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| At a glance | **1** | This document provides additional context around the information requested in the RfI Response Template J. |

CONFIDENCE GRADES

1. This RfI includes a confidence grading system which requires each Local Authority to apply a level of confidence to each request.
2. The confidence grade system has been developed to provide a reasoned basis for Local Authorities to qualify information in respect to reliability and accuracy. It is essential that proper care and a high level of application is given to the assignment of confidence grades to data requiring such annexation.
3. There are two elements to the confidence grades:

* Reliability bands (A to D); and
* Accuracy bands (1 to 6).

1. The reliability bands are assigned according to the source of the information.

| **Reliability Band** | **Description** |
| --- | --- |
| A | Sound textual records, procedures, investigations or analysis properly documented and recognised as the best method of assessment. |
| B | As A but with minor shortcomings. Examples include old assessment, some missing documentation, some reliance on unconfirmed reports, some use of extrapolation. |
| C | Extrapolation from limited sample for which Grade A or B data is available. |
| D | Unconfirmed verbal reports, cursory inspections or analysis. |

1. Accuracy bands provide the margin of error around the central estimate.

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| --- | --- | --- |
| **Accuracy Band** | **Accuracy to or within +/-** | **but outside +/-** |
| 1 | 1% | - |
| 2 | 5% | 1% |
| 3 | 10% | 5% |
| 4 | 25% | 10% |
| 5 | 50% | 25% |
| 6 | 100% | 50% |
| X | Accuracy outside +/- 100 %, zero or small numbers or otherwise incompatible, see example below. | |

1. The X grade is generally only likely to be appropriate where a zero has been entered.
2. The overall confidence grade is a combination of the reliability and accuracy band. For example:

* A2: Data based on sound records etc. (A, highly reliable) and estimated to be within +/- 5% (accuracy band 2);
* C4: Data based on extrapolation from a limited sample (C, unreliable) and estimated to be within +/- 25% (accuracy band 4);
* AX: Data based on sound records etc. (A, highly reliable) but value too small to calculate any meaningful accuracy percentage.

1. The table below provides a list of compatible confidence grades.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Compatible Confidence Grades** | | | | |
| **Accuracy Band** | **Reliability Band** | | | |
|  | A | B | C | D |
| 1 | A1 |  |  |  |
| 2 | A2 | B2 | C2 |  |
| 3 | A3 | B3 | C3 | D3 |
| 4 | A4 | B4 | C4 | D4 |
| 5 |  |  | C5 | D5 |
| 6 |  |  |  | D6 |
| X | AX | BX | CX | DX |

1. As shown in the table above, certain reliability and accuracy band combinations are considered to be incompatible – for example, D1 or D2.
2. When selecting a confidence grade from the drop-down boxes provided in the template, it would be appreciated if each Local Authority could add explanatory comments for responses with lower confidence levels in the Comments field.

JOINT VENTURES

1. In the event of a joint venture of assets serving two or more Local Authority areas, asset values should be allocated to each Local Authority according to the contractual arrangements in place (e.g. how costs are shared). The Local Authority is expected to explain the allocation rules used to apportion asset values in the commentary cells of the respective table and line.

GLOSSARY

|  |  |
| --- | --- |
| **MEICA** | Mechanical, Electrical, Instrumentation, Control and Automation |
| **ORC** | Optimised Replacement Cost |

TABLE J1: SUMMARY - ASSET REPLACEMENT

Background

1. The purpose of this table is to estimate future asset replacement requirements in the medium to long-term. This is calculated for each asset category based on dividing an estimate of the replacement cost of the asset base (in New Zealand, based on the Optimised Replacement Cost methodology) by an estimate of the expected full lifetime of those assets.
2. In Scotland, Scottish Water and WICS completed such an analysis to understand the appropriate level of replacement investment to be allowed for in customer charges over time for the Strategic Review of Charges 2021-27. Scottish Water’s analysis is outlined in the accompanying document titled ‘Scottish Water’s transition profiles for asset replacement in Tier 2: Methodology’. We anticipate that Scottish Water will also present its methodology at a Webinar. This should assist Local Authorities in completing the J Tables.
3. This analysis will be important in New Zealand in order to understand the appropriate level of asset replacement investment, and future investment requirements, in the long-term.
4. As further information, Watercare has already completed this analysis. It used information on Optimised Replacement Cost which it already had available. This was further complemented by more recent information on contractor unit rates.
5. The analysis requires three steps:
   1. Categorisation of assets
   2. Asset life
   3. Cost of replacement

Categorisation of assets

1. Table J1 requires broad categorisations of assets. It is important that Local Authorities identify and report information on Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) equipment. These are assets which have shorter asset lives and require replacement several times over the lifetime of a larger asset such as a treatment plant. Appendix 1 provides a list of assets considered MEICA for this table.
2. Local Authorities should ensure that all assets are accounted for in Table J1.

