# STRATEGIC ASSET MANAGEMENT PLAN SERVICE LEVELS

# BRIDGE ASSETS

Bridge assets are provided in accordance with obligations arising under the **Local Government Act 1999** and the requirement of our Development Plan. We shall continue to provide and maintain bridges, culverts and floodways' as appropriate within the portions of the road network that are our responsibility.

Bridge asset upgrades and development will meet the requirements of our Development Plan and comply with Australian Standards, codes of practice and guidelines where relevant. Where a development is proposed which will generate the need for bridges, we will ensure that these facilities are in accordance with relevant standards.

Bridge assets serve the community with:

- transport connectivity within the area
- transport connectivity with the wider transport network
- walking and cycling facilities
- local amenity and enhanced functionality within the immediate environs
- improved facilities in public places, including the coast.

Acknowledging the above, the location of road bridges will be determined by road network requirements.

Location of pedestrian bridges will be determined by the need to link existing and new pedestrian facilities and will be cognisant of the location of existing bridge structures which provide access. Locating multiple bridges within 400 metres of each other, where they provide the same level of access to an area, will be avoided where possible.

The provision of shared use path bridges is currently informed by the Trails and Cycling Strategic Management Plan 2016-21.

## BUILDING ASSETS

Legislation constraining assets

| Reference | Details/impact |
|---|---|
| **AAS27 Accounting Guidelines** | defines the rules to be applied when accounting for assets within the local government environment |
| **Building Code of Australia** | describes the construction standards to be applied to all new buildings built after 1993 |
| **Council by-laws** | laws enforceable by council that constrain the behaviour of tenants and general public when using public buildings |
| **Dangerous Substances Act 1979** | an Act to regulate the keeping, handling, transporting, conveyance, use and disposal, and the quality of dangerous substances |
| **Development Act 1993** | an Act to provide for planning and regulate development in the state; to regulate the use and management of land and buildings, and the design and construction of buildings; to make provision for the maintenance and conservation of land and buildings where appropriate |
| **Disability Discrimination Act 1993 (Cth)** | this **Commonwealth Act** describes the requirements for property owners of pre-existing buildings to make provision for disabled persons where that provision will not cause undue hardship for the owner |
| **Environment Protection Act 1993** | an Act to provide for the protection of the environment; to establish the Environment Protection Authority and define its functions and powers |
| **Fences Act 1975** | an Act to provide for the erection, replacement, repair and maintenance of fences |
| **Food Act 2001** | an Act to provide for the safety and suitability of food |
| **Graffiti Control Act 2001** | an Act to introduce measures for the minimisation of graffiti; to punish people responsible for graffiti; to provide for the removal of graffiti |
| **Heritage Places Act 1993** | an Act to make provision for the identification, recording and conservation of places and objects of non-Aboriginal heritage significance; to establish the South Australian Heritage Council |
| **Landlord and Tenant Act 1936** | an Act to regulate the relationship of landlord and tenant under certain commercial tenancy agreements |
| **Local Government Act 1999** | an Act to provide for local government in SA |
| **Occupational Health and Safety Act 1986** | an Act to provide for the health, safety and welfare of persons at work |
| **Private Parking Areas Act 1986** | an Act to regulate, restrict or prohibit the use by the public of private access roads, private walkways, and private parking areas; to make special provision for the enforcement of provisions relating to private parking areas |
| **Public and Environmental Health Act 1987** | under the conditions of this Act it is the duty of a local council to promote proper standards of public and environmental health and to prevent any infestation or spread of vermin, rodents or other pests within its area |

| Reference | Details/impact |
|---|---|
| *Real Property Act 1886* | an Act to regulate the land titles in South Australia and to administer land and easement transactions. |
| *Residential Tenancies Act 1995* | an Act to regulate the relationship of landlord and tenant under residential tenancy agreements |
| *Retail and Commercial Leases Act 1995* | an Act regulating the leasing of certain retail shops; to amend the *Landlord and Tenant Act 1936* |
| *Zero Waste SA Act 2004* | an Act to establish a statutory corporation, Zero Waste SA, with the function of reforming waste management in the state; to amend the *Environment Protection Act 1993* |

Levels of service and standards - Legislative

Some aspects of asset service delivery are constrained by legislation which determines the size, type, location, life-cycle, maintenance regimes and disposal method for the assets. These Acts may call up Australian Standards and Codes of Practice where appropriate to guide or direct outcomes. The legislation in this instance will be deemed to be the benchmark for performance measurement.

The underlying table summarises the legislation that is the source of some of these benchmarks for each of the asset management phases.

| Issue | Service strategies | Benchmark standards |
|---|---|---|
| Provision – Planning | *Local Government Act 1999* *Development Act 1993 (SA)* | Assets must be sustainable, adequate, appropriate, accessible and cost effective. Development planning must be in keeping with the requirements of the approved Development Plans. |
| Construction | Building Code of Australia (BCA) *Disability Discrimination Act (Cth)* | All buildings constructed are to be fully compliant with the conditions outlined in the BCA and all related legislation, Standards and Codes of Practice (including DDA). |
| Replacement | *Development Act 1993* Building Code of Australia (BCA) | All buildings and sub-elements to be replaced in accordance with the requirements of the Development Act, the BCA, relevant Australian Standards and Codes of Practice. |
| Maintenance | *Development Act 1993 (SA)* Building Code of Australia (BCA) Relevant Australian Standards | Buildings and sub-elements to be maintained in full accordance with the requirements of the Development Act, the relevant Australian Standards and associated codes of practice. |

| Issue | Service strategies | Benchmark standards |
|---|---|---|
| Operations | Council by-laws, **Dangerous Substances Act, Disability Discrimination Act, Environmental Protection Act, Fences Act, Food Act, Graffiti Control Act, Heritage Places Act, Landlord and Tenant Act, OHS&W Act, Private Parking Areas Act, Residential Tenancies Act, Retail and Commercial Leases Act, Zero Waste Act.** | All assets and sub-elements should be operated in strict accordance with the requirements of the Acts outlined in the Drivers. |
| Disposal | **Environmental Protection Act 1993**<br><br>**Zero Waste Act 2004**<br><br>Accounting Standards<br><br>**Real Property Act 1886**<br><br>**Local Government Act 1999**<br><br>**Crown Lands Act 1929** | Buildings and sub-elements to be disposed of in accordance with the statutory obligations contained within these principles pieces of legislation. |

**Table 1: Levels of service and standards – Legislative**

**Levels of service and standards - Corporate**

It is expected that the corporate goals and objectives will drive the development, management, operation and disposal of facilities through the proper analysis and application of the corporate plans, business plans and strategies. It is also expected that council will create its own set of guidelines, standards and specifications for the future development of some assets, such as public toilets, community halls, libraries etc, and that these will be used in future to measure performance (where appropriate).

In some cases the proper application of the corporate goals and objectives implies the correct use of the BCA, Australian Standards and other legislation as outlined in Table 1 above.

| Issue | Service strategies | Corporate standard |
|---|---|---|
| Planning | City of Onkaparinga Development Plan | Application of the key outcomes as defined in the Development Plan. |
| Planning cont | Community Plan 2030 | Monitor delivery of the key outcomes of the Community Plan 2030 through individual Business Plans. |
| | Climate Change Response Plan (due 2021)<br>Others previous strategies such as the:<br>Biological Diversity Strategy 2006-2010<br>Water Management Strategy 2008-2013 | Application of standards and guidelines within which planning can be carried out to ensure the environmental sustainability of its assets.<br>Implementation of Council's Green Buildings Initiative |
| | Open Space Strategic Management Plan 2018-23<br>Trails and Cycling Strategic Management Plan 2016-21 | Provision of standards and guidelines for planning for appropriate levels of open space amenity in the 'Local, District, Neighbourhood or Regional' reserves. |
| | Sport and Active Recreation Strategic Management Plan | Provision of standards and guidelines for the delivery of recreational facilities. |
| | Community Capacity Strategic Plan 2021-24 | Provision of standards for the delivery of facilities for the aged population in the City. |
| | Public Toilet Strategy | Provision of standards and guidelines for the delivery of public toilet facilities in the City. |
| Construction | Council Standards for construction, referencing the BCA and Australian Standards. | Appropriate application of the design standards for all facilities: See Public Toilets, design standards. |
| Replacement | Building Asset Management Plans | Application of appropriate standards for:<br>- Obsolescence and/or redundancy caused by functionality and location issues.<br>- Asset failure – caused by issues of maintainability, cost effectiveness, condition.<br>- Legislation that limits asset life-cycles.<br>- Manufacturer's recommendations for optimum replacement because of standardised life-cycles. |
| Maintenance | Maintenance Strategy | Council ensures application of:<br>- Legislative requirements for maintenance<br>- Manufacturer's recommendations.<br>- Local needs, considering the environment, local standards, local guidelines<br>- Implementation of proactive maintenance scheduling (where appropriate) |

| Issue | Service strategies | Corporate standard |
|---|---|---|
| Operations | Operations Plans<br><br>Community Land Management Plans | Council ensures appropriate application of:<br>- Operations Guidelines for each asset including the use of the manufacturer's recommendations for proper operation of each asset.<br>- Compliance with appropriate Acts, Australian Standards and Codes of Practice (see table 3).<br>- Appropriate maintenance/inspection programs.<br>- Reference to the Environmental Mgt. System. |
| Disposal | City of Onkaparinga's Accounting Standards.<br><br>Community Land Management Plans | Council ensures appropriate application of the rules for asset disposal. |

**Table 2: Levels of service and standards - Corporate**

Levels of service and standards - Community

In order to better understand the community's expectations for facilities, council will generally engage with the community at a number of levels. This may include participation in community forums, and the undertaking of an annual survey of ratepayers. These engagements will invariably provoke investigations for increased capital works, improved maintenance practices or changes to operational procedures.

It is reasonable to expect that the community's expectations for management and operations of assets will be in keeping with the industry best practice approach, which should be based around the application of appropriate Australian Standards, as well as the council's own guidelines.

| Issue | Service strategies | Community expectation |
|---|---|---|
| Planning | Community surveys and forums<br>Demographic analysis<br>Service needs | Appropriate application of the results from the surveys and forums for the provision of new or improved facilities. |
| Construction | Building Code of Australia (BCA)<br>***Development Act***<br>Council Standards<br>Budgets | The Community expect the proper application of:<br>- Development Plan requirements.<br>- Australian Standards and Codes of Practice.<br>- Council Standards for design and construction. |
| Replacement | Community surveys and forums<br>Legal requirements | Appropriate legal compliance and use of survey and forum results for the replacement of existing facilities. |
| Maintenance | Australian Standards, Council's own maintenance strategies, programs, plans and guidelines. | Demonstration of best-practice approach, using Council's Maintenance Plans and Guidelines and appropriate Australian Standards. |
| Operations | Council's Operational Guidelines | Proper use of Council's Operational Guidelines in maintaining, operating, cleaning, making safe, securing and removing waste from the site. |
| ESD | Council's Environmental Guidelines encompassed within the climate change strategy | Use of Council's own Environmental Guidelines in managing each site. |
| Disposal | AAS27 Accounting Guidelines<br>Acquisition and disposal policies. | Proper use of Council's Accounting Guidelines. |

**Table 3: Levels of service and standards – Community**

**Performance indicators and measures**

The asset service levels must be measurable, as they are used to quantify and qualify the outputs from each asset or asset group so as to ensure optimum delivery of the associated programs.

They are based around a performance scale of A (excellent) to E (very low) across a number of result areas, including condition (functionality and aesthetics), compliance, cost effectiveness and capacity.

Condition standard and levels of service

This is the standard which combines the level of presentation with the aesthetics of the asset/facility. The standard of condition is a factor of the assessment both of these issues. The assets should be assessed for their potential to influence **visual** and **operational** outcomes, in terms of:

- presentation
- functionality.

This approach is intended to encourage assessors to think of assets in terms of the outputs that they deliver, rather than as entities in their own right.

Visual and functional standards

| Level | General Definition | Visible | Functional |
|---|---|---|---|
| Excellent (A) | Reflects the highest outcome possible for an asset at all times. | As new or highest quality of visual appearance reasonably achievable. | All elements must function as intended at all times, with no down time during periods of intended use. |
| High (B) | Reflects the high level of importance of the facility to the organisation. | Minor signs of visible deterioration for short periods of time when viewed closely. | All elements must function as intended during periods of intended use, with a low probability of failure. |
| Standard (C) | A default standard that reflects on operational needs. | Some minor signs of visible deterioration are acceptable when viewed from normal distance. | All required elements should function as intended during periods of intended use. Minor failures, excluding those which bring threat to safety or security, can be tolerated. |
| Low (D) | Reflects a lesser priority on appearance, yet still meets OHSW needs. | More significant signs of visible deterioration are acceptable when viewed from a normal distance. Failure of the surface finish may impact on related surfaces. | All required elements should function as intended during periods of intended use. Minor failures will be tolerated except for security. |
| Very Low (E) | Mothball standard for a facility that is no-longer used or is about to be disposed in the short term. | Visual standard is not important. | No requirement to retain any functional performance except to avoid degradation of asset value. |

**Table 4: Visual and Functional Standards**

The above table describes the level of visual presentation and functionality required to reach the desired benchmarked condition rating for each building use category.

Levels of Service - Condition benchmarks

| Building Use Type | Functional Use Zones | Benchmarks | | |
| --- | --- | --- | --- | --- |
| | | Presentation | Functionality | Overall Condition |
| Commercial Buildings | All functional use zones | Standard | Standard | Standard |
| Community Centres | All functional use zones | Standard | Standard | Standard |
| | Kitchens | High | High | High |
| Halls | All functional use zones | Standard | Standard | Standard |
| Municipal Buildings | Reception, Foyer | High | High | High |
| | All other functional use zones | Standard | Standard | Standard |
| Public Toilets | All functional use zones | Low | High | Standard |
| Other Buildings | All functional use zones | Standard | Standard | Standard |

**Table 5: Levels of service - Condition benchmarks**

Legal Compliance Standards and Levels of Service

Buildings must comply with the standards and codes of practice that existed at the time of construction (unless major developments have taken place since that time). It is intended that the following service levels will be set as benchmarks for any new or improved buildings and for the existing portfolio.

| Standard | Legal Standard Descriptions |
| --- | --- |
| Excellent | All legal responsibilities must be met at all times. |
| High | All legal responsibilities must be met at all times. |
| Standard | All health, safety and environmental issues met at all times. Other responsibilities should be achieved to the maximum extent feasible. |
| Low | Legal responsibilities with respect to health, safety and the environment should be met where possible. |
| Very low | Only essential responsibilities for safety and the environment are met. |

**Table 6: Legal Compliance Standards**

The above table describes the level of compliance required to reach the required benchmark standard for each building-use category.

| Building Use Type | Functional Use Zones | Benchmark Legal Standard |
|---|---|---|
| Commercial Buildings | All functional use zones | Standard |
| Community Centres | All functional use zones | Standard |
| Halls | All functional use zones | Standard |
| Municipal Buildings | All functional use zones | Standard |
| Public Toilets | All functional use zones | Standard |
| Other Buildings | All functional use zones | Standard |

**Table 7: Levels of service – Legal compliance**

Cost Effectiveness Standard and Levels of Service

Cost effectiveness standards deal with the level of costs associated with management and operation of the building, compared to benchmarks set for similar structures in a similar operating environment.

Building research has ascertained that optimum annual maintenance costs of typical council buildings should be approximately 1.5% of the replacement value of the building. This includes regular routine and breakdown maintenance costs and the replacement of existing elements. It does not include utility costs (electricity and water) or operations (cleaning, security and waste).

It is intended that the following cost effectiveness standards will be set as benchmarks for the existing portfolio.

| Standard | Cost Effectiveness Standard Description |
|---|---|
| Extreme | Long-term economic criteria are essential in this category. Apply the highest level of maintenance to increase long-term replacement cycle and minimise operational costs. Annual maintenance costs >3% of the Replacement Cost. |
| High | The aim is to maximise medium to mid to long-term economic performance. Lower level of priority for long-term cost effectiveness. Annual maintenance costs >1.5% and <3% of the Replacement Cost. |
| Standard | The primary aim is to optimise medium term economic outcomes. Some trade-off with maintenance planning may reduce life-spans and increase operating costs. Annual maintenance costs 1.5% of the Replacement Cost. |
| Low | Limitation of short-term maintenance costs is the primary objective. Low level of maintenance priority will shorten life-cycle and reduce replacement cycle. Annual maintenance costs >0.5% and <1.5% of the Replacement Cost. |
| Very Low | The limitation of maintenance costs in the short-term is the primary objective. Short life is not an issue. Annual maintenance costs <0.5% of the Replacement Cost. |

**Table 8: Cost Effectiveness Standards**

The underlying table describes the level of cost effectiveness required to reach the desired rating for each building use category.

| Building Use Type | Functional use | Cost Effectiveness Standard |
|---|---|---|
| Commercial Buildings | All functional use zones | Standard |
| Community Centres | All functional use zones | Standard |
| Halls | All functional use zones | Standard |
| Municipal Buildings | All functional use zones | High |
| Public Toilets | All functional use zones | Standard |
| Other Buildings | All functional use zones | Standard |

**Table 9: Levels of Service - Cost Effectiveness**

Capacity Standards and Levels of Service

Capacity standards are based on supply and demand issues associated with the design standards and the requirements of the tenants/users. They are sometimes determined by internal council policy; however, they may also be constrained by the legal requirement such as outlined by the BCA and a license to operate (eg a liquor license). Using the classification system outlined in the BCA, all public buildings at the City of Onkaparinga are classified as either:

- class 9b – assembly building
- class 5 – office building used for professional or commercial purposes.

Under these classifications building capacities are determined by using the table D1.13 of the BCA that outlines the area per person depending upon the use to which it is put. This is summarised for the City of Onkaparinga's buildings as follows:

| Building Use Type | Specific use | BCA Building Class | Area per person |
|---|---|---|---|
| Commercial Buildings | Tourist Park laundry block | Class 9b | N/A |
| | Tourist Park shower block | Class 9b | N/A |
| Community Centres | Meeting rooms | Class 9b | 1 sqm per person |
| Halls | Meeting rooms | Class 9b | 1 sqm per person |
| | Theatre and public hall | Class 9b | 1 sqm per person |
| | Theatre dressing room | Class 9b | 4 sqm per person |
| | Kitchens | Class 9b | 10 sqm per person |
| | Kiosk | Class 9b | 1 sqm per person |
| | Gymnasiums | Class 9b | 3 sqm per person |
| Municipal Buildings | Offices | Class 5 | 10 sqm per person |
| | Workshops for maintenance staff | Class 9b | 30 sqm per person |
| Public Toilets | Public conveniences | Class 9b | Based on the number of cubicles, or the length of the urinal. |
| Other Buildings | Undetermined | - | - |

**Table 10: Levels of Service - Building Capacity Guidelines (National Construction Code)**

Using these guidelines assessments are to be carried out of all council buildings to determine their demand against designed capacity.

Locational Standards and Levels of Service

The service levels and standards for location are based on two key issues:

The corporate requirements

Our 'corporate' assets are the Noarlunga Civic Centre and the depots (Field Operations Centre and Southern Operations Centre). It is essential that these facilities are located appropriately so as to ensure effective and efficient use of Council's resources, as well as to ensure easy access to the community when necessary.

Community expectations

The community assets are all those of a non-corporate nature. There is an expectation that these assets will be located according to the need of the community based on demographics or trends, and that whenever they are not able to deliver the service intended because the service is no longer needed (eg because of changes in demography), then the asset will be reviewed in line with future requirements.

Locational service levels and standards for public conveniences have already been developed and can therefore be analysed more closely. Where the location of an asset does not apply relative to the locational standards specific to this asset group, then the asset may be reviewed for council consideration for disposal.

| Building Use Category | Locational Levels of Service |
|---|---|
| Commercial Buildings | Businesses must be commercially viable |
| Community Centres | Demographic study determines need for Community Centre |
| Halls | Demographic study determines need for Hall |
| Municipal Buildings | Efficiency and effectiveness of depots and office locations |
| Public Toilets | Main Street, Regional Sportsground, District Sportsground, Neighbourhood Sportsground (linked to kiosk), Regional Park, District Park. 100-200 metres from high-use area, high-use coastal nodes. |
| Other Buildings | As needed |

## BUS STOP ASSETS

Bus stop infrastructure is provided in accordance with obligations arising under the ***Local Government Act 1999***.

Council maintains it is the responsibility of the State Government to provide dedicated bus stop infrastructure at stops that do not currently have council owned bus shelters. Council is currently not funding the provision of new bus shelters unless the State Government provides funding support.

Council's bus shelter funding allocation is currently directed toward the DDA compliance and replacement of infrastructure at stops that already have existing council owned infrastructure.

Where council has provided bus stop shelters, basic minimal protection from wind, sun and rain will be provided with seating for three average sized people and includes space for two wheel chairs. DDA compliance is to be provided wherever practicable.

Bus stop infrastructure management will be focussed in areas of concentrated residential development to encourage use by the maximum number of passengers and in areas of high need for support to use the services.

Appropriate locations include but are not limited to:

- schools
- shopping centres
- medical facilities
- major transportation hubs and transport routes
- tourist locations
- community centre and leisure facilities
- aged and disabled facilities.

Metropolitan bus service shelters are to be provided by the service provider (DIT) who prioritise infrastructure according to the following network hierarchy:

- transfer stops
- transit stops (in bound)
- go zones (in bound)
- high use (close proximity to schools or shops etc)
- rural bus services shelters, excluding school bus routes, may be provided by the City of Onkaparinga
- school bus service shelters are to be provided by the service provider; however this does not preclude use of existing infrastructure.

## CAR PARK ASSETS

Car park assets are provided in accordance with obligations arising under the **Local Government Act 1999** and our Development Plan.

Car park assets serve our communities with:

- upgraded facilities in public places (including the coast)
- enhanced functionality and design of centres
- improved maintenance of public infrastructure and facilities.

Our current service level is to:

- provide and maintain car parks including stand-alone car parks and those associated with other facilities as appropriate
- comply with the requirements of our Development Plan
- comply with Australian Standards, Codes of Practice and guidelines
- where a development is proposed which will generate the need for car parking facilities, Council will ensure that these facilities are in accord with relevant standards.

## COASTAL ASSETS

Coastal assets are provided in accordance with obligations arising under the **Local Government Act 1999**. We will undertake coastal projects that address coastal pressures (natural, human and infrastructure), provide mitigating actions to manage these pressures and deliver on-ground works that act in support of maintaining the natural values of the coast in a sustainable manner. Such works typically include erosion control, cliff stabilisation, access provision, access restriction and the protection of sensitive sites.

The coastal environment provides the community with both tangible services and less tangible services such as:

- coastal lifestyle and recreational options
- opportunities for tourism and employment
- a biologically diverse marine environment
- coastal open space
- coastal residential opportunities
- maritime heritage sites
- an important social and cultural identity attached to living by the coast.

In relation to beach access and fencing we will endeavour to:

- provide planned and controlled access to the shoreline and conveniences such as car parks, public toilets and other facilities in selected locations
- maintain natural and cultural assets and protect these from damage including beaches, dune systems, salt marshes, estuaries, aboriginal sites of significance and established coastal views
- integrate asset development and management with the coastal character through careful consideration of material selection, colouring, placement and coordination with the design of other structures
- develop fencing and access ways that are durable and robust
- enhance safety for motorists, cyclists and pedestrians by according with relevant standards and guidelines where possible.

In relation to coastal protection and other coastal assets we will endeavour to:

- maintain and strengthen the natural 'values' of the coast rather than using hard engineering methods to halt natural process
- develop cliff stabilisation works that focus on the mitigation of public risk and protection of infrastructure. Stabilisation works will consider soft and hard engineering, revegetation, upgrade/rationalisation of access points, informal signage and a broader community information/educational program.

Balancing the business and tourism (economic) and community (social) demands on the coast and the health of the natural coastal environment is relevant to all three categories in this asset class.

## Corporate service standards

It is expected that the corporate goals and objectives will drive the development, management and operation of the CWMS system through the proper analysis and application of the corporate plans, business plans and strategies.

The corporate service standards are set out in the table below:

| | | |
|---|---|---|
| Accessibility | Wastewater connections available. | For customers within defined CWMS areas we endeavour to authorise connections into our CWMS within 30 days following the provision of the required information and the payment of all relevant connection charges and account establishment fees. |
| Affordability | The services are affordable and compliant with ESCOSA pricing principles.<br><br>The services are managed and maintained at the lowest possible cost for required level of service. | Fees and charges are set in compliance with ESCOSA's pricing principles set out in its Price Determination, to ensure full cost recovery for long term sustainability of the CWMS and affordability for customers. |
| Health and Safety | Sewage is managed with minimal risk to public and environmental health and safety. | Remove sewage and wastewater from each CMWS connected property in accordance with all relevant public health and environmental regulatory requirements.<br><br>Overflows attributed to CWMS faults are contained and cleaned up within 24 hours. |
| Reliability/ Responsiveness | A reliable and efficient service is provided. | 60% customers satisfied with the reliability of their wastewater services.<br><br>An emergency telephone number is provided by council and TRILITY in the event of an emergency or service interruptions. This service is available 24/7.<br><br>Provide customers with information on planned interruptions to their CWMS service at least 4 business days prior to undertaking any works or maintenance. |
| Sustainability | Long term plans are prepared. | A 20-year management plan is operational for wastewater, approved by appropriate authorities, and is reviewed every 5 years. |

| | Water resources are used efficiently and sustainably. | 100 % compliance. |
|---|---|---|

## TRILITY Pty Ltd Key Performance Indicators (as outlined in the contract)

The asset service levels must be measurable, as they are used to quantify and qualify the outputs from each asset or asset group so as to ensure optimum delivery of the relevant asset.

They are based around a performance scale of identified target levels as outlined.

### CWMS

The Key Performance Indicators described in clause 1 of schedule 8 of the contract (as outlined below) apply only to the CWMS, excluding the WWTP.

- **Number of Pumping Main Bursts**

  Method of data collection: Records to be kept by TRILITY and be made available to the Council on request.

  Target level: No pipe bursts recorded.

  *Comment:* This is a measure of the level of performance of TRILITY in its management of the requirement for an assessment of the road for ongoing expenditure and the genuine integrity of the CWMS.

- **Number of Chokes**

  Method of data collection: Records to be maintained by TRILITY and to be made available to the council on request.

  Target level: No chokes required

  *Comment:* This is a measure of the level of performance of TRILITY in its management of the pipelines, its management of the need for it to anticipate future capital expenditure on replacement and renovation and the general integrity of the CWMS.

- **Number of Pumping Station Overflows**

  Method of data collection: Records to be maintained by TRILITY and to be made available to the council on request.

  Target level: Nil recorded each month

  *Comment:* This is a measure of the level of performance of TRIITY in its operation of the CWMS, its management of the need of the need for it to anticipate future capital expenditure on replacement and renovation and the general integrity of the CWMS.

- **Percentage of Reported Defects Rectified in 8 hours**

  Method of data collection: Records to be maintained by TRILITY and to be made available to council on request.

  Benchmark level: 80% of reported defects to be rectified within 8 hours of a service call being received by TRILITY.

  Comment: This is a measure of the level of performance of TRILITY in its management and operation of the CWMS and its provision of customer service.

- **Percentage of Reported Defects Rectified in 48 hours**

  Method of data collection: Records to be maintained by TRILITY and to be made available to the council of request.

  Benchmark level: 100% of reported defects to be rectified within 48 hours of a service call being received by TRILITY.

  Comment: This is a measure of the level of performance of TRILITY in its management and operation of the STEDS and its provision of customer service.

## WWTP

The Key Performance Indicators described in clause 2 of schedule 8 of the contract (as outlined below) apply only to the performance of the WWTP.

- **Compliance with Treated Effluent Quality Specification**

  Method of data collection: Regular testing and reporting to the council.

  Benchmark level: The Effluent Quality criteria specified in clause 2.4 of Schedule 1, subject to the Influent Specification complying with the criteria specified in Schedule 9.

  *Comment:* This is a measure of the proper operation and management of the System and also compliance with environmental requirements.

- **Compliance with EPA Licence Including Provisions of Monitoring Programme and Contingency Plans**

  Method of data collection: Review by the council and appropriate authorities.

  Benchmark level: 100% compliance

  *Comment*: This is a critical level of performance of TRILITY in complying with its obligations under the agreement.

### Septic Tank Desludging Programme

The Key Performance Indicators described in clause 3 of schedule 8 of the contract (as outlined below) apply only to the performance of the management of the Septic Tank Desludging Programme.

Method of data collection: Records to be maintained and reported by TRILITY and independent checks by council.

Benchmark level: Performance to be in accordance with agreed programme.

*Comments:* This is a measure of whether the council's reports regarding regular Desludging are being met.

## FOOTPATH ASSETS

Footpath provisions need to align with National and State Strategies as well as Council plans and strategies. The **Local Government Act 1999** and the Council's Infrastructure Planning and Provision Policy Statement state requirements for footpath delivery.

The Footpath Network services the community with:

- Safe pedestrian movement throughout the district in all weathers
- Access to businesses, facilities, residences and recreational facilities
- Pleasing streetscape and reserves amenities
- Enhanced transport facilities
- Lifestyle and recreational options.

The Infrastructure Planning and Provision Policy Statement states:

*"Council will provide and maintain footpaths as appropriate where they are determined to be Council's responsibility".*

In addition, Council will provide developer funded footpaths on a priority basis once contributions are received and when sub-divisions have reached 80% occupancy.

The Service Level Statement details the service levels for footpaths.

Urban areas and townships - Residential

Low Density Housing

- Major roads (arterial, distributor and collector roads) shall have a footpath on both sides of the road located away from the back of kerb where possible and where there is demonstrated need.
- Minor /local roads with low density residential development shall have a footpath on one side of the road located away from the back of kerb, or at the back of the kerb and include a wider section to accommodate refuse bins placed on the footpath on collection days. Urban design principles should inform the most appropriate location for the footpath in these instances.
- Minor/local roads within pedestrian generator zones may have consideration given for footpaths on both sides depending on the pedestrian generator and identified pedestrian traffic.

Medium/High Density Housing

- Major roads (arterial, distributor and collector roads) shall have a footpath on both sides of the road located away from the back of kerb where possible.
- Minor /local roads where the majority of the development is medium/high density residential shall where possible have a footpath provided on at least the side containing the medium density development. Site specific issues will need to be considered in regard to whether the footpath is positioned either at the back of kerb, remote from the kerb or made full verge width. Urban design principles should inform the most appropriate location for the footpath in these instances.

Urban areas and townships – Centres

Generally, roads of all classifications within identified Centre's shall have a footpath on both sides. Consideration should be given to paving the full width of the verge, depending on the verge layout, relationship to development, and street-scaping requirements. There are 4 categories of Centres: Regional, District, Neighborhood and Local. It is anticipated that Regional and District, and a number of Neighborhood Centre's, will have an associated individual action plan that sets out specific infrastructure requirements for the centre. Where these are completed and approved, the service level contained therein shall be followed.

Rural roads

- Major rural roads shall utilise the road shoulder as the footpath

- Where possible, and an assessment against the Resource Prioritisation Document prioritisation and scheduling criteria justifies, an off–road unsealed path (shared path when and where appropriate and possible) shall be provided in the road reserve. The location of off-road paths are considered within the Trails and Cycling Strategic Management Plan.

- Minor/local rural roads shall utilise the road shoulder as a footpath.

## LIGHTING ASSETS

Lighting assets are provided in accordance with obligations arising under the **Local Government Act 1999** and the requirement of our Development Plan.

Service levels have been reviewed as part of preparation of this plan and vary according to the asset category and ownership. These are outlined below:

SA Power Networks (SAPN) owned lighting and energised by an unmetered power supply

> All new lighting will be installed to SAPN's, and current street and road, lighting Australian Standards.

> Council will upgrade existing SA Power Networks owned lighting according to the following:

- Where lighting at intersections and pedestrian refuge crossings no longer meets current standards and where there is an assessed safety risk

- Where the road hierarchy classification of a road has changed post the initial installation and existing lighting does not comply with current standards relevant to the new road hierarchy classification

- Where council undertakes a major road, car park or reserve upgrade project.

CLER lighting (Council owned and SAPN maintained, unmetered lighting)

- No new lighting will be installed by council or developers under a CLER tariff arrangement

- Where current street lighting under a CLER tariff exists and requires replacing, new lighting may be upgraded to the required standards and transferred to SAPN's asset base

- Where it is not practical or cost effective to upgrade to SAPN's standards, CLER lights shall be transferred to an energy only tariff and lighting maintained by Council.

Metered lighting (Council owned)

- Metered lighting will be installed according to the relevant Australian Standard and be fit for purpose.

- Metered connections shall be used to energise lights installed in parks and reserves, however a connection to the unmetered network may be used where practical in this situation under the 'energy only' tariff agreement.

Lighting attached or ancillary to Council owned buildings, which is connected to the buildings metered electricity supply, is considered to be a building asset and included in the Asset Management Plan – Buildings.

Energy efficient LED technologies are being considered as part of any new lighting project. Council are currently transitioning to LED street lighting and including 'SMART' lighting technology options as part of lighting upgrades and new lighting projects.

Solar lighting is also being considered for new projects and will be installed where it is feasible and practical.

## OPEN SPACE ASSETS

The open space network is provided in accordance with obligations arising under the ***Local Government Act 1999*** and the ***Development Act 1993***. Council will provide and manage a system of council owned open space that facilitates a range of passive and active recreational, lifestyle and environmental opportunities that are safe and promote physical health, social interaction, increased land values, enhanced landscape amenity and the protection and enhancement of the natural and cultural environment.

The Open Space Strategic Management Plan 2018-2023 sets the principles, planning and direction for the future provision, development and maintenance of the open space network. It defines the open space hierarchy including 4 levels to describe the size of a park's catchment and 3 broad activity types (active, family and passive). Both the catchment and activity type will direct the service levels that will be applied to the design construction and maintenance of parks.

**1. Regional** – providing a large range of services that attract visitors from across the City and beyond and will be designed in a way that ensures users who have travelled to and intend to stay for a long period of time are supported by appropriate facilities.

**2. District** – providing a moderate range of services that attract visitors from across a district and will be designed in a way that ensures users who have travelled to and intend to stay for a long period of time are supported by appropriate facilities.

**3. Neighbourhood** – providing a small range of services that attract residents from across a suburb and will provide facilities that cater for local residents who have travelled a short distance and intend to have a short stay.

**4. Local** – providing services that attract residents from within a short walking distance and will provide facilities for local residents who have walked a short distance and intend to stay for a short time.

Whilst the catchment size influences the total capacity of a park and the provision of travel and long-stay facilities, community need should be the primary driver for service levels.

The open space planning principles provide high level direction to ensure the provision and design of open space and supporting facilities and infrastructure matches the service levels and key function of our open spaces according to the hierarchy.

The open space network also serves the community in more complex ways by providing:

- opportunities for a broad range of leisure and recreation activities
- physical links to larger areas of open space, natural features and facilities such as schools, shopping centres and other services
- water quality improvement by buffering watercourses such as creeks, rivers, drainage reserves and stormwater channels through filtration of stormwater and rainfall
- environmental conservation by protecting and maintaining habitat and corridors, the natural environment and the life forms which comprise it (including the different plants, animals and microorganisms, their genes and the ecosystems of which they are part)
- preservation of cultural and heritage places significant to European or Indigenous communities

- visual appeal providing a buffer between incompatible land uses, shielding more sensitive uses whilst providing open space for community use.

**Open Space Service Standards – Family Parks**

*Regional Family Park*

Our service standard identifies that we should have four regional family parks within the City of Onkaparinga. These include Wilfred Taylor Reserve Morphet Vale, Thalassa Park Aberfoyle Park and The Adventure Playground Port Noarlunga and as the population increases in the southern suburbs a fourth regional park will be built.

A Regional Family Park is a major unique and iconic play space with facilities and services that meet the needs of visitors intending to stay for up to a full day.

Council's base provision of service for these types of parks includes:

- A high level and comprehensive tailored playground suitable for long stays and designed for all ages
- All ability play facilities to be provided as part of the play space
- Space suitable for large scale gatherings
- Playgrounds should be adventure and inclusive in nature and include a high element of nature play
- A park large enough to provide for 150 or more children per hour
- Facilities provided to meet the needs of carers
- Group play should be encouraged as part of any design development
- There will be a combination of play and safety surfaces
- There may be a separation of age specific play areas
- Irrigated turf area to be provided
- Public art to be included
- Drink fountains to be provided
- Sealed pathways to be included in and around park area
- Public litter bins to be provided
- Barbeque facilities to be provided
- High quality landscaping throughout the park
- Built shade structures to be provided
- Lighting to be provided
- Information and directional signage will be provided

In some cases, Council may consider advanced provision (site specific) of the following;

- Toilets
- Car parking suitable for mini bus and larger coaches

*District Family Park*

We have a number of District Family Parks distributed across the council area. Examples of District Family Parks include Market Square in Old Noarlunga, Robertson Road in Reynella and The Rose Garden on Port Road in Willunga.

District Parks are designed for stays from two to four hours and can be accessed by shared use paths, footpaths, public transport and cars.

Council's base provision of service includes:

- Park should be large enough to provide for 30-65 or more children per hour
- Tailored playgrounds that meet a wide age group and medium scale gatherings
- A formed path network to and around the playground should be provided
- Playground may include nature play elements
- All ability play facilities to be provided as part of the playspace
- Built and planted shade should be provided
- An irrigated turf area to be provided
- Picnic facilities to be provided
- Drinking fountains to be provided
- Public litter bins to be provided

In some cases, Council may consider advanced provision (site specific) of the following;

- Toilet facilities
- Barbeque facilities
- Car parking
- High level landscaping
- Information and interpretive signage
- Art work
- Lighting

*Neighbourhood Family Park*
A Neighbourhood Family Park will have a medium sized play area within walking distance for adults, children and children beginning to travel independently. The playground is suited for ages 0-12 years+. These parks are designed for stays of 1-2 hours.

Council's base provision of service includes:

- Playspaces to be designed to allow for small scale gatherings and focus on a specific age group
- Seating
- Formal paths
- Playground will be integrated into surrounding landscape where possible
- Two or more dynamic play elements to be included in the playspace
- The playground should provide surfaces that allow access for all
- Trees will be included for shade
- Playground safety surface maybe a mix of surfaces taking into consideration children with mobility challenges
- Where possible and appropriate an area of irrigated turf will be provide near to the playground

In some cases, Council may consider advanced provision (site specific) of the following;

- Where possible provide an area suitable for a kick around
- Some elements of nature and all ability play maybe considered as part of the playspace
- Bins
- Drinking fountain
- Picnic tables

*Local Family Local Park*
These parks are our most common with over 140 spread across the council area. They usually consist of minimal play equipment and are generally designed to cater for short visits.

A Local Family Park will provide a small play area within easy walking distance that often will focus on a specific age group.

Council's base provision of service includes:

- Playspaces will be designed to allow for small scale gatherings and focus on a specific age group
- Playground equipment that provides for early to middle childhood
- Seating will be provided
- Playground safety surface should only be of one type
- Up to two pieces of dynamic play elements will be included in the playspace
- Trees planted for shade
- Where possible, and appropriate, an area of irrigated turf will be provided near to the playground

In some cases, Council may consider advanced provision (site specific) of the following;

- Elements of nature play
- Formed paths

**Open Space Service Standards – Active Parks**

The primary function of active parks is the provision of formal sporting activities and the service provision is directed by the Sport and Active Recreation Action Plan (in draft), however some of these spaces may provide the community with informal leisure opportunities.

*Regional Active Park*
Regional Sports Parks and large iconic parks draw in both local visitors as well as visitors from outside the region. Facilities meet the requirements for visitors who plan to stay up to one day.
These sites are specifically used as multi-use sports grounds, including formal and active sport activities such as football, afl, rugby, bmx and skate parks, clubrooms, toilets, bbqs, car parking, irrigated sports turf. Some of these parks may also provide a playground.

*District Active Park*
Guided by the Sport and Active Recreation Action Plan (in draft) these are sites specifically utilised as District level sports grounds. Formal and active sport activities including football, tennis, afl, rugby, bmx, surf clubs, and skate parks, clubrooms, toilets, bbqs, car parking, irrigated sports turf. Some of these parks may also provide a playground.

*Neighbourhood Active Park*
Guided by the Sport and Active Recreation Action Plan (in draft), these sites provide active and formal sport such as bmx, cricket, tennis or skate parks.

*Regional Passive Park*
These parks include our key wetland and Waterproofing the South sites throughout the council area. These sites are also known as our Regional Biodiversity Sites and state owned Regional and National Parks can also serve the same function.

Councils base provision of service includes:

- Unsealed and/or sealed pathways will be provided
- Interpretive signage will be provided
- Seating will be provided

In some cases, Council may consider advanced provision (site specific) of the following;

- The inclusion of artwork
- Car parking
- Viewing areas
- Picnic facilities
- Bird hides
- Boardwalks

*District Passive Parks*

District Passive Parks also known as District Biodiversity Sites include some creek lines, wetlands and some Waterproofing the South sites.

Council may provide any of the following however is very site specific:

- Unsealed pathways
- Interpretive signage
- Artwork
- Seating
- Car parking
- Viewing areas

*Neighbourhood Passive Parks*

Neighbourhood Passive Parks consist of minor creeklines, minor land parcels and land with small pockets of biodiversity.

Minimal provision of facilities however interpretive signage, seating and minor unsealed paths may be provided on a case by case basis.

*Local Passive Parks*

Local Passive Parks often consist of small road reserves, drainage lines and other minor stormwater management sites. Sites may include small pockets of biodiversity with generally no built facilities included.

## ROADS, KERBS AND SPOON DRAIN ASSETS

The road network, with its associated kerbs and spoon drains, is provided in accordance with obligations arising under the ***Local Government Act 1999***. We will provide and maintain roads as appropriate within the portions of the road network for which we are responsible. We will liaise with the Department for Infrastructure and Transport (DIT) for corresponding development of the arterial road network under DIT care and control.

The road network serves the community with:

- connectivity within the region
- connectivity with the wider road network and DIT roads
- support to business and tourism
- access to properties.

Service levels for our roads are informed by the Road Network Plan. A review of our Road network Plan is due in 2021.

The Road Network Plan provides the operational management procedures and frameworks for decision making for the road hierarchy and functional network. Criteria are identified to guide the designation of the road hierarchy classification based on movement type along a road. Each hierarchy classification provides cross section requirements, parking, property access, and speed environments, acceptable forms of traffic control, alignment, pedestrian facilities and lighting.

The functional hierarchy classifications are based on determining the most common vehicle type along a road. Our functional hierarchies include freight, tourist, access and passenger transport routes. Functional classifications combined with the road hierarchy inform the cross section requirements, parking layout, acceptable forms of traffic control and alignment.

Frameworks for decision making include traffic management, unsealed road maintenance and upgrades, freight networks, native vegetation management, sustainable roads (water sensitive urban design) and unmade roads.

All roads will comply with Australian Standards and guidelines where relevant. We have a road network consisting of both sealed and unsealed roads.

Our roads that shall generally be sealed are:

- secondary arterial
- collector
- distributor
- local/minor urban roads.

The methodology for managing unsealed roads and identification of roads that remain unsealed are detailed in section 8.2 of the Road Network Plan. Generally these:

- have low maintenance costs
- have low traffic volumes
- service a limited number of properties
- are primarily used by light passenger vehicles.

Unsealed roads not to be sealed include roads in the area known as the Aldinga Scrub and parts of Port Willunga. In addition, the Road Network Plan identifies a number of unique unsealed roads and acknowledges that the traffic impacts of sealing these roads must be considered on a case by case basis.

The kerb and spoon drain network serves the community by:

- providing traffic control/management
- managing and redirecting surface stormwater (property runoff, road surface, verge)
- minimising roadside maintenance
- minimising environmental issues, such as scour and erosion.

Kerb and spoon drain assets are a component of many sealed roads or sections of sealed roads. The provision of these assets relates primarily to service standards and will be provided in line with the requirements for arterial, secondary arterial, and distributor, collector and local roads as detailed in the Road Network Plan.

## SHARED USE PATH ASSETS

The shared use paths network is provided in accordance with obligations arising under the **Local Government Act 1999**.

The shared use path network serves the community with:

- safe, healthy lifestyle options for participation in unstructured recreation
- safe walker and cyclist movement throughout the district
- additional means of access to areas of interest, residences and other recreational facilities
- pleasing streetscape and reserve amenities
- alternative transport facilities
- protection of natural areas from degradation (managed access near sensitive areas).

Levels of service and locations for shared use paths are currently based on the Trails and Cycling Strategic Management Plan 2016-21 as well as legislation, regulations and standards.

We will provide and maintain a network of shared use paths and trails in accordance with the Trails and Cycling Strategic Management Plan 2016-21. This network includes off-road bicycle and shared use paths, walking trails (but not including footpaths) and horse trails. In providing shared use paths, we will strive to achieve multiple objectives wherever possible.

Connecting paths will be considered where required to provide connections between new and existing shared path infrastructure.

Urban areas and townships

Shared use paths mapped via the Trails and Cycling Strategic Management Plan 2016-21 process have considered significant corridors such as:

- the coast
- major waterways
- linear reserves
- major roads (arterial, distributor and collector roads).

Shared use paths along major roads will be located away from the back of kerb, wherever possible.

Rural roads

Unless identified in the Trails and Cycling Strategic Management Plan 2016-21 shared use paths will not be provided along rural roads where users will utilise the road shoulder.

## WATER RESOURCE ASSETS

Service Level Context:

Water resource assets are provided in accordance with obligations arising under the **Local Government Act 1999** and other relevant legislation, and the Agreement between the Government of South Australia and the Local Government Association on Stormwater management (February 2006).

Water resource assets serve the community by:

- minimising risk of injury, flooding and property damage due to major and minor storm events
- improving accessibility and reducing risk of injury or damage during "unexceptional" rain events by reducing surface water flows and ponding on streets
- contributing to enhanced environmental health by reducing ponding and potential for waters to stagnate
- improving aesthetics of open space
- addressing our general environmental duty of care obligations under the **Environment Protection Act** and **Natural Resources Management Act** by:
  o protecting and supporting receiving water's ecosystems and
  o supporting biodiversity of indigenous native species of flora, fauna and microfauna
  o providing recreation facilities
  o enhancing the landscape
  o enabling water harvesting and reuse.

Our water management infrastructure service levels acknowledge the influence of State Government policy, natural resource management plans and research which promote management of Stormwater in accordance with the principles of integrated catchment management:

- to protect and minimise risk to property, infrastructure and public health and safety;
- protect waterways from erosion;
- protect inland and marine waters;
- conserve water and
- enhance water quality in conjunction with natural resource management board programs.

Water for Good introduces new targets and actions and consolidates existing initiatives for water management including:

- Development of water quality improvement plans for the Mount Lofty Ranges Watershed and other critical water catchments across the State
- Development of water allocations plans for catchments
- Continued investigation into and investment in Stormwater harvesting, water conservation and wastewater reuse.

The 30 Year Plan for Greater Adelaide established a number of policies and targets relating to, or with potential impacts on, water management including:

- Increasing urban density, especially around mixed use centres, and transport terminals
- Incorporating and even proposing to mandate water sensitive urban design in development
- Requiring links between development plans, structure plans, stormwater management plans and flood plain mapping to address flood protection.

The Greening Adelaide Board promotes aspirational targets for water resources including:

- harvesting and reusing 75% of stormwater
- all water resources meet water quality guidelines to protect defined environmental values
- all water resources used within sustainable yield (allowing for variability)
- reducing average annual cost of flood damage
- land based impacts on coastal, estuarine and marine processes reduced from current levels.

The City of Onkaparinga's water management strategy Water Futures 2008-2013 nominated a strategic framework and actions to integrate water resource works and includes water quality and water harvesting objectives, including:

- conserve water
- protect water quality – surface and groundwater
- reduce reliance on water sourced from the River Murray
- protect water dependent ecosystems including coastal and marine environments
- harvest stormwater for reuse
- promote economic development opportunities.

Due to the complexity of water resource management associated with the change in emphasis from water quantity management to water quality management and water harvesting, our service levels for the provision of stormwater infrastructure provide for flood protection (based on a risk assessed approach) and water quality management and also consider environmental flow management.

Service Level Definitions:

Flood Management:

The service level definition for flood protection is separated into minor flow path and major flow management.

The flood management service levels manage hazard by defining limiting flow width, depth and velocity for overland flows. This requires consideration of, and is dependent on, a number of possible influences including, rainfall intensity, duration and frequency, development type and form, flood plain extents, network capacity including pipe and inlet capacity, road class and waterway area (for bridges and culverts).

Major flow management refers to the floods of significant magnitude possible within the flood plain of a watercourse. The focus of the major flood protection service level is intended to provide for the safety of persons and protection of property in the event of a major flood within the floodplain of a watercourse by limiting "flood hazard", (based on a combination of flow depth and velocity), to permit safe evacuation and limit inundation and potential damage of property.

Due to the relatively small catchments for watercourses in the City of Onkaparinga, flood events of this magnitude are typically likely to last for from 6 hours up to 30 hours and therefore long term interruption to services or access is unlikely, except where associated with massive infrastructure damage or failure.

There is considerable uncertainty associated with prediction of flood events and it is not possible, and nor is it intended, to ensure all properties are free from all flooding.

Our development plan identifies "flood prone land" as land subject to be inundation in a 1;100 ARI* (or 1% AEP#) flood event as being a trigger to either require special development conditions, or where appropriate, limit or prevent development occurring, depending on the level of hazard. Due to the provision of open space along many of our major watercourses, the demand for infrastructure to manage major flood flows is limited.

Implementation of an effective emergency management plan is considered to have significant benefits in reducing losses associated with major floods.

In urban areas and small catchments where the critical time of concentration is less than a few hours (and can be considerably less than 1 hour), major floods are also classed as "flash floods". Flash floods in urban areas are often the result of localised thunderstorms and are very difficult to model or anticipate, and therefore also very difficult to mitigate. The principle adopted for management of flash floods is to facilitate major flow paths via public land (for example public roads or drainage reserves and easements) and to require buildings to have floor levels set at a minimum of 300mm above the water table or above the 100 year flood level. Flows of this magnitude are typically likely to only last for a period of less than a few hours due to the relatively small, predominantly urban catchments involved, and therefore interruption to essential services and activities are likely to be of a short duration.

Minor flow management refers to the management of lower intensity and severity local urban run-off flows within the street network. The focus of this service level is to facilitate "business as usual" during and after rain events, by limiting gutter flow width and depth and directing flows into underground drainage networks rather than allowing excessive surface flows. The service level is expressed such that flows up to the nominated event severity are managed, with events above this resulting in gutter flow widths and depths which may exceed the desired maximum (set at the equivalent of the velocity and depth limit for a child to wade safely). Flows above the nominated event severity, including major flood, or "flash flood" flows are subject to control in accordance with the major flood management service level.

The City of Onkaparinga service level standard for minor flow management has historically been based on management of minor flows up to the 1:10 ARI* or 10% AEP# event. Much of Council's substantial underground stormwater network and inlet pit provision (especially within the former City of Noarlunga area) has historically been built to address this standard.

By reducing the service level to 1;5 ARI* or 20% AEP# for residential areas, the investment in underground infrastructure can be reduced, at the cost of limited additional inconvenience in events above the service level standard. Adoption of a minor flow management standard of 1:5 ARI* or 20% AEP# is consistent with the recommendations of the Queensland Urban Drainage Manual, and interstate and other metropolitan Adelaide Councils.

Gap flows above 1:5 standards are still to be managed in accordance with our Major flow management service level.

A higher standard which also takes into account flow width is recommended for collector, distributor and arterial road networks, commensurate with the potentially higher risk to public safety and business associated with higher pedestrian and vehicle traffic and property value and density.

Service levels:

Major Flood Management:

Non–rural, hills face or special use zone areas (i.e., residential, commercial, industrial):

- Flood hazard for private land will be limited to low hazard (as defined by Appendix J, SCARM 73) for up to 100 year ARI*or 1% AEP# event, with higher hazard over land flow paths confined to public land.

- Where overland flow paths are not available, underground stormwater infrastructure must be capable of handling sufficient proportion of the 1:100 ARI flow (with 50% blockage) to limit surface inundation to low hazard.

- Development in flood prone lands (lands likely to be inundated in a 1; 100 ARI event) are identified in the Development Plan (where flood plain mapping has been completed) and development within these flood prone areas will be subject to controls which protect public safety and limit risk to property.

Rural, hills face and special use zones:

- Flood prone lands (lands likely to be inundated in a 1; 100 ARI event) are identified in the Development Plan (where flood plain mapping has been completed) and development within these flood prone areas will be subject to controls which protect public safety.

- Road crossings (urban and rural) i.e.: where watercourses cross roadways:

Local and collector roads:

- sufficient flow capacity will be provided in combination between under road bridge or culvert, and overland flow to limit overland flow velocity and depth to low hazard as defined by SCARM 73 Appendix J in a 1; 100 ARI event.

- sufficient flow capacity will be provided in under road bridge or culvert, to convey a 1; 20 ARI event (in a rural area).

- there is no tangible adverse impact on upstream or downstream flood extents or hazard level as a result of compliance with the above

Distributor roads:

- sufficient flow capacity will be provided in combination between under road bridge or culvert, and overland flow to limit overland flow velocity and depth to medium hazard as defined by SCARM 73 Appendix J in a 1; 500 ARI event.

- sufficient flow capacity will be provided in under road bridge or culvert, to convey a 1; 50 ARI event.

- there is no tangible adverse impact on upstream or downstream flood extents or hazard level as a result of compliance with the above

Minor urban street network flow management:

Local roads:

- gutter flow depth and velocity limited to vxd<0.4

- flows up to 1:5 ARI* to be directed to underground drainage
- gutter flow widths for intersections, pedestrian crossings to be determined based on 1:5 ARI*

Distributor, collector and roads in commercial and industrial zoned areas:

- gutter flow depth and velocity limited to vxd<0.4
- flows up to 1; 10 ARI* to be directed to underground drainage
- Gutter flow width to be limited to allow at least 3m clear lane width and
- Gutter flow widths for intersections, pedestrian crossings to de determined based on 1:10 ARI*
- Note that interpretation and implementation of the service levels requires consideration of additional technical requirements as outlined in the Queensland Urban Drainage Manual, regarding flow width and depth limitations, pipe sizing, hydraulic design and etc.
- Stormwater outflows from new development shall not exceed the pre-development flow rate for a 1:5 ARI event and should be limited to pre-development conditions.

* ARI refers to the Average Recurrence Interval of a 'design storm'.

#AEP refers to the Annual Exceedances Probability of a 'design storm' and is approximately a "converse" of ARI. A 1% AEP event is approximately equivalent to a 1:100 ARI storm. However it is expressed as the possibility of the event occurring rather than likely recurrence interval. I.e.: a 1; 100 ARI event has (statistically) approximately a 1% chance of occurring in any one year, similarly a 100% AEP is an equivalent of a 1:1ARI storm event.


Water Quality Management:

Our service levels for water quality management acknowledge the influence of the Adelaide Coastal Waters Study and regional natural resources management plans on our stormwater management obligations under the agreement with the State Government.

Water quality in outflows from new development shall have load reduction (when compared to untreated stormwater outflows) improvement equivalent to:

- 80% reduction in suspended solids
- 60% reduction in total nitrogen
- 45% reduction in phosphorous
- 90% reduction in litter.

State Government water quality modelling is undertaken based on works proposed either as new development or infrastructure extension, renewal or upgrades. Our water resources category resource prioritisation document prioritises projects which achieve water quality outcomes consistent with our service level.

We have a stormwater levy system in place which permits a developer to pay a levy into the stormwater reserve fund, in lieu of providing water quality improvements, where site or development constraints constrain the developer from otherwise complying with the water quality service standards. The levy is then available for use to contribute to construction of strategic stormwater management infrastructure to contribute to achievement of our overall water quality standards.

As part of our previous improvement plans, collectively, a Council wide model was identified to be developed to identify our total load for the nominated pollutants, and to then assess the level of load reduction based on water quality improvement works constructed. Where flood capacity is available in our existing network downstream of new developments, and the risk of adverse impacts associated with higher flows is low, we will negotiate for dispensation from our pre-development flow service level in lieu of a levy. The funds obtained are then directed to the stormwater reserve for use in funding strategic water management infrastructure in pursuit of our service levels.

Environmental Flow Management:

Our service levels also target management of environmental flows to ensure that impacts from urbanisation do not result in increased flow rates, and the risk of increased erosion in water courses, and for environmental flows to be maintained.

New urban development:

Major (flood) stormwater outflows from new development shall not exceed the equivalent pre-development (pre settlement) flow rate for a 1:100 ARI event.

Minor stormwater outflows from new development shall not exceed the equivalent pre-development (pre settlement) flow rate for a 1:5 ARI event.

Stormwater discharge shall be managed and where necessary, limited to ensure environmental flows are maintained for watercourses with water dependent ecological communities.

Water harvesting:

Stormwater harvesting shall be managed and where necessary, limited to ensure environmental flows are maintained for watercourses with water dependent ecological communities.

The target limit for stormwater harvesting is 75% of urban stormwater flows, however this is subject to:

- Addressing requirements for environmental flows limits
- Cost benefit analysