# List of JWWA Q100 Performance Indicator led by Statistics on Water Supply in Japan

| Guidelines for the management and assessment of a drinking water supply service (JWWA Q100) | | | | Statistics on Water Supply | |
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| PI Code | Name of PI | Description | Definition | Stats Code | Name of Stats |
| 1001 | Resources availability ratio | The purpose of drinking water supply services is to deliver the enough volume of water with stability. To do it, water resources should hold the sufficient volume of water. The ratio of water volume held by the water resources to water volume consumed actually represents the allowance and efficiency of the water resources. Accordingly, this indicator value should be high in preparation for droughts. | Resources availability ratio = (Average daily transmission input/ Resource capacity) × 100 (unit: %) | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| | | | | 0412 | Designed Maximum Water Abstraction Volume per Day/ Total (m3) |
| 1002 | Surplus capacity of resources | The purpose of drinking water supply services is to deliver the enough volume of water with stability. To do it, water resources should hold the sufficient volume of water. The ratio of water volume held by the water resources to water volume consumed actually represents the allowance and efficiency of the water resources. Accordingly, this indicator value should be high in preparation for droughts. | Surplus capacity of resources = ((Resource capacity/ Maximum daily transmission input) × 1) × 100 (Unit: %) | 5103 | Water Supply Volume per Day/ Daily Maximum Water Supply Volume (m3) |
| | | | | 0412 | Designed Maximum Water Abstraction Volume per Day/ Total (m3) |
| 1003 | Effective raw water ratio | This indicator is similar to the leakage rate indicator, but represents the ratio of water effectively used to water abstracted. It has wider meaning than the leakage rate indicator, that is, the effectiveness of water used in terms of total system. | Effective raw water ratio = (Annual effective volume/ Annual intake volume) × 100 (Unit: %) | 5021 | Annual Water Supply Volume/ Accounted Water Consumption (1,000 m3) |
| | | | | 5026 | Annual Bulk Water Supply Volume/ Accounted Water Consumption (1,000 m3) |
| | | | | 5031 | Annual Water supply volume to another water supplier/ Accounted Water Consumption (1,000 m3) |
| | | | | 5012 | Annual Water Abstraction Volume/ Total (1,000 m3) |
| 1004 | Self owned resources ratio | This indicator can be applied to self owned dams and wells, and represents flexibility in the management of water resources. In addition, it relates to water flexibility upon drought. | Self owned resources ratio = (Self owned resource capacity/ Total resource capacity) × 100 (Unit: %) | 0412 | Designed Maximum Water Abstraction Volume per Day/ Total (m3) |
| | | | | 0408 | Designed Maximum Water Abstraction Volume per Day/ Raw Water Receiving (m3) |
| | | | | 0411 | Designed Maximum Water Abstraction Volume per Day/ Purified Water Receiving (m3) |
| | | | | 0412 | Designed Maximum Water Abstraction Volume per Day/ Total (m3) |

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| 1115 | Direct supply from distribution main | This indicator is a direct water supply ratio, and is one of indices showing the extent to which an approach to keeping the reliability of water quality control is employed and the safety of service quality. Compared with the conventional method of using receiving tanks for buildings having three floors or more, the direct water supply method has advantages, for example, it can address sanitary problems in the tank and trouble with the water quality. Accordingly, it is desired to migrate to the direct water supply method by improving water distribution systems and facilities in the future. | Direct supply from distribution main = (Number of direct connection users/ Total number of users) × 100 (unit: %) | 6981 | Total/ Number of buildings |
| | | | | 5214 | Tariff structure by customer use/ Number of Household/ Total |
| | | | | 5342 | Tariff structure by meter size/ Number of Household/ Total |
| 1117 | Ratio of lead service lines | As a rule, the use of lead pipes are prohibited f rom a safety point of view, but many old lead pipes still remains. Water utilities may change the type of pipes connected to water meters when making a laying change in distribution lines. However, this indicator value does not reduce because they cannot change indoor lead pipes. | Ratio of lead service lines = (Number of lead service lines in use/ Number of service lines) × 100 (unit: %) | 3907 | Lead Service pipes/ Site Number of remaining Lead service pipes (Total) |
| | | | | 5214 | Tariff structure by customer use/ Number of Household/ Total |
| | | | | 5342 | Tariff structure by meter size/ Number of Household/ Total |
| 2001 | Drinking water storage volume per population supplied | The service reservoir capacity should be high enough to keep drinking water in preparation for disasters like earthquakes. When a disaster occurs, a single user needs a minimum water volume of three liters in a day. This indicator gives information about how many days the reservoir can supply water, but in real life, three liters become insufficient over the course of time. Accordingly, this indicator employs the volume of reserved drinking water per user, not the number days. | Drinking water storage volume per population supplied = ((Total service reservoir capacity (except emergency reservoirs) × 1/2 + Emergency reservoir capacity)/ Service population) × 1,000 (unit: L/person) | 0532 | Water Purification Plant/ Treated Water Reservoir/ Effective Capacity (m3) |
| | | | | 0542 | Water Purification Plant/ Distribution Reservoir/ Effective Capacity of Distribution Reservoirs (m3) |
| | | | | 0535 | Water Distribution Facilities/ Effective Capacity of Distribution Reservoirs (m3) |
| | | | | 0540 | Water Distribution Facilities/ Effective Capacity of Elevated Distribution Reservoir (m3) |
| | | | | 6708 | Emergency receiving tanks, etc./ Settled by Water utilities/ Potable Water & Domestic water (m3) |
| | | | | 6711 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Water Utilities/ Potable Water & Domestic water (m3) |
| | | | | 6714 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Local governments/ Potable Water & Domestic water (m3) |
| | | | | 0206 | Population/ Water Supply Population (Capita) |

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| 2002 | Transmission input per population supplied | This indicator shows the progress of water-saving consumption, which is an approach to the preservation of water environments. | Transmission input per population supplied = (Average daily transmission input/ Service population) × 1,000 (unit: L/person/day) | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| | | | | 0206 | Population/ Water Supply Population (Capita) |
| 2004 | Service reservoir capacity | This indicator tells how many hours the reservoirs can supply water at an average daily flow rate, that is, the stability of water supply and the capability of responding to critical events, such as disasters and accidents. The larger the indicator value, the higher the capabilities of water regulation and ad hoc water supply when an emergency event has occurred. According to Design Criteria for Waterworks Facilities, the service reservoir should have effective capacity which makes it possible to deliver water for 12 hours at a maximum daily flow rate. | Service reservoir capacity = Total service reservoir capacity/ Average daily transmission input (unit: days) | 0532 | Water Purification Plant/ Treated Water Reservoir/ Effective Capacity (m3) |
| | | | | 0542 | Water Purification Plant/ Distribution Reservoir/ Effective Capacity of Distribution Reservoirs (m3) |
| | | | | 0535 | Water Distribution Facilities/ Effective Capacity of Distribution Reservoirs (m3) |
| | | | | 0540 | Water Distribution Facilities/ Effective Capacity of Elevated Distribution Reservoir (m3) |
| | | | | 6708 | Emergency receiving tanks, etc./ Settled by Water utilities/ Potable Water & Domestic water (m3) |
| | | | | 6711 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Water Utilities/ Potable Water & Domestic water (m3) |
| | | | | 6714 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Local governments/ Potable Water & Domestic water (m3) |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |

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| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| 2005 | Restricted water supply | This indicator represents days when water supply is restricted in a year, that is, coMF ort and convenience given to users as well as the stability of water supply services. | Restricted water supply = Number of restricted service days per year (unit: days) | 6943 | Drought/ Pressure reducing water supply/ Number of days |
| | | | | 6945 | Drought/ Temporal water supply/ Number of days |
| | | | | 6948 | Water quality accident/ Pressure reducing water supply/ Number of days |
| | | | | 6950 | Water quality accident/ Temporal water supply/ Number of days |
| 2006 | Population served by water supply | This indicator represents the ratio of the number of users to the population of a service area, and is one of indices showing the general conditions and local characteristics of water supply services. | Population served by water supply = (Service population/ Service area population) × 100 (unit: %) | 0206 | Population/ Water Supply Population (Capita) |
| | | | | 0202 | Population/ Population in Water Supply District (Capita) |
| 2007 | Distribution mains density | This indicator represents the length of distribution pipes per service area of 1 km2, which means the extent of physical convenience when consumers apply for water supply. | Distribution mains density = Distribution pipe length/ Service area (unit: km/km2) | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| | | | | 0218 | Area/ Current Water Supply District Area (km2) |
| 2008 | Customer meter density | This indicator represents the number of water meters per pipeline of 1 km, that is, the number of water supply points per unit length of distribution pipes. | Customer meter density = Number of water meters/ Distribution pipe length (unit: No./km) | 5215 | Number of installed meter |
| | | | | 5343 | Number of installed meter |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 2101 | Aging of water treatment facilities | The useful life has a deep relationship with years for which facilities have been used. However, it is difficult to constantly review the useful life in order to maintain and control waterworks facilities. Accordingly, this indicator employs the statutory useful life defined in Municipal Enterprise Law. | Aging of water treatment facilities = (Capacity of purification facilities exceeding statutory useful life/ Capacity of all purification facilities) × 100 (unit: %) | 3601 | Capacity of Facilities/ Exceed Depreciation Period Designated by Law (m3/ day) |
| | | | | 5118 | Capacity of Facilities (m3/ day) |
| 2102 | Aging of electric and mechanical equipment | The life cycle has a deep relationship with years for which electrical or mechanical equipment has been used. However, it is difficult to constantly review the life cycle in order to | Aging of electric and mechanical equipment = (Number of electric and mechanical equipment exceeding life cycle/ Total number of electric and | 3603 | Number of Instrumentation equipment exceed legal durable years (number of equipment) |

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| | | maintain and control waterworks facilities. Accordingly, this indicator employs the life cycle. | mechanical equipment) × 100 (unit: %) | 3602 | Total number of Instrumentation equipment (number of equipment) |
| 2103 | Aging of mains | The useful life has a deep relationship with years for which facilities have been used. However, it is difficult to constantly review the useful life in order to maintain and control waterworks facilities. Accordingly, this indicator employs the statutory useful life of pipelines. | Aging of mains = (Length of pipelines exceeding statutory useful life/ Total pipeline length) × 100 (unit: %) | 3604 | Length of Pipeline/ Raw Water Conveyance pipes/ pipes exceed Depreciation Period Designated by Law (40 years) (m) |
| | | | | 3605 | Length of Pipeline/ Water Transmission pipes/ pipes exceed Depreciation Period Designated by Law (40 years) (m) |
| | | | | 3606 | Length of Pipeline/ Distributing Main pipes/ pipes exceed Depreciation Period Designated by Law (40 years) (m) |
| | | | | 3607 | Length of Pipeline/ Distributing Branch pipes/ pipes exceed Depreciation Period Designated by Law (40 years) (m) |
| | | | | 0701 | Length of Raw Water Conveyance pipes/ Classified by Diameter/ Length of Raw Water Conveyance pipes/ Total (m) |
| | | | | 0706 | Length of Water Transmission pipes Classified by Diameter/ Length of Water Transmission pipes/ Total (m) |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 2104 | Mains rehabilitation | This indicator represents the percentage of conveyance, transmission, and distribution pipes replaced in a year, that is, the extent to which the replacement is made in order to ensure the reliability. | Mains rehabilitation = (Length of replaced pipelines/ Total pipeline length) × 100 (unit: %) | 7016 | Raw Water and Purified Water Transmission pipes/ Length of Replaced pipes/ Total (m) |
| | | | | 7040 | Water Distribution pipes/ Length of Replaced pipes/ Total (m) |
| | | | | 0701 | Length of Raw Water Conveyance pipes/ Classified by Diameter/ Length of Raw Water Conveyance pipes/ Total (m) |
| | | | | 0706 | Length of Water Transmission pipes Classified by Diameter/ Length of Water Transmission pipes/ Total (m) |

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| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 2106 | Valves replacement | This indicator represents the percentage of valves replaced in a year, that is, the extent to which the replacement is made in order to ensure the reliability of water distribution control for pipelines. | Valves replacement = (Number of replaced valves/ Total number of existing valves) × 100 (unit: %) | 0746 | Number of Replaced Valve |
| | | | | 0747 | Number of Installed Valve |
| 2107 | Newly installed mains | This indicator shows the extent to which pipelines increase. Water distribution networks should cover all service areas to achieve the 100 -percent water supply coverage. | Newly installed mains = (Length of newly installed pipelines/ Total pipeline length) × 100 (unit: %) | 7008 | Raw Water and Purified Water Transmission pipes/ Length of Newly Installed pipes/ Total (m) |
| | | | | 7032 | Water Distribution pipes/ Length of Newly Installed pipes/ Total (m) |
| | | | | 0701 | Length of Raw Water Conveyance pipes/ Classified by Diameter/ Length of Raw Water Conveyance pipes/ Total (m) |
| | | | | 0706 | Length of Water Transmission pipes Classified by Diameter/ Length of Water Transmission pipes/ Total (m) |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 2201 | Accidental water resource pollution | This indicator does not relate directly to services offered by water utilities or authorities, but they should take flexible measures against any accidents to supply an enough volume of water. Most water pollution accidents have a serious impact on water supply. Accordingly, it is important to take a variety of preventive measures to reduce the accidents. Using this indicator with water cut rates allows water utilities to check the stability of drinking water supply services. | Accidental water resource pollution = Number of water pollution accidents per year (unit: No.) | 3809 | Annual Water quality accident/ Number of incidents (times/ year) |
| 2202 | Trunk mains failures | This indicator represents the number of accidents occurring in main pipelines in a year, that is, the soundness of the pipeline facilities. The mains refer to pipelines important to water operation. When this indicator value becomes large, water utilities should take quick measures, for example, replacement pipelines in which accidents often occur or which have aged pipes. | Trunk mains failures = (Number of mains failures/ Total mains length) × 100 (unit: No./100 km) | 3810 | Number of Water main pipe accidents (times/ year) |
| | | | | 6812 | Length of Raw Water Conveyance pipes/ Total (m) |
| | | | | 6824 | Length of Water Transmission pipes/ Total (m) |

