QUALITY WATER FOR QUALITY LIVING

Annual Report 2022
Metropolitan Waterworks Authority

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Quality Water for Quality Living

"Quality Water" results from the main intention of innovating for value, increasing efficiency to reduce water loss and providing good quality water for consumption. **"Quality Living"**, meanwhile, happens as an effect of secure growth through comprehensive waterworks businesses and water resource security and has an aim of extensively and equitably boosting service user confidence to lead to a good quality of life of the people. The details of these aims are shown in the figure below.

Core Ideology | **Envisioned Future**

- Innovations for value
- Improve efficiency and reduce water loss
- Good water quality for use and consumption
- Stable growth through comprehensive waterworks businesses
- Water security

Quality Water

- High-quality and high-safety water that is suitable for both use and consumption, meet international water quality standards and respond to government policies while sustainably fulfilling the needs and expectations of every stakeholder.
- Management of the water supply system from the source to the destination while creating value at appropriate costs according to good governance principles and using knowledge and digital technology to enhance work processes through innovations and the capability to develop high-quality products and services.
- Operating connected businesses by providing comprehensive waterworks services that deliver value to customers beyond their expectations and in time for their needs to create good customer impressions.

Quality Living

- Safeguarding public interest by ensuring extensive and sufficient access to high-quality, clean and safe water supply in line with international standards while reducing inequality by using fair prices.
- Supporting the national economy for growth, national security and a sustainable Thai society.
- Operating business ethically and for the benefit of stakeholders, society and the environment.

The Metropolitan Waterworks Authority (MWA)

The Metropolitan Waterworks Authority (MWA) is a state enterprise under the supervision of the Ministry of Interior that has been operating since 16 August 1967 pursuant to the Metropolitan Waterworks Authority Act, B.E. 2510 (1967). The enterprise's primary mission is to provide raw water for use in supply, production, delivery and distribution of water in Bangkok, Nonthaburi and Samut Prakan while operating other connected businesses or businesses that benefit waterworks.

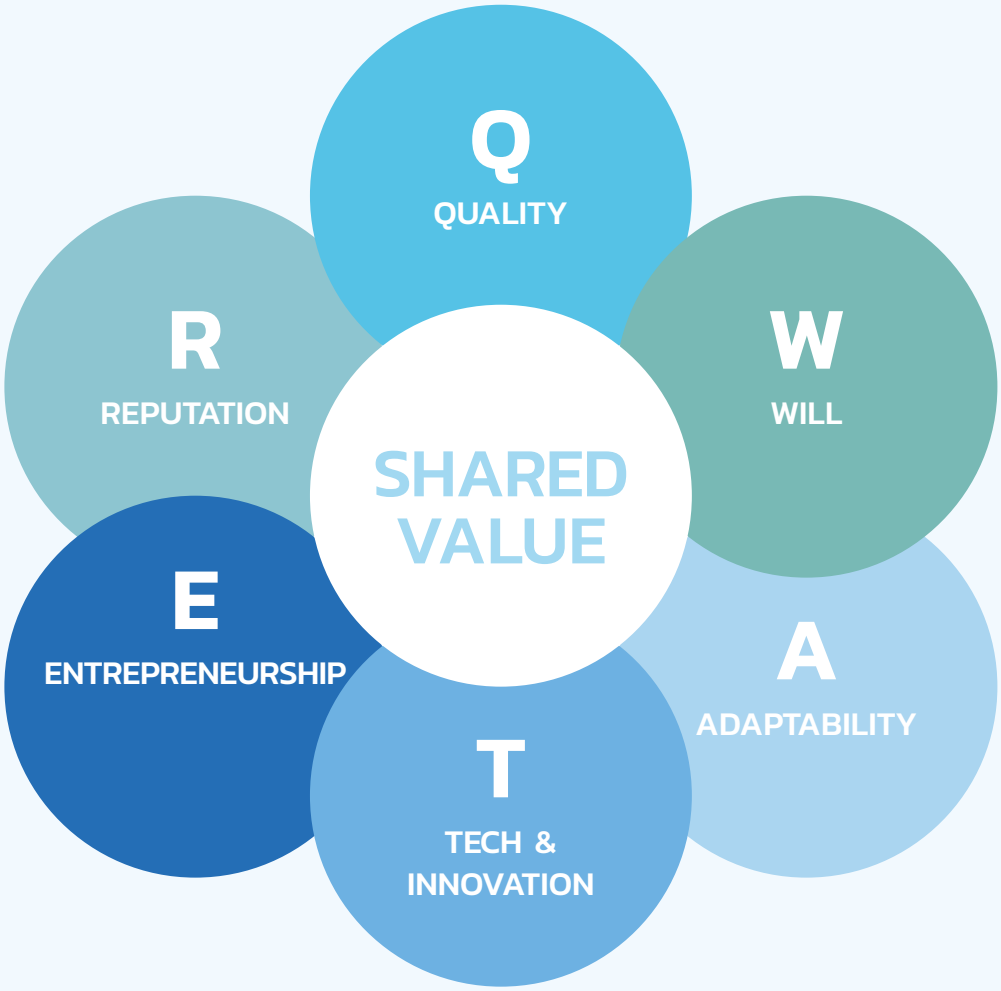
Vision

Quality Water for Quality Living

Missions

1. Comprehensively to operate the main water supply business by providing water services that meet quality standards for the extensive good quality of life of the people.
2. To be an organization with the capability to effectively deal with crises.
3. To operate connected businesses to create value for stakeholders while creating sustainable growth for the organization.

Value



There are **3 policy levels** that public sector shareholders have for state enterprises:

1. **Policies for State Enterprises as a Whole**

   These serve as government mechanisms for driving the Thai economy and society for security, prosperity and sustainability.

2. **Policies for State Enterprises in Public Utilities**

   These are meant for improving basic infrastructure and real estate to raise the quality of life of the people while sustainably supporting urbanization and economic zones.

3. **Policies for the Metropolitan Waterworks Authority**

   These are aimed at improving and expanding water supply networks for quality and sufficiency to meet the needs of increasing urbanization while developing connected businesses to create added value for the enterprise.

Pride Awards

1 Public Sector Excellence Awards 2022 (Government Services)

Siamrath Online Award 2022 (State Enterprise with Excellent Morals and Governance) 2

3 Southeast Asia Most Innovative Knowledge Enterprise Award 2022 (SEA MIKE Award)

4 Thailand Kaizen Award 2022

ประกาศนียบัตรเชิดชูเกียรติ
ให้ไว้เพื่อแสดงว่า
การประปานครหลวง
เป็นหน่วยงานที่ได้ผลการประเมินคุณธรรม
และความโปร่งใสในการดำเนินงานของหน่วยงานภาครัฐ
ประจำปีงบประมาณ พ.ศ. 2565
หน่วยงานที่มีผลคะแนนระดับ AA
พลเอก ประยุทธ์ จันทร์โอชา นายกรัฐมนตรี
พลตำรวจเอก วัชรพล ประสารราชกิจ ประธานกรรมการ ป.ป.ช.
AA
ITA

5

Certificate of Integrity and Transparency Assessment: ITA for the year 2022 (AA Rating)

6

Organization Award for Promoting Good, Talented and Brave People

7

Government Easy Contact Center: GECC Award 2022

8

Golden Heart Award 2022

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Message from the Chairman

of the Metropolitan Waterworks Authority

We strive to devote ourselves in our work to improve services to the fullest of our potential to enhance the quality of life for the people.

Quality Water for Quality Living

(Mr. Nisit Jansomwong)
Chairman, Metropolitan Waterworks Authority

Over the past year, the Metropolitan Waterworks Authority entered into its 55th year since its founding and 108th year since its contribution to ensuring security in the waterworks business of Thailand. Through developing modern waterworks and management systems, we strive to devote ourselves in our work to improve services to the fullest of our potential while firmly committing to collective interest and giving top priority to improving the quality of life of the people to ensure that the people within our responsibility, namely, Bangkok, Nonthaburi and Samut Prakan, have equal access to quality water supply in every household, and we also pay attention to adopting digital technologies and innovations to promote achieve digital transformation in the organization within the principles of good governance and while caring for the environment and communities in the midst of crises impacting society and the global economy.

Throughout our operation in 2022, the Board of Directors of the Metropolitan Waterworks Authority handed down organization management policies to set guidelines for driving efforts in line with the government's guidelines under the supervision of the Ministry of Interior. In addition, we adopt in digital technologies and innovations to enhance work effectiveness and services under good corporate governance principles and excellence of oversight. This is demonstrated in the numerous awards that the organization received in 2022, such as the Public Sector Excellence Award from the Office of the Public Sector Development Commission (OPDC), which the organization won in 5 categories in public government services, the Outstanding Government Information Center Award by the Office of the Official Information Commission, Sustainability Disclosure Award by the Thaipat Institute, the Moral Organization award by the National Moral Promotion Committee and Integrity and Transparency Assessment: ITA performance evaluation score by the Office of the National Anti-Corruption Commission of 98.23 or a AA rating.

Furthermore, the Metropolitan Waterworks Authority also received pride awards on the international level such as the International Innovation Awards (IIA 2020) in Services and Solutions Innovations by Enterprise Asia and the Médaille d'Or Silver Medal in Computer Science - Software - Electronic - Electricity - Methods of Communication at the **"48th International Exhibition of Inventions Geneva"** in Switzerland.

On behalf of the Board of Directors of the Metropolitan Waterworks Authority, I would like to thank everyone for their cooperation and dedication in carrying out the work of the executive team, employees and all contract workers, and I promise that we are ready and determined to develop waterworks management to sustainably and perpetually meet the needs of every stakeholder in order to take the organization toward superior development like it has always done.

In the 2022 fiscal year, the Metropolitan Waterworks Authority swiftly implemented the 9th Bangkok Water Supply Improvement Project in full form, ranging from water production capacity expansion to integration of water supply tunnel networks and increasing the stability of water pressure at multiple water distribution pumping stations. This mission is an important mechanism for promoting security and sustainability in the water supply management of the Bangkok Metropolitan Region and other service areas. If the plan is fully realized, we will be able to mitigate the problem of rising seawater levels in the Chao Phraya River while being able to meet the water needs of the entire service area in the eastern region, in addition to reinforcing stability and security in the water supply network for the direct and entire benefit of the people, business sector and industries through the Metropolitan Waterworks Authority's 42,750-million-baht investment.

One of the many challenges that the Metropolitan Waterworks Authority has to deal with is water treatment and water supply service costs, particularly raw water costs and increasing cost in the use of space for water pipe installations, which amount to over a billion baht. However, the Metropolitan Waterworks Authority remains committed and steadfast in being an organization of the government that meets the basic utility needs of the people by having maintained the same water supply fee rate for over 23 years, which is the intention of a **"giver"** organization like that always strives to create benefits for the public.

Nevertheless, the development context of the Metropolitan Waterworks Authority also shows a focus on building the strength of its personnel from knowledge development to capability enhancement in various career paths, work process improvements, development of innovations and innovators and knowledge facilitators and dissemination of academic knowledge domestically and abroad, including the creation of professional waterworks network. All of these are developments aimed at creating an organization of learning and sharing whose results are sustainably extended to upstream to midstream and downstream stakeholders, the public, communities and society on the macro level.

On behalf of the Metropolitan Waterworks Authority, I would like to thank everyone for having contributed to pushing directly and indirectly for creative development, and I firmly promise on behalf of the organization that the Metropolitan Waterworks Authority will always be an organization that grows and builds Thai society toward security in water service quality through sincere services.

Message from the Governor

of the Metropolitan Waterworks Authority

I would like to thank everyone for having contributed to pushing directly and indirectly for creative development.

Quality Water for Quality Living

(Mr. Manit Panaim)
Governor, Metropolitan Waterworks Authority

Organization

Structure

Manpower Structure

(As of September 2022)

As of 30 September 2022, the Metropolitan Waterworks Authority has 5,271 personnel total, of whom there were 4,251 employees and 1,020 contract workers while total employee-related expenses were 3,411.86 million baht, divided into 3,182.80 million baht of employee expenses and 229.06 million baht of contract workers expenses.

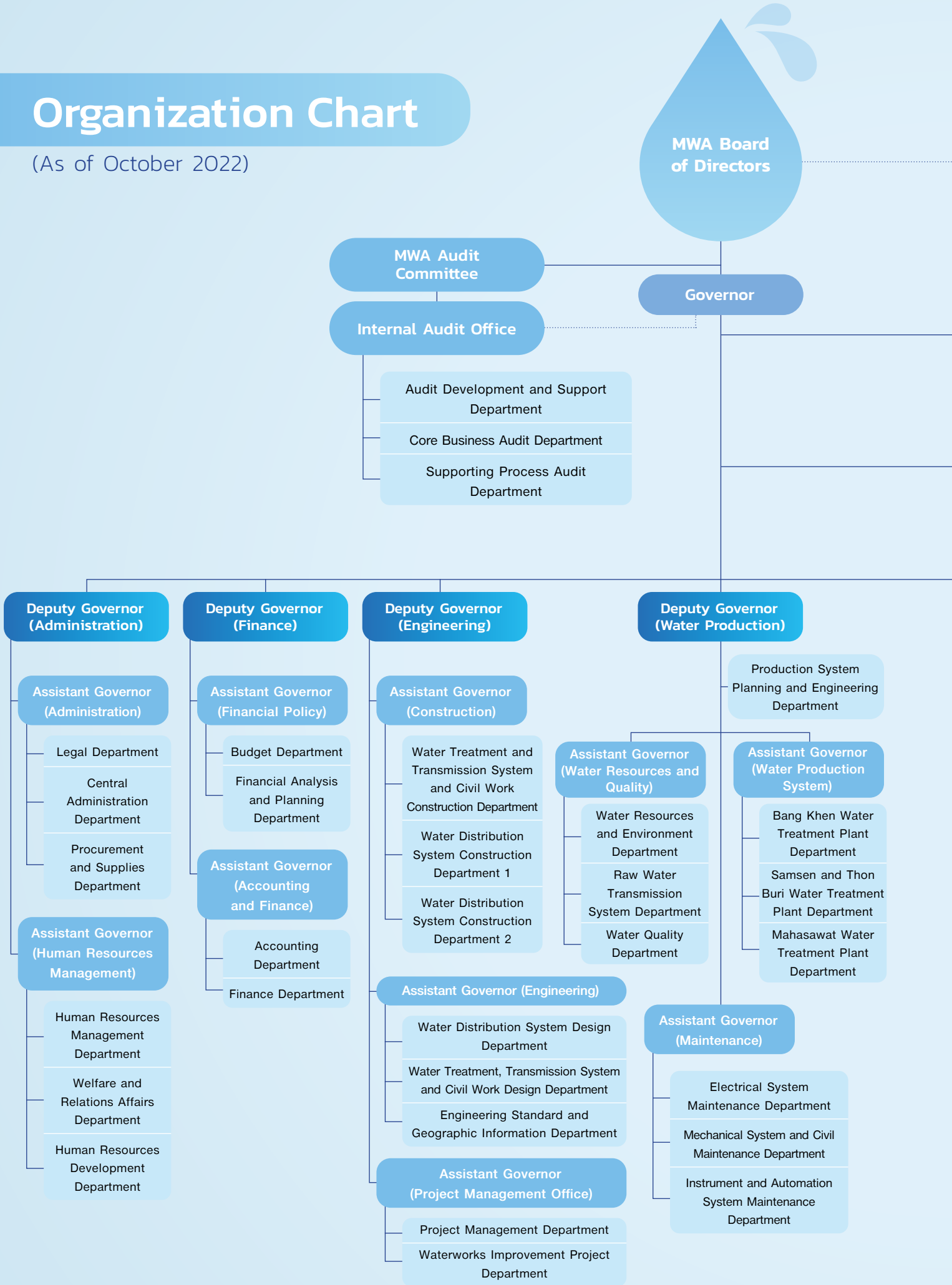
Operation Line	Manpower (persons)		
	Employees	Contract Workers	Total
1. Governor	158	29	187
2. Deputy Governor (Administration)	312	68	380
3. Deputy Governor (Finance)	163	13	176
4. Deputy Governor (Eastern Services)	1,209	313	1,522
5. Deputy Governor (Western Services)	1,094	310	1,404
6. Deputy Governor (Engineering)	356	52	408
7. Deputy Governor (Water Production)	687	183	870
8. Deputy Governor (Planning and Development)	153	43	196
9. Deputy Governor (Digital Technology)	119	9	128
Total	**4,251**	**1,020**	**5,271**

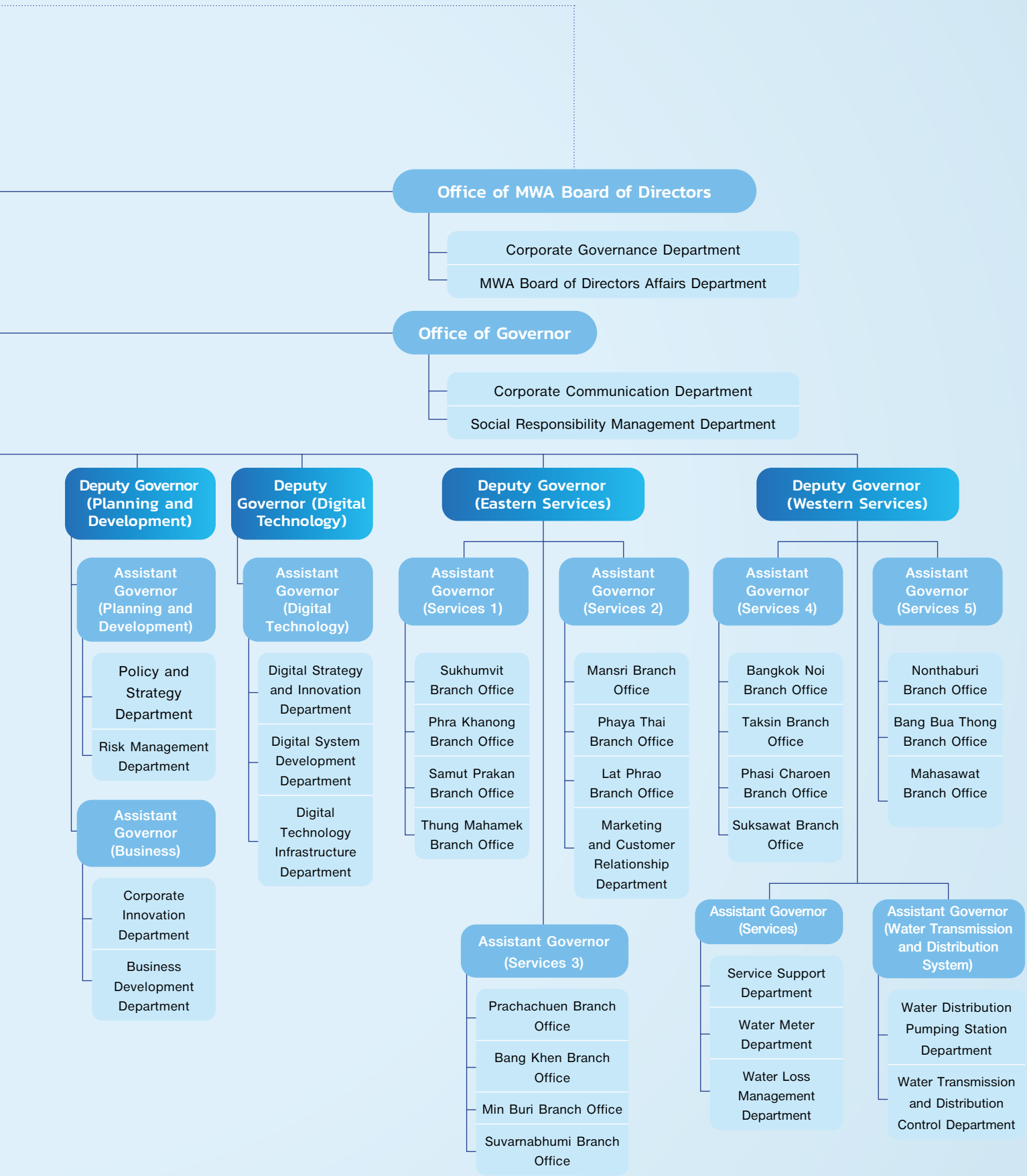
Personnel expenses in the past 3 years

Operation Line	Expenses (Million baht)								
	Employees			Contract Workers			Total		
	2022	2021	2020	2022	2021	2020	2022	2021	2020
1. Governor	158.75	239.69	240.63	3.69	14.31	14.73	162.44	254.00	255.36
2. Deputy Governor (Administration)	235.70	190.94	197.47	11.04	10.68	10.58	246.74	201.62	208.05
3. Deputy Governor (Finance)	139.76	129.54	128.90	2.13	2.19	2.30	141.89	131.73	131.20
4. Deputy Governor (Eastern Services)	848.89	783.32	748.17	73.20	62.86	62.64	922.09	846.18	810.81
5. Deputy Governor (Western Services)	809.81	641.77	622.91	90.89	64.44	57.61	900.70	706.21	680.52
6. Deputy Governor (Engineering)	230.29	211.82	208.69	8.82	8.82	8.70	239.11	220.64	217.39
7. Deputy Governor (Water Production)	529.73	620.63	599.44	32.32	55.26	50.30	562.05	675.89	649.74
8. Deputy Governor (Planning and Development)	127.59	81.29	79.35	5.38	0.59	0.73	132.97	81.88	80.08
9. Deputy Governor (Digital Technology)	102.28	97.49	100.24	1.59	1.69	1.68	103.87	99.18	101.92
Total	**3,182.80**	**2,996.49**	**2,925.80**	**229.06**	**220.84**	**209.27**	**3,411.86**	**3,217.33**	**3,135.07**

Organization Chart

(As of October 2022)




Office of MWA Board of Directors
Corporate Governance Department
MWA Board of Directors Affairs Department
Office of Governor
Corporate Communication Department
Social Responsibility Management Department
Deputy Governor (Planning and Development)
Assistant Governor (Planning and Development)
Policy and Strategy Department
Risk Management Department
Assistant Governor (Business)
Corporate Innovation Department
Business Development Department
Deputy Governor (Digital Technology)
Assistant Governor (Digital Technology)
Digital Strategy and Innovation Department
Digital System Development Department
Digital Technology Infrastructure Department
Deputy Governor (Eastern Services)
Assistant Governor (Services 1)
Sukhumvit Branch Office
Phra Khanong Branch Office
Samut Prakan Branch Office
Thung Mahamek Branch Office
Assistant Governor (Services 2)
Mansri Branch Office
Phaya Thai Branch Office
Lat Phrao Branch Office
Marketing and Customer Relationship Department
Assistant Governor (Services 3)
Prachachuen Branch Office
Bang Khen Branch Office
Min Buri Branch Office
Suvarnabhumi Branch Office
Deputy Governor (Western Services)
Assistant Governor (Services 4)
Bangkok Noi Branch Office
Taksin Branch Office
Phasi Charoen Branch Office
Suksawat Branch Office
Assistant Governor (Services 5)
Nonthaburi Branch Office
Bang Bua Thong Branch Office
Mahasawat Branch Office
Assistant Governor (Services)
Service Support Department
Water Meter Department
Water Loss Management Department
Assistant Governor (Water Transmission and Distribution System)
Water Distribution Pumping Station Department
Water Transmission and Distribution Control Department

MWA Board of Directors

(As of 31 December 2022)

Mr. Nisit Jansomwong
Chairman and Independent Director

General Singthong Meethong, Ph.D.
Independent Director

Mr. Anuchit Trakulmututa
Independent Director

Mr. Chaitat Saetang, D.B.A.
Independent Director

Mr. Nattakit Tangpoonsinthana, Ph.D.
Independent Director

Mr. Krisada Kaweeyarn
Independent Director

Mr. Varayuth Yenbamroong
Independent Director

MWA Board of Directors

(As of 31 December 2022)

M.R. Sasiprin Chandratat
Independent Director

Mr. Roya Juntaratana
Independent Director

Mr. Nitat Maneesilasan
Independent Director

Mr. Sanya Saengpumpong
Independent Director

Mr. Manit Panaim
Director and MWA Governor

Mr. Werawat Yomchinda
Independent Director

Mr. Boonchai Charassangsomboon
Director

MWA Board of Directors List

(As of 31 December 2022)

Mr. Nisit Jansomwong

Position: Chairman and Independent Director

Age: 60

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), King Prajadhipok's Institute
- Certificate of the Joint State-Private Course (Class 23), National Defence College
- 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), Budget Bureau
- Director Certification Program (DCP) (Class 253/2018), Thai Institute of Directors (IOD)
- Advanced Certificate Course of Capital Market Academy Programs (Class 28)
- Certificate of College of the Constitutional Court (Class 6)

Work Experience:

- Head of Plan and Develop the Staffing System Group, Personal Division, Office of the Permanent Secretary for Interior
- Director of Administrative System Development Group, 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 Interior
- Vice Governor of Samut Prakan 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 Commission, Office of the Prime Minister
- Chairman of Audit Committee of Thailand Post Distribution Co., Ltd.
- Chief of Inspector for Interior
- Governor of Prachuap Khiri Khan Province
- Governor of Ratchaburi Province
- Governor of Phuket Province
- Governor of Nonthaburi Province
- Deputy Permanent Secretary, Ministry of Interior
- Director General of Community Development Department
- Director General of Department of Lands

Present Positions:

- Chairman of MWA Board of Directors
- Vice Chairman of Thailand Post Distribution Co., Ltd.
- Subcommittee of Public Sector Audit and Evaluation
- Subcommittee of Independent Director of Performance Enhancement for Human Resource Management of Office of the Civil Service Commission
- The Law Reform in Urgent Stage Commission
- Subcommittee of Improvement or Abrogation of Unnecessarily Burdensome Laws
- Advisor, Office of the Public Sector Development Commission (OPDC).
- Office of the Public Sector Development Commission Subcommittee (OPDCSC), involved in promoting and improving convenience in government and business application processes
- Remuneration/Managing Director's Performance Evaluation Subcommittee, Thailand Post Distribution Co., Ltd.
- Legal Subcommittee, Thailand Post Distribution Co., Ltd.
- Corporate Strategy Subcommittee, Thailand Post Distribution Co., Ltd.
- Marketing and Communication Subcommittee, Thailand Post Distribution Co., Ltd.
- Senior Director, Songkhla Rajabhat University.

Other Directorships:

- Vice Chairman of Thailand Post Distribution Co., Ltd.
- The Law Reform in Urgent Stage Commission
- Subcommittee of Public Sector Audit and Evaluation
- Senior Director, Songkhla Rajabhat University

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Manit Panaim

Position: Director and MWA Governor

Age: 58

Education/Training:

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Bachelor of Law, Sukhothai Thammathirat Open University
- Master of Engineering (Civil Engineering), Thammasat University
- Master of Engineering (Infrastructure Engineering and Management), Kasetsart University
- Military Logistics Management and Defence Industrial Relationship Development Program, The RTA Logistics School
- The Civil Service Executive Development Program: Visionary and Moral Leadership, Office of the Civil Service Commission
- Security Management and Leadership for Executives Program, National Defence College

Work Experience:

- Engineering Standard and Geographic Information Department Director
- Water Distribution System Construction Department 1 Director
- MWA Expert Level 9
- Assistant Governor (Project Management Office)
- Deputy Governor (Engineering)

Present Positions:

- Director of Metropolitan Waterworks Authority
- Governor of Metropolitan Waterworks Authority
- Member of MWA Improvement Subcommittee, Metropolitan Waterworks Authority
- Member of the Procurement Subcommittee, Metropolitan Waterworks Authority

Other Directorships:

- None

Holding in a connected juristic person:

- None

Connected juristic person:

- None

General Singthong Meethong, Ph.D.

Position: Independent Director

Age: 62

Education/Training:

- Bachelor of Science, Chulachomklao Royal Military Academy
- Master of Arts (Political Science), Ramkhamhaeng University
- Ph.D. (Public Affairs), Burapha University
- Thailand National Defence College (Class 57), National Defence College
- Infantry Officer Basic Course, Infantry School Infantry Center
- Infantry Officer Advance Course, Infantry School Infantry Center
- Command and General Staff Officer Course (CGSOC) (Class 70)
- Director Certificate Program (DCP) 305/2021, Thai Institute of Directors (IOD)

Work Experience:

- Commander of Infantry Battalion 4, Infantry Regiment 1, King's Guard
- Infantry Regiment 1 Deputy Commander, King's Guard
- Commander General, Infantry Battalion 19
- Infantry Regiment 9 Deputy Commissioner
- Commander General, Kanchanaburi Military District
- Commanding General, Military Circle 11
- Commanding General, Military Circle 14
- Special Expert, Royal Thai Army (Lieutenant General)
- Deputy Chief of Staff, Royal Thai Army
- Army Special Qualified General, Royal Thai Army

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the Risk Management and Internal Control Subcommittee, Metropolitan Waterworks Authority
- Vice Chairman of Policy Implementation Monitoring Subcommittee, Metropolitan Waterworks Authority

Other Directorships:

- None

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Krisada Kaweeyarn

Position: Independent Director

Age: 51

Education/Training:

- Master of Business Administration (MBA) Kenan-Flagler Business School, the University of North Carolina at Chapel Hill, USA
- Bachelor degree in Accounting and Finance (Second Class Honor – Upper Division) Faculty of Commerce and Accountancy, Thammasat University
- Islamic Finance Diploma in Islamic Finance, the United Kingdom Chartered Institute for Securities and Investment
- Business Government and International Economy, Harvard Business School
- Diploma Program in Medical Governance for Senior Executives (Class 10), King Prajadhipok's Institute and the Medical Council of Thailand
- National Defence College (Class 64) Thailand National Defence College
- Director Certification Program (DCP), Thai Institute of Directors (IOD)
- Advanced Master of Management Program (AMM), Graduate School of Public Administration, National Institute of Development Administration
- Top Executive Program in Metropolitan Development (Mahanakorn 4), Navamindradhiraj University
- Thammasat Leadership Program, Class 3, Thammasat University
- Capital Market Academy (Class 10)
- Homeland Security Program, Internal Security Operations Command
- Public Economic Management for Executives, Class 3, King Prajadhipok's Institute

Work Experience:

- Strategic Advisor, International Finance Corporation (IFC), World Bank Group
- Independent Director and Chairman of the Audit Committee, Metropolitan Waterworks Authority
- Director of the Board of Director, Chairman of the Risk Management Committee and the Executive Board, the Krungthep Thanakom Company Limited
- Director and Chairman of the Board of Director, CAT Telecom Public Company Limited
- Director and Chairman of the Board of Director, Islamic Bank of Thailand
- Executive Director, Dhanarak Asset Development Company Limited
- Director and Member of the Internal Audit Committee, Playing Card Factory, the Excise Department
- Chief Executive Officer (CEO), Ploenchit Asset Management Company Limited
- Chief Executive Officer (CEO), Altus Capital Partners (Thailand) Company Limited
- Advisor to the Board of Directors, Software Industry Promotion Agency (Public Organization)
- Head of Principal Transaction Group, Lehman Brothers (Thailand) Company Limited
- Vice President, GE Capital, Danbury Connecticut (USA)
- Vice President, Broadcaster's Association of Thailand under the Royal Patronage of H.M. the King
- Vice President, Digital Media for Consumer Association (Thailand)
- Vice President, Broadcaster's Association of Thailand under the Royal Patronage of H.M. the King

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the Water Loss Monitoring and Water Pressure Management Subcommittee, Metropolitan Waterworks Authority
- Member of the Audit Committee, Metropolitan Waterworks Authority
- Managing Director, Precious Wood Industry Company Limited
- Chief Executive Officer (CEO), I Am Chinatown Company Limited
- Chief Executive Officer (CEO), Chamada Real Estate Company Limited and Affiliate Companies

Other Directorships:

- Managing Director, Precious Wood Industry Company Limited
- Chief Executive Officer (CEO), I Am Chinatown Company Limited
- Chief Executive Officer (CEO), Chamada Real Estate Company Limited and Affiliate Companies

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Chaitat Saetang, D.B.A.

Position: Independent Director

Age: 43

Education/Training:

- Bachelor of Arts (B.A.) in Mass Communication, Ramkhamhaeng University
- Master of Business Administration (MBA) (Marketing), Ramkhamhaeng University
- Doctor of Business Administration (DBA) (Business Management), Phranakhon Rajabhat University
- Director Certification Program (DCP 222), Thai Institute of Directors (IOD)
- Family Business Governance (FBG 13), Thai Institute of Directors (IOD)
- Senior Management Program in Urban Development (Metropolitan Development), Class 5, Navamindradhiraj University
- Digital Chief Executive Officer (CEO) Program, Class 1, Digital Economy Promotion Agency
- Senior Executive Management for Industrial Business Development and Investment, Class 5, Institute of Business and Industrial Development
- Top Executive Program in Commerce and Trade (TEPCoT), Class 12, Commerce Academy, University of Thai Chamber of Commerce
- Advanced Retail Management (ARM) Program, Class 28, Office of Business Networking Management, CP All Public Company Limited
- Project Management Essential Program, Career for the Future Academy
- Top Executives for Nation Building Program, Class 1, Nation-Building Institute
- Advanced Certificate Course of Capital Market Academy Programs (Class 31)
- Certificate of Corporate Governance for Directors and Senior Executives of Regulators, State Enterprises and Public Organizations, King Prajadhipok's Institute

Work Experience:

- Advisor for Digital Content Marketing & IMC
- Advisor for IT Human Transformation
- Advisor for Digital Signage Design
- Advisor for Adaptation of Sufficiency Economy Philosophy for Sustainability
- Advisor for Presentation Skills for Small Businesses

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the MWA Digital Technology Development Subcommittee, Metropolitan Waterworks Authority
- Member of the Procurement Subcommittee, Metropolitan Waterworks Authority
- Chief Executive Officer (CEO), Chaiyagarn Consulting Company Limited

Other Directorships:

- Chief Executive Officer (CEO), Chaiyagarn Consulting Company Limited

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Varayuth Yenbamroong

Position: Independent Director

Age: 38

Education/Training:

- Bachelor of Science (Aerospace Engineering), University of California at Los Angeles, USA
- Master of Science (Mechanical Engineering), University of California at Los Angeles, USA

Work Experience:

- Civil Engineering (Drainage Design), Los Angeles County Department of Public Works, USA
- Systems Engineer, Northrop Grumman Corporation, USA
- Senior Integration Project Engineer Lead, Northrop Grumman Corporation, USA
- Director of Strategy and Business Development, Northern Gulf Petroleum Pte Ltd.
- Director and Chief Technology Officer (CTO), Mobile LTE Company Limited
- Director and Chief Executive Officer (CEO), Mobile LTE Company Limited

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Vice Chairman of the Risk Management and Internal Control Subcommittee, Metropolitan Waterworks Authority
- Director & Chief Executive Officer (CEO), Mu Space and Advanced Technology Company Limited
- Chief Technology Officer (CTO), Mu Space and Advanced Technology Company Limited

Other Directorships:

- Director & Chief Executive Officer (CEO), Mu Space and Advanced Technology Company Limited

Holding in a connected juristic person:

- None

Connected juristic person:

- None

M.R. Sasiprin Chandratat

Position: Independent Director

Age: 58

Education/Training:

- Bachelor of Accountancy, Chulalongkorn University
- MBA (Finance), University of Central Oklahoma, USA
- Director Accreditation (DAP 52/2006) Program, Thai Institute of Directors (IOD)
- Director Certification Program (DCP 121/2009), Thai Institute of Directors (IOD)
- Audit Committee Program (ACP 34/2010), Thai Institute of Directors (IOD)
- Role of the Compensation Committee (RCC) 2012, Thai Institute of Directors (IOD)

Work Experience:

- Director, Islamic Bank of Thailand
- Director, CAT Telecom Public Company Limited
- Director, Thailand Institute of Scientific and Technological Research

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the Policy Implementation Monitoring Subcommittee, Metropolitan Waterworks Authority
- Vice Chairman of the MWA Improvement Subcommittee, Metropolitan Waterworks Authority
- Chief Executive Officer (CEO), Ploenchit Capital Company Limited
- Chairman, K.C. Property PCL.
- Director, the Sustainable Arts and Crafts Institute of Thailand (Public Organization)
- Director, Amnex Co., Ltd.
- TT & T Subscriber Services Co., Ltd.

Other Directorships:

- Chief Executive Officer (CEO), Ploenchit Capital Company Limited
- Chairman, K.C. Property PCL.
- Director, The Sustainable Arts and Crafts Institute of Thailand (Public Organization)
- Director, Amnex Co., Ltd.
- TT & T Subscriber Services Co., Ltd.

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Nattakit Tangpoonsinthana, Ph.D.

Position: Independent Director

Age: 58

Education/Training:

- Bachelor of Communication Arts (Mass Communication), Chulalongkorn University
- Master of Business Administration, University of North Texas, USA
- Ph.D. in Mass Communication Arts, Chulalongkorn University
- Certificate of Director Certification Program (DCP 209), Thai Institute of Directors (IOD)
- Certificate of Good Governance for State Enterprise/ Public Organization Directors & Executives Program (Class 14), Public Director Institute, King Prajadhipok's Institute
- Industrial Business Development and Investment Program for Top Executives, Institute of Business and Industrial Development (Class 2)
- TME Tourist Management Program for Executive, (Class 3)
- Top Executive Program in Commerce and Trade (TEPCoT) (Class 11), Commerce Academy, University of Thai Chamber of Commerce
- Capital Market Leader Program, Capital Market Academy (CMA-24)
- Diploma, National Defend Course 62

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 Cooperatives

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the MWA Improvement Subcommittee, Metropolitan Waterworks Authority
- Chairman of the MWA Governor's Performance Appraisal Subcommittee, Metropolitan Waterworks Authority
- Member of the MWA Digital Technology Development Subcommittee, Metropolitan Waterworks Authority
- Senior Executive Vice President of Central Group
- Executive Vice President in Marketing Line, Central Pattana Public Company Limited
- Director, Siamrajathanee Public Company Limited
- Director, Premier Quality Starch Public Company Limited
- Chairman of Marketing Management Group, Thailand Management Association (TMA)
- Subcommittee: Thailand National Committee on Competitive Benchmarking Development

Other Directorships:

- Director, Siamrajathanee Public Company Limited
- Director, Premier Quality Starch Public Company Limited
- Senior Executive Vice President of Central Group
- Executive Vice President in Marketing Line, Central Pattana Public Company Limited

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Roya Juntaratana

Position: Independent Director

Age: 61

Education/Training:

- Bachelor of Engineering (Civil Engineering), Rajamangala Institute of Technology
- Bachelor of Business Administration (Construction Management), Sukhothai Thammathirat Open University
- Director Certification Program (DCP), Thai Institute of Directors (IOD)
- Diploma National Defence College, the National Defence Course, (NDC) (Class 60)
- The Executive Program in Energy Literacy for a Sustainable Future, (Class 15)

Work Experience:

- Chief Office of the Minister, Ministry of Energy
- Deputy Director General, Department of Alternative Energy Development and Efficiency
- Inspector General, Ministry of Energy, Office of the Permanent Secretary, Ministry of Energy
- Director, EGAT International Company Limited

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the Human Resources Management & Development Subcommittee, Metropolitan Waterworks Authority
- Vice Chairman of the MWA Governor's Performance Appraisal Subcommittee, Metropolitan Waterworks Authority
- Member of the Risk Management and Internal Control Subcommittee, Metropolitan Waterworks Authority

Other Directorships:

- None

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Werawat Yomchinda

Position: Independent Director

Age: 60

Education/Training:

- Bachelor of Political Science, Ramkhamhaeng University
- Mini MBA, Class 32, Thammasat Business School
- Diploma of Advance Energy Project, Class 15
- Certificate of "Kasettrapipat" Training (Honorable), Class 76, Ministry of Agriculture and Cooperatives
- Director Certificate Program (DCP) 307/2021, Thai Institute of Directors (IOD)

Work Experience:

- Director, Wastewater Management Authority
- President of Subcommittee on Public Relations, Wastewater Management Authority
- Director, the Zoological Park Organization of Thailand under the Royal Patronage of H.M. the King
- President of Subcommittee on Business Development, the Zoological Park Organization of Thailand under the Royal Patronage of H.M. the King
- President of Subcommittee on Information Technology, the Zoological Park Organization of Thailand under the Royal Patronage of H.M. the King

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the MWA Relations Affairs Committee, Metropolitan Waterworks Authority
- Vice Chairman of the Water Loss Monitoring and Water Pressure Management Subcommittee, Metropolitan Waterworks Authority
- Member of MWA Governor's Performance Appraisal Subcommittee, Metropolitan Waterworks Authority
- Chief Executive Officer (CEO), Maxima Studio Company Limited

Other Directorships:

- Chief Executive Officer (CEO), Maxima Studio Company Limited

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Nitat Maneesilasan

Position: Independent Director

Age: 56

Education/Training:

- Bachelor of Science (Computer Science), University of the Thai Chamber of Commerce
- Bachelor of Law, Ramkhamhaeng University
- Diploma Attorney, Batch No. 48, Lawyers Council of Thailand under the Royal Patronage
- Master of Management (General Management), College of Management, Mahidol University
- Director Accreditation Program (DAP), Thai Institute of Directors (IOD)
- Mini MBA of Retail Management
- Real Estate Entrepreneurs Program, Kasetsart University
- Advance Diploma in Public Administration and Law (Class 21), King Prajadhipok's Institute

Work Experience:

- Chairman of the Executive Committee and Managing Director, Solution Corner (1998) Public Limited Company
- Director, Media Executive Group Company Limited
- Vice President of IT, University of the Thai Chamber of Commerce Alumni Association
- Vice President, the Association of Thai Software Industry
- Advisor and Secretary of the Police Commission of the Police Commission, the House of Representatives
- Advisor and Specialist Committee on Land, Natural Resources and Environment, the House of Representatives
- Specialist of the Representative, the House of Representatives
- Working group study on state security for Nuclear energy case, Energy Commission, the House of Representatives
- Working group on considering further study on Service Places Act, B.E. 2509, the House of Representatives
- Board of Directors on considering the application for BOI promotion, Software Industry Promotion Agency (Public Organization)
- Honorary Advisor, Software Industry Promotion Agency (Public Organization)
- Subcommittee of Software Industry Promotion Agency (Public Organization)
- Subcommittee, Organization Management, Office of Trade Competition Commission
- Subcommittee, Investment Management, Social Security Fund, Social Security Office
- Chairman, Corporate Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee, Metropolitan Waterworks Authority
- Risk Management and Internal Control Subcommittee, Metropolitan Waterworks Authority

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the Procurement Subcommittee, Metropolitan Waterworks Authority
- Vice Chairman of the MWA Digital Technology Development Subcommittee, Metropolitan Waterworks Authority
- Member of MWA Improvement Subcommittee, Metropolitan Waterworks Authority
- Advisory Board of Deputy Minister of Public Health Office of the Minister, Ministry of Public Health
- Audit Committee, Office of Trade Competition Commission
- Subcommittee, Risk Management Committee, Social Security Fund
- Independent Director, Audit Committee and Nomination Committee, Capital Link Credit Foncier Company Limited
- Independent Director, Audit Director and Nomination Director, Capital Link Financial Group Public Company Limited
- Director and Chief Executive Officer (CEO), Openserve Company Limited
- Director, Happy Serve Company Limited
- Director, Third Dragon Company Limited
- Director, Little Hill Place Company Limited

Other Directorships:

- Independent Director, Audit Director and Nomination Director, Credit Foncier Capital Link Co., Ltd.
- Independent Director, Audit Director and Nomination Director, Capital Link Financial Group PCL.
- Director and Chief Executive Officer (CEO), Openserve Company Limited
- Director, Happy Serve Company Limited
- Director, Third Dragon Company Limited
- Director, Little Hill Place Company Limited

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Sanya Saengpumpong

Position: Independent Director

Age: 60

Education/Training:

- Bachelor of Engineering (Civil Engineering), Rajamangala University of Technology
- Master of Engineering (Irrigation Engineering), Kasetsart University
- Master of Public and Private Management, National Institute of Development Administration
- Top Executive Development Program in Agriculture and Cooperatives, Class 51, Kasetrathikarn Institute, Office of the Permanent Secretary for Ministry of Agriculture and Cooperatives
- Administration and Leadership Competency Development Program, GRIPS Institute, Japan
- Security Psychology Program for Executives, Institute of Security Psychology, National Defence Studies Institute
- The Civil Service Executive Development Program: Visionary and Moral Leadership (Nor Bor Sor 1), Class 87, Office of the Civil Service Commission
- Director Accreditation Program (DAP) 184/2021, Thai Institute of Directors (IOD)
- Advance Audit Committee Program (AACP), Thai Institute of Directors (IOD)

Work Experience:

- Director of Bureau of Water Management and Hydrology, Royal Irrigation Department
- Expert in Irrigation Engineering, Royal Irrigation Department
- Expert in Irrigation Engineering (Maintenance), Royal Irrigation Department
- Inspector General, Ministry of Agriculture and Cooperatives, Office of the Permanent Secretary for Ministry of Agriculture and Cooperatives

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the Corporate Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee, Metropolitan Waterworks Authority
- Vice Chairman of the Procurement Subcommittee, Metropolitan Waterworks Authority

Other Directorships:

- None

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Anuchit Trakulmututa

Position: Independent Director

Age: 63

Education/Training:

- Bachelor of Engineering, Technology and Vocational Education College (Rajamangala University of Technology)
- Bachelor of Arts (Political Science), Ramkhamhaeng University
- Bachelor of Law, Thammasat University
- Master of Development Administration (Public Administration), NIDA
- High level Senior Administration Program (Class 55), Damrong Rajanubhab Institute
- Modern Executive Program, Department of Public Works and Town & Country Planning (DTCP)
- High level Senior Administration of City Planning Program (Class 1), Department of Public Works and Town & Country Planning (DTCP)
- Department Inspector, Office of the Prime Minister
- Advance Diploma in Public Administration and Law (Class 16), King Prajadhipok's Institute

Work Experience:

- Department of Public Works and Town & Country Planning Inspector, Ministry of Interior
- Vice Governor of Songkhla Province, Ministry of Interior
- Governor of Yala Province, Ministry of Interior

Present Positions:

- Independent Director of Metropolitan Waterworks Authority
- Chairman of the Legal and Appeal Subcommittee, Metropolitan Waterworks Authority
- Vice Chairman of the Human Resources Management and Development Subcommittee, Metropolitan Waterworks Authority
- Member of the Audit Committee, Metropolitan Waterworks Authority

Other Directorships:

- None

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Mr. Boonchai Charassangsomboon

Position: Director

Age: 59

Education/Training:

- Bachelor of Arts (Political Science), Chulalongkorn University
- Master of Science (Development Economics), National Institute of Development Administration (NIDA)
- Master of Economics, Macquarie University, Sydney, Australia
- Advanced Management Program (AMP 183), Harvard Business School
- Thailand National Defence College, Class 60, National Defence College
- Senior Anti-Corruption Strategic Executive Program, Class 13
- The Executive Program in Energy Literacy for a Sustainable Future, Class 16
- Directors Certification Program (DCP), Thai Institute of Directors (IOD)
- Corporate Governance for Capital Market Intermediaries (CGI), Thai Institute of Directors (IOD)
- Advanced Audit Committee Program (AACP), Thai Institute of Directors (IOD)
- Risk Management Program for Corporate Leaders (RCL), Thai Institute of Directors (IOD)
- IT Governance and Cyber Resilience Program (ITG), Thai Institute of Directors (IOD)

Work Experience:

- Director of Financial Policy and Financial Institutions Bureau, Fiscal Policy Office
- Minister (Economic and Financial), Office of Economic and Financial Affairs, Royal Thai Embassy, London, United Kingdom
- Director of Macroeconomic Policy Bureau, Fiscal Policy Office
- Alternate Executive Director for Southeast Asia (SEA) Group, the World Bank Group, Washington D.C., USA
- Director of International Economic Policy Bureau, Fiscal Policy Office
- International Economic Advisor, Fiscal Policy Office
- Inspector General, Ministry of Finance
- Chief Inspector General, Ministry of Finance

Present Positions:

- Director of Metropolitan Waterworks Authority
- Chairman of the Audit Committee, Metropolitan Waterworks Authority
- Vice Chairman of the Corporate Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee, Metropolitan Waterworks Authority
- Vice Chairman of the Legal and Appeal Subcommittee, Metropolitan Waterworks Authority
- Deputy Permanent Secretary, Ministry of Finance
- Director, Government Housing Bank
- Director, Expressway Authority of Thailand
- Director, Neighbouring Countries Economic Development Cooperation Agency (Public Organization)
- Director, Government Pension Fund

Other Directorships:

- Deputy Permanent Secretary, Ministry of Finance
- Director, Government Housing Bank
- Director, Expressway Authority of Thailand
- Director, Neighbouring Countries Economic Development Cooperation Agency (Public Organization)
- Director, Government Pension Fund

Holding in a connected juristic person:

- None

Connected juristic person:

- None

Definitions

(1) **Other directorship** means a situation where a director of the Metropolitan Waterworks Authority holds the position of director or high-ranking executive in other state enterprises/ juristic persons.

(2) **Holding in a connected juristic person** means the holding of stocks (shares) by a director of the Metropolitan Waterworks Authority in juristic persons connected with the main business of the Metropolitan Waterworks Authority by a proportion in excess of 10 percent of all issued voting shares.

(3) **Connected juristic person** means a juristic person that is or is expected to have transactions connected with the Metropolitan Waterworks Authority in which the spouses, children/adopted children before majority age of a director of the Metropolitan Waterworks Authority has some control authority, such as by holding voting shares in excess of 50 percent of all voting rights or having the power to control the majority votes of shareholder meetings or having the power to control the appointment or removal of directors by at least one-half of all directors.

Note: The Metropolitan Waterworks Authority has no subsidiaries/ affiliated companies.

MWA Executives

MWA Executives

(As of 3 October 2022)

Mr. Manit Panaim

MWA Governor

Education/Training:

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Bachelor of Law, Sukhothai Thammathirat Open University
- Master of Engineering (Civil Engineering), Thammasat University
- Master of Engineering (Infrastructure Engineering and Management), Kasetsart University
- Military Logistics Management and Defence Industrial Relationship Development Program, the RTA Logistics School
- The Civil Service Executive Development Program: Visionary and Moral Leadership, Civil Service Training Institute
- Security Management and Leadership for Executives Program (Class 3), National Defence College

Work Experiences:

- Assistant Governor (Project Management Office)
- Deputy Governor (Engineering)

Mr. Thamrong Buranatrakul

Deputy Governor (Digital Technology)

Education/Training:

- 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
- e-Government Program for Chief Executive Officer: e-GCEO, Thailand Digital Government Academy (TDGA)

Work Experiences:

- Assistant Governor (Water Transmission and Distribution System)
- MWA Expert Level 10

Miss Chawewan Uthaipibool

Deputy Governor (Planning and Development)

Education/Training:

- 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)
- Senior Executives on Justice Administration (Class 26), National Justice Academy, Judicial Training Institute

Work Experiences:

- Assistant Governor (Administration)
- Deputy Governor (Administration)

Mr. Raksak Suriyaharn

Deputy Governor (Water Production)

Education/Training:

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- National Defence College of Thailand (Class 63)
- Director Certification Program (DCP) Class 321/2022, Thai Institute of Directors (IOD)

Work Experiences:

- Assistant Governor (Services 4)
- Deputy Governor (Western Services)

Mr. Prasopsuk Somprasonk

Deputy Governor (Western Services)

Education/Training:

- Bachelor of Engineering (Civil Engineering), King Mongkut's University of Technology Thonburi
- Army War College, Class 56
- Public Administration and Public Law Program, King Prajadhipok's Institute

Work Experiences:

- Assistant Governor (Services 1)
- Assistant Governor (Services 2)

Miss Busagon Procks-anocha

Deputy Governor (Finance)

Education/Training:

- Bachelor of Science (Accounting), Kasetsart University
- Master of Accountancy (Financial Accounting), Chulalongkorn University
- Master of Science (Information Technology), Eastern Asia University
- Corporate Governance for Directors and Senior Executives of Regulators, State Enterprises and Public Organizations, Public Director Institute (PDI)
- Financial & Fiscal Management Program for Senior Executives (FME), the Comptroller General's Department

Work Experiences:

- Assistant Governor (Internal Audit Office)
- MWA Inspector Level 10

Mr. Suthirug Buchagul

Deputy Governor (Engineering)

Education/Training:

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Mini Master of Management Program (MMM), National Institute of Development Administration (NIDA)
- Leadership Succession Program (LSP), Institute of Research and Development for Public Enterprises (IDRP)

Work Experiences:

- Assistant Governor (Planning and Development)
- Deputy Governor (Planning and Development)

Mr. Suthep Euapakorn

Deputy Governor (Eastern Services)

Education/Training:

- Bachelor of Engineering (Civil Engineering), Khon Kaen University
- Master of Public and Private Management Program (Public and Private Management), National Institute of Development Administration (NIDA)
- Naval War College, Class 49
- Top Executive in Metropolitan Development Program (Class 7), Navamindradhiraj University

Work Experiences:

- Suksawat Branch Office Manager
- Assistant Governor (Services)

Miss Suwara Thawitchasri

Deputy Governor (Administration)

Education/Training:

- Bachelor of Political Science (International Relations), Chulalongkorn University
- Master of Labour and Welfare Development, Thammasat University
- Joint Staff College (Class 57), Joint War College, National Defence Studies Institute
- Good Governance for Sustainability Development (Class 8), Office of the Public Sector Development Commission (OPDC)

Work Experiences:

- Corporate Communication Department Director
- Assistant Governor (Office of MWA Board of Directors)

Mrs. Kanitta Pholcharoen

MWA Expert Level 10

Education/Training:

- Bachelor of Science (Statistics), Chiang Mai University
- The Leadership for Digital Transformation Thailand (Digital CEO), Digital Economy Promotion Agency (DEPA)
- e-Government Executive Program: e-GEP, Thailand Digital Government Academy (TDGA)

Work Experiences:

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

Mrs. Rachirach Uthayo

MWA Expert Level 10

Education/Training:

- Bachelor of Communication Arts (Public Relations), Bangkok University
- National Defense College of Thailand (Class 63)

Work Experiences:

- Director of Corporate Communication Department
- Assistant Governor (Office of Governor)

Mr. Veerachai Wisespunthurungsi

MWA Expert Level 10

Education/Training:

- Bachelor of Engineering (Civil Engineering), Kasetsart University
- Master of Engineering (Water Resources Engineering), Kasetsart University
- Good Governance for Sustainability Development (Class 5), Office of the Public Sector Development Commission (OPDC)
- Executive Relationship Development Program (Class 13), Royal Thai Armed Forces Headquarters, Institute of Security Psychology

Work Experiences:

- MWA Expert Level 9
- Assistant Governor (Services 5)

Miss Widchuda Liamsanguan

MWA Expert Level 10

Education/Training:

- Bachelor of Engineering (Irrigation Engineering), Kasetsart University
- Master of Engineering (Water Resources Engineering), Chulalongkorn University
- Master of Business Administration (Management), Thammasat University
- Global Mini MBA: Entrepreneurial Manager Series (Class 83), Thammasat University
- Public Private Partnership for Executives Program: PEP (Class 7), Institute of Research and Development for Public Enterprises (IRDP)

Work Experiences:

- Project Management Department Director
- Assistant Governor (Planning and Development)

Executives (Assistant Governor and Equivalent)

(As of 3 October 2022)

Line of Governor

Mrs. Maytawee Suchartlumpong
Assistant Governor
(Office of Governor)

Mrs. Umpaisri Thanthumwong
Assistant Governor
(Internal Audit Office)

Miss Kornvilai Yeawyasat
Assistant Governor
(Office of MWA Board of Directors)

Line of Deputy Governor (Administration)

Mr. Mongkol Kerkkittikul
Assistant Governor
(Administration)

Mrs. Apinya Rotchanahatsadin
Assistant Governor
(Human Resource Management)

Line of Deputy Governor (Finance)

Mrs. Sukontip Ngarmwacha
Assistant Governor
(Financial Policy)

Mrs. Pattharaporn Pattharasikarin
Assistant Governor
(Accounting and Finance)

Line of Deputy Governor (Eastern Services)

Mr. Archawan Im-erbtham
Assistant Governor
(Services 1)

Mr. Saharat Porkaew
Assistant Governor
(Services 2)

Mr. Wison Midtrapanon
Assistant Governor
(Services 3)

Line of Deputy Governor (Western Services)

Mr. Sarawut Boonwong
Assistant Governor
(Services 4)

Mr. Washirawit Powichit
Assistant Governor
(Services 5)

Mr. Supichete Tavorntaveevong
Assistant Governor
(Services)

Mr. Sermsak Jansam
Assistant Governor
(Water Transmission and Distribution System)

Line of Deputy Governor (Engineering)

Mr. Arnuparp Supapant
Assistant Governor
(Construction)

Mr. Pornsak Panyoi
Assistant Governor
(Engineering)

Mr. Sutthisak Lapprasert
Assistant Governor
(Project Management Office)

Line of Deputy Governor (Water Production)

Mr. Montri Longtee
Assistant Governor
(Water Resources and Quality)

Mr. Pornsak Samornkraisorakit
Assistant Governor
(Water Production System)

Mr. Amnat Pakros
Assistant Governor
(Plant Maintenance)

Line of Deputy Governor (Planning and Development)

Mr. Thanapong Kausangunsilp
Assistant Governor
(Planning and Development)

Mrs. Nisapas Wongpat
Assistant Governor
(Business)

Line of Deputy Governor (Digital Technology)

Mr. Paripan Pinsurong
Assistant Governor
(Digital Technology)

MWA Expert Level 9

Miss Anchalee Musigatham

Mr. Suntorn Thonggumnerd

Miss Sompit Nawapornchai

Mrs. Suwanna Parkros

Mrs. Pawnthip Dinakara Na Ayudhya

Mr. Viwat Kuharat

Mr. Somsak Passananon

Mrs. Pitsawart Phapsuwan

Mr. Kittipat Uthikamporn

MWA Inspector (Level 9)

Mr. Sinut Sinittarnon

Executives (Department Director and Equivalent)

(As of 3 October 2022)

Line of Governor

Mrs. Chavina	Wiratyosin	Corporate Communication Department Director
Miss Nattaya	Bunkerd	Social Responsibility Management Department Director
Mrs. Araya	Sukyuang	Audit Development and Support Department Director
Mrs. Suchada	Nakyoy	Core Business Audit Department Director
Mr. Siam	Jittharm	Supporting Process Audit Department Director
Mrs. Sirijan	Santirojanakul	Corporate Governance Department Director
Mrs. Nittaya	Pibul	MWA Board of Directors Affairs Department Director

Line of Deputy Governor (Administration)

Mrs. Tatrapa	Kanjanasint	Legal Department Director
Mr. Phanrat	Payak	Central Administration Department Director
Miss Pattana	Witchajutakul	Procurement and Supplies Department Director
Mr. Narintorn	Mahanaka	Human Resources Management Department Director
Mrs. Phongpan	Wattanasermkit	Welfare and Relations Affairs Department Director
Mr. Chumpon	Kongkasem	Human Resources Development Department Director

Line of Deputy Governor (Finance)

Mrs. Saikwan	Chaowanakit	Budget Department Director
Miss Pornwilai	Sinwirote	Financial Analysis and Planning Department Director
Miss Anoottaree	Prasertchai	Accounting Department Director
Miss Patcharin	Punyapornsup	Finance Department Director

Line of Deputy Governor (Eastern Services)

Mr. Chiranuwat	Narong	Sukhumvit Branch Office Manager
Mr. Teerasak	Jangwiboon	Phra Khanong Branch Office Manager
Mr. Kamol	Wisansawat	Samut Prakan Branch Office Manager
Miss Phakamas	Choakanantrakul	Thung Mahamek Branch Office Manager
Miss Amphai	Phanayuwattana	Mansri Branch Office Manager
Mr. Chaiyaporn	Rattanatanangpong	Phaya Thai Branch Office Manager
Miss Jitaree	Mungkun	Lat Phrao Branch Office Manager
Miss Achara	Poramathikul	Marketing and Customer Relationship Department Director
Miss Panicha	Wetchosodsakda	Prachachuen Branch Office Manager
Mr. Sanchai	Pongputtchart	Bang Khen Branch Office Manager
Mr. Pratan	Leardcharoenroek	Min Buri Branch Office Manager
Miss Duangkamol	Rienpuech	Suvarnabhumi Branch Office Manager

Line of Deputy Governor (Western Services)

Mr. Sukit	Musikphan	Bangkok Noi Branch Office Manager
Mr. Wimarn	Marsjaroon	Taksin Branch Office Manager
Mr. Luanchai	Kanjanasint	Phasi Charoen Branch Office Manager
Mr. Nurach	Noisopa	Suksawat Branch Office Manager
Mr. Phichet	Wongphitak	Nonthaburi Branch Office Manager
Mrs. Sasithorn	Meekuniam	Bang Bua Thong Branch Office Manager
Mr. Pornchai	Mongkolkruit	Mahasawat Branch Office Manager
Mrs. Duangjit	Suvanphatep	Service Support Department Director
Mr. Piyapong	Srisomboon	Water Meter Department Director
Mr. Natthapong	Suwannarat	Water Loss Management Department Director
Mr. Komgrit	Pochai	Water Distribution Pumping Station Department Director
Mr. Pummate	Chaitragul	Water Transmission and Distribution Control Department Director

Line of Deputy Governor (Engineering)

Miss Madira	Suparp	Water Treatment and Transmission System and Civil Work Construction Department Director
Mr. Chana	Pongpothakul	Water Distribution System Construction Department 1 Director
Mr. Pravej	Ampornrat	Water Distribution System Construction Department 2 Director
Mr. Winyu	Roongadulpisan	Water Distribution System Design Department Director
Mrs. Thimaporn	Wimonanupong	Engineering Standard and Geographic Information Department Director
Miss Warangkana	Sudto	Water Treatment, Transmission System and Civil Work Design Department Director
Mr. Dollachet	Klahan	Project Management Department Director
Mr. Noppatat	Malerak	Waterworks Improvement Project Department Director

Line of Deputy Governor (Water Production)

Mr. Supukkaj	Bunnahirun	Production System Planning and Engineering Department Director
Miss Chatsinee	Surasen	Water Resources and Environment Department Director
Mr. Thaveesak	Ngarmwacha	Raw Water Transmission System Department Director
Miss Nongnara	Atanavanich	Water Quality Department Director
Mr. Manawat	Preechachon	Bang Khen Water Treatment Plant Department Director
Mr. Thanitpong	Settachaisri	Samsen and Thon Buri Water Treatment Plant Department Director
Mr. Chaiwat	Chotkongkatitham	Mahasawat Water Treatment Plant Department Director
Mr. Yongyut	Srimode	Electrical System Maintenance Department Director
Mr. Vittaya	Kongkeatvanit	Mechanical System and Civil Maintenance Department Director
Mr. Pisarn	Thudee	Instrument and Automation System Maintenance Department Director

Line of Deputy Governor (Planning and Development)

Mr. Jirawat	Kanpayan	Policy and Strategy Department Director
Miss Orawan	Suraiman	Risk Management Department Director
Mrs. Sunisa	Piyasuwan	Corporate Innovation Department Director
Mrs. Petiporn	Chantawong	Business Development Department Director

Line of Deputy Governor (Digital Technology)

Mrs. Pajongjit	Saovajantr	Digital Strategy and Innovation Department Director
Mrs. Nongnuch	Wongkalasin	Digital System Development Department Director
Mr. Phakphoom	Pirachai	Technology and Communication Department Director

MWA Expert Level 8

Miss Kanyarach	Nantanawikul	MWA Expert Level 8
Mrs. Suntaree	Akepanidtaworn	MWA Expert Level 8
Miss Suwaree	Chiawchanlikit	MWA Expert Level 8
Mr. Prawit	Sangsukcharoen	MWA Expert Level 8
Mrs. Wantanee	Chumpoo	MWA Expert Level 8
Mr. Khajohnwatch	Suwanla-iad	MWA Expert Level 8
Miss Roskon	Dankul	MWA Expert Level 8
Miss Nuchnapa	Wongmongkhon	MWA Expert Level 8
Mrs. Duaenchai	Sinthuyon	MWA Expert Level 8
Mrs. Aimchit	Chumchalerm	MWA Expert Level 8
Mr. Anuruk	Promchai	MWA Expert Level 8
Mr. Arttachai	Ketrattanabovorn	MWA Expert Level 8
Miss Jaroonrat	Thanaolan	MWA Expert Level 8
Mr. Prasert	Chatpreechakul	MWA Expert Level 8
Mrs. Wisakhar	Montian-art	MWA Expert Level 8
Mr. Boonchok	Panyaprasirtkit	MWA Expert Level 8
Miss Thiranut	Thamlethong	MWA Expert Level 8
Miss Somjai	Yaemlaksanaleart	MWA Expert Level 8
Mrs. Dalina	Klayklueng	MWA Expert Level 8
Mr. Thanomsak	Duangdee	MWA Expert Level 8
Miss Wanicha	Yotkham	MWA Expert Level 8
Mr. Sarawut	Apiluk	MWA Expert Level 8
Mr. Pongtape	Nootbootsaba	MWA Expert Level 8
Mr. Chodanun	Surapeepong	MWA Expert Level 8
Mr. Naruchit	Kanittakul	MWA Expert Level 8

Auditor Level 8

Mr. Bundit	Seanglew	Auditor Level 8

Executives During the Year 2022

Mr. Kavee	Areekul	MWA Governor
Mr. Komkrit	Dinakara Na Ayudhya	Deputy Governor (Eastern Services)
Miss Sutisa	Naksen	MWA Expert Level 10

The Metropolitan Waterworks Authority

Today and the Future

State of the Industry and Future Trends

In 2022, the global economy showed a downward trend with many countries entering into recession. The World Bank projected that growth in the global economy would fall to only 2.9 percent in 2022 from 5.7 percent in 2021 due to rising inflation in both developed and developing countries. In response, the central banks of each country had been issuing increasingly strict fiscal policies and raising interest rates, thereby contributing to higher loan costs. Furthermore, the war between Russia and Ukraine disrupted the supply chain and led sustained impacts to be felt by many countries, while the Coronavirus 2019 (COVID-19) situation was unrelenting. Meanwhile, in 2023 It is expected that the global economic growth will decline to only 2.7 percent following continued lack of vitality in the global economy, while the economic growth of countries in East Asia and the Pacific Region is projected to reach only 3.2 percent as a result of inadequate growth in the Chinese economy stemming from strict COVID-19 control measures impacting industrial manufacturing and trade in China. Nevertheless, China's economy is expected to recover in 2023 with supporting factors contributing to regional economic reinvigoration including a resolution to the COVID-19 situation and revival of tourism in Southeast Asian countries.

As for Thailand, the Bank of Thailand projected that the country's economy will experience a sustained growth of up to 3.3 percent and 3.8 percent in 2022 and 2023, respectively, in line with growth in tourism and private consumption. Tourism in particular will experience substantial snapback from rapid resurgence in the number of foreign tourists and overall business revitalization, especially in the service sector, as well as from better distribution of income. However, the export sector will experience a loss of growth due to overall stagnation in the global economy. Even so, this will not impact the overall recovery, and Thailand's economy is anticipated to return to its pre-COVID-19 levels by early 2023. In any case, risk factors requiring monitoring include rising energy prices on account of the ongoing war between Russia and Ukraine that is having an impact on private sector consumption and demand, along with the strained global financial situation and rapid downward spiral of the Chinese economy, which might hinder recovery.

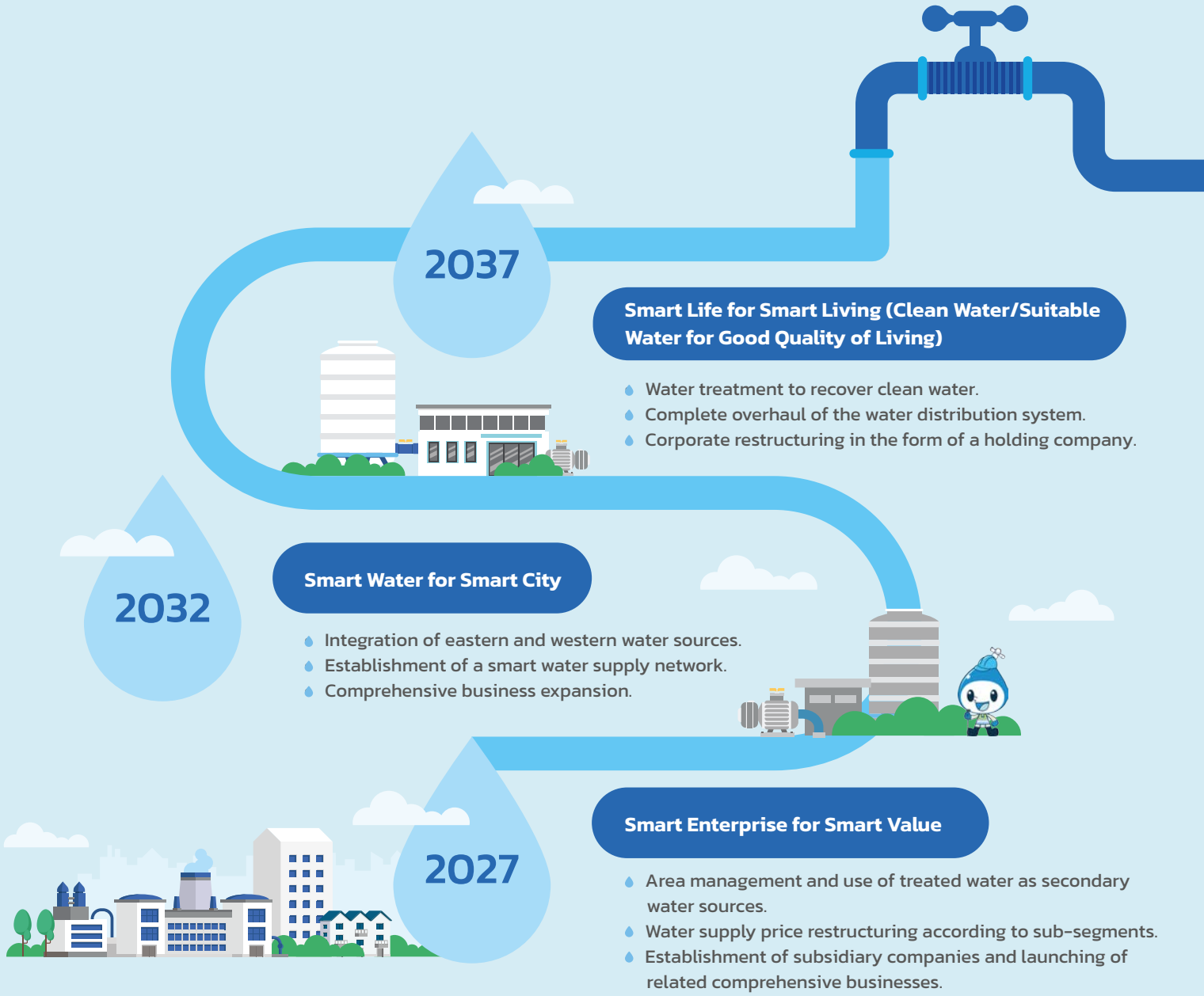
As regards growth in the country's gross domestic product in manufacturing, the Office of the National Economic and Social Development Council hopes that in the 2nd quarter of 2022, agriculture will grow by 4.4 percent while 2.3 percent will be achieved by the non-agricultural sector, with growth coming from key manufacturing areas such as wholesale and retail and accommodations and food services. The key contributing factors for this are the service sector's renewed vigor following the relaxation of COVID-19 control measures and the implementation of the government's measures to continuously support tourism.

The Metropolitan Waterworks Authority projects that in the 2023 fiscal year, the volume of water sold by the Metropolitan Waterworks Authority will increase from the 2022 fiscal year due to an upward trend of water sales since mid-2022 in line with the sustained recovery in international tourist numbers after the government's relaxation of travel restrictions and discontinuation of the Test & Go system in mid-2022. Accordingly, the Tourism Authority of Thailand believes the number of tourists traveling to Thailand will rise to 18 - 20 million people in 2023 from 8 - 10 million people in 2022, with favorable conditions stemming from the government's various measures to stimulate the economy and attract long-term foreign residents, which are contributing to growth in the real estate sector.

Important Work Plans and Projects

Project	Project Duration (Years)	Project Expenses (Million THB)	Performance up to 2022 Fiscal Year (%)
1. The 7th Bangkok Water Supply Improvement Project The production capacity of the water treatment plants in Bang Khen and Mahasawat was increased at each place by 400,000 cubic meters per day, and water distribution pumping stations in Bang Phli and Min Buri were constructed along with the construction of a water supply tunnel and water pipe installation over a distance of 1,000 kilometers.	1999 - 2022	25,177.3	100
2. The 8th Bangkok Water Supply Improvement Project The production capacity of the water treatment plants in Bang Khen and Mahasawat was increased at each place by 400,000 cubic meters per day, and clear water reservoirs were constructed at the Rat Burana and Phet Kasem water distribution pumping stations. Raw water pumps, water supply pumps and water distribution pumps were also purchased and installed along with the construction and installation of piping systems and other related work.	2008 - 2022	7,494.0	84.82
3. The 9th Bangkok Water Supply Improvement Project The production capacity of the water treatment plant in Mahasawat was increased by 800,000 cubic meters per day, and the effectiveness of the water distribution system was increased through the construction of water supply tunnels and a water distribution pumping station at Bang Mod and the expansion of clear water reservoirs along with the construction and installation of piping systems and other related work.	2017 - 2024	42,750.0	7.94
4. Work to Enhance Water Pumping Potential in the Main Pipe System New pipes were installed and old pipes were renovated in all 18 branches under the responsibility of the Metropolitan Waterworks Authority.	2016 - 2024	4,300.0	26.96
5. Project to Improve Water Pipe Systems to Increase Water Supply System Stability Work was carried out to improve the water pipe systems to reduce waste and enhance the overall effectiveness of the piping networks of the Metropolitan Waterworks Authority.	2012 - 2024	2,042.4	43.75
6. Project to Improve the Raw Water Transportation System to Enhance Stability and Permanently Prevent Flooding The raw water transmission system on the eastern side where raw water was supplied to the Bang Khen water treatment plants, Sam Sen water treatment plants and Thon Buri water treatment plants was improved from the Bang Khen water treatment plants to the Sam Lae raw water distribution pumping station to increase water transmission potential and permanently prevent flooding along water supply canals.	2013 - 2024	1,939.0	12.35

6th Metropolitan Waterworks Authority Enterprise Plan Roadmap



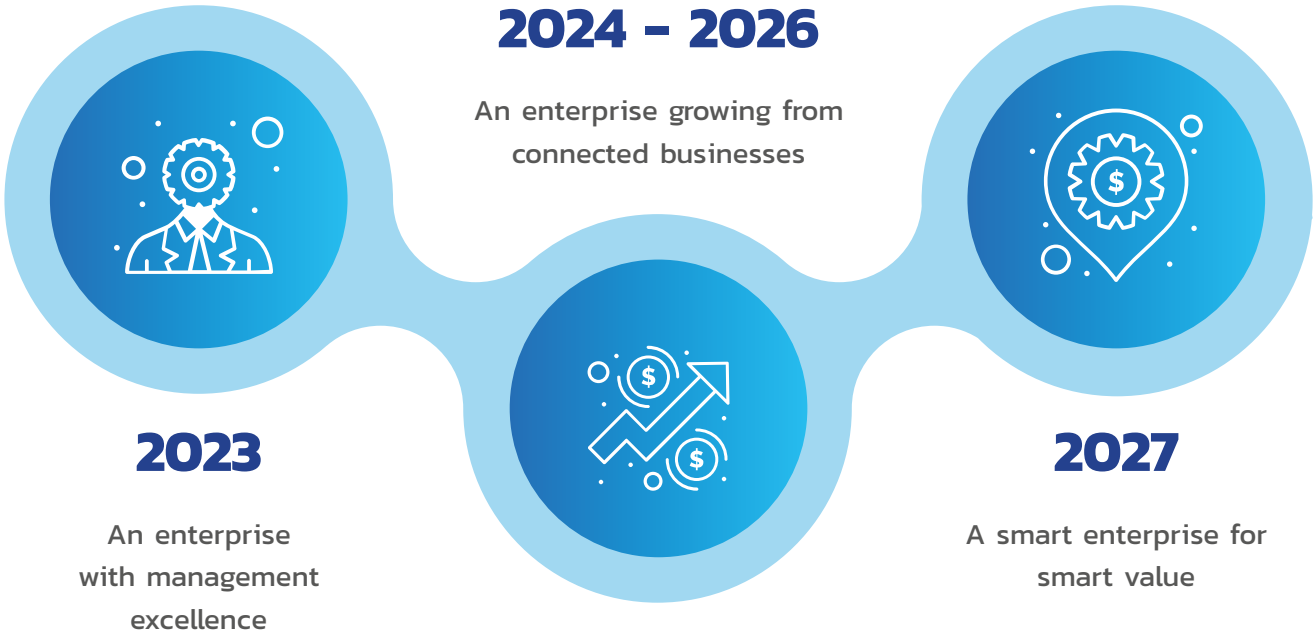
The Metropolitan Waterworks Authority has divided its goals into 3 phases as follows:

1. Short-term Goals (2027) Focus on driving the organization forward to become a smart enterprise for smart value through important activities like studying feasibility in procuring space to serve as secondary raw water sources and water price restructuring according to sub-segments and establishment of subsidiaries and launching of related comprehensive businesses, etc.

2. Medium-term Goals (2032) Focus on providing comprehensive water services to provide smart water for smart city through key activities such as integration of eastern and western water sources, establishment of a smart water network and comprehensive business expansion, etc.

3. Long-term Goals (2037) Give priority to clean water/suitable water for good quality of life (smart life for smart living) through key activities such as reuse of cleaned water for utilization and consumption, overhauling the entire water distribution system and restructuring the organization in the form of a holding company etc.

Strategic Positions



The 6th Metropolitan Waterworks Authority Enterprise Plan (2023 - 2027) specifies targets of success and indicators for each time period in clear phases. Hence, strategic positions are set as 3 sub-phases, namely, 1) the short-term (2023), 2) the medium term (2024 - 2026), and 3) the long-term (2027), with considerations to 3 dimensions, namely, 1) quality waterworks systems, 2) service excellence and 3) sustainable management. This is to ensure that the direction of the enterprise's future work is effective with challenging, clear and verifiable indicators. As such, goals and indicators for strategic positions are set according to the time periods, including being an enterprise with management excellence by 2023, being an enterprise that grows from connected businesses by 2024 - 2026 and being a smart enterprise for smart value by year 2027.

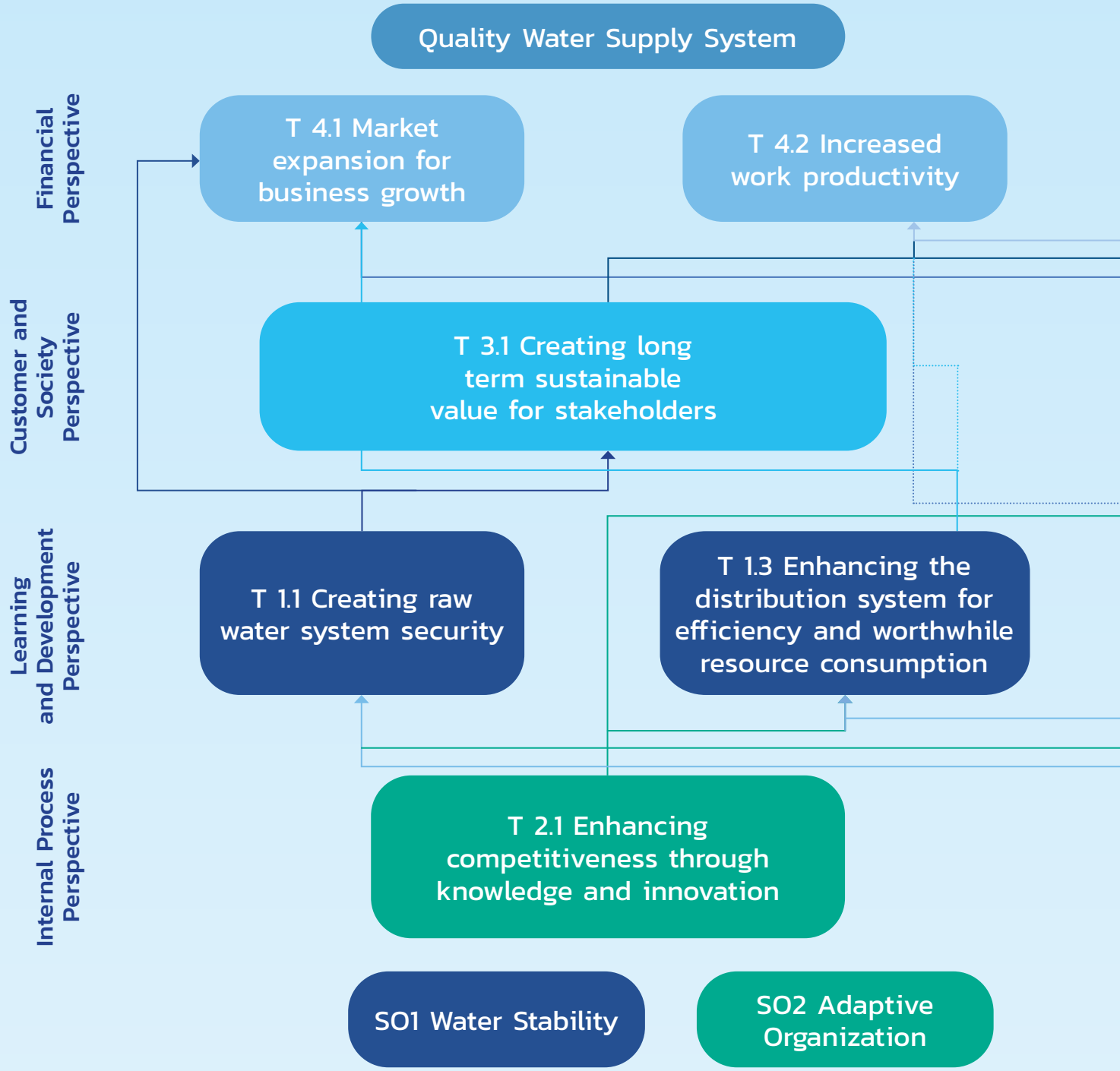
1. Short-term (2023): An enterprise with management excellence Focus on good corporate governance, a secure waterworks system and work processes that emphasize quality through efficiency and active communication to promote the organization's image through analysis of the internal environment of the Metropolitan Waterworks Authority and the needs and expectations of stakeholders, especially stakeholders who are customers who prioritize water supply quality, in addition to making use of the strengths of the Metropolitan Waterworks Authority in good governance and water system expertise in short-term considerations (2023) given that these issues are issues that can be dealt with right away.