Asset lifetime

1. Table J1 requests a broad range for the estimated asset life for each category of assets assuming that the asset is new. This involves:
   1. Identifying a “maximum” possible life (e.g. by considering information such as: the site creation date, the site refurbishment date, the site estimated date, the unit replacement date);
   2. Identifying a “minimum” possible life (e.g. by considering the latest maintenance intervention date).
2. This could be based on asset inventories and engineering and asset management judgement, where appropriate. The Local Authority should explain the approach taken and the source of information in the commentary.

Cost of replacement

1. Local Authorities should provide a cost range for each of the categories of assets as listed. These cost ranges should be based on Optimised Replacement Cost. It is important that the Local Authority provides the non-depreciated Optimised Replacement Cost. Otherwise, the analysis will understate the true asset replacement requirement in the future.
2. The commentary should provide the date that the assessment of the Optimised Replacement Cost was undertaken and, if available, provide the supporting reports.
3. Local Authorities should provide contractor rates for each category of asset in Table J1. In the event that such rates are not available, Local Authorities should complete Table J3 in line with the detailed instructions provided.

Annualised cost of replacement (economic depreciation)

1. For Three Waters services to be sustainable, the economic depreciation needs to be reflected in the charges that are levied on customers and communities. We calculate the economic depreciation by dividing the Optimised Cost of Replacement for each asset category by its expected life.
2. This will provide a high and low estimate of the annualised cost of replacement as we will look to divide the highest optimised replacement cost by the lowest asset life and the lowest optimised replacement cost by the highest asset life. This should give us confidence that if charged economic depreciation is consistent with this range then services are broadly sustainable.

Asset quantity and average capacity measurements

1. **Estimated average installation year:** Please provide the estimated average installation year for each of the assets described in days. For example, the average age, in years, of the raw water mains.
2. **Unit of measurement:** Please provide the units of measurement that corresponds with the value of measure in the point below. For example, kilometres (water mains with a length of [xx] kilometres) or quantity (number of pumping stations).
3. **Value of measure:** Please provide the value of measure that corresponds to the unit of measurement above. For example, 100 kilometres (water mains with a length of 100 kilometres) or 5 (5 pumping stations).
4. **Capacity description:** Please provide a description of the average capacity of the assets in the preceding points above. For example, 300mm diameter (water mains with a length of 100 kilometres and average dimeter of 300mm) or 10,000 litres per minute (5 pumping stations with an average pumping capacity of 10,000 litres per minute).

BLOCK 1: WATER SERVICE

(i) Source

|  |  |  |  |
| --- | --- | --- | --- |
| **J1.1** | **Water Service (Source) – Raw Water Pumping Stations** | | **NZ$000,000/ Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for raw water pumping stations. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.2** | **Water Service (Source) – Raw Water Mains and aqueducts** | | **NZ$000,000/ Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for raw water mains and aqueducts. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.3** | **Water Service (Source) – Dams, impounding reservoirs and raw water intakes** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for dams, impounding reservoirs and raw water intakes. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

(ii) Water Treatment Plants

|  |  |  |  |
| --- | --- | --- | --- |
| **J1.4** | **Water Service (Water Treatment Plants) – Civils** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for civil structures at water treatment plants. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.5** | **Water Service (Water Treatment Plants) – MEICA** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for Mechanical Electrical Instrumentation, Control and Automation Equipment (MEICA) at water treatment plants. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

(iii) Distribution

|  |  |  |  |
| --- | --- | --- | --- |
| **J1.6** | **Water Service (Distribution) – Treated Water Storage** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for treated water storage. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.7** | **Water Service (Distribution) – Treated Water Pumping Stations** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for treated water pumping stations. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.8** | **Water Service (Distribution) – Water Supply/ Communication Pipes** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for water supply/communication pipes (i.e. pipes from the curtilage of the property and into the customers home). An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.9** | **Water Service (Distribution) – Water Mains >300mm** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for water mains with a nominal bore with a diameter larger than 300mm. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.10** | **Water Service (Distribution) – Water Mains ≤300mm** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for water mains with a nominal bore with a diameter of 300mm or smaller. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.11** | **Water Service (Distribution) – Water Meters** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for water meters. This could include water meters on the distribution network (e.g. district meters). An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