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| | | | | 6836 | Length of Water Distribution pipes/ Distributing Main pipes/ Total (m) |
| 2203 | Available water volume in an accident | For the risk management of drinking water supply systems, it is simply assumed that the largest purification plant or pump station stops completely. This indicator represents the flexibility and margin of the system, that is, the sustainability of services. | Available water volume in an accident = (Reduced transmission input/ Average daily transmission input) × 100 (unit:%) | 3811 | Distribution water volume at the time of accidents (m3/ day) |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| 2204 | Population supplied water in an accident | For the risk management of drinking water supply systems, it is simply assumed that the largest purification plant or pump station stops completely. This indicator represents the flexibility and margin of the system, that is, the sustainability of services. | Population supplied water in an accident = (Accident -affected population/ Service population) × 100 (unit:%) | 3812 | Water Supply Population at the time of accidents (Capita) |
| | | | | 0206 | Population/ Water Supply Population (Capita) |
| 2205 | Water supply points density in emergency | This indicator represents the number of service locations per service area of 100 km2, that is, the ease of use when an emergency event has occurred. It is also one of indices showing response to an emergency event. | Water supply points density in emergency = (Number of distribution and emergency reservoirs/ Service area) × 100 (unit: No./100 km2) | 6701 | Distribution Reservoir, etc./ Disaster correspondence/ Number of Water Supply (Number of Authorization) |
| | | | | 6704 | Wells/ Number of Water Supply |
| | | | | 6707 | Emergency receiving tanks, etc./ Settled by Water utilities/ Number of Water Supply |
| | | | | 6710 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Water Utilities/ Number of Water Supply |
| | | | | 6713 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Local governments/ Number of Water Supply |
| | | | | 0218 | Area/ Current Water Supply District Area (km2) |
| 2207 | Ratio of earthquake-resistant treatment facility | Drinking water structures should conform to earthquake resistance for safety (Rank A of Level 2). New facilities are designed to meet Level 2, while it is difficult to improve aged facilities to meet Level 2. Therefore, repairs for improving the earthquake resistance should be evaluated carefully. | Ratio of earthquake-resistant treatment facility = (Capacity of earthquake-resistant purification facilities/ Capacity of all purification facilities) × 100 (unit:%) | 4101 | Capacity of Purification plants with Earthquake-resistance/ Ｌ２対応 (m3/ day) |
| | | | | 5118 | Capacity of Facilities (m3/ day) |

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| 2208 | Ratio of earthquake-resistant pumping station | Drinking water structures should conform to earthquake resistance for safety (Rank A of Level 2). New facilities are designed to meet Level 2, while it is difficult to improve aged facilities to meet Level 2. Therefore, repairs for improving the earthquake resistance should be evaluated carefully. This indicator makes a judgment regarding the earthquake resistance of pump stations rather than pumps. | Ratio of earthquake-resistant pumping station = (Capacity of earthquake-resistant pump stations/ Capacity of all pump stations) × 100 (unit:%) | 4105 | Capacity of pumping stations with Earthquake-resistance ランクＡでＬ２対応 (m3/ day) |
| | | | | 6514 | Pumping Stations classified by Facilities/ Total/ Pumping Volume (m3/ min.) |
| 2209 | Ratio of earthquake-resistant service reservoir | Drinking water structures should conform to earthquake resistance for safety (Rank A of Level 2). New facilities are designed to meet Level 2, while it is difficult to improve aged facilities to meet Level 2. Therefore, repairs for improving the earthquake resistance should be evaluated carefully. In addition, the water leakage should be checked with this indicator. If a plant has pump stations and distribution reservoirs, water utilities should select either indicator by comparing the importance of both facilities. | Ratio of earthquake-resistant service reservoir = (Capacity of earthquake-resistant service reservoirs/ Capacity of all service reservoirs) × 100 (unit:%) | 4109 | Earthquake-resistant countermeasureが施されている Distribution Reservoir/ Capacity/ ランクＡでＬ２対応 (m3) |
| | | | | 0532 | Water Purification Plant/ Treated Water Reservoir/ Effective Capacity (m3) |
| | | | | 0542 | Water Purification Plant/ Distribution Reservoir/ Effective Capacity of Distribution Reservoirs (m3) |
| | | | | 0535 | Water Distribution Facilities/ Effective Capacity of Distribution Reservoirs (m3) |
| | | | | 0540 | Water Distribution Facilities/ Effective Capacity of Elevated Distribution Reservoir (m3) |
| | | | | 6708 | Emergency receiving tanks, etc./ Settled by Water utilities/ Potable Water & Domestic water (m3) |
| | | | | 6711 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Water Utilities/ Potable Water & Domestic water (m3) |
| | | | | 6714 | Emergency receiving tanks, etc./ Settled by Local Government/ Managed by Local governments/ Potable Water & Domestic water (m3) |
| 2210 | Ratio of earthquake-resistant pipeline | This indicator shows the progress of migration to earthquake-resistant conveyance, transmission, and distribution pipes, that is, water supply system's safety and response to seismic disasters. Since not so many | Ratio of earthquake-resistant pipeline = (Length of earthquake-resistant pipelines/ Total pipeline length) × 100 (unit:%) | 6802 | Length of Raw Water Conveyance pipes/ Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |
| | | | | 6814 | Length of Water Transmission pipes Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |

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| | | polyethylene pipes are used, it still takes a time to verify the earthquake resistance. Accordingly, the performance indicator should be marked with an asterisk (*) if the polyethylene pipe is included. | | 6826 | Length of Water Distribution pipes/ Distributing Main pipes/ Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |
| | | | | 6838 | Length of Water Distribution pipes/ Distributing Branch pipes/ Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |
| | | | | 6850 | Length of Raw Water Conveyance pipes/ Steel pipes (Connected with Welded Joint) (m) |
| | | | | 6854 | Length of Water Transmission pipes Steel pipes (Connected with Welded Joint) (m) |
| | | | | 6858 | Length of Water Distribution pipes/ Distributing Main pipes/ Steel pipes (Connected with Welded Joint) (m) |
| | | | | 6862 | Length of Water Distribution pipes/ Distributing Branch pipes/ Steel pipes (Connected with Welded Joint) (m) |
| | | | | 6852 | Length of Raw Water Conveyance pipes/ Polyethylene pipes (Connected with Reinforced Heat Fusion Attachment pipes Fittings) (m) |
| | | | | 6856 | Length of Water Transmission pipes Polyethylene pipes (Connected with Reinforced Heat Fusion Attachment pipes Fittings) (m) |
| | | | | 6860 | Length of Water Distribution pipes/ Distributing Main pipes/ Polyethylene pipes (Connected with Reinforced Heat Fusion Attachment pipes Fittings) (m) |
| | | | | 6864 | Length of Water Distribution pipes/ Distributing Branch pipes/ Polyethylene pipes (Connected with Reinforced Heat Fusion Attachment pipes Fittings) (m) |
| | | | | 6810 | Length of Raw Water Conveyance pipes/ Stainless Steel pipes (m) |
| | | | | 6822 | Length of Water Transmission pipes Stainless Steel pipes |
| | | | | 6834 | Length of Water Distribution pipes/ Distributing Main pipes/ Stainless Steel pipes (m) |
| | | | | 6846 | Length of Water Distribution pipes/ Distributing Branch pipes/ Stainless Steel pipes (m) |
| | | | | 0701 | Length of Raw Water Conveyance pipes/ Classified by Diameter/ Length of Raw Water Conveyance pipes/ Total |
| | | | | 0706 | Length of Water Transmission pipes Classified by Diameter/ Length of Water Transmission pipes/ Total (m) |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 2211 | Chemicals stock | Each purification plant has to keep chemicals for water treatment. An earthquake may make it impossible to deliver chemicals. Accordingly, it is desired to have appropriate amounts of chemical stocks. | Chemicals stock = Average chemical stock/ Daily consumption (unit: days) | 4205 | Chemical Storage/ Average Coagulant Storage (t) |
| | | | | 4242 | Chemical Storage/ Average Chlorine Agent Storage (t) |

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| | | | | 4206 | Chemical Storage/ Daily Average Coagulant Usage Volume (t/ day) |
| | | | | 4243 | Chemical Storage/ Daily Average Chlorine Agent Usage Volume (t/ day) |
| 2212 | Fuel stock | Each purification plant has to keep fuels. An earthquake may make it impossible to deliver fuels. Accordingly, it is desired to have appropriate amounts of fuel stocks able to supply power for a period of time assumed in the event of a disaster. | Fuel stock = Average fuel stock/ Daily consumption (unit: days) | 4207 | Fuel storage/ Average Fuel storage volume (t) |
| | | | | 4208 | Fuel storage/ Daily Water Consumption (t/ day) |
| 2213 | Water truck | The more the supplies, the more helpful in an emergency event, but cost and control problems persist. The necessary supplies include engine pumps, lamps, water balloons, water bags, and simple purifiers, but this indicator selects only emergency water trucks as their representative. | Water truck = (Number of water trucks/ Service population) × 1,000 (unit: No./1,000 persons) | 4211 | Number of Water trucks (台) |
| | | | | 0206 | Population/ Water Supply Population (Capita) |
| 2215 | Water service tank carried by vehicles | This indicator represents how much water can be supplied to 1,000 users via on-vehicle service tanks in the event of a disaster, that is, response to critical events such as earthquakes. | Water service tank carried by vehicles = (Total capacity of on -vehicle service tanks/ Service Population) × 1,000 (unit: m3/1,000 persons) | 4212 | Total Capacity of Water service tanks for car (m3) |
| | | | | 0206 | Population/ Water Supply Population (Capita) |
| 2216 | Ratio of non-utility generation facility | The indicator is the ratio of on-site generation power to total generation power in waterworks facilities, and shows the percentage of electric facilities able to run in an emergency event, that is, one of indices representing response to critical events. | Ratio of non-utility generation facility = (On-site generation power/ Total generation power) × 100 (unit:%) | 4209 | Capacity of Non-utility generation facilities (kW) |
| | | | | 4210 | Total Electric Power Capacity of Non-utility generation facilities (kW) |
| 3001 | Operating ratio | This indicator is one of indices showing the profitability. It indicates the extent to which the income covers the expense. The higher the operating ratio, the higher the prof it, and less than 100 percent means a loss | Operating ratio = (Operating income/ Operating expenses) × 100 (unit:%) | 5402 | ( 1 ) Operating Income [ (a)～ (c) ] (1,000 yen) |
| | | | | 5413 | ( 1 ) Operating Expenses [ (a)～ (j) ] (1,000 yen) |
| 3002 | Ratio of current expense to current income | This indicator is the most typical index showing the profitability. It indicates the extent to which the income covers the expense. The higher the ratio, the higher the current profit, and less than 100 percent means a loss. The operation is good if this indicator exceeds 100 percent within a charge calculating period (financial planning period) rather than in one fiscal year. | Ratio of current expense to current income = ((Operating income + Non-operating income)/ (Operating expenses + Non-operating expenses)) × 100 (unit: %) | 5402 | ( 1 ) Operating Income [ (a)～ (c) ] (1,000 yen) |
| | | | | 5406 | ( 2 ) Non-operating Income [ (a)～ (d) ] (1,000 yen) |
| | | | | 5413 | ( 1 ) Operating Expenses [ (a)～ (j) ] (1,000 yen) |

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| | | | | 5424 | (２) Non-operating Expenses [ (a)～ (e) ] (1,000 yen) |
| 3003 | Rate of total returns | This indicator shows the extent to which the gross income covers the gross expense. The operation is not good if the indicator value does not exceed 100 percent, which means that the income is less than the expense. | Rate of total returns = (Gross income/ Gross expenses) × 100 (unit:%) | 5401 | １/ Gross Income (１)＋ (２)＋ (３) (1,000 yen) |
| | | | | 5412 | ２/ Gross Expenses (１)＋ (２)＋ (３) (1,000 yen) |
| 3004 | Ratio of cumulative deficit | This indicator is the ratio of the cumulative deficit to the operating income (except the commissioned work revenue), and shows whether the operation of a water utility is good or not by grasping the amount of the cumulative deficits. It is one of indices showing the soundness of operation. If the indicator is not zero, it says that the operation is not good. The higher the value, the worse the operation. | Ratio of cumulative deficit = (Cumulative deficit/ (Operating income × Commissioned work income)) × 100 (unit:%) | 5535 | (c) Unappropriated Profit, Unappropriated Deficit (△) (1,000 yen) |
| | | | | 5402 | (１) Operating Income [ (a)～ (c) ] (1,000 yen) |
| | | | | 5404 | (b) Revenue on Trusted Construction (1,000 yen) |
| 3005 | Percentage of money transferred (revenue receipts) | This indicator represents the dependence of the revenue receipts on the transferred money, that is, the soundness and efficiency of operation. Drinking water supply services are based on a self -supporting system in which the source of revenue is a water rate. It is desirable to make the indicator value lower. | Percentage of money transferred (revenue receipts) = (Transferred money/ Revenue receipts) × 100 (unit:%) | 5409 | (c) Subsidy from General Account (1,000 yen) |
| | | | | 5401 | １/ Gross Income (１)＋ (２)＋ (３) (1,000 yen) |
| 3006 | Percentage of money transferred (capital income) | This indicator represents the dependence of the capital income on the transferred money, and is one of indices showing the soundness and efficiency of operation. Drinking water supply services are based on a self-supporting system in which the source of revenue is a water rate. It is desirable to make the indicator value lower. | Percentage of money transferred (capital income) = (Transferred money on capital accounts/ Capital income) × 100 (unit:%) | 5606 | 1/ Capital Receipt (2) Subsidies from General Account (1,000 yen) |
| | | | | 5608 | １/ Capital Receipt (４) Government Subsidy (1,000 yen) |
| | | | | 5611 | １/ Capital Receipt (７)/ Total [ (１)～ (６) ] (A) (1,000 yen) |
| 3007 | Revenue on water sales per personnel | This indicator employs the water supply revenue to represent productivity per staff member belonging to the profit and loss account. | Revenue on water sales per personnel = (Water supply revenue/ Number of staff members on profit and loss account)/ 1,000 (unit: thousand yen/person) | 5403 | (a) Revenue on Water Supply (1,000 yen) |
| | | | | 0330 | Number of Personnel which accounted to profit & loss account (Capita) |

| | | | | | |
|---|---|---|---|---|---|
| 3008 | Ratio of personnel salary costs for revenue on water sales | This indicator represents the ratio of the salaries paid to the personnel to the water supply revenue, and is one of indices used to analyze the profitability of operation. Basically, the water supply revenue should go to drinking water supply services, so it is not desirable to increase the indicator value by allotting the revenue to the personnel. | Ratio of personnel salary costs for revenue on water sales = (Labor cost/ Water supply revenue) × 100 (unit:%) | 5732 | 1/ Personnel Expenses〔(1)＋(2)〕(1,000 yen) |
| | | | | 5403 | (a) Revenue on Water Supply (1,000 yen) |
| 3009 | Ratio of income bond interest for revenue on water sales | This indicator represents the ratio of the interest on corporate bonds to the water supply revenue, and is one of indices used to analyze the profitability of operation. | Ratio of income bond interest for revenue on water sales = (Interest on corporate bonds/ Water supply revenue) × 100 (unit :%) | 5425 | (a) Interest Cost of Public Corporation Bonds (1,000 yen) |
| | | | | 5403 | (a) Revenue on Water Supply (1,000 yen) |
| 3010 | Ratio of depreciation cost for revenue on water sales | This indicator represents the ratio of the depreciation costs to the water supply revenue, and is one of indices used to analyze the profitability of operation. | Ratio of depreciation cost for revenue on water sales = (Depreciation cost/Water supply revenue) × 100 (unit:%) | 5421 | (h) Depreciation Expense (1,000 yen) |
| | | | | 5403 | (a) Revenue on Water Supply (1,000 yen) |
| 3011 | Ratio of principal redemption on revenue bond for revenue on water sales | This indicator represents the ratio of the money redeemed from corporate bonds to the water supply revenue, and is used to analyze the impact of the redemption money on operation. | Ratio of principal redemption on revenue bond for revenue on water sales = (Redemption money/ Water supply revenue) × 100 (unit:%) | 5617 | ２/ Capital Expenditure (３) Redemption of Public Corporation Bonds (1,000 yen) |
| | | | | 5403 | (a) Revenue on Water Supply (1,000 yen) |
| 3012 | Ratio of unamortized balance on revenue bond for revenue on water sales | This indicator represents the ratio of the balance of corporate bonds to the water supply revenue, and is used to analyze the corporate bond balance and its impact on operation. | Ratio of unamortized balance on revenue bond for revenue on water sales = (Corporate bond balance/ Water supply revenue) × 100 (unit:%) | 5523 | (２) Borrowed Capital [ (a)〜 (b) ] (1,000 yen) |
| | | | | 5403 | (a) Revenue on Water Supply (1,000 yen) |
| 3013 | Ratio of tariff to production (ratio of water supply charges to water supply expenses) | This indicator represents the balance of water supply, and is one of indices showing the soundness of operation. If the indicator value is below 100 percent, income other than charges compensates water supply expenses. | Ratio of tariff to production = (Water supply rate/ Water supply cost) × 100 (unit:%) | | |
| | | | | | |
| 3014 | Unit tariff of water supply | This indicator shows how much money water utilities earn by supplying a cubic meter of drinking water. | Unit tariff of water supply = (Water supply revenue/ Revenue water volume) × 100 (unit: yen/m3) | 5403 | (a) Revenue on Water Supply (1,000 yen) |

| | | | | | |
|---|---|---|---|---|---|
| | | | volume) × 100 (unit: yen/m3) | 5022 | Annual Water Supply Volume/ Breakdown/ Billed Water Consumption (1,000 m3) |
| | | | | 5027 | Annual Bulk Water Supply Volume/ Breakdown/ Billed Water Consumption (1,000 m3) |
| | | | | 5032 | Annual Water supply volume to another water supplier/ Breakdown/ Billed Water Consumption (1,000 m3) |
| 3015 | Cost to water supply | This indicator shows how much money water utilities pay for supplying a cubic meter of revenue water. | Cost to water supply = (Ordinary expenses - (Commissioned work cost + Unused material and article costs + Auxiliary service cost))/ Revenue water volume (unit: yen/m3) | 5413 | ( 1 ) Operating Expenses [ (a)～ (j) ] (1,000 yen) |
| | | | | 5424 | ( 2 ) Non-operating Expenses [ (a)～ (e) ] (1,000 yen) |
| | | | | 5418 | (e) Expense on Trusted Construction (1,000 yen) |
| | | | | 3703 | Cost of Materials, etc. sold among Previous "Others" (1,000 yen) |
| | | | | 3704 | Incidental Expenses (1,000 yen) |
| | | | | 5022 | Annual Water Supply Volume/ Breakdown/ Billed Water Consumption (1,000 m3) |
| | | | | 5027 | Annual Bulk Water Supply Volume/ Breakdown/ Billed Water Consumption (1,000 m3) |
| | | | | 5032 | Annual Water supply volume to another water supplier/ Breakdown/ Billed Water Consumption (1,000 m3) |
| 3016 | Charge for one month per 10 m3 for domestic | This indicator represents charges that the standard household pays for using water, and is one of indices showing the economical convenience of consumers. It is inevitable that different water utilities offer different water rates because they have different water resources, locations, waterworks facilities construction timing, operating scales, and labor and facilities maintenance costs. However, a large disparity in regions should be avoidable because water is indispensable to daily life. Water utilities should compare their water rates with the average to take measures for eliminating the disparity. | Charge for one month per 10 m3 for domestic = Monthly minimum charge (13-mm diameter) + Meter rate per 10 cubic meters (unit: yen) | 0117 | Tariff for Households/ monthly/ Basic Charge (Yen) |
| | | | | 0134 | Tariff for Households/ monthly/ Bill for Consumption of 10 m3 |

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|---|---|---|---|---|---|
| 3017 | Charge for one month per 20 m3 for domestic | This indicator represents charges that the standard household pays for using water, and is one of indices showing the economical convenience of consumers. It is inevitable that different water utilities offer different water rates because they have different water resources, locations, waterworks facilities construction timing, operating scales, and labor and facilities maintenance costs. However, a large disparity in regions should be avoidable because water is indispensable to daily life. Water utilities should compare their water rates with the average to take measures for eliminating the disparity. | Charge for one month per 20 m3 for domestic = Monthly minimum charge (13-mm diameter) + Meter rate per 20 cubic meters (unit: yen) | 0117 | Tariff for Households/ monthly/ Basic Charge (Yen) |
| | | | | 0133 | Tariff for Households/ monthly/ Bill for Consumption of 20 m3 |
| 3018 | Revenue water ratio | This indicator represents the ratio of revenue water to distribution input (supply volume) in a year, and allows water utilities to check whether the operation of facilities yields revenue. | Revenue water ratio = (Revenue water volume/ Supply volume) × 100 (unit: %) | 5022 | Annual Water Supply Volume/ Breakdown/ Billed Water Consumption (1,000 m3) |
| | | | | 5027 | Annual Bulk Water Supply Volume/ Breakdown/ Billed Water Consumption (1,000 m3) |
| | | | | 5032 | Annual Water supply volume to another water supplier/ Breakdown/ Billed Water Consumption (1,000 m3) |
| | | | | 5020 | Annual Water Supply Volume/ Annual Water Supply Volume (1,000 m3) |
| 3019 | Rate of facility utilization | This indicator shows the ratio of the average daily supply to the daily capacity, and allows water utilities to make a comprehensive judgment regarding the cost effectiveness of waterworks facilities. The larger the value, the higher the efficiency. The indicator is also given by multiplying the maximum operation rate and the load factor. If the indicator value is small because the maximum operation rate is low, not the load factor, it tells that investments are too much and that part of facilities is idle. | Rate of facility utilization = (Average daily supply/ Daily capacity) × 100 (unit: %) | 5106 | Water Supply Volume per Day/ Daily Average Water Supply Volume (m3) |
| | | | | 5118 | Capacity of Facilities (m3/ day) |
| 3020 | Maximum rate of operation | This indicator should define the ratio of the longest to the planned in the daily operating time of facilities, but it is difficult to find them. As a result, it represents the ratio of the maximum daily supply to the daily capacity, and is one of indices showing the efficiency of waterworks facilities. | Maximum rate of operation = (Maximum daily supply/ Daily capacity) × 100 (unit: %) | 5103 | Water Supply Volume per Day/ Daily Maximum Water Supply Volume (m3) |
| | | | | 5118 | Capacity of Facilities (m3/ day) |
| 3021 | Average rate of loading | This indicator is one of indices showing the efficiency of waterworks facilities. The larger the value, the higher the efficiency. In the water industry, the demand varies season by season and the facilities are designed to meet | Average rate of loading = (Average daily supply/ Maximum daily supply) × 100 (unit: %) | 5106 | Water Supply Volume per Day/ Daily Average Water Supply Volume (m3) |

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| | | a demand peak. As a result, the larger the demand variation, the lower the efficiency and load factor. | | 5103 | Water Supply Volume per Day/ Daily Maximum Water Supply Volume (m3) |
| 3022 | Current ratio | This indicator represents the ratio of the current assets to the current liabilities, that is, the capability of paying short -term obligations. The indicator value should be over 100 percent, otherwise a bad debt occurs. | Current ratio = (Current assets/ Current liabilities) × 100 (unit: %) | 5510 | ２/ Current Assets [ (１)～ (３) ] (1,000 yen) |
| | | | | 5517 | ６/ Current Liabilities [ (１)～ (２) ] (1,000 yen) |
| 3023 | Ratio of net worth to total capital | This indicator represents the ratio of the owned capital to the total capital (liabilities plus capital), and is one of indices showing the soundness of finance. Water utilities should increase the indicator value to make their operation stable. | Ratio of net worth to total capital = ((Owned capital + Surplus)/ Total of liabilities and capital) × 100 (unit: %) | 5522 | (１) Equity Capital (1,000 yen) |
| | | | | 5526 | ９/ Accumulated Profit [ (１)～ (２) ] (1,000 yen) |
| | | | | 5538 | １１/ Liabilities/ Total Capital [７＋１０] (1,000 yen) |
| 3024 | Ratio of fixed assets to equity capital | This indicator shows how much owned capital is invested in the fixed assets. If the value is within 100 percent, it means that investments in the fixed assets are within the owned capital. If the value exceeds 100 percent, it means that loans are given to capital investment, which causes problems, such as the payment of the loans and interests. | Ratio of fixed assets to equity capital = (Fixed assets/ (Owned capital + Surplus)) × 100 (unit: %) | 5501 | １/ Fixed Assets [ (１)～ (３) ] (1,000 yen) |
| | | | | 5522 | (１) Equity Capital (1,000 yen) |
| | | | | 5526 | ９/ Accumulated Profit [ (１)～ (２) ] (1,000 yen) |
| 3025 | Ratio of principal redemption cost on revenue bond to depreciation cost | This indicator shows the balance between invested capital recovery and reinvestment. If the indicator value exceed 100 percent, the soundness of investment deteriorates because the reinvestment relies on external funds like corporate bonds. | Ratio of principal redemption cost on revenue bond to depreciation cost = (Redemption principal/ Depreciation cost) × 100 (unit: %) | 5617 | ２/ Capital Expenditure (３) Redemption of Public Corporation Bonds (1,000 yen) |
| | | | | 5421 | (h) Depreciation Expense (1,000 yen) |
| 3026 | Turnover of fixed assets | This indicator represents the ratio of the operating income to the fixed assets, that is, how many times larger than the fixed assets the operating income is in a given period of time. The fixed assets turnover is very important because drinking water supply services relate closely to facilities. If the indicator value is large, the facilities run effectively, but if small, excess investments may occur. | Turnover of fixed assets = (Operating income - Commissioned work income)/ ((Initial fixed assets + Final fixed assets)/2) (unit: rotations) | 5402 | (１) Operating Income [ (a)～ (c) ] (1,000 yen) |
| | | | | 5418 | (e) Expense on Trusted Construction (1,000 yen) |
| | | | | 5501 | １/ Fixed Assets [ (１)～ (３) ] (1,000 yen) |
| | | | | 5501 | １/ Fixed Assets [ (１)～ (３) ] (1,000 yen) |
| 3027 | Efficiency of fixed assets utilization | This indicator represents the ratio of the annual water supply volume to the tangible fixed assets. The larger the value, the more efficient the facilities. If the indicator | Efficiency of fixed assets utilization = (Supply volume/ Tangible fixed assets) × 10,000 (unit: m3/10,000 | 5020 | Annual Water Supply Volume/ Annual Water Supply Volume (1,000 m3) |

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| | | value is low, water utilities should examine idle and unproductive assets. | yen) | 5502 | ( 1 ) Tangible Fixed Assets [ (a)〜 (e) ] (1,000 yen) |
| 3101 | Number of employees' qualifications | Offering drinking water supply services need statutory licenses. Water utilities can commission third parties to conduct any work, but should have qualified staff members. The qualification is classified into statutory and private licenses, but this indicator employs only the statutory. It does not include qualifications obtained as a personal interest. | Number of employees' qualifications = Number of statutory qualifications/ Total number of staff members (unit: No./person) | 3505 | Number of Qualified person of Technical administrator of waterworks/ Employee (Capita) |
| | | | | 3509 | Number of Qualified person of Inspector for water facilities construction/ Employee (Capita) |
| | | | | 0326 | Number of Personnel/ Sub/ Total (Capita) |
| 3105 | Technical employee's ratio | The inheritance of technology is necessary and important, but in current times, the number of engineers decreases. As the indicator value is reducing, it is more difficult for water utilities to maintain the facilities by themselves. | Technical employee's ratio = (Number of engineers/ Total number of staff members) × 100 (unit: %) | 0321 | Number of Personnel/ Engineering Staff/ Total (Capita) |
| | | | | 0326 | Number of Personnel/ Sub/ Total (Capita) |
| 3109 | Transmission input per employee | This indicator is one of indices showing the efficiency of whole drinking water supply services. | Transmission input per employee = Annual distribution input/ Total number of staff members (unit: m3/person) | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| | | | | 0326 | Number of Personnel/ Sub/ Total (Capita) |
| 3110 | Number of meters per employee | This indicator is one of indices showing the efficiency of whole drinking water supply services. | Number of meters per employee = Number of water meters/ Total number of staff members (unit: No./person) | 5215 | Number of installed meter |
| | | | | 0326 | Number of Personnel/ Sub/ Total (Capita) |
| 4001 | Electric power consumption per 1 m3 transmission input | Since it is important to keep power even in the event of an accident, duplex power lines may be necessary with compromising the efficiency in view of environmental protection and risk dispersion. The power consumption varies particularly depending on the geographical features of distribution systems. | Electric power consumption per 1 m3 transmission input = Total power consumption/ Annual transmission input (unit: kWh/m3) | 6119 | Electric Power Consumption計 (kWh) |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| 4002 | Energy consumption per 1 m3 transmission | Energy saving is encouraged to preserve the global environment. This indicator (MJ/m3) can be used to select measures effective in reducing environmental | Energy consumption per 1 m3 transmission input = Total energy consumption/ Annual transmission | | |

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| | m3 transmission input | select measures effective in reducing environmental loads, for example, when water utilities find a target value for energy reduction. | consumption/ Annual transmission input (unit: MJ/m3) | 6119 | Electric Power Consumption計 (kWh) |
| | | | | 4401～4423 | |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| 4003 | Renewable energy use ratio | This indicator represents the percentage of recyclable energy used by a water utility, and is one of indices showing the reduction of environmental loads and environmental preservation. It is desired to improve the efficiency of energy utilization and to decrease environmental loads by using unused and recyclable energy. | Renewable energy use ratio = (Recyclable power consumption/ Total power consumption) × 100 (unit: %) | 4501 | Renewable Energy Facilities/ Electric Power Consumption/ Hydroelectric Power Generation (kWh) |
| | | | | 4502 | Renewable Energy Facilities/ Electric Power Consumption/ Solar Power Generation (kWh) |
| | | | | 4503 | Renewable Energy Facilities/ Electric Power Consumption/ Wind Power Generation (kWh) |
| | | | | 4504 | Renewable Energy Facilities/ Electric Power Consumption/ Other Power Generation (kWh) |
| | | | | 6119 | Electric Power Consumption計 (kWh) |
| 4004 | Recycling ratio of generated sludge from purification plants | This indicator represents the effective use of sludge deposited during purification, and is one of indices showing the extent to which water utilities conserve the environment. Setting up a target value for this indicator can embody environmental activities (including environmental management systems). | Recycling ratio of generated sludge from purification plants = (Amount of used sludge/ Amount of deposited sludge) × 100 (unit: %) | 0833 | Operation Condition/ Disposition Method of Soil Produced in Water Purification/ Effective Utilization (%) |
| 4005 | Recycling ratio of construction by-product | This indicator represents the effective use of by-products generated during construction, and is one of indices showing the extent to which water utilities conserve the environment. Setting up a target value for this indicator can embody environmental activities (including environmental management systems). | Recycling ratio of construction by-product = (Amount of recycled by-products/ Amount of generated by-products) × 100 (unit: %) | 4301～4307 | |
| | | | | 4315～4321 | |
| 4006 | Emission of CO2 per 1 m3 transmission input | This indicator is one element of environmental measures, which water utilities take to reduce the amount of greenhouse gases. | Emission of CO2 per 1 m3 transmission input = (Carbon dioxide emission/ Annual transmission input) × 106 (unit: g CO2/m3) | | |
| | | | | 6120 | Contracted Electric Power Company ( 1 ) |
| | | | | 6119 | Electric Power Consumption計 (kWh) |

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| | | | | 4401～4423 | |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| 4101 | Underground water ratio | Water resources have surface and underground water, and the smaller the scale of water utilities, the larger the ratio of underground water. This is because the underground water is low in cost and stable, that is, the utilization value is high. However, water utilities should take care of the allowable volume of water because excess pumping may cause a land subsidence. | Underground water ratio = (Pumping discharge/ Water resource volume) × 100 (unit: %) | 5006 | Annual Water Abstraction Volume/ Ground Water/ Shallow Well Water (1,000 m3) |
| | | | | 5007 | Annual Water Abstraction Volume/ Ground Water/ Deep Well Water (1,000 m3) |
| | | | | 5010 | Annual Water Abstraction Volume/ Sub/ Total (1,000 m3) |
| 5009 | Outsourced purification plant ratio | Conventionally, no engineer was stationed in commissioned purification plants, but this indicator is applied only to third parties based on the law. This is because the conventional commission does not specify the scope strictly. This indicator employs the purification capacity rather than the number of purification plants because the former can clearly show the extent to which the plants are commissioned. | Outsourced purification plant ratio = (Commissioned purification capacity/ Total purification capacity) (unit: %) | 3410 | Capacity of Water Purification Plants Entrusted to Third Party (m3/ day) |
| | | | | 5118 | Capacity of Facilities (m3/ day) |
| 5101 | Number of purification plant accident | Many accidents occur in purification plants, but typically, the duplex system and backup function of facilities avoid a water purification or transmission failure because it has a serious impact. | Number of purification plant accident = Number of accidents for ten years/ Number of purification plants (unit: No./plant/ 10 years) | 3813 | Suspension time of water purification plants (times/ year) |
| | | | | 0545 | Water Purification Plant/ Number of Water Purification Plant/ Slow Sand Filtration System |
| | | | | 0546 | Water Purification Plant/ Number of Water Purification Plant/ Rapid Sand Filtration System |
| | | | | 0553 | Water Purification Plant/ Number of Water Purification Plant/ Membrane Filtration System |
| 5102 | Ratio of ductile iron and steel mains | This indicator focuses on the material strength of conveyance, transmission, and distribution pipes, that is, the maintainability. | Ratio of ductile iron and steel mains = ((Length of ductile cast iron pipes + Length of steel pipes)/ Total pipeline length) × 100 (unit: %) | 6802 | Length of Raw Water Conveyance pipes/ Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |
| | | | | 6803 | Length of Raw Water Conveyance pipes/ Ductile Iron pipes/ Except Previous item (m) |

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| | | | | 6814 | Length of Water Transmission pipes Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |
| | | | | 6815 | Length of Water Transmission pipes Ductile Iron pipes/ Except Previous item (m) |
| | | | | 6826 | Length of Water Distribution pipes/ Distributing Main pipes/ Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |
| | | | | 6827 | Length of Water Distribution pipes/ Distributing Main pipes/ Ductile Iron pipes/ Except Previous item (m) |
| | | | | 6838 | Length of Water Distribution pipes/ Distributing Branch pipes/ Ductile Iron pipes (Connected with Earthquake-resistant Joint) (m) |
| | | | | 6839 | Length of Water Distribution pipes/ Distributing Branch pipes/ Ductile Iron pipes/ Except Previous item (m) |
| | | | | 6866 | Length of Raw Water Conveyance pipes/ Ductile Iron pipes (Connected with K-type Mechanical Joint and Installed on the Stable Ground) (m) |
| | | | | 6867 | Length of Water Transmission pipes Ductile Iron pipes (Connected with K-type Mechanical Joint and Installed on the Stable Ground) (m) |
| | | | | 6868 | Length of Water Distribution pipes/ Distributing Main pipes/ Ductile Iron pipes (Connected with K-type Mechanical Joint and Installed on the Stable Ground) (m) |
| | | | | 6869 | Length of Water Distribution pipes/ Distributing Branch pipes/ Ductile Iron pipes (Connected with K-type Mechanical Joint and Installed on the Stable Ground) (m) |
| | | | | 6804 | Length of Raw Water Conveyance pipes/ Steel pipes (m) |
| | | | | 6816 | Length of Water Transmission pipes Steel pipes (m) |
| | | | | 6828 | Length of Water Distribution pipes/ Distributing Main pipes/ Steel pipes (m) |

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| | | | | 6840 | Length of Water Distribution pipes/ Distributing Branch pipes/ Steel pipes (m) |
| | | | | 0701 | Length of Raw Water Conveyance pipes/ Classified by Diameter/ Length of Raw Water Conveyance pipes/ Total (m) |
| | | | | 0706 | Length of Water Transmission pipes Classified by Diameter/ Length of Water Transmission pipes/ Total (m) |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 5103 | Number of pipeline failures | This indicator represents the annual sum of accidents in conveyance, transmission, and distribution pipes per pipeline length of 100 km, that is, the soundness of the pipelines There are various accidents; their scale and impact are different. Since this indicator evaluates failed pipelines from a facility control point of view, it ignores the scale of accidents. The influence of accidents varies depending on environmental conditions and measures, and any accident has a possibility of causing serious damage. | Number of pipeline failures = (Number of pipeline failures/ Total pipeline length) × 100 (unit: No./100 km) | 3814 | Number of pipeline accidents (times/ year) |
| | | | | 0701 | Length of Raw Water Conveyance pipes/ Classified by Diameter/ Length of Raw Water Conveyance pipes/ Total |
| | | | | 0706 | Length of Water Transmission pipes Classified by Diameter/ Length of Water Transmission pipes/ Total (m) |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 5106 | Number of service pipe failures | This indicator shows the soundness of service pipes from branch points to water meters. As a rule, consumers are responsible for maintaining service equipment, but water utilities should support it actively to improve drinking water supply services. | Number of service pipe failures = (Number of service pipe failures/ Total number of users) × 1,000 (unit: No./1,000 No.) | 3910 | Number of water supply pipe accidents (times) |
| | | | | 5214 | Tariff structure by customer use/ Number of Household/ Total |
| | | | | 5342 | Tariff structure by meter size/ Number of Household/ Total |
| 5107 | Leakage rate | Knowing the volume of water is basic to maintenance, so water utilities should make correct measurements. Since it is impossible to measure the volume of leaked water directly, water utilities are obliged to do estimations. It is recommended that water utilities use a logical analysis as shown in the section “4.3 Structure of classified water quantity.” | Leakage rate = (Annual leakage/ Annual transmission input) × 100 (unit: %) | 3911 | Annual Water leakage volume (m3/ year) |
| | | | | 5018 | Annual Water Purified Volume/ Annual Water Purified Volume/ Total (1,000 m3) |
| | | | | 5011 | Annual Water Abstraction Volume/ Purified Water Receiving (1,000 m3) |
| 5108 | Leakage volume per contracted service connection | Knowing the volume of water is basic to maintenance, so water utilities should make correct measurements. Since it is impossible to measure the volume of leaked water directly, water utilities are obliged to do estimations. It is recommended that water utilities use a logical analysis as shown in the section “4.3 Structure of classified water | Leakage volume per contracted service connection = Annual leakage/ Total number of users (unit: m3/connection) | 3911 | Annual Water leakage volume (m3/ year) |
| | | | | 5214 | Tariff structure by customer use/ Number of Household/ Total |

| | | | | | |
|---|---|---|---|---|---|
| | | quantity.” | | 5342 | Tariff structure by meter size/ Number of Household/ Total |
| 5109 | Hour of water interruption or water turbidity | A drought causes a water cut, but it is not sudden. This indicator includes only accidental water cuts. If private plumbing work interrupts water supply, it is excluded because of private responsibilities. | Hour of water interruption or water turbidity = (Water cut and turbidity time × Suffered service population)/ Service population (unit: hour) | 9201 | |
| | | | | 9202 | |
| | | | | 0206 | Population/ Water Supply Population (Capita) |
| 5112 | Valve density | This indicator shows the flexibility of water distribution and the maintainability of pipelines. Water utilities should deploy the valves in appropriate places while considering the configuration and geographical features of pipeline facilities in order to average the dynamic water pressure, to use water rationally, and to maintain the pipelines properly. Moreover, water utilities should install the valves to minimize the area where an emergency water cut occurs. | Valve density = Number of valves/ Total pipeline length (unit: No./km) | 0747 | Number of Installed Valve |
| | | | | 0701 | Length of Raw Water Conveyance pipes/ Classified by Diameter/ Length of Raw Water Conveyance pipes/ Total (m) |
| | | | | 0706 | Length of Water Transmission pipes Classified by Diameter/ Length of Water Transmission pipes/ Total (m) |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |
| 5114 | Hydrant density | This indicator shows the pipeline facility’s capabilities of firefighting and risk management as a lifesaving line. The waterworks play the role of supplying water for firefighting, so the hydrant supplies water when a fire occurs. | Hydrant density = Total number of hydrants/ Distribution pipe length (Unit: No./km) | 0743 | Number of Fire Hydrant 地 上 (基) |
| | | | | 0744 | Number of Fire Hydrant 地 下 (基) |
| | | | | 0745 | Number of Fire Hydrant/ Others (基) |
| | | | | 0711 | Length of Water Distribution pipes Classified by Diameter/ Length of Water Distribution pipes/ Total (m) |