2. Middle-term (2024 - 2026): An enterprise that grows through connected businesses: Prioritize the sustainable growth of the enterprise in main businesses and connected businesses with focus on adjusting water supply prices consistently with changes in circumstance and initiating connected businesses covering provision of reclaimed water services and premium drinking water services through analysis of information

about the internal environment of the Metropolitan Waterworks Authority, especially on the issue of the Metropolitan Waterworks Authority's financial status trending toward decreasing income through having retained the same water supply fees for over 20 years despite increasing expenses in accessing the areas of local agencies or raw water charge. Furthermore, the enterprise also analyzed external environmental information related to the Metropolitan Waterworks Authority such as the trend of adjustments by other state enterprises alongside the Metropolitan Waterworks Authority, such as state enterprises in utilities and state enterprises that have to invest in basic infrastructure such as energy state enterprises and communications state enterprises, not to mention the trend of adaptation by private companies in the waterworks industry. Accordingly, the focus in this area at this stage requires time and adaptation cannot be achieved immediately or within 1 year. For example, adjustment of the structure and fees for water supply requires detailed analysis of impacts on consumers and organizations and need the official approval of the Board of Directors of the Metropolitan Waterworks Authority. Additionally, in regards to increasing services in connected businesses such as provision of reclaimed water services for consumption and premium drinking water services, it is still necessary to gather detailed and complete data from project feasibility studies, and work systems and processes have to be changed to accommodate the changing direction of the enterprise. Hence, the middle-term strategic position (2024 - 2026) has specified the aforementioned strategic issues for consideration of suitability and feasibility in the adaptation of the enterprise.

3. Long-term (2027): Smart Enterprise for Smart Value The aim is to create customer experiences and employee engagement along with management excellence and virtual branch services following analysis of information about the external environment, particularly in regards to rapid and drastic technological changes and the adaptation of comparable agencies that strive toward increasing digital services and use of disruptive technologies such as the development of digital utility systems by state enterprises in energy, where artificial intelligence or AI is increasingly being used along with machine learning (ML) to improve services and work effectiveness to become technology-driven enterprises. As such, the development of virtual branches is one of the long-term goals of the strategic position under the 6th Metropolitan Waterworks Authority Enterprise Plan (2023 - 2027), where a clear, detailed and complete customer journey map has to be constructed alongside the creation of a suitable service format to meet the needs and expectations of consumers. These adjustments require time for continuous studies, because the needs and expectations of users can change constantly, making it necessary to devote time to collect detailed and complete data covering every dimension of the needs and expectations of consumers to design effective systems capable of actual implementation and completely fulfilling the aims of the long-term strategic position.

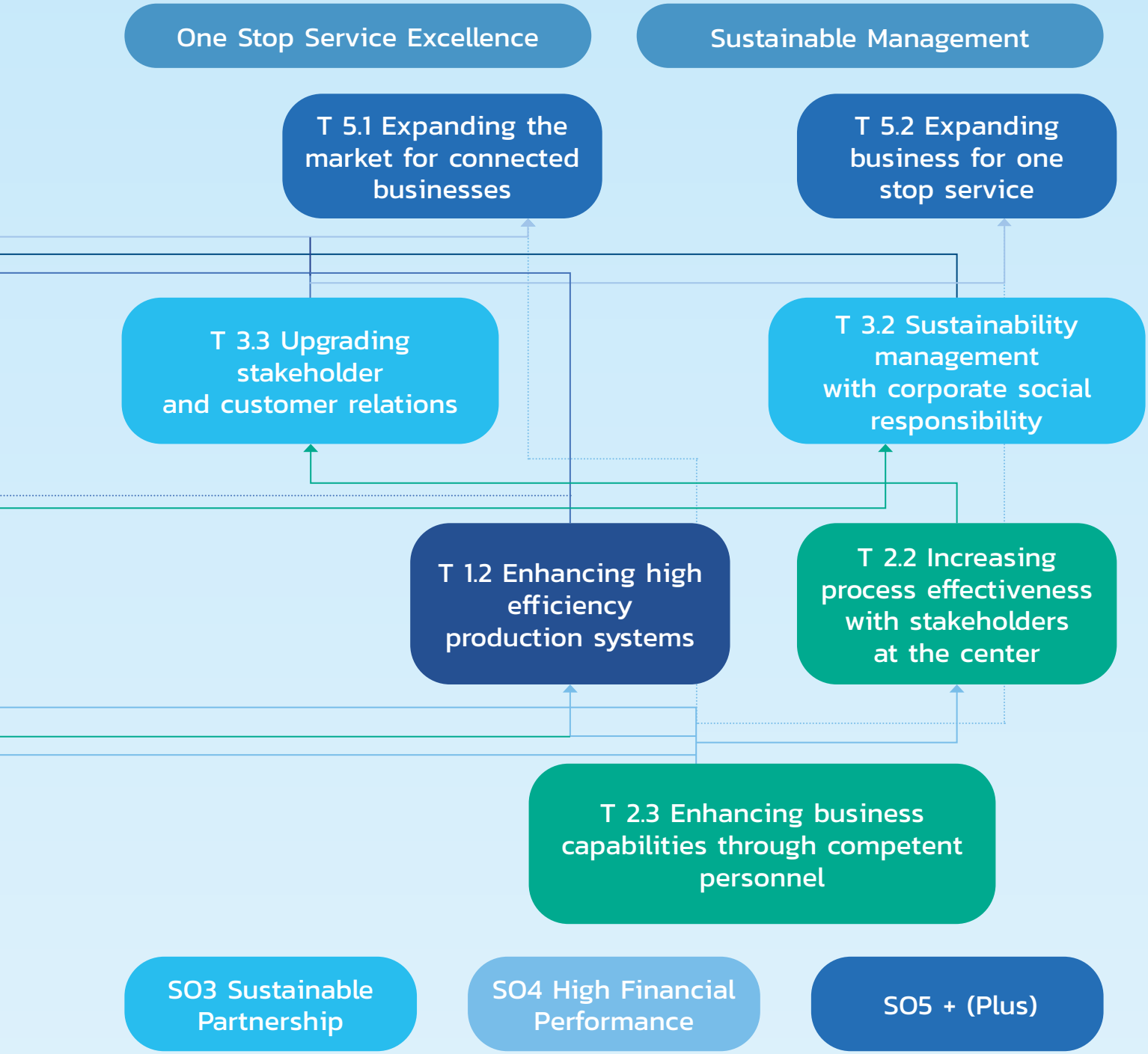
Policies and Future Work Plan



Main	CM DT	CM KM IM HCM DT
Support	KM IM CG CSR SM HCM	CG CSR SM

MWA
Quality Water for Quality Living

Enterprise Plan



CG CSR SM HCM CM DT KM IM

CM IM KM HCM CSR SM CG

CM CG CSR SM KM IM HCM DT

The 6th Metropolitan Waterworks Enterprise Plan (2023 - 2027) contains 5 strategic goals and 13 strategies along with 48 action plans to support the Metropolitan Waterworks Authority enterprise. Some key examples of implementation projects are as follows:

The 9th Bangkok Water Supply Improvement Project

- Expand the production capacity of Mahasawat water treatment plant by 800,000 cubic meters per day to make the total capacity of Mahasawat water treatment plant equal 2,400,000 cubic meters per day.
- Construct of a water tunnel capable of delivering water from the west to the east at the maximum rate of 400,000 cubic meters per day.
- Enhance the potential of water supply reserves by increasing the storage capacity of clear water reservoirs at Mahasawat water treatment plant and water distribution pumping stations by a total of 480,000 cubic meters of additional storage capacity. The operation will be completed in 2024.

The 10th Bangkok Water Supply Improvement Project

- Expand the production capacity of Mahasawat water treatment plant by 800,000 cubic meters per day to make the total capacity of Mahasawat water treatment plant equal 3,200,000 cubic meters per day.
- Construct of a water tunnel capable of delivering tap water from the west to the east at the maximum rate of 600,000 cubic meters per day.
- Increase the potential in water supply reserves by expanding the clear water reservoirs of the Bang Khen water treatment plant by an additional storage capacity of 190,000 cubic meters.
- Construct a new water distribution pumping station on the upper west side with a clear water reservior sized 40,000 cubic meters. The operation will be completed in 2027.

Eastern and Western Raw Water Transmission System Improvement Project

The purpose of the project is to create security in the raw water distribution system by enhancing the potential of western transport canals to be capable of supporting more raw water by 60 cubic meters per second while improving the eastern raw water transmission system to be capable of holding water during times of crises involving salt water contamination through time-delay capability by stopping water intake at Samlae Raw Water Pumping Station while the water treatment plant continues to operate normally for approximately 5 hours.

Raw Water Reserve Holding Area Procurement Project

To study the feasibility of providing an area in the upper part of the Chao Phraya River Basin to be able to hold raw water by at least 1.5 million cubic meters.

Piping System Improvement and Surveillance Area Management Project

To improve damaged pipes to be enable efficient use to support the water transmission and water distribution with higher pressure and manage water loss in targeted areas with high water loss rates.

Water Safety Plan Project

To improve work in line with the water safety plan of the World Health Organization (WHO) by adopting good treatment practices and risk management principles in managing water quality and the water supply chain from the source of raw water to consumers.

Extensive, Sufficient and Secure Water Supply Service Expansion with Uniform Standard Project

To improve the quality of life of the people to ensure extensive access to water supply.

MWA Command Center Project

To develop a center for managing and resolve the people's plight relating to water supply by gathering important data.

Branch Office Service Improvement Project

To meet the needs and expectations of customers and build confidence and image in all key touch points through the services of branch offices.

Digital Service Enhancement Project

To enhance services by using digital services to meet needs and create customer satisfaction.

Connected Business Upgrade Project

To establish/jointly invest in affiliated companies and operate the connected businesses of the Metropolitan Waterworks Authority and study feasibility and opportunities for operating new connected businesses to comprehensively meet customer needs in water supply services.

Water Saving Label Project

To promote an image of an enterprise of excellence of the Metropolitan Waterworks Authority in terms of social and environmental responsibility in the perspectives of stakeholders.

Corporate Social Responsibility Knowledge and Awareness Promotion Project

To ensure that the personnel of the Metropolitan Waterworks Authority possess knowledge and understanding about social responsibility and successfully implement them in work.

Greenhouse Gas (CO_2) Reduction Project

To have the organization successfully and continuously reduce greenhouse gas (CO_2) emissions.

Performance

Performance According to the 2022 Fiscal Year Action Plan

1. Water Stability

The Metropolitan Waterworks Authority strives to build stability and security in the waterworks systems (water treatment, water transmission and water distribution systems) to be able to continuously supply water to the people in the areas under our responsibility while developing information technologies for use in managing water loss, water pressure, water quantity and water quality throughout the entire system (upstream and downstream).

Improving the Water Distribution System

The Metropolitan Waterworks Authority operates to replace its water piping systems for pipes that are nearing the end of their usage life and that are regularly at risk of leaks and breakage. We do this to ensure sustainability in our work while effectively supporting increased water distribution with greater water pressure. As such we had a construction contract for the renovation of about 1,200 kilometers of piping systems for the entire fiscal year, with the cumulative pipe installation work up to September 2022 having reached about 1,210.368 kilometers. Moreover, we worked to repair broken and leaky main pipes whenever reported (above-ground) and from surveys (underground), with 100 percent of our cumulative work completed.

Furthermore, the Metropolitan Waterworks Authority actively works to manage wastewater and manage water pressure while supporting for reduction in water wastage by administrating surveillance areas to effectively reduce water loss in the DMA, and we have a GIS database system to aid us in analysis and decision-making, in addition to making use of new technologies to minimize activities that waste water. For example, we use satellite imagery to survey pipe leaks and set guidelines for repairing/replacing pipes, in addition to producing data for managing the work of operators to reduce water wastage.

Treatment System Enhancement (Treatment, Transmission and Distribution)

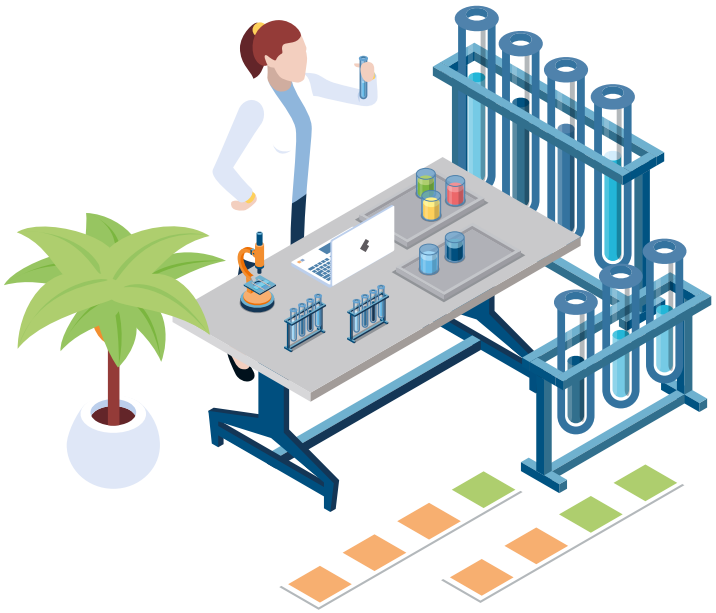
In order to ensure stability in the effective management of water transmission and distribution and enhance the capabilities of water treatment plants such that they have the capacity to accommodate future water consumer needs, the Metropolitan Waterworks Authority established security in the water supply system under the 9th Bangkok Water Supply Improvement Project, which is expected to be constructed and completed by 2023 - 2024 fiscal year, concurrently along with the 10th Bangkok Water Supply Improvement Project that is expected to expand the production capacity of Mahasawat Water Treatment Plant to 800,000 cubic meters per day, including a sediment removal system, and the construction of Bang Bua Thong Water Distribution Pumping Station with a 40,000 cubic-meter clear water reservoir, and the construction of an additional clear water reservoir at Bang Khen Water Treatment Plant with a capacity of 190,000 cubic meters, the construction of a water transmission tunnel connecting between the Western and Eastern Regions, the construction of a water transmission tunnel from Mahasawat Water Treatment Plant to new water distribution pumping stations in the upper Western Region along 3 different routes to increase capabilities and

accommodate water diversion from the Western Region to the Eastern Region during times of raw water quality crises in the Chao Phraya River, for which we have presented our project proposals report to the Ministry of Interior and the Office of the National Economic and Social Development Council (NESDC) to seek approval. The plan is expected to be implemented over 6 years (2023 to 2028) with an investment capital of 21,965 million baht.

However, the Metropolitan Waterworks Authority also recognizes the importance of developing and renovating the basic infrastructure of the water supply systems. As such, we took created the Master Plan on the basic tap water infrastructure system of the Metropolitan Waterworks Authority (2022 - 2052) to lay the foundation for infrastructure for the next 30 years within the following work scope: future water needs, raw water systems, water treatment systems and water transmission and distribution systems.

Water Quantity and Quality Management

The Metropolitan Waterworks Authority endeavors to operate to produce and supply clean and safe water to the public and gives importance to every related process, from upstream to downstream, while raising the standards for water quality management according to the Water Safety Plans (WSP) of the World Health Organization (WHO). In doing so, we adopt good production practices and risk management principles to manage water quality throughout the entire water supply chain from raw water sources to consumers. Moreover, in order to guarantee that every drop of water that reaches the public is clean, the Metropolitan Waterworks Authority works to enhance risk management capabilities for emergencies and disasters in line with the Business Continuity Management System (BCMS) and has developed a Security, Safety, Health and Environment (SSHE) management system for our water treatment plans by hiring consultants to develop a BCMS plan and take actions according to the ISO 45001 system. Accordingly, the Mahasawat Water Treatment Plant already received assessment and certification according to the ISO 45001:2018 system, and we reviewed our Water Treatment Plant Contingency Plan and held drills in coordination with external agencies and stakeholders.



2. Adaptive Organization

The Metropolitan Waterworks Authority gives importance to continuously developing innovations and technologies to support changes and create opportunities to increase the value of the organization's products and services while improving work processes to meet the needs and expectations of every stakeholder.

Digital Service Transformation

The Metropolitan Waterworks Authority supports the adoption of technologies in the organization to boost capabilities and upgrade services in the digital format to promote satisfaction among our consumers. In doing so, we have created additional service channels in the form of virtual branches for the convenience of consumers and to build a good image for the organization while also contributing to the government's digital economy policy to ensure that our consumers can access the Metropolitan

Waterworks Authority's services through online and digital channels.

- MWA onMobile – This is an application for giving news updates about the Metropolitan Waterworks Authority to offer water usage convenience in the digital age to consumers through a variety of services such as checking of water billing information for the latest month and use of barcodes or QR codes from the application to instantly pay water bills, in addition to checking past water fees and receiving warning information about weak water supply and non-flowing areas and lab tests to determine water quality and water quality test stations. Moreover, consumers can also send pictures of broken water pipes for the system to specify coordinates and have the Metropolitan Waterworks Authority send personnel to accurately and swiftly carry out repairs, and consumers can also request for new connections or electrical installations (in the service areas of the Metropolitan Electricity Authority) and pay for new water supply installations and overdue water bills through credit cards such as Visa and Master Card, in addition to receiving interesting news and information about the quality of water supply in the areas of Bangkok, Nonthaburi and Samut Prakan every day. People can download the application for free from the App Store and Play Store.
- e-Billing and e-Tax Invoice & e-Receipt Services – This project reduces the time it takes to receive tax invoices/receipts from 30 days to just 1 hour and solves problems related to damaged and missing documents while conserving resources.
- The Metropolitan Waterworks Authority's Website (e-Service) – We added a service channel for consumers for them to conduct transactions online via e-Service system. For example, people can apply to receive electronic water bills (e-Bills), apply to receive electronic tax invoices and receipts (e-Tax Invoices/ e-Receipts) and make online payments for water bills and new connections for meters sized ½ inch, and we also offer complaint handling services such as for broken water meters, inoperable water meters, meter replacements, cloudy meters and inaccurate meters (moving too fast/slow).
- Automatic Meter Reading System (AMR) – This system allows consumers to check information about their water usage online through the internet and smartphones on both IOS and Android. They can review daily, weekly, monthly and yearly water usage statistics and compare water usage statistic with past averages, thus enabling consumers to manage their water usage and inspect and reduce water wastage inside their homes. Currently, we are in the process of integrating the system and outputting results on MWA onMobile.

An Innovative Organization

The Metropolitan Waterworks Authority gives importance to creating an organization of innovations to enhance the effectiveness of work processes to accommodate changes from multiple factors such as environmental, economic and social changes. As such, we gather information about the needs and expectations of our stakeholders to analyze, select and order importance in the development of innovations. Then we research, develop and create innovative works and implement work prototypes for trials of actual operation to ensure that the Metropolitan Waterworks Authority has innovative works in terms of products, services and new work processes that meet the needs of stakeholders.

Personnel Development

The Metropolitan Waterworks Authority strives to develop employees for them to have a wide variety of capabilities and skills (multi-skill), and we cultivate innovators to support changes and keep up

with the Thailand 4.0 policy, in addition to building confidence and work willingness through promotion of use of new knowledge and skills in work while providing employee training in various courses such as on water loss management, water safety plans, digital and innovations. In any case, in order to ensure that the Metropolitan Waterworks Authority has an organizational structure that supports rapid changes, the Metropolitan Waterworks Authority has adopted the enterprise architectural framework in line with the TOGAF 9.2 standard for work in support of virtual office development.

3. Sustainable Partnership

The Metropolitan Waterworks Authority gives importance to every stakeholder. Thus, we have organized various projects to improve the lives of the people while encouraging community progress in multiple dimensions under the principles of good corporate governance with emphasis on meeting the needs and expectations of stakeholders.

Development of Positive Relationships and Cooperation with Stakeholders through Good Governance

We aim to enhance management effectiveness and raise the standard of services for excellence. Thus, the Metropolitan Waterworks Authority has engaged in the following activities:

- 1125 Hotline Upgrade – We improved the work manual for the MWA Call Center 1125, provided training to enhance the capabilities of Call Center 1125 personnel, and we tracked and reported progress to consumers (after-sale service). We also randomly examine conversations between service users and Call Center 1125 personnel and inspect electronic information services to assess service quality (quality assurance) to use information obtained to make our services even better. As a result, our public satisfaction score (for the Call Center 1125) was 4.494 points.
- Involvement in Key Community Development Activities – We operated the Metropolitan Waterworks Authority project to conserve watershed forest by visiting local areas to engage in forest-planting activities and improve people's lives and schools at water source areas in Nan. We have also provided plumbers' training to the public in communities near water treatment plants and visited these areas to establish networks to promote community development engagement in addition to surveying the needs and expectations of different communities. We did this in 15 communities total. Moreover, we operated the Ruamjai Rak Nam project (water conservation project) by surveying people's needs and readiness in joining projects in collaboration with the Wastewater Management Authority (WMA) by constructing grease traps for schools along the water canals in the Eastern Region.
- Management Enhancement through Governance – We made the declaration, "The Metropolitan Waterworks Authority (MWA) is transparent, verifiable, uncorrupted and effective" in order to state our honest intention to work in line with the principles of corporate governance of the Metropolitan Waterworks Authority and spread knowledge about the Integrity and Transparency Assessment Project (ITA). Additionally, we created a training course on the project to "raise scores for the Integrity and Transparency Assessment Project (ITA)", and we drive Corporate Governance Council through Corporate Governance Council members who share governance knowledge with agency personnel.

Improving People's Lives

We aim for the people living in our service areas to have equal access to clean and safe water in addition to receiving lasting quality of life improvements in line with the government's policy

to reduce social inequality and create opportunities to access government services through projects to expand water service areas extensively, sufficiently and securely according to the same standards. In doing so, the Metropolitan Waterworks Authority has ongoing construction projects to install water distribution pipes (with up to 92.865 kilometers of cumulative distance up to September 2022).

Moreover, the Metropolitan Waterworks Authority collaborates with local organizations to improve water utility services and has signed 3 memorandums of understanding (MOUs), namely, with (1) Phuket Town Municipality on 27 January 2022; (2) Kong Din Sub-district Municipality, Rayong Province, on 28 February 2022; and (3) Kham Muang Sub-district Municipality, Kalasin Province, on 15 August 2022.

Promotion of Social and Environmentally-Friendly Activities

The Metropolitan Waterworks Authority operated the "Water Saving Labels" project to encourage and support the public to recognize the importance of using water in a mindfulness matter while instructing manufacturers/businesses to develop innovations to conserve water by bringing products to apply for water-saving labels from the Metropolitan Waterworks Authority. In total, 51 product models already received labeling to demonstrate their water conservation effectiveness, and these have already been installed in up to 7 developed housing projects.

4. High Financial Performance

The Metropolitan Waterworks Authority invested enormously to ensure stability in the water supply system and support future water needs in addition to maintaining financial security to ensure that the Metropolitan Waterworks Authority can flexibly manage itself and procure funding for investment, despite having maintained a fixed rate of water fees for over 20 years. Accordingly, the Metropolitan Waterworks Authority has guidelines to increase revenues for its main businesses and to ensure financial security for the enterprise as follows:

- Expansion of Water Distribution in Capable Junction Areas – We worked to distribute water to the Provincial Waterworks Authority in capable junction areas, such as Hathai Rat Road and Suwinthawong Road, and we also distribute water to the Provincial Waterworks Authority by using booster pumps in the vicinity of Phasi Charoen Branch Office.

- Development of Connected Businesses' Potential – The Metropolitan Waterworks Authority has developed businesses for behind-the-meter waterworks tasks such as affordable water tank washing services (starting at 1,100 baht) offered to the general public, and interested persons can make contact for services through 3 channels, namely, bit.ly/MWAhomecare, all 18 MWA branch offices and the 1125 MWA Call Center. We also publicize hiring activities (waterworks system development) to target groups.

Risk Management

The Metropolitan Waterworks Authority gives importance to corporate risk management to ensure work effectiveness and efficiency. As a result, the Metropolitan Waterworks Authority took actions to manage risks and exert internal control according to Committee of Sponsoring Organizations of the Treadway Commission: COSO framework in addition to following State Enterprise Assessment Model: SE-AM (Core Business Enablers) in line with good corporate governance principles and the strategies of the enterprise. Our work in different areas is summarized as follows:

Raw Water Quantity and Quality

Thailand continues to experience droughts and inconsistent rains since the past year. Effectively, this has impacted the agricultural sector along with the quality and quantity of water for public use and consumption. Because Bangkok, Nonthaburi and Samut Prakan are under the responsibility of the Metropolitan Waterworks Authority, we effectively managed water in keeping with the situation to minimize impacts on consumer, and our Water Crisis Management Center consistently surveilled and monitored the situation and facilitated close cooperation with related agencies in the public and private sectors. For the long-term, the Metropolitan Waterworks Authority created projects to expand water treatment plant production capacity, maintain and increase clear water reservoirs and renovate water canals to reduce impacts from potential crises in addition to meeting future water usage requirements. On the other hand, toward the end of the rainy season, there was above-average rainfall and a likelihood for the formation of storms, which could lead to floods that affect water quality. Hence, the Metropolitan Waterworks Authority specified key risk indicators (KRIs) and continuously surveilled the quality and quantity of water, and in 2022, the Metropolitan Waterworks Authority added key risk indicators in finance and services to deal with situations in a timely fashion while reducing potential repercussions and to provide data for executives to manage resources in the most beneficial manner and extensively deliver quality water in line with the recommendations of the World Health Organization to consumers according to the missions of the Metropolitan Waterworks Authority.

Stability in the Treatment, Transmission and Distribution Systems

In order to reduce risk and impacts on the stability of the production, transmission and distribution systems of water supply on the eastern and western sides, the Metropolitan Waterworks Authority put in place prevention and surveillance measures covering pipe installation, increasing leaking pipe detection effectiveness and enhancing the water pipe network system for greater security and strength, in addition to expanding the production capacity of water treatment plants to accommodate future water needs stemming from urbanization.

Responsibility to Stakeholders

The Metropolitan Waterworks Authority renovated the structures and equipment in buildings used to dispense chemicals in all 4 water treatment plants to reduce impacts on the communities surrounding water treatment plants and to increase stringency in the prevention of chlorine gas leaks from the existing internal control system. In doing so, we installed emergency shut-off valves and reviewed and drilled the emergency chlorine leak contingency plan for the surrounding communities and stakeholders of

the water treatment plants through a collaboration involving the internal agencies of the Metropolitan Waterworks Authority and external agencies in the public and private sectors to build cooperation and raise awareness and understanding about the roles and duties of the employees of the Metropolitan Waterworks Authority during incidents and to foster good relations between the Metropolitan Waterworks Authority and external agencies surrounding communities.

Finance

Because investment capital is an important macroeconomic driving factor of the country, the Metropolitan Waterworks Authority strives to give importance to spending in every process of investment budget management in order to meet regular working requirements and strategies in a worthwhile and complete manner while keeping in mind the various measures or policies of the government that might affect investment capital spending.

To ensure that work in the Metropolitan Waterworks Authority's budget management achieves the above intentions, the Metropolitan Waterworks Authority developed information technology to support the expediting of investment spending such as the "Capital Budget System" (CBS), the "CBS Revise Sub-system" and the "Capital Management System" (CMS) that are developed for integration with the SAP system and enable problem-tracking and the rapid setting of corrective guidelines for the investment budget management system to support and promote more effective expediting of budgetary spending.

Information Technology

To ensure effective and fast service for the public, the Metropolitan Waterworks Authority established a "command center" to serve as the center for "control, command and surveillance" in a single location to reduce communication time, enhance problem

cause analysis and aid the enterprise in focusing on services without concern, in addition to having in place measures to prevent network intrusions and attacks by malicious actors. Furthermore, the Metropolitan Waterworks Authority has made preparations to support the Personal Data Protection Act, B.E. 2562 (2019), by reviewing and managing Business Continuity Plans (BCP) on IT and holding drills in accordance with standards regularly every year to ensure readiness for dealing with undesirable situations.

Improving Efficiency in Water Loss Reduction

The Metropolitan Waterworks Authority hires out work to survey for leaks and repair leaky pipes in the water distribution system covering the areas under the responsibility of the Metropolitan Waterworks Authority. We have also adopted Camera Intelligence Alert (CIA) technology in surveilling and controlling the construction of water distribution pipe installations in the field to ensure effective inspection and control of pipe installation work according to standards and the Water Safety Plan (WSP) in addition to promoting overall sustainability in the water distribution pipe system. Moreover, the enterprise gives out Performance Based Contracts (PBC) for water loss management by area to reduce water loss according to set objectives.

Business Continuity Management

The Metropolitan Waterworks Authority recognizes the importance of managing work flexibly in preparation for dealing with disasters and emergencies and crises that might occur in the future in a timely manner and in line with the enterprise's strategies. In 2022, the Metropolitan Waterworks Authority received certification for the Business Continuity Management System (BCMS) according to the ISO 22301 standard with a scope covering raw water management processes, tap water treatment processes, water transmission and distribution processes, service processes and related support processes. This ensures the Metropolitan Waterworks Authority is prepared to deal with potential situations and solve problems effectively and efficiently as they occur and according to the situation, in addition to giving confidence that the Metropolitan Waterworks Authority has the capability to work and continuously deliver high-quality water services to consumers, regardless of the various crises that the enterprise might encounter.

Internal Control

The Metropolitan Waterworks Authority recognizes the importance of having in place a good internal control system to give confidence to the public about its performance, financial and non-financial reports and compliance to related laws, regulations and requirements. As such, we strictly comply with the requirements of the Ministry of Finance's requirements concerning the standards and practice requirements for the internal control of government agencies of B.E. 2561 (2018) and we follow the internal control framework of Committee of Sponsoring Organizations of the Treadway Commission: COSO 2013, which include 5 components as follows:

1. Control Environment

The Metropolitan Waterworks Authority strives to create an atmosphere and culture that supports corporate internal risk management and in doing so has set forth a policy integrating governance, risk management and compliance (GRC) for the staff on every level to implement in order to promote correct knowledge and understanding and follow set principles and procedures effectively according to international standards and good practice guidelines.

2. Risk Assessment

We integrate internal control with the key processes of the Metropolitan Waterworks Authority, with the internal control system covering every control point and with systematic risk management guidelines for executives on every level to engage in risk identification and assessment with consideration to strategic risk and risks in the various work systems of connected processes, in addition to analyzing risk factors from key value drivers to build confidence in success as prescribed by the enterprise plans of the Metropolitan Waterworks Authority.

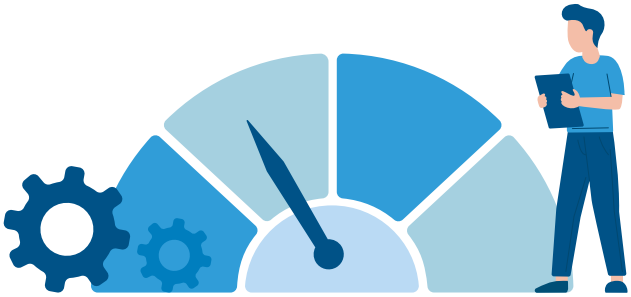
3. Control Activities

We set control activities in every work process and assess the efficacy of existing control systems to ensure that the enterprise will meet its goals, and we require agencies to conduct control self-assessments on performance at least once per year in order to judge the suitability of control activities and make adjustments consistently with changes in circumstance.

4. Information and Communication

The Metropolitan Waterworks Authority has an information system to help support risk management. Accordingly, we integrate internal control work with knowledge management by keeping knowledge used to control risks at control points in the KM Portal information system to communicate,

exchange and transfer relevant knowledge to personnel to ensure their understanding and caution in engaging in activities that support the work of the enterprise.



5. Monitoring Activities

The Metropolitan Waterworks Authority reports its performance in internal control to the Board of Directors and related subcommittees on a quarterly basis and submits the internal control assessment reports of the Metropolitan Waterworks Authority to the Permanent Secretary of the Ministry of Interior in a complete manner within set timeframes. In 2022, an internal audit office audited the internal control of the Metropolitan Waterworks Authority, performed an audit rating with the finding that the enterprise had overall good internal audit results and no very high/high risk issues.

In 2023, the Metropolitan Waterworks Authority continues to strive to raise awareness about internal control in work processes by using knowledge as the basis and has added to the evaluation criteria for knowledge impacts and agency-level risk assessments to allow related agencies to be able to identify and assess risks in every dimension. Additionally, we aim to support the dissemination of knowledge used in controlling risks at control points in full in support of potential changes and to ensure continuity of operations in a manner that contributes to the strategic objectives set by the Metropolitan Waterworks Authority.

Internal Audit

Internal Audit is an assurance and consulting services that takes place fairly and independently with the aim of adding to the value of and improving work processes to achieve the enterprise's objectives. Therefore, in the assessment and improvement of the efficacy of the risk management, internal control and corporate governance processes, we have clearly stated roles and responsibilities in the charter of the Internal Audit Office with a review/revision taking place at least once annually and set a policy to support team work with emphasis on knowledge exchanges through integration of important work processes and creating quality inspection work and giving strategic recommendations and creating value for the enterprise. Moreover, we have added proactive consulting roles to raise the level of work processes according to State Enterprise Assessment Model: SE-AM (7 Core Business Enablers).

Inspection and Reporting Activities

We have created a long-term 5-year inspection plan (2022 - 2026) and the 2022 risk-based annual audit plan with focus on the enterprise's major risks in line with the vision, goals and plans of the Metropolitan Waterworks Authority's enterprise. We also adopted digital technology and data analytics to support work operations, and in 2022 we were able to complete all work assignments according to the annual audit plan and gave consultation to executives and audited agencies to facilitate improvements in effectiveness and efficiency and create value for the organization. Accordingly, audit reports were submitted to the executives of the agencies that received the audit, the Governor, the Audit Committee, the Board of Directors of the Metropolitan Waterworks Authority and supervisory agencies, with quarterly follow-ups on results of activities based on recommendations. In the

activities of the Internal Audit Office, there were no restrictions on the expression of opinions and no unresolved conflicts of interest between the Audit agencies and the Internal Audit Office.

Maintaining the Work Quality of the Internal Auditor

The internal auditor operated according to the guidelines set forth in the internal audit work manual based on the international standards for professional internal auditing with post-audit quality assessment by the agencies subjected to auditing. In addition, the Internal Audit Office receives assessment from the Audit Committee and senior executives once annually along with internal audit quality assessment every 5 years by external independent experts in order to use the assessment results and recommendations as feedback for improving and increasing work effectiveness. Furthermore, we have created plans for recruiting, developing and retaining internal audit personnel who possess knowledge and capabilities and we offer support to internal auditors in developing themselves to become Certified Internal Auditors (CIA) or to hold other related professional certificates, in addition to support in in-house and off-site training by at least 40 hours per person per year.

Audit Fee: The State Audit Office of the Kingdom of Thailand is the Metropolitan Waterworks Authority's auditor, and for the 2022 fiscal year, the audit fee was set to 2.50 million baht.

Corporate Social and Environmental Responsibility Policy of the Metropolitan Waterworks Authority

The Metropolitan Waterworks Authority recognizes the importance of all stakeholders. Therefore, we have applied corporate social and environmental responsibility principles according to the ISO 26000 standards covering 7 behavioral principles, namely, responsibility, transparency, ethical conduct, respecting stakeholders' interest, respecting the law, respecting international practices and guidelines and respecting human rights. We use these as the operating framework with consideration throughout the entire value chain, and thus we have created a corporate social and environmental responsibility policy for the Board of Directors, Governor, executives and every employee of the Metropolitan Waterworks to adhere to as practice guidelines as follows:

1. Strive to develop water supply provision according to the primary missions of the enterprise while exhibiting corporate responsibility for society and environment in processes (CSR in Process) and engaging in social activities (CSR after Process) by following the 7 principles of the management system in line with the ISO 26000 international standard made up of governance, human rights, labor practices, the environment, fair treatment, consumer issues and engagement with communities and community development. Do so by focusing on engaging stakeholders while considering prevention of potential impacts from the enterprise's activities and setting clear objectives.

2. Instill and promote conscience in personnel on every level for social responsibility, ethics and morals to the extent that they become part of the organization's culture.

3. Promote engagement with stakeholders systematically according to the AA1000 Stakeholder Engagement Standard (AA1000SES) in a manner that contributes to efficient and productive management of the key issues of stakeholders with emphasis on relying on the expertise of the enterprise to support and meet stakeholders' needs and expectations.

4. Promote sustainable development and reporting of the enterprise's performances by relying upon the sustainable reporting guidelines of the GRI (Global Reporting Initiative) in order to enhance the operating capabilities of the enterprise and increase the reliability of performance reports to receive acceptance on the international level.

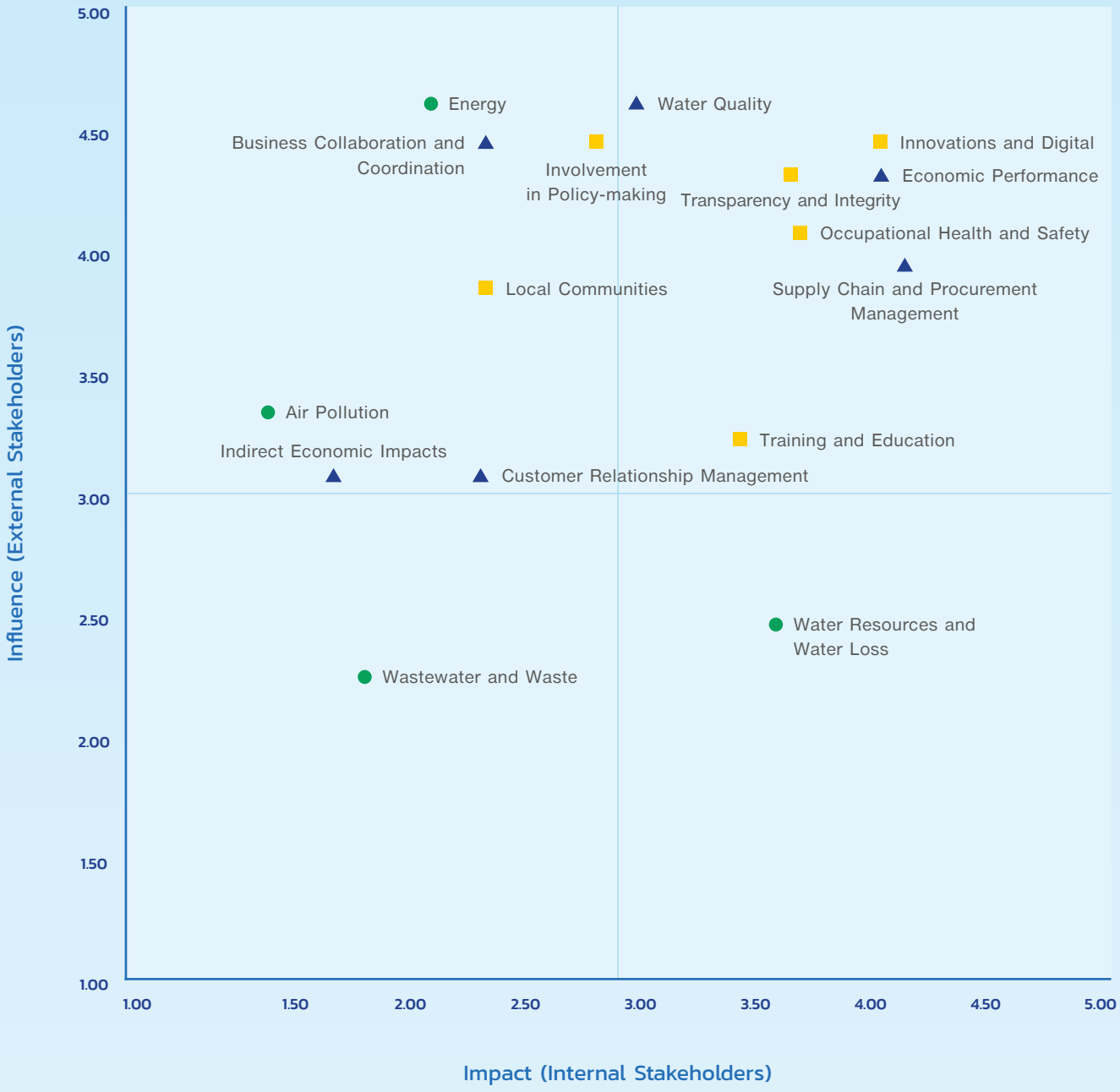
The personnel of the Metropolitan Waterworks Authority must commit to the corporate social and environmental responsibility policy as part of their work to drive the Metropolitan Waterworks Authority to become an organization that operates with responsibility for society and the environment, which make up the essential foundation for the organization to develop into a sustainable organization.