BLOCK 2: WASTEWATER SERVICE

(i) Collection

|  |  |  |  |
| --- | --- | --- | --- |
| **J1.12** | **Wastewater Service (Collection) – Lateral sewers** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for lateral sewers. Local Authorities should only report the asset values if they operate and maintain lateral sewers. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.13** | **Wastewater Service (Collection) - Sewers** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for wastewater sewers. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.14** | **Wastewater Service (Collection) - Combined sewers** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for combined sewers. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.15** | **Wastewater Service (Collection) – Wastewater and Sludge Pumping Mains** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for wastewater and sludge pumping mains. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.16** | **Wastewater Service (Collection) – Combined Wastewater and Emergency Outflows** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for combined wastewater and emergency outflows. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.17** | **Wastewater Service (Collection) – Wastewater Pumping Stations** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for wastewater pumping stations. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.18** | **Wastewater Service (Collection) – Other Wastewater Structures** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for other wastewater structures. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.19** | **Wastewater Service (Collection) – Cess and Septic Tanks** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for cess and septic tanks. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

(ii) Wastewater Treatment Plants

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| --- | --- | --- | --- |
| **J1.20** | **Wastewater Service (Wastewater Treatment Plants) – Civils** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for civil structures at wastewater treatment plants. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.21** | **Wastewater Service (Wastewater Treatment Plants) – MEICA** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for MEICA assets at wastewater treatment plants. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

(iii) Discharge

|  |  |  |  |
| --- | --- | --- | --- |
| **J1.22** | **Wastewater Service (Discharge) – Sludge Treatment Facilities** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for sludge treatment facilities. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.23** | **Wastewater Service (Discharge) – Long and Short Sea Outfalls** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for long and short sea outfalls. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

BLOCK 3: STORMWATER SERVICE

(i) Collection

|  |  |  |  |
| --- | --- | --- | --- |
| **J1.24** | **Stormwater Service (Collection) – Stormwater only sewers** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for stormwater only sewers. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.25** | **Stormwater Service (Collection) – Stormwater Pumping Mains** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for stormwater pumping mains. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.26** | **Stormwater Service (Collection) – Stormwater Pumping Stations** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for stormwater pumping stations. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |
| **J1.27** | **Stormwater Service (Collection) – Other Stormwater Structures** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for other stormwater structures. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

BLOCK 4: BUSINESS SERVICES

|  |  |  |  |
| --- | --- | --- | --- |
| **J1.28** | **Business Services** | | **NZ$000,000 / Nr** |
| *Definition:* | | The total optimised replacement cost and lifetime for business services. This can include, for example, information systems, IT equipment, telemetry systems. An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

BLOCK 5: CONCESSION ARRANGEMENT

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| --- | --- | --- | --- |
| **J1.29** | **Concession Arrangements – Civils** | | **NZ$000,000 / Nr** |
| *Definition:* | | In Scotland, Scottish Water has Private Finance Initiative schemes (also known as a Design, Build, Finance and Operate schemes or concession arrangements) in place for the provision of wastewater treatment at certain large treatment plants. Scottish Water pays an annual charge to the third party over the lifetime of the contract. At the end of the contract, the ownership of the assets transfers back to Scottish Water – at which point Scottish Water will be responsible for the replacement of those assets at the appropriate time.  If the Local Authorities have similar arrangements for the provision of water and wastewater services (i.e. where an asset will be transferred to them at a date in the future), please provide the estimated optimised replacement cost and expected asset lives for Civil structures for these assets.  An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

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| --- | --- | --- | --- |
| **J1.30** | **Concession Arrangements – MEICA** | | **NZ$000,000 / Nr** |
| *Definition:* | | If the Local Authorities have similar arrangements for the provision of water and wastewater services (i.e. where an asset will be transferred to them at a date in the future), please provide the estimated optimised replacement cost and expected asset lives for MEICA equipment for these assets.  An upper and lower threshold should be entered by the Local Authority. Please explain as part of the commentary how the estimate has been calculated and, if based on a valuation, when this took place. | |
| *Processing Rules:* | | Input / Calculated field | |

TABLE J2 – DISAGGREGATED ASSET INFORMATION

Mains laying

1. Estimates in the Columns a) to c) shall be consistent with the definition of surface type categories as follows:
   1. **Mains Laying – Grassland**: Urban/rural verges, new development sites or open fields normally used for grazing. Allow for reinstatement of original surface but assume that no imported backfill material other than pipe surround is required. Exclude the costs of traffic management.
   2. **Mains Laying - Rural / Suburban highway**: Type 3 or 4 reinstatement and non-traffic sensitive. For example, secondary or minor roads, housing estates. For standard costs, assume the cheapest method permitted.
   3. **Mains Laying - Urban highway:** Type 2 reinstatement and traffic sensitive. For example, cities and town centre trunk roads. For standard costs, assume the cheapest method permitted.

Wastewater and stormwater sewer laying

1. Estimates in the Columns a) to c) shall be consistent with the definition of surface type categories as provided for water above (i.e. grassland, rural/suburban highway, urban highway).

BLOCK 1: LENGTH OF MAINS

|  |  |  |  |
| --- | --- | --- | --- |
| **J2.1** | **Nominal bore ≤100mm** | | **m** |
| *Definition:* | | The total length of ≤100mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations. | |
| *Processing Rules:* | | Input field | |
| **J2.2** | **Nominal bore between 101mm and 150mm** | | **m** |
| *Definition:* | | The total length of between 101mm and 150mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations. | |
| *Processing Rules:* | | Input field | |

|  |  |  |  |
| --- | --- | --- | --- |
| **J2.3** | **Nominal bore between 151mm and 200mm** | | **m** |
| *Definition:* | | The total length of between 151mm and 200mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations. | |
| *Processing Rules:* | | Input field | |
| **J2.4** | **Nominal bore between 201mm and 300mm** | | **m** |
| *Definition:* | | The total length of between 201mm and 300mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations. | |
| *Processing Rules:* | | Input field | |
| **J2.5** | **Nominal bore between 301mm and 450mm** | | **m** |
| *Definition:* | | The total length of between 301mm and 450mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations. | |
| *Processing Rules:* | | Input field | |
| **J2.6** | **Nominal bore between 451mm and 600mm** | | **m** |
| *Definition:* | | The total length of between 451mm and 600mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations | |
| *Processing Rules:* | | Input field | |
| **J2.7** | **Nominal bore >600mm** | | **m** |
| *Definition:* | | The total length of >600mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations. | |
| *Processing Rules:* | | Input field | |

BLOCK 2: LENGTH OF SEWERS

|  |  |  |  |
| --- | --- | --- | --- |
| **J2.8** | **Diameter ≤150mm** | | **m** |
| *Definition:* | | The total length of ≤150mm diameter sewers, at a depth of 2.00mm cover, (to crown of pipe), including gravity sewers, rising mains, and combined sewers. Exclude lateral sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.9** | **Diameter between 151mm and 225mm** | | **m** |
| *Definition:* | | The total length of between 151mm and 225mm diameter sewers, at a depth of 2.00mm cover, (to crown of pipe), including gravity sewers, rising mains, and combined sewers. Exclude lateral sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.10** | **Diameter between 226mm and 300mm** | | **m** |
| *Definition:* | | The total length of between 226mm and 300mm diameter sewers, at a depth of 2.00mm cover, (to crown of pipe), including gravity sewers, rising mains, and combined sewers. Exclude lateral sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.11** | **Diameter between 301mm and 450mm** | | **m** |
| *Definition:* | | The total length of between 301mm and 450mm diameter sewers, at a depth of 2.00mm cover, (to crown of pipe), including gravity sewers, rising mains, and combined sewers. Exclude lateral sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.12** | **Diameter between 451mm and 600mm** | | **m** |
| *Definition:* | | The total length of between 451mm and 600mm diameter sewers, at a depth of 2.00mm cover, (to crown of pipe), including gravity sewers, rising mains, and combined sewers. Exclude lateral sewers. | |
| *Processing Rules:* | | Input field | |

|  |  |  |  |
| --- | --- | --- | --- |
| **J2.13** | **Diameter between 601mm and 900mm** | | **m** |
| *Definition:* | | The total length of between 601mm and 900mm diameter sewers, at a depth of 2.00mm cover, (to crown of pipe), including gravity sewers, rising mains, and combined sewers. Exclude lateral sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.14** | **Diameter >900mm** | | **m** |
| *Definition:* | | The total length of >900mm diameter sewers, at a depth of 2.00mm cover, (to crown of pipe), including gravity sewers, rising mains, and combined sewers. Exclude lateral sewers. | |
| *Processing Rules:* | | Input field | |

BLOCK 3: LENGTH OF STORMWATER SEWERS

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| --- | --- | --- | --- |
| **J2.15** | **Diameter ≤100mm** | | **m** |
| *Definition:* | | The total length of ≤100mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.16** | **Diameter between 101mm and 150mm** | | **m** |
| *Definition:* | | The total length of between 101mm and 150mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.17** | **Diameter between 151mm and 225mm** | | **m** |
| *Definition:* | | The total length of between 151mm and 225mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.18** | **Diameter between 226mm and 300mm** | | **m** |
| *Definition:* | | The total length of between 226mm and 300mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.19** | **Diameter between 301mm and 375mm** | | **m** |
| *Definition:* | | The total length of between 301mm and 375mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.20** | **Diameter between 376mm and 450mm** | | **m** |
| *Definition:* | | The total length of between 376mm and 450mm diameter sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.21** | **Diameter between 451mm and 600mm** | | **m** |
| *Definition:* | | The total length of between 451mm and 600mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.22** | **Diameter between 601mm and 900mm** | | **m** |
| *Definition:* | | The total length of between 601mm and 900mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |
| **J2.23** | **Diameter >900mm** | | **m** |
| *Definition:* | | The total length of >900mm diameter stormwater sewers. | |
| *Processing Rules:* | | Input field | |

TABLE J3 - CONTRACTOR RATES FOR ASSET REPLACEMENT

Overall guidance

1. If information is not available for contractor rates, Local Authorities should provide their best informed guess based on the information available (e.g. from recent projects) and reflect the uncertainty in selecting the appropriate confidence grade.

Objectives and format of the submission

1. This table is only for Local Authorities that are unable to provide contractor rates for each category of asset in Table J1. These Local Authorities should provide standardised unit costs in line with the detailed instructions provided below.
2. The submission shall consist of sections as set out below.
   * A description of the sources of information and the general methodology and assumptions used in compiling standard cost estimates.
   * Infrastructure standard cost estimates and commentary for assets and size categories in table J1, as set out in the infrastructure standard cost analysis section of these requirements.

Sources of information and general methodology

1. It is a requirement of the submission that standard cost estimates are based on sources of information consistent with those used by the Local Authority to estimate costs of forecast capital programme. Local Authorities’ assessment of the Optimised Replacement Cost should also be compiled from a common unit cost database.
2. The Local Authority shall document the main source data used and the method used to translate source data into the standard cost estimates. The Local Authority shall indicate the areas where unit cost data was not available from within the Local Authority and the sources of data used as an alternative.
3. All standard costs submitted shall be presented at price levels in 2020 (i.e. current prices).

Engineering judgement grades (Confidence Grades)

1. An engineering judgement grade shall be applied to each of the standard cost estimates according to the guidance below. It is essential that the Local Authority give proper care in the assignment of engineering judgement grades to the standard cost estimates.

Reliability band - source of information

1. Reliability bands shall be assigned as set out in the framework provided in Table 1 below. The Local Authority shall indicate the areas where unit cost data was not available internally and the sources of data used as an alternative.

Table : Framework for Reliability Bands

| Reliability Band | General Description | Main source of data used in standard cost estimation |
| --- | --- | --- |
| A | Local Authority Specific data | Standard cost is in a field where the Local Authority has considerable experience in its own region and can call on data from a series of similar completed projects in a similar size band. |
| B | Local Authority Specific data | Standard cost is in a field where the Local Authority has experience in its own region and can call on data from either a limited number of completed projects or detailed design estimates in a similar size band. |
| C | Other water industry data. | Standard cost data is based on data relating to projects carried out by the Local Authority outside its region or in projects of significantly different size bands, on a standard NZ costing model or contractors estimates with limited or no Local Authority specific input. |
| D | International data. Notional estimates. | Standard cost is based on international data or on notional estimates. |

Accuracy Band

1. The accuracy bands specified by the Local Authority shall relate to the accuracy of the Local Authority’s standard cost estimate compared to the actual cost the Local Authority would incur in undertaking the works as specified. The same methodology for accuracy band allocation applies in line with the guidance document.

Infrastructure standard cost analysis

1. The Local Authority should provide estimates for infrastructure standard costs in Table J3. These cover a range of sizes in common use in the industry.
2. The standard cost estimates produced are to be based on whole project costs of completed projects wherever possible. However, in order that broad comparisons can be made it is necessary to reduce the external factors that are beyond the Local Authorities’ control. Standard costs therefore require unit costs for construction, which are typical of situations where adverse conditions and complications are generally minimal. The following inclusions and exclusions therefore apply. Standard costs shall represent the average unit costs for work that complies with the standard cost specification.
   * Assume no unusual ground conditions. Omit de-watering, soil stabilisation, deep foundations, rafts, piling, special ground support, ground anchors and excavation in rock;
   * Assume an average non-complex amount of trench water pumping and typical requirements for diversion of services. Include for non-complex geotechnical investigations;
   * Assume excavated materials are not contaminated and can be used to refill trenches in field/verge;
   * Assume trenches are refilled with stone in highways and excavated material disposed of to a landfill tip 1km distant;
   * Assume all necessary working space and areas for storage of materials are readily available at nominal cost;
   * Assume open trench laying; and
   * Project Management Costs to be included in standard cost estimates are shown in the accompanying checklist sheet. Note that a general adjustment to the standard costs can be made to cover the management costs on above items. Adjustments for tender-outturn margin and contingencies should be the same as normal levels assumed in the Local Authority's investment projections.

Mains laying

1. Standard costs are required for new water mains for the size bands in lines J3.1 to J3.6 in Table J3. Therefore, no allowance needs to be made for maintaining flows, over-pumping or disconnection or reconnection of services.
2. Diameters relate to the nominal internal bore of the pipe. Rates are required for the diameters specified. Assume that depth of cover to the mains is 900mm to the crown of the pipe.
3. State the assumptions regarding the pipe material, for which the design pressure should not exceed 10 bar.
4. Estimates in the Columns a) to c) shall be consistent with the definition of surface type categories as provided in section J2 (i.e. grassland, rural/suburban highway, urban highway).
5. Costs are to include all fixtures and fittings and ancillary works, along with associated structures, at defined frequencies as given in Table 2 below. Cost of communication pipes, stopcocks and meter boxes should be excluded.

Table : Table of Frequencies

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Nom. Bore (mm)** | **FREQUENCY OF OCCURRENCE (Number / 100m)** | | | | | | | | |
| **Access Pits** | **Sluice Valves** | **Hydrants / Flush Valves** | **Tees** | **Bends** | **Trial Holes** | **Samples** | **Unplanned Pits** | **Air valves** |
| 100  150  200  400  600 | 1.5  1.5  0.75  0.75  0.75 | 1.0  1.0  0.2  0.07  0.07 | 1.0  1.0  0.2  0.07  0.07 | 0.75  0.75  0.2  0.07  0.07 | 0.5  0.5  0.07  0.07  0.07 | 0.75  0.75  0.4  0.2  0.2 | 0.2  0.2  0.2  0.2  0.2 | 0.63  0.63  0.33  0.17  0.17 | N/A  N/A  N/A  0.07  0.07 |
| **FREQUENCIES:**  1.5 = 1 per 67m 0.5 = 1 per 200m 0.17 = 1 per 600m  1.0 = 1 per 100m 0.4 = 1 per 250m 0.1 = 1 per 1000m  0.75 = 1 per 133m 0.33 = 1 per 300m 0.07 = 1 per 1500m  0.63 = 1 per 160m 0.2 = 1 per 500m | | | | | | | | | |

Wastewater and Stormwater Sewer Laying

1. Standard costs are required for new wastewater sewers for the size bands in lines J3.7 to J3.12 and stormwater sewers for the size bands in lines J3.13 to J3.20 in Table J3. Therefore, no allowance needs to be made for maintaining flows, over-pumping or disconnection or reconnection of laterals and other sewers. Include both temporary and permanent reinstatement.
2. Diameters relate to the nominal internal bore of the pipe. Rates are required for the diameters specified. Assume that depth of cover to the sewer is 2.0m to the crown of the pipe.
3. Costs are to include for a sewer junction and cap at 10 metre intervals. Assume 50m intervals between manholes. Assume no requirements for backdrops to manholes, ventpoles and flushing chambers.
4. Costs are to be based on open-trench pipe laying with all other assumptions consistent with the relevant design and construction guidelines in Sewers for Adoption (4th edition). State assumptions regarding the pipe material and also confirm frequency of lateral connections.
5. Estimates in the Columns a) to c) shall be consistent with the definition of surface type categories as provided in section J2 (i.e. grassland, rural/suburban highway, urban highway).
6. Where the Local Authority’s projects costs are based on an assumption different from that specified above (i.e. depth of cover, etc.) then the Local Authority should make appropriate adjustments to its project costs such that the standard costs submitted reflect the assumptions specified in this document.

BLOCK 1: WATER INFRASTRUCTURE STANDARD COSTS: MAINS LAYING

|  |  |  |  |
| --- | --- | --- | --- |
| **J3.1** | **Nominal bore 100mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 100mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.2** | **Nominal bore 150mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 150mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.3** | **Nominal bore 200mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 200mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.4** | **Nominal bore 300mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 300mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |

|  |  |  |  |
| --- | --- | --- | --- |
| **J3.5** | **Nominal bore 450mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 450mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.6** | **Nominal bore 600mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 600mm diameter pipe laid at a depth of no greater than 900mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |

BLOCK 2: WASTEWATER INFRASTRUCTURE STANDARD COSTS: SEWER LAYING

|  |  |  |  |
| --- | --- | --- | --- |
| **J3.7** | **Diameter 150mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 150mm diameter sewer at a depth of 2.00mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.8** | **Diameter 225mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 225mm diameter sewer at a depth of 2.00mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.9** | **Diameter 300mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 300mm diameter sewer at a depth of 2.00mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |

|  |  |  |  |
| --- | --- | --- | --- |
| **J3.10** | **Diameter 450mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 450mm diameter sewer at a depth of 2.00mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.11** | **Diameter 600mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 600mm diameter sewer at a depth of 2.00mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.12** | **Diameter 900mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 900mm diameter sewer at a depth of 2.00mm cover, (to crown of pipe), in the specified locations.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |

BLOCK 3: STORMWATER INFRASTRUCTURE STANDARD COSTS: STORMWATER SEWER LAYING

|  |  |  |  |
| --- | --- | --- | --- |
| **J3.13** | **Diameter 100mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 100mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.14** | **Diameter 150mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 150mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.15** | **Diameter 225mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 225mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.16** | **Diameter 300mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 300mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.17** | **Diameter 375mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 375mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.18** | **Diameter 450mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 450mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.19** | **Diameter 600mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 600mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
| **J3.20** | **Diameter 900mm** | | **NZ$/m (1dp)** |
| *Definition:* | | Estimated cost per metre of a 900mm diameter stormwater sewer.  These should be based on recent estimates of contractor unit rates. If these are not available, please explain the approach taken in the commentary. | |
| *Processing Rules:* | | Input field | |
|  | |  | |
|  | |  | |

APPENDIX 1 MEICA ASSETS

|  |  |  |
| --- | --- | --- |
| CLASSIFER | COMMINUTOR | DIFFUSER |
| THICKENER | MONOMUNCHER | NON-REGULAT SAMP TAP |
| AERATOR | MACERATOR | REGULATORY SAMP TAP |
| DRAW OFF EQUIPMENT | DETRITOR | TURBINE |
| DRIVE SYSTEM | DISTRIBUTOR | TELEMETRY |
| GENERATOR | PUMP | TRANSFORMER |
| SCADA EQUIPMENT | PRESS | VARIABLE SPEED DRIVE |
| THERMAL DRYER | PRESSURE VESSEL |  |
| BRIDGE | EJECTOR |  |
| BLOWER | FAN |  |
| BOILER | FILTER |  |
| DETECTION EQUIPMENT | INSTRUMENTATION |  |
| EVAPORATOR | SCREEN |  |
| LIFT | BK UP BATTERIES |  |
| GEARBOX | EMERGENCY EQUIPMENT |  |
| CRANES/HOISTS | HV SWITCH GEAR |  |
| MOTOR | LV SWITCH GEAR |  |
| MIXER | SCREEN LAUNDER |  |
| CENTRIFUGE | SCRAPER |  |
| DOSING SYSTEM | VALVE |  |
| MONITORING EQUIPMENT | TANKS/VESSELS/SILOS |  |
| CONVEYOR | WEIR |  |
| COMPRESSOR | OZONE DESTRUCTOR |  |
| AIR DRYER | OZONE GENERATOR |  |
| COMPACTOR | OZONE CHILLER |  |