 8
Mr. Paripan	Pinsurong	MWA Expert Level 8
Mr. Wisut	Teerapong	MWA Expert Level 8
Miss Panicha	Wetchosodsakda	MWA Expert Level 8
Mr. Sanchai	Pongputtchart	MWA Expert Level 8
Mrs. Pornwarin	Poonsup	MWA Expert Level 8
Miss Wimonstri	Klancharoen	MWA Expert Level 8
Mr. Phaisarn	Ngernkorn	MWA Expert Level 8
Mr. Wichai	Sangpornsriaroon	MWA Expert Level 8
Acting Pol.Sub-Lt. Aree	Chumchuchan	MWA Expert Level 8
Miss Pornthip	Onneam	MWA Expert Level 8
Miss Achara	Poramathikul	MWA Expert Level 8
Mr. Khajhonwatch	Suwanlaaid	MWA Expert Level 8
Miss Roskon	Dankul	MWA Expert Level 8
Mr. Chiranuwat	Narong	MWA Expert Level 8

Executives during the Year 2018 (Retired on 1 October 2018)

Mr. Chalit	Kaewsai	Deputy Governor (Administration)
Miss Pajaree	Salimee	Deputy Governor (Information Technology)
Mr. Jumroen	Tantiwongwat	Deputy Governor (Western Services)
Miss Suree	S.Srisuwan	Deputy Governor (Finance)
Mrs. Aphorn	Phusap	MWA Expert Level 10





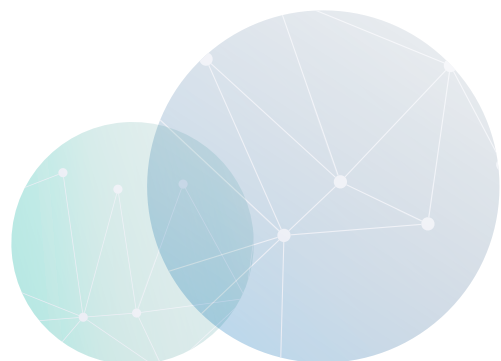
Metropolitan Waterworks Authority ... The Present and the Future

Industrial Conditions and Future Tendency

Due to the trend of industrial expansion and higher consumption around the world particularly in the economic leader countries such as the United States, EU member states, Japan, China, India and so forth, the International Monetary Fund (IMF) has forecast the global gross products in the years 2018 and 2019 will grow by 3.9% per year. However, various factors including trade barriers between the United States and China that have not been finalized, political stability in the European Union, and conflicts in the Middle East countries may be the risk factors that affect the world economic expansion as well as Thailand economic growth.

According to the IMF's forecast, the Thai economy in 2019 is likely to continuously expand, causing its GDP to grow by 3.8% as a result of the main driving force of the export sector due to the rising world economy, higher price of the world market products, the growth of tourism in the country, and high investments in the public sector. In addition, the main factor that can attract private investment particularly the foreign investors who are interested in the Eastern Economic Corridor Development Project (EEC) and the rapid growth of digital consumer market that will create tremendous business opportunities in Thailand and the ASEAN countries will help promote the expansion of private domestic investment. Furthermore, the clarity of the election will be a significant positive factor for Thailand 2019 economy.

Based on the continuous growing trend of the domestic economy, MWA foresees the increasing demand of future water usage due to the expansion of urban areas and the industrial sector in accordance with the economic expansion in Thailand and all over the world. However, some risk factors such as natural disasters and the government policy in water resource management may affect the quantity of water budget. Accordingly, MWA has to prepare an investment plan to support arising situations and conform to the expansion of residential areas, the business and industrial sectors in the future to enhance the water supply service to meet international standards as well as to create maximum satisfaction for customers and good quality of life for people so that the country will be developed with sustainability.



Major Plans and Projects

Project	Project Period	Project Cost (Million Baht)	Implementation Results to Fiscal year 2018 (Percentage)
1. The Seventh Bangkok Water Supply Improvement Project Expansion of the production capacity of Bangkhen and Mahasawat Water Treatment Plants for another 400,000 cubic meters per day each; construction of Bang Phli and Min Buri Pumping Stations; construction of transmission tunnels; and distribution pipelines.	1999-2020	25,177.3 ¹	94.9%
2. The Eighth Bangkok Water Supply Improvement Project Expansion of the production capacity of Bangkhen and Mahasawat Water Treatment Plants for another 400,000 cubic meters per day each; construction of reservoirs at Ratburana and Petchkasem Distribution Pumping Stations; procurement and installation of raw water pumps, transmission pumps and distribution pumps; construction of pipelines and other related operations.	2008-2020	7,494.0 ²	85.6%
3. The Ninth Bangkok Water Supply Improvement Project Expansion of production capacity of Mahasawat Water Treatment Plants for another 800,000 cubic meters per day; enhancing efficiency of the distribution system by constructing transmission tunnels and Bangmod Water Distribution Pumping Station as well as expanding reservoirs; construction of pipelines and other related operations.	2017-2022	42,750.0	0.79%
4. Enhancement of Water Pumps Performance for Trunk Main System Construction and improvement of the new pipelines in the MWA's assigned area.	2016-2022	3,798.0	7.0%
5. Pipeline System Improvement Project for Water Distribution Stability Water Distribution pipeline improvement to reduce water loss and increase MWA overall pipeline network efficiency.	2012-2021	1,520.4	35.7%
6. Untreated Water Transmission System Project for Stability and Permanent Flood Prevention Improvement of untreated water transmission system on the eastern side, from the areas of Bangkhen Water Treatment Plant to Samlae Pumping Station to enhance water transmission potential and permanently protect flooding along the untreated water canals.	2013-2022	2,600.0	12.4%
7. Service Area Coverage Expansion Project to All Communities Expansion of service area coverage to the total area of urban communities under MWA's responsibility, where supply water is not available.	2015-2018	737.3	100.0%

¹ and ², after finished the project, the expenses is expected to be below than the budget approved.



Future Policies and Plans



According to the review of the 4th Issue of MWA Strategic Management Planning (2017-2021) in fiscal year 2018, MWA has examined the core competencies of the future organization: “Being a production expert, providing quality water supply service in large cities and operating other businesses related or beneficial to MWA”. Due to the fact that in the near future, MWA will invest in the large-scale water supply infrastructure to create stability in its service, it is therefore necessary to generate revenue from other businesses apart from the main income from tap water sale in the responsible areas of three provinces. MWA focuses on improving and developing three matters:

- 1) Reducing the water loss rate and keeping it within an economic level of leakage,
- 2) developing the water system by using the Water Safety Plan, and
- 3) upgrading the organization to become “Digital MWA”

Under the 4th Issue of MWA’s Strategic Management Planning (1st reviewed issue) (2019-2021), the major plans and projects in response to future policies and directions are classified by the following strategies:

Strategy 1. Create corporate stability

- The project on expansion of water distribution in the potential boundary areas aims to support the demand for water supply based on the expansion of cities, economy and other future projects.
- The project on the business unit study aims to support businesses related to and appropriate for the organizational context and the related business potential development project. This project also aims to seek funding for development of large-scale water supply infrastructure in order to create service stability with the expectation that the income from related business will be projected at least 900 million baht by the year 2021

Strategy 2. Enhance corporate capacity to excellence

- The Big Data Analysis System Development Project and the Waterworks Management Data Warehouse Project aims to respond to Thailand 4.0 policy and upgrade MWA to Digital MWA by integrating the information both in the organization and in the country to reach standards of the most effective water supply service.
- The Digital Service Development Project aims to meet the changing behavior of customers by currently providing services for new connection requests, dealing with various complaints, receiving bill payments through mobile application and the Internet as well as the virtual branch service which will be able to start by 2021.
- The Personnel Development Project for support of effective strategy implementation aims to develop personnel ability and their multi-skills in digital work, water loss management and the Water Safety Plan.

Strategy 3. Create stability of the water supply system

- The water loss management consisting of 4 main projects: the Water Meter Management Project, the Surveillance Area Management Project, the Distribution Pipelines Improvement Project, and the Technology-based Project for Water Loss Management aiming to keep MWA's

water loss rate remain at 19% and maintain it within an appropriate level of leakage.

- The long-term water supply infrastructure development consists of the preparation of 30-year Infrastructure Master Plan Project, The Ninth and The Tenth Bangkok water supply improvement projects which aim at creating stability of the water supply system, and Water Safety Plan, focusing on upgrading the total water supply system from receiving raw water to consumers' locations to be at a better level than the guidelines for drinking-water quality of the World Health Organization.
- A study on an increase in resource consumption efficiency and sustainable reduction in environmental impacts caused by water supply production and service aims to be used further in calculation and analyses of water footprint.

Strategy 4. Promote good relation with stakeholders

- The Energy Conservation Project emphasizes on reduction of consuming fossil fuel energy and electrical energy as well as reduction of direct and indirect CO2 emissions from water supply production processes.
- A Project for setting standards and controlling the services of outsource employees aims to standardize pipeline installation and repairs, reduce complaints and satisfy stakeholders by returning traffic surfaces and pedestrian walkway.
- An increase in stakeholders' satisfaction (excluding consumers) aims to respond to stakeholders' needs and expectations in a balance manner with process improvement plans (such as procurement process, internal and external corporate communication processes, research and development processes as well as innovation and so forth).

The 4th Issue

of MWA Strategic Management Planning Roadmap

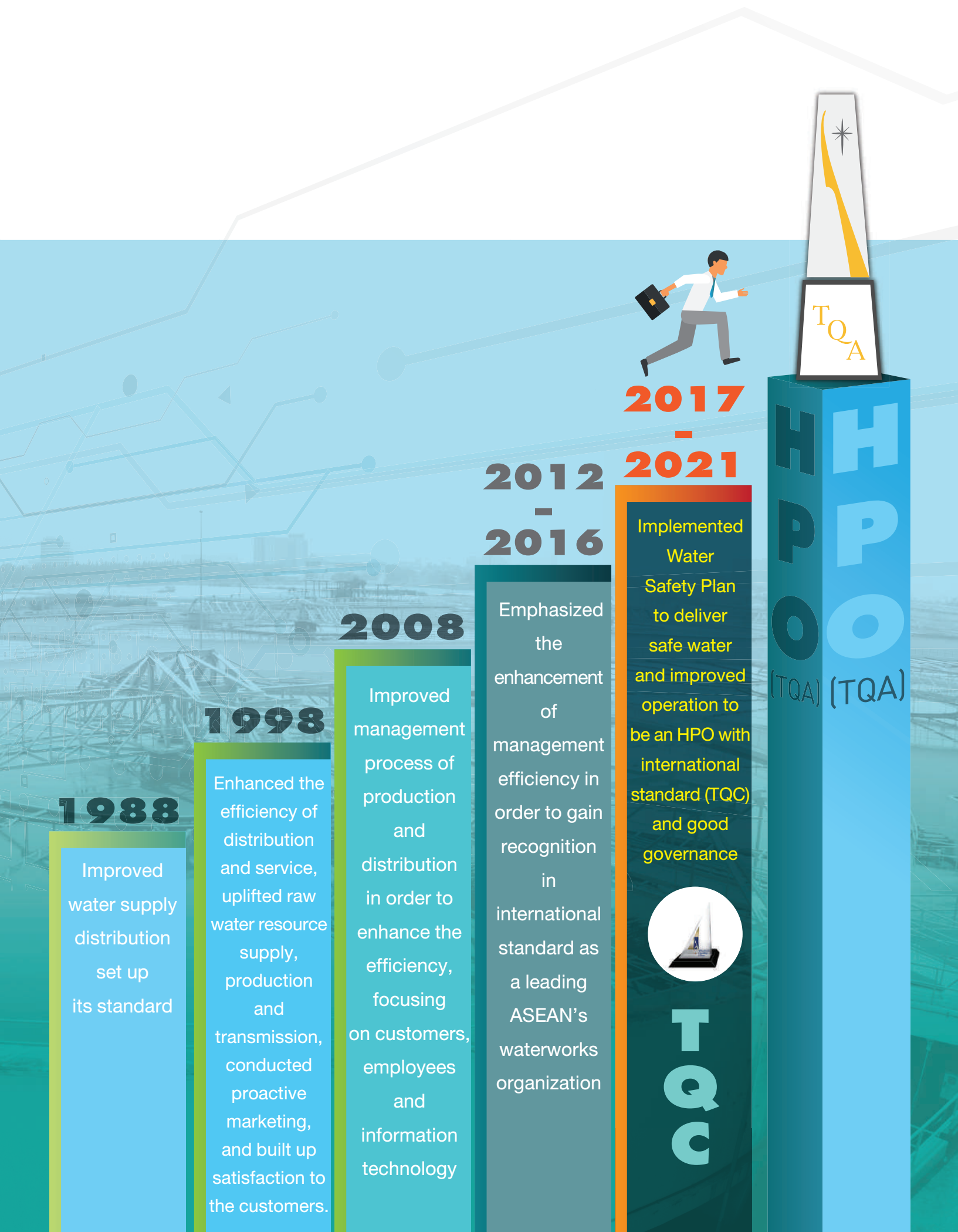


1978

Enhanced the efficiency of water supply production and transmission

1967

Supplied raw water resources, and improved water supply production and transmission





Performance Results



Organization Performance

Finance

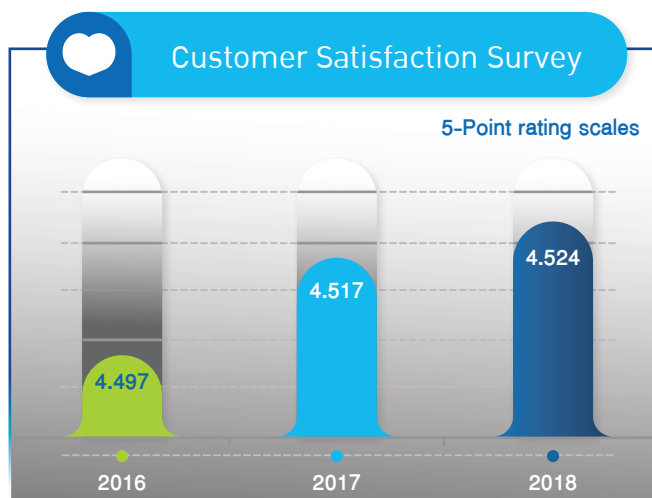
- MWA has optimized asset management to create value with expansion of MWA's innovation use by enquiring about the use of innovation in the organization before creating additional works to put them on trials within MWA's work units and utilized them further for the organization. An example is Kraithong Family, an innovation for detecting cracked or leaky pipes for reducing water loss, which is an MWA's important agenda.

- MWA has managed cash and temporary investments appropriately by studying the laws and regulations for cash investments. MWA has also planned the use of organization's cash in the short and long terms suitably by taking into account the minimum cash on hand and making plans for estimated daily cash receipts and payments. In addition, for the corporate maximum benefits, MWA also planned for remaining liquidity management to meet MWA's receipts and payments and studied alternative ways to invest cash in various sources after analyzing return rates, investment risks and liquidity in accordance with affecting factors in order to gain more returns.

Customer

- MWA has enhanced its service quality in response to the government policy in heading to Thailand 4.0 under the Digital MWA policy, emphasizing development of various work systems to provide maximum benefits and convenience for customers. Furthermore, the database of over 2.3 million customers has been updated by linking more than 22 sub-systems of the Customer Information Service (CIS). Besides, more services have been provided such as credit card payment on Website www.mwa.co.th under the name MWA e-Service, applying for a new connection on MWA onMobile Application, and e-bill service.

- MWA annually conducts a survey on MWA's customer satisfaction in order to use its results to improve and develop the branch offices' services, the employees, and the water supply products with intention to create best benefits for the customers. It has been obviously found that the satisfaction scores have been continuously increasing every year, and the satisfaction rating of consumers was at the most satisfactory level according to the survey in fiscal year 2018.



- MWA created good relations with the consumers in communities through the activity "Quality Water for Quality Life", operated by 18 MWA Branch Offices in order to access the customers, build networks and listen to people's opinions in the responsible areas. Throughout fiscal year 2018, 72 events of the project "Quality Water for Quality Life" were held in the MWA responsible areas of 3 provinces (Bangkok, Nonthaburi and Samut Prakan). In each event, the participants were provided services and knowledge such as MWA's plumbing services, basic plumbing inspection and repair, how to repair broken or leaky pipes in the house, water saving knowledge, and awareness in the value of water. In addition, the participants were introduced how to use MWA onMobile Application, and a survey on satisfaction of consumers in each area was conducted in order to use the results to improve service.

Internal Process

- MWA produced and distributed 1,997.1 million cubic meters, or 5.47 million cubic meters on daily average through its network of pipelines with a total length of 37,700.054 kilometer (excluding service pipes). Currently, the Ninth Bangkok Water Supply Improvement Project is in progress to enhance stability of the water supply infrastructure and to expand production capacity of Mahasawat Water Treatment Plant for another 80,000 cubic meters per day.

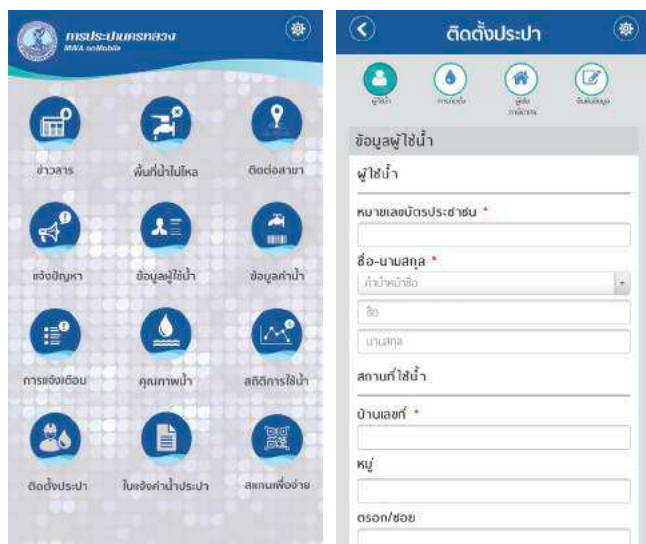
- MWA has driven Water Safety Plan: WSP by monitoring the raw water quality in real time 24 hours and developing real time water quality website (<http://rwc.mwa.co.th>) together with improving the display of information on the map and disseminating stable data, and keeping the pipes clean along with changing them according to the usage life as well as proving knowledge regarding home pipes and plumbing system maintenance.

- MWA has emphasized loss water management by laying new pipes to replace deteriorated or expired pipes and applying new technology in management, resulting in a water loss rate of 29.83% which decreased by 1.92% from the previous year.

Learning and Growth

- MWA has enhanced human resource development through the implementation of major projects such as the MWA Young Smart Project to develop the potential of highly skilled and competent personnel to support driving corporate goals. Moreover, the Strategic Succession Plan for the Key Position Project has been implemented to prepare future executives to become visionary leader of the organization.

- MWA has developed digital service to meet the people's lifestyle in the 4.0 society such as the development of new connection service and notification of e-bills through MWA onMobile Application which can be used in both Android and iOS systems. Furthermore, the newly developed payment services include QR Code water bill payment and water payment 3 days prior to due date.



คำขอชำระเงินค่าค่าน้ำ (INVOICE)
(METROPAUL) WATERWORKS AUTHORITY
http://www.mwa.go.th E-mail: mwa@125g.com

สาขา: บางกอกใหญ่ 0-2948-5119 วันที่: 11/01/2561

วันที่ (ปี/เดือน/วัน)	เลขที่ใบแจ้งหนี้ (ปี/เดือน/วัน)	เลขที่ใบแจ้งหนี้ (ปี/เดือน/วัน)	เลขที่ใบแจ้งหนี้ (ปี/เดือน/วัน)	เลขที่ใบแจ้งหนี้ (ปี/เดือน/วัน)
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ค่าค่าน้ำ (ดูรายละเอียด... 0.00...บาท)	4.05
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ส่วนลด	0.00
ค่าค่าน้ำรวม	25.00
รวมค่าน้ำรวม	258.55
ค่าค่าน้ำรวม	18.10
รวมค่าน้ำรวม	276.65
ค่าค่าน้ำรวม	0.00
รวมค่าน้ำรวม	276.65

ชำระหนี้ (ดูรายละเอียด... 0.00...บาท)

วันที่ชำระหนี้ (ปี/เดือน/วัน) 27/01/61

ชำระหนี้ (ดูรายละเอียด... 0.00...บาท)

วันที่ชำระหนี้ (ปี/เดือน/วัน) 27/01/61

- MWA has encouraged research and development of processes, for example, waterworks innovation in “MWA Academic Festival 2018” which was organized to allow various agencies to submit their works to the contest for dissemination of innovations, and in fiscal year 2018, the second event of competition for plumbing professional skills was also held.

- MWA has strengthened values to become a corporate culture cultivating desirable behavior in driving the organization to achieve its visions and missions through activities such as QWATER Heroes and QWATER Change Agents.

Corporate Governance

- MWA enhanced transparent procurement operations by signing the Integrity Pact in between MWA, the observers and the private companies that wish to bid on the following 3 projects:

- The Ninth Bangkok Water Supply Improvement Project: The working groups related to the expansion of production capacity of Mahasawat Water Treatment Plant.

- The Ninth Bangkok Water Supply Improvement Project: the working groups related to the construction of transmission tunnels, distribution pumping stations, reservoirs, substations and other related operations.

- Untreated Water Transmission System Project for Stability and Permanent Flood Prevention.

- The MWA Board of Directors, the Governor and the executives participated in signing a declaration of intent “MWA is transparent, inspectable and uncorrupted” to be a good model for all employees and contract workers in driving MWA’s operations with good governance and creation of fair service to the public. MWA also gave a policy to all employee and contract workers to sign the declaration of intent “MWA is transparent, inspectable, and uncorrupted” to participate in propelling the organization with the same ideology.

- MWA has provided the enhancement of good governance, promotion of ethics as well as prevention and suppression of corruption and misconduct for executives, employees and contract workers. Various topics of training courses were organized such as “Administrative Law for Executive”, CG Open House Project, “MWA Good Governance, Good Things to know.” Moreover, MWA has arranged study visits to external agencies that have received good governance awards to exchange experiences and apply knowledge gained in the organization.

- MWA has driven the MWA Good Governance Council by arranging a study visit to the Anti-Corruption Museum at the Office of the National Anti-Corruption Commission to create work awareness with adherence to good governance principles and not neglecting corruption. In addition, a roadshow was arranged in order for MWA personnel to acknowledge the comments about corporate operations with QR Code and the meeting of the MWA Good Governance Council Committee. The issues from the Good Governance’s meeting were jointly considered, and topics were set for the Council’s members to communicate further.

Organization Management



Risk Management

Risk Management is very important for the organization due to the fact that it helps ensure the achievement of the operational objectives under uncertainty that may occur. MWA is highly aware of risk management and implement integrated risk management at all levels based on guidelines of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), which includes international approaches that convey values from the risk management subcommittee to the operating level. The process begins with considering risk issues related to both external and internal factors, creating a systematic risk management plan as well as continuously monitoring risk management results and preparing to support risks in all situations in order to reduce the risks to an acceptable level required by the organization and respond to risks promptly as well as to push risk management to become corporate culture. The performance results of risk management in various aspects can be summarized as follows:

Quantity and Quality of Raw Water Supply

MWA constantly focuses on the quantity and quality of raw water supply by closely monitoring the water situation and water quality as well as coordinating with related agencies in water management regularly. Moreover, MWA has also followed up on the key risk indicators (KRI) of water quality and the amount of raw water on a regular basis to be used as quality surveillance data and the data for decision making in raw water management as well as for setting an emergency action plan to support future crises.

Sanitary Enhancement and Maintenance of Water Quality in Compliance with International Standards

MWA has continuously and concretely implemented Water Safety Plan, which has been defined as a main mission of the 4th Issue of MWA Strategic Management Planning (2017-2021). In addition, MWA has received cooperation from the World Health Organization (WHO) in the assessment on MWA's Water Safety Plan and provision of water management training. Besides, WHO has assisted in identifying hazards and hazardous factors that may affect water quality from raw water receiving spots, distribution pumping stations to water consumers. This aims to ensure that the water delivered to users can be consumed safely as well as to allow people to access clean and safe drinking water with a fair price.

Stability in the Production, Transmission and Distribution Systems for Water Supply

MWA invested in the Ninth Bangkok Water Supply Improvement Project to increase the production capacity and network of water supply systems supporting future urban expansion. Moreover, the project is intended to create sustainability and stability in the systems of water production, water transmission and distribution of MWA to enable immediate support of future circumstances and crises. In addition, MWA has adopted the Business Continuity Plan: BCP of important processes from the raw water system to the consumers to ensure that MWA will be able to continue to provide water supply

service for consumers even when facing crises. With regard to this, review and rehearsal are performed regularly to ensure that employees are ready to cope with arising incidents.

Finance

MWA has effectively managed the liquidity of the organization continuously and paid attention to the disbursement of investment budget, so it managed the risk of accelerating the disbursement of investment budget in order for the disbursement to meet the target. MWA has reviewed the needs and demand for investment budget in line with the actual operations, improved the procurement process, middle price setting, TOR preparation, as well as recruiting experienced and skilled contractors in order to implement various projects to achieve goals effectively.

Information Technology

MWA has reviewed and updated the IT Business Continuity Plan: BCP as well as continuously practiced it to meet ISO 27001:2013 standards for expertise. Additionally, MWA has proceeded to close loopholes with prevention measures for network intrusion and malicious attack, which is an important issue found in media around the world. This can ensure that the organization's information system is safe and ready to function with stability in all situations.

Efficiency Improvement of Water Loss Reduction

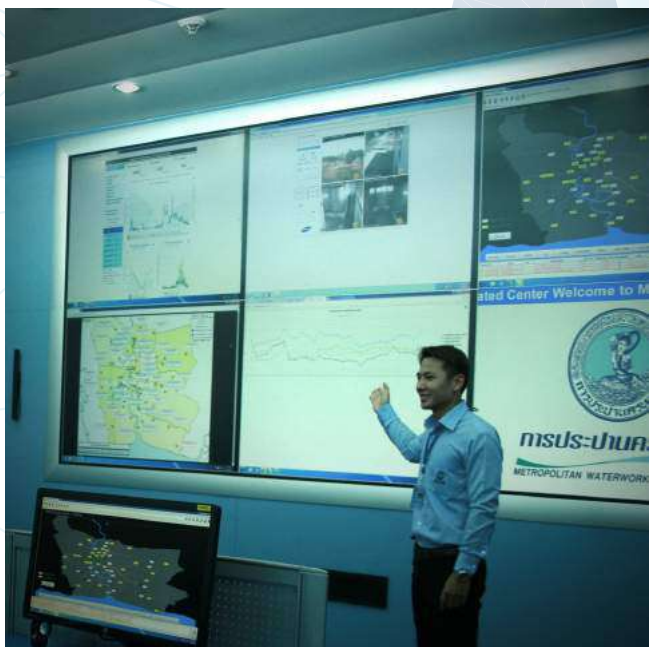
MWA has been committed to the production and service of tap water for thorough and sufficient consumption of the consumers. Due to its awareness in the importance of water resource consumption for highest benefits, MWA thus managed the risk of improving water loss efficiency. An attack team was established to detect leaky pipes by using modern technology devices for water loss management. Also, additional surveillance system equipment was installed along with maintenance and inspection of the equipment accuracy to ensure that reduction of water loss rate conformed to the target.

Internal Control

MWA has emphasized long-term stability and sustainability of the organization, and has paid attention to sufficiency management and the hygiene of consumers continuously. Currently, MWA operates under the 4th Issue of MWA Strategic Management Planning (2017-2021), which is based on the concept of integrating all work systems, corporate management using good governance with a vision “To be a high performance water supply organization with excellent corporate governance and reach international standards”.

MWA has adopted an international control system as a management tool because an organization with a good control environment can help reduce the risk of operations. Moreover, MWA has strengthened the guidelines for carrying out various activities for efficiency and effectiveness, leading to achieving organizational goals and MWA management strategies.

In fiscal year 2018, MWA conducted activities to enhance knowledge and understanding about internal control for personnel at all levels to create awareness of the implementation of internal control system in operation, and the activities included as follows:



- Review and Improvement of the MWA Announcement on Internal Control Policy and the MWA Order on Internal Control Practices in order to cover personnel's duties at all level with appropriateness in accordance with current situation.

- Setting criteria for attending the workshop for Control Self-Assessment (CSA) in collaboration with internal work units, integrating frameworks of governance, risk and compliance (GRC) to make MWA internal control more efficient and effective. The criteria for considering work systems are as follows:

- Corporate goals
- Corporate key work process
- MWA management strategies
- Corporate risk management plan
- Work systems with internal control improvement plan of fiscal year 2017

- Organizing training on “Internal Control” for the orientation of new employees and preparing staff for their promotion to provide them knowledge and raise awareness in the importance of internal control as well as to increase skills in applying internal control in operations.

- Creating an infographic in the topic of internal control to be the media for disseminating knowledge to employees throughout the organization through various channels such as the Webpage of Risk Management Department, the Academic Festival together with using it as training materials.

According to the performance results of fiscal year 2018, the Audit Office prioritized audit rating and found that the overall results were good. Generally, various departments had adequate internal control systems, complied with the corporate internal control system, and no issues with high-risk matters were found.

In the year 2019, MWA still aims to support internal control as part of the corporate culture, focusing on proactive activities such as organizing roadshows in various work units and quiz competition in order to instill personnel at all levels with good discipline and positive attitude towards internal control. This will be a part that helps the organization to achieve its goals of becoming a high performance organization and win a Thailand Quality Class (TQC).

Internal Audit

The MWA Audit Office is responsible for performing independent and fair audits according to the profession standards of internal audit. Its purpose is to build assurance and provide consulting to the Audit Committee and top executives in terms of corporate governance, risk management and good internal audit. Moreover, the MWA Audit Office has provided guidelines for improvement in order to ensure efficiency and effectiveness as well as to achieve corporate goals, resulting in the organization's strength and sustainability.



Internal Audit Policy

In order to ensure the maximum efficiency and effectiveness of the Internal Audit's operations to meet corporate visions and missions, a policy that will allow the Audit Office to be a trusted advisor has been set, consisting of

1. Standards and Regulations: Being professional; complying with standards and charters; emphasizing efficiency and effectiveness in the responsible work; and developing auditing with Data Analytics using IT support.

2. Team: Working together; supporting each other; pursuing knowledge and sharing to each other; being positive; and being flexible to adapt to all situations.

3. Services: Creating additional value for audit work by listening to all stakeholders in addition to the audit unit; collaborating with the audit unit with friendliness to achieve the objectives; creating value for organization sustainability with proactive or preventive audits; and focusing on looking ahead to prevent recurrence.

Internal Audit Practice and Reporting

The long-term audit plan (fiscal year 2017-2021) and the audit plan, fiscal year 2018 of the Audit Office are in accordance with the Risk Based Audit. The plans focus on the major risks of the organization and comply with the MWA Strategic Management Plan, the issues that the executives pay attention to, the observations from the Office of the Auditor General, and opportunities for improvement from the feedback report of the assessment based on the SEPA system, Categories 1-6. The Audit Universe (AU) covers all aspects of MWA operations, and applies data analytical and CAATS validation techniques to increase the audit efficiency in accordance with the Digital MWA Policy.

The internal audit reporting and suggestions/guidelines for improvement are submitted to executives of the audit unit in order to improve work performance. The performance results based on recommendations are followed up before the results are reported to the MWA Governor, the MWA Audit Committee, and the MWA Board of Directors every 3 months.

Value Creation

The Office of Auditor General emphasizes an integrated audit covering all over the organization's core operational processes such as water supply production process, management of plumbing systems of MWA Branch Offices, water loss management, Water Safety Plan, the Ninth Bangkok Water Supply Improvement Project and risk management, etc. In addition, consulting services are provided for the executives and the Audit Unit on various issues in order to create value and develop risk management processes, internal control and corporate governance.

Maintenance of Internal Auditor's Quality

The internal audit manual is reviewed annually in order for all internal auditors to use as performance guidelines within the same direction. The MWA auditing process includes operational quality reviewed by senior auditors; assessment on satisfaction inspected after auditing by the audit unit; self-assessment by internal auditors, and the quality assessment by independent external experts outside the organization every five years. All assessment results have been analyzed to improve efficiency and to arrange training courses suitable for internal auditors in order to increase their skills and capacity. In addition, MWA has emphasized encouragement of self-development for internal auditors in order that they are able to hold an Internal Audit Diploma or other professional fields related to the internal audit.

Auditor Compensation: The Office of Auditor General of Thailand was the auditor for MWA in the financial year 2018, with a charge of 2.50 million baht.



Corporate Social and Environmental Responsibility



MWA has been carrying out the Corporate Social Responsibility (CSR) in compliance with ISO 26000 — International standards for organizations, which has been used as operational guidelines for adopting the MWA CSR policy. The policy has been set to create a more distinct operational direction to enable MWA to operate its core missions with highest efficiency and effectiveness in providing clean water supply sufficiently and thoroughly with international standards for the users. Moreover, this has been able to create maximum satisfaction of the consumers in responsible areas by taking into account good relations with stakeholders in all sectors so that everyone in the society and communities can live together in harmony.

In addition, MWA had paid attention to implementation of CSR in-process, starting from supply of raw water, production, pumping and distribution as well as customer service, particularly the reduction of GHG emissions in the production and distribution processes for the sustainability of the organization and society. Furthermore, MWA has prepared a sustainable development report to reveal the performance results on social responsibility covering 3 dimensions – economy, society and environment, which reflect positive and negative impacts of the

corporate operations on stakeholders. Besides, the report has identified 10 aspects of materiality affecting corporate sustainability in the year 2018, by using guidelines and structures based on the standards of Global Reporting Initiative (GRI), which is an international reporting framework to create integration of sustainability as a part of corporate strategies.

Distinctive MWA's CSR After Process

MWA Plumber for People Project aims to provide corporate core knowledge and expertise of water pipe system maintenance as well as water pipe and equipment repair techniques to the general public with no limitation on genders and education levels together with offering suits and plumber tool box for basic waterworks tasks with free of charge. The training course included theoretical and practical sessions as well as arrangement of the activity “CSR Quality Water for Quality Life” for trained participants so that they can apply their knowledge and skills to real situation by acting as volunteers to repair and maintain the water supply system in various locations such as temples, schools and communities to increase skills and learn how to cope with immediate problem solving. Also, the MWA employees were available to supervise these trainees and provide them some advice so that the knowledge, skills and experience they obtained from the training will provide them an extra career opportunity, or lessen their household expense in repairing and maintaining basic waterworks system. Even more, they can be independent and help others in their community; particularly, it is another way to reduce water loss from broken pipes.

In 2018, MWA offered 4 classes of basic training course and 1 advanced class with 222 trained participants. From the beginning of the project in March 2014 to September 2018, there were a total of 37 classes with 1,213 participants across the country (including 32 beginner classes and 5 advanced classes) together with arranging the activity CSR Quality Water for Quality Life for people for 32 events at 42 places. Nonetheless, what made the MWA more proud than providing the knowledge and opportunity was that the trained people could build on what they had learned, whether the development of innovation to apply in plumbing works or participation in the MWA innovation contest with the winner awards. Additionally, they also developed themselves from the trainees to become the trainers to expand learning opportunity for other people. The self-potential discovering and self-confidence had made them proud to be useful for their families and communities and this had helped them realize the value of water and water resource conservation. (This project won the Outstanding State Enterprise Award 2015, in category of outstanding CSR operation, from State Enterprise Policy Office, Ministry of Finance).

The MWA Plumbing System for School is a project in response to the royal speech addressed by H.M. King Bhumibol Adulyadej, using the school development model to develop water supply system for school. The system was connected to the **MWA Watershed Forest Conservation Project to honor King Bhumibol**, at Baan Lin Luang, Chiangmai Province (a raw water source for water supply production in the east side). In 2012-2016, the project was expanded to Mae Klong River basin (one of the main raw water sources in the west side). The project subsidized the budget of creating tap water system for schools in the area of Mae Klong River basin, which was inaccessible to clean water supply, by starting implementation from 2016 until now. In 2018, the project was carried out in Ratchaburi and Kanchanaburi Provinces for 4 schools including Ban Thung Chaeng School, Kaem-On Subdistrict, Chom Bueng District of Ratchaburi Province; Anubanthong Phaphum School, Tha

Khanun Subdistrict, Thong Pha Phum District of Kanchanaburi Province; Ban Nammakui School, Lin Thin Subdistrict, Thong Pha Phum District of Kanchanaburi Province; and Ban Onsit School, Natsuan Subdistrict, Srisawat District of Kanchanaburi Province. To include its development of the plumbing system since 2006, MWA has developed its water supply system in a total of 21 schools, and it also formed a school team to continue maintenance of the system. Furthermore, the project has provided knowledge about how to use water effectively for students and community people to promote the conservation of natural and water resources for creation of sustainable development. Besides, the networks of water resource conservation have been expanded by fostering relations with public, private and local agencies as well as the civil society sectors such as local government agencies in Kanchanaburi, Department of Ground Water Resources, MWA Labor Union, and the project known as MWA Shares Smiles for Society. The implementation of this project has formed collaborative networks with MWA in creating social awareness and conservation of water resources. (This project was awarded 2017 Outstanding State Enterprise, category of Outstanding CSR Operations, from State Enterprise Policy Office, Ministry of Finance).

The activity "Water Conservation Camp" provided knowledge to raise awareness in the value of water, water conservation for the students in the Mae Klong River basin and the Chao Phraya River basin areas. A total of 4 sessions of activities for 16 schools were organized including 3 sessions for 12 schools in the areas of Mae Klong River basin and 1 session for 4 schools in the areas of Chao Phraya River basin, Nonthaburi Province.

Demand Side Management (DSM) : MWA has encouraged people's awareness in the value of water and water saving as well as changing their water consuming behavior. The project has also supported water saving innovations and promoted the production of water saving devices with the performance label of MWA.

Inspection of the fire hydrants at over 20,000 spots throughout the areas of Bangkok, Nonthaburi, and Samut Prakan to make sure that they are in a ready state to help extinguish any possible case of fire and reduce the loss of life and property of the people, etc.

MWA is still committed to the operation of CSR with readiness to take part in enhancing the sustainability of community and society along with carrying out the core missions in basic utility services of the necessity of living, which is "water supply" with cleanness, safety and international standards as defined in the corporate key principle that "Quality Water for Quality Life".



Service Performance of MWA's Branch Offices

Branch Office	Service Area	Customer	New Connection	Water Production	Water Consumption			Pipe Length*
	Sq km.	Connection	Connection	Million cu.m.	Water Sale Million cu.m.	Other Million cu.m.	Total Million cu.m.	Km.
Region 1	489.53	467,113	14,820	482.79	335.95	4.59	340.54	7,653.140
Sukhumvit	94.81	123,482	2,323	143.62	103.04	1.09	104.13	2,176.480
Phra Khanong	120.12	147,759	4,878	140.68	93.59	1.17	94.76	2,406.055
Samut Prakan	274.60	195,872	7,619	198.49	139.32	2.33	141.65	3,070.605
Region 2	226.46	393,665	4,903	462.89	323.46	3.94	327.40	5,797.127
Phaya Thai	60.91	88,123	1,156	150.52	93.10	3.09	96.19	1,482.341
Thung Mahamek	31.86	71,998	548	88.15	61.24	0.16	61.40	783.077
Mansri	35.81	68,982	486	123.42	86.55	0.27	86.82	864.578
Lad Phrao	97.88	164,562	2,713	100.80	82.57	0.42	82.99	2,667.131
Region 3	754.23	505,364	18,012	352.34	267.72	5.55	273.27	9,016.419
Prachachuen	77.87	114,747	1,926	88.06	62.19	1.66	63.85	1,691.806
Bang Khen	81.90	122,895	3,543	71.63	50.36	0.99	51.35	1,917.680
Min Buri	282.76	155,345	5,502	75.77	64.45	2.25	66.70	2,939.226
Suvarnabhumi	311.70	112,377	7,041	116.88	90.72	0.65	91.37	2,467.707
Region 4	522.69	591,417	11,693	467.69	284.38	13.19	297.57	8,232.993
Bangkok Noi	112.04	133,992	1,786	114.48	64.90	3.64	68.54	2,050.136
Taksin	113.70	155,200	2,470	116.49	78.94	2.26	81.20	1,989.854
Phasi Charoen	128.57	166,359	3,241	122.41	72.46	3.73	76.19	1,863.481
Suksawat	168.38	135,866	4,196	114.31	68.08	3.56	71.64	2,329.522
Region 5	456.36	417,931	16,225	231.36	159.60	3.00	162.60	7,000.375
Nonthaburi	91.96	128,496	1,974	92.02	65.40	1.27	66.67	1,952.364
Bang Bua Thong	203.97	135,272	6,544	61.11	44.28	0.62	44.90	2,501.599
Mahasawat	160.43	154,163	7,707	78.23	49.92	1.11	51.03	2,546.412
Grand Total	2,449.27	2,375,490	65,653	1,997.07	1,371.11	30.27	1,401.38	37,700.054

* The pipeline length in the transmission and distribution systems.

Pipeline Length and Equipment (As of 30 September 2018)

Dia. Size (mm.)	Pipe Length (km.)				
	ST	SCP	RCP (ST)	CI	PC-ST
Tunnel and Conduit					
3,400	10.367				6.582
3,200	40.846				
3,000	16.286				
2,800	0.070				25.124
2,500	11.980				6.172
2,300	19.497				1.755
2,000	36.801				8.153
1,500	7.289				
Total in Transmission System (km.)	143.135	0.000	0.000	0.000	47.786
Trunk Main					
1,800	12.540	0.676			
1,500	↓ 95.401	11.079	10.322		
1,200	↑ 140.950	14.715	1.965	0.044	
1,000	↑ 538.869	12.407	↑ 34.102	12.937	
900	28.867			20.386	
800	↑ 477.244	0.114	↑ 0.168	8.822	
700	↓ 38.350			11.001	
600	↓ 150.412		0.009	15.843	
500	36.190			19.404	
400	19.144			↓ 19.523	
Total in Trunk Main (km.)	1,537.968	38.990	46.566	107.959	0.00
Distribution Pipe					
400	37.658			6.634	
300	↑ 263.901			2.264	
250	↑ 1.970			0.351	
200	↑ 110.492			↓ 1.807	
150	↑ 128.749			0.112	
100	↑ 6.787			↓ 0.964	
50	0.048			0.057	
Total in Distribution Pipe (km.)	549.605	0.00	0.00	12.190	0.00
Total in Distribution System (km.)	2,230.708	38.990	46.566	120.149	47.786

Remarks : Length of distribution pipeline excluding service pipe (1/2"-3" size)



	PC	AC	DI	PVC	GI	HDPE	PB	Total
								16.949
								40.846
								16.286
								25.193
								18.152
								21.252
								44.954
								7.289
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	190.921
								13.216
								116.802
	0.354		0.013					158.040
	4.533							602.847
	3.128					1.265		53.646
	4.874		0.423			2.643		494.288
	6.934					1.338		57.623
	8.310	3.786	2.704			0.582		181.647
	13.862	3.090				0.127		72.673
	0.934	0.042		0.234		0.004		39.882
	42.929	6.918	3.140	0.234	0.00	5.959	0.00	1,790.662
		↓ 110.425		↑ 110.852		↑ 0.262		265.831
		↓ 1,278.444		↑ 4,417.564	0.062	↑ 47.123		6,009.357
		19.675		1.323				23.318
		↓ 462.697		↑ 4,344.622	0.012	↑ 57.136		4,976.767
		↓ 968.411		↑ 8,737.155	24.589	↑ 14.662		9,873.678
		↓ 357.474		↑ 12,132.223	↓ 211.479	↑ 48.068		12,756.995
		0.441		↓ 36.930	↓ 30.865	↑ 3.129	↑ 1,741.054	1,812.524
	0.00	3,197.566	0.00	29,780.669	267.008	170.380	1,741.054	35,718.471
	42.929	3,204.484	3.140	29,780.903	267.008	176.339	1,741.054	37,700.054

Fire Hydrant (150 mm.) 30,206 units (30,184 above-the-ground units and 22 underground units)

Gate Valve 140,605 units

Butterfly Valve 2,672 units

Water Production Process Chart

Raw Water Sources

1

Chao Phraya River, abstracted from Ban-Krachang Sub-district, Mueang District, Pathumthani Province

2

Mae Klong Dam, abstracted from Tah-Muang District, Kanchanaburi Province

Unit : (million cu.m./day)	Production Capacity	Water Production
Samsen Water Treatment Plant	0.550	0.324
Thonburi Water Treatment Plant	0.170	0.103
Bangkhen Water Treatment Plant	4.400	3.813
Mahasawat Water Treatment Plant	1.600	1.435

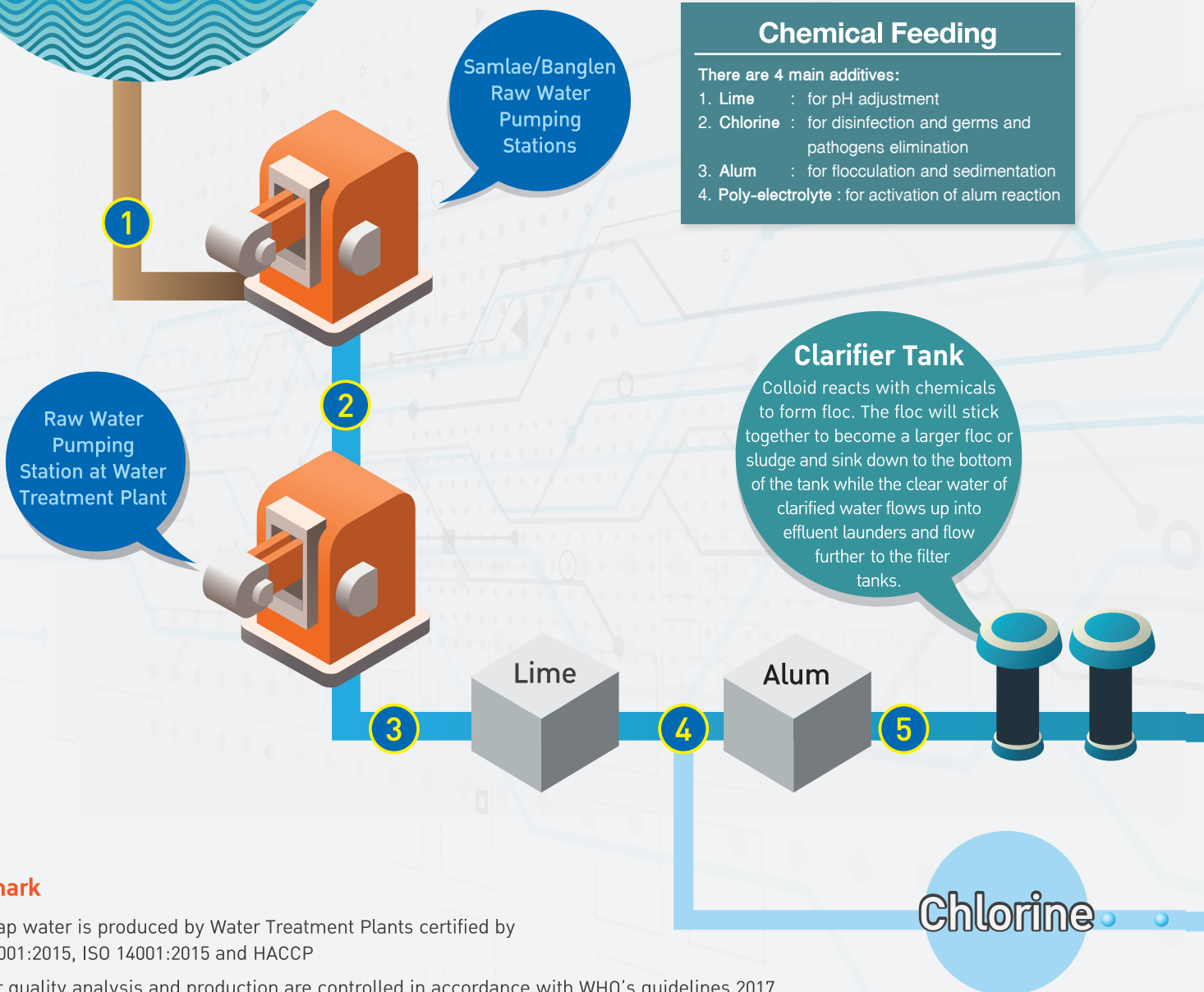
Chemical Feeding

There are 4 main additives:

1. Lime : for pH adjustment
2. Chlorine : for disinfection and germs and pathogens elimination
3. Alum : for flocculation and sedimentation
4. Poly-electrolyte : for activation of alum reaction

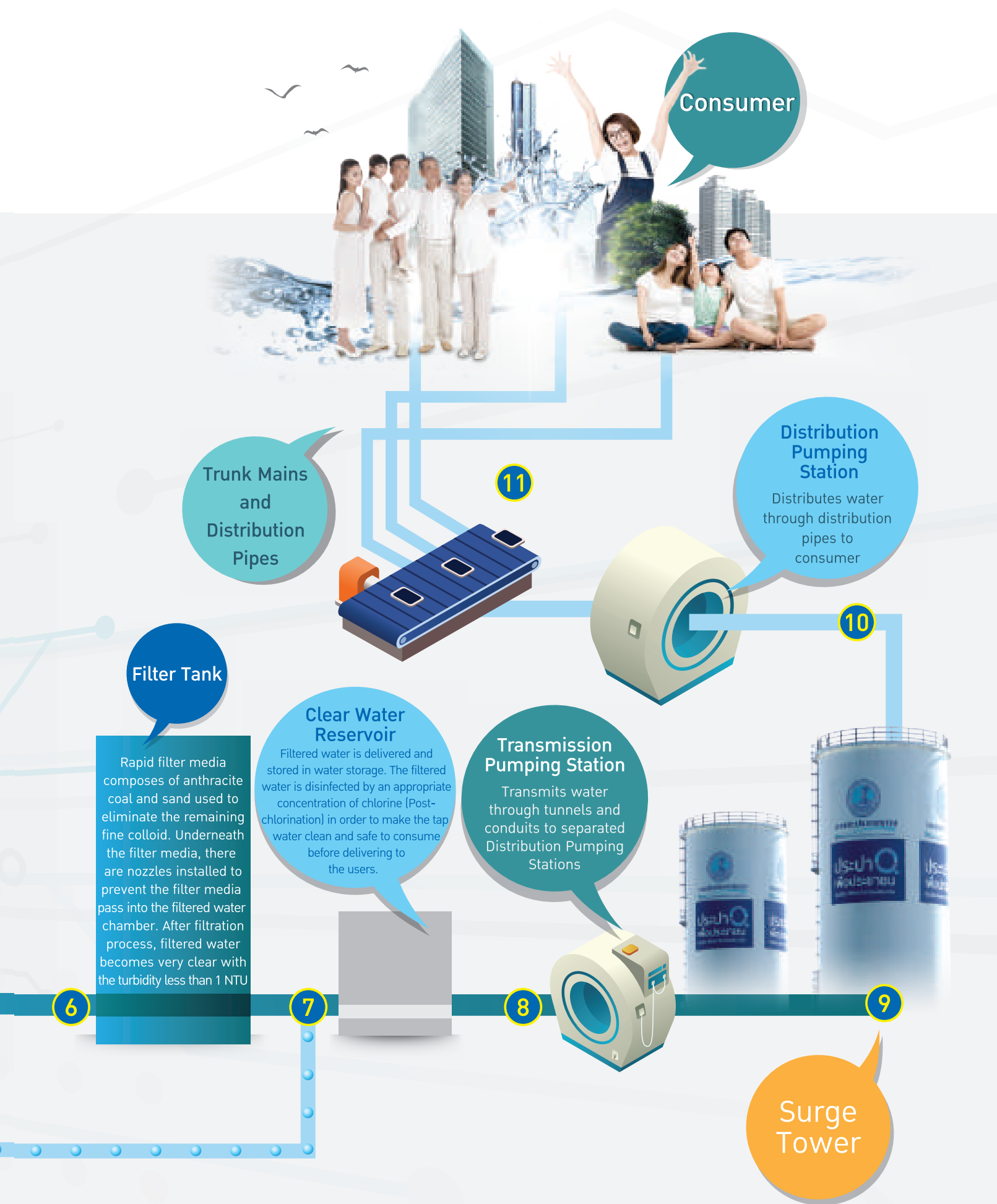
Clarifier Tank

Colloid reacts with chemicals to form floc. The floc will stick together to become a larger floc or sludge and sink down to the bottom of the tank while the clear water of clarified water flows up into effluent launders and flow further to the filter tanks.



Remark

- The tap water is produced by Water Treatment Plants certified by ISO 9001:2015, ISO 14001:2015 and HACCP
- Water quality analysis and production are controlled in accordance with WHO's guidelines 2017. Water quality analysis and monitoring take place in Water Quality Department Laboratory certified by ISO 17025:2005



MWA Proud Awards



The Single Fund Winner Awards
category of state-enterprise
provident funds with total assets less
than 5,000 million baht.



The Golden Award
Thailand Kaizen Awards 2018
Contest for the innovation
“ADD[...]SPACE”, the water
maintenance equipment.

An Award Plaque to honor outstanding executives of the year 2018

category of waterworks
innovation for people,
pursuing the One Million
Good Deed Seedlings for
the King Project, offered to
Mr. Prinya Yamasamit,
MWA Governor.



Activities in 2018



1. MWA Plumber for People Project

2. MWA consigned clear water to the community.



3. MWA Open House



Activities in 2018



4. Demand Side Management

5. Data Scientist Bootcamp



6. MWA meets People



7. Delivery the innovation equipment to works project.



8. MWA CSR Day 2018



9. MWA CG Day 2018



10. Water Loss Reduction Roadshow



11. The MWA Watershed Forest Conservation Project Following the Royal Path of HM King Rama IX





Good Corporate Governance



Good Corporate Governance Policy

The MWA Board of Directors has strictly adhered to the good corporate governance principles in operating the business and set a clear CG policy since 2006 according to Corporate Principles and Guidelines for State Enterprise 2009 and the Stock Exchange of Thailand (SET)'s Corporate Governance Principles. MWA has adopted CG policy as the core framework in promoting efficient operations based on moral, ethics and responsibility to society and environment, resulting in the corporate success and sustainable growth.

The MWA Good Corporate Governance

consists of 6 principles, which have been used as a guideline for management and operations to create organizational stability and equitable treatment of stakeholders as follows.

1. The Rule of Law

Focusing on fair rules and regulations and fair implementation with equitable treatment and no double standards along with keeping corporate operations within the framework of rules and regulations and timeframe with no abuse of authority power as well as paying attention to respect on rights and freedom and updating rules and regulations to reflect the current situation.

2. Virtue

Adhering to operation virtue in order to be a role model for the society as well as supporting and encouraging people self-development to create society of integrity, sincerity, toleration, discipline and honesty together with abstaining from corrupted activities and working in collaboration with all employees in preventing corrupted acts in the organization.

3. Transparency

Maintaining transparent management and operations in all areas including clear and transparent work process and audit process as well as straightforward, accurate, transparent and timely disclosure of information beneficial to public.

4. Participation

Providing equal opportunity for employees to participate in the management related to recommendation and decision making along with resource allocation which affects operations, employees and employers; providing information, taking employee's opinions into account, giving them advice and allowing them to join planning and plan execution as well as stakeholder control.

5. Accountability

Being aware of rights and duties, sense of responsibility, caring, enthusiasm in problem solving along with willingness and readiness for audit and evaluation which reflects responsibility towards stakeholders as well as accountability for operational consequences.

6. Efficiency and Effectiveness

Performing effective and efficient management, optimizing existing resources for the best benefits of the organization, creating quality and competitive products and services, maintaining sustainable society and environment together with setting key performance indicator and conducting the performance appraisal by recognized independent organizations or persons.

MWA has operated by adhering to the good governance principles and determined to prevent and combat corruption in certain concrete ways. One example was that the MWA Board of Directors, MWA subcommittees, The Governor, and all MWA employees participate in the declaration of intent "MWA is transparent, inspectable, and uncorrupted" to express their commitment to honest and inspectable management. In addition, MWA set good governance policy on giving and receiving gifts or any other benefits, 2018, and established the MWA Good Governance Council to promote a transparent organization with no corruption in a sustainable manner. Besides, the MWA Anti-Corruption Operation Center has been established to proceed with preventing and suppressing MWA's corruption and misconduct to conform with the National Strategy on prevention and suppression of corruption, and respond to the State Policy on promotion of public administration with good governance to form networks for propelling policies and measures in collaboration with the Ministry of Interior's Anti-Corruption Operation Center. The MWA Anti-Corruption Operation Center is located at the Information Center on the 1st floor of MWA Head Office, and it deals with reports on complaints about corruption and misconduct through various channels such as telephones, fax, the internet and intranet, etc.

Remuneration of Governor and Executives

- The Governor of MWA is appointed through a recruitment process. The contract terms is four years. The Governor receives remuneration as considered and approved by the Board of Directors, depending on his/her knowledge, capacity, responsibility and the MWA's ability to pay within the remuneration framework.

- The current Governor, Mr. Prinya Yamasamit (contract period from 19 April 2017 to 11 August 2020) received fixed remuneration of 327,757.50 baht per month in fiscal year 2018 along with other benefits as state in the employment contract. The Governor's Performance Appraisal Subcommittee considered the Governor's performance and resolved that the Governor passed all the appraisal and performance criteria. As a result, the Governor received the remuneration in accordance with the appraisal result of 1,524,802.81 baht per year and additional fixed monthly remuneration from October 2018 of 358,032.46 baht per month

- Remuneration of top executives (Deputy Governors and Equivalents) is pursuant to the Ministry of Labor's salary structure (46.5 levels). The remuneration of Deputy Governors and Equivalents is not more than 113,520 baht. There are also other benefits both in financial and non-financial terms, including entertainment allowance, bonus, car allowance and other benefits according to the MWA regulations.

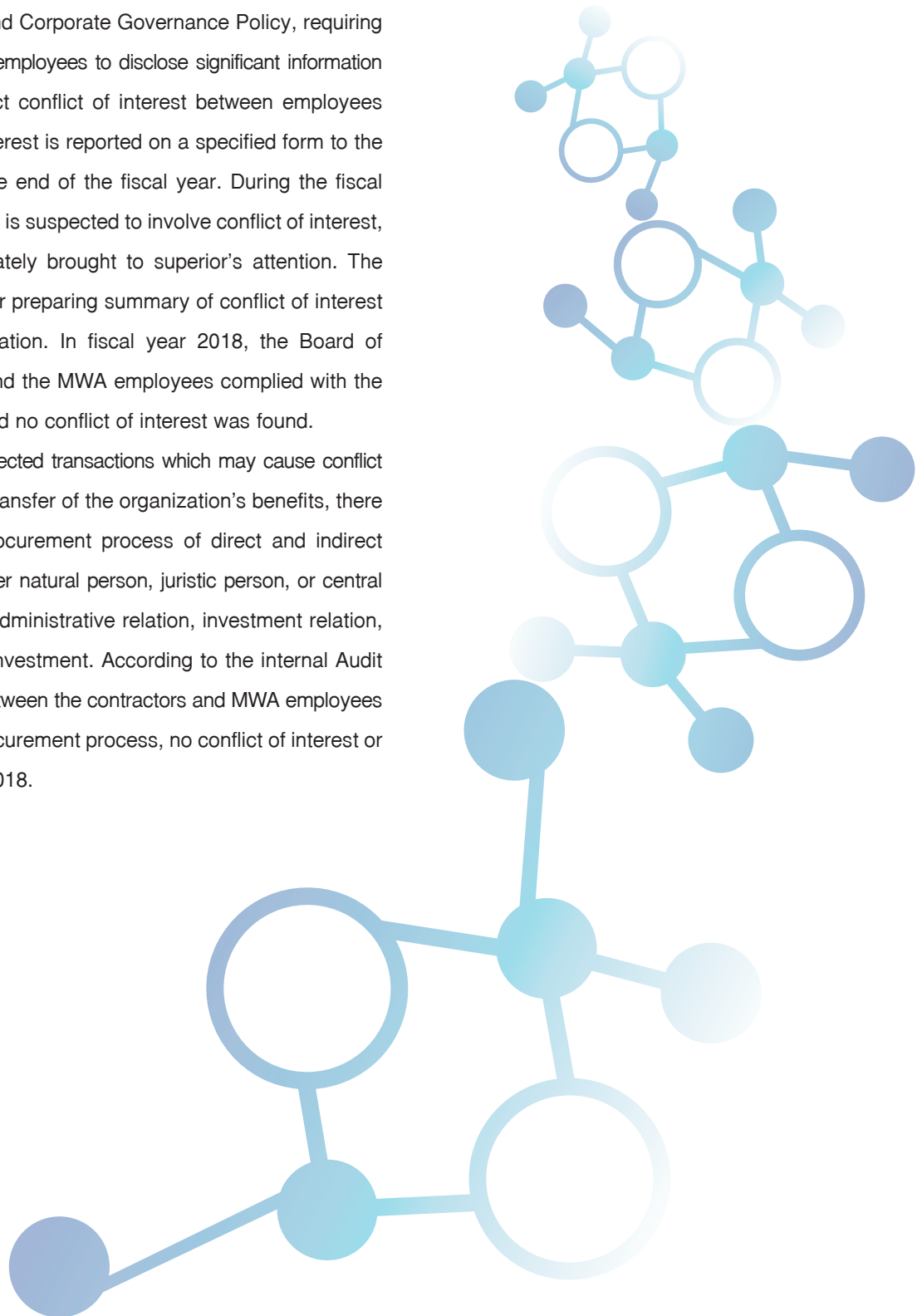
Unit : Million Baht

Remuneration	2018	2017	2016	Change 2018-2017 Increase (Decrease)	
				Million Baht	Percentage
Remuneration of Governor	4.29	4.78	5.79	(0.49)	(10.25)
Remuneration of Deputy Governors and Equivalents	23.37	20.93	20.47	2.44	11.66
Total	27.66	25.71	26.26	1.95	7.58

Conflict of Interest Management

The MWA Board of Directors emphasizes the importance of prudent, transparent and inspectable conflict of interest management. Criteria and directions on conflict of interest management have been included in the management policy and Corporate Governance Policy, requiring the directors, executives and employees to disclose significant information to prevent direct and indirect conflict of interest between employees and the MWA. Conflict of interest is reported on a specified form to the higher level supervisor at the end of the fiscal year. During the fiscal year, if there is any issue that is suspected to involve conflict of interest, the matter shall be immediately brought to superior's attention. The Audit Office is responsible for preparing summary of conflict of interest report of the entire organization. In fiscal year 2018, the Board of Directors, Subcommittees and the MWA employees complied with the conflict of interest reports and no conflict of interest was found.

With respect to the connected transactions which may cause conflict of interest and may lead to transfer of the organization's benefits, there will be inspection of the procurement process of direct and indirect interest between bidders either natural person, juristic person, or central market in order to find any administrative relation, investment relation, or cross-management and investment. According to the internal Audit Office's review of relations between the contractors and MWA employees who were involved in the procurement process, no conflict of interest or related issue was found in 2018.



Details of Important Securities Held by Directors and Related to MWA and Connected transactions to MWA

MWA has prepared a form for disclosure of securities (shares) and connected transactions for the Board of Directors to disclose to the public. The information as of 31 December 2018 can be summarized as follows:

Name		Shareholding in juristic person related to core business	Related juristic person	Being a director/top executive in other state enterprises/juristic persons		
Chairman and Independent Director				Chairman	Director	Executive
1.	Mr. Vullop Phringphong	-	-	-	A	-
Director and Independent Director						
2.	Prof. Suwatana Chittaladakorn, Ph.D.	-	-	-	-	-
3.	Mr. Wanchai Lawattanatrakul	-	-	-	B	-
4.	Mr. Nattakit Tangpoonsinthana, Ph.D.	-	-	-	C	D
5.	Asst. Prof. Teekawuth Potapirom	-	-	-	-	-
6.	Mr. Chaichana Mitrpant, Ph.D.	-	-	-	E	F
7.	Mr. Thongplew Kongjun, D.Eng	-	-	-	-	G
8.	Assoc. Prof. Chanin Tinnachote, Ph.D.	-	-	-	H	-
9.	Vadm. Nadaecho Kerdchoochuen	-	-	-	-	-
Director, Ministry Representative						
10.	Mr. Nisit Jansomwong	-	-	-	I	J
11.	Mrs. Siriporn Luangnual	-	-	-	K	-
Director and Governor						
12.	Mr. Prinya Yamasamit	-	-	-	-	-

Remarks : MWA has no subsidiaries or associates

A : Expert, National Land Policy Committee

Expert, Local Personnel Management Standards Committee

B : Director and Chairman of the Audit Committee, SPCG Co., Ltd.
(Public)

C : Director, Siamrajathanee Co., Ltd.

D : Vice President, Central Group Co., Ltd.

Executive Vice President, Marketing Department, Central Pattana Co., Ltd. (Public)

E : Executive Director, Bangkok Mass Transit Authority

Executive Director, PTT Oil and Retail Business Public Company Limited

F : Deputy Director, Electronic Transactions Development Agency
(Public Organization)

G : Director-General, Department of Irrigation

H : Director, Universal Utilities Public Company Limited

I : Director, Thailandpost Distribution Co., Ltd.
Law Reform Commission of Thailand

J : Director-General, Department of Community Development

K : Director, Ratchaburi Electricity Generating Holding Public Company Limited

Director, TOT Public Company Limited

Definitions

(1) Securities holding (shareholding) in a juristic person related to core business: shareholding of MWA directors in a juristic person related to the core business of MWA in the percentage exceeding 10 percent of the total shares with voting rights.

(2) Juristic persons related to MWA directors: a juristic person which has or is likely to have a transaction activity related to MWA where the spouse, minor child/adopted child of MWA directors has control over on one of the following cases: holding shares with voting rights exceeding 50 percent of all voting rights; or having controlling power in the majority of votes in shareholders meeting; or having controlling power in the appointment or removal of at least half of all directors.

(3) Holding the positions of directors/ high-level executives in state enterprises / other juristic persons: state enterprises/juristic persons where the MWA directors hold the positions of directors or high-level executives. (See list of state enterprises/other juristic persons where MWA directors hold the positions on page 70 of the annual report.)

MWA Code of Ethics

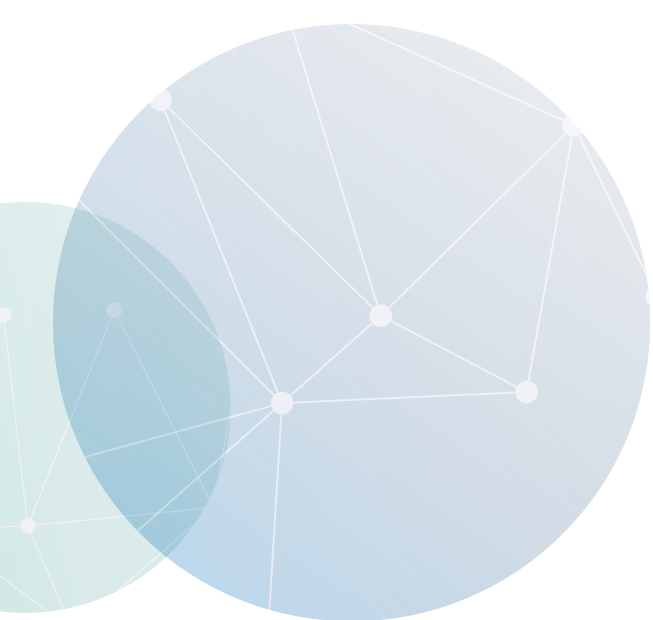
To express the intention in operating the business with transparency, moral principles and responsibility toward stakeholders, the MWA Board of directors thus set MWA Code of Ethics in accordance with the Metropolitan Waterworks Authority Regulation No. 133 on ethics of MWA Governor and Employee B.E. 2552 (2009) dated 28 December 2009. MWA Code of Ethics has been issued to ensure that all stakeholders receive fair treatment, and has been distributed to all to be used as practice guidelines for directors, executives, employees and contract workers. If there are proofs in case of violation, or non-compliance with the Code of Ethics, the MWA disciplinary actions shall be taken. In fiscal year 2018, MWA made a review on MWA Code of Ethics such as ethical standards of the Board, subcommittees and MWA consultants as well as ethical standards of the Governor and MWA employees together with reports on violation or non-compliance with MWA Code of Ethics.


Promotion of Good Corporate Governance and Social and Environmental Responsibility

The MWA Board of Directors has set a significant policy for MWA to be managed under Good Governance along with corporate social and environmental responsibility (CSR). This policy has been assigned to the Corporate Good Governance (CG) and Corporate Social and Environmental Responsibility (CSR) Subcommittee to determine the strategies, goals, and action plans on good governance and CSR. In fiscal year 2018, the main activities were as follows:

1. Establishing the Compliance Unit which was appointed by the MWA Board of Directors to study any new laws, regulations, and criteria related to the Board of Directors, executives, and employees so that they could be analyzed and defined as practical guidelines for overall organization along with posting the guidelines derived from the study on the MWA CG Website to generate total understanding among officials in the organization.

2. Appointing anti-corruption and enhancement of ethics committee to be in charge of developing action plans in order to accelerate and regulate the concerned units to implement the action plans for preventing and suppressing corruption and misconduct as well as to promote work ethics of MWA employees and contract workers.





3. Making the declaration of intent “MWA is transparent, inspectable and uncorrupted” by the MWA Board of directors, the Governor, and the executives in department level and equivalents to be a good model for all employees and contract workers to propel MWA operations with good governance principles and create fairness in providing services to the public in accordance with the 4th Issue of MWA Strategic Management Planning to achieve its goal and vision “To be a high performance water supply organization with excellent corporate governance and reach international standard”.

4. Generating communication from top executives to the work operators by arranging a meeting every quarter together with preparing a meeting report and circulating to employees as well as posting it on MWA’s website.

5. Appointing a working group to review and improve the MWA good governance manual which was completed in 2018 as well as distributing it to the governor, executives and employees who also signed an MWA agreement for acknowledgement of the manual and further practice.

6. Simplifying work policies to be easy and understandable for all individuals to follow, such as the policy on giving and receiving gifts or any other benefits, 2018.

7. Driving the MWA Good Governance Council by organizing a study visit of the council members to the Anti-Corruption Museum, arranging meetings for the Good Governance Council Committee along with organizing a roadshow to provide knowledge about QR code and publicize it, which was also a platform for MWA staff to express their opinions on MWA’s operations to the executives and staff members in all operation lines.

8. Creating the body of knowledge on good governance and disseminating it to all staff members to make them aware of the importance of applying good governance principles in work through different channels including CG MAG Journal, CG articles to publish in Nam Kok (Tap water) Journal, MWA CG brochures, CG Mee Dee (Having something good). The MWA activities are monthly publicized on the MWA CG website.

9. Organizing an event on MWA CG Day to raise staff member's awareness in applying CG principles in work operations in order to move forward to become a transparent and uncorrupted organization under the concept "MWA CG Land", enabling all staff to use CG principles in work; several activities organized in the event include exhibitions from all operation lines and offering awards in the contest under Kla Tham Dee (Dare to do good deed) Project Year 2.

10. Providing a lecturer on "Administrative Law for Executives", a course for executives or equivalents to enhance knowledge on administration law and able to apply for transparent, inspectable and uncorrupted operations.

11. Arranging Tonkla Thammaphiban (Young blood for good governance), a training course for personnel to get promoted as well as those requiring to develop and improve their work performances, including a posttest after training.

12. Providing a lecture in the CG Open House, on the topic "MWA Good Governance, Good Knowledge for All" for MWA employees and contract workers to strengthen morality, ethics and to prevent corruption.

13. Organizing training courses regarding good governance, code of ethics and corruption prevention for employees and contract workers, including "Jainism Coaching Art", "Learning Sufficiency Economy at Kru Thani's Home" and "Conflict between Personal Interests and Common Interests based on the Office of the National Anti-Corruption Commission's Law, Section 100 and Section 103".

14. Assessing work performance on corporate governance by evaluating the knowledge, attitude, behavior and exposure to social media on good governance of MWA's employees and contract workers.

15. Participating in "Integrity and Transparency Assessment: ITA" 2018 organized by the National Anti-Corruption Commission in which the MWA scored 92.40 points, a very high level of moral and transparent operations.

16. Setting up the corporate transparency index to be used as division-level key performance indicators.

17. Organizing a project known as Doing Good with Good Governance Heart and giving certificates to the MWA employees and contract workers whose services were admired by the public.

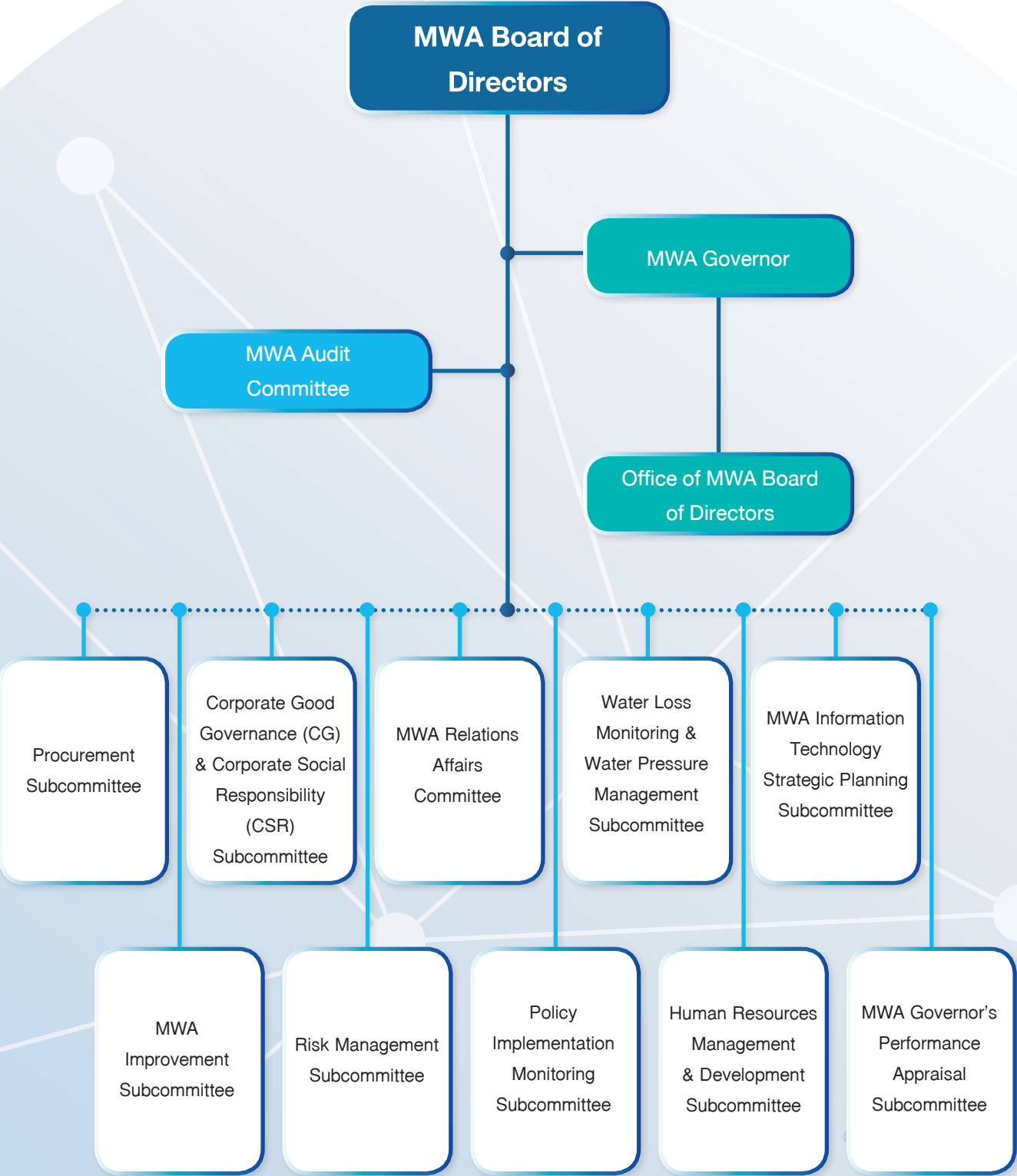
18. Promoting ethical activities through arrangement of the followings:

- An alms-giving activity on the first Fridays of each month on the occasion of important Buddhist holidays and festivals; a "Wai-Phra" (paying homage to monks) together with dhamma practice on Buddhist days; and dhamma teachings.

- Doing Good Deeds for Society activities such as donation of good condition clothes to the Mirror Foundation under the Sharing for a Change Project; handing used desktop calendars to Pattaya Redemptorist School for the Blind, Pattaya, Chonburi for making Braille alphabets; eyeglass donation activity in which sunglasses were given to Foundation for the Blind in Thailand, under the Royal Patronage of H.M. the Queen in order to hand them over to the blind.



MWA Board of Directors Structure



Appointment of Committees and Subcommittees

(As of 31 October 2018)

1. Procurement Subcommittee

1. Mr. Wanchai	Lawattanatrakul	Chairman
2. Mrs. Siriporn	Luangnual	Vice Chairman
3. Mr. Kidditada	Charusakul	Member
4. Mr. Pairoj	Sattayasansakul	Member
5. Mr. Surasak	Satawiriya	Member
6. Mr. Piched	Niamnud	Member
7. Mrs. Duangjai	Tanticharatchai	Member
8. Ms. Kanatwatda	Supap	Member
9. Mr. Decha	Mekvilai	Member
10. Ms. Jantana	Techasirinugool	Member
11. Deputy Governor (Administration)		Member
12. Deputy Governor (Engineering and Construction)		Member
13. Assistant Governor (Construction)		Member and Secretary
14. Project Management Department Director		Assistant Secretary
15. Procurement and Supplies Department Director		Assistant Secretary

Procurement Subcommittee is responsible for screening the authorization requests for procurement and work contracts; approving changes in procurement and work contracts within the confines of power of the MWA board of directors prior to submission to the MWA Board of Directors; and following up, counseling the solution in procurement or construction contracts administration and monitoring the implementation of contracts as seemed appropriate.

2. MWA Improvement Subcommittee

1. Mrs. Siriporn	Luangnual	Chairman
2. Mr. Wanchai	Lawattanatrakul	Vice Chairman
3. Mr. Nattakit	Tangpoonsinthana	Member
4. Assoc.Prof. Chanin Tinnachote, Ph.D.		Member
5. Governor		Member
6. Mr. Montri	Srisakul	Member
7. Mr. Sakol	Leenothai	Member
8. Ms. Soontraluck	Petchkoon*	Member
9. Ms. Ratchanee	Saelim*	Member
10. Mr. Supot	Lappratthana	Member
11. Ms. Oranuch	Vinutit	Member
12. Ms. Jirika	Nutalay	Member
13. Mr. Luechai	Deethawon	Member
14. Deputy Governor (Planning and Development)		Member
15. Chairman of Labour Union of MWA		Member
16. Assistant Governor (Planning and Development)		Member and Secretary
17. Policy and Strategy Department Director		Assistant Secretary

* the representatives from National Economic and Social Development Board

MWA Improvement Subcommittee is responsible for establishing the MWA management strategies and annual action plan; allocating budget in line with the MWA action plan as well as all aspects of operation plans ranging from water production to waterworks system; providing consultation towards service management and investment along with approving financial management, financial analysis report and financial status; managing and controlling investment budget in accordance with the action plan; providing guidelines on concerned MWA business operation to enhance revenues; establishing procedures and benchmarks for continual monitoring and assessing the MWA performance in order to achieve the objectives and targets of the organization; contemplating and amending law, regulations, agreements and contracts within the management sector for greater flexibility in practice.

3. Corporate Good Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee

1. Mr. Nattakit	Tangpoonsinthana, Ph.D.	Chairman
2. Mrs. Siriporn	Luangnual	Vice Chairman
3. Governor		Member
4. Ms. Piyawan	Lamkitcha	Member
5. Mr. Ruangchai	Sapnirund	Member
6. Mr. Krishna	Boonyachai	Member
7. Mr. Peerapong	Klinla-or, Ph.D.	Member
8. Mr. Kriengkrai	Suebsumpan	Member
9. Mr. Sakkasem	Niyomvanich, Ph.D.	Member
10. Mr. Bandit	Tungprasert	Member
11. Mrs. Tatiya	Jaiboon	Member
12. Assistant Governor		Member
(Office of MWA Board of Director)		
13. Chairman of Labour Union of MWA		Member
14. Assistant Governor		Member and Secretary
(Office of Governor)		
15. Corporate Governance		Assistant Secretary
Department Director		

Corporate Good Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee is responsible for establishing; scrutinizing and approving good governance operation plan and corporate social responsibility plan in accordance with any changes occurred and with international guidance; monitoring the operation status; suggesting the direction of business ethics including working procedures for directors, managers, employees; and staff members providing advice to the MWA Board of Directors where there is a conflict regarding organization benefits; setting policy and public relation strategy to each of stakeholder groups; considering and approving the MWA annual relation plan; monitoring business operation in order to cultivate MWA's good image as well as reliability within public sector and setting guidance for the museum administration as well as allocating the supporting budget.

4. Risk Management Subcommittee

1. Asst.Prof. Teekawuth	Potapirom	Chairman
2. V.adm. Nadaecho	Kerdchoochuen	Vice Chairman
3. Prof. Suwatana	Chittaladakom, Ph.D.	Member
4. Governor		Member
5. Mr. Sanya	Saengpumpong *	Member
6. Mr. Vorrachaya	Latthayaporn	Member
7. Mr. Therdthum	Wongkalasin	Member
8. Mr. Vichian	Udomratanasilpa	Member
9. Assoc.Prof. Patcharaporn	Suwanvitaya	Member
10. Asst.Prof. Sampan	Hunpayon	Member
11. Assoc.Prof. Prawit	Suraneeranat	Member
12. Mr. Wisit Wongwiwat		Member
13. Mr. Yongyuth	Arpaichiratana	Member
14. Deputy Governor		Member
(Planning and Development)		
15. Deputy Governor		Member
(Water Production and Transmission)		
16. Assistant Governor		Member and Secretary
(Planning and Development)		
17. Risk Management		Assistant Secretary
Department Director		

* Selected Representative from Royal Irrigation Department

Risk Management Subcommittee is responsible for providing recommendation and support in formulating risk management policies, risk management process, acceptable; approving, identifying, analyzing, and assessing risks and risk management plan; providing recommendation for establishing business stability and continuity; ensuring all preventive measures in the waterworks system in order to tackle any potential crisis; supervising and monitoring the implementation of risk management policy, plan and process; screening and reviewing risk management report and establishing the culture and communication of appropriate risk management in the organization.

5. MWA Relations Affairs Committee

Mr. Chaichana Mitrapant, Ph.D. Chairman

Employer's Representatives:

1. Deputy Governor (Administration) Member
2. Assistant Governor (Waterworks Academic Development) Member
3. Assistant Governor (Financial Policy) Member
4. Assistant Governor (Services 1) Member
5. Assistant Governor (Construction) Member
6. Assistant Governor (Water Production System) Member
7. Assistant Governor (Planning and Development) Member
8. Assistant Governor (Information Technology) Member
9. Assistant Governor (Human Resource Management) Member

Employee's Representatives:

1. Mr. Sompop Pranswatdi Member
2. Mr. Paiwong Leelakan Member
3. Acting Lt. Ruengsil Kotchanin Member
4. Mr. Suchan Thanavirojkul Member
5. Mr. Noppa Gunraksa Member
6. Mr. Naris Plukchalee Member
7. Mr. Supan Srimata Member
8. Mr. Prapon Pratomchai Member
9. Mr. Sakon Boonsuaykhwan Member
10. Welfare and Labor Relations Affairs Department Director Secretary

MWA Relations Affairs Committee has a duty under the Article 23 of the State Enterprise Labor Relations Act B.E. 2543 (AD 2000); providing opinions on improving the effectiveness of the state enterprise operations as well as promoting and developing labor relations; making compromise and ending conflicts within the state enterprise; amending work regulations for the benefits of the state enterprise employers and employees; providing counseling to solve employees or the labor union's problems and complaints related to disciplinary punishment and providing consultation to improve the employment situation.

6. Audit committee

1. V.adm. Nadaecho Kerdchoochuen Chairman
2. Asst.Prof. Teekawuth Potapirom Member
3. Mr. Thongplew Kongjun, D.Eng. Member
4. Assistant Governor (Internal Audit Office) Secretary

Audit Committee is responsible for reviewing the MWA's operation for its compliance with regulations, rules, guidance, Cabinet's resolution, and announcements or orders relevant to the state enterprise operations; reviewing the accuracy and credibility of financial report; monitoring the sufficiency and effectiveness of internal control system, good governance process, and risk management process; monitoring and ensuring the MWA's good internal audit system and examining the independence of the internal audit unit.

7. Policy Implementation Monitoring Subcommittee

1. Mr. Thongplew Kongjun, D.Eng. Chairman
2. Mr. Wanchai Lawattanatrakul Vice Chairman
3. V.adm. Nadaecho Kerdchoochuen Member
4. Mr. Somdee Kachayangyea Member
5. Mr. Wiwatchai Rattanasat Member
6. Mr. Asavin Chotipanang, Ph.D. Member
7. Lt.Gen.Prachaphat Vachanaratna Member
8. Mr. Prateep Pakdeerod Member
9. Mr. Kwanchat Wongsuppharanan Member
10. Assistant Governor (Water Production System) Member
11. Assistant Governor (Administration) Member
12. Assistant Governor (Engineering) Member
13. Assistant Governor (Services) Member
14. Assistant Governor (Information Technology) Member
15. Assistant Governor (Office of MWA Board of Director) Member and Secretary
16. MWA Board of Director Affairs Department Director Assistant Secretary

Policy Implementation Monitoring Subcommittee is responsible for monitoring the implementation of policies formulated by the government; supervising ministries, and the MWA Board of Directors; following up the implementation of Water Supply Improvement Project, Expense Disbursement and other major projects and reporting to the MWA Board of Directors on a monthly basis

8. Water Loss Monitoring and Water Pressure Management Subcommittee

1. Prof. Suwatana	Chittaladakorn, Ph.D.	Chairman
2. Asst.Prof. Teekawuth	Potapirom	Vice Chairman
3. Mr. Chaichana	Mitrpant, Ph.D.	Member
4. Assoc.Prof. Chanin	Tinnachote, Ph.D.	Member
5. Governor		Member
6. Mr. Taiwhut	Khankaew	Member
7. Mr. Vicha	Nilpetploy	Member
8. Mr. Sompop	Sucharit, Ph.D.	Member
9. Asst.Prof. Sitang	Pilailar, Ph.D.	Member
10.Mr. Vitaya	Intachit	Member
11.Mr. Somchai	Chai-anuraks	Member
12.Deputy Governor (Western Services)		Member
13.Deputy Governor (Eastern Services)		Member
14.Deputy Governor (Engineering and Construction)		Member
15.Assistant Governor (Water Transmission and Distribution System)		Member
16.Assistant Governor (Services)		Member and Secretary
17.Water Loss Management Department Director		Assistant Secretary
* Selected Representative from Bangkok Metropolitan Administration		

Water Loss Monitoring and Water Pressure Management Subcommittee is responsible for developing strategies for the effective water loss reduction; considering the water loss and water pressure management plan as well as ensuring the achievement of the plans; accelerating the operation of the water loss management; screening and allocating budget for water loss management activities; providing recommendations on the use of advanced water loss management technology and monitoring the implementation of the water loss management.

9. Human Resources Management and Development Subcommittee

1. Mr. Nisit	Jansomwong	Chairman
2. Prof. Suwatana	Chittaladakorn, Ph.D.	Vice Chairman
3. Mr. Nattakit	Tangpoonsinthana, Ph.D.	Member
4. Governor		Member
5. Ms. Rasa	Kanchanasai	Member
6. Mrs. Nongphanga	Boonpak	Member
7. Mr. Seubphong	Buranasirin	Member
8. Pol.Maj.Gen. Sompong Chingduang		Member
9. Mr. Somsak	Poothongchairit	Member
10.Deputy Governor (Administration)		Member
11.Deputy Governor (Planning and Development)		Member
12.Mr. Chaiwat	Vorapeboonpong	Member
	MWA Expert (Level 10)	
13.Assistant Governor (Waterworks Academic Development)		Member
14.Chairman of Labour Union of MWA		Member
15.Assistant Governor (Human Resource Management)		Member and Secretary
16.Human Resources Development Department Director		Assistant Secretary
17.Human Resources Management Department Director		Assistant Secretary

Human Resources Management and Development Subcommittee is responsible for formulating human resource management and human resource development policies and strategies that systematically support each other; considering administrative structure, employee's salary and organizational administration structure in the form of Business Unit (BU); providing advices to optimize human resource management and development; formulating policies and directions for the management of the MWA Waterworks Academy in order to achieve the international recognition and standards; formulating policies; promoting and encouraging waterworks research, development and innovations at an international level and governing and monitoring human resource management and development activities.

10. MWA Information Technology Strategic Planning Subcommittee

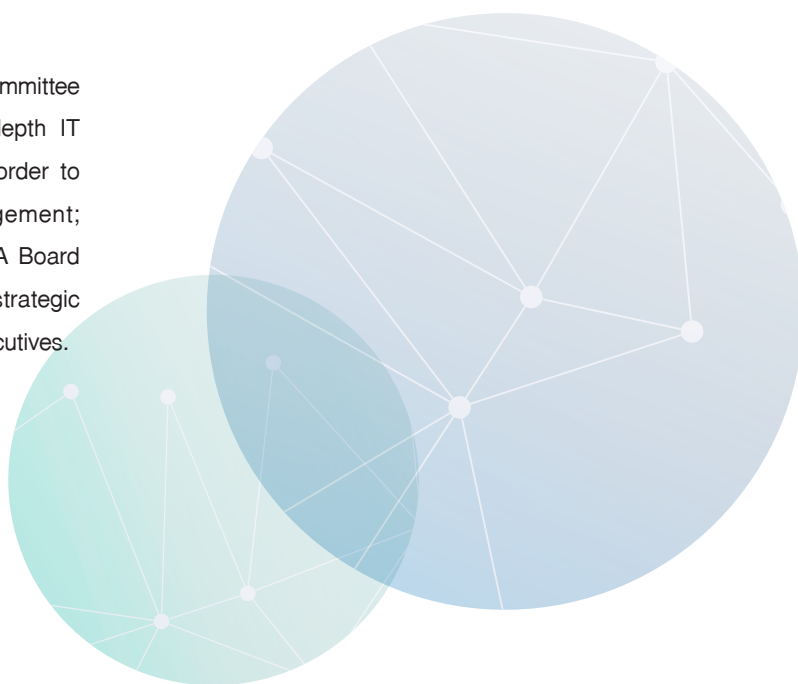
1. Assoc.Prof. Chanin Tinnachote, Ph.D.	Chairman
2. Mr. Chaichana Mitrpant, Ph.D.	Vice Chairman
3. Governor	Member
4. Assoc.Prof. Asanee Kawtrakul, Ph.D.	Member
5. Asst.Prof. Phongchai Nilas, Ph.D.	Member
6. Dr. Khanat Kruthkul	Member
7. Mr. Jirasak Kananukul	Member
8. Mr. Maythapolnun Athimethphat	Member
9. Mr. Apinetr Unakul	Member
10. Prof.Kosin Chamnongthai, Ph.D.	Member
11. Deputy Governor (Engineering and Construction)	Member
12. Deputy Governor (Western Services)	Member
13. Deputy Governor (Information Technology)	Member
14. Deputy Governor (Water Production and Transmission)	Member
15. Assistant Governor (Information Technology)	Member and Secretary
16. Technology Development and Support Department Director	Assistant Secretary

MWA Information Technology Strategic Planning Subcommittee is responsible for providing recommendation and in-depth IT information; directing and formulating IT strategies in order to promote good corporate governance on IT management; monitoring IT administration in order to report the MWA Board of Director on a quarterly basis and counseling the strategic information technology to MWA Board of Director and executives.

11. MWA Governor's Performance Appraisal Subcommittee

1. Mr. Nisit Jansomwong	Chairman
2. Mr. Wanchai Lawattanatrakul	Vice Chairman
3. Mrs. Siriporn Luangnual	Member
4. Deputy Governor (Planning and Development)	Secretary
5. Assistant Governor (Office of MWA Board of Director)	Assistant Secretary

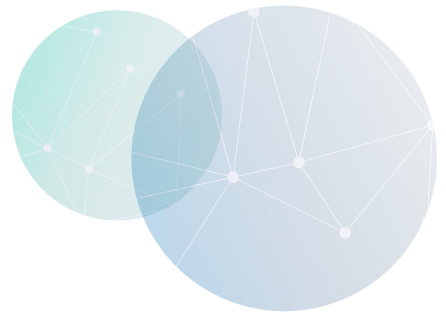
The MWA Governor's Performance Appraisal Subcommittee is responsible for the MWA Governor's performance appraisal and subjecting to approval of the MWA Board of Directors as well as conducting performance appraisal within the specified period.



Meeting Attendance and Remuneration of Board of Directors, Committees and Subcommittees

(As of 1 October 2017 – 30 September 2018)

No.	Name – Surname	Position	Board of Directors	Risk Management Subcommittee	Audit Committee	MWA Governor's Performance Appraisal Subcommittee	MWA Relations Affairs Committee	Procurement Subcommittee	MWA Improvement Subcommittee	
			12 Meetings	11 Meetings	11 Meetings	7 Meetings	11 Meetings	12 Meetings	11 Meetings	
1	Mr. Vullop Phringphong	Chairman	12/12							
2	Mr. Nisit Jansomwong	Director	11/12			6/7				
3	Prof. Suwatana Chittaladakorn, Ph.D.	Director	12/12	11/11						
4	Mr. Bowon Vongsinudom	Director	5/5	4/4					4/4	
5	Mr. Wanchai Lawattanatrakul	Director	11/12			7/7		12/12	10/11	
6	Mr. Royol Chitradon, Ph.D.	Director	3/3							
7	Mr. Nattakit Tangpoonsinthana, Ph.D.	Director	10/12						5/11	
8	Asst.Prof. Teekawuth Potapirom	Director	12/12	11/11	11/11					
9	Mr. Chaichana Mitrpant, Ph.D.	Director	3/12				1/1			
10	Mr. Thongplew Kongjun, D.Eng.	Director	8/12		2/11					
11	Mr. Somsak Suwansujarit	Director	10/11			6/6	10/10			
12	Assoc.Prof. Chanin Tinnachote, Ph.D.	Director	12/12						9/11	
13	Vadm. Nadaecho Kerdchoochuen	Director	11/12	6/6	11/11					
14	Mrs. Siriporn Luangnual	Director	11/12			7/7		11/12	8/11	
15	Mr. Prinya Yamasamit	Director	12/12	11/11					11/11	



	MWA Information Technology Strategic Planning Subcommittee	Corporate Good Governance (CG) & Corporate Social Responsibility (CSR) Subcommittee	Policy Implementation Monitoring Subcommittee	Water Loss Monitoring & Water Pressure Management Subcommittee	Human Resources Management & Development Subcommittee	Meeting Allowance from All Committee	Fixed Remuneration	Bonus	Total Remuneration
	11 Meetings	11 Meetings	11 Meetings	11 Meetings	11 Meetings				
						150,000.00	223,333.33	262,500	635,833.33
					11/11	316,250.00	111,666.67	210,000	637,916.67
				10/11	11/11	378,750.00	111,666.67	210,000	700,416.67
						145,000.00	55,215.06	93,709.68	293,924.74
			11/11			372,500.00	111,666.67	210,000	694,166.67
	0/2		2/2			55,000.00	31,989.25	53,064.52	140,053.77
		11/11			6/11	317,500.00	111,666.67	210,000	639,166.67
				11/11		379,959.68	111,666.67	210,000	701,626.35
	3/11			1/11		86,250.00	111,666.67	105,000	302,916.67
			9/11			301,209.68	111,666.67	157,500	570,376.35
		6/10				310,000.00	111,666.67	192,500	614,166.67
	11/11			9/11		367,500.00	111,666.67	210,000	689,166.67
			10/11			363,387.10	111,666.67	210,000	685,053.77
		8/11		11/11		368,750.00	111,666.67	210,000	690,416.67
	11/11	10/11			11/11	340,000.00	111,666.67	210,000	661,666.67
						4,252,056.46	1,650,537.68	2,754,274.20	8,656,868.34

Remarks : No. 4 Resigned from MWA Director on 12 March 2018
No. 6 Retired at the age of 65 on 2 January 2018
No. 11 Resigned from MWA Director on 1 September 2018
October 2017 MWA Board Meeting : 2 times (counted as once)

Compliance with Official Information Act B.E. 2540 (1997)

It has been 2 decades that the Official Information Act B.E. 2540 (1997) has supported the people' rights to know regardless having any stakes. It is also a guarantee for all people to acknowledge information about the state operations and to receive protection of personal information in the state possession and regulation. In addition, people can push state agencies to operate with transparency and good corporate governance as well as to disclose the information deserving public acknowledgement and their benefits in joining future national development. With respect to this matter, MWA has established the MWA Information Center to provide information service for the public. The Center is located on the first floor of the MWA Head Office and operates under the responsibility of Corporate Information and Communication Appraisal Section, Corporate Image Management and Communication Planning Division, Corporate Communication Department.

Performances of MWA Information Center in 2018

The MWA Information Center has operated in accordance with the MWA Information Center's Action Plan for fiscal year 2018 under the regulations of the MWA Information Center Committee. There has been the improvement of the information disseminated in the Physical Information Center (on the 1st floor of Head Office) and the Electronic Information Center (<http://oic.go.th/INFOCENTER2/237>) in correspondence with the Official Information Act B.E. 2540 (1997). In addition, the MWA Regulations on MWA Information B.E. 2561 (2018) and the MWA Announcement on the fees charged for requests for duplicate documents or duplicate documents certified by the MWA Information Center have been launched to be used as a framework for MWA operations of information, and became effective on 3 August 2018.



Service Recipients of MWA Information Center

- 9 Users visiting Physical Information Center
- 5,911 viewers visiting Electronic Information Center's Website
- 5 persons requesting for particular information (based on Section 11 of the Act)

Meetings of MWA Information Center Committee

In 2018, the MWA Information Center Committee had a total of 2 meetings to consider guidelines and procedures in certain operations such as the disclosure of information for 2 requestors - 1) Department of Irrigation asking for household water usage data, and 2) a doctoral student in Water Resources Engineering, Faculty of Engineering, Kasetsart University, asking for geographic information data, water sales data and data on water getting through the pump system. Besides, additional matters were considered, for instance, the MWA Information Center's action plan fiscal year 2018, training on knowledge about the Official Information Act B.E. 2540 (1997), study visits at the Information Centers of other agencies, etc.

Training on Official Information Act 2540 (1997)

On 16 May 2018, MWA held a training program on knowledge about Official Information Act B.E. 2540 (1997) for 85 participants of employees and agencies related to provision of information service for public in order to enhance knowledge and understanding of the Act as well as guidelines for providing MWA information service in accordance to the rules. The training guest speaker was Ms. Pakpicha Chantrasiri, Director, Policy and Plan Analysis Division, Office of the Official Information Commission under Office of the Permanent Secretary, the Prime Minister's Office.



First study



Second study

Study Visits and Seminar Participation

The MWA Information Center Committee together with the Center's staff and relevant work units visited the Information Center of Provincial Electricity Authority (PEA) for 2 times as follows:

- **First study** visit to the PEA Information Act Center, PEA Head Office, on 24 May 2018
- **Second study** visit to the PEA Information Act Center, Pathum Thani Province, on 31 May 2018

The objectives of these visits were to exchange ideas and learn about the operation of information centers to be used as guidelines for development and improvement of MWA Information Center.

In addition, MWA assigned its staff to participate in the training and seminar programs organized by Office of the Official Information Commission as follows:

- Training and Test on Official Information Act B.E. 2540 (1997) Project, fiscal year 2018, on 7 March 2018, at Meeting Room 510, 5th Floor, Office of the Public Sector Development Commission (OPDC)
- 2017 Annual Academic Seminar on the Announcement of Official Information Act B.E. 2540 (1997), entitled "2 Decades of Official Information Act, Creation of Transparency to Civil State", as well as granting certificates to those who passed the test according to the Training and Test on Official Information Act B.E. 2540 (1997) Project, on 13 September 2018, at Santi Maitri Building, Government House.

Information and Statistics

General Statistics	Fiscal Year				
	2014	2015	2016	2017	2018
Total Water Production (million cu.m.)	1,797.8	1,835.1	1,965.9	2,063.8	1,997.1
Bangkhen Water Treatment Plant	1,163.4	1,152.9	1,290.9	1,404.5	1,334.4
Samsen Water Treatment Plant	124.5	137.9	129.7	120.7	116.4
Thonburi Water Treatment Plant	30.0	33.7	30.9	40.5	37.4
Mahasawat Water Treatment Plant	479.9	510.6	514.4	498.1	508.9
Total Water Consumption (million cu.m.)	1,377.2	1,406.3	1,406.3	1,408.6	1,401.4
Residence	646.9	657.8	653.8	656.8	651.5
Commerce, State Enterprise, Government Agency and Others	703.6	724.8	723.7	723.4	719.6
Public Water Supply and Others	26.7	23.7	28.8	28.4	30.3
Percentage of Water Consumption (%)	76.61	76.63	71.53	68.25	70.17
Number of Customers at Year End (Connection)	2,171,371	2,226,707	2,281,058	2,328,598	2,375,490
Residence	1,733,655	1,784,541	1,835,430	1,878,888	1,921,897
Commerce, State Enterprise, Government Agency and Others	437,716	442,166	445,628	449,710	453,593
Small User (Connection)	2,136,214	2,190,943	2,244,815	2,292,106	2,338,779
Meter Diameter 1/2 ins.	1,338,653	1,367,682	1,394,915	1,421,764	1,459,347
Meter Diameter 3/4 ins.	733,475	757,753	783,235	802,913	811,431
Meter Diameter over 1 ins.	64,086	65,508	66,665	67,429	68,001
Large User (Connection)	35,157	35,764	36,243	36,492	36,711
Meter Diameter 1 1/2 ins.	14,156	14,502	14,804	15,058	15,610
Meter Diameter 2 ins.	13,796	13,919	14,015	13,972	13,672
Meter Diameter over 2 ins	7,205	7,343	7,424	7,462	7,429
Number of New Connections (Connection)	75,570	72,865	71,325	65,327	65,653
Average Water Consumption per Customer per Month (cu.m.)	52.49	52.34	50.88	49.85	48.55
Residence	31.54	31.13	30.08	29.44	28.56
Commerce, State Enterprise, Government Agency and Others	134.84	137.23	135.57	134.54	132.56
Average Water Tariffs per cu.m. (Baht)	12.00	12.02	12.02	12.01	11.98
Residence	10.01	10.01	10.03	10.03	9.99
Commerce, State Enterprise, Government Agency and Others	13.83	13.84	13.83	13.82	13.79
Number of Personnel at Year End (Person)	5,347	5,339	5,386	5,403	5,365
Number of Employees at Year End	4,185	4,246	4,326	4,385	4,310
Number of Contract Laborers at Year End	1,162	1,093	1,060	1,018	1,055
Ratio of Customers to One Employee (Connection)	406	417	424	431	443
Population in Responsible Areas at Year End (Person)	8,127,684	8,156,851	8,192,123	8,222,916	8,249,551
Number of Households in Responsible Areas at Year End (House)	3,868,216	3,958,491	4,099,437	4,210,444	4,323,941

Financial Statistics	Fiscal Year				
	2014	2015	2016	2017	2018
Total Assets (Million Baht)	63,268.1	66,751.2	68,254.4	72,214.9	75,108.5
Current Assets	9,816.0	13,564.0	14,873.5	17,343.6	21,561.4
Non-Current Assets	53,452.1	53,187.2	53,380.9	54,871.3	53,547.1
Total Liabilities (Million Baht)	11,920.4	12,051.6	12,435.9	15,405.8	14,599.2
Current Liabilities	5,401.4	4,853.6	4,932.4	4,678.4	4,453.4
Non-Current Liabilities	6,519.0	7,198.0	7,503.5	10,727.4	10,145.8
Equity (Million Baht)	51,347.7	54,699.6	55,818.5	56,809.1	60,509.3
Total Revenues (Million Baht)	19,492.2	19,917.2	20,074.2	19,193.2	19,203.0
Operating Revenues	19,194.2	19,577.8	19,681.1	18,850.5	18,801.1
Water Charge and Monthly Meter Fees	17,292.0	17,735.2	17,698.6	17,740.3	17,602.6
New Connections	455.0	410.1	391.6	406.6	396.7
Other Operating Revenues	1,447.2	1,432.5	1,590.9	703.6	801.8
Non-Operating Revenues	298.0	339.4	393.1	342.7	401.9
Total Expense (Million Baht)	12,615.4	12,767.2	12,904.5	11,624.8	11,683.8
Operating Expenses	12,646.7	12,749.1	12,831.2	11,701.4	11,676.6
Direct Operating Expenses	7,907.8	7,983.4	7,945.7	7,305.8	7,142.7
Depreciation and Amortization	4,673.9	4,704.3	4,829.0	4,345.5	4,493.3
Finance Cost	65.0	61.4	56.5	50.1	40.6
Non-Operating Expenses	(31.3)	18.1	73.3	(76.6)	7.2
Other Expenses	5.3	2.5	2.6	10.9	26.0
(Profit) Loss on Foreign Exchange Rates	(36.6)	15.6	70.7	(87.5)	(18.8)
Net Income (Million Baht)	6,876.8	7,150.0	7,169.7	7,568.4	7,519.2
Rate of Return on Total Assets (%)	10.87	10.71	10.50	10.48	10.01
Rate of Return on Equity (%)	13.39	13.07	12.84	13.32	12.43
Net Profit Margin (%)	35.83	36.52	36.43	40.15	39.99
Assets Turnover (Times)	0.30	0.29	0.29	0.26	0.25
Current Ratio (Times)	1.82	2.79	3.02	3.71	4.84
Ratio of Liabilities on Total Assets (Times)	0.19	0.18	0.18	0.21	0.19
Debt Equity Ratio (Times)	0.23	0.22	0.22	0.27	0.24
Cost per Unit Sold (Baht)	8.62	8.55	8.65	8.31	8.03

Remark : 2017 Financial information has changed from the original due to the accounting adjustment in the fiscal year 2018. Therefore, the information must be updated in fiscal year 2017 for the benefit of comparison.

Water Tariffs and New Connection Tariffs

Type1 Residence		Type2 : 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	0-10	9.50 not less than 90.00 baht
31-40	10.03	11-20	10.70
41-50	10.35	21-30	10.95
51-60	10.68	31-40	13.21
61-70	11.00	41-50	13.54
71-80	11.33	51-60	13.86
81-90	12.50	61-80	14.19
91-100	12.82	81-100	14.51
101-120	13.15	101-120	14.84
121-160	13.47	121-160	15.16
161-200	13.80	161-200	15.49
More than 200	14.45	More than 200	15.81

Remarks

- The above water tariffs do not include VAT.
- The average water tariff for bulk sale is as follows:
 - * Residence: 10.50 baht/cu.m.
 - * Others: 13.00 baht/cu.m.
- Since 1 June 2004, MWA has included the raw water charge at the rate of 0.15 baht/cu.m. in order to remit it to Royal Irrigation Department.

New Connection Tariffs (Flat Rate and Monthly Service Charge)

Unit : Baht

Meter Size	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	12"
New Connection Fee	5,000	6,000	8,000	12,500	38,500	76,000	93,500	156,500	210,000	431,500
Deposit Fee	400	600	1,500	3,000	4,000	10,000	15,000	20,000	30,000	100,000
Monthly Service Charge	25	40	50	80	300	400	500	900	1,100	3,500

Remarks :

- New connection applicants must pay for additional fees of pipeline installation and equipment for the connection 20 meters away from the MWA main pipeline. The water pipe installation cost is as follows:

Pipe Size (mm.)	20	25	40	50	100	150	200	300
Cost per meter (baht)	355	386	452	997	1,981	2,160	2,364	3,017

- The above fees do not include Vat.

Locations of MWA Branch Offices



MWA Head Office

400 Prachachuen Road, Tungsonghong, Laksi, Bangkok 10210

Tel 0 2504 0123

Fax 0 2500 2582-3

E-mail: mwa1125@mwa.co.th

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1564/1 Sukhumvit Road, Phra Khanong, Khlong Toei, Bangkok 10260

Tel 0 2331 0028-30 Fax 0 2331 7533

E-mail: br07s00@mwa.co.th

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Fax 0 2586 0922

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Fax 0 2449 0065

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Fax 0 2411 3117

E-mail: br01s00@mwa.co.th

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E-mail: br05s00@mwa.co.th

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Mansri Branch Office

1203 Nakhon Chaisi Road, Samsen Nai, Phaya Thai, Bangkok 10400

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E-mail: br06s00@mwa.co.th

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E-mail: br14s00@mwa.co.th

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591 Soi Ramkhamhaeng 39 (Tepleela 1), Ramkhamhaeng Road,

Wang Thonglang, Bangkok 10310

Tel 0 2934 4432-6 Fax 0 2934 4815

E-mail: br12s00@mwa.co.th

Bang Bua Thong Branch Office

59 Moo 2, Bang Kruai-Sai Noi Road, Sanoeloy, Bangbuathong, Nonthaburi 11110

Tel 0 2571 3982-7 Fax 0 2571 1743

E-mail: br54s00@mwa.co.th

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133 Ramkhamhaeng Road, Saen Saeb, Minburi, Bangkok 10510

Tel 0 2543 6500 Fax 0 2543 6630

E-mail: br53s00@mwa.co.th

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170 Moo 2 Kanchanaphisek Road, Plai Bang, Bangkok Kruai, Nonthaburi 11130

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E-mail: br56s00@mwa.co.th

Suvarnabhumi Branch Office

133 Ramkhamhaeng Road, Saen Saeb, Minburi, Bangkok 10510

Tel 0 2543 6500 Fax 0 2543 6648

E-mail: br55s00@mwa.co.th

Nonthaburi Branch Office

282 Nonthaburi Road, Tha Sai, Mueang, Nonthaburi 11000

Tel 0 2589 0035-8 Fax 0 2580 5964

E-mail: br04s00@mwa.co.th

Contact MWA

1. The MWA Call Center: providing information, dealing with complaints, receiving applications for services and coordinating with relevant organizations in problem-solving for complaints to the public or customers through the following:

- Hotline 1125, 24hrs
- E-mail : mwa1125@mwa.co.th
- Facebook : www.facebook.com/1125callcenter
- Twitter: @mwa1125
- Website: www.mwa.co.th
- Web Chat

The MWA Call Center is responsible for responding to the following:

- 1) Change of billing address
- 2) Change of type of customer
- 3) Change of customers' name / address
- 4) Report on damaged water meter
- 5) Report on defective water meter
- 6) Services other than meter service
- 7) Other services concerning the water meter
- 8) Registration for SMS service
- 9) Cancellation for SMS service

Once a customer contacts the MWA Call Center, his/her request is recorded in the Customer Relationship Management system (CRM) and a relevant organization is informed in order to take prompt action.

2. MWA Website (www.mwa.co.th): providing online services including new connection request, connection progress tracking, bill payment and information request, water usage calculation and complaint dealing.

3. All 18 MWA Branch Offices: providing the following services for customers in area of their responsibilities:

- Request for new connection within one day and cancellation of service
- Change of water meter
- Change of customers' details
- Water meter suspending service
- Taking note of broken/leaking pipeline and proceeding repair
- Water bill payment
- Receiving other bill payment service under the MWA Easy Pay

Project including AIS mobile phone payment, KTC credit card payment (10 baht fees for each payment), Land and House Bank PLC's loan payment (free of charge), and electricity bill payment (free of charge)

4. One-Stop Government Service Center, Nonthaburi at Central Plaza Westgate, Central Plaza Chaengwattana, and The Mall Ngamwongwan provide customers' request services and receive water bill payment.

5. Suksawat Smart Customer Service Center at Phra Pra Daeng

District Office and Phra Samut Chedi District Office, Samut Prakarn Province provide customers' request services and receive water bill payment.

6. MWA Clean Water Clinic under Water Supply Section, Water Quality Surveillance Division: providing suggestion and information about tap water quality. Tel. 02-981-7321 Fax. 02-981-7313 E-mail : waterclinic@mwa.co.th

7. MWA onMobile Application: Allowing the users to apply for new connection; report or send photos of damaged or leaking pipes which can be exactly located by the Application; report abnormal water bills, areas with no running water, low pressure water, cloudy or smelly tap water; the complaints will be sent to relevant work units for further action. In addition, by means of MWA onMobile Application, customers can follow MWA news, check no water areas, contact branch offices, pay for water, check water quality, view past water usage records, print out water bills and scan for payment.

Channels for payment

1. MWA Head Office and all 18 MWA branch offices, Special Collection Division, Evian Village and One-Stop Government-Service at Central West gate shopping center, Central Plaza Chaengwattana, and The Mall Ngamwongwan

2. Suksawat Smart Customer Service Centers at Phra Pra Daeng District Office and Phra Samut Chedi District Office provide services for customers' requests and receive water bill payment.

3. "Drive Thru Payment" Service at the MWA Head Office and 8 MWA stations at the following MWA branches including Sukhumvit and Phra Khanong, Taksin and Suksawat, Nonthaburi, Prachachuen, Bang Khen, Phaya Thai, Min Buri, and Phasi Charoen (9 stations altogether)

4. Payment via MWA Website (www.mwa.co.th)
5. Payment via Internet Banking
6. Payment by direct debit from bank account
7. Payment by company credit card accounts and ABC point card
8. Payment through smartphone application services: MWA onMobile, mPAY, True Money, DTAC, Krungthai NEXT, Kasikorn Thai Bank, AirPay, 2C2P, Government Savings Bank
9. Payment at counter services, e.g. banks' counter services, Metropolitan Electricity Authority (MEA), post offices, TOT counter services, Tesco Lotus and Big-C super centers
10. Transfer payment via Banks' ATM

Payment Channel Currently in Development

- Online payment allowing payment service providers to receive overdue bills
- Cross bank bill payment
- Credit card payment at MWA counter service
- Automated bill payment kiosk



Financial Information



Financial factors affecting MWA operation

In 2018, MWA has operated continuously under the 4th Issue of MWA's Strategic Management Planning (2017-2021) by focusing on becoming a quality organization which Internationally recognized, ready to upgrade to High Performance Organization (HPO) and achieving an excellence management award - Thailand Quality Class (TQC) within its strategic timeframe or in year 2021. Financial factors are crucial for MWA's operating related to the strategic planning in growth and sustainability to achieved according to the goal of MWA's vision and mission.

MWA has long-term debt obligation in Yen with Japan International Cooperation Agency (JICA) proceeding closely monitored on foreign currency loan risk management. From considering the economic situation and money market of Thailand and Japan recently discovered Thailand's booming export and travel resulted in economy recovery continuously together with the confidence of more foreign investors resulted in investment fund flows into Thailand money market. While the central bank of Japan has implemented a monetary easing policy with the goal to stimulate inflation at a low level for a long time. As a result, the yen weakened against the baht. In addition, MWA has sufficient liquidity. From such factors, the loan payment was made before the due date of the whole amount (Prepayment) of the contract number TXXXII-1 on 23 April 2018 is completed. At the present, MWA has a long-term debt of JPY and JICA remaining, the contract number TXXIV-4 which has managed the risk by means of converting foreign currency debt into Thai currency (Cross Currency Swap: CCS), resulting MWA able to reduce the risk of debt burden caused by exchange rate fluctuations.

However, currently MWA still in the process of implementing The Ninth Bangkok Water Supply Improvement Project by the Cabinet approved the operation on 4 October 2016, the investment amount of 42,750 million baht for the operation period of 7 years (2016-2022). Disbursement results from the income of MWA since the project started Until 30 September 2018, the total disbursement amount is 380.49 million baht which MWA may need to procure a loan to use in operation of the said project. Therefore, having the full cooperation of all departments and financial management in a transparent and efficient manner will lead the organization to have a good and stable performance. In order to be able to develop the plumbing work professionally and ready to respond to the needs of stakeholders in all sectors in accordance of organization's core values as Quality, Willingness, Achievement, Team, Excellent Service, and Respect to Transparency



Important Financial Information*

List	2018	2017	2016
Financial Status (Million Baht)			
• Current Assets	21,561.42	17,343.60	14,873.51
• Total Assets	75,108.52	72,214.86	68,254.44
• Current Liabilities	4,453.44	4,678.43	4,932.38
• Total Liabilities	14,599.20	15,405.81	12,435.90
• Equity	60,509.32	56,809.05	55,818.54
Performance Results (Million Baht)			
• Total Revenues	19,203.00	19,193.17	20,074.23
• Total Expenses	11,683.82	11,624.79	12,904.55
• Net Profit	7,519.18	7,568.38	7,169.68
Financial Ratios			
• Net Profit Margin Ratio (%)	39.99	40.15	36.43
• Rate of Return on Assets (%)	10.01	10.48	10.50
• Rate of Return on Equity (%)	12.43	13.32	12.84
• Debt Equity Ratio (Times)	0.24	0.27	0.22
• Current Ratio (Times)	4.84	3.71	3.02
• Average Collection Period (Days)	28	27	28

Loan Liabilities*

Unit : million baht

Loan Liabilities	2018	2017	2016
Domestic Loan	-	-	-
Foreign Loan	485.979	1,466.555	1,927.143
Total	485.979	1,466.555	1,927.143

Remittance to Ministry of Finance*

Unit : million baht

Remittance to Ministry of Finance	2018	2017	2016
Remittance to Ministry of Finance	3,734.00	4,309.98	6,106.45

Approved Budget

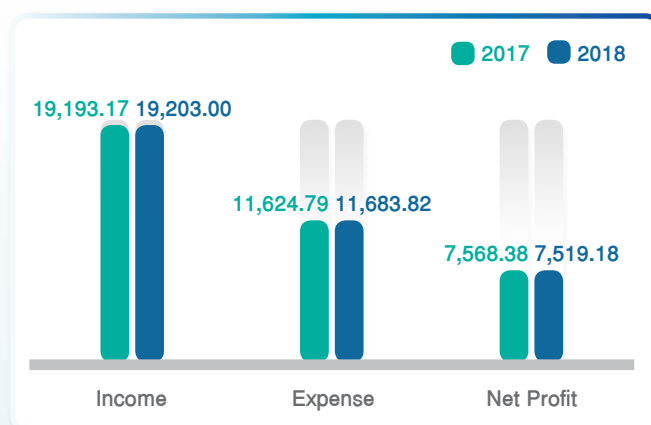
Unit : million baht

Approved Budget	2018	2017	2016
Operating Budget	7,600.0	8,011.3	7,706.6
Capital Budget	3,688.0	4,704.9	4,249.2
Total	11,288.0	12,716.2	11,955.8

Remark : 2017 Financial Information has changed from the original due to the accounting adjustment in the fiscal year 2018.

Analysis of Financial Statement

For the fiscal year of 2018, Metropolitan Waterworks Authority (MWA) had a profit for 7,519.18 million baht which was lower than the previous year for 49.20 million baht. The declined of profit was due to a decrease in water income, the main of all income, and an increase in the total expenses.



Performance Results

Performance Result of Income

MWA's total income was 19,203.00 million baht which was higher than the previous year by 9.83 million baht accounting for 0.05%, consisting of:

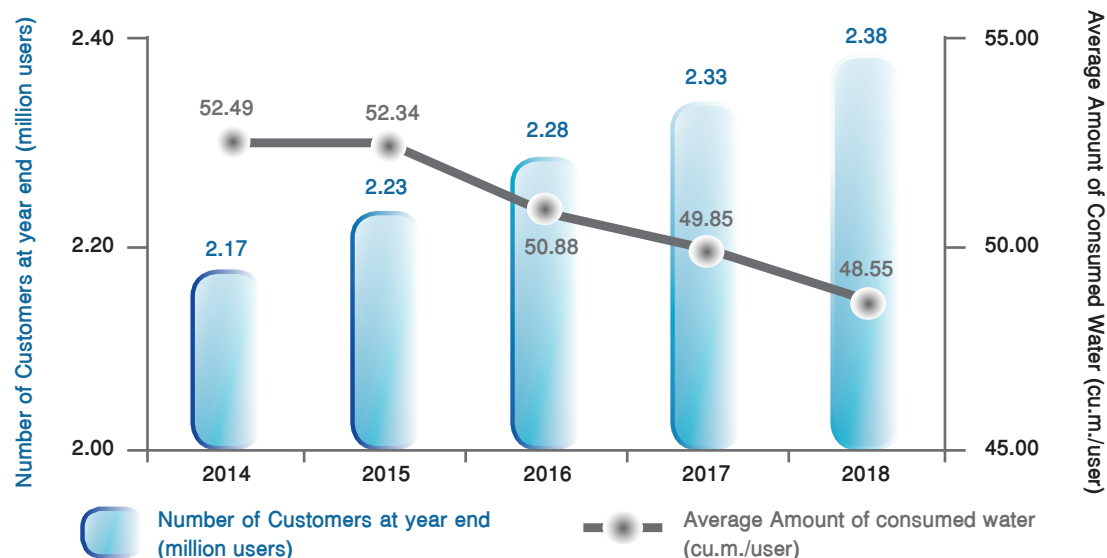
Unit : million baht

List	2018	2017	Increase (Decrease)
Performance Results of Income	18,801.13	18,850.48	(49.35)
• Water	16,631.31	16,784.93	(153.62)
• Services	971.31	955.41	15.90
• New Connections	396.67	406.58	(9.91)
• Extra Income	541.22	442.55	98.67
• Other Operating Income	260.62	261.01	(0.39)
Other Income	401.87	342.69	59.18
Total	19,203.00	19,193.17	9.83

The operating income was 18,801.13 million baht which was lower than that in previous year by 49.35 million bath, consisting of

- **The water income** the main income 16,631.31 million baht, lower than the previous year by 153.62 million baht since the quantity of water sales was 9.03 million cubic meters. The decreasing was from the water consumption of resident and industrial group due to weather temperature declined and increased of rainfall during January - April in 2018 and more continuous long holidays than the previous year including economic recession caused entrepreneurs reduced the production gradually.
- **The New Connections Income** was 9.91 million baht lower than that in the previous year because of the increase of new connection installations using small meters which is low installation fees and the big meters that its cost are higher, the installation decreased. The overall installation was only 326 cases higher than that previous year.
- **The extra income** was 98.67 million baht higher than the previous year, resulting from the increasing of private sectors' plumbing work, designs and its proving fees, and cost of work administration.

The other income was higher than in the previous year, which was 59.18 million baht due to more profits from higher interest rates.



Performance Result of Expense

MWA had a total expense of 11,683.82 million baht, higher than the previous year by 59.03 million baht, or 0.51% consisting of:

Unit : million baht

List	2018	2017	Increase (Decrease)
Operating Expense	11,635.97	11,651.25	(15.28)
• Raw materials and Supplies	2,183.79	2,428.59	(244.80)
• Employee Benefits	3,605.28	3,472.53	132.75
• Depreciation and Amortization	4,493.34	4,345.48	147.86
• Other Operating Expenses	1,353.56	1,404.65	(51.09)
Other Expenses	7.22	(76.59)	83.81
Financial Costs	40.63	50.13	(9.50)
Total	11,683.82	11,624.79	59.03

The Operating Expense was 11,635.97 million baht, which was 15.28 million baht, or 0.13% lower than that in the previous year, consisting of:

- **The expense for raw materials and supplies** lower than previous year 244.80 million baht from the chemical expense decreased 122.88 million baht due to the better quality raw water of the previous year included 8% of new alum had more effective than the old alum, the expense of chlorine purchasing lower than the previous year together with decreased quantity of water product was 66.75 million cubic meters and electricity expense was lower than the previous year by 68.91 million baht due to the decreasing of water production though the variable electricity (Ft) was adjusted higher.

- **The expense for Employee Benefits** were higher than the previous year by 132.75 million Baht due to employees' higher annual salary adjustment and increasing welfare.

- **The expense for depreciation and amortization** were higher than the previous year by 147.86 million Baht most of factors are investment, water pipe networking's extension and improvement and water meters.

Other expenses and Financial Costs were higher than the previous year by 74.31 million baht due to lower profits from currency exchange rates in the previous year as well as lower interest rate due to the prepayment of foreign loan debt before setting time.

Financial Status

Total assets were 75,108.52 million Baht on September 30, higher than the previous year by 2,893.66 million Baht mostly resulting from increasing temporary investment as decreasing debts in the previous year due to the Prepayment of foreign loan debt before the setting time and for the higher principal from the previous resulted from the increasing collection profit.

Unit : million baht

List	2018	2017	Increase (Decrease)
Temporary Capital	19,528.86	15,019.18	4,509.68
Current assets	2,032.56	2,324.42	(291.86)
Long term Capital	150.00	1,120.00	(970.00)
Land, Buildings, Equipment, and assets during construction	52,936.57	53,284.88	(348.31)
Non-Current assets	460.53	466.38	(5.85)
Total assets	75,108.52	72,214.86	2,893.66
Current Liabilities	4,453.44	4,678.43	(224.99)
Long term Loan	404.98	1,257.05	(852.07)
Deferred Income	5,975.46	5,766.90	208.56
Non-Current Liabilities	3,765.32	3,703.44	61.88
Total Liabilities	14,599.20	15,405.82	(806.62)
Capital	8,386.85	8,386.85	-
Collection Profit	52,122.47	48,422.19	3,700.28
Total Capital	60,509.32	56,809.04	3,700.28

Liquidity

As of September 30, MWA had net cash and cash equivalent remained 449.51 million Baht decreasing from the year 2017 by 269.88 million Baht and its details as follows:

Unit : million baht

List	2018	2017	Increase (Decrease)
Net cash flow from operating activities	11,014.76	10,851.77	162.99
Net cash flow used in investing activities	(6,554.96)	(6,842.06)	287.10
Net cash flow used in financing activities	(4,729.68)	(4,566.73)	(162.95)
Net increase (decrease) in cash and cash equivalents	(269.88)	(557.02)	287.14
Cash and cash equivalents at the beginning of the year	719.39	1,276.41	(557.02)
Cash and cash equivalents at the end of the year	449.51	719.39	(269.88)

- **Net cash derived from activities** of operation by 11,014.76 million Baht higher than the previous year by 162.99 million Baht due to the performance result during the year.

- **Net cash used in investment activities** was 6,554.96 million baht, by investments in temporary and long-term investments of 3,539.68 million baht and fixed assets for use in operations of 3,354.53 million baht while cash received from interest income and disposal of assets 339.25 million baht.

- **Net cash used in financing activities** 4,729.68 million baht, due to the money being sent to the Ministry of Finance 3,734.00 million baht and pay the loan and interest 995.68 million baht.

Report of the Audit Committee

The current MWA Audit committee was appointed in accordance with the MWA Board of Directors' Order No.5/2562, dated 1 March 2019, consisting of: 1) Asst. Prof. Teekawuth Potapirom as the Chairman 2) Mr. Thongplew Kongchan D.Eng as the Member 3) Assoc. Prof. Chanin Tinnachote. Ph.D. as the Member 4) Assistant Governor (Internal Audit Office) as the Secretary

The previous MWA Audit Committee was appointed according to the MWA Board of Directors' Order No.2/2560, dated 9 October 2017, holding the position from 5 October 2017 to 6 February 2019, consisting of: 1) Vadm. Nadaecho Kerdchoochuen as the Chairman 2) Asst. Prof Teekawuth Potapirom as the Member 3) Mr. Thongplew Kongchan D.Eng as the Member 4) Assistant Governor (Internal Audit Office) as the Secretary

The MWA Board of Directors has approved to hire a consultant to the Financial Accounting Audit Committee and an internal audit specialist to participate in the meeting to provide knowledge and suggestions for the Audit Committee, consisting of: 1) Mrs. Wilai Chatthanrassami Consultant to the Financial Accounting Audit Committee 2) Mr. Pongsak Sangsingkee Internal Audit Specialist

In fiscal year 2018, the Audit Committee held a total of 11 meetings in which its members had discussions and exchanges of opinions with top executives, internal auditors and the delegates from the Office of the Auditor General. The Committee performed its duties as specified by the MWA Board of Directors, and in accordance with the Ministry of Finance's regulations under the section of Audit Committee and Internal Audit Office for State Enterprises 2012, the State Enterprises' Internal Audit Manual, Ministry of Finance and the Audit Committee Charter. The summary of its performances is as follows:

1. Financial Reports: The quarterly and annual financial reports 2018 were checked to ensure that the essence of financial statements was presented accurately and timely. The important information was disclosed adequately. The changes in significant accounting estimates were examined, and all items were presented in the financial statements to ensure that they are beneficial to the users.

2. Internal Control: The efficiency, effectiveness and adequacy of the internal audit system were reviewed by considering the audit results of the Internal Audit Office and the Office of Auditor General's delegates. The performance results were reported regarding the internal audit of the Internal Control Committee as well as the important errors and solutions to the Board of Directors so that the top executives can be encouraged to provide adequate and efficient internal control systems.

3. Risk Management: The performance results were checked based on the implementation of MWA's risk management plan for fiscal year 2018. The risk management of all operation lines was monitored to ensure that the risk management plan was effective in controlling or mitigating the impacts on achievement of the organization's goals to an acceptable level. Moreover, the efficiency, effectiveness, and appropriateness of the risk management process were regularly considered and reviewed, and the suggestions were provided to the units responsible for better improvement.

4. Compliance with Relevant Laws, Rules and Regulations: The Committee monitored, made an inquiry, and discussed with the management team, and they also checked the performance results of the Internal Audit Office to ensure that the MWA strictly complied with the laws, rules, and regulations.

5. Governance and Auditing Development: The operation of the Internal Audit Office was checked on the basis of the Annual Audit Plan. The audit results were checked and additional feedback was provided apart from the Internal Audit Office's judgements. The implemented corrective actions were monitored and followed up in accordance with the audit results on significant issues. This stage includes the approval for the Internal Audit Office's Charter and the Annual Audit Plan; the reviewed Annual Audit Plan and the Internal Audit Manual; the checked suitability of human resources and other resources of the Internal Audit Office including appointment and rotation of the Internal Office's staff; the support for the internal auditors to improve their knowledge and skills to obtain a professional certificate in internal audit.

6. Audit Committee's Quality Control: The Audit Committee Charter was reviewed and the annual meeting plan of the Audit Committee was held to formulate the Audit Committee policy and report the quarterly and annual performance results of the Audit Committee. In addition, the Audit Committee's performances were assessed both as a whole and individually as self-assessment according to the good operational guidelines of State Enterprise Policy Office, Ministry of Finance.

In summary, for fiscal year 2018, the Audit Committee considered that the MWA strictly and continuously adhered to good governance principles. The risk management and internal control system were effective, efficient and adequate, and all units performed correctly in compliance with related laws and regulations



(Assistant Professor Teekawuth Potapirom)
The MWA's Chairman of the Audit Committee

Report on the Board of Directors' Responsibility for Financial Report

The Board of Directors of the Metropolitan Waterworks Authority (MWA) is responsible for financial statement by directing the preparation of financial statement in accordance with the generally accepted accounting standards. There is an adequate disclosure of significant information in the Notes to the Financial Statement as well as certified by the Office of the Auditor General.

The Board of Directors has appointed the MWA Audit Committee which comprises of Independent Directors to supervise the auditing, the review of the financial statement and the internal control, to ensure the accounting records are correct, fully adequate, and punctual, and to prevent fraud and irregular conduct.

The MWA Board of Directors has considered that the financial statement of the Metropolitan Waterworks Authority reports the financial status, performance results, and changes in equity and cash flow accurately in the subject matters under generally accepted accounting standards.



(Mr. Vullop Phringphong)
Chairman, MWA Board of Directors

AUDITOR'S REPORT

To The Board of Directors of Metropolitan Waterworks Authority

Opinion

The State Audit Office of the Kingdom of Thailand has audited the financial statements of Metropolitan Waterworks Authority (MWA) which comprise the statements of financial position as at September 30, 2018, the statements of income, the statements of comprehensive income, the statements of changes in equity and the statements of cash flows for the year then ended, and the notes to the financial statements, including a summary of significant accounting policies.

In the State Audit Office of the Kingdom of Thailand's opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Metropolitan Waterworks Authority as at September 30, 2018, and its financial performance and its cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

Basis for opinion

The State Audit Office of the Kingdom of Thailand conducted the audit in accordance with State Audit Standards and Thai Standards on Auditing. The State Audit Office of the Kingdom of Thailand's responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of the State Audit Office of the Kingdom of Thailand's report. The State Audit Office of the Kingdom of Thailand is independent of the Company in accordance with the ethical requirements set out in the State Audit Standards issued by the State Audit Commission and the Federation of Accounting Professions' Code of Ethics for Professional Accountants that are relevant to the State Audit Office of the Kingdom of Thailand's audit of the financial statements, and has fulfilled other ethical responsibilities in accordance with these requirements. The State Audit Office of the Kingdom of Thailand believes that the audit evidence the State Audit Office of the Kingdom of Thailand has obtained is sufficient and appropriate to provide a basis for the State Audit Office of the Kingdom of Thailand's opinion.

Other information

The management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the financial statements and auditor's report thereon. The annual report is expected to be made available to the State Audit Office of the Kingdom of Thailand after the date of this auditor's report.

The State Audit Office of the Kingdom of Thailand's opinion on the financial statements does not cover the other information and the State Audit Office of the Kingdom of Thailand will not express any form of assurance conclusion thereon.

In connection with the audit of the financial statements, the State Audit Office of the Kingdom of Thailand's responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the financial statements or the State Audit Office of the Kingdom of Thailand's knowledge obtained in the audit, or otherwise appears to be materially misstated.

When the State Audit Office of the Kingdom of Thailand reads the annual report, if the State Audit Office of the Kingdom of Thailand concludes that there is a material misstatement therein, the State Audit Office of the Kingdom of Thailand is required to communicate the matter to those charged with governance.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Thai Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error. In preparing the financial statements, the management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so. Those charged with governance are responsible for overseeing the Company's financial reporting process.

Auditor's Responsibility for the Financial Statements

The State Audit Office of the Kingdom of Thailand's objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes the State Audit Office of the Kingdom of Thailand's opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with State Audit Standards and Thai Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements. As part of an audit in accordance with State Audit Standards and Thai Standards on Auditing, the State Audit Office of the Kingdom of Thailand exercises professional judgment and maintain professional skepticism throughout the audit. the State Audit Office of the Kingdom of Thailand also :

- Identifies and assesses the risks of material misstatement of the financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence that is sufficient and appropriate to provide a basis for the State Audit Office of the Kingdom of Thailand's opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Concludes on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If the State Audit Office of the Kingdom of Thailand concludes that a material uncertainty exists, the State Audit Office of the Kingdom of Thailand is required to draw attention in the auditor's report of the State Audit Office of the Kingdom of Thailand to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify the State Audit Office of the Kingdom of Thailand's opinion. The State Audit Office of the Kingdom of Thailand's conclusions are based on the audit evidence obtained up to the date of the auditor's report of the State Audit Office of the Kingdom of Thailand. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluates the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

The State Audit Office of the Kingdom of Thailand communicates with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that the State Audit Office of the Kingdom of Thailand identifies during the State Audit Office of the Kingdom of Thailand's audit.

(Signed) Suwimol Dechanukulkij

(Miss Suwimol Dechanukulkij)

Director of Financial and Procurement Audit Office No.17

(Signed) Pranee Kirirat

(Mrs. Pranee Kirirat)

State Auditor, Senior Professional Level

Financial Statements and Notes to the Financial Statements

METROPOLITAN WATERWORKS AUTHORITY STATEMENTS OF FINANCIAL POSITION AS OF SEPTEMBER 30, 2018

				Unit : Baht
	Notes	2018	2017 (Restated)	2016 (Restated)
ASSETS				
Current assets				
Cash and cash equivalents	5.2, 7.1	449,514,446	719,392,754	1,276,412,675
Current investments	7.2	19,528,862,416	15,019,179,937	12,024,075,486
Trade accounts receivable	5.3, 7.3	504,828,017	508,112,392	469,964,295
Accrued revenue of water sales, meter fees and raw waters	7.4	850,632,734	853,723,406	869,439,077
Inventories and supplies	5.4, 7.5	132,132,181	161,730,772	170,972,586
Other current assets	7.6	95,452,916	81,455,843	62,647,828
Total current assets		21,561,422,710	17,343,595,104	14,873,511,947
Non-current assets				
Long-term Investment		150,000,000	1,120,000,000	750,000,000
Property, plant and equipment	4, 5.5, 7.7, 10	47,013,811,035	47,895,642,766	46,504,386,581
Intangible assets	5.6, 7.8	178,759,879	236,362,635	263,823,424
Works under construction	4, 5.7, 7.9, 10	5,922,754,004	5,389,243,083	6,455,493,813
Advance payment	7.10	238,088,969	185,754,975	179,324,458
Other non-current assets		43,680,072	44,259,041	44,470,936
Total non-current assets		53,547,093,959	54,871,262,500	54,197,499,212
Total assets		75,108,516,669	72,214,857,604	69,071,011,159

The accompanying notes are an integral part of these financial statements.

METROPOLITAN WATERWORKS AUTHORITY
STATEMENTS OF FINANCIAL POSITION
AS OF SEPTEMBER 30, 2018

				Unit : Baht
	<u>Notes</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
			<u>(Restated)</u>	<u>(Restated)</u>
LIABILITIES AND EQUITY				
Current liabilities				
Trade accounts payable		1,037,874,870	1,219,779,240	1,249,746,580
Current portion of long-term loans	7.11	80,996,511	209,507,854	244,659,741
Accrual remittance to the Ministry of Finance	7.12	1,875,000,000	1,749,000,000	1,714,000,000
Other current liabilities	4, 7.13, 10	1,459,564,626	1,500,139,933	1,306,242,688
Total current liabilities		4,453,436,007	4,678,427,027	4,514,649,009
Non-current liabilities				
Long-term loans	7.11	404,982,555	1,257,047,125	1,682,483,750
Employee benefit obligations	7.14	1,661,351,966	1,619,826,256	1,628,026,362
Customers' guarantee deposits		1,667,973,976	1,633,850,218	1,597,615,946
Deferred revenues	4, 7.15, 10	5,975,458,977	5,766,903,007	5,617,893,113
Government grants	4, 7.16, 10	125,837,780	99,509,970	213,372,442
Other non-current liabilities	7.17	310,153,768	350,249,225	286,645,486
Total non-current liabilities		10,145,759,022	10,727,385,801	11,026,037,099
Total liabilities		14,599,195,029	15,405,812,828	15,540,686,108
Equity				
Capital	7.18	8,386,847,139	8,386,847,139	8,386,847,139
Unappropriated retained earnings	4, 10	52,122,474,501	48,422,197,637	45,143,477,912
Total equity		60,509,321,640	56,809,044,776	53,530,325,051
Total liabilities and equity		75,108,516,669	72,214,857,604	69,071,011,159

The accompanying notes are an integral part of these financial statements.

(Signed) *Prinya Yamasamit*

(Mr.Prinya Yamasamit)
Governor

(Signed) *Wasana Nakpiphatkul*

(Mrs.Wasana Nakpiphatkul)
Director of Accounting Department

METROPOLITAN WATERWORKS AUTHORITY
STATEMENTS OF INCOME
FOR THE YEARS ENDED SEPTEMBER 30, 2018

Unit : Baht

	<u>Notes</u>	<u>2018</u>	<u>2017</u> <u>(Restated)</u>
Operating revenues			
Water sales		16,631,309,160	16,784,925,837
Water meter fees		971,315,864	955,409,244
Tab water connection fees	4, 10	396,667,294	406,580,092
Work contract revenues	4, 10	541,218,819	442,547,680
Other operating income	4, 10	260,620,243	261,015,480
Total operating revenues		18,801,131,380	18,850,478,333
Operating expenses			
Changes in inventories of finished goods and work in progress	10	82,571	20,925
Work performed by the entity and capitalized		(45,186,303)	(80,649,280)
Raw materials and consumables used	4, 7.19, 10	2,183,794,737	2,428,587,985
Directors remuneration	7.20	18,063,166	20,355,404
Employee benefit expenses		3,605,277,274	3,472,532,950
Depreciation and amortization expenses	4, 10	4,493,335,261	4,345,479,363
Other operating expenses	4, 7.21, 10	1,380,600,398	1,464,920,422
Total operating expenses		11,635,967,104	11,651,247,769
Profit from operating		7,165,164,276	7,199,230,564
Other revenues and expenses			
Interest income		282,117,472	230,121,640
Other revenues	10	119,751,455	112,572,584
Other expenses		(25,972,853)	(10,964,452)
Gains (losses) on foreign exchange rate	7.22	18,750,605	87,548,122
Total other revenues and expenses		394,646,679	419,277,894
Profit before finance cost		7,559,810,955	7,618,508,458
Finance costs		(40,633,470)	(50,128,014)
Profit for the year		7,519,177,485	7,568,380,444

The accompanying notes are an integral part of these financial statements.

METROPOLITAN WATERWORKS AUTHORITY
STATEMENTS OF COMPREHENSIVE INCOME
FOR THE YEARS ENDED SEPTEMBER 30, 2018

		Unit : Baht	
	<u>Note</u>	<u>2018</u>	<u>2017</u>
			<u>(Restated)</u>
Profit for the year		7,519,177,485	7,568,380,444
Other comprehensive income			
Items that will not be reclassified to profit or loss in subsequent periods			
Actuarial Gains (Losses)	7.14	37,452,088	49,158,457
Total comprehensive income for the year		7,556,629,573	7,617,538,901

The accompanying notes are an integral part of these financial statements.

METROPOLITAN WATERWORKS AUTHORITY
STATEMENTS OF CHANGES IN EQUITY
FOR THE YEARS ENDED SEPTEMBER 30, 2018

	Unit : Baht				
	Initial Capital	Government Budget	Total Capital	Unappropriated retained earnings	Total equity
Balance as of October 1, 2016	1,192,708,301	7,194,138,838	8,386,847,139	47,431,695,709	55,818,542,848
The effect of changes in accounting errors	-	-	-	(2,883,036,973)	(2,883,036,973)
Balance after Adjustment	1,192,708,301	7,194,138,838	8,386,847,139	44,548,658,736	52,935,505,875
Remittance to Ministry of Finance	-	-	-	(3,744,000,000)	(3,744,000,000)
Total comprehensive income for the year	-	-	-	7,617,538,901	7,617,538,901
Balance as of September 30, 2017	1,192,708,301	7,194,138,838	8,386,847,139	48,422,197,637	56,809,044,776
Balance as of October 1, 2017	1,192,708,301	7,194,138,838	8,386,847,139	50,645,007,872	59,031,855,011
The effect of changes in accounting errors	-	-	-	(2,310,162,944)	(2,310,162,944)
Balance after Adjustment	1,192,708,301	7,194,138,838	8,386,847,139	48,334,844,928	56,721,692,067
Remittance to Ministry of Finance	-	-	-	(3,769,000,000)	(3,769,000,000)
Total comprehensive income for the year	-	-	-	7,556,629,573	7,556,629,573
Balance as of September 30, 2018	1,192,708,301	7,194,138,838	8,386,847,139	52,122,474,501	60,509,321,640

The accompanying notes are an integral part of these financial statements.

METROPOLITAN WATERWORKS AUTHORITY
STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2018

	<u>2018</u>	<u>2017</u> <u>(Restated)</u>
Cash flows from operating activities :		
Profit for the year	7,519,177,485	7,568,380,444
Adjustment of net income to cash received (paid)		
From operating activities		
Depreciation	4,429,164,614	4,281,594,788
Amortization - intangible assests	64,114,613	63,827,465
Amortization	56,034	57,110
Doubtful accounts	3,051,830	3,209,504
(Gains) losses on foreign exchange rate	(7,703,114)	(153,136,449)
Gains from disposal of assets	(15,387,229)	(2,847,927)
Gains from disposal of obsolete materials and supplies	(20,953,744)	(16,960,252)
Finance costs	40,633,470	50,128,014
Interest income	(282,117,472)	(230,121,640)
Revenues from donation assets	(3,124,090)	(3,110,333)
Revenues from tab water connection fees	(380,348,499)	(392,743,266)
Revenues from work contract revenues	(440,567,096)	(395,761,369)
Employee benefit obligations	19,988,709	2,293,237
Other revenues	-	(12,824,099)
Other operating expenses	-	2,282,189
Operating income before changes in operating assets and liabilities	10,925,985,511	10,764,267,416
Operating assets (increase) decrease		
Trade accounts receivable	(14,810,312)	(41,206,937)
Accrued revenue of water sales, meter fees and raw waters	3,090,672	15,715,671
Inventories	185,303,479	185,589,542
Other current assets	(233,612)	10,489,355
Other non-current assets	233,001	4,120
Operating liabilities increase (decrease)		
Trade accounts payable	(1,157,332,482)	(1,280,568,046)
Other current liabilities	47,882,371	(103,711,791)
Provision for employee benefits	58,989,090	38,665,113
Customers' guarantee deposits	34,123,758	36,234,272
Deferred revenues	884,027,396	1,071,808,457
Government grants	83,945,678	97,044,613
Other non-current liabilities	(40,095,457)	63,603,739
Bonus paid to Board of Directors and Employees from last year	3,647,290	(6,162,777)
Net cash from operating activities	11,014,756,383	10,851,772,747

The accompanying notes are an integral part of these financial statements.

METROPOLITAN WATERWORKS AUTHORITY
STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2018

	<u>2018</u>	Unit : Baht <u>2017</u> (Restated)
Cash flows from investing activities		
Current investment increase	(4,509,682,479)	(2,995,104,450)
Long - term investment increase	970,000,000	(370,000,000)
Interest received	268,354,011	200,824,270
Proceeds from disposals of property, plant, and equipment	49,944,608	33,080,238
Proceeds from disposal of obsolete materials and supplies	20,953,744	17,012,044
Payments of fixed assets acquisition	(3,354,523,810)	(3,727,869,149)
Net cash used in investing activities	<u>(6,554,953,926)</u>	<u>(6,842,057,047)</u>
Cash flows from financing activities		
Proceeds from borrowings	-	10,762,676
Repayment on borrowing	(953,629,009)	(216,867,167)
Cash paid for interest expenses	(42,051,756)	(50,651,130)
Remittance to Ministry of Finance	(3,734,000,000)	(4,309,980,000)
Net cash used in financing activities	<u>(4,729,680,765)</u>	<u>(4,566,735,621)</u>
Net increase(decrease) in cash and cash equivalents	<u>(269,878,308)</u>	<u>(557,019,921)</u>
Cash and cash equivalents at the beginning of the year	<u>719,392,754</u>	<u>1,276,412,675</u>
Cash and cash equivalents at the ending of the year	<u><u>449,514,446</u></u>	<u><u>719,392,754</u></u>

The accompanying notes are an integral part of these financial statements.

METROPOLITAN WATERWORKS AUTHORITY
NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEARS ENDED SEPTEMBER 30, 2018

1. GENERAL INFORMATION

Established and Objective

Metropolitan Waterworks Authority (MWA) is the state enterprise under the Metropolitan Waterworks Authority Act, B.E. 2510 (1967) and its amendment with objectives as follows,

1.1 To survey and provide raw water sources and acquire raw water for use in the waterworks.

1.2 To produce, supply and distribute treated water in the Bangkok Metropolis, Nonthaburi and Samut Prakan provinces and control the standard of the private waterworks system in such areas.

1.3 To engage in other related business or beneficial to MWA.

The head office is located at 400 Prachachuen Road, Laksi, Bangkok, 10210

2. BASIS OF PREPARATION AND PRESENTATION OF THE FINANCIAL STATEMENTS

The financial statements have been prepared in accordance with Thai Generally Accepted Accounting Principles under the Accounting Act, B.E.2543 being these Thai Financial Reporting Standards issued under the Accounting Profession Act, B.E. 2547 and presents its financial statements in compliance with the notification of the Department of Business Development “Definition of the abbreviated components required in the financial statements” B.E. 2559.

Preparation of financial statements in accordance with Thai Financial Reporting Standards, Management is required to use estimates and assumptions that affect income, expenditure, assets and liabilities for the purpose of determining the value of assets, liabilities as well as contingent liabilities. For that reason the result of the transactions when actually happened therefore may differ from the estimates.

3. NEW FINANCIAL REPORTING STANDARDS

3.1 Financial reporting standards that became effective in the current year

MWA has adopted the revised and new financial reporting standards issued by the Federation of Accounting Professions which become effective for fiscal years beginning on or after 1 January 2017. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards, with most of the changes directed towards revision of wording and terminology, and provision of interpretations and accounting guidance to users of standards. The adoption of these financial reporting standards does not have any significant impact on the financial statements.

3.2 Thai Financial Reporting Standards (TFRS) not yet effective

The Federation of Accounting Professions issued a number of the revised (revised 2017) which is effective for fiscal years beginning on or after 1 January 2018. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards. The MWA's management believes that the revised and new financial reporting standards and accounting treatment guidance will not have any significant impact on the financial statements when it is initially applied.

4. CORRECTION OF ACCOUNTING ERROR

In the fiscal year 2018, MWA discovered errors in accounting records as follows:

Tab water connection fees and Work contract revenues Previously, MWA recognized revenue based on the stage of completion of work. Changed to gradually recognize according to the useful life of assets.

Memorandum Of Understanding (MOU) Previously, MWA recognized revenue based on the stage of completion of work. Changed to government grants which is shown deducted from the value of the related assets

MWA has revised the financial statements presented for comparison. With the following effects

	Unit : Million Baht	
STATEMENTS OF FINANCIAL POSITION AS OF SEPTEMBER 30,	2017	2016
Increase in Property, plant and equipment	144.12	258.51
Increase in Works under construction	545.54	558.06
Decrease in Other current liabilities	220.93	417.73
Increase in Deferred revenues	3,033.89	3,309.15
Increase in Government grants	99.51	213.37
Decrease in Unappropriated retained earnings	2,222.81	2,288.22
STATEMENTS OF INCOME FOR THE YEAR ENDED SEPTEMBER 30, 2017		
Increase in Tab water connection fees	67.07	
Decrease in Work contract revenues	350.38	
Decrease in Other operating income	417.23	
Decrease in Raw materials and consumables used	161.62	
Increase in Depreciation and amortization expenses	58.79	
Decrease in Other operating expenses	650.81	

5. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

5.1 REVENUES AND EXPENSES RECOGNITION are recognized on accrual basis.

5.2 CASH AND CASH EQUIVALENTS

Cash and cash equivalents comprise cash on hand, deposits held at call with banks but do not include deposits with banks which are held to maturity, and other short-term highly liquid investments with maturities of three months or less from the date of acquisition and without restriction of use and that are subject to an insignificant risk of change in value.

5.3 TRADE ACCOUNTS RECEIVABLE AND ALLOWANCE FOR DOUBTFUL ACCOUNTS

Trade Accounts receivable are stated at original invoice amount less allowance for doubtful accounts. Allowance for doubtful accounts computed from percentage of the outstanding balance of trade accounts receivable except trade accounts receivable from government agencies and state enterprises. The estimation has been based on the Ministry of Finance regulation regarding the accounting and finance of state enterprises B.E. 2548 as follow :

<u>Outstanding period</u>	<u>Percentage of Allowance for Doubtful Accounts</u>
Over 6 months - 1 Year	50
Over 1 Year	100

5.4 INVENTORIES

Inventories are valued at the lower of cost price or net realizable value, Consist of:

5.4.1 Materials and supplies use in MWA's operation such as pipes, water meter and chemical are valued at cost moving average method.

For disposal obsolete materials, materials awaiting for checking and material awaiting to exchange will have an allowance for loss with the same amount.

Obsolete materials by dismantling of assets valued at book values.

5.4.2 Finished Goods comprises of drinkable bottle cost moving average method.

5.5 PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are stated at cost on the date of acquisition or the completion of constructions, less accumulated depreciation. The cost of assets includes the acquisition price and other necessary expenses in making them ready to operate.

Depreciation of plant and equipment is calculated by reference to their costs on a straight-line basis over the estimated useful lives as follows : -

	<u>Useful lives (Years)</u>
Land improvement	30
Building and factory	30
Machinery and equipment	5, 7, 10, 20, 25
Pipe and tunnel	10, 15, 25, 35
Meter	5 , 8
Office equipments	5
Vehicles	5 , 8

Donated assets recorded with deferred revenue and recognized to revenue throughout the useful lives.

5.6 INTANGIBLE ASSETS

Intangible assets are the right to use the digital data map and the computer software presented at cost deducted by accumulated amortization expense. Amortization is charged to the income statement on a straight-line basis according to the 5-20 years estimated useful life of assets.

5.7 WORKS UNDER CONSTRUCTION

All costs related directly to qualifying assets, and its assets under construction are recorded as works under construction. When the construction is completed and prepare the assets for its intended use, its cost will be transferred to property, plant and equipment.

5.8 BORROWING COSTS

Borrowing costs are interest expense, finance charges and exchange differences arising from foreign currency borrowings to the extent that they are regarded as an adjustment to interest costs, which related to qualifying assets, and its assets under construction less any income earned on the temporary investment of such borrowings are capitalized as part of the constructions cost. When constructions are completed, such borrowing costs will be recorded as the expenses.

5.9 FOREIGN CURRENCY TRANSACTIONS

Transactions in foreign currencies are translated into Thai Baht at the exchange rates prevailing at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the end of reporting period are translated into Thai Baht at the exchange rates prevailing at that dates as referred to the average buying or selling rate notified by the Bank of Thailand. Foreign exchange gains and losses resulting from the currency adjustment are recognized as revenue and expense.

5.10 EMPLOYEE BENEFITS

Recognition and measurement

5.10.1 Short-term employee benefits are recognized in profit and loss as expenses when incurred.

5.10.2 Post-employment benefits

Defined contribution plans

MWA and its employees have established MWA provident fund in accordance with the Provident Fund Act B.E. 2530 (1987) and registered on June 2, 1997.

The fund is separated from assets of MWA and managed by asset management company and will be paid to employees upon termination of employment in accordance with the rules of the fund.

The MWA contributes to the fund on a monthly basis at a rate of 9% of salaries for members having 1-10 years of service, 10% for members having 11-20 years of service and 11 % for members having more than 20 years of service. Contributions are recognized in profit and loss as expenses when incurred.

Defined benefit plans

MWA has established MWA pension fund on October 28, 1976 for the purpose of providing its employees with retirement benefits. The MWA contributes to the fund on a monthly basis at the rate of 10% of salary of MWA pension fund members.

The obligation under the defined benefit plan is determined based on actuarial techniques, using the Projected Unit Credit Method, in order to determine present value of the obligation, current service cost and past service cost. These are recognized as a liability in statements of financial position and expenses in profit and loss. Actuarial gains and losses arising from post-employment benefits are recognized in statements of comprehensive income when incurred.

5.10.3 Other long-term employment benefits

The obligation under the defined benefit plan is determined based on actuarial techniques, using the Projected Unit Credit Method, in order to determine present value of the obligation, current service cost and past service cost. These are recognized as a liability in statements of financial position. Expenses and actuarial gains and losses arising from post-employment benefits are recognized in profit and loss.

6. SIGNIFICANT ACCOUNTING JUDGEMENTS AND ESTIMATES

The preparation of financial statement in conformity with generally accepted accounting principles requires management to make judgements, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income, and expenses. Actual results may differ from these estimates. The significant judgements and estimate is as follow:

6.1 PROPERTY, PLANT, EQUIPMENT AND DEPRECIATION

In determining depreciation of plant and equipment, the management is required to make estimates of the useful lives and residual value of the plant and equipment and to review estimate useful lives when there are any changes.

6.2 ACCRUED REVENUE OF WATER SALES, METER FEES

Unbilled revenue was calculated from water consumption from the last reading date to reporting date by estimated from water consumption average per day of the latest month to the following month backwards 3 years.

6.3 LITIGATION

MWA has contingent liabilities as a result of litigation. The management has used judgment to assess of the results of the litigation and believes that no loss will result. Therefore no contingent liabilities are recorded as at the reporting date.

7. ADDITIONAL DATA

7.1 CASH AND CASH EQUIVALENTS comprised of :

	Unit : Million Baht	
	<u>2018</u>	<u>2017</u>
Cash on hand	1.85	2.00
Savings and current account	418.84	690.55
Cash in transit	28.82	26.84
Total	<u>449.51</u>	<u>719.39</u>

7.2 CURRENT INVESTMENTS comprised of :

	Unit : Million Baht	
	<u>2018</u>	<u>2017</u>
Fixed deposit account (over 3 months)	16,531.29	15,019.18
Government securities purchased under resale agreements (over 3 months)	2,997.57	-
Total	<u>19,528.86</u>	<u>15,019.18</u>

7.3 TRADE ACCOUNTS RECEIVABLE comprised of :

	Unit : Million Baht	
	<u>2018</u>	<u>2017</u>
Water utilities bills receivable	542.04	520.41
<u>Less</u> Undue output taxes water utilities	<u>(35.14)</u>	<u>(33.64)</u>
Total water utilities bills receivable	506.90	486.77
Water connection fees receivable	6.70	30.86
Total trade accounts receivable	513.60	517.63
<u>Less</u> allowance for doubtful accounts	<u>(8.77)</u>	<u>9.52</u>
Total	<u>504.83</u>	<u>508.11</u>

As at September 30, 2018 and 2017, the water utility bills receivable were shown as follows:

Unit : Million Baht						
<u>Aging period</u>	<u>2018</u>			<u>2017</u>		
	<u>Private sector</u>	<u>Public sector</u>	<u>Total</u>	<u>Private sector</u>	<u>Public sector</u>	<u>Total</u>
1 - 6 months	210.70	258.17	468.87	210.21	258.35	468.56
Over 6 months – 1 year	1.77	10.03	11.80	2.01	7.52	9.53
Over 1 year	7.85	18.38	26.23	8.50	0.18	8.68
Total	<u>220.32</u>	<u>286.58</u>	<u>506.90</u>	<u>220.72</u>	<u>266.05</u>	<u>486.77</u>

7.4 ACCRUED REVENUE OF WATER SALES, METER FEES comprised of:

Unit : Million Baht		
	<u>2018</u>	<u>2017</u>
Private sector	747.00	753.02
Public sector	<u>103.63</u>	<u>100.70</u>
Total	<u>850.63</u>	<u>853.72</u>

7.5 INVENTORIES comprised of:

Unit : Million Baht		
	<u>2018</u>	<u>2017</u>
Finish goods	0.38	0.46
Materials and Supplies	134.08	161.78
Material in transit	1.63	3.45
<u>Less allowance for obsolete inventories</u>	<u>(3.96)</u>	<u>(3.96)</u>
Total	<u>132.13</u>	<u>161.73</u>

7.6 OTHER CURRENT ASSETS comprised of:

Unit : Million Baht		
	<u>2018</u>	<u>2017</u>
Accrued interest receivable	91.32	77.56
Prepaid expense	1.50	0.03
Other assets	<u>2.63</u>	<u>3.87</u>
Total	<u>95.45</u>	<u>81.46</u>

7.7 PROPERTY, PLANT AND EQUIPMENT details as follows:

Unit : Million baht

	2018								
	Cost				Accumulated Depreciation				Property, Plant
	Oct 1, 2017	Additions	Write off	Sep 30, 2018	Oct 1, 2017	Depreciation	Write off	Sep 30, 2018	and Equipment
									Sep 30, 2018
Land	4,284.28	-	-	4,284.28	-	-	-	-	4,284.28
Building and									
improvements	19,383.04	42.38	(9.59)	19,415.83	11,939.64	470.41	(8.98)	12,401.07	7,014.76
Machineries and									
equipments	11,422.35	236.85	-	11,659.20	8,432.14	481.67	-	8,913.81	2,745.39
Pipes	85,152.09	2,650.08	(158.63)	87,643.54	54,641.59	2,868.34	(158.09)	57,351.84	30,291.70
Meters	5,349.38	464.65	(168.69)	5,645.34	3,254.29	379.74	(148.57)	3,485.46	2,159.88
Office -									
equipments	1,808.41	129.13	(2.67)	1,934.87	1,371.28	210.99	(2.67)	1,525.60	409.27
Vehicles and									
transport	307.01	45.51	-	352.52	225.98	18.01	-	243.99	108.53
Total	127,706.56	3,568.60	(339.58)	130,935.58	79,810.92	4,429.16	(318.31)	83,921.77	47,013.81

Property, plant and equipment , amounted to Baht 130,935.58 million , as of September 30, 2018 included fully depreciation assets Baht 33,689.97 million, which have the carrying amount Baht 115.98 million.

Unit : Million baht

	2017								
	Cost				Accumulated Depreciation				Property, Plant
	Oct 1, 2016	Additions	Write off	Sep 30, 2017	Oct 1, 2016	Depreciation	Write off	Sep 30, 2017	and Equipment Sep 30, 2017
Land	4,284.29	-	(0.01)	4,284.28	-	-	-	-	4,284.28
Building and improvements	18,244.71	1,162.46	(24.13)	19,383.04	11,465.11	495.81	(21.28)	11,939.64	7,443.40
Machineries and equipments	10,687.97	1,006.84	(272.46)	11,422.35	8,203.53	492.30	(263.69)	8,432.14	2,990.21
Pipes	82,461.47	2,847.34	(156.72)	85,152.09	52,075.24	2,715.03	(148.68)	54,641.59	30,510.50
Meters	5,055.95	569.32	(275.89)	5,349.38	3,169.57	343.77	(259.05)	3,254.29	2,095.09
Office - equipments	1,761.68	119.78	(73.05)	1,808.41	1,171.22	218.46	(72.40)	1,371.28	491.13
Vehicles and transport	324.07	4.33	(21.39)	307.01	231.09	16.22	(21.33)	225.98	81.03
Total	122,820.14	5,710.07	(823.65)	127,706.56	76,315.76	4,281.59	(786.43)	79,810.92	47,895.64

Property, plant and equipment , amounted to Baht 127,706.56 million , as of September 30, 2017, included fully depreciation assets Baht 32,488.13 million, which have the carrying amount Baht 73.11 million.

7.8 INTANGIBLE ASSETS

Intangible assets presented at cost deduct by accumulated amortization expense. Amortization is calculated by straight-line method basis according to estimated useful life of assets, details as follows:

Unit : Million baht

2018								
	<u>Oct 1, 2017</u>	<u>Additions</u>	<u>Cost</u>		<u>Oct 1, 2017</u>	<u>Accumulated amortization</u>		<u>Intangible assets Sep 30, 2018</u>
			<u>Written off</u>	<u>Sep 30, 2018</u>		<u>Amortization</u>	<u>Written off</u>	
Rights to use the digital data map	215.68	-	-	215.68	162.65	8.37	-	44.66
Software	1,163.92	6.51	-	1,170.43	980.59	55.74	-	134.10
Total	1,379.60	6.51	-	1,386.11	1,143.24	64.11	-	178.76

Unit : Million baht

2017								
	<u>Oct 1, 2016</u>	<u>Additions</u>	<u>Cost</u>		<u>Oct 1, 2016</u>	<u>Accumulated amortization</u>		<u>Intangible assets Sep 30, 2017</u>
			<u>Written off</u>	<u>Sep 30, 2017</u>		<u>Amortization</u>	<u>Written off</u>	
Rights to use the digital data map	212.47	7.95	(4.74)	215.68	158.62	8.77	(4.74)	53.03
Software	1,169.74	28.41	(34.23)	1,163.92	959.77	55.05	(34.23)	183.33
Total	1,382.21	36.36	(38.97)	1,379.60	1,118.39	63.82	(38.97)	236.36

7.9 ASSETS UNDER CONSTRUCTION details as follows:

Unit : Million baht

	2018				
	<u>Oct 1, 2017</u>	<u>Additions</u>	<u>Borrowing cost</u>	<u>Transferred to assets</u>	<u>Sep 30, 2018</u>
The Seventh Bangkok water Supply Improvement Project	321.74	118.83	-	(9.06)	431.51
The Eighth Bangkok water Supply Improvement Project	676.42	28.97	-	(1.03)	704.36
The Ninth Bangkok water Supply Improvement Project	42.32	306.91	-	(18.75)	330.48
Normal Capital Expenditure	4,348.76	3,245.48	-	(3,137.84)	4,456.40
Total	5,389.24	3,700.19	-	(3,166.68)	5,922.75

Unit : Million baht

	<u>2017</u>				
	<u>Oct 1, 2016</u>	<u>Additions</u>	<u>Borrowing</u> <u>cost</u>	<u>Transferred to</u> <u>assets</u>	<u>Sep 30, 2017</u>
The Seventh Bangkok water Supply Improvement Project	345.89	282.73	-	(306.88)	321.74
The Eighth Bangkok water Supply Improvement Project	2,288.82	103.95	1.17	(1,717.52)	676.42
The Ninth Bangkok water Supply Improvement Project	-	42.32	-	-	42.32
Normal Capital Expenditure	3,820.78	3,466.33	-	(2,938.35)	4,348.76
Total	<u>6,455.49</u>	<u>3,895.33</u>	<u>1.17</u>	<u>(4,962.75)</u>	<u>5,389.24</u>

7.10 Advance Payment

Advance payment as of September 30, 2018 and 2017 amounting to Baht 238.09 million and Baht 185.75 Million, respectively have paid according to the conditions in the agreement. The contractor has to submit Thai Government's bond or a guarantee issued by a local bank in accordance with Rules of Metropolitan Waterworks Authority (Volume 100) on Procurement B.E.2537 (1994) and Government Procurement and Supplies Management Act B.E. 2560 (2017)

7.11 LONG – TERM LOANS details as follows:

Unit : Million baht

Loan facility	2018		2017		Annual Interest rate (percent per annum)	Number of installment	Repayment Condition	
	Foreign	Thai Baht	Foreign	Thai Baht			The First	The Last
	currency	equivalent	currency	equivalent			repayment date	repayment date
Japanese Yen currency (Unit : million Yen)								
1. Yen 11,706.00 million loan	1,680.23	485.98	1,960.27	588.33	1.70	37	Sep 20, 2006	Sep 20, 2024
2. Yen 4,098.00 million loan	-	-	2,735.64	821.04	0.80	21	Aug 20, 2014	Aug 20, 2024
3. Yen 364.00 million loan	-	-	190.54	57.19	0.01	21	Aug 20, 2014	Aug 20, 2024
Total long-term loans	1,680.23	485.98	4,886.45	1,466.56				
Less: Total current portion	(280.04)	(81.00)	(698.06)	(209.51)				
Long-term loans - net	1,400.19	404.98	4,188.39	1,257.05				

BOT average selling Foreign Exchange Rate

As of Sep 28, 2018 1 JPY = 0.289234 THB

As of Sep 29, 2017 1 JPY = 0.300127 THB

Movements in the long-term loans account are summarized below;

	Unit : Million baht	
	<u>Foreign</u>	<u>Thai Baht</u>
	<u>currency</u>	<u>equivalent</u>
<u>Japanese Yen currency</u>		
Balance as of October 1, 2017	4,886.45	1,466.56
Additional borrowings	-	-
Losses on foreign exchange rate	-	(36.80)
Repayment	(3,206.22)	(943.78)
Balance as of September 30, 2018	<u>1,680.23</u>	<u>485.98</u>

7.12 ACCRUED REMITTANCE TO THE MINISTRY OF FINANCE

In this fiscal year, the Ministry of Finance has prescribed MWA to deliver a remittance to the Ministry of Finance 45% of the net income before provision of bonus expense, which delivering twice a year.

Movements in the Accrual remittance to the Ministry of Finance account are summarized below;

	Unit : Million Baht	
	<u>2018</u>	<u>2017</u>
Balance as of October 1	1,749.00	1,714.00
Increase during the period		
- Additional of the year 2016	-	600.98
- The first half of the year 2017	-	1,995.00
- The second half of the year 2017	-	1,749.00
- Additional of the year 2017	91.00	-
- The first half of the year 2018	1,894.00	-
- The second half of the year 2018	1,875.00	-
Remittance to the Ministry of Finance		
- The second half of the year 2016	-	(1,714.00)
- Additional of the year 2016	-	(600.98)
- The first half of the year 2017	-	(1,995.00)
- The second half of the year 2017	(1,749.00)	-
- Additional of the year 2017	(91.00)	-
- The first half of the year 2018	(1,894.00)	-
Balance as of September 30	<u>1,875.00</u>	<u>1,749.00</u>

The outstanding balance of remittance to the Ministry of Finance as of the second half of the year 2018 amount Baht 1,875.00 million.

7.13 OTHER CURRENT LIABILITIES comprised of:

	Unit : Million baht	
	2018	2017
Accrued interest payables	1.90	3.32
Accrued public utilities	116.78	127.78
Accrued expenses	20.00	47.34
Accrued expense on value added taxes	69.99	54.68
Accrued withholding taxes	9.94	11.33
Accrued bonus expense	855.74	804.83
Accrued raw water	21.88	22.54
Unearned income	5.49	20.19
Cross currency swap obligation	87.91	80.90
Outstanding cheques	25.53	10.72
Other liabilities	244.40	316.51
Total	1,459.56	1,500.14

7.14 EMPLOYEE BENEFIT OBLIGATIONS

Post-employment benefits comprised of:

7.14.1 Defined contribution plan

MWA and its employees have established MWA provident fund in accordance with the Provident Fund Act B.E. 2530 (1987) and registered on June 2, 1997.

The fund is separated from assets of MWA and managed by asset management company and will be paid to employees upon termination of employment in accordance with the rules of the fund.

The MWA contributes to the fund on a monthly basis at a rate of 9% of salaries for members having 1-10 years of service, 10% for members having 11-20 years of service and 11 % for members having more than 20 years of service.

7.14.2 Defined benefit plan

7.14.2.1 Post-employment benefits plan comprised of 4 projects as follows:

The pension fund is employee benefits pension fund will receive on retirement without fault, which is equal to the product of working age, with a yearly salary of the last month.

The MWA contributes to the fund on a monthly basis at the rate of 10% of salary of MWA pension fund members.

The remuneration on retirement preferences

Employee benefits are notification of State Enterprise Labor Relations Commission's minimum standards of employment conditions in state-owned enterprises, 2010. Employee retired which work more than 15 years. Benefits are equal to the wage rate of the last 300 days.

The annual leave project that has not been exercised is employee benefits retirement and the annual leave is not exercised. Benefits are equal to the number of days that have not been exercised. Up to 45 days of the final wage rate.

The project of the awards age 60 years or retirement A project of the awards when employees age 60 years or retirement.

7.14.2.2 Other long-term employee benefits plan A project of the awards when employees work 25 years.

The MWA's liability for post-employment benefits is recognized in the statements of financial position, as follows:

Unit : Million baht

	2018					Other Long-term Employee Benefits	
	Post-Employment Benefits					25 years long-service award	Total
	Staff Pension fund	Legal severance plan	Unused vacation plan	Retirement award	Total		
At October 1, 2017	1,058.56	1,148.54	171.13	66.19	2,444.42	32.40	2,476.82
Service cost	39.64	78.65	11.71	8.56	138.56	4.44	143.00
Interest cost	13.24	24.65	3.67	2.61	44.17	1.14	45.31
Benefits paid	(77.17)	(62.74)	(9.36)	(5.45)	(154.72)	(4.02)	(158.74)
Actuarial (Gains) Losses	(23.67)	(48.68)	(7.23)	42.13	(37.45)	19.99	(17.46)
At September 30, 2018	1,010.60	1,140.42	169.92	114.04	2,434.98	53.95	2,488.93
Less Fair value of plan assets	(827.58)	-	-	-	(827.58)	-	(827.58)
Amount recognized in statement of financial position.	183.02	1,140.42	169.92	114.04	1,607.40	53.95	1,661.35

Unit : Million baht

	2017					Other Long-term Employee Benefits	
	Post-Employment Benefits					25 years long-service award	Total
	Staff Pension fund	Legal severance plan	Unused vacation plan	Retirement award	Total		
At October 1, 2016	1,109.67	1,164.41	173.50	57.68	2,505.26	27.64	2,532.90
Service cost	42.61	78.10	11.69	5.43	137.83	3.02	140.85
Interest cost	12.51	22.86	3.40	1.39	40.16	0.62	40.78
Benefits paid	(96.12)	(78.63)	(11.77)	(3.15)	(189.67)	(1.17)	(190.84)
Actuarial (Gains) Losses	(10.11)	(38.20)	(5.69)	4.84	(49.16)	2.29	(46.87)
At September 30, 2017	1,058.56	1,148.54	171.13	66.19	2,444.42	32.40	2,476.82
Less Fair value of plan assets	(856.99)	-	-	-	(856.99)	-	(856.99)
Amount recognized in statement of financial position.	201.57	1,148.54	171.13	66.19	1,587.43	32.40	1,619.83

Expenses recognized in the statements of comprehensive income, as follows:

Unit : Million baht

2018							
	Post-Employment Benefits					Other Long-term	
	Staff Pension fund	Legal severance plan	Unused vacation plan	Retirement award	Total	25 years long-service award	Total
<u>Statement of income</u>							
Service cost	39.64	78.65	11.71	8.56	138.56	4.44	143.00
Interest cost	13.24	24.65	3.67	2.61	44.17	1.14	45.31
Return on plan assets	(10.69)	-	-	-	(10.69)	-	(10.69)
Actuarial (Gains) Losses	-	-	-	-	-	19.99	19.99
Total	42.19	103.30	15.38	11.17	172.04	25.57	197.61
<u>Other comprehensive income</u>							
Actuarial Gains (Losses)	23.67	48.68	7.23	(42.13)	37.45	-	37.45
Total	23.67	48.68	7.23	(42.13)	37.45	-	37.45

Unit : Million baht

2017							
	Post-Employment Benefits					Other Long-term	
	Staff Pension fund	Legal severance plan	Unused vacation plan	Retirement award	Total	25 years long-service award	Total
<u>Statement of income</u>							
Service cost	42.61	78.10	11.69	5.43	137.83	3.02	140.85
Interest cost	12.51	22.86	3.40	1.39	40.16	0.62	40.78
Return on plan assets	(10.35)	-	-	-	(10.35)	-	(10.35)
Actuarial (Gains) Losses	-	-	-	-	-	2.29	2.29
Total	44.77	100.96	15.09	6.82	167.64	5.93	173.57
<u>Other comprehensive income</u>							
Actuarial Gains (Losses)	10.11	38.20	5.69	(4.84)	49.16	-	49.16
Total	10.11	38.20	5.69	(4.84)	49.16	-	49.16

Movements in the present value of the plan assets – Staff Pension fund, as follows:

Unit : Million baht

	2018	2017
Beginning Balance	856.99	904.88
<u>Add</u> Return on plan assets	10.69	10.35
Obligation payable from MWA.	37.07	37.88
<u>Less</u> Benefits paid	(77.17)	(96.12)
Ending Balance	827.58	856.99

Principal actuarial assumptions

	<u>Annual percentage (%)</u>
Discount rate at 28 September 2018	1.19 – 3.78
Salary increase rate	7.50
Employee turnover rate	0.78

7.15 DEFERRED REVENUES comprised of:

	Unit : Million baht			
	<u>2018</u>			
	<u>As of Oct</u> <u>1, 2017</u>	<u>Added</u>	<u>Recognized</u> <u>as income</u>	<u>As of Sep</u> <u>30, 2018</u>
Other assets	16.41	-	(3.12)	13.29
Water meter	1,495.02	310.89	(380.35)	1,425.56
Government plumbing works	341.97	16.02	(35.57)	322.42
Private plumbing works	3,913.50	705.69	(405.00)	4,214.19
Total	<u>5,766.90</u>	<u>1,032.60</u>	<u>(824.04)</u>	<u>5,975.46</u>

	Unit : Million baht			
	<u>2017</u>			
	<u>As of Oct</u> <u>1, 2016</u>	<u>Added</u>	<u>Recognized</u> <u>as income</u>	<u>As of Sep</u> <u>30, 2017</u>
Other assets	19.48	0.04	(3.11)	16.41
Water meter	1,563.06	324.70	(392.74)	1,495.02
Government plumbing works	354.78	21.51	(34.32)	341.97
Private plumbing works	3,680.57	594.37	(361.44)	3,913.50
Total	<u>5,617.89</u>	<u>940.62</u>	<u>(791.61)</u>	<u>5,766.90</u>

7.16 GOVERNMENT GRANTS

As of September 30, 2018 and 2017, the government grants amounting to Baht 125.84 million and 99.51 million respectively. The government grant is money from government to contribute for plumbing work constructions which are MWA shown government grant in related with assets by deducted from value of the related assets and recognized them in gain or loss according to the useful life of assets in the form of reduced depreciation.

7.17 NON-CURRENT LIABILITIES comprised of :

	Unit : Million baht	
	2018	2017
Collective and metering representative deposits	21.46	20.51
Work guarantee (retention) and Contractor deposits	288.69	329.74
Total	<u>310.15</u>	<u>350.25</u>

7.18 CAPITAL

Capital, amounted to Baht 8,386.85 million, as of September 30, 2018, included initial capital Baht 1,192.71 million and government budget Baht 7,194.14 million.

7.19 RAW MATERIALS AND CONSUMABLES USED comprised of:

	Unit : Million baht	
	2018	2017
Raw water	266.95	273.16
Chemical	287.51	410.39
Electricity utility	1,309.75	1,378.66
Pipe and equipment for repair and maintenance	189.79	219.50
Other raw material and consumables used	129.79	146.88
Total	<u>2,183.79</u>	<u>2,428.59</u>

7.20 REMUNERATION FOR DIRECTORS

The remuneration for directors for the year ended September 30, 2018 and 2017 amounting to Baht 18.06 million and Baht 20.36 million are expense of Director and MWA's Board of directors.

7.21 OTHER OPERATING EXPENSES comprised of:

	Unit : Million baht	
	2018	2017
Contract out - inspection and improvement of distribution valve	19.79	29.19
Contract out - leakage pipes survey and repair	310.11	332.46
Contract out - other services	207.13	218.31
Outsourcing expenditure	228.60	215.22
Collective and metering representative expenses	126.84	123.61
Repair and maintenance expenses	119.84	147.50
Work contracts expenses	36.59	30.41
Other operating expenses	331.70	368.22
Total	<u>1,380.60</u>	<u>1,464.92</u>

7.22 GAINS (LOSSES) ON FOREIGN EXCHANGE RATE comprised of:

	Unit : Million baht	
	<u>2018</u>	<u>2017</u>
During period (realized)		
- From loans repayment	12.59	3.53
- Foreign currency deposit	(1.54)	(69.12)
On September (unrealized)		
- From loans outstanding	26.95	254.49
- Cross currency swap	(19.25)	(101.35)
Total	<u>18.75</u>	<u>87.55</u>

8. DISCLOSURES OF FINANCIAL INSTRUMENT

MWA had entered into Plain vanilla cross currency swap agreement on March 17, 2006, to reduce the risk from exchange rate. Contract principle amount to Yen 11,706.00 million, utilized amount to Yen 5,180.74 million, to the MWA's Lender through 18.5 years contract which details as follows.

Swap contract notional receipt	5,180.74 million Yen
Swap contract interest receipt rate (per annum)	1.70
Swap contract exchange rate	1 JPY = 0.334 THB
Swap contract notional payment	1,730.37 million Baht
Swap contract interest payment rate (percent per annum)	5.759
<u>As of September 30, 2018</u>	
Outstanding Loan	1,680.23 million Yen
Remaining Tenor	6 Years
BOT Buying rate as at September 28, 2018	1 JPY = 0.281676 THB

9. ESTIMATE AND CONTINGENT LIABILITIES

9.1 THE CONTINGENT LIABILITIES UNDER CONSIDERATION OF THE ARBITRATION PROCEEDING

9.1.1 MWA has engaged SG-STPE Joint Venture, contract no. E-RW/TR(BK)/(MS)-8(R) to furnish and install of pumping equipment with contract value amounting to Baht 274.05 million and Yen 407.64 million.

On September 10, 2015 the contractor has submitted a dispute to Thailand Arbitration Center, black case no.66/2015, demanding MWA to revoke the termination of contract ,dated November 18, 2014 , and to refrains the forfeit amounting Baht 134.21 million, and to assents the contractor return to work on the rest to finish, and to pays for the remaining cost of the work amounting Baht 54.81 million and settles to the spare parts that delivered amount Baht 5.05 million, and to pay total amount Baht 59.86 million for goods and spare parts that had delivered. In addition to suspend or revoke the order of the contractor abandoned the work.

On January 26, 2017 the contractor has additional submitted a dispute, demanding MWA to pay extra amounting Baht 56.61 million that include total amount Baht 116.47 million and Yen 81.53 million.

The first investigative appointment of plaintiff's witness and defendant is on December 1, 2017.

Completely investigated on February, 2018.

Currently this case is proceeding on The Arbitral Tribunal.

9.1.2 MWA has engaged ST power engineering corporation limited, contract no. S-BK-8 to provide and install of electric substation of Bang Khen water treatment plant with related work according to The eight Bangkok water supply improvement project which issued on May 25, 2011 with construction cost Baht 140.50 million.

On September 15, 2015 MWA has reserved right's notice to collect the delayed fine from ST power engineering corporation limited amount Baht 52.30 million.

On August 8, 2014 ST power engineering corporation limited has submitted a dispute to Thailand Arbitration Center, black case no.77/2016, demanding MWA extended working period and considered to reduce delayed fine to 10 percent which damages amount Baht 36.51 million.

Appointed with both litigants for defined dispute issues on February 6, 2018.

Investigative appointment of claimant's witness on July 12, 2018 August 23, 2018 November 6, 2018 and November 8, 2018 and opposition's witness on November 9, 2018 and November 13, 2018.

Currently this case is proceeding on The Arbitral Tribunal.

9.1.3 Hydrotek Public Company Limited and Salcon Engineering Berhad has submitted a dispute to Thailand Arbitration Center, black case no.112/2017, dated January 15, 2018, demanding MWA extended working period to 478 days and refunded fine to claimants amount Baht 42.02 million with interest at the rate 7.5 percent per annum, calculated from the date of filing statements of claim until the total payment has been met by contract no. G-PK/RB-8.

On July 12, 2018 Attorney submitted an objection.

Currently this case is proceeding on The Arbitral Tribunal.

9.2 THE CASES THAT MWA WAS FILED THE PETITION TO OBJECTION THE ARBITRAL AWARD

9.2.1 Thames Water International Limited and Thames Water National Service Limited, claimed for compensation on disagreed unpaid success fees and incentive cost Baht 232.07 million, on March 22, 2006, black case no.26/2006.

On June 23, 2008, the arbitral award ruled by The Arbitral Tribunal in the red case no.44/2008 ordered MWA To pay compensation on disagreed unpaid success fees and incentive amounting of Baht 232.07 million together with interest at the rate of 7.5 percent per annum, calculated from the next date of MWA receipt of the said award until the total payment has been made.

On August 8, 2008, An attorney representing MWA filed a case through the Central Administrative Court requested the court to revoke such arbitral award, since its award was not unreasonable in compliance with the facts and law, which is material of the case.

On October 15, 2008, the company filed a petition with the Ratchada Civil court requesting issuance of judgment to enforce compliance with the arbitral award, but was later withdrawn the petition.

On June 27, 2012, the Central Administrative Court judgment to enforce compliance with the arbitral award.

On July 26, 2012, MWA submitted an appeal objecting of the Central Administrative Court judgment to the Supreme Administrative Court. The director of the Department of Administrative Litigation, Office of the Attorney General that should be invoked. The judgment of the court that the arbitral award within the scope of the arbitration agreement and the enforcement of the arbitral award is not like the facts and law.

Currently this case is depending to be consideration of the Supreme Administrative Court.

9.2.2 MWA has engaged Nawaratpatanakarn public company limited, contract no. G-MC-7D/2 to construct water tunnel and facilities with construction cost Baht 1,142.0 million.

On June 22, 2010 the contractor has submitted a dispute to the Office of the Arbitration Tribunal Board of Trade of Thailand, black case no.5/2010 claimed MWA for compensation on breach of contract amounted to Baht 145.27 million together with interest at the rate of 7.5 percent per annum, calculated from the day following the date of filing statements of claim until the total payment has been met.

On October 31, 2016, the arbitral award ruled by The Arbitral Tribunal ordered the respondent to pay amounting of Baht 8.00 million for the claimant within 60 days from the day following the date of acknowledgment of the arbitral award. If the period in question, the respondent hasn't paid all or part of it to the claimant, to pay interest at the rate of 7.5 percent per annum of the amount owed, calculated from the day following the due date until the total payment has been met.

On January 26, 2017 MWA filed a case through the Central Administrative Court requested the court to revoke such arbitral award.

Currently this case is depending to be consideration of the Central Administrative Court.

9.3 THE CASES ARE UNDER CONSIDERATION OF DEPARTMENT OF CIVIL DISPUTE SETTLEMENT AND ARBITRATION

9.3.1 Royal Irrigation Department demands from Department of Rural Roads and MWA reimburse damages from river bank protection wall moved and collapsed into Lad Pho canal amounting Baht 32.50 million. The Department of Civil Dispute Settlement and Arbitration had memo no. ๐๙๐๐2๐(๐๖๒)/14 ,dated January 11, 2018 to inform MWA for clarify the facts.

On February 27, 2018 MWA clarified the facts with related documents to attorney.

Currently this case is proceeding of attorney.

9.3.2 Metropolitan Electricity Authority (MEA) demands from MWA to settle final period for TIE LINE electric system improvement 69 kV and setting them at electric substation of Samsen Water Treatment Plant amounting Baht 4.09 million. The Department of Civil Dispute Settlement and Arbitration had memo no. ๐๙๐๐2๐(๐๖๑)/6 ,dated January 5, 2018 to inform MWA for clarify the facts.

On March 29, 2018 MWA had memo to assign associated staff for clarify the facts. MWA clarified the facts with related documents to attorney.

On July 3, 2018 MWA appointed MEA to clarify the facts.

Currently this case is proceeding of attorney.

9.4 MWA was charged 20 cases of lawsuit, estimated total claims for compensation and damages amount of Baht 198.28 million, as follow:

9.4.1 The two civil cases claimed for compensation Baht 12.10 million, on contract default , which one is being considered in the Civil Court and another one is being considered in the Supream Administrative Court.

9.4.2 The seventeen civil cases claimed for damages Baht 186.16 million. They are being considered. Four cases are in the Civil Court, three cases are in the Appeal Court, six cases are in the Central Administrative Court, two cases are in the Supreme Administrative Court, and the other two cases are in the Supreme Court.

9.4.3 The civil case claimed for damages amounting Baht 0.02 million. This case is in the consideration of the Central Administrative Court.

10. ADJUSTMENT AND RECLASSIFICATION

MWA has adjusted statement of financial position as of September 30, 2016 and 2017, statement of income and statement of cash flows for the year ended September 30, 2017.

	Unit : Baht		
<u>Transactions</u>	<u>Before adjustment</u>	<u>Adjustment</u>	<u>After adjustment</u>
<u>Statement of financial position</u>			
<u>As of September 30, 2016</u>			
Property, plant and equipment	46,245,870,228	258,516,353	46,504,386,581
Works under construction	5,897,435,060	558,058,753	6,455,493,813
Other current liabilities	1,723,973,773	(417,731,085)	1,306,242,688
Deferred revenues	2,308,741,567	3,309,151,546	5,617,893,113
Government grants	-	213,372,442	213,372,442
Unappropriated retained earnings	47,431,695,709	(2,288,217,797)	45,143,477,912
<u>Statement of financial position</u>			
<u>As of September 30, 2017</u>			
Property, plant and equipment	47,751,523,336	144,119,430	47,895,642,766
Works under construction	4,843,705,297	545,537,786	5,389,243,083
Other current liabilities	1,721,069,420	(220,929,487)	1,500,139,933
Deferred revenues	2,733,016,039	3,033,886,968	5,766,903,007
Government grants	-	99,509,970	99,509,970
Unappropriated retained earnings	50,645,007,872	(2,222,810,235)	48,422,197,637

Statement of income**For the year ended September 30, 2017**

Tab water connection fees	339,508,423	67,071,669	406,580,092
Work contract revenues	792,923,170	(350,375,490)	442,547,680
Other operating income	678,242,679	(417,227,199)	261,015,480
Changes in inventories of finished goods and work in progress	(9,744)	30,669	20,925
Raw materials and consumables used	2,590,205,493	(161,617,508)	2,428,587,985
Depreciation and amortization expenses	4,286,688,470	58,790,893	4,345,479,363
Other operating expenses	2,115,725,805	(650,805,383)	1,464,920,422
Other revenues	112,541,915	30,669	112,572,584

Statement of cash flows**For the year ended September 30, 2017****Cash flows from operating activities**

Profit for the year	7,515,279,466	53,100,978	7,568,380,444
Depreciation	4,222,803,895	58,790,893	4,281,594,788
Revenues from donation assets	(323,292,919)	320,182,586	(3,110,333)
Revenues from tab water connection fees	-	(392,743,266)	(392,743,266)
Revenues from works contract revenues	-	(395,761,369)	(395,761,369)
Other operating expenses	-	2,282,189	2,282,189
Deferred revenues	-	1,071,808,457	1,071,808,457
Government grants	-	97,044,613	97,044,613

Cash flows from investing activities

Payments of fixed assets acquisition	(2,913,164,068)	(814,705,081)	(3,727,869,149)
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11. Approval of Financial Statements

These financial statements were authorized for issue by the Governor of MWA on March 19, 2019.

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