Corporate Social and Environmental Responsibility Performance

The Metropolitan Waterworks Authority operates continuously while demonstrating responsibility for society and the environment. We have adopted the ISO 26000 social responsibility standard of the International Organization for Standardization (ISO) as a working guideline and as a social and environmental responsibility policy (MWA CSR Policy) to ensure that the Metropolitan Waterworks Authority carries out the enterprise's main tasks in the most effective and efficient manner by producing clean and high-quality water in line with international standards and delivering water to consumers sufficiently and extensively while also engaging with stakeholders according to the AA1000SES international guidelines (Stakeholder Engagement Standard) to meet the needs of all group of stakeholders throughout the entire supply chain of the Metropolitan Waterworks Authority. Moreover, we have also been preparing sustainability reports to disseminate and communicate sustainable management guidelines and disclose information regarding the economy, society and environment according to the reporting standards of the Global Reporting Initiatives (GRI Standard) since 2016. For additional information, see the website of the Metropolitan Waterworks Authority (http://www.mwa.co.th).

In the making of our sustainability report, we underwent a process to specify and select materiality topics on sustainability until obtaining the materiality matrix from perspectives inside and outside the organization in 2022 as shown in the figure.

Prioritization of Stakeholder Topics



Corporate Social Responsibility in the Economic Dimension

The quality of the Metropolitan Waterworks Authority's water plays an important part in driving the organization toward having secure economic performance, and this must occur alongside all-round risk management and firm commitment to governance, ethics and Code of conduct. We strive to achieve good corporate governance and to manage conflicts of interest while engaging in the integrity work of the Metropolitan Waterworks Authority along with internal control, internal audit, supply chain and procurement management, and we also enhance human resources capabilities for skill and knowledge in providing water supply services to manage customer relations effectively while making use of business collaboration and coordination to expand results to build a good quality of life in society for sustainable mutual coexistence, which will indirectly benefit the economy.

Corporate Social Responsibility in the Social Dimension

The Metropolitan Waterworks Authority gives stakeholders opportunities to become involved in making the policies of the Metropolitan Waterworks Authority through annual strategic discussions focusing on innovations and digital topics to ensure work transparency, integrity, verifiability and extensive and equal access to clean water, and we also give importance to occupational health and work safety and provide training and education along with benefits and welfare to employees, including a provident fund and preparation for retirement. Moreover, we instill a corporate culture in favor of participation in local community development from upstream to downstream communities (Water Conservation Project, MWA Plumbing System for School Project and MWA Plumber for People Project).

Corporate Social Responsibility in the Environmental Dimension

The Metropolitan Waterworks Authority takes care of natural resources throughout the entire water treatment process, particularly "water" resources that make up an essential cost in tap water production. We do so by managing the country's water resources in collaboration with various other related agencies in order to facilitate cooperation in the Metropolitan Waterworks Authority in reducing water resource losses and water losses while raising awareness about the value of water in the population (water-saving efficiency labels). Moreover, we effectively manage wastewater and waste from water treatment processes according to industrial standards for such waste as soil sediments to prevent negative ecological and community impacts, and we take measures to reduce air pollution and conserve energy and conduct studies to assess eco-efficiency in order to put in place eco-efficiency standards for the enterprise and create improvement guidelines for future eco-efficiency.

Stakeholders of the Metropolitan Waterworks Authority and Relationship Building with Stakeholders

The Metropolitan Waterworks Authority recognizes the importance of integrating cooperation with stakeholders with an aim to meet the needs of every stakeholder in a balanced manner under the principles of good governance with consideration to responsibility to society and environment in such a way as to lead to development and building of the enterprise's foundation for high-performance and sustainable growth. In doing so, we apply international principles in the process to develop engagement with stakeholders in line with the AA1000 Stakeholder Engagement Standard (AA1000SES) in order to manage stakeholders. We also extensively consider important work processes and the entire value chain. In the 2022 fiscal year, the Metropolitan Waterworks Authority reviewed the indicators of the enterprise's stakeholders and found that there were still 9 groups of stakeholders as previously assessed, and these are described below.

1. **Policy agencies and government shareholders** means agencies responsible in governing and supervising state enterprises, including the Metropolitan Waterworks Authority Board of Directors, and various subcommittees appointed by the Metropolitan Waterworks Authority Board of Directors.

2. **Task-based related agencies** mean government agencies whose tasks are shared with us.

3. **Customers** The Metropolitan Waterworks Authority classifies customers based on water products that cover the customer life cycle, including existing and future customers as follows:

- **Existing customers** are customers who use tap water in areas under our responsibility (Bangkok, Nonthaburi and Samut Prakan). They are divided based on behavior firmographics and needs into 3 groups as follows:
  - Residential (R) means customers who use water for utility and consumption in residential areas. Mostly, they use water in the morning hours, evening hours and at night.
  - Commercial (C) means customers who use water commercially or in organizations with a water usage model that follows the working hours of each business or organization.
  - Industrial (I) means customers who use water industrially such as in manufacturing with a continuous usage model. Some industries require 24-hour water use.

- Future customers These are based on the government's policy which aims to provide the population with equal access to clean water and on strategic opportunities in selling water in fringe areas. These are divided into 2 groups as follows:
  - Potential customers, which mean customers in the areas under our responsibility (Bangkok, Nonthaburi and Samut Prakan) that still do not have tap water for use, and include water users in local administrative organization areas and users of ground water and other natural water sources.
  - Potential areas mean customers in areas that should have access to tap water according to the Ministry of Interior's policy, particularly groups living on the fringes of service areas.

4. Employees and Contract Workers

- Employees mean personnel who perform work and who are the permanent contract workers of the Metropolitan Waterworks Authority who are supervised by the Metropolitan Waterworks Authority to operate according to their job descriptions.

- Contract workers mean personnel working as temporary contract workers who operate according to the duties described by their employment contracts with the Metropolitan Waterworks Authority providing supervision to ensure that they work according to their employment contracts. They include private sector contract workers and representatives.
  - Private sector contract workers mean personnel that the Metropolitan Waterworks Authority employs through a contractor who is a trade partner of the Metropolitan Waterworks Authority, whereby their employment is annual in nature. They are divided into 4 groups as follows: 1) administrative, 2) technical, 3) vehicular and 4) other groups, such as laborers and welders.
  - Representatives mean personnel employed by the Metropolitan Waterworks Authority to serve as agents in performing work related to consumer services according to the criteria and operating procedures prescribed by the Metropolitan Waterworks Authority with employment contracts prescribing durations not exceeding 3 years. They are divided into 3 groups, namely, 1) payment collectors and handlers, 2) cable tie and 3) meter readers.

5. The media means those operating in the media professions or persons or groups of persons, regardless of whether they are juristic persons or not, that operate media businesses serving as conduits in delivering news, information and contents of every type to the masses and the public, whether in printed, radio, television, digital or other formats that can convey meanings to the general public.

6. Communities and Society

- Community means
  1) Water source communities (Eastern and Western).
  2) Communities along water transmission areas (Western) in Kanchanaburi, Ratchaburi, Nakhon Pathom and Nonthaburi over a distance of 107 kilometers and communities along water transmission areas (Eastern) in Pathum Thani over 30 kilometers.
  3) Communities around water distribution pumping stations (all 10 stations).
  4) Communities in service areas.
  5) Downstream communities in the Mae Klong River Basin and Chao Phraya River Basin.

- Society means groups of people/agencies that are not directly affected by the operation of the Metropolitan Waterworks Authority but

that are groups supported by the Metropolitan Waterworks Authority in improving/promoting quality of life.

Remark: Important communities of the Metropolitan Waterworks Authority include communities around water treatment plants (all 4 sites). Our criteria for choosing important communities include being communities located adjacently to our areas of operation that might be most heavily affected by the work of the Metropolitan Waterworks Authority and potential areas where the special abilities (expertise) of the Metropolitan Waterworks Authority might be used to strengthen important communities.

7. **Trade partners** mean agencies or juristic persons or persons receiving remunerations from preparing products, services, rental contracts and personnel for the Metropolitan Waterworks Authority.

8. **Allies** mean agencies, organizations or groups of people who agree to work in collaboration with the Metropolitan Waterworks Authority in order to achieve mutual objectives. These are sub-divided into 2 groups as follows:
   - Business allies such as those under contracts of appointment to become payment processors.
   - Academic allies such as agencies/persons that receive research support or funding from the Metropolitan Waterworks Authority.

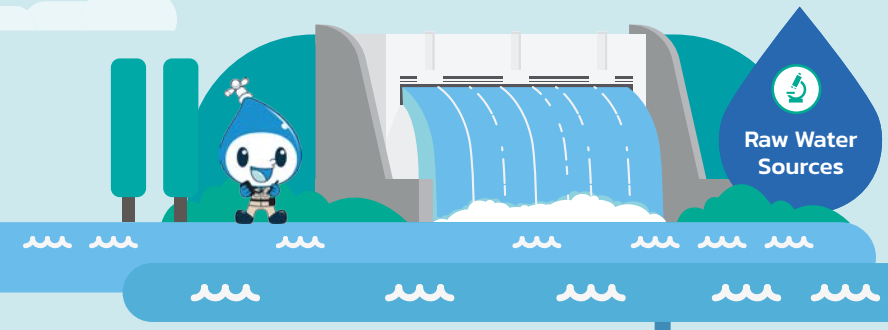
9. **Activists/independent organizations/civil societies/academics** mean persons, groups of persons or non-profit organizations who provide perspectives to society for the purpose of improving the quality of life of society and environment and whose perspectives might affect the direction or work of the Metropolitan Waterworks Authority. The Metropolitan Waterworks Authority also considers the importance of stakeholders on the enterprise level consistently with the purposes and scope of involvement prescribed for each different time period with consideration to the level of influence and interest of the stakeholders on work according to the enterprise's vision. **Critical stakeholders (highly-influential and highly-interested stakeholders) are policy agencies, government shareholders, task-based related agencies and customers.**

In addition, we have also set our policies and practice guidelines on the treatment of stakeholders consistently with the needs and expectations of each stakeholder group in line with the **Metropolitan Waterworks Authority Announcement on the Stakeholders Management Policy** that was issued on 23 December 2021.

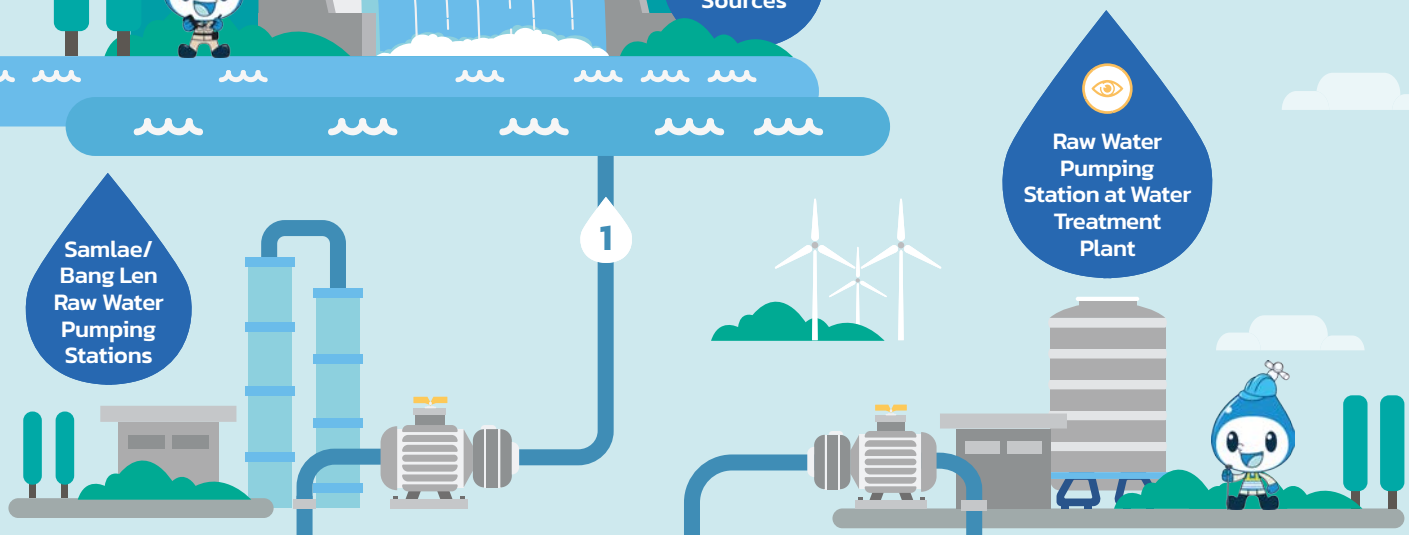
Stakeholders Management Policy

Stakeholder Performance 2022

Water Production Process Chart



- Chao Phraya River, water abstraction from Samlae intake, Ban-Krachang Sub-district, Mueang Pathum Thani District, Pathum Thani Province.
- Mae Klong River, water abstraction from Mae Klong Dam, Tha Muang District, Kanchanaburi Province.



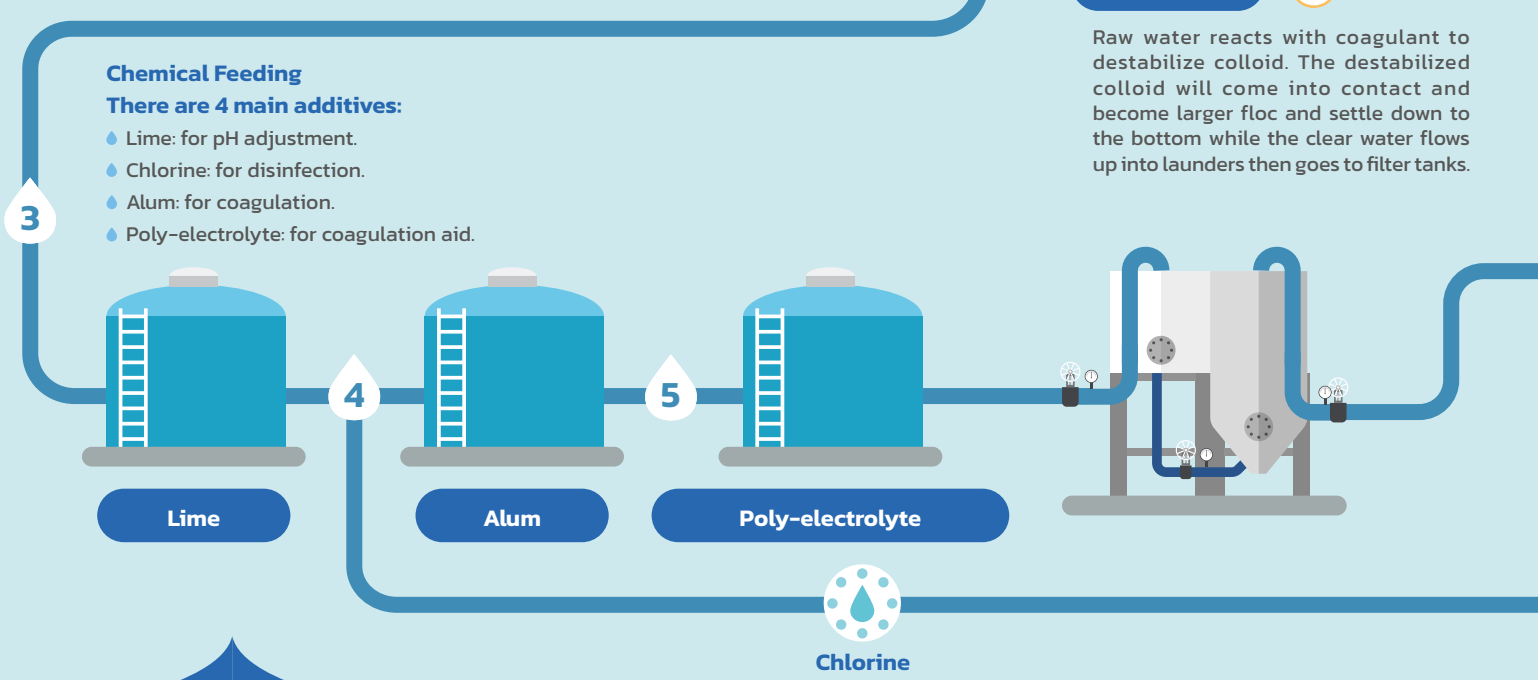
Clarifier Tank

Raw water reacts with coagulant to destabilize colloid. The destabilized colloid will come into contact and become larger floc and settle down to the bottom while the clear water flows up into launders then goes to filter tanks.

Chemical Feeding

There are 4 main additives:

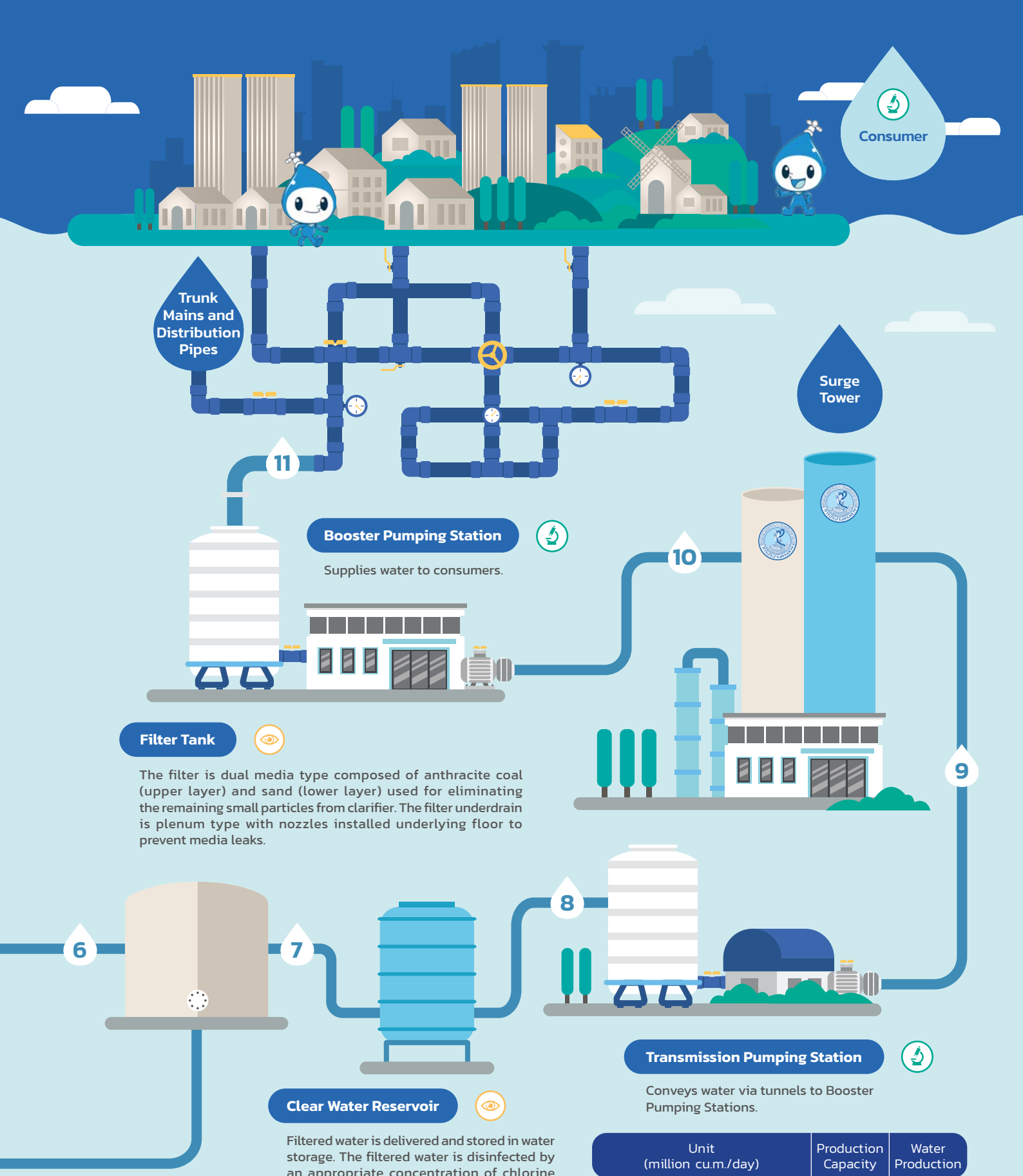
- Lime: for pH adjustment.
- Chlorine: for disinfection.
- Alum: for coagulation.
- Poly-electrolyte: for coagulation aid.



Remarks

Water monitoring and analysis are done by ISO 9001:2015, ISO 14001:2015, GMP and HACCP Certified Water Treatment Plant's Laboratory.

Water quality analysis and production management comply with WHO's guidelines 2022. Water quality analysis and monitoring conducted in Water Quality Department Laboratory certified to ISO/IEC 17025:2017



Unit (million cu.m./day)	Production Capacity	Water Production
Samsen Water Treatment Plant	0.42	0.237
Thon Buri Water Treatment Plant	0.10	0.109
Bang Khen Water Treatment Plant	4.20	3.958
Mahasawat Water Treatment Plant	1.60	1.568
Total	**6.32**	**5.872**

Length of Pipes and Equipment

(As of 30 September 2022)

Diameter Size	ST	ST		CI	PC-ST
		SCP	RCP (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	12.583	0.676			
1,500	103.660	11.806	10.672		
1,200	154.743	14.930	2.744		
1,000	563.423	16.635	47.622	13.118	
900	27.020			16.948	
800	476.467	0.330	0.170	8.885	
700	39.301			8.419	
600	135.295		0.009	15.746	
500	37.449			19.158	
400	20.203			18.039	
Total in Trunk Main (km.)	**1,570.144**	**44.376**	**61.217**	**100.313**	**0.000**
Distribution Pipe					
400	36.442			6.595	
300	294.230			2.244	
250	1.770			0.351	
200	140.421			1.540	
150	168.154			0.112	
100	18.185			0.623	
50	0.045			0.057	
Total in Distribution Pipe (km.)	**659.246**	**0.00**	**0.00**	**11.522**	**0.00**
Total in Distribution System (km.)	**2,372.525**	**44.376**	**61.217**	**111.835**	**47.786**

*Length of pipes and equipment excluding the length of service pipes (Size 1/2 - 3 inches)

Number of fire hydrant size 150 mm.	32,488	Number of gate valve (Distribution Pipe)	150,483
Above-ground fire hydrant	32,462	Number of gate valve (Trunk Main)	4,330
Underground fire hydrant	26	Number of DMA gate valve	2,973
		Total	157,786
		Butterfly Valve	2,732

Pipe Length (km.)								
	PC	AC	DI	PVC	GI	HDPE	PB	Total
								16.949
								40.846
								16.286
								25.193
								18.152
								21.252
								44.954
								7.289
	0.000	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**190.921**
								13.258
								126.138
	0.354		0.013					172.783
	4.533							645.331
	2.322					1.250		47.544
	4.866		0.423			3.041		494.182
	6.830					1.338		55.889
	4.978	3.786	2.704			0.582		163.100
	12.160	2.702				0.127		71.597
	0.222	0.142				0.172		38.779
	36.266	**6.629**	**3.140**	**0.000**	**0.000**	**6.515**	**0.000**	**1,828.601**
		103.735		111.472		1.172	0.106	259.522
		1,059.928	1.096	4,940.999	0.053	75.103	0.145	6,373.797
		16.449		1.282				19.851
		372.322		4,757.760	0.012	120.712	0.131	5,392.899
		830.755		9,708.693	22.659	10.995	1.280	10,742.648
		307.176		13,278.865	173.366	106.913	2.602	13,887.729
		0.454		33.280	28.640	3.071	1,760.747	1,826.293
	0.00	**2,690.818**	**1.10**	**32,832.351**	**224.730**	**317.966**	**1,765.012**	**38,502.739**
	36.266	2,697.447	4.235	32,832.351	224.730	324.481	1,765.012	40,522.261

Services of MWA Branch Office

(As of 30 September 2022)

Branch Office	Serviced Area	Consumer	New Connection	Produced Water for Distribution	Distributed Water		
					Sold Pipes Water	Other Water	Total
	Km²	Connection	Connection	Million m³	Million m³	Million m³	Million m³
Region 1	**529.55**	**580,244**	**14,010**	**555.82**	**372.67**	**22.25**	**394.92**
Sukhumvit	95.15	129,184	2,479	135.79	91.25	4.16	95.41
Phra Khanong	120.85	160,223	4,361	141.94	93.04	11.24	104.28
Samut Prakan	281.69	219,780	6,714	196.15	137.09	5.60	142.69
Thung Mahamek	31.86	71,057	456	81.94	51.29	1.25	52.54
Region 2	**194.67**	**324,780**	**3,594**	**343.65**	**229.81**	**5.96**	**235.77**
Phaya Thai	60.89	88,458	873	123.82	81.08	3.76	84.84
Mansri	35.81	67,088	566	111.09	70.50	1.55	72.05
Lat Phrao	97.97	169,234	2,155	108.73	78.23	0.65	78.88
Region 3	**774.16**	**563,342**	**17,796**	**365.65**	**282.36**	**10.57**	**292.93**
Prachachuen	77.87	118,620	1,888	84.42	59.25	3.06	62.31
Bang Khen	82.77	134,103	3,473	71.77	53.68	2.78	56.46
Min Buri	292.05	175,045	6,010	93.13	75.10	1.63	76.73
Suvarnabhumi	321.47	135,574	6,425	116.33	94.33	3.10	97.43
Region 4	**527.79**	**623,397**	**11,949**	**537.54**	**282.73**	**27.18**	**309.91**
Bangkok Noi	112.25	137,036	2,288	132.10	63.97	10.62	74.59
Taksin	114.22	159,888	2,144	140.85	78.02	2.57	80.59
Phasi Charoen	129.38	176,587	3,111	127.16	73.22	4.52	77.74
Suksawat	171.95	149,886	4,406	137.44	67.52	9.47	76.99
Region 5	**480.18**	**466,655**	**15,030**	**277.61**	**168.52**	**20.12**	**188.64**
Nonthaburi	91.96	132,018	1,816	93.26	62.39	4.13	66.52
Bang Bua Thong	218.60	155,869	6,327	83.69	49.74	7.68	57.42
Mahasawat	169.63	178,768	6,887	100.65	56.39	8.31	64.70
Total	**2,506.35**	**2,558,418**	**62,379**	**2,080.27**	**1,336.09**	**86.08**	**1,422.17**

Activities in the 2022 Fiscal Year

GoLive DAVIS (MWA Data Warehouse Project)

Water Conservation Project 2022

Bawon Activities (Houses, Temples, Schools) Year 5

MWA Meets the People Activity

Water-Saving Homes with MWA Activity

Pineapple Eye Families Project

Big Data Platform Project

MWA Plumber for People Project

Scale-up Innovation Project

Corporate Governance

Policy Performance

Corporate Governance Policy

The Metropolitan Waterworks Authority focuses on operating according to the corporate governance policy in line with international standards (OECD) and the State Enterprise Policy Office (SEPO). As such, the Board of Directors of the Metropolitan Waterworks Authority pays attention to managing the enterprise according to the principles of good governance by operating in a transparent and verifiable manner without any corruption with the aim of becoming to a high-performing organization to boost confidence in every stakeholders in a sustainable manner. The corporate governance policy was created to cover various issues such as 1) the roles of the public sector, 2) the equal rights of shareholders, 3) the board of directors, 4) the roles of stakeholders, 5) sustainability and innovations, 6) information disclosures, 7) risk management and internal control, 8) ethics and 9) performance monitoring.

Accordingly, the Metropolitan Waterworks Authority operates according to the corporate governance policy by operating in conformance with good corporate governance work plans under the supervision of the Board of Directors of the Metropolitan Waterworks Authority, the Corporate Good Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee. Performance is reported quarterly in order to receive opinions or observations about work operations according to set objectives along with corrective guidelines for work problems and obstacles.

Reviewing Adherence to Good Corporate Governance Guidelines and Principles

The Metropolitan Waterworks Authority reviews the corporate governance policy along with other policies related to corporate governance on a regular basis every year before the start of each fiscal year to ensure consistency with changes in policies and contexts under the supervision of the Board of Directors of the Metropolitan Waterworks Authority and subcommittees assigned by the Board of Directors of the Metropolitan Waterworks Authority, with the Steering Committee made up of deputy governor from each work line screening suitability and completeness to ensure that the corporate governance policy covers contents that are consistent with international standards.

Corporate Governance Principles of the Metropolitan Waterworks Authority

The Metropolitan Waterworks Authority focuses on managing the enterprise in an effective manner with emphasis on efficiency. In doing so, we have set guidelines to operate justly and to promote equality while giving importance to every group of stakeholders in a balanced manner in addition to respecting the rules, regulations and requirements of the enterprise and being transparent and verifiable in every work process. The Metropolitan Waterworks Authority firmly adheres to 6 principles consistent with the values for effective governance of the country as follows:

1. The Rule of Law This means having rules and regulations that are fair for every party and that are enforced in an equitable manner without double standards and that ensure practices according to the frameworks of the rules, regulations and operating timeframes without seeking illegitimate gains, but operating within the bounds of respect for rights and freedoms and updating rules and regulations to always be consistent with the current situation.

2. Virtue This means committing to what is good and right while performing duties to serve as good role models for society and promoting the people to improve themselves together to transform Thailand into a society of honesty, sincerity, forbearance and discipline and that engages in honest professions without becoming involved in or supporting corruption and that collaborates to control and prevent corruption from taking place in organizations.

3. Transparency This means being transparent in management through verifiability in every area such as by having a clear and disclosable work system and clear processes for verifying correctness in addition to disclosing beneficial news and information to the public directly, accurately and transparently according to the times and situation.

4. Participation This means distributing opportunities for employees to become involved in management and administration related to giving recommendations and decision-making regarding various matters, including the allocation of the enterprise's resources that affect operations, employees and owners through rendering, hearing and expressing opinions and consultation, joint planning, joint practice and control by stakeholders.

5. Accountability This means being aware of rights and duties and being conscious about responsibilities while paying attention to and being enthusiastic about solving problems, giving opportunities and being prepared for verification. In addition, it means being ready for assessments that reflect the responsibility of stakeholders and accepting results from duties performed and activities.

6. Efficiency & Effiectiveness This means having efficient and effective management by using resources in a worthwhile manner for the best interest of the whole in tandem with developing quality products and services that are also competitive while taking care of the society and environment for lasting abundance through the specification of key performance indicators and having organizations or individuals who are independent and accepted by society to perform assessments.

Corporate Governance Performance of the Metropolitan Waterworks Authority

The Metropolitan Waterworks Authority prioritizes working within the framework of the corporate governance policy and updates it to always remain consistent with situational changes in line with the government's policy to promote ethical government administration and anti-corruption and anti-misconduct in the public sector, including the 5th Metropolitan Waterworks Authority Enterprise Plan (2020 - 2022). This is meant to ensure that the Metropolitan Waterwork Authority becomes a state enterprise that can carry out activities according to the enterprise's tasks and missions with a focus on implementation to drive efforts to achieve the organization's vision and achieving the vision of the national strategies for "Thailand to be secure, prosperous and sustainable as a developed country through development according to the Sufficiency Economy Philosophy", including consideration to corporate social and environmental responsibility in its activities, which are major components for the sustainable development of the enterprise.

The corporate governance activities of the Metropolitan Waterworks Authority prioritize promoting ethics and morals in personnel on every level through a variety of learning processes such as training, work studies and promotion awareness through public relations media such as circular letters, posters, video clips and engagement activities of personnel through the establishment of the Metropolitan Waterworks Authority Corporate Governance Council with the purpose of promoting personnel to become selected as members of the Corporate Governance Council and to participate in communication and jointly serve as announcers in promoting knowledge and understanding about governance in their own departments in addition to creatively taking part in monitoring, surveillance and reporting on suspected incidences of corruption in the enterprise.

Furthermore, the Metropolitan Waterworks Authority remains committed to and aware of the importance of preventing and combating corruption through important activities. For example, the Board of Directors of the Metropolitan Waterworks Authority, subcommittees and all executives and employees joined together to declare the intention of the "MWA being transparent, verifiable, corruption-free, and efficient" to express their intention to manage work with both honesty and integrity. In addition, the Metropolitan Waterworks Authority issued announcements on the policies and practice guidelines for preventing conflicts of interest, on use of internal information and on connected transactions to prevent conduct that create conflicts between the personal interests of operators and the collective interest of the Metropolitan Waterworks Authority. Finally, we also established the Metropolitan Waterworks Authority Anti-Corruption Center that has duties in promoting morals and ethics and anti-corruption, and the Metropolitan Waterworks Authority also announced its policy for reporting on corruption and protecting whistleblowers to ensure that activities follow set procedures while protecting the confidentiality of personal data.

Remunerations of the Governor and High-ranking Executives

- The Governor of the Metropolitan Waterworks Authority is obtained through recruitment with an employment contract lasting no more than 4 years per occasion, and he/she receives remunerations based on the considerations of the Metropolitan Waterworks Authority's Board of Directors in regards to his knowledge, competence, duties and responsibilities, in addition to the enterprise's ability to pay such remunerations, within a specified remuneration framework.
- The remunerations of executives (deputy governors and equivalent) follow the wage structure of the state enterprise contract workers (53 tiers), and they also receive other monetary and non-monetary remunerations and other benefits in conformity with the regulations of the Metropolitan Waterworks Authority.

Unit: Million THB

Item	2022	2021	2020	Difference in 2022 - 2021, Increased (Decreased)	
				Million THB	Percent
Remunerations of the Governor	4.71	4.51	4.31	0.20	4.43
Remunerations of Deputy Governors and Equivalent	21.02	21.04	22.54	(0.02)	(0.10)
Total	**25.73**	**25.55**	**26.85**	**0.18**	**0.70**

Prevention of Conflicts of Interest, Use of Internal Information and Connected Transactions

The Board of Directors of the Metropolitan Waterworks Authority recognizes the importance of preventing behaviors that create conflicts in the personal interests of personnels and the collective interests of the Metropolitan Waterworks Authority. As a result, we have specified policies and practice guidelines for preventing conflicts of interest, use of internal information and connected transactions along with related regulations, and we oversee an annual review of these policies and practice guidelines to ensure that shareholders' rights are managed transparently and effectively according to the principles and guidelines for good corporate governance. Accordingly, the Metropolitan Waterworks Authority has disseminated these policies and practice guidelines in the Metropolitan Waterworks Authority's Good Governance Manual for personnels' acknowledgment and practice.

1. Conflict of Interest Prevention Policy and Practice Guidelines We have specified the following actions and situations to be conflicts of interest:

(1) Use of information of the Metropolitan Waterworks Authority to seek benefits for the self or other parties.

(2) Becoming party to a contract or holding stake in a contract made with the Metropolitan Waterworks Authority or operation of a business that competes with the Metropolitan Waterworks Authority such that the interests of the personnel conflicts with or contradicts the interests of the Metropolitan Waterworks Authority or impacts judgment in the duties of the operator as an officer of the Metropolitan Waterworks Authority.

(3) Holding position as a managing director, manager, major shareholder, consultant, representative, employee or contract worker in a business supervised, overseen, controlled or inspected by the Metropolitan Waterworks Authority such that the interests of the operator conflicts with or contradicts the interests of the Metropolitan Waterworks Authority or impacts judgment in the duties of the personnel as an officer of the Metropolitan Waterworks Authority unless assigned to do so in writing by the Metropolitan Waterworks Authority.

The actions in (1), (2) and (3) that are performed by the spouses of personnel will be seen as if performed by the officers themselves.

(4) Accepting assets or benefits from people aside from assets or benefits that are earned under the law or regulations or rules issued by virtue of the law, except for cases involving acceptance from a parent, descendant or relative according to tradition or duty according to their status, by which the dutiful acceptance has a price or value of acceptance from each individual and each occasion that does not exceed the that prescribed by the National Anti-Corruption Commission or is an act of giving to ordinary people.

(5) Consenting for or colluding with a member of one's own family to accept from a subordinate or a connected person in the performance of duties assets or other benefits that have a price or value of acceptance from each person and each occasion that exceeds that prescribed by the National Anti-Corruption Commission.

(6) Giving assets or any benefits or consenting for or colluding with a member of one's own family for the giving to any supervisor or family member of a supervisor or any connected person in the performance of duties of assets or benefits with a price or value of giving to each person on each occasion that exceeds that prescribed by the National Anti-Corruption Commission for acceptances of assets or other benefits.

Accordingly, supervisors are prohibited from appointing or assigning people with potential conflict of interest in any matter to become a director or decider on any matter relating to the offering of information or opinions, nor to have the power to issue instructions regarding the matter.

2. Use of Internal Information Policy and Practice Guideline Officers have the duty to safeguard the internal information of the Metropolitan Waterworks Authority that they receive from performing their duties, and they are prohibited from using internal information to seek illegitimate gains or benefits for themselves or other people, whether directly or indirectly, except for uses of information in making complaints or inquiring about complaints to ensure transparency and fairness according to the principles of good governance and uses in education or research for the benefit of the enterprise or the public. In any case, uses of internal information must take place within the scope of assigned duties and responsibilities in addition to complying with the law, regulations, rules, orders and practice guidelines relating to internal information.

3. Connected Transactions Policy and Practice Guideline Connected transactions will refer to transactions conducted between the Metropolitan Waterworks Authority and connected persons with transaction values following the criteria set by the Metropolitan Waterworks Authority. Such transactions include contracts or agreements for the acquisition or disposal of assets, renting or giving rent of assets or giving or receiving services or giving or receiving financial assistance and acts that lead to the creation or forfeiture of rights in the aforementioned actions, except for transactions that a proven to be fair and not cause any transfer of benefits. To enter into connected transactions, the utmost care and honesty and integrity are required, in addition to following correct procedures without the involvement of stakeholders in decision-making, and these transactions must be conducted for the best interest of the Metropolitan Waterworks Authority as if the transactions are being conducted with external parties (arm's length basis), and connected transactions that might cause conflicts of interest are to be avoided.

4. Reporting According to the Policies and Practice Guidelines for Preventing Conflicts of Interest, Use of Internal Information and Connected Transactions Personnels including the Board of Directors, executives, employees and contract workers, are to disclose information to prevent conflicts between their personal interests and those of the whole regardless of whether they are direct or indirect by reporting conflicts of interest, use of internal information and connected transactions to their supervisors according to the specified forms and the chain of command in each fiscal year, and if any actions that might fit the criteria for a conflict of interest or connected

transaction occurs during the fiscal year, it is also necessary to report to a supervisor every time. The Internal Audit Office is responsible for summarizing reports on the conflicts of interest, use of internal information and connected transactions that take place throughout the year for the entire enterprise and for reporting to the Governor to make present them to the Board of Directors of the Metropolitan Waterworks Authority by 30 September each year.

In the 2022 fiscal year, the personnels of the Metropolitan Waterworks Authority, including the Board of Directors of the Metropolitan Waterworks Authority (and the Governor), employees of the Metropolitan Waterworks Authority and other contract workers reported conflicts of interest by a total of 4,330 people, of whom 4,330 people had no conflicts of interest.

Accordingly, in the procurement process, the Metropolitan Waterworks Authority examines the direct and indirect interests of people who submit bidding envelopes regardless of whether they are ordinary people or juristic persons. We also look at their relationships in terms of management and capital or whether or not there are overlaps between management and capital. The Metropolitan Waterworks Authority firmly commits to and acts strictly in line with the Public Procurement and Supplies Administration Act, B.E. 2560 (2017), and other related laws and regulations.

Important Stockholding Information of Directors in Connection

with the Metropolitan Waterworks Authority and Connected Transactions with the Metropolitan Waterworks Authority

The Metropolitan Waterworks Authority has prepared a report form on stocks (shares) and connected transactions information for the Board of Directors of the Metropolitan Waterworks Authority to report to the public. Information as of 31 December 2022 is summarized as follows:

List of Directors	Holding in a Connected Juristic Person	Connected Juristic Person	Other Directorships		
			Chairman	Director	Executive
Chairman					
1. Mr. Nisit Jansomwong	-	-	-	A	-
Director and Independent Director					
2. General Singthong Meethong, Ph.D.	-	-	-	-	-
3. Mr. Anuchit Trakulmututa	-	-	-	-	-
4. Mr. Krisada Kaweeyarn	-	-	-	-	B
5. Mr. Chaitat Saetang, D.B.A.	-	-	-	-	C
6. Mr. Varayuth Yenbamroong	-	-	-	D	E
7. Mr. Nattakit Tangpoonsinthana, Ph.D.	-	-	-	F	G
8. M.R. Sasiprin Chandratat	-	-	H	I	J
9. Mr. Roya Juntaratana	-	-	-	-	-
10. Mr. Sanya Saengpumpong	-	-	-	-	-
11. Mr. Nitat Maneesilasan	-	-	-	K	-
12. Mr. Werawat Yomchinda	-	-	-	L	-
Director Representing the Ministry of Finance					
13. Mr. Boonchai Charassangsomboon	-	-	-	M	N
Director and Governor					
14. Mr. Manit Panaim	-	-	-	-	-

A : Vice President, Thailand Post Distribution Co., Ltd.
The Urgent Reforms Committee
Provincial Government Audit and Performance Evaluation Sub-Committee (PGAPES)
Senior Director, Songkhla Rajabhat University

B : Managing Director, Precious Wood Industry Co., Ltd.
Managing Director, I'm Chinatown Co., Ltd.
Managing Director, Chamada Real Estate Co., Ltd. and affiliated companies

C : CEO, Chaiyakan Consulting Co., Ltd.

D : Director, Mu Space and Advanced Technology Co., Ltd.

E : CEO, Mu Space and Advanced Technology Co., Ltd.

F : Director, Siamrajathanee PCL.
Director, Premier Quality Starch PCL.

G : Vice President, Central Group Co., Ltd.
Executive Vice President of Marketing, Central Pattana PCL.

H : Chairman, K.C. Property PCL.

I : Director, The Sustainable Arts and Crafts Institute of Thailand (Public Organization)
Director, Amnex Co., Ltd.
Director, TT & T Subscriber Services Co., Ltd.

J : CEO, Ploenchit Capital Limited

K : Independent Director, Audit Director and Nomination Director, Capital Link Credit Foncier Limited
Independent Director, Audit Director and Nomination Director, Capital Link Financial Group PCL.
Director and CEO, Openserve Co., Ltd.
Director, Happy Serve Co., Ltd.
Director, Third Dragon Co., Ltd.
Director, Little Hill Place Co., Ltd.

L : CEO, Maxima Studio Co., Ltd.

M : Director, Government Housing Bank
Director, Expressway Authority of Thailand
Director, Neighboring Countries Economic Development Cooperation Agency (Public Organization)
Director, Government Pension Fund

N : Deputy Permanent Secretary of Ministry of Finance

Note: The Metropolitan Waterworks Authority has no subsidiaries/affiliated companies.

Definitions

(1) **Holding in a connected juristic person** means the holding of stocks (shares) by a director of the Metropolitan Waterworks Authority in juristic persons connected with the main business of the Metropolitan Waterworks Authority by a proportion in excess of 10 percent of all issued voting shares.

(2) **Connected juristic person** means a juristic person that is or is expected to have transactions connected with the Metropolitan Waterworks Authority in which the spouses, children/adopted children before majority age of a director of the Metropolitan Waterworks Authority has some control authority, such as by holding voting shares in excess of 50 percent of all voting rights or having the power to control the majority votes of shareholder meetings or having the power to control the appointment or removal of directors by at least one-half of all directors.

(3) **Other directorship** means a situation where a director of the Metropolitan Waterworks Authority holds the position of director or high-ranking executive in other state enterprises/juristic persons. (See the list of other state enterprises/juristic persons in which directors hold positions on page 22 - 31 of the annual report.)

Structure of the Board of Directors of the Metropolitan Waterworks Authority

Pursuant to the Standard Qualifications of Directors and State Enterprise Employees Act, B.E. 2518 (1975), the Board of Directors of a state enterprise will consist of a chairman and at least 9 other directors but no more than 13 directors along with a governor who will also be a director by virtue of his office, and Board of Directors appointed by the Cabinet will be in office for 3 years per term. (If a director is removed from office, a replacement director is to be appointed, and the replacement will stay in office only for the remainder of the term of the person whom the director is replaced.)

The Board of Directors of the Metropolitan Waterworks Authority currently has 14 members (including the Chairman and Governor) (data as of 31 December 2022).

- There are 11 members from the state enterprise Directors' Pool (excluding the Chairman and Governor).
- There are 12 independent directors.

All directors are knowledgeable people with experiences beneficial to the Metropolitan Waterworks Authority and come from a variety of fields such as engineering, law, business administration, public administration, information technology, etc. Accordingly, the members of the Board of Directors of the Metropolitan Waterworks Authority are recruited according to the specifications in the Metropolitan Waterworks Authority Act, B.E. 2510 (1967) and the principles of good corporate governance. In order to ensure that the Board of Directors of the Metropolitan Waterworks Authority possesses the essential capabilities and knowledge to perform its duties, the highest-ranking executives and the State Enterprise Policy Office, have considered and specified a skills matrix for the Board consistently with the missions and strategies of the enterprise covering 4 areas, namely, finance, accounting, law and information technology, in addition to the expertise required by the Metropolitan Waterworks Authority, which are reviewed annually. Furthermore, the skills matrix is used to consider the recruitment of people to be nominated to become directors of the Metropolitan Waterworks Authority, and the number of skills matrices must not exceed the total number of directors of the Board of Directors of the Metropolitan Waterworks Authority.

Governance of the Board of Directors and Executives

The Metropolitan Waterworks Authority Act, B.E. 2510 (1967), together with good corporate governance principles divide duties and responsibilities clearly between the Board of Directors and Management. Accordingly, the Board of Directors has the duty to set policies, control and oversee the affairs of the Metropolitan Waterworks Authority and monitor the outcomes of the activities and performance evaluations of the Governor, while the Governor has the duty to manage, control and oversee the business of the Metropolitan Waterworks Authority according to the laws, requirements and policies set by the Board of Directors and report to the Board of Directors.

Meetings

The Board of Directors of the Metropolitan Waterworks Authority plans meetings in advance throughout the entire calendar year with 1 meeting scheduled to occur every month, and special agendas may be set as appropriate. Accordingly, the Office of the MWA Board of Directors serves as the secretary to send meeting invitation letters, meeting agendas along with meeting documents. In the 2022 fiscal year, meetings occurred every month in normal agendas. (The meeting attendance details of each director are shown in page 118 - 119 of the annual report.)

The Board of Directors of the Metropolitan Waterworks Authority receives meeting agendas and meeting documents by at least 7 days in advance on average. Therefore, the Board of Directors has sufficient time to study information before each meeting. In addition, at each meeting of the Board of Directors of the Metropolitan Waterworks Authority, executives on the level of Deputy Governors are also invited to attend to provide useful information to the consideration of the Board of Directors and to acknowledge policies to implement them correctly and swiftly. To ensure independence, however, only the Board of Directors is present in some agendas.

At every meeting of the Board of Directors of the Metropolitan Waterworks Authority, directors present opinions broadly and independently, and if any director holds any stake in the matter being discussed, the director will leave the meeting until the deliberations on the agenda are completed. In addition, meeting reports containing opinions/observations are made in writing and certified meeting reports are stored to allow directors and related persons to verify them.

Additionally, the Board of Directors of the Metropolitan Waterworks Authority participate in operational meetings and workshops and operational seminars with executives to set the direction for strategic operation and future work plans of the Metropolitan Waterworks Authority.

Appointment of the Committees/Subcommittees

In 2022, the Board of Directors of the Metropolitan Waterworks Authority appointed committees/subcommittees to screen important work processes before making proposals to the Board of Directors of the Metropolitan Waterworks Authority in 12 committees in total. The details about the composition, scope, duties and responsibilities of each committee are shown on page 104 - 117 of the annual report, and subcommittees have created charters for use as practice guidelines according to their respective duties and responsibilities in line with the enterprise's good corporate governance policy.

Remunerations of the MWA Board of Directors and Committees/Subcommittees Appointed by the MWA Board of Directors

Remunerations and meeting attendance fees are provided pursuant to the resolution of the Cabinet on 24 April 2019, except for the Audit Committee, which follows the Ministry of Finance Regulation on the Audit Committees and Internal Audit Agencies of State Enterprises, B.E. 2555 (2012).

1. Remunerations/Meeting Attendance Fees

1.1 For the Board of Directors of the Metropolitan Waterworks Authority, directors receive monthly remunerations and meeting attendance fees, and the Board of Directors of the Metropolitan Waterworks Authority are responsible for their income taxes as follows:

- Directors receive monthly remunerations amounting to no more than 10,000 baht per month. In cases where a director does not hold his/her office for a full month, remunerations are paid proportionately to his/her time in office.
- The chairman of the Board of Directors receives monthly remunerations at 2 times the monthly remunerations of directors (20,000 baht per month).
- Directors receive meeting attendance fees per occasion by 1 time per month at an amount not exceeding 20,000 baht per person per month and no more than 1 time per month, and these fees are only paid to directors who attend their meetings. The meeting chairman accordingly receives an additional 25 percent of the meeting attendance fees, and, if appropriate, considerations can be made to pay meeting attendance fees more than 1 time per month but without exceeding 15 times per year.

1.2 The Board of Directors of the Metropolitan Waterworks Authority and other directors who are not state enterprise personnel who are appointed to serve as directors in committees/subcommittees/work groups receive meeting attendance fees per meeting at an equal amount by a rate not exceeding 0.5 percent of the meeting attendance fees of state enterprise director meetings that together do not exceed 2 committees and by no more than 1 time per month per committee, and meeting chairmen are paid an additional 25 percent of the director meeting attendance fees, unless the law, regulations or Cabinet resolutions stipulate other remuneration payment rates or criteria. If those other directors are state enterprise personnel, and the meetings in question according to the practices of the state enterprise can be classified as the performance of duties by the aforementioned personnel, the aforementioned personnel will receive no meeting attendance fee due to simply performing their duties.

1.3 The Audit Committee of the Metropolitan Waterworks Authority receives remunerations by being the Audit Committee of the Metropolitan Waterworks Authority as monthly lump sums equal to the meeting attendance fees of the Board of Directors of the Metropolitan Waterworks Authority, and the Chairman of the Audit Committee is paid an additional 25 percent of the remunerations, and remunerations are to be paid even on months in which no meetings are held. In addition, when a director has been in office for less than a full month, the director is to be paid proportionately according to his/her time in office.

1.4 The Relations Affairs Committee of the Metropolitan Waterworks Authority is a committee under enterprise labor relations laws. The committee's scope of duties is to support the work of the Board of Directors of the state enterprise and the committee receives meeting attendance fees per occasion by 1 time monthly at the rate of 0.5 percent of the meeting attendance fees of state enterprise director meetings, and only directors who attend meetings are paid the fees. In addition, if a director appointed by virtue of his/her office is absent from a meeting and has assigned another person to attend the meeting on his/her behalf, a letter or evidence clearly showing the designation must be submitted, and the representative will be the person to receive the meeting attendance fee.

1.5 Directors are required to attend meetings by at least 75 percent of the total number of meetings organized by the Board of Directors each year.

2. Bonus

The chairman and directors are entitled to receive bonuses according to the regulations set by the Cabinet.

Bonuses can be allocated only after the State Audit Office of the Kingdom of Thailand has reviewed and certified the financial statement and approval for bonus allocation has been granted by the State Enterprise Policy Office (SEPO), and only then will the Metropolitan Waterworks Authority be able to request to allocate its profits as bonuses for the Board of Directors, subject to the following conditions:

2.1 The bonus payment rate for the Board of Directors of the state enterprise is judged based on profit for bonus allocation as follows:

Profit for Bonus Allocation (Million baht)	Bonus (baht/Person)
No more than 100	3 percent of profit for bonus allocation but by no more than 60,000 baht per person.
From 100 to 300	65,000
More than 300 to 500	70,000
More than 500 to 700	75,000
More than 700 to 1,000	80,000
More than 1,000 to 2,000	90,000
More than 2,000 to 5,000	100,000
More than 5,000 to 8,000	110,000
More than 8,000 to 11,000	120,000
More than 11,000 to 13,000	130,000
Additional Profit in Intervals of Every 2,000	Additional 10,000

The chairman and vice chairman receive 25 percent and 12.50 percent more bonuses than directors, respectively.

2.2 For state enterprises of the type that pays bonuses to employees when there is profit for bonus allocation, bonus payments to directors are appropriate based on performance evaluation results as follows:

Performance Evaluation (Score)	Directors' Bonus Amount (baht/Person/Year)
5.00 (Excellent)	Base + 100 percent of the base.
4.50	Base + 75 percent of the base.
4.00 (Very Good)	Base + 50 percent of the base.
3.50	Base + 25 percent of the base.
3.00 (Good)	Base.
2.50	Base - 25 percent of the base.
2.00 (Fair)	Base - 50 percent of the base.
1.50	No bonus.
1.00 (Improvement Needed)	No bonus.

Criteria

1. In the payment of bonuses to directors, payment is permissible only after the Metropolitan Waterworks Authority has remitted net earnings allocated as government revenues to the Ministry of Finance or received authorization from the State Enterprise Policy Office to remit in installments according to a fixed time period.

2. The method for calculating net profit for allocation of bonuses for directors has to follow the specifications of the State Enterprise Policy Office and the Ministry of Finance.

3. Directors who receive bonuses are to be personally responsible or their own income taxes. If in an accounting year, a director is absent from meetings for more than 3 months, his/her bonus is to be paid according to the following criteria:

- If the director was absent from meetings for more than 3 months but fewer than 6 months, pay bonuses by 25 percent less.
- If the director was absent from meetings for more than 6 months but fewer than 9 months, pay bonuses by 50 percent less.
- If the director was absent from meetings for more than 9 months, pay bonuses by 75 percent less.

Oversight of Compliance to Laws, Regulations and Requirements (Compliance Unit)

The Metropolitan Waterworks Authority provides oversight to ensure compliance to laws and regulations in the form of a **"Compliance Unit"** in which the deputy governor (Administration) serves as chairman and the assistant governor (Internal Audit Office) serves as an advisor to the Board of Directors, with executives on the assistant governor level from every line of work contributing as members and the director of the Legal Department serving as the secretary who reports outcomes to the Governor.

The Compliance Unit has the duty and power to supervise and oversee the performance of the Metropolitan Waterworks Authority in compliance with laws and regulations and recommend working guidelines or working criteria. Accordingly, the Legal Department, as the secretary, works with other agencies to gather and compile a database of laws and regulations related to the work of the Metropolitan Waterworks Authority and specify work processes for reporting performance according to laws and regulations, with the process owner department (1st Line of Defense) functioning to perform assessments and report on performance and the Legal Department (2nd Line of Defense) functioning to audit and prepare reports to present to the Compliance Unit to set working guidelines or criteria for compliance with laws and regulations.

In the 2022 fiscal year, the Compliance Unit played a role in supervising, overseeing and monitoring the performance of the Metropolitan Waterworks Authority to comply with laws, regulations and requirements in addition to recommending opinions to problems relating to compliance to laws, regulations and requirements and practice guidelines to related departments to ensure that activities follow laws in addition to performing other important tasks in line with the enterprise's policies such as by considering and reviewing the Code of Ethics for the Governor and employees of the Metropolitan Waterworks Authority, considering approval of the registration and list of legal specifications and regulations concerning business continuity, evaluating and approving deliberation outcomes for risks and opportunities and determining consistency of practice in compliance with laws, regulations and requirements.

Good Corporate Governance Structure of the Metropolitan Waterworks Authority

Regulatory Agencies
- Ministry of Interior
- Ministry of Finance (Shareholder)

MWA Board of Directors

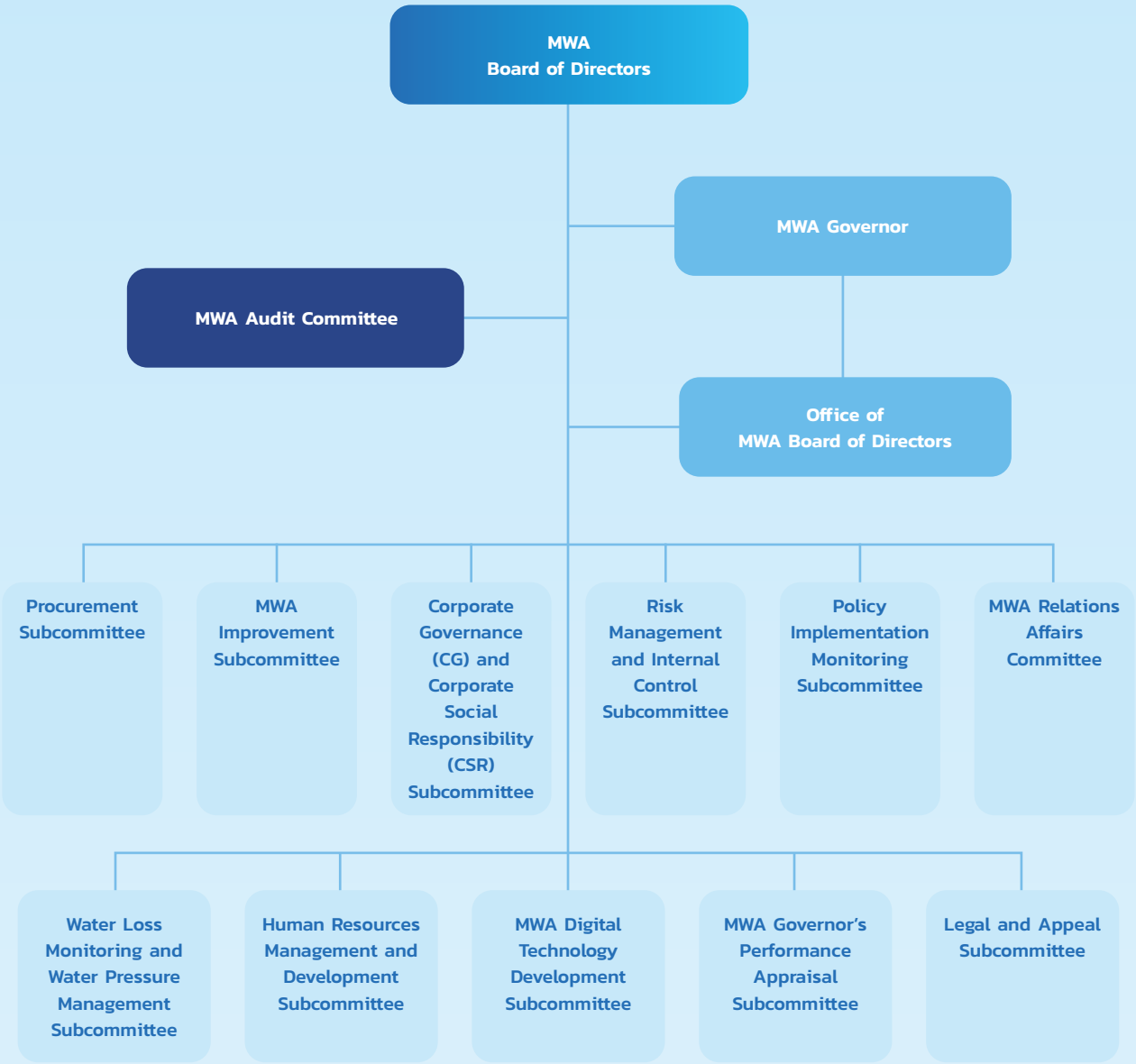
- MWA Audit Committee
- MWA Relations Affairs Committee
- Procurement Subcommittee
- MWA Improvement Subcommittee
- Corporate Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee
- Risk Management and Internal Control Subcommittee
- Policy Implementation Monitoring Subcommittee
- Water Loss Monitoring and Water Pressure Management Subcommittee
- Human Resources Management and Development Subcommittee
- MWA Digital Technology Development Subcommittee
- MWA Governor's Performance Appraisal Subcommittee
- Legal and Appeal Subcommittee
- MWA Governor Nomination Committee
- MWA Governor's Remuneration Subcommittee

MWA Governor

- Internal Audit Office
- Office of Governor
- Office of MWA Board of Directors

- Deputy Governor (Administration)
- Deputy Governor (Finance)
- Deputy Governor (Engineering)
- Deputy Governor (Water Production)
- Deputy Governor (Planning and Development)
- Deputy Governor (Digital Technology)
- Deputy Governor (Eastern Services)
- Deputy Governor (Western Services)

MWA Board of Directors Structure



Appointment of Committees and Subcommittees

(As of 31 December 2022)

1. Procurement Subcommittee

1.	Mr. Nitat Maneesilasan	Chairman
2.	Mr. Sanya Saengpumpong	Vice Chairman
3.	Mr. Chaitat Saetang	Member
4.	Governor	Member
5.	Mr. Prasit Suebchana	Member
6.	Mr. Napong Sirikantayakul	Member
7.	Mr. Krid Thammasiri	Member
8.	Mr. Pasuk Choeychom	Member
9.	Mr. Asawin Chotipanang	Member
10.	Deputy Governor (Administration)	Member
11.	Deputy Governor (Engineering)	Member
12.	Assistant Governor (Project Management Office)	Secretary
13.	Project Management Department Director	Assistant Secretary
14.	Procurement and Supplies Department Director	Assistant Secretary

Powers and Duties

1) Consider and screen matters to make proposals to request for supplies procurement and hiring, including hiring of consultants, engineering design and construction supervisors, within the jurisdiction of the MWA Board of Directors before making proposals to the MWA Board of Directors.
2) Consider and screen contract changes or procurement agreement changes or suspension or reduction of fines for contract parties and work schedule extensions according to contracts or agreements under the jurisdiction of the MWA Board of Directors before making proposals to the MWA Board of Directors.
3) Monitor and expedite undertakings in procurement, including the management of various contracts, as deemed fitting.
4) Consider, screen and improve drafts of laws, regulations and rules related to the procurement of the Metropolitan Waterworks Authority to ensure suitability to current work activities before making proposals to the Board of Directors of the Metropolitan Waterworks Authority for further proposals to the Ministry of Finance.
5) Provide consultation and/or recommendations of guidelines on how to resolve obstacles in procurement/contract management efforts under the jurisdiction of the MWA Board of Directors.
6) Perform other actions as assigned by the MWA Board of Directors.

2. MWA Improvement Subcommittee

1.	Mr. Nattakit Tangpoonsinthana	Chairman
2.	M.R. Sasiprin Chandratat	Vice Chairman
3.	Mr. Nitat Maneesilasan	Member
4.	Governor	Member
5.	Mr. Wanchai Lawattanatrakul	Member
6.	Lieutenant General Kittipan Chupiputt	Member
7.	Mr. Chira Wongburana	Member
8.	Mr. Vararatana Jutimitta	Member
9.	The Representatives from Office of the National Economic and Social Development Council Member (Ms. Ratchanee Saelim, Ms. Teeranute Sinsirithavorn and Mr. Apichart Jaksripon)	Member
10.	Mr. Khanat Kruthkul	Member
11.	Mr. Areesak Streanraparp-ar-yut	Member
12.	Deputy Governor (Planning and Development)	Member
13.	Chairman of Labor Union of MWA	Member
14.	Assistant Governor (Planning and Development)	Secretary
15.	Policy and Strategy Department Director	Assistant Secretary

Powers and Duties

1) Consider and screen enterprise plans and annual action plans and consider budgets consistently with action plans before making proposals to the MWA Board of Directors or approval prior to the start of each fiscal year and monitor activities to make proposals to the MWA Board of Directors by at least once quarterly.
2) Consider approval for policies, practice guidelines and manuals on knowledge management and consumers and marketing before making proposals to the MWA Board of Directors for acknowledgment before the start of each fiscal year.
3) Consider and screen policies, practice guidelines/manuals on innovation management and sustainability on the strategic level before making proposals to the MWA Board of Directors for approval before the start of each fiscal year.
4) Consider and give approval for strategies, master plans and long-term and short-term action plans on management of knowledge, innovations, customers and marketing before making proposals to the MWA Board of Directors for acknowledgment before the start of each fiscal year and monitoring work activities to present them to the MWA Board of Directors at least once quarterly.
5) Consider water supply activities and give consultation and/or recommendations on matters ranging from sourcing water resource to water production, transmission and distribution and service provision, including financial, investment and business operational management and monitoring of activities to present them to the MWA Board of Directors at least once quarterly.
6) Consider and screen methods and criteria for evaluating the performance of the Metropolitan Waterworks Authority before making proposals to the MWA Board of Directors for approval and monitoring performance at least once quarterly.
7) Perform other tasks as assigned by the MWA Board of Directors.

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

1.	Mr. Sanya Saengpumpong	Chairman
2.	Mr. Boonchai Charassangsomboon	Vice Chairman
3.	Miss Piyawan Lamkitcha	Member
4.	Mr. Sukich Udindu	Member
5.	Mr. Pradit Ruangdit	Member
6.	Mrs. Rachadaporn Kaewsanit	Member
7.	Mr. Visut Bootsripoom	Member
8.	Mr. Apirat Chatupanyachotikul	Member
9.	Mr. Songtham Dechsingsopa	Member
10.	Mr. Komol Buathong	Member
11.	Mrs. Intira Narksakul	Member
12.	Assistant Governor (Office of MWA Board of Directors)	Member
13.	Chairman of Labor Union of MWA	Member
14.	Assistant Governor (Office of Governor)	Secretary
15.	Corporate Governance Department Director	Assistant Secretary

Powers and Duties

1) Consider and screen good governance policies and manuals, policies and practice guidelines for reporting work activities according to the good governance policies and practice guidelines to government shareholders, policies and practice guidelines for managing the rights of shareholders according to the law, other requirements related to stakeholder management policies and practice guidelines, the purpose and scope of building relations with stakeholders, and identify the enterprise's stakeholders and issues/needs of the enterprise's critical stakeholders before making proposals to the MWA board of directors for approval before the start of each fiscal year.
2) Consider and give approval for long-term good corporate governance action plans and annual plans before making proposals the MWA Board of Directors for acknowledgment before the start of each fiscal year and monitor the results of work proposed to the MWA Board of Directors at least once quarterly.
3) Consider and give approval to the Code of Conduct and specifications related to the MWA Code of Conduct and work integrity, including the practice guidelines of directors, executives and employees and contract workers of the Metropolitan Waterworks Authority before making proposals to the Board of Directors of the Metropolitan Waterworks Authority for acknowledgment before the start of each fiscal year.
4) Consider and give approval to long-term strategic plans concerning stakeholders and action plans before making proposals to the MWA Board of Directors for acknowledgment before the start of each fiscal year and monitor work outcomes before making proposals to the Board of Directors of the Metropolitan Waterworks Authority at least once quarterly.
5) Supervise, oversee, monitor and give work recommendations in line with corporate governance principles and reporting to the MWA Board of Directors at least once quarterly.
6) Consider and give approval of strategic policies and proactive public relations action plans with every group of stakeholders before making proposals to the MWA Board of Directors for acknowledgment and monitor work outcomes to present them to the MWA Board of Directors at least once quarterly.
7) Consider and specify guidelines for managing museum work that shows our history from the past to the present, along with future possibilities, and allocate budgets to support work success.
8) Perform other tasks as assigned by the MWA Board of Directors.

4. Risk Management and Internal Control Subcommittee

1.	General Singthong Meethong	Chairman
2.	Mr. Varayuth Yenbamroong	Vice Chairman
3.	Mr. Roya Juntaratana	Member
4.	General Kanok Poomuang	Member
5.	General Suvit Mahasaksoonthorn	Member
6.	Lieutenant General Kuntapon Aukkaranuluk	Member
7.	Lieutenant General Kittipan Chupiputt	Member
8.	Major General Banlang Vajrakupta	Member
9.	Mr. Surapol Arunmas	Member
10.	Mr. Kreecha Kirdsriphan	Member
11.	Ms. Kanatwatda Supap	Member
12.	Deputy Governor (Planning and Development)	Member
13.	Deputy Governor (Water Production)	Member
14.	Assistant Governor (Planning and Development)	Secretary
15.	Risk Management Department Director	Assistant Secretary

Powers and Duties

1) Prepare the Charter of the Risk Management and Internal Control Subcommittee to propose to the MWA Board of Directors for approval.
2) Give approval to policies, manuals, practice guidelines and plans for risk management and internal control before making proposals to the MWA Board of Directors for acknowledgment before the start of each fiscal year and monitoring work outcomes in risk management and internal control and presenting them to the Audit Committee and the MWA Board of Directors at least once quarterly.
3) Consider and screen governance, risk management and compliance (GRC) and specification of the enterprise risk appetite and risk tolerance before making proposals to the MWA Board of Directors for approval before the start of each fiscal year and monitor work outcomes to present them to the MWA Board of Directors at least once quarterly.
4) Consider and screen Business Continuity Plans (BCP) and emergency plans before making proposals to the MWA Board of Directors for approval before the start of each fiscal year and monitor work outcomes to present to the MWA Board of Directors at least once quarterly.
5) Give recommendations related to risk management processes to ensure that all important risk areas of the enterprise are adequately and appropriately managed.
6) Consider and screen internal control evaluation reports on the enterprise level before making proposals to the MWA Board of Directors for approval and then reporting them to the Ministry of Interior and the Audit Committee at least once annually within 90 days before the end of each fiscal year.
7) Perform other tasks as assigned by the MWA Board of Directors.

5. MWA Relations Affairs Committee

Mr. Werawat Yomchinda	Chairman

Employer's Representatives:

1.	Deputy Governor (Eastern Services)	Member
2.	Deputy Governor (Digital Technology)	Member
3.	Deputy Governor (Administration)	Member
4.	Deputy Governor (Water Production)	Member
5.	Deputy Governor (Engineering)	Member
6.	Deputy Governor (Western Services)	Member
7.	Deputy Governor (Financial)	Member
8.	Deputy Governor (Planning and Development)	Member
9.	Assistant Governor (Human Resource Management)	Member

Employee's Representatives:

1.	Acting Sub Lieutenant Chaiyuth Homvong	Member
2.	Mr. Marut Puekpong	Member
3.	Mr. Prawech Chamchaloem	Member
4.	Mr. Siwapong Wanna	Member
5.	Mr. Jaktree Mesombut	Member
6.	Mr. Wanna Sreesod	Member
7.	Mr. Prayad Jitreechow	Member
8.	Mr. Kittisak Chumwaengwapee	Member
9.	Mr. Patompong Ruenloang	Member
10.	Welfare and Labor Relations Affairs Department Director	Secretary
11.	Welfare and Labor Relations Division Director	Assistant Secretary

Powers and Duties

The committee's duties follow Section 23 of the State Enterprise Labor Relations Act, B.E. 2543 (2000) as follows:

1) Consider and give approval on matters related to improving the working effectiveness of the state enterprise and promote and develop labor relations.
2) Seek paths to unity and solutions to conflicts within the state enterprise.
3) Consider and improve work regulations and rules in a manner that will benefit the employer and employee of the Metropolitan Waterworks Authority.
4) Provide consultation and discussions to resolve problems based on the complaints of employees or labor unions, including complaints related to disciplinary punishments.
5) Provide consultation or discussions to consider employment condition improvements.

6. MWA Audit Committee

1.	Mr. Boonchai Charassangsomboon	Chairman
2.	Mr. Anuchit Trakulmututa	Member
3.	Mr. Krisada Kaweeyarn	Member
4.	Assistant Governor (Internal Audit Office)	Secretary

Powers and Duties

1) Prepare and review the suitability of the Charter of the Audit Committee consistently with the scope of responsibility in the work of the Metropolitan Waterworks Authority with the approval for the MWA Board of Directors at least once annually and communicate to all people involved.
2) Arrange for evaluations of the composition, attributes, essential performance and knowledge (skills matrix) of the Audit Committee at least once annually or whenever there are changes to the Audit Committee and present outcomes to the MWA Board of Directors for acknowledgment.
3) Report performance related to the internal audit activities of the Audit Committee and present them to the MWA Board of Directors and submit copies to the Ministry of Interior and the Ministry of Finance as follows:
   3.1) Submit a quarterly report of internal audit activities within 60 days from the end of each quarter and an annually report of internal audit activities within 90 days from the end of the fiscal year of the Metropolitan Waterworks Authority and disclose the Audit Committee's annual reports in the annual reports of the Metropolitan Waterworks Authority.
   3.2) Report actions based on the recommendations of the Audit Committee at least once annually.
   3.3) If the Metropolitan Waterworks Authority does not have an audit committee and/or the MWA Board of Directors, the assistant governor (Internal Audit Office) should hold a written discussion with the State Enterprise Policy Office (SEPO) about the guidelines for submitting reports to supervisory agencies.
4) Prepare and review the work manual of the Audit Committee for use as a work guideline in line with the Charter of the Audit Committee and actual practices by at least once annually.
5) Prepare and review action plans covering duties and responsibilities.
6) Disclose conflicts of interest in line with the criteria and practice guideline for conflicts of interest.
7) Audit the effectiveness and efficiency of the internal control, risk management and good corporate governance processes.
8) Audit to ensure that the Metropolitan Waterworks Authority has accurate and reliable financial reports through the activities divided as follows:
   8.1) General audits such as reviews about key accounting issues that impact financial reports, critical risks and legal issues.
   8.2) Annual financial reports, information disclosures and inter-period financial reports.
9) Review, consider and approve the long-term audit plans and annual audit plans of the Internal Audit Office.
10) Review, consider and approve the Charter of the Internal Audit Office before presenting it to the MWA Board of Directors for acknowledgment at least once annually.

11) Review, consider and approval the internal audit work manual of the Internal Audit Office.
12) Review, consider and approve audit reports on the various activities of the enterprise and provide additional opinions/recommendations on the policy level to create additional value for the Metropolitan Waterworks Authority before making proposals to the MWA Board of Directors for acknowledgment to ensure that the Metropolitan Waterworks Authority has in place good processes and responsible departments that effectively carry out their work in line with the 7 Core Business Enablers as follows:
    12.1) Corporate Governance & Leadership
    12.2) Strategic Planning
    12.3) Risk Management and Internal Control
    12.4) Stakeholder and Customer Managemen
    12.5) Digital Technology
    12.6) Human Capital Management
    12.7) Knowledge and Innovation Management
13) Audit the Metropolitan Waterworks Authority to ensure the presence of a good internal audit system and consider the independence of the Internal Audit Office.
14) Consider the appointments, transfers, removals, promotions, position changes and performance evaluations of the employees of the Internal Audit Office:
    14.1) For the assistant governor (Internal Audit Office) and employees of the Internal Audit Office on Level 8, the Audit Committee is to hold a discussion with the governor before making proposals to the MWA Board of Directors for consideration.
    14.2) For the employees of the Internal Audit Office on Level 6 - 7, the assistant governor (Internal Audit Office) is to hold a discussion with the governor before making proposals to the Audit committee for consideration.
    14.3) For employees of the Internal Audit Office on Level 3 - 5, the assistant governor (Internal Audit Office) is to hold a discussion with the governor before making proposals to the Audit Committee for acknowledgment.
15) Consider the suitability and sufficiency of human resources by reviewing the personnel recruitment plans of the Internal Audit Office along with the internal audit personnel retention plans, internal auditor promotion and support plans for professional certification plans and other resource plans of the Internal Audit Office to determine whether the governor, in his activities, such as budget activities, has sufficient resources to carry out audit plans and whether personnel receive sufficient training and whether or not the Metropolitan Waterworks Authority has a succession plan in place for the assistant governor (Internal Audit Office).
16) Hold discussions with the auditor regarding the scope and guidelines of auditing along with performance outcomes and findings from auditing of financial reports and possibly give recommendations for reviewing or auditing any item deemed necessary, in addition to holding special meetings with the auditor to discuss various appropriate issues without the involvement of Management or unrelated parties by at least once annually.

17) Hold joint discussions with executives to aid the Audit Committee in understanding the business, risk management and internal control of the Metropolitan Waterworks Authority. In addition, a joint meeting should be held officially at least once annually and high-ranking executives should be invited to attend the meeting discussing various topics related to each meeting agenda and discussions should be held regularly with some executives such as the deputy governor (Finance) and the director of the Legal Department, assistant governor (Internal Audit Office), etc.
18) Audit the work of the Metropolitan Waterworks Authority to ensure compliance with the laws, regulations, requirements, orders, announcements, work procedures and criteria related to the activities of the Metropolitan Waterworks Authority.
19) Audit to ensure that the Code of Conduct for executives, employees and contract workers has been created in writing and acknowledged by every executive and employee and communicated to demonstrate the importance of morals, ethics and guidelines related to appropriate practices.
20) Consider connected transactions and transactions that might cause conflicts of interest or corruption that might affect the operation of the Metropolitan Waterworks Authority and make reports about auditing of transactions with conflicts of interest and related reports.
21) Other responsibilities:
    21.1) Provide supervision and oversight as requested by the Board of Directors of the Metropolitan Waterworks Authority.
    21.2) Arrange for special audits to take place as required and hire consultants or experts as appropriate.
    21.3) Supervise, oversee and monitor management of damage prevention processes, improvements and recommendations of the Internal Audit Office on information system security.
    21.4) Support for there to be oversight of complaint handling.
    21.5) Monitor work activities according to the observations or recommendations of the Ministry of Interior, Ministry of Finance, State Audit Office of the Kingdom of Thailand and the Audit Committee.

7. Policy Implementation Monitoring Subcommittee

1.	M.R. Sasiprin Chandratat	Chairman
2.	General Singthong Meethong	Vice Chairman
3.	Associate Prof. Thira Jearsiripongkul	Member
4.	Mr. Vimol Malila	Member
5.	Mr. Jaran Saowakul	Member
6.	Mr. Wichien Anukul	Member
7.	Mr. Supich Jurukul	Member
8.	Mrs. Noon Saiong	Member
9.	Deputy Governor (Administration)	Member
10.	Deputy Governor (Eastern Services)	Member
11.	Deputy Governor (Western Services)	Member
12.	Deputy Governor (Water Production)	Member
13.	Deputy Governor (Engineering)	Member
14.	Deputy Governor (Digital Technology)	Member
15.	Ms. Kornvilai Yeawyasat Assistant Governor (Office of MWA Board of Directors)	Secretary
16.	Waterworks Improvement Project Department Director	Assistant Secretary
17.	MWA Board of Directors Affairs Department Director	Assistant Secretary

Powers and Duties

1) Monitor efforts according to the policies of the government, supervising ministries and the MWA Board of Directors.
2) Monitor efforts according to Bangkok Water Supply Improvement Projects.
3) Monitor the investment spending of the Metropolitan Waterworks Authority to conform to proposals to ensure investment spending effectiveness and efficiency.
4) Monitor efforts according to the resolutions assigned by the MWA Board of Directors.
5) Report monitoring of policy efforts to the Metropolitan Waterworks Authority for acknowledgment at least once quarterly.
6) Perform other tasks as assigned by the MWA Board of Directors.

8. Water Loss Monitoring and Water Pressure Management Subcommittee

1.	Mr. Krisada Kaweeyarn	Chairman
2.	Mr. Werawat Yomchinda	Vice Chairman
3.	Mr. Trirong Khanom	Member
4.	The Representative from Public Works Department, Bangkok Metropolitan Administration (Mr. Chiradeth Karunkritkul)	Member
5.	Mr. Daroon Saengchai	Member
6.	Mr. Utarn Pichayaporn	Member
7.	Mr. Panasin Chungsawanant	Member
8.	Mr. Yongyuth Arpaichiraratana	Member
9.	Mr. Kittipong Apichaichankit	Member
10.	Deputy Governor (Eastern Services)	Member
11.	Deputy Governor (Western Services)	Member
12.	Deputy Governor (Engineering)	Member
13.	Assistant Governor (Services)	Secretary
14.	Water Loss Management Department Director	Assistant Secretary

Powers and Duties

1) Consider and screen strategies and the work plans of the Metropolitan Waterworks Authority for water loss and water pressure management.
2) Consider water pressure management in line with water loss management plans.
3) Consider and screen activities according to water loss and water pressure management plans.
4) Consider and give recommendations on the adoption of modern technologies in water loss and water pressure management.
5) Invite agencies or persons involved in water loss and water pressure management to provide essential information.
6) Summarize all activities that require undertakings and propose them to the MWA Board of Directors for approval.
7) Oversee, expedite and monitor activities in water loss and water pressure management according to plans and report progress periodically to the MWA Board of Directors.
8) Perform actions according to policies assigned by the MWA Board of Directors.

9. Human Resources Management and Development Subcommittee

1.	Mr. Roya Juntaratana	Chairman
2.	Mr. Anuchit Trakulmututa	Vice Chairman
3.	General Supamanat Parapob	Member
4.	Mr. Chalermsak Panasri	Member
5.	Mr. Asawin Chotipanang	Member
6.	Mr. Chumroen Varaporn	Member
7.	Mr. Tunniti Chavaratnitichot	Member
8.	Mr. Phat Tangbenjapon	Member
9.	Mr. Piboon Meenil	Member
10.	Deputy Governor (Administration)	Member
11.	Chairman of Labor Union of MWA	Member
12.	Assistant Governor (Human Resources Management)	Secretary
13.	Human Resources Management Department Director	Assistant Secretary
14.	Human Resources Development Department Director	Assistant Secretary

Powers and Duties

1) Consider and give approval to policies, strategies, goals and the master plan and action plans in Human Resource Management (HRM) and Human Resource Development (HRD) in a consistent, congruent and systematic manner that benefits the driving of the overall management of the enterprise before making proposals to the MWA Board of Directors for acknowledgment before the start of each fiscal year and monitor work outcomes to present them to the MWA Board of Directors at least once quarterly.
2) Consider and screen the management structure and manpower framework and salary structure of the personnels of the Metropolitan Waterworks Authority before making proposals to the MWA Board of Directors for approval.
3) Provide recommendations to drive implementation according to the master plan and action plans to effectively meet objectives and human resource management and development guidelines.
4) Perform other tasks related to human resources management/development.
5) Perform other tasks as assigned by the MWA Board of Directors.

10. MWA Digital Technology Development Subcommittee

1.	Mr. Chaitat Saetang	Chairman
2.	Mr. Nitat Maneesilasan	Vice Chairman
3.	Mr. Nattakit Tangpoonsinthana	Member
4.	Associate Prof. Pisit Boonsrimuang	Member
5.	Mr. Arnon Tubtiang	Member
6.	Mr. Yongyuth Areerat	Member
7.	Mr. Prechaporn Suwatnodom	Member
8.	Mr. Atipat Jarurojanaanan	Member
9.	Mr. Adisorn Anananusit	Member
10.	Mr. Udomsakdi Apichatthanapath	Member
11.	Deputy Governor (Western Services)	Member
12.	Deputy Governor (Water Production)	Member
13.	Deputy Governor (Digital Technology)	Member
14.	Deputy Governor (Engineering)	Member
15.	Assistant Governor (Digital Technology)	Secretary
16.	Digital Strategy and Innovation Department Director	Assistant Secretary

Powers and Duties

1) Consider and set the direction, policies and strategies on digital technology development in line with the needs and expectations of stakeholders consistently with and in support of the enterprise plans of the Metropolitan Waterworks Authority to achieve the set vision and missions.
2) Consider and give approval for the digital governance framework and make proposals to the MWA Board of Directors for acknowledgment before the start of each accounting year.
3) Consider and give approval to the short-term and long-term digital action plans of the Metropolitan Waterworks Authority and annual digital action plans and make proposals to the MWA Board of Directors for acknowledgment before the start of each accounting year.
4) Supervise and monitor efforts according to the work plans of important enterprise management systems such as the information and digital management system/digital action plans by at least quarterly.
5) Assess the quality and/or efficiency of participatory processes and monitor the work outcomes of the information and digital management system/digital action plans and use assessment results as basic data for accompanying tangible improvements.
6) Report work performance and consider and approval consideration for the information and digital management system/digital action plans to the Board of Directors of the Metropolitan Waterworks Authority.
7) Perform other tasks as assigned by the MWA Board of Directors.

11. MWA Governor's Performance Appraisal Subcommittee

1.	Mr. Nattakit Tangpoonsinthana	Chairman
2.	Mr. Roya Juntaratana	Vice Chairman
3.	Mr. Werawat Yomchinda	Member
4.	Assistant Governor (Office of MWA Board of Directors)	Secretary
5.	Ms. Nuchnapa Wongmongkhon MWA Expert Level 8	Assistant Secretary

Powers and Duties

1) Consider and screen the action plans of the Governor of the Metropolitan Waterworks Authority in line with objectives, goals and missions to ensure that the Governor of the Metropolitan Waterworks Authority takes actions in line with set strategies and direction and manage the enterprise in various areas in the most effective and efficient manner and make proposals to the MWA Board of Directors for approval.
2) Set the Key Performance Indicators (KPIs) and performance evaluation methods for the Governor of the Metropolitan Waterworks Authority in line with set missions before proposing them to the MWA Board of Directors for approval.
3) Monitor and assess the performance of the Governor of the Metropolitan Waterworks Authority at set timeframes in line with set evaluation methods and Key Performance Indicators (KPIs) before making proposals to the MWA board of directors for approval.
4) Perform other tasks as assigned by the MWA Board of Directors.

12. Legal and Appeal Subcommittee

1.	Mr. Anuchit Trakulmututa	Chairman
2.	Mr. Boonchai Charassangsomboon	Vice Chairman
3.	Mr. Chartpong Chirabandhu	Member
4.	Mr. Prasit Suebchana	Member
5.	Mrs. Saowarot Rimsakorn	Member
6.	Mr. Krit Khamtawee	Member
7.	Mr. Seree Nonthasoot	Member
8.	Mr. Krid Thammasiri	Member
9.	Mrs. Patraporn Milindasuta	Member
10.	Legal Department Director	Secretary
11.	Legal Development Division Director	Assistant Secretary

Powers and Duties

1) Consider, screen and improve drafts of the laws, regulations, agreements and contracts of the Metropolitan Waterworks Authority to ensure suitability with current work activities.
2) Consider and give opinions on various matters relating to the laws, contracts, regulations, requirements and orders of the Metropolitan Waterworks Authority in cases where there are issues or doubts requiring deliberation or instruction.
3) Consider and give opinions regarding the appeals of administrative orders or complaints in line with the Metropolitan Waterworks Authority Regulation on Personnel Administration, B.E. 2543 (2000), and the Administrative Procedure Act, B.E. 2539 (1996), as assigned by the Chairman of the MWA Board of directors or the MWA Board of Directors.
4) Perform other tasks as assigned by the Chairman of the MWA Board of Directors or the MWA Board of Directors.

Meetings and Remunerations of the Board of Directors, Committees and Subcommittees

(October 2021 – 30 September 2022)

No.	Name	Position	MWA Board of Directors	MWA Audit Committee	Water Loss Monitoring and Water Pressure Management Subcommittee	Procurement Subcommittee	Human Resources Management and Development Subcommittee	Risk Management and Internal Control Subcommittee	MWA Digital Technology Development Subcommittee	Corporate Governance (CG) and Corporate Social Responsibility (CSR) Subcommittee
			15 times	7 times	12 times	12 times	12 times	12 times	13 times	12 times
1	Mr. Nisit Jansomwong	Chairman	15/15							
2	General Singthong Meethong, Ph.D.	Director	15/15	3/3				12/12		
3	Mr. Anuchit Trakulmututa	Director	15/15	1/1	10/10		12/12			
4	Mr. Krisada Kaweeyarn	Director	14/15	5/7	2/2					
5	Mr. Chaitat Saetang, D.B.A.	Director	15/15		10/10	2/2			12/12	
6	Mr. Varayuth Yenbamroong	Director	14/15					0/2	0/10	0/10
7	Mr. Prasit Suebchana	Director	7/7			12/12				
8	Mr. Nattakit Tangpoonsinthana, Ph.D.	Director	15/15				10/10		2/2	
9	M.R. Sasiprin Chandratat	Director	15/15					10/10		
10	Mr. Roya Juntaratana	Director	15/15			10/10	12/12	2/2		
11	Mr. Sanya Saengpumpong	Director	15/15	6/6		2/2				6/6
12	Mr. Nitat Maneesilasan	Director	15/15			6/6		10/10	2/2	6/6
13	Mr. Werawat Yomchinda	Director	15/15		12/12					
14	Mr. Boonchai Charassangsomboon	Director	9/9	4/4						6/6
15	Mr. Kavee Areekul	Director/ Governor	11/11		7/10		9/10	9/10	8/9	8/10
16	Mr. Manit Panaim	Director/ Governor	4/4			2/2			0/1	

Notes:
- The Cabinet passed a resolution on 23 November 2020 to appoint the chairman of the Board and Directors of the Board of Directors of the Metropolitan Waterworks Authority by a number of 14 people with the Governor of the MWA serving as a director by virtue of his/her position.
- The Cabinet passed a resolution on 8 March 2022 to appoint **Mr. Boonchai Charassangsomboon** as a director (representative of the Ministry of Finance) to replace **Mr. Chamroen Phothiyod** (representative of the Ministry of Finance), a former director who resigned, effective as of 1 October 2021.

Policy Implementation Monitoring Subcommittee	Legal and Appeal Subcommittee	MWA Relations Affairs Committee	MWA Improvement Subcommittee	MWA Governor's Performance Appraisal Subcommittee	MWA Governor Nomination Committee	MWA Governor's Remuneration Subcommittee	Meeting Allowance for All Committees	Fixed Remunerations	Bonus	Total
12 times	9 times	12 times	12 times	8 times	3 times	1 time				
							400,000.00	240,000.00	187,500.00	827,500.00
12/12						1/1	550,000.00	195,483.87	150,000.00	895,483.87
	9/9				3/3		587,500.00	160,000.00	150,000.00	897,500.00
			10/10				450,000.00	360,000.00	150,000.00	960,000.00
					3/3		590,000.00	120,000.00	150,000.00	860,000.00
						1/1	310,000.00	120,000.00	150,000.00	580,000.00
	8/8				3/3		382,500.00	61,666.65	77,083.33	521,249.98
			10/12	8/8	3/3		585,000.00	120,000.00	150,000.00	855,000.00
12/12			12/12				590,000.00	120,000.00	150,000.00	860,000.00
				8/8		1/1	592,500.00	120,000.00	150,000.00	862,500.00
10/10							475,000.00	344,999.97	150,000.00	969,999.97
			10/12		3/3		590,000.00	120,000.00	150,000.00	860,000.00
		12/12		8/8			590,000.00	120,000.00	150,000.00	860,000.00
	6/6						24,000.00	273,387.08	84,677.41	382,064.49
			7/9				384,000.00	83,548.38	116,935.48	584,483.86
		8/9	3/3				190,000.00	26,451.62	33,064.51	249,516.13
						Total	**7,290,500.00**	**2,585,537.57**	**2,149,260.73**	**12,025,298.30**

- **Mr. Prasit Suebchana** left his office as a director in the Board of Directors of the MWA due to reaching 65 years of age on 5 April 2022.
- **Mr. Kavee Areekul** worked as the Governor of the MWA from 16 September 2020 to 11 July 2022.
- **Mr. Manit Panaim** worked as the Governor of the MWA from 12 July 2022 to the present.

Compliance to the Official Information Act, B.E. 2540 (1997)

The Metropolitan Waterworks Authority Information Center was established under the Official Information Act, B.E. 2540 (1997), to gather information for the public to search, study and view with convenience. We commit to providing information services according to good governance principles in an accessible and verifiable manner with primary consideration to the benefits of service users.

In addition to providing information services in a systematic, complete, accurate and current manner, we have also renovated our facilities for ease of access and to improve our image, in addition to providing an electronic information service center together with physical services to improve convenience and reduce risk from the COVID-19 situation while maintaining and raising the standards of information services in line with the concept of "largely disclose and only conceal in exceptional cases." Our effort in this area led the Metropolitan Waterworks Authority Office Information Center to receive the Outstanding Official Information Center Award for the 4th consecutive year (from 2019 to 2022). The award was given by Office of the Official Information Commission under the Office of the Prime Minister and demonstrates our determination to follow the Official Information Act, B.E. 2540 (1997), which instructs government agencies to disclose government information to the public.

The public can view information about the Metropolitan Waterworks Authority Information Center at www.oic.go.th/INFOCENTER2/237 or by traveling to the 1st floor of the Headquarters Building of the Metropolitan Waterworks Authority.

Performance in 2022

The Metropolitan Waterworks Authority Information Center operated according to the information center action plan for the 2022 in line with the Official Information Act, B.E. 2540 (1997), and the Metropolitan Waterworks Authority Regulation on the Information, B.E. 2561 (2018), as follows:

- **Committee Meetings**

  Meetings were held remotely via the Internet by using the Webex application to discuss matters and acknowledge performance in various areas such as consideration of the Metropolitan Waterworks Authority Information Center's action plan for the 2023, report of performance according to the action plan of 2022 and the Outstanding Government Information Center Award of 2022, etc.

- **Visit to the Center**

  Agencies conducted work studies at the Metropolitan Waterworks Authority Information Center as follows:

  - Legal Execution Department on 11 March 2022.
  - Office of the Permanent Secretary of the Ministry of Commerce on 17 March 2022.
  - Department of Health on 25 May 2022.
  - Defence Technology Institute on 7 September 2022.

- **Work Studies**

The Metropolitan Waterworks Authority Information Center Committee and 8 Corporate Communication personnel conducted a work study at the Department of Health Information Center under the Ministry of Public Health to exchange knowledge about information center operations and information services.

- **Personnel Knowledge Training**

Training was provided in online learning format via the Zoom application in the "Knowledge about the Official Information Center Act, B.E. 2540 (1997)" course to Level 2 - 7 employees, totaling 200 persons.

- **Dissemination of Knowledge about the Official Information Center Act, B.E. 2540 (1997)**

We prepared news and articles for publication through various public relations media and held activities to provide knowledge to the public such as a lecture to the Legal Execution Department about the Official Information Center Act through electronic media and public relations activity of the Metropolitan Waterworks Authority Information Center in the "MWA Meets the People" activity on the occasion of the 55th anniversary of the Metropolitan Waterworks Authority at Suwannaprasit Community 1, Prasoetmanukit Alley 48, Bueng Kum District, Bangkok Metropolis.

- **Service Statistics for the 2022 Fiscal Year**
  - Information was provided electronically to 1,128 persons.
  - Information was provided to 4 individual inquirers (pursuant to Section 11).

Information and Statistics

General Information	Unit	Fiscal Year				
		2018	2019	2020	2021	2022
Total amount of distributed water	Million m^3	1,997.1	2,075.2	2,121.1	2,116.5	2,080.3
Bang Khen Water Treatment Plant	Million m^3	1,334.4	1,402.3	1,410.0	1,427.6	1,394.0
Sam Sen Water Treatment Plant	Million m^3	116.4	113.0	102.4	92.2	86.4
Thon Buri Water Treatment Plant	Million m^3	37.4	41.1	36.4	40.1	39.9
Mahasawat Water Treatment Plant	Million m^3	508.9	518.8	572.3	556.6	560.0
Total amount of sold water	Million m^3	1,401.4	1,467.4	1,458.3	1,416.2	1,422.2
Residences	Million m^3	651.5	675.7	694.3	705.8	695.6
Businesses, state-owned enterprises, government agencies and other	Million m^3	719.6	753.2	717.8	643.2	640.5
Public water and other	Million m^3	30.3	38.5	46.2	67.2	86.1
Percentage of sold water	percent	70.17	70.71	68.8	66.9	68.4
Number of consumers at the end of the years	connections	2,375,490	2,423,540	2,479,547	2,517,486	2,558,418
Residences	connections	1,921,897	1,957,391	2,010,824	2,062,299	2,109,493
Businesses, state-owned enterprises, government agencies and other	connections	453,593	466,149	468,723	455,187	448,925
Small consumers	connections	2,338,779	2,386,832	2,443,405	2,482,886	2,523,957
Water meter size 1/2 inch	connections	1,459,347	1,510,537	1,571,405	1,613,975	1,658,198
Water meter size 3/4 inch	connections	811,431	807,907	803,240	798,621	795,051
Water meter size 1 inch	connections	68,001	68,388	68,760	70,290	70,708
Major consumers	connections	36,711	36,708	36,142	34,600	34,461
Water meter size 1 1/2 inches	connections	15,610	16,078	16,169	15,366	15,596
Water meter size 2 inches	connections	13,672	13,243	12,814	12,405	12,235
Water meter size over 2 inches	connections	7,429	7,387	7,159	6,829	6,630
Number of new connections	connections	65,653	67,745	67,916	60,241	62,379
Average amount of water consumption per month	m^3	48.55	49.58	47.98	44.99	43.86
Residences	m^3	28.56	29.02	29.16	28.86	27.78
Businesses, state-owned enterprises, government agencies and other	m^3	132.56	136.14	127.67	116.38	118.05
Average water fee per m^3	baht	11.98	11.99	10.93	11.31	11.69
Residences	baht	9.99	10.00	8.96	9.40	9.85
Businesses, state-owned enterprises, government agencies and other	baht	13.79	13.79	12.85	13.42	13.69
Total personnel	persons	5,365	5,378	5,384	5,314	5,272
Number of personnel at the end of the year	persons	4,310	4,303	4,339	4,250	4,252
Number of contract workers	persons	1,055	1,075	1,045	1,064	1,020
Ratio of consumers per personnel	connections	443	451	461	474	485
Population in the responsible area at the end of the year	persons	8,249,551	8,276,526	8,216,446	8,173,080	8,151,075
Number of households in the responsible area at the end of the year	houses	4,323,941	4,436,973	4,354,086	4,609,369	4,688,136

Financial Information	Unit	Fiscal Year				
		2018	2019	2020	2021	2022
Total assets	Million baht	75,108.5	79,365.8	81,337.9	84,158.8	87,211.4
Current assets	Million baht	21,561.4	20,751.8	13,653.8	10,356.4	11,431.1
Non-current assets	Million baht	53,547.1	58,614.0	67,684.1	73,802.4	75,780.3
Total liabilities	Million baht	14,599.2	15,742.2	15,055.4	16,761.1	17,683.0
Current liabilities	Million baht	4,453.4	4,059.6	3,105.6	4,369.1	5,303.4
Non-current liabilities	Million baht	10,145.8	11,682.6	11,949.8	12,392.0	12,379.6
Owners' Equity	Million baht	60,509.3	63,623.6	66,282.5	67,397.7	69,528.4
Total income	Million baht	19,203.0	20,051.4	18,045.0	18,435.6	18,490.4
Operating income	Million baht	18,801.1	19,548.9	17,559.8	18,061.1	18,067.4
Income from water fee and water equipment service	Million baht	17,602.6	18,334.2	16,548.9	16,895.4	16,837.8
Income from new connection	Million baht	396.7	385.9	247.9	278.5	308.9
Income from other operations	Million baht	801.8	828.8	763.0	887.2	920.7
Non-operating income	Million baht	401.9	502.5	485.2	374.5	423.0
Total expenses	Million baht	11,683.8	13,047.6	12,422.0	13,600.3	14,380.0
Operating expenses	Million baht	11,676.6	13,012.8	12,390.6	13,574.7	14,375.3
Direct Operating expenses	Million baht	7,142.7	8,173.6	7,536.1	8,339.3	8,840.2
Depreciation and amortization	Million baht	4,493.3	4,808.4	4,829.0	5,210.6	5,515.3
Interest expense and loan fee	Million baht	40.6	30.8	25.5	24.8	19.8
Non-operating expenses	Million baht	7.2	34.8	31.4	25.6	4.7
Other expenses	Million baht	26.0	36.7	33.6	25.6	4.7
(Profit) Loss from foreign exchange rate	Million baht	(18.8)	(1.9)	(2.2)	-	-
Net profits	Million baht	7,519.2	7,003.8	5,623.0	4,835.3	4,110.4
Return on asset	percent	10.01	8.82	6.91	5.75	4.71
Return on equity	percent	12.43	11.01	8.48	7.17	5.91
Net profit margin	percent	39.99	35.83	32.02	26.77	22.75
Asset turnover	times	0.25	0.25	0.22	0.21	0.21
Current ratio	times	4.84	5.11	4.40	2.37	2.16
Debt to total asset ratio	times	0.19	0.20	0.19	0.20	0.20
Debt to equity ratio	times	0.24	0.25	0.23	0.25	0.25
Cost of water sale per m^3	baht	8.03	8.67	8.33	9.48	10.07

Rate of Water Fee and Rate of New Installation Fee

Rate of Water Fee

Type 1 Residences		Type 2 Businesses, Government Agencies, State-owned Enterprises, Industry and Other	
Amount of Water Consumption (m^3)	Water Price (baht/m^3)	Amount of Water Consumption (m^3)	Water Price (baht/m^3)
0 - 30	8.50	0 - 10	9.50 But 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: 1. Water supply rates are exclusive of VAT.

2. For water wholesale, the average water prices are as follows:

* Residential type: 10.50 baht/m^3
* Other types: 13.00 baht/m^3

Effective as of 1 June 2004, MWA shall charge the raw water fee at the rate of 15 Satang/m^3 for contribution to Royal Irrigation Department.

Rate of New Installation in Lump Sum and Monthly Service Fee

Unit: baht

Meter Sizes (inches)	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
Meter Fee	25	40	50	80	300	400	500	900	1,100	3,500

Remarks: 1. For the expenses for the part that exceeds 20 meters from MWA's main pipe, water supply requestor shall pay the price of pipeline installation and equipment as follows:

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

2. The expenses in the above table are exclusive of VAT.

Locations of MWA Offices

Head Office

400 Prachachuen Road, Thung Song Hong Sub-district, Lak Si District, Bangkok Metropolis 10210

- Tel 0 2504 0123
- Fax 0 2500 2582-3
- E-mail mwa1125@mwa.co.th

Sukhumvit Branch Office

1564/1 Sukhumvit Road, Phra Khanong Sub-district, Khlong Toei District, Bangkok Metropolis 10260

- Tel 0 2331 0028-30
- Fax 0 2331 7533
- E-mail br07s00@mwa.co.th

Prachachuen Branch Office

2 Soem Suk Alley, Prachachuen Road, Chatuchak Sub-district, Chatuchak District, Bangkok Metropolis 10900

- Tel 0 2585 7444, 0 2585 0319, 0 2585 3889, 0 2585 0490
- Fax 0 2586 0922
- E-mail br15s00@mwa.co.th

Phra Khanong Branch Office

1564/1 Sukhumvit Road, Phra Khanong Sub-district, Khlong Toei District, Bangkok Metropolis 10260

- Tel 0 2331 0031-32
- Fax 0 2331 1061
- E-mail br13s00@mwa.co.th

Bang Khen Branch Office

3 Chaeng Watthana Road, Anusawari Sub-district, Bang Khen District, Bangkok Metropolis 10220

- Tel 0 2552 1550-4
- Fax 0 2521 1176
- E-mail br16s00@mwa.co.th

Samut Prakan Branch Office

27 Bunsiri 4 Alley, Sukhumvit Road, Pak Nam Sub-district, Mueang Samut Prakan District, Samut Prakan Province 10270

- Tel 0 2384 1411-2
- Fax 0 2384 3065
- E-mail br17s00@mwa.co.th

Phasi Charoen Branch Office

454 Kanchanaphisek Road, Bang Khae Nuea Sub-district, Bang Khae District, Bangkok Metropolis 10160

- Tel 0 2455 0055
- Fax 0 2454 5500
- E-mail br11s00@mwa.co.th

Phaya Thai Branch Office

1057 Vibhavadi-Rangsit Road, Chatuchak Sub-district, Chatuchak District, Bangkok Metropolis 10900

- Tel 0 2537 8225
- Fax 0 2537 8227
- E-mail br03s00@mwa.co.th

Bangkok Noi Branch Office

170 Moo 2, Kanchanaphisek Road, Plai Bang Sub-district, Bang Kruai District, Nonthaburi Province 11130

- Tel 0 2449 0011, 0 2448 0461
- Fax 0 2449 0065

Service Unit 258/4 Charan Sanit Wong 30/1 Alley, Ban Chang Lo Sub-district, Bangkok Noi District, Bangkok Metropolis 10700

- Tel 0 2411 3117, 0 2411 2240
- Fax 0 2411 3117
- E-mail br01s00@mwa.co.th

Thung Mahamek Branch Office

9/2 Nang Linchi Road, Thung Mahamek Sub-district, Sathon District, Bangkok Metropolis 10120

- Tel 0 2286 0172, 0 2286 0174-5, 0 2286 0177, 0 2286 0179
- Fax 0 2286 0153
- E-mail br05s00@mwa.co.th

Mansri Branch Office

1203 Nakhon Chaisi Road, Samsen Nai Sub-district, Phaya Thai District, Bangkok Metropolis 10400

- Tel 0 2298 6700-24
- Fax 0 2298 6735
- E-mail br06s00@mwa.co.th

Lat Phrao Branch Office

591 Ramkhamhaeng 39 (Thep Lila 1) Alley, Ramkhamhaeng Road, Wang Thonglang Sub-district, Wang Thonglang District, Bangkok Metropolis 10310

- Tel 0 2934 4432-6
- Fax 0 2934 4815
- E-mail br12s00@mwa.co.th

Min Buri Branch Office

133 Ramkhamhaeng Road, Saen Saep Sub-district, Min Buri District, Bangkok Metropolis 10510

- Tel 0 2543 6500
- Fax 0 2543 6630
- E-mail br53s00@mwa.co.th

Suvarnabhumi Branch Office

623/1 Luang Phaeng Road, Thap Yao Sub-district, Lat Krabang District, Bangkok Metropolis 10520

- Tel 0 2171 5455-64
- Fax 0 2171 5475
- Email br55s00@mwa.co.th

Taksin Branch Office

71 Rama 2 Road, 31 Alley, Bang Mot Sub-district, Chom Thong District, Bangkok Metropolis 10150

- Tel 0 2427 6000
- Fax 0 2427 7772
- E-mail br02s00@mwa.co.th

Suk Sawat Branch Office

71 Rama 2 Road, 31 Alley, Bang Mot Sub-district, Chom Thong District, Bangkok Metropolis 10150

- Tel 0 2427 7000
- Fax 0 2427 7772
- E-mail br14s00@mwa.co.th

Bang Bua Thong Branch Office

59 Moo 2, Bang Kruai-Sai Noi Road, Sano Loi Sub-district, Bang Bua Thong District, Nonthaburi Province 11110

- Tel 0 2571 3982-7
- Fax 0 2571 1743
- E-mail br54s00@mwa.co.th

Mahasawat Branch Office

170 Moo 2, Kanchanaphisek Road, Plai Bang Sub-district, Bang Kruai District, Nonthaburi Province 11130

- Tel 0 2449 0129
- Fax 0 2449 0088
- E-mail br56s00@mwa.co.th

Nonthaburi Branch Office

282 Nonthaburi Road, Tha Sai Sub-district, Mueang Nonthaburi District, Nonthaburi Province 11000

- Tel 0 2589 0035-8
- Fax 0 2580 5964
- E-mail br04s00@mwa.co.th

Contact Channels

1. The MWA Call Center (1125)

is an agency that provides service in information inquiries and accepting incident reports, complaints, service requests, recommendations and other matters. The call center can be contacted through the following channels:

- 24-hour 1125 Hotline
- E-mail: mwa1125@mwa.co.th
- Facebook: www.facebook.com/MWAthailand
- Twitter: @mwa1125
- Website: www.mwa.co.th
- Web Chat
- LINE Official: @MWAthailand
- Instagram: @MWAthailand
- Justice Provision Center of the Metropolitan Waterworks Authority
- Government Contact Center of the Prime Minister's Office (GCC 1111)

The complaint services that are provided include the following:

1) Bill delivery address changes
2) Consumer type changes
3) Water usage location/name change
4) House number changes
5) SMS information subscriptions
6) Cancellation of SMS information subscriptions
7) Other water meter services
8) Damaged water meter reports
9) Inoperable water meter reports
10) MWA branch office appointment scheduling services
11) Post-metering service

Accordingly, after customers/people make a report at the MWA Call Center (1125), officials will record details in the iMind CRM (Customer Relationship Management) work system and then immediately inform the relevant departments or parties for further action.

2. The website of the Metropolitan Waterworks Authority (www.mwa.co.th) offers services electronically as follows:

- e-Services such as requests for new connections, water supply installation requests for groups, water supply pipe installation requests, real estate projects, installation status verifications, water supply payment services, information inquiries, complaint handling, service request application filings, registration for electronic receipts/tax invoices and registration for electronic water bills, etc.
- Water fee calculation service
- Registration for refunding of water usage guarantee
- Registration for use of entitlements from government welfare cards

3. **All branches of the Metropolitan Waterworks Authority have the responsibility of overseeing and providing services to the people in their areas of responsibility by providing such services as the following:**
   - Request for new connections within 1 day and water usage cancellation
   - Consumer information changes
   - Reports of broken or leaking pipes and carrying out repairs
   - Changing water meters
   - Water meter deposit
   - Water bill payments
   - Other service payments in the MWA Easy Pay Project such as AIS mobile phone (charges for a fee of 10 baht per transaction), Krungthai credit card (expenses for a fee of 10 baht per transaction), Land and Houses Bank Public Company Limited loan payments (for without charge) and electrical bill payments (free of charge)

4. **Department store service centers, where Metropolitan Waterworks Authority branches provide water supply service request handling and payment services as follows:**
   - The Government Center in Nonthaburi Province at the Central Plaza Westgate; Central Plaza Chaeng wattana; and The Mall Lifestore Ngamwongwan
   - Bangkok Express Service, Bangkok, at The Mall Bang Khae

5. **Suksawat Smart Consumer**

   Service Centers at Phra Pradaeng District Office and Phra Samut Chedi District Office, Samut Prakan Province, which provide service request handling and water bill payment services

6. **MWA Clean Water Clinic**

   The Water Quality Department has the duty of providing consultation about water quality problems and can be contacted via the telephone number 0 2504 0123 to 1877-1778 and Facebook: www.facebook.com /mwacleanwater.

7. **The MWA onMobile application provides the following services:**
   - Water bill checking services
   - Water usage history viewing
   - Service requests (water meters, new connections, e-Invoice and e-Tax Invoice)
   - New connections fee payments
   - Notifications (water bills, abnormal flow, no flow)
   - Incident reports (pipe leaks and pipe installation/repair work)
   - Complaints (criticisms, suggestions and other complaints)
   - Electricity usage application and Electricity bill verification (through connection with the Metropolitan Electricity Authority's website)
   - Water bill payments
   - Questionnaires
   - Information archives
   - Water supply quality inspections
   - No-water-flow announcements
   - Contact information of the Metropolitan Waterworks Authority
   - Press releases of the Metropolitan Waterworks Authority

Payment Channels

MWA onMobile Application and MWA e-Service

https://eservicesapp.mwa.co.th

Mobile Application

MWA Representative Counter Services

Water Bill Payments

- In case of overdue payment, the fee will be paid through an agent of 15 baht.
- In case of overdue payment and water use is temporarily suspended, the fee is 107 baht.

Direct Debit

ATM

Kiosk

Credit Card

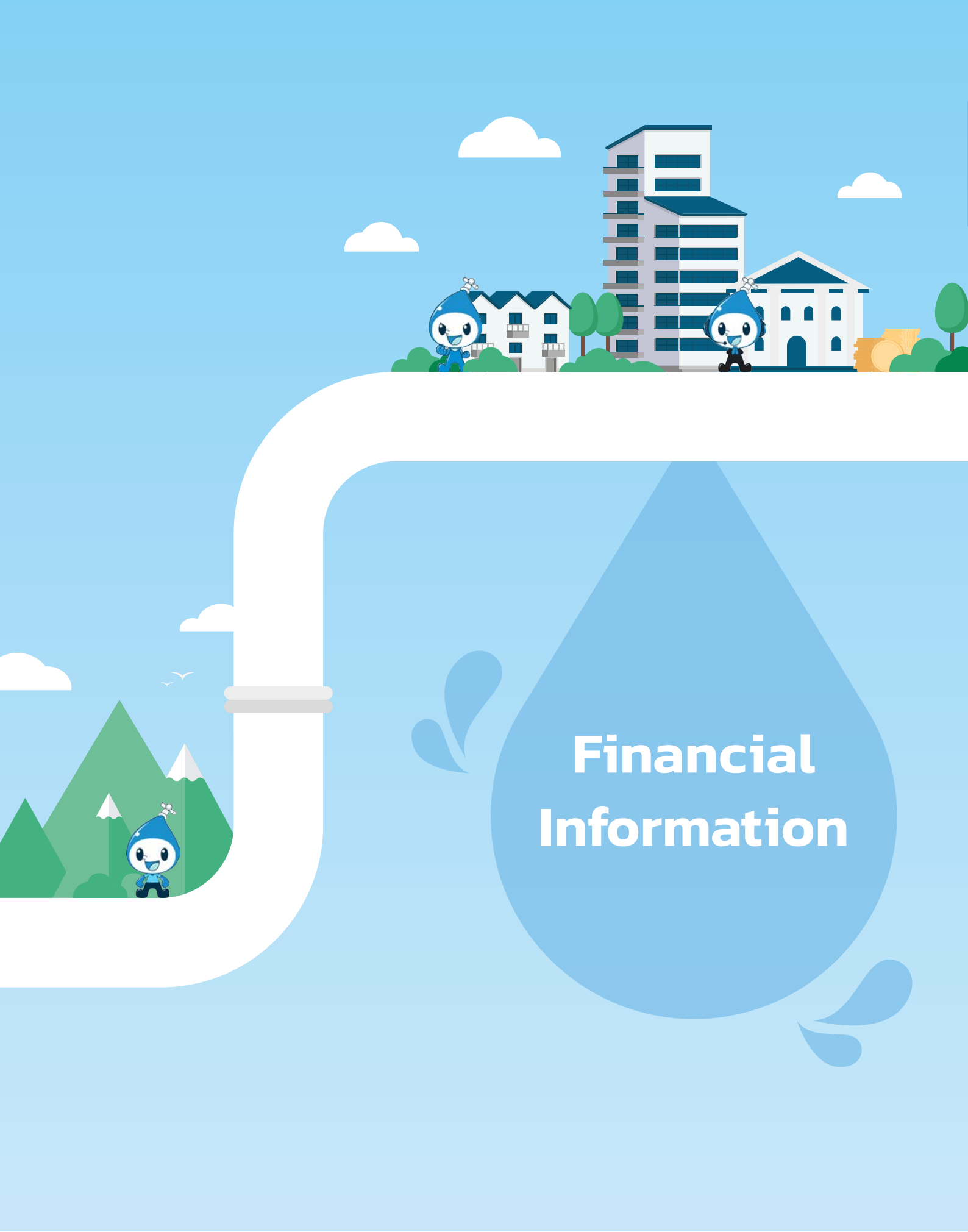
Payment Channels in Case of Overdue

Mobile Application

(Only for all free accounts)

MWA Representative Counter Services

* Able to pay overdue fees



Financial Information

Factors Influencing Financial Status and Performance

The 2022 fiscal year was another challenging year for us amidst the ongoing COVID-19 pandemic, which started in 2019 and has been continuing up to the present. Although the situation has become less severe following greater rates of vaccination and the people's lifestyle changes that enabled normal coexistence with COVID-19 (New Normal), both of which contributed to economic resurgence, the situation still has not returned to pre-pandemic levels. Furthermore, in the first half of 2022 when the overall Thai economy gradually recovered, the new Omicron variant outbreak in December 2021 led the government to deploy strict pandemic control measures once again, thus causing widespread impact on the Thai economy. Those affected included private sector investments, the real estate sector and tourism. Moreover, the global economy showed signs of slowing down as a product of inflation and the prolonged war between Russia and Ukraine, which has been ongoing since February 2022. These situations contributed to a decrease in water fee revenues, which are the Metropolitan Waterworks Authority's primary source of income, and the business sector water revenues were particularly affected. Nevertheless, in the second half of the year, the Thai economy showed signs of improving after the government eased various measures and fully reopened the country as of 1 July 2022 in line with the resolving pandemic situation. Consequently, tourism-related businesses experienced improvements and water revenues began to rise back little by little from among hotels, malls, airports and retail businesses. Meanwhile, for the people who suffered from COVID-19, the Metropolitan Waterworks Authority implemented measures to provide assistance in continuation from 2021 to help provide relief to the suffering of the people by granting fee exemptions for late water bill payments for payments made through payment service providers and charitable contributions in the form of money and drinking water to field hospitals, quarantine centers, temples and other places. In addition, we promoted use of technology to offer conveniences to the public in paying water bills and receiving services through the MWA onMobile application and e-Service website in order to minimize trips to contact MWA branch offices and reduce expenses and risks of contracting COVID-19.

The Metropolitan Waterworks Authority has always committed to the quality treatment, transmission and distribution of water in line with the standards of the World Health Organization (WHO), and we care for water quality from upstream to downstream to ensure that every member of the public in our service areas can have extensive and sufficient access to clean and safe water supply despite today's greater water treatment expenses caused by the crisis of rising energy prices due to the Russo-Ukrainian war, which led to

increased electricity prices, not least mentioning the declining quality of raw water resulting from flooding in multiple areas that increased the Metropolitan Waterworks Authority's raw water quality management expenses. Moreover, we faced additional expenses from fees collected by various agencies by virtue of government acts and ministerial regulations, such as from the Royal Irrigation Department, the Treasury Department, the Department of Highways and the Department of Rural Roads, which inevitably increased the treatment and distribution cost of water supply.

In view of all of the aforementioned factors, the Metropolitan Waterworks Authority recognizes the impacts that the enterprise must encounter. As such, we operate with a business continuity management system and continuously seek opportunities to expand connected businesses to enable the enterprise to withstand changing situations brought about by internal and external factors while still being able to promote the good quality of life of the people by delivering high-quality, clean and safe water supply alongside maintaining the enterprise's financial stability and managing investment and utilization of available resources for maximum effectiveness to achieve continued growth and sustainability for the enterprise.

Key Financial Information

Key Financial Information

Unit: Million baht

Descriptions	2022	2021	2020
Financial Position (Million baht)			
Current Assets	11,431.11	10,356.39	13,653.75
Total Assets	87,211.40	84,158.81	81,337.85
Current Liabilities	5,303.45	4,369.14	3,105.59
Total Liabilities	17,683.05	16,761.08	15,055.32
Owners' Equity	69,528.35	67,397.73	66,282.53
Operating Results (Million baht)			
Total Income	18,490.38	18,435.62	18,044.95
Total Expenses	14,379.98	13,600.33	12,421.99
Net Profits	4,110.40	4,835.29	5,622.96
Financial Ratio			
Net Profit Margin (percent)	22.75	26.77	32.02
Return on Asset (percent)	4.71	5.75	6.91
Return on Equity (percent)	5.91	7.17	8.48
Debt to Equity Ratio (times)	0.25	0.25	0.23
Current Ratio (times)	2.16	2.37	4.40
Average Collection Period (days)	28	30	32

Capital Structure

100 percent of MWA shares are held by Ministry of Finance.

Unit: Million baht

Descriptions	2022	2021	2020
Initial capital	1,192.71	1,192.71	1,192.71
Government budget	7,194.14	7,194.14	7,194.14
Total	**8,386.85**	**8,386.85**	**8,386.85**

Approved Budgets

Unit: Million baht

Approved Budgets	2022	2021	2020
Operating budget	9,059.8	7,790.0	6,985.0
Investment budget	12,261.8	9,461.9	6,200.0
Total	**21,321.6**	**17,251.9**	**13,185.0**

Loan Debts

Unit: Million baht

Loan Debts	2022	2021	2020
Domestic loans	-	-	-
Foreign loans	148.907	258.012	340.188
Total	**148.907**	**258.012**	**340.188**

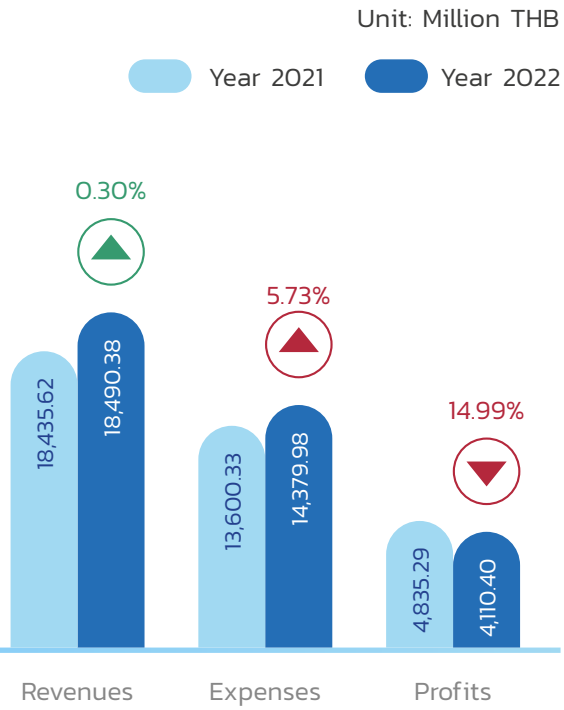
Remittance to Ministry of Finance

Unit: Million baht

Remittance to Ministry of Finance	2022	2021	2020
Remittance to Ministry of Finance	2,172.75	3,522.55	3,413.20

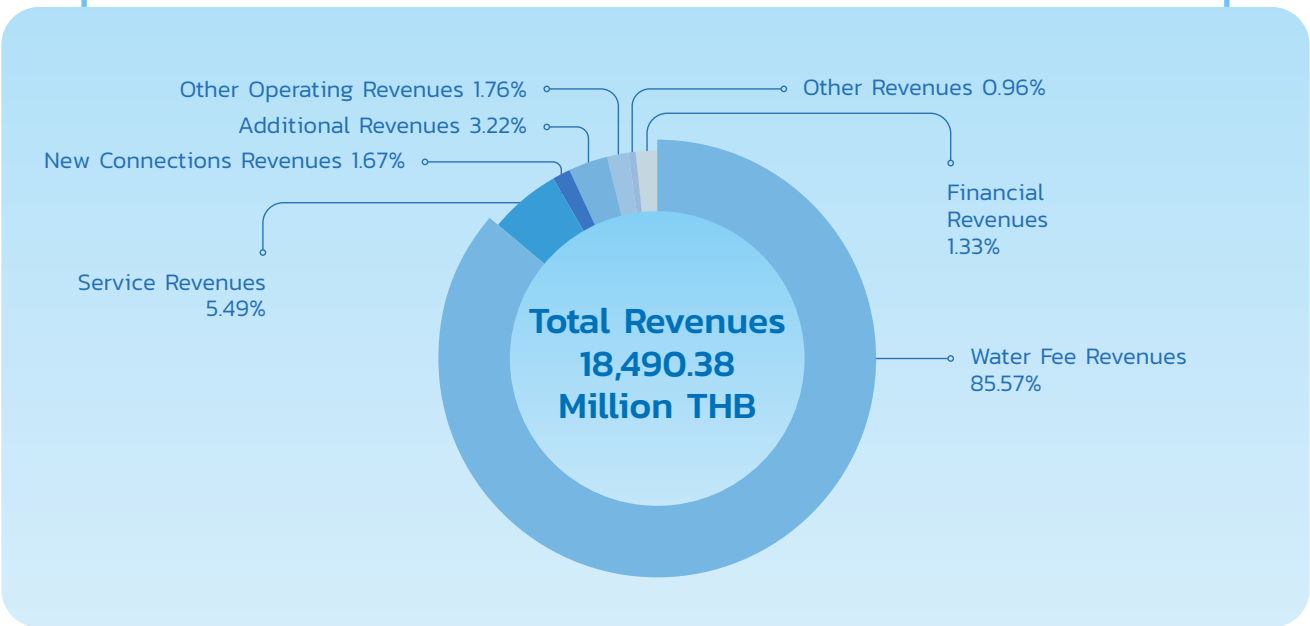
Report of Financial Analysis

For the overall performance in 2022, the Metropolitan Waterworks Authority continued to be affected by the COVID-19 pandemic; the Thai economy began to recover; and the global economy shown signs of slowing down due to inflation following energy price increases. All of these factors contributed to the Metropolitan Waterworks Authority's net profit to equal 4,110.40 million baht or 724.89 million baht or 14.99 percent less than the previous year.



Performance

Revenues



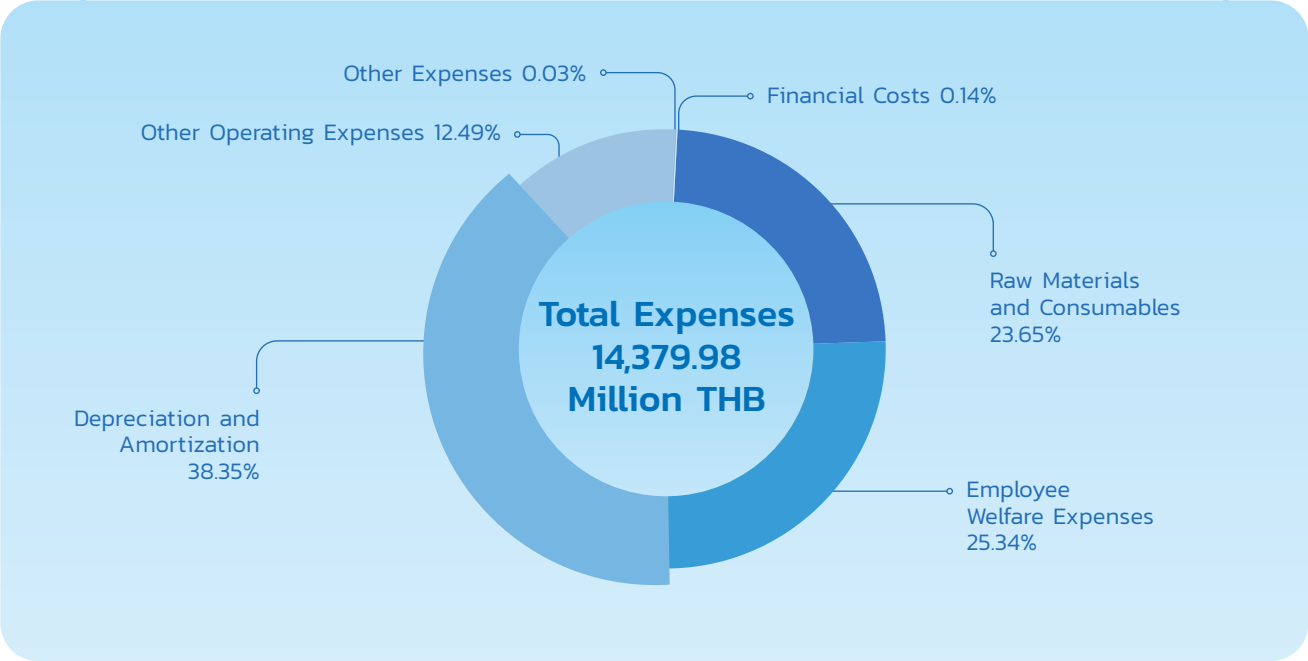
Unit: Million THB

Item	2021	2022	Increased (Decreased)
Revenues	**18,129.52**	**18,244.62**	**115.10**
Water Fee Revenues	15,887.80	15,821.54	(66.26)
Service Revenues	1,007.56	1,016.25	8.69
New Connections Revenues	278.50	308.91	30.41
Additional Revenues	577.07	595.39	18.32
Other Operating Revenues	310.15	325.32	15.17
Other Revenues	68.44	177.21	108.77
Financial Revenues	**306.10**	**245.76**	**(60.34)**
Total	**18,435.62**	**18,490.38**	**54.76**

The Metropolitan Waterworks Authority's total revenues were 18,490.38 million baht or 54.76 million baht or 0.30 percent higher than the previous year. Largely, this was due to increased other revenues and new connections. At the same time, water fee revenues were lower than the previous year by 66.26 million baht, and without considering water discounts from the measures to assist water users affected by the COVID-19 pandemic in the previous year[1], water revenues decreased by 120.85 million baht. For the most part, this occurred as a result of business consumers experiencing impacts from COVID-19 and the government's pandemic control measures and the global economic downturn, which led to a high level of contraction in trade and service businesses. Additionally, many businesses shut down or still have not recovered back to normal. Furthermore, financial revenues contracted by 60.34 million baht due to decreased interest revenue stemming from below-average interest rates in the previous year.

Note: [1] In 2021, there was a measure to reduce water supply fees for residential houses and small businesses (excluding government agencies and state enterprises) by a rate of 10 percent or 481.72 million baht with financial support from a loan under a royal decree authorizing the Ministry of Finance to procure a loan to implement the aforementioned measure by the amount of 427.18 million baht.

Expenses

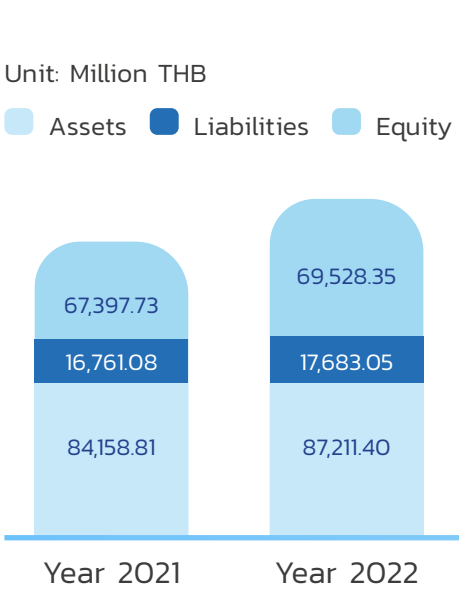


Unit: Million THB

Item	2021	2022	Increased (Decreased)
Expenses	**13,575.51**	**14,360.15**	**784.64**
Raw Materials and Consumables	2,417.16	3,400.95	983.79
Employee Welfare Expenses	3,531.22	3,643.94	112.72
Depreciation and Amortization	5,210.66	5,515.26	304.60
Other Operating Expenses	2,390.90	1,795.29	(595.61)
Other Expenses	25.57	4.71	(20.86)
Financial Costs	**24.82**	**19.83**	**(4.99)**
Total	**13,600.33**	**14,379.98**	**779.65**

The Metropolitan Waterworks Authority's overall expenses were 14,379.98 million baht, higher than the previous year by 779.65 million baht or 5.73 percent. Mostly, this resulted from raw materials and consumables such as the increased cost of raw water in the Eastern Region being charged by the Royal Irrigation Department since January 2022. In addition, chemical and electrical costs were both higher than the previous year, and depreciation and amortization also increased in consequence to pipe price depreciation in line with the policy to expedite pipe replacements to reduce water loss. Meanwhile, other operating expenses decreased.

Financial Position



3.63%

- **Total assets** amounted to 87,211.40 million baht or 3,052.59 million baht higher than the previous year, mostly due to assets pending construction and cash.

5.50%

- **Total assets** amounted to 17,683.05 million baht or 921.97 million baht higher than the previous year. This largely resulted from outstanding raw water fees and government revenues pending remittance to the treasury.

3.16%

- **Equity** was 69,528.35 million baht or 2,130.62 million baht higher as a consequence of increased retained earnings.

Liquidity

As of 30 September 2022, the Metropolitan Waterworks Authority's balance of cash and cash-equivalent transactions was 1,693.03 million baht or an increase by 1,296.13 million baht from 2021 according to the following details:

Unit: Million THB

Item	2021	2022	Cashflow Increased (Decreased)
Net Cash Received from Operating Activities	8,690.57	8,468.99	(221.58)
Net Cash Spent in Investment Activities	(6,570.40)	(4,763.70)	(1,806.70)
Net Cash Spent in Financing Activities	(3,702.45)	(2,409.16)	(1,293.29)
Net Cash and Cash-equivalent Transactions Increased (Decreased)	**(1,582.28)**	**1,296.13**	**2,878.41**
Cash and Cash-equivalent Transactions at Start of Period	1,979.18	396.90	(1,582.28)
Cash and Cash-equivalent Transactions at End of Period	396.90	1,693.03	1,296.13

- **Net cash revenue from operating activities** was 8,468.99 million baht or decreased by 221.58 million baht mostly due to higher operating expenses.
- **Net cash spent in investment activities** was 4,763.70 million baht or decreased by 1,806.70 million baht. For the most part, this occurred due to less cash spending in investment in immovable properties when compared to the previous year.
- **Net cash spent in financing activities** was 2,409.16 million baht or decreased by 1,293.29 million baht, mostly as a result of decreased remittance of funds to the treasury.

Audit Committee's Report

The Audit Committee of the Metropolitan Waterworks Authority was appointed by the Board of Directors of the Metropolitan Waterworks Authority and is made up of senior directors with knowledge, competence and experience consistent with the essential capabilities and knowledge (skills matrix) of the Audit Committee. In the 2022 fiscal year, the Board of Directors of the Metropolitan Waterworks Authority issued an order to appoint 3 Audit Committees as follows:

1. Board of Directors of the Metropolitan Waterworks Authority Order No. 6/2564 was issued on 7 December 2021 specifying a term in office lasting from 26 November 2021 to 24 March 2022 for the following:

   1) Mr. Sanya Saengpumpong — Chairman
   2) General Singthong Meethong — Member
   3) Mr. Krisada Kaweeyarn — Member

2. Board of Directors of the Metropolitan Waterworks Authority Order No. 2/2565 was issued on 31 March 2022 specifying a term in office lasting from 25 March 2022 to 25 July 2022 for the following:

   1) Mr. Boonchai Charassangsomboon — Chairman
   2) Mr. Sanya Saengpumpong — Member
   3) Mr. Krisada Kaweeyarn — Member

3. Board of Directors of the Metropolitan Waterworks Authority Order No. 4/2565 was issued on 26 July 2022 specifying a term in office lasting from 26 July 2022 to present for the following:

   1) Mr. Boonchai Charassangsomboon — Chairman
   2) Mr. Anuchit Trakulmututa — Member
   3) Mr. Krisada Kaweeyarn — Member

Accordingly, the assistant governor (Internal Audit Office) is to serve as the secretary of the Audit Committee.

In the 2022 fiscal year, the Audit Committee held 7 meetings in total within the attendance of high-ranking executives, the internal auditor and representatives of the State Audit Office of the Kingdom of Thailand according to related agendas to hold discussions and exchange opinions, and a meeting report was submitted to the Board of Directors of the Metropolitan Waterworks Authority for every meeting with the essential contents summarized as follows:

Financial Report

The Metropolitan Waterworks Authority's financial report for the 2021 fiscal year was audited along with the financial statements for the 1st and 2nd quarters of the 2022 fiscal year, and discussions were held with executives in finance to make inquiries and express opinions regarding important issues impacting financial reporting to ensure that financial reports were prepared correctly and appropriately in essential content and in line with financial reporting standards in addition to disclosing important information sufficiently and showing transactions in a beneficial manner for the users of the financial reports.

The Audit Committee held a special meeting with the representatives of the State Audit Office of the Kingdom of Thailand on 1 occasion without the attendance of Management to discuss matters relating to performance, discoveries from the auditing of financial reports and other related matters. In addition, the total audit fee was 2.50 million baht.

Risk Management, Internal Control and Good Corporate Governance

Audits were conducted according to the risk management process to ensure confidence that risk management can deal with risks that might affect the enterprise's ability to accomplish its objectives. In doing so, the effectiveness and suitability of the risk management process were regularly reviewed and audited.

The effectiveness, efficiency and sufficiency of the internal control system were audited with consideration based on the audit results of the Internal Audit Office and the representatives of the State Audit Office of the Kingdom of Thailand, including performance reports about the directors' internal control on internal control actions to ensure compliance with the requirements of the Ministry of Finance. Additionally, reports of significant discoveries and corrective guidelines were presented to the Board of Directors of the Metropolitan Waterworks Authority.

Work performance was audited according to the related laws, regulations and specifications to ensure consistency with the principles of good governance, and recommendations were made to responsible departments to make further improvements.

The Enterprise's Performance According to the State Enterprise Assessment: SE-AM (Core Business Enablers)

The various activities of the enterprise were audited to ensure confidence that the Metropolitan Waterworks Authority managed affairs according to the Core Business Enablers for state enterprises and to provide additional opinions/recommendations to increase value and systematically enhance the operations of the Metropolitan Waterworks Authority.

Oversight and Internal Audit Improvement

The charter and internal audit manual were considered, reviewed and improved along with the independence of the Internal Audit Office. In addition, the 5-year long-term audit plan and annual audit plan were approved along with the internal audit effectiveness improvement plan, and audit reports were reviewed and additional recommendations and opinions were provided in addition to the recommendations of the Internal Audit Office. In addition, significant issues were monitored and resolved, and we also considered personnel recruitment plans, training plans and the sufficiency and suitability of available human resources and other resources of the Internal Audit Office. We also approved guidelines for developing and retaining talented personnel or people who were awarded with professional certificates to support the self-improvement of internal auditors in favor of professional certification in internal auditing or other related fields. Moreover, we supported the adoption of digital technology to support internal audit work to enhance work efficiency.

Maintaining Audit Committee Quality

We considered, reviewed and improved the charter and work manual of the Audit Committee and reviewed the skills matrix and work performance of the Audit Committee on a whole-committee and individual basis in line with the good practice guidelines of the State Enterprise Policy Office under the Ministry of Finance, specified the Audit Committee development plan and reported internal audit performance to the Board of Directors of the Metropolitan Waterworks Authority on a quarterly and annual basis, in addition to attending the Advanced Audit Committee Program (AACP) organized by the Institute of Thai Directors (IOD).

In conclusion, the Audit Committee performed its duties by using its knowledge and abilities and had sufficient independence to carry out its tasks according to the responsibilities specified in the Audit Committee's charter and work manual, and the Audit Committee's opinions are that the audited financial reports show essential information that was reliable and consistent with financial reporting standards and that risks were managed to an acceptable level, that work activities had sufficient internal control and good governance and fully complied with related laws, regulations and specifications. Moreover, we have provided useful recommendations that would systematically add value to the Metropolitan Waterworks Authority.

(Signed) *Boonchai Charassangsomboon*

(Mr. Boonchai Charassangsomboon)
Chairman, MWA Audit Committee

Note: The Metropolitan Waterworks Authority Audit Committee (according to the Board of Directors of the Metropolitan Waterworks Authority Order No. 4/2565 as of 26 July 2022) considered and approved the MWA financial statement for the year ended 30 September 2022 (approved by the State Audit Office of the Kingdom of Thailand) in the Meeting No. 2/2566 on 4 April 2023.

Report of Board of Directors' Responsibility for the 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 State Audit Office of the Kingdom of Thailand.

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. Nisit Jansomwong)
Chairman, MWA Board of Directors

(TRANSLATION)

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, 2022, 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, 2022, 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 MWA in accordance with the ethical requirements set out in the State Audit Standards issued by the State Audit Commission and the Code of Ethics for Professional Accountants including Independence Standards issued by 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 State Audit Standards and the Code of Ethics for Professional Accountants. 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 State Audit Office of the Kingdom of Thailand expects to receive the annual report 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 MWA'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 MWA or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the MWA's financial reporting process.

Auditor's Responsibilities for the audit of the 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 MWA'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 MWA'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 MWA 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) *Chittina Siriwatcharakul*

(Mrs. Chittina Siriwatcharakul)

Director of Financial and Procurement Audit Office No.17

(Signed) *Piyarat Tangkanjanapas*

(Ms. Piyarat Tangkanjanapas)

State Auditor, Senior Professional Level

State Audit Office of the Kingdom of Thailand
March 8, 2023

METROPOLITAN WATERWORKS AUTHORITY

STATEMENTS OF FINANCIAL POSITION

AS OF SEPTEMBER 30, 2022

Unit : Baht

	Note	2022	2021
ASSETS			
Current assets			
Cash and cash equivalents	*4.1, 6.1*	1,693,027,444	396,897,900
Trade accounts receivable and other current receivables	*4.2, 6.2*	1,259,917,540	1,457,199,227
Inventories and supplies	*4.3, 6.3*	162,095,163	161,305,260
Investment in current financial assets	*6.4*	6,874,898,049	6,624,586,425
Current special-purpose deposits at financial institutions	*6.5*	1,344,397,370	1,504,987,026
Other current assets	*6.6*	96,777,943	211,410,630
Total current assets		11,431,113,509	10,356,386,468
Non-current assets			
Investment in non-current financial assets	*6.7*	15,439,522,069	15,258,031,120
Non-current special-purpose deposits at financial institutions	*6.8*	164,991,524	-
Advance payment	*6.9*	2,878,640,534	2,623,311,278
Assets under construction	*4.4, 6.10*	9,804,801,630	8,738,232,539
Property, plant and equipment	*4.5, 6.11*	46,996,372,489	46,708,024,036
Right-of-use assets	*4.12, 6.12*	334,560,483	312,735,806
Intangible assets	*4.6, 6.13*	138,931,466	139,653,203
Other non-current assets		22,463,881	22,437,527
Total non-current assets		75,780,284,076	73,802,425,509
Total assets		87,211,397,585	84,158,811,977

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

METROPOLITAN WATERWORKS AUTHORITY

STATEMENTS OF FINANCIAL POSITION

AS OF SEPTEMBER 30, 2022

Unit : Baht

	Note	2022	2021
LIABILITIES AND EQUITY			
Current liabilities			
Trade accounts payable		1,736,261,565	1,491,558,217
Current portion of long-term loans	*6.14*	74,453,703	86,003,870
Current portion of lease liabilities	*4.12, 6.15*	174,188,022	136,270,937
Accrual remittance to the Ministry of Finance	*6.16*	1,182,600,000	968,350,000
Other current liabilities	*6.17*	2,135,948,867	1,686,952,226
Total current liabilities		5,303,452,157	4,369,135,250
Non-current liabilities			
Long-term loans	*6.14*	74,453,703	172,007,741
Lease liabilities	*4.12, 6.15*	242,366,856	238,309,593
Employee benefit obligations	*4.11, 6.18*	2,575,034,820	2,860,168,396
Provision on litigation	*6.19*	38,900,356	16,357,866
Water usage guarantee		1,381,014,818	1,425,480,293
Deferred revenues	*4.7, 6.20*	7,371,707,517	7,124,252,864
Unearned income		129,423,667	96,965,623
Other non-current liabilities	*6.21*	566,697,504	458,404,235
Total non-current liabilities		12,379,599,241	12,391,946,611
Total liabilities		17,683,051,398	16,761,081,861

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

METROPOLITAN WATERWORKS AUTHORITY

STATEMENTS OF FINANCIAL POSITION

AS OF SEPTEMBER 30, 2022

Unit : Baht

	Note	2022	2021
Equity			
Capital	*6.22*	8,386,847,139	8,386,847,139
Unapporpriated retained earnings		61,349,332,391	59,625,929,029
Other components of equity		(207,833,343)	(615,046,052)
Total equity		69,528,346,187	67,397,730,116
Total liabilities and equity		87,211,397,585	84,158,811,977

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

(Signed) *Manit Panaim*

(Mr. Manit Panaim)

Governor

(Signed) *Anoottaree Prasertchai*

(Miss Anoottaree Prasertchai)

Director of Accounting Department

METROPOLITAN WATERWORKS AUTHORITY

STATEMENTS OF INCOME

FOR THE YEARS ENDED SEPTEMBER 30, 2022

Unit : Baht

	Note	2022	2021
Revenues			
Water sales		15,821,539,088	15,887,795,673
Water meter fees		1,016,249,199	1,007,564,675
Tab water connection fees		308,908,834	278,499,371
Work contract revenues		595,394,124	577,065,918
Other operating income		325,325,286	310,154,011
Other revenues		177,211,220	68,440,954
Total Revenues		18,244,627,751	18,129,520,602
Expenses			
Finished goods and work in process increase (decrease)		197,742	152,191
Work performed by the entity and capitalized		(46,292,448)	(46,424,875)
Raw materials and consumables used	*6.23*	3,400,953,065	2,417,164,352
Directors remuneration	*6.24*	32,959,795	21,309,862
Employee benefit expenses		3,643,945,639	3,531,216,931
Depreciation and amortization expenses		5,515,261,471	5,210,661,561
Other operating expenses	*6.25*	1,808,418,876	2,415,856,083
Other expenses		4,705,890	25,565,873
Total Expenses		14,360,150,030	13,575,501,978
Profit from operating		3,884,477,721	4,554,018,624
Finance income		245,757,259	306,096,073
Finance costs	*6.26*	(19,831,618)	(24,823,512)
Profit for the year		4,110,403,362	4,835,291,185

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

METROPOLITAN WATERWORKS AUTHORITY

STATEMENTS OF COMPREHENSIVE INCOME

FOR THE YEARS ENDED SEPTEMBER 30, 2022

Unit : Baht

	Note	2022	2021
Profit for the year		4,110,403,362	4,835,291,185
Other comprehensive income			
Items that will not be reclassified to profit or loss in subsequent periods			
Actuarial Gains (Losses)	*6.18*	395,133,908	(4,906,016)
Items that will be reclassified to profit or loss in subsequent periods			
Gains (Losses) on cash flow hedge		12,078,801	12,466,669
Other comprehensive income for the year		407,212,709	7,560,653
Total comprehensive income for the year		4,517,616,071	4,842,851,838

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, 2022

Unit : Baht

	Initial Capital	Government Budget	Total Capital	Unappropriated retained earnings	Other components of equity: Actuarial Gains (Losses)	Other components of equity: Cash flow hedge reserve	Total equity
Balance as of October 1, 2020	1,192,708,301	7,194,138,838	8,386,847,139	58,446,250,201	(550,567,037)	-	66,282,530,303
The effect of changes in accounting errors	-	-	-	(13,714,357)	-	(72,039,668)	(85,754,025)
Balance after Adjustment	1,192,708,301	7,194,138,838	8,386,847,139	58,432,535,844	(550,567,037)	(72,039,668)	66,196,776,278
Remittance to Ministry of Finance	-	-	-	(3,641,898,000)	-	-	(3,641,898,000)
Profit for the year	-	-	-	4,835,291,185	-	-	4,835,291,185
Total comprehensive income for the year	-	-	-	-	(4,906,016)	12,466,669	7,560,653
Balance as of September 30, 2021	1,192,708,301	7,194,138,838	8,386,847,139	59,625,929,029	(555,473,053)	(59,572,999)	67,397,730,116
Balance as of October 1, 2021	1,192,708,301	7,194,138,838	8,386,847,139	59,625,929,029	(555,473,053)	(59,572,999)	67,397,730,116
Remittance to Ministry of Finance	-	-	-	(2,387,000,000)	-	-	(2,387,000,000)
Profit for the year	-	-	-	4,110,403,362	-	-	4,110,403,362
Total comprehensive income for the year	-	-	-	-	395,133,908	12,078,801	407,212,709
Balance as of September 30, 2022	1,192,708,301	7,194,138,838	8,386,847,139	61,349,332,391	(160,339,145)	(47,494,198)	69,528,346,187

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

METROPOLITAN WATERWORKS AUTHORITY
STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2022

Unit : Baht

	2022	2021
Cash flows from operating activities		
Profit for the year	4,110,403,362	4,835,291,185
Adjustment of net income to cash received (paid)		
From operating activities		
Depreciation	5,465,584,196	5,158,489,995
Amortization - intangible assests	49,677,275	52,171,566
Allowance for obsolete inventories	-	948,731
Impairment loss	(41,471,719)	(8,494,342)
(Gains) losses from disposal of assets	(6,480,327)	22,918,373
Gains from disposal of obsolete materials and supplies	(21,315,664)	(21,889,546)
Gains from terminated leases	(62,408)	-
Finance costs	19,831,618	24,823,512
Finance income	(245,757,259)	(306,096,073)
Deferred revenues from donated assets	(2,997,860)	(2,972,073)
Deferred revenues from tab water connection fees	(289,166,474)	(263,626,784)
Deferred revenues from work contract revenues	(557,746,670)	(535,758,649)
Deferred revenues from pipeslines-MOU	(46,755,499)	(43,804,758)
Provision for employee benefit obligations	225,258,362	230,751,979
Prosecution losses	27,511,175	-
Operating income before changes in operating assets and liabilities	8,686,512,108	9,142,753,116
Operating assets (increase) decrease		
Trade accounts receivable and other current receivables	201,205,444	8,649,670
Inventories	217,906,415	298,050,560
Other current assets	75,160,621	(75,166,564)
Other non-current assets	164,994	(140,329)
Operating liabilities increase (decrease)		
Trade accounts payable	(2,257,440,231)	(2,125,635,152)
Accrued bonus expense	(62,749,446)	(81,966,680)
Other current liabilities	497,608,788	670,717,681
Provision for employee benefits	(115,258,029)	(115,475,623)
Provisions for litigation	(4,968,686)	-
Water usage guarantee	(44,465,475)	(81,583,786)
Deferred revenues	1,101,336,490	947,019,547
Unearned income-MOU	68,997,908	46,305,741
Other non-current liabilities	104,906,992	57,196,294
Net cash from operating activities	8,468,917,893	8,690,724,475

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

METROPOLITAN WATERWORKS AUTHORITY

STATEMENTS OF CASH FLOWS

FOR THE YEARS ENDED SEPTEMBER 30, 2022

Unit : Baht

	2022	2021
Cash flows from investing activities		
Cash inflow (outflow) from investments in current financial assets	(250,000,000)	1,701,506,000
Cash inflow (outflow) from Current special-purpose deposits at financial institutions	160,600,000	(30,210,000)
Payments of Investment in non-current financial assets	(140,000,000)	(2,350,000,000)
Payments of Non-current special-purpose deposits at financial institutions	(165,000,000)	-
Interest received	285,560,741	351,010,453
Proceeds from disposals of assets	62,785,888	36,785,916
Proceeds from disposal of obsolete materials and supplies	22,532,665	23,247,352
Payments of fixed assets acquisition	(4,740,177,518)	(6,302,241,001)
Advance payment for lease agreement	-	(500,000)
Net cash used in investing activities	(4,763,698,224)	(6,570,401,280)
Cash flows from financing activities		
Repayment on borrowing	(77,588,729)	(82,354,975)
Installment payment on lease	(144,021,253)	(77,358,434)
Finance costs	(14,802,238)	(20,188,786)
Remittance to Ministry of Finance	(2,172,750,000)	(3,522,548,000)
Net cash used in financing activities	(2,409,162,220)	(3,702,450,195)
Net increase (decrease) in cash and cash equivalents	1,296,057,449	(1,582,127,000)
Allowance for expected credit losses (increase) decrease	72,095	(150,384)
Cash and cash equivalents at the beginning of the period	396,897,900	1,979,175,284
Cash and cash equivalents at the ending of the period	1,693,027,444	396,897,900
Supplementary cash flow information		
Invested in fixed assets on payables	645,138,277	978,121,051

The accompanying notes are an integral part of these financial

METROPOLITAN WATERWORKS AUTHORITY

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEARS ENDED SEPTEMBER 30, 2022

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1. GENERAL INFORMATION

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 including accounting interpretations and guidelines promulgated by the Federation of Accounting Professions and announcements Department of Business Development "Definition of the abbreviated components required in the financial statements (No. 3) B.E. 2562" dated December 26, 2019.

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 accounting standards, financial reporting standards and interpretation issued by the Federation of Accounting Professions which effective for fiscal years beginning on or after January 1, 2021. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards, with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards. The adoption of these financial reporting standards does not have any significant impact on MWA's financial statements.

3.2 Financial reporting standards that are not yet effective

During the period, the Federation of Accounting Professions issued a number of revised financial reporting standards (Revised 2021), which are effective for fiscal years beginning on or after January 1, 2022. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards. The management of MWA is currently evaluating the impact of these standards to the financial statements in the year when they are adopted.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

4.1 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.

4.2 TRADE ACCOUNTS RECEIVABLE AND OTHER CURRENT RECEIVABLES

Trade accounts receivable and other current receivables measure initially at fair value and measure later with the amortized cost price.

Trade accounts receivable and accrued revenue of water sales, meter fees and raw waters, MWA uses a simple method for calculating allowance for expected credit losses over the life of trade accounts receivable. The expected loss rate is calculated at the end of each reporting period.

Other current receivables, MWA calculates the allowance for expected credit losses by considering the accounts receivable that expected to be unable to collect by estimated from the amount of outstanding debt at the end of the period according to payment history and the current financial status of the accounts receivable, including considering the percentage according to the accounts receivable aging of the outstanding balance at the end of the period.

Increases and decreases in allowance for expected credit losses are expensed in the period that occurred.

4.3 INVENTORIES

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

4.3.1 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 will have an allowance for loss in the whole amount.

Obsolete materials by dismantling of assets valued at book values.

4.3.2 Finished Goods comprises of drinkable bottle are valued cost moving average method.

4.4 ASSETS UNDER CONSTRUCTION

All costs related directly to qualifying assets and those assets under construction are recorded at cost. When the construction is completed and in the condition necessary for it to be capable of operating in the manner of its intended use, its cost will be transferred to property, plant and equipment.

4.5 PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are stated at cost at the date of purchase or acquisition. or the completion of constructions, the expenses incurred to keep the asset in a ready-to-use condition less accumulated depreciation.

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

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

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

4.6 INTANGIBLE ASSETS

Intangible assets include 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.

4.7 DEFERRED REVENUES

4.7.1 The asset from donation account is recorded together with the Deferred revenue from donation. They are recognized as income at a rate consistent with depreciation over the useful life of that asset for donation assets in operations.

4.7.2 Deferred revenue is the money that the MWA charges from the applicant to use the water supply for the installation of new water supply and the laying of pipes. The ownership of assets, maintenance and repair belong to the MWA. Such items are presented as deferred income. They are recognized as income at a rate consistent with depreciation over the useful life of that asset.

4.8 REVENUES

MWA recognizes revenue when it fulfills its obligations to customers by delivery goods or services promised to customers in an amount that reflects the expected consideration to be entitled to the exchange of goods or

services the amount of revenue recognized is the amount allocated to the performance obligation. For a contract of delivery of goods, it is an obligation that must be fulfilled at a certain point in time. Service delivery are obligations that must be completed over a period of time at the end of the reporting period. MWA recognizes revenue by measuring the progression of the performance obligation.

4.9 BORROWING COSTS

Borrowing costs consist of interest expense, fee, all of the finance charges and exchange differences arising from foreign currency. Adjustment of the cost of interest expense recognized as an expense in the whole amount. Except for borrowing costs related to qualifying fixed assets and assets under construction are capitalized as part of the constructions cost. When constructions are completed, such borrowing costs will be recorded as the expenses.

Interest expense from financial liabilities at amortised cost is calculated using the effective interest method and recognized on an accrual basis.

4.10 FOREIGN CURRENCY TRANSACTIONS

Foreign currency transactions in foreign currencies are converted into Thai Baht by using the exchange rates prevailing at the transaction date. Monetary assets and liabilities denominated in foreign currencies at the fiscal year-end date are converted into Thai Baht at the average buying or selling rate announced by the Bank of Thailand at such date. Gains or losses on exchange rate arising on settlements and conversion are recognized as revenue or expense.

4.11 EMPLOYEE BENEFITS

Recognition and measurement

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

4.11.2 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 as expenses when incurred.

Defined benefit plans comprised of 4 projects as follows:

1. The pension fund MWA established MWA employee pension fund on October 28, 1976 with the objective of helping the employees in the case of vacating office without fault equal to the product of working age calculated annually by the last month's salary. MWA contribution to the fund on a monthly basis at the rate of 10 % of salary of MWA pension fund members.

2. The remuneration on retirement preferences is 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.

On September 25, 2019, the State Enterprise Labor Relations Committee announced The Government Gazette, the minimum standard of employment conditions in state enterprises (Issue 4), issued with the approval of the Cabinet on September 10, 2019 which stipulates that employees who have worked continuously for 20 years or more to receive benefits not less than the last 400 days' wage rate.

3. 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.

4. The project of the awards age 60 years or retirement is a project of the awards when employees age 60 years or retirement.

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.

4.11.3 Other long-term employee benefits plan is a project of the awards when employees work 25 years.

MWA uses actuarial estimation techniques in the same method as for termination of employment benefit plans. It is recognized as a liability in the statement of financial position. Actuarial expenses and gains (losses) are recognized in the income statement in the period in which they are incurred.

4.12 Leases

At inception of contract, MWA assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

MWA as a lessee

MWA applied a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. At the commencement date of the lease (i.e. the date the underlying asset is available for use), MWA recognizes right-of-use assets representing the right to use underlying assets and lease liabilities based on lease payments.

Right-of-use assets

Right-of-use assets are measured at cost, less accumulated depreciation, any accumulated impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities initially recognized , initial direct costs incurred, and lease payments made at or before the commencement date of the lease less any lease incentives received.

Depreciation of right-of-use assets are calculated by reference to their costs, on the straight-line basis over the shorter of their estimated useful lives and the lease term.

Land	3 - 30	years
Building and improvements	36	months
Machinery and equipment	13 - 36	months
Office –equipments	36	months
Vehicles	60	months

If ownership of the leased asset is transferred to MWA at the end of the lease term or the cost reflects the exercise of a purchase option, depreciation is calculated using the estimated useful life of the asset.

Lease liabilities

Lease liabilities are measured at the present value of the lease payments to be made over the lease term. The lease payments include fixed payments less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be payable under residual value guarantees. Moreover, the lease payments include the exercise price of a purchase option reasonably certain to be exercised by MWA and payments of penalties for terminating the lease, if the lease term reflects MWA exercising an option to terminate. Variable lease payments that do not depend on an index or a rate are recognized as expenses in the period in which the event or condition that triggers the payment occurs.

MWA discounted the present value of the lease payments by the interest rate implicit in the lease or MWA's incremental borrowing rate. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a change in the lease term, a change in the lease payments or a change in the assessment of an option to purchase the underlying asset.

Short-term leases and leases of low-value assets

A lease that has a lease term less than or equal to 1 2 months from commencement date or a lease of low-value assets is recognized as expenses on a straight-line basis over the lease term.

4.13 Financial instruments

MWA initially measures financial assets at its fair value plus, in the case of financial assets that are not measured at fair value through profit or loss, transaction costs. However, trade receivables, that do not contain a significant financing component, are measured at the transaction price.

Classification and measurement of financial assets

Financial assets are classified, at initial recognition, as to be subsequently measured at amortised cost, fair value through other comprehensive income ("FVOCI"), or fair value through profit or loss ("FVTPL"). The classification of financial assets at initial recognition is driven by MWA's business model for managing the financial assets and the contractual cash flows characteristics of the financial assets.

Financial assets at amortised cost

MWA measures financial assets at amortised cost if the financial asset is held in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Financial assets at amortised cost are subsequently measured using the effective interest rate ("EIR") method and are subject to impairment. Gains and losses are recognized in profit or loss when the asset is derecognized, modified or impaired.

Classification and measurement of financial liabilities

Except for derivative liabilities, at initial recognition MWA's financial liabilities are recognized at fair value net of transaction costs and classified as liabilities to be subsequently measured at amortised cost using the EIR method. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the EIR amortization process. In determining amortised cost, MWA takes into account any fees or costs that are an integral part of the EIR. The EIR amortization is included in finance costs in profit or loss.

Derecognition of financial instruments

A financial asset is primarily derecognized when the rights to receive cash flows from the asset have expired or have been transferred and either MWA has transferred substantially all the risks and rewards of the asset, or MWA has neither transferred nor retained substantially all the risks and rewards of the asset but has transferred control of the asset.

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in profit or loss.

Impairment of financial assets

MWA recognizes an allowance for expected credit losses ("ECLs") for all debt instruments not held at FVTPL. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that MWA expects to receive, discounted at an approximation of the original effective interest rate.

For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure (a lifetime ECL).

MWA considers a significant increase in credit risk to have occurred when contractual payments are more than 30 days past due and considers a financial asset in default when contractual payments are 90 days past due.

However, in certain cases, MWA may also consider a financial asset to have a significant increase in credit risk and to be in default using other internal or external information, such as credit rating of issuers.

For trade receivables and Accrued revenue of water sales, meter fees and raw waters, MWA applies a simplified approach in calculating ECLs. Therefore, MWA does not track changes in credit risk, but instead recognises a loss allowance based on lifetime ECLs at each reporting date. It is based on its historical credit loss experience and adjusted for forward-looking factors specific to the debtors and the economic environment.

A financial asset is written off when there is no reasonable expectation of recovering the contractual cash flows.

Offsetting of financial instruments

Financial assets and financial liabilities are offset, and the net amount is reported in the statement of financial position if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

4.14 Derivatives and hedge accounting

MWA uses derivatives, cross currency swaps, to hedge its foreign currency risks.

Derivatives are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently remeasured at fair value. The subsequent changes are recognized in profit or loss unless the derivative is designated and effective as a hedging instrument under cash flow hedge. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Derivatives are presented as non-current assets or non-current liabilities if the remaining maturity of the instrument is more than 12 months and it is not due to be realized or settled within 12 months. Other derivatives are presented as current assets or current liabilities.

Hedge accounting

For the purpose of hedge accounting, hedge is classified as cash flow hedges when hedging the exposure to a variability in cash flows that is either attributable to a particular risk associated with a recognized asset or liability or a highly probable forecast transaction.

At the inception of a hedging relationship, MWA formally designates and documents the hedging relationship to which it wishes to apply hedge accounting and the risk management objective and strategy for undertaking the hedge.

The documentation, at the inception of the hedge and on an ongoing basis, includes identification of the hedging instrument, the hedged item, the nature of the risk being hedged and how MWA will assess whether the hedging relationship meets the hedge effectiveness requirements, including analysis of the sources of hedge ineffectiveness and how the hedge ratio is determined.

A hedging relationship qualifies for hedge accounting if it meets all the following hedge effectiveness requirements:

- There is 'an economic relationship' between the hedged item and the hedging instrument.

- The effect of credit risk is not the dominant factor in the value changes that result from that economic relationship.

- The hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that MWA actually hedges and the quantity of the hedging instrument that MWA actually uses to hedge that quantity of hedged item.

Hedges that meet all the qualifying criteria for hedge accounting are accounted for, as described below:

Cash flow hedges

The effective portion of the gain or loss on the hedging instrument is recognized in other comprehensive income in the cash flow hedge reserve, while any ineffective portion is recognized immediately in profit or loss. The cash flow hedge reserve is adjusted to the lower (in absolute amounts) of the cumulative gain or loss on the hedging instrument and the cumulative change in fair value of the hedged item.

The way cash flow hedge reserve accumulated in other comprehensive income are subsequently accounted for, depends on the nature of the underlying hedged transaction. If the hedged transaction subsequently results in the recognition of a non-financial item, the reserve accumulated in equity is removed from the separate component of equity and included in the initial cost or other carrying amount of the hedged asset or liability. This is not a reclassification adjustment and is not recognized in other comprehensive income for the period. For any other cash flow hedges, the reserve accumulated in other comprehensive income is subsequently reclassified to profit or loss as a reclassification adjustment in the same period which the hedged cash flows affect profit or loss.

If cash flow hedge accounting is discontinued, the cash flow hedge reserve accumulated in other comprehensive income must remain in equity if the hedged future cash flows are still expected to occur. Otherwise, the reserve will be immediately reclassified to profit or loss as a reclassification adjustment. After discontinuation, once the hedged cash flow occurs, the way the reserve remaining in equity is accounted for depends on the nature of the underlying transaction as described above.

4.15 Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between buyer and seller (market participants) at the measurement date. MWA applies a quoted market price in an active market to measure their assets and liabilities that are required to be measured at fair value by relevant financial reporting standards. Except in case of no active market of an identical asset or liability or when a quoted market price is not available, MWA measures fair value using valuation technique that are appropriate in the circumstances and maximizes the use of relevant observable inputs related to assets and liabilities that are required to be measured at fair value.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy into three levels based on categorize of input to be used in fair value measurement as follows:

- Level 1 Use of quoted market prices in an active market for such assets or liabilities.

- Level 2 Use of other observable inputs for such assets or liabilities, whether directly or indirectly.

- Level 3 Use of unobservable inputs such as estimates of future cash flows.

At the end of each reporting period, MWA determines whether transfers have occurred between levels within the fair value hierarchy for assets and liabilities held at the end of the reporting period that are measured at fair value on a recurring basis.

5. 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:

5.1 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.

5.2 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.

5.3 LITIGATION

The MWA has recorded provisions on litigation for cases which have considered the status of the cases and are expected to bear liability. As for the liabilities that may arise from being prosecuted for damages. In which the management has discretion in an evaluation of a lawsuit that has been prosecuted and is confident that no damages will occur, such provisions will not be recorded at the date of the financial statements.

5.4 ALLOWANCE FOR EXPECTED CREDIT LOSSES OF TRADE RECEIVABLES AND ACCRUED REVENUE OF WATER SALES

In determining an allowance for expected credit losses of trade receivables and accrued revenue of water sales, the management needs to make judgement and estimates based upon, among other things, past collection history, aging profile of outstanding debts and the forecast economic condition for groupings of various customer segments with similar credit risks. MWA's historical credit loss experience and forecast economic conditions may also not be representative of whether a customer will actually default in the future.

5.5 LEASES

Determining the lease term with extension and termination options - MWA as a lessee.

In determining the lease term, the management is required to exercise judgement in assessing whether MWA is reasonably certain to exercise the option to extend or terminate the lease considering all relevant facts and circumstances that create an economic incentive for MWA to exercise either the extension or termination option.

Estimating the incremental borrowing rate - MWA as a lessee.

MWA cannot readily determine the interest rate implicit in the lease, therefore, the management is required to exercise judgement in estimating its incremental borrowing rate to discount lease liabilities. The incremental borrowing rate is the rate of interest that MWA would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment.

6. ADDITIONAL DATA

6.1 CASH AND CASH EQUIVALENTS comprised of:

Unit : Million Baht

	2022	2021
Cash on hand	5.89	1.69
Savings and current account	917.74	384.00
Cash in transit	(30.52)	11.36
Current account up to 3 months	800.00	-
Total Cash and cash Equivalents	1,693.11	397.05
Less Allowance for Expected Credit Losses	(0.08)	(0.15)
Total Cash and cash equivalents - net	1,693.03	396.90

6.2 TRADE ACCOUNTS RECEIVABLE AND OTHER CUREENT RECEIVABLES comprised of:

Unit : Million Baht

6.2.1 TRADE ACCOUNTS RECEIVABLE comprised of:

	2022	2021
Accounts receivable	472.56	526.66
A Other Current Receivables	787.36	930.54
Total	1,259.92	1,457.20

6.2.1 TRADE ACCOUNTS RECEIVABLE comprised of:

Unit : Million Baht

	2022	2021
Water utilities bills receivable	520.64	583.87
Less Undue output taxes water utilities	(33.47)	(37.89)
Total Water utilities bills receivable	487.17	545.98
Less Allowance for Expected Credit Losses	(14.61)	(19.32)
Total Water utilities bills receivable - net	472.56	526.66

As of September 30, 2022 and 2021, the water utility bills receivable were shown as follows:

Unit : Million Baht

Aging period	2022			2021		
	Private sector	Public sector	Total	Private sector	Public sector	Total
Not yet due	179.92	177.68	357.60	194.45	157.29	351.74
Up to 3 months	29.43	60.71	90.14	63.03	60.04	123.07
Over 3 months - 6 months	1.65	10.14	11.79	9.45	4.18	13.63
Over 6 months - 1 year	3.12	1.32	4.44	6.02	1.21	7.23
Over 1 year	10.92	12.28	23.20	10.12	40.19	50.31
	225.04	262.13	487.17	283.07	262.91	545.98
Less Allowance for Expected Credit Losses	(14.61)	-	(14.61)	(19.32)	-	(19.32)
Total	210.43	262.13	472.56	263.75	262.91	526.66

For government and state enterprise accounts receivable as of September 30, 2022 and 2021, MWA does not set an allowance for expected credit losses as there is quite a possibility to receive payments from government and state enterprise.

The movement in the allowance for expected credit losses of trade and other receivables are as follows.

Unit : Million Baht

	2022	2021
Balance brought forward at beginning of period	19.32	32.42
Less Provision for expected credit losses	0.93	(10.35)
Amount written off	(5.47)	(2.48)
Adjusting the list of cancellation of the previous year's bill	(0.17)	(0.27)
Balance carry forward at ending of period	14.61	19.32

6.2.2 OTHER CURRENT RECEIVABLES comprised of:

Unit : Million Baht

	2022	2021
Water installation receivable and others	6.57	1.81
Less Allowance for Expected Credit Losses	(0.04)	(0.06)
Water installation receivable and others - net	6.53	1.75
Accrued revenue of water sales, meter fees and raw waters	782.47	771.33
Less Allowance for Expected Credit Losses	(1.64)	(1.62)
Accrued revenue of water sales, meter fees and raw waters - net	780.83	769.71
Receivables from the Ministry of Finance's compensation	-	159.08
Total other current receivables - net	787.36	930.54

6.3 INVENTORIES AND SUPPLIES comprised of:

Unit : Million Baht

	2022	2021
Finish goods	-	0.20
Materials and Supplies	151.49	161.11
Material in transit	10.61	-
Total	162.10	161.31

6.4 INVESTMENT IN CURRENT FINANCIAL ASSETS

Unit : Million Baht

	2022	2021
Investment in current financial assets	6,875.00	6,625.00
Less Allowance for Expected credit losses	(0.10)	(0.41)
Total investment in current financial assets - net	6,874.90	6,624.59

6.5 CURRENT SPECIAL-PURPOSE DEPOSITS AT FINANCIAL INSTITUTIONS

Unit : Million Baht

	2022	2021
Current special-purpose deposits at financial institutions	1,344.40	1,505.00
Less Allowance for Expected Credit losses	-	(0.01)
Total Current special-purpose deposits at financial institutions - net	1,344.40	1,504.99

As of September 30, 2022 and 2021, Current special-purpose deposits at financial institutions consist of water usage guarantee and its interests. As of September 30, 2022, water usage guarantee reserved for repayment and interest income earned from water usage guarantee amounting to 9.78 million baht is included in cash and cash equivalents item in the financial statements.

6.6 OTHER CURRENT ASSETS comprised of:

Unit : Million Baht

	2022	2021
Accrued interest receivable	90.97	130.78
Less Allowance for Expected Credit Losses	(0.01)	(0.35)
Accrued interest receivable - net	90.96	130.43
Other assets	5.82	80.98
Total other current assets	96.78	211.41

6.7 INVESTMENTS IN NON-CURRENT FINANCIAL ASSETS

Unit : Million Baht

	2022	2021
Investments in non-current financial assets	15,440.00	15,300.00
Less Allowance for Expected Credit Losses	(0.48)	(41.97)
Total investments in non-current financial assets - net	15,439.52	15,258.03

6.8 NON-CURRENT SPECIAL-PURPOSE DEPOSITS AT FINANCIAL INSTITUTIONS

Unit : Million Baht

	2022	2021
Non-current special-purpose deposits at financial institutions	165.00	-
Less Allowance for Expected Credit Losses	(0.01)	-
Total Non-current special-purpose deposits at financial institutions - net	164.99	-

As of September 30, 2022, Non-current special-purpose deposits at financial institutions consist of water usage guarantee and its interests.

6.9 ADVANCE PAYMENT

As of September 30, 2022 and 2021, Advance payment amounting to 2,878.64 million baht and 2,623.31 million baht, 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).

6.10 ASSETS UNDER CONSTRUCTION details as follows:

Unit : Million baht

			2022	
	Oct 1, 2021	**Additions**	**Transferred to assets**	**Sep 30, 2022**
The Seventh Bangkok water Supply Improvement Project	272.62	2.35	(274.97)	-
The Eighth Bangkok water Supply Improvement Project	383.24	10.06	(0.15)	393.15
The Ninth Bangkok water Supply Improvement Project	668.43	1,044.32	(69.10)	1,643.65
Normal Capital Expenditure	7,413.94	5,631.38	(5,277.32)	7,768.00
Total	8,738.23	6,688.11	(5,621.54)	9,804.80

Unit : Million baht

			2021	
	Oct 1, 2020	**Additions**	**Transferred to assets**	**Sep 30, 2021**
The Seventh Bangkok water Supply Improvement Project	233.51	56.24	(17.13)	272.62
The Eighth Bangkok water Supply Improvement Project	436.44	37.84	(91.04)	383.24
The Ninth Bangkok water Supply Improvement Project	532.90	295.45	(159.92)	668.43
Normal Capital Expenditure	6,423.18	5,652.85	(4,662.09)	7,413.94
Total	7,626.03	6,042.38	(4,930.18)	8,738.23

6.11 PROPERTY, PLANT AND EQUIPMENT details as follows:

Unit : Million baht

	2022								
	Cost				Accumulated Depreciation				Property,Plant
	Oct 1, 2021	Additions	Write off	Sep 30, 2022	Oct 1, 2021	Depreciation	Write off	Sep 30, 2022	and Equipment Sep 30, 2022
Land	4,287.78	-	-	4,287.78	-	-	-	-	4,287.78
Building and improvements	19,709.92	112.94	(122.73)	19,700.13	13,745.92	466.27	(120.34)	14,091.85	5,608.28
Machineries and equipments	12,524.89	282.93	(349.62)	12,458.20	9,827.47	413.90	(339.30)	9,902.07	2,556.13
Pipes	97,593.72	4,595.56	(1,682.48)	100,506.80	66,542.20	3,762.60	(1,674.61)	68,630.19	31,876.61
Meters	6,036.92	532.13	(363.10)	6,205.95	3,892.03	450.81	(320.39)	4,022.45	2,183.50
Office - equipments	2,255.71	125.43	(249.73)	2,131.41	1,791.09	199.20	(249.72)	1,740.57	390.84
Vehicles and transport	318.48	12.15	(31.57)	299.06	220.69	14.05	(28.91)	205.83	93.23
Total	142,727.42	5,661.14	(2,799.23)	145,589.33	96,019.40	5,306.83	(2,733.27)	98,592.96	46,996.37

Property, plant and equipment, amounting to 145,589.33 million baht , as of September 30, 2022 included fully depreciation assets 42,133.16 million baht, which have the carrying amount 61.10 million baht.

Unit : Million baht

	2021								
	Cost				Accumulated Depreciation				Property,Plant
	Oct 1, 2020	Additions	Write off	Sep 30, 2021	Oct 1, 2020	Depreciation	Write off	Sep 30,2021	and Equipment Sep 30, 2021
Land	4,287.78	-	-	4,287.78	-	-	-	-	4,287.78
Building and improvements	19,675.96	67.77	(33.81)	19,709.92	13,335.54	431.99	(21.61)	13,745.92	5,964.00
Machineries and equipments	12,140.57	650.46	(266.14)	12,524.89	9,621.13	472.33	(265.99)	9,827.47	2,697.42
Pipes	94,218.65	3,564.99	(189.92)	97,593.72	63,264.90	3,463.69	(186.39)	66,542.20	31,051.52
Meters	5,860.40	524.36	(347.84)	6,036.92	3,757.33	446.94	(312.24)	3,892.03	2,144.89
Office - equipments	2,062.15	242.38	(48.82)	2,255.71	1,627.67	212.22	(48.80)	1,791.09	464.62
Vehicles and transport	315.21	3.27	-	318.48	203.28	17.41	-	220.69	97.79
Total	138,560.72	5,053.23	(886.53)	142,727.42	91,809.85	5,044.58	(835.03)	96,019.40	46,708.02

Property, plant and equipment, amounting to 142,727.42 million baht, as of September 30, 2021 included fully depreciation assets 39,498.47 million baht, which have the carrying amount 55.32 million baht.

6.12 RIGHT-OF- USE ASSETS

Unit : Million baht

2022

	Cost				Accumulated Depreciation				Right of use
	Oct 1, 2021	Additions	Write off	Sep 30, 2022	Oct 1, 2021	Depreciation	Write off	Sep 30, 2022	Asset Sep 30, 2022
Land	88.04	-	-	88.04	23.85	23.86	-	47.71	40.33
Building and improvements	-	14.28	-	14.28	-	2.38	-	2.38	11.90
Machineries and equipments	36.10	88.03	(11.65)	112.48	4.12	38.31	(10.21)	32.22	80.26
Office - equipments	-	16.57	-	16.57	-	2.77	-	2.77	13.80
Vehicles	302.50	63.66	(15.54)	350.62	85.93	91.95	(15.53)	162.35	188.27
Total	426.64	182.54	(27.19)	581.99	113.90	159.27	(25.74)	247.43	334.56

Unit : Million baht

2021

	Cost				Accumulated Depreciation				Right of use
	Oct 1, 2020	Additions	Write off	Sep 30, 2021	Oct 1, 2020	Depreciation	Write off	Sep 30, 2021	Asset Sep 30, 2021
Land	84.86	3.18	-	88.04	-	23.85	-	23.85	64.19
Machineries and equipments	-	36.10	-	36.10	-	4.12	-	4.12	31.98
Vehicles	194.96	107.54	-	302.50	-	85.93	-	85.93	216.57
Total	279.82	146.82	-	426.64	-	113.90	-	113.90	312.74

6.13 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

2022

	Cost				Accumulated Depreciation				Intangible assets
	Oct 1, 2021	Additions	Write off	Sep 30, 2022	Oct 1, 2021	Amortization	Write off	Sep 30, 2022	Sep 30, 2022
Rights to use the data map	215.73	-	-	215.73	187.88	7.21	-	195.09	20.64
Software	1,235.46	48.44	(22.39)	1,261.51	1,123.66	41.95	(22.39)	1,143.22	118.29
Total	1,451.19	48.44	(22.39)	1,477.24	1,311.54	49.16	(22.39)	1,338.31	138.93

Unit : Million baht

2021

	Cost				Accumulated Depreciation				Intangible assets
	Oct 1, 2020	Additions	Write off	Sep 30, 2021	Oct 1, 2020	Amortization	Write off	Sep 30, 2021	Sep 30, 2021
Rights to use the data map	211.74	3.99	-	215.73	178.80	9.08	-	187.88	27.85
Software	1,185.52	49.94	-	1,235.46	1,080.57	43.09	-	1,123.66	111.80
Total	1,397.26	53.93	-	1,451.19	1,259.37	52.17	-	1,311.54	139.65

6.14 LONG – TERM LOANS details as follows:

Unit : Million baht

Loan facility	2022 Foreign currency	2022 Thai Baht equivalent	2021 Foreign currency	2021 Thai Baht equivalent	Annual Interest rate (percent per annum)	Repayment Condition: Number of installment	Repayment Condition: The First repayment date	Repayment Condition: The Last repayment date
Japanese Yen currency (Unit : million Yen)								
Yen 11,706.00 million loan	560.07	148.90	840.11	258.01	1.70	37	Sep 20, 2006	Sep 20, 2024
Total long-term loans	560.07	148.90	840.11	258.01				
Less Total current portion	(280.04)	(74.45)	(280.04)	(86.00)				
Long-term loans - net	280.03	74.45	560.07	172.01				

BOT average selling Foreign Exchange Rate

As of Sep 30, 2022 1 JPY = 0.265870 THB

As of Sep 30, 2021 1 JPY = 0.307115 THB

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

Unit : Million baht

	Foreign currency	Thai Baht equivalent
Japanese Yen currency		
Balance as of October 1, 2021	840.11	258.01
Gains on foreign exchange rate	-	(31.52)
Repayment	(280.04)	(77.59)
Balance as of September 30, 2022	560.07	148.90

6.15 LEASE LIABILITIES

Unit : Million baht

	2022	2021
Lease liabilities	425.31	383.56
Less Deferred interest expense	(8.75)	(8.98)
Lease liabilities- net	416.56	374.58
Portion due within one year	174.19	136.27
Portion due over one year	242.37	238.31
Total	416.56	374.58

Expenses relating to leases that are recognized in profit or loss

t : Million baht

	2022	2021
Depreciation expense of right-of-use assets	159.27	113.90
Interest expense on lease liabilities	5.19	4.80
Expense relating to short-term leases	206.08	21.16
Expense relating to leases of low-value assets	4.72	4.68
Expense relating to variable lease payments	1.12	1.89

MWA had total cash outflows for leases for the year ended September 30, 2022 and 2021 amounting to 161.47 million baht and 94.26 million baht respectively, including the cash outflow related to short-term lease, leases of low-value assets and variable lease payments that do not depend on an index or a rate.

At of September 30, 2022 and 2021, MWA had non-cash additions to right-of-use assets and lease liabilities of 182.54 and 146.32 million baht respectively.

6.16 ACCRUED REMITTANCE TO THE MINISTRY OF FINANCE

The Ministry of Finance has prescribed MWA to delivers a remittance to the Ministry of Finance at the rate of 50 percent of the net income before deducting of bonus expense. If it appears that the amount Remittance of the state income is lower than the amount of remittance prescribed in the Annual Budget Expenditure Act, MWA remits the state income in the amount prescribed in the Act. which delivering twice a year.

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

Unit : Million Baht

	2022	2021
Balance at beginning of period	968.35	849.00
Increase during the period		
- The first half of the year 2021	-	1,472.40
- The addition of the year 2020	-	701.15
- The addition of the year 2021	-	500.00
- The second half of the year 2021	-	968.35
- The first half of the year 2022	1,204.90	-
- The second half of the year 2022	1,182.10	-
Decrease during the period		
Remittance to the Ministry of Finance		
- The second half of the year 2020	-	(848.90)
- The addition of the year 2020	-	(701.25)
- The first half of the year 2021	-	(1,472.40)
- The addition of the year 2021	-	(500.00)
- The second half of the year 2021	(968.35)	-
- The first half of the year 2022	(1,204.40)	-
Balance at end of period	1,182.60	968.35

The outstanding balance of remittance to the Ministry of Finance as of the second half of the year 2022 amounting to 1,182.60 million Baht.

6.17 OTHER CURRENT LIABILITIES comprised of:

	Unit : Million baht	
	2022	**2021**
Accrued interest payables	0.08	0.13
Accrued public utilities	161.74	122.25
Accrued expenses	673.06	786.81
Accrued expense on value added taxes	25.53	-
Accrued withholding taxes	18.82	33.68
Accrued bonus expense	428.28	491.03
Accrued raw water	587.55	25.39
Unearned income	14.33	9.70
Outstanding cheques	0.08	0.32
Other liabilities	226.48	217.64
Total	2,135.95	1,686.95

MWA recognizes the estimation of rental fee for the use of Ratchaphatsadu land in the possession of the Treasury Department according to the The Ratchaphatsadu Land Act, B.E.2562 (2019), which came into force on July 7, 2019, amounting to 628.88 million baht. It is an estimatation of expenses from July 7, 2019 to September 30, 2022 and this estimation is presented as part of the accrued expenses in the financial statements. As of now, it is in the process of auditing the facts before making lease agreement.

6.18 EMPLOYEE BENEFIT OBLIGATIONS

Provisions for employee benefits in statement of financial position as of September 30, 2022 and 2021

	Unit : Million baht	
	2022	**2021**
Post-employment benefits		
The pension fund	945.00	1,081.70
The remuneration on retirement preferences	1,819.59	2,015.51
The annual leave project that has not been exercised	206.27	228.28
The project of the awards age 60 years or retirement	145.18	159.04
Total	3,116.04	3,484.53
Less Plan assets	(598.38)	(685.92)
Total Post-employment benefits	2,517.66	2,798.61
Other long-term employee benefits plan		
The awards when employees work 25 years	57.38	61.56
Total Other long-term employee benefits plan	57.38	61.56
Employee benefit obligations - net	2,575.04	2,860.17

Unit : Million baht

	2022						
	Post-Employment Benefits					Other Long-term Employee Benefits	
	Staff Pension fund	Legal severance plan	Unused vacation plan	Retirement award	Total	25 years long-service award	Total
As of October 1, 2021	1,081.70	2,015.51	228.28	159.04	3,484.53	61.56	3,546.09
Service cost	33.40	128.08	14.59	11.15	187.22	5.00	192.22
Interest Cost from Defined Benefit Obligation	9.90	30.44	3.44	2.40	46.18	0.81	46.99
Benefits paid	(120.87)	(64.58)	(7.34)	(7.96)	(200.75)	(4.09)	(204.84)
Actuarial (Gains) Losses	(59.13)	(289.86)	(32.70)	(19.45)	(401.14)	(5.90)	(407.04)
As of September 30, 2022	945.00	1,819.59	206.27	145.18	3,116.04	57.38	3,173.42
Less Fair value of plan assets	(598.38)	-	-	-	(598.38)	-	(598.38)
Amount recognized in statement of financial position.	346.62	1,819.59	206.27	145.18	2,517.66	57.38	2,575.04

Unit : Million baht

	2021						
	Post-Employment Benefits					Other Long-term Employee Benefits	
	Staff Pension fund	Legal severance plan	Unused vacation plan	Retirement award	Total	25 years long-service award	Total
As of October 1, 2020	1,096.45	1,925.00	217.99	151.27	3,390.71	59.57	3,450.28
service cost	36.45	127.75	14.56	11.16	189.92	5.08	195.00
Interest Cost from Defined Benefit Obligation	10.02	27.97	3.16	2.20	43.35	0.74	44.09
Benefits paid	(61.22)	(65.21)	(7.43)	(5.59)	(139.45)	(3.83)	(143.28)
As of September 30, 2021	1,081.70	2,015.51	228.28	159.04	3,484.53	61.56	3,546.09
Less Fair value of plan assets	(685.92)	-	-	-	(685.92)	-	(685.92)
Amount recognized in statement of financial position.	395.78	2,015.51	228.28	159.04	2,798.61	61.56	2,860.17

Expenses are recognised in statements of income and statements of comprehensive income, as follows:

Unit : Million baht

	2022						
	Post-Employment Benefits					Other Long-term Employee Benefits	
	Staff Pension fund	Legal severanc plan	Unused vacation plan	Retirement award	Total	25years long-service award	Total
Statements of income							
service cost	33.40	128.08	14.59	11.15	187.22	5.00	192.22
Interest Cost from Defined Benefit Obligation	9.90	30.44	3.44	2.40	46.18	0.81	46.99
Return on plan assets	(8.05)	-	-	-	(8.05)	-	(8.05)
Actuarial (Gains) Losses	-	-	-	-	-	(5.90)	(5.90)
Total	35.25	158.52	18.03	13.55	225.35	(0.09)	225.26
Other comprehensive income							
Actuarial Gains (Losses)	53.12	289.86	32.70	19.45	395.13	-	395.13
Total	53.12	289.86	32.70	19.45	395.13	-	395.13

Unit : Million baht

	2021						
	Post-Employment Benefits					Other Long-term Employee Benefits	
	Staff Pension fund	Legal severance plan	Unused vacation plan	Retirement award	Total	25 years long-service award	Total
Statements of income							
Service cost	36.45	127.75	14.56	11.16	189.92	5.08	195.00
Interest Cost from Defined Benefit Obligation	10.02	27.97	3.16	2.20	43.35	0.74	44.09
Return on plan assets	(8.34)	-	-	-	(8.34)	-	(8.34)
Total	38.13	155.72	17.72	13.36	224.93	5.82	230.75
Other comprehensive income							
Actuarial Gains (Losses)	(4.91)	-	-	-	(4.91)	-	(4.91)
Total	(4.91)	-	-	-	(4.91)	-	(4.91)

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

Unit : Million baht

	2022	2021
Balance at beginning of period	685.92	710.29
Add Return on plan assets	8.05	8.34
Obligation payable from MWA.	31.29	33.42
Less Benefits paid	(120.87)	(61.22)
Plan assets Gains (Losses)	(6.01)	(4.91)
Balance at end of period	598.38	685.92

Principal actuarial assumptions to determine the present value of Post-Employment Benefits provision, as follows:

	Annual percentage (%)	
	2022	2021
Discount rate	1.11-5.76	0.51-2.78
Salary increase rate	5.0-8.0	5.0-8.0
Employee turnover rate	0.0-2.0	0.0-2.0
Mortality rate	According to the announcement by the Office of Insurance Commission (OIC) Thai Death Table 2017	According to the announcement by the Office of Insurance Commission (OIC) Thai Death Table 2017
Improvement the mortality	3.0	3.0

A sensitivity analysis of the Principal actuarial assumptions to determine the present value of post-employment benefit provisions and other long-term employee benefits is as follows:

	Change in present value of provision increase (decrease)	
		Unit : Million baht
	2022	2021
Discount rate -1.0%	295.09	367.10
Discount rate + 1.0%	(252.93)	(315.60)
Salary increase rate -1.0%	(238.31)	(321.88)
Salary increase rate +1.0%	271.16	371.43
Gold price -20% of assumptions	(40.51)	(44.23)
Gold price +20% of assumptions	40.51	44.23
Employee turnover rate -20.0% of assumptions	15.26	22.48
Employee turnover rate +20.0% of assumptions	(15.06)	(22.16)
Improvement the mortality -1.0%	(10.19)	(12.19)
Improvement the mortality +1.0%	8.92	10.70

6.19 PROVISION ON LITIGATION

	Unit : Million baht
As of October 1, 2021	16.36
Increase during the period	27.51
Decrease during the period	(4.97)
As of September 30, 2022	38.90

As of September 30, 2022, MWA are defendant sued for damages. From consideration the status of lawsuits, there are 7 lawsuits which it's probably to accept obligation and record accounts at the expected payment amounting to 38.90 million baht as mentioned in Note 8 to the financial statements.

6.20 DEFERRED REVENUES comprised of:

Unit : Million baht

	2022			
	As of Oct 1, 2021	**Added**	**Recognized as income**	**As of Sep 30, 2022**
Other assets	10.80	1.39	(3.00)	9.19
Water meter	1,514.69	291.97	(289.16)	1,517.50
Government plumbing works	249.49	20.32	(38.95)	230.86
Private plumbing works	4,895.88	793.69	(518.79)	5,170.78
MOU	449.94	36.75	(46.76)	439.93
Government Grants	3.45	-	-	3.45
Total	7,124.25	1,144.12	(896.66)	7,371.71

Unit : Million baht

	2021			
	As of Oct 1, 2020	**Added**	**Recognized as income**	**As of Sep 30, 2021**
Other assets	12.98	0.79	(2.97)	10.80
Water meter	1,487.54	290.78	(263.63)	1,514.69
Government plumbing works	271.55	16.06	(38.12)	249.49
Private plumbing works	4,755.79	637.73	(497.64)	4,895.88
MOU	435.69	58.05	(43.80)	449.94
Government Grants	-	3.45	-	3.45
Total	6,963.55	1,006.86	(846.16)	7,124.25

6.21 OTHER NON-CURRENT LIABILITIES comprised of:

Unit : Million baht

	2022	**2021**
Collective and metering representative deposits	22.70	22.88
Work guarantee (retention) and Contractor deposits	497.83	392.74
Derivative liabilities	46.17	42.78
Total	566.70	458.40

6.22 CAPITAL

As of September 30, 2022, capital 8,386.85 million Baht, included initial capital 1,192.71 million Baht and government budget 7,194.14 million Baht.

6.23 RAW MATERIALS AND CONSUMABLES USED comprised of:

Unit : Million baht

	2022	2021
Raw water	885.84	292.72
Chemical	526.48	353.91
Electricity utility	1,604.06	1,437.91
Pipe and equipment for repair and maintenance	247.84	211.32
Other raw material and consumables used	136.73	121.30
Total	3,400.95	2,417.16

6.24 DIRECTORS REMUNERATION

The remuneration for directors for the year ended September 30, 2022 and 2021 amounting to 32.96 million Baht and 21.31 million Baht are expense of Director and MWA's Board of directors.

6.25 OTHER OPERATING EXPENSES comprised of:

Unit : Million baht

	2022	2021
Contract out - inspection and improvement of distribution valve	60.40	21.92
Contract out - leakage pipes survey and repair	675.90	546.25
Contract out - other services	284.10	230.27
Outsourcing expenditure	229.06	220.82
Collective and metering representative expenses	136.87	132.28
Repair and maintenance expenses	204.70	217.03
Work contracts expenses	12.60	16.33
Other expenses	204.79	1,030.96
Total	1,808.42	2,415.86

6.26 FINANCE COSTS comprised of:

Unit : Million baht

	2022	2021
Interest expense on borrowings	36.63	5.22
Interest expense on lease liabilities	5.19	4.80
Interest paid from cross currency swaps and other interest rates	11.01	14.80
Total	19.83	24.82

7. DISCLOSURES OF FINANCIAL INSTRUMENT

7.1 Derivative designated as hedging instruments

MWA had entered into Plain vanilla cross currency swap agreement on March 17, 2006, designated as hedging instrument in cash flow hedge on fixed-rate loan in foreign currency to reduce the risk from exchange rate. Contract principle amounting to 11,706.00 million Yen, utilized amounting to 5,180.74 million Yen, 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
As of September 30, 2022	
Outstanding Loan	560.07 million Yen
Remaining Tenor	2 Years
BOT Average Buying Rates as of September 30, 2022	1 JPY = 0.258965 THB

As of September 30, 2022, The CCS has a carrying amount of derivative liabilities (Level 3 fair value) at 46.17 million baht, presented as a part of other non-current liabilities in statement of financial position.

7.2 Financial risk management objectives and policies

MWA's financial instruments principally comprise cash and cash equivalents, trade accounts receivable and other current receivables, and long-term loans. The financial risks associated with these financial instruments and how they are managed is described below.

7.2.1 Credit risk

MWA is exposed to credit risk primarily with respect to trade accounts receivable and accrued revenue of water sales, meter fees and raw waters, deposits with banks and financial institutions and other financial instruments. Except for derivatives, the maximum exposure to credit risk is limited to the carrying amounts as stated in the statement of financial position. MWA's maximum exposure relating to derivatives is noted in the liquidity risk topic.

Trade accounts receivable and accrued revenue of water sales, meter fees and raw waters

MWA manages the risk by adopting appropriate credit control policies and procedures and therefore does not expect to incur material financial losses. Outstanding trade receivables are regularly monitored. An impairment analysis is performed at each reporting date to measure expected credit losses. The provision rates are based on days past due for groupings of various customer segments with similar credit risks. MWA classifies customer segments by customer type. The calculation reflects the probability-weighted outcome, the time value of money and reasonable and

supportable information that is available at the reporting date about past events, current conditions and forecasts of future economic conditions.

Cash deposits

MWA manages the credit risk from balances with banks and financial institutions. When making a deposit, MWA will consider the amount and time of deposit to be appropriate with the remaining liquidity of the MWA by depositing or investing in short-term financial instruments with financial institutions in accordance with the regulations. Set out in the regulations of the Ministry of Finance regarding accounting and finance of state owned enterprise B.E. 2548, including the distribution of deposits or investments. with many financial institutions in order to reduce the risk of concentration and alleviate financial losses that may arise from the default of financial institutions.

The credit risk on debt instruments and derivatives is limited because the counterparties are banks with high credit-ratings assigned by international credit-rating agencies.

7.2.2 Market risk

There are two types of market risk comprising currency risk and interest rate risk. MWA enters into a cross currency swaps to mitigate the risk of foreign currency rates:

Foreign currency risk

MWA's exposure to the foreign currency risk relates primarily to its borrowing that is denominated in foreign currency. MWA seeks to reduce this risk by entering into a cross currency swap contract as described in Note 7.1 to the financial statements

Interest rate risk

As of September 30, 2022, significant financial assets and liabilities classified by type of interest rate are summarized in the table below, with those financial assets and liabilities that carry fixed interest rates further classified based on the maturity date, or the repricing date if this occurs before the maturity date.

Unit : Million Baht

	2022						
	Fixed interest rates						
	Within 1 year	1-5 years	Over 5 years	Floating interest rate	Non-interest bearing	Total	Effective interest rate (% per annum)
Financial assets							
Cash and cash equivalents	800.00	-	-	887.14	5.89	1,693.03	0 - 0.75
Trade accounts receivable and other current receivables	-	-	-	-	1,259.92	1,259.92	-
Investment in current financial assets	6,874.90	-	-	-	-	6,874.90	0.75 – 0.86

Unit : Million Baht

	2022						
	Fixed interest rates						
	Within 1 year	1-5 years	Over 5 years	Floating interest rate	Non-interest bearing	Total	Effective interest rate (% per annum)
Current special-purpose deposits at financial institutions	1,344.40	-	-	-	-	1,344.40	0.625 – 0.775
Investment in non-current financial assets	15,439.52	-	-	-	-	15,439.52	0.70 – 1.83
Non-current special-purpose deposits at financial institutions	164.99	-	-	-	-	164.99	0.80
	24,623.81	-	-	887.14	1,265.81	26,776.76	

Unit : Million Baht

	2022						
	Fixed interest rates						
	Within 1 year	1-5 years	Over 5 years	Floating interest rate	Non-interest bearing	Total	Effective interest rate (% per annum)
Financial liabilities							
Trade accounts payable	-	-	-	-	1,600.84	1,600.84	-
Long-term loans	74.45	74.45	-	-	-	148.90	5.759
Lease liabilities	174.19	242.19	0.18	-	-	416.56	0.67 - 2.85
	248.64	316.64	0.18	-	1,600.84	2,166.30	

7.2.3 Liquidity risk

MWA monitors the risk of a shortage of liquidity using long-term loan and lease contracts. Approximately 18.45 % of MWA's debt will mature in less than one year as of September 30, 2022 based on the carrying value of borrowings reflected in the financial statements. The table below summaries the maturity profile of MWA's non-derivative financial liabilities and derivative financial instruments as of September 30, 2022 based on contractual undiscounted cash flows:

Unit : Million Baht

	On demand	Less than 1 year	1 to 5 years	Over 5 years	Total
Non-derivatives					
Trade accounts payable	1,600.84	-	-	-	1,600.84
Water usage guarantee	1,381.01	-	-	-	1,381.01
Long-term loans	-	76.67	75.40	-	152.07
Lease liabilities	-	179.20	245.87	0.24	425.31
Total non-derivatives	2,981.85	255.87	321.27	0.24	3,559.23
Derivatives					
Derivative liabilities: pay separately					
Cash inflow	-	74.68	73.44	-	148.12
Cash outflow	-	(102.95)	(97.57)	-	(200.52)
Total derivatives	-	(28.27)	(24.13)	-	(52.40)

7.3 Fair values of financial instruments

Since the majority of MWA's financial instruments are short-term in nature or carrying interest at rates close to the market interest rates, their fair value is not expected to be materially different from the amounts presented in the statement of financial position.

MWA estimate fair value of financial Instruments by using following assumptions:

Cash and cash equivalents, trade accounts receivable and other current receivables, investment in current financial assets, other current assets, investment in non-current financial assets, other non-current assets, trade accounts payable, accrual remittance to the Ministry of Finance, other current liabilities, water usage guarantee and other non-current liabilities have the carrying amounts based on a reasonable estimate of fair value, except for the items shown in the table as follows.

Unit : Million Baht

	Fair Value				Book Value
	Level 1	Level 2	Level 3	Total	
2022					
Financial liabilities disclosed at fair value					
Long-term loans	-	-	148.99	148.99	148.90
2021					
Financial liabilities disclosed at fair value					
Long-term loans	-	-	258.16	258.16	258.01

Valuation techniques and data input for Level 3 fair value measurements

The fair value of the long-term loan is estimated by using technique on calculating present value of future cash flow and by using valuation models, which is discount rate adjusted by the risk on the cash receiving date. The rate is used because the reference risk in the market at the end of the fiscal period is not available. The related observable data in the market includes spot rate, interest rate and the yield curve of debt instruments.

8. OBLIGATION AND CONTINGENT LIABILITIES

Material changes in the obligations and contingent liabilities with detail as follows:

8.1 OBLIGATIONS UNDER BANK GUARANTEES

As of September 30, 2022, MWA has letters of guarantee issued by a bank on behalf of MWA amounting to 78.42 million baht, which all bank guarantees are guarantees for pipeline construction.

8.2 OBLIGATIONS OF CAPITAL EXPENDITURE

As of September 30, 2022, MWA has obligations of capital expenditure as follows:

Unit : Million baht

The Seventh Bangkok water Supply Improvement Project	0.95
The Eighth Bangkok water Supply Improvement Project	372.32
The Ninth Bangkok water Supply Improvement Project	17,518.59
Normal Capital Expenditure	9,513.07
Total	27,404.93

8.3 OBLIGATIONS UNDER LEASE AGREEMENT

As of September 30, 2022 and 2021 MWA has legal obligations arising from a lessee under a financial lease with the minimum amount of money to be paid in the future according to the contract that cannot be terminated as follows:

Unit : Million Baht

	2022	2021
- Not more than 1 year	0.42	0.49
- Over 1 year but not over 5 years	-	-
Total	0.42	0.49

8.4 OBLIGATIONS FOR USING THE HIGHWAYS AREA

The Ministry of Transport has issued ministerial regulations prescribing fees for utilization area of special highways. national highways, rural highways and concession highways B.E. 2564 (2021), effective from January 1, 2022, prescribing the person so permitted for utilization the highway area to erect the pole, line up, lay pipes or perform any action in the highway area shall pay fee for utilization of the highway area at the rates prescribed in Ministerial Regulations.

MWA received a notice from the Department of Highways and the Department of Rural Roads to collect fee for utilization of the highway area at the rates prescribed in Ministerial Regulations. However, the MWA Board of Directors resolved to allow the MWA to exercise its power under section 38 of Metropolitan Waterworks Authority Act B.E. 2510 (1967) to pay fee in the form of land utilization compensation, not fee for utilization of the highway area. The committee which determines the amount of compensation for damage from utilization or taking possession immovable property and compensation for utilization land and cutting down trees is considering the criteria and guidelines for payment compensation.

But in the present, MWA has not yet concluded the form of payment and payment rates of such expenses. As a result, it is not possible to estimate the expenses that will or may occur reliably. Therefore, the MWA has not yet recognized the estimated expenses that the Department of Highways and the Department of Rural Roads collect in the financial statements.

8.5 CASE IN WHICH THE MWA FILED PETITIONS AGAINST THE ARBITRAL AWARDS AS OF SEPTEMBER 30, 2022, AMOUNTING TO 3 CASES, AS FOLLOWS:

8.5.1 The case that the MWA filed a petition opposing the Arbitration Office of Board of trade of Thailand’s award that the MWA pays additional work fees according to the contract to one of the MWA's contractors (the claimant) amounting to 8.00 million baht to the claimant within 60 days from the following day. Date of acknowledgment of award. If after such period of time has elapsed, the MWA has not made all or part of the payment to

the claimant, the MWA shall pay interest at the rate of 7.5% per annum of the outstanding principal from the day following the due date until will pay off.

The Central Administrative Court dismissed the petition against the award. At present, the case is under consideration by the Supreme Administrative Court.

The MWA recognized of a provision on litigation of the said case as mentioned in note 6.19 to the financial statements amounting to 8.00 million baht.

8.5.2 The case in which the MWA filed a petition against the award of the Thai Arbitration Institute that ordered the MWA to return the contractual fines to 2 MWA's contractors amounting to 18.34 million baht with interest at the rate of 7.5 % per year. From the day following the date of submitting the dispute until the settlement is complete. At present, the case is under the consideration of Central Administrative Court.

8.5.3 The case in which the MWA filed a petition against the award of the Thai Arbitration Institute that ordered the MWA to pay for the work under the contract to a contractor of MWA (the claimant) amounting to27.40 million baht and 40.76 million yen, totaling 43.50 million baht, with the claimant paying a fine of 69.00 million baht after offsetting. the claimants must pay the MWA the amount of 25.50 million baht. The Claimants also file a request for revocation of the award. At present, the case is under the consideration of the Central Administrative Court.

8.6 THE CASES ARE UNDER CONSIDERATION OF DEPARTMENT OF CIVIL DISPUTE SETTLEMENT AND ARBITRATION AS OF SEPTEMBER 30, 2022, AMOUNTING TO 2 CASES, AS FOLLOWS:

8.6.1 A lawsuit that a government agency demanded that the MWA and another government agency jointly, responsible for compensation for damages arising from the movement of the wall protecting the bank and falling into Khlong Lat Pho amounting to 32.50 million baht. Currently, the case is pending with the prosecutor who owns the case.

8.6.2 A case in which a government agency demanded that the MWA pay the deficit of land rent and fines, according to the lease of land in Lumpini Park amounting to 51.81 million baht, it is currently in the process of being processed by the prosecutor who owns the case.

MWA recognized the deficit of land rental amounting to 49.26 million baht in the financial statements as part of the lease liabilities in note 6.15 to the financial statements.

During the accounting period, there were cases that the Office of Civil Litigation Settlement and Arbitration had completed. It is a case that a government agency demands that the MWA pay for the improvement of the TIE LINE electric system 69 kV ready to be installed at the Samsen Water Treatment Plant Substation, the last installment amounting to 4.09 million baht. In which the MWA brought wages amounting to 4.09 million baht, deducting fines amounting to 0.84 million baht, remaining 3.25 million baht, to deposit assets at the Deposit Office, Legal Execution Department already. Later, on June 14, 2022, the Attorney General has considered MWA has the right to charge fines for late delivery amounting to 0.72 million baht. The MWA has to pay an additional amounting to 0.12 million baht and has already been paid on August 2, 2022.

8.7 MWA WAS CHARGED 21 CASES OF LAWSUIT AS OF SEPTEMBER 30, 2022, ESTIMATED TOTAL CLAIMS FOR COMPENSATION AND DAMAGES AMOUNTING TO BAHT 301.90 MILLION BAHT, AS FOLLOW:

8.7.1 There are 3 cases about breach of employment contract amounting to 81.99 million baht. In the present, 2 cases are under consideration by the Supreme Court and 1 case is under consideration by the Supreme Administrative Court.

8.7.2 There are 17 cases about infringement claiming damages amounting to 219.63 million baht. In the present, 1 case is under consideration by the Civil Court, 9 cases are under consideration by the Central Administrative Court and 7 cases are under consideration by the Supreme Administrative Court.

8.7.3 There is 1 case about claiming other damages The amount of the case amounting to 0.28 million baht. In the present, this case is under consideration by the Supreme Court.

The MWA recognizes of a provision on litigation of the said case as mentioned in note 6.19 to the financial statements amounting to 30.90 million baht.

9. Approval of Financial Statements

These financial statements were approved for issuance by MWA Governor of MWA on March 8, 2023.

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METROPOLITAN WATERWORKS AUTHORITY

Survey on Satisfaction
towards MWA
Annual Report 2022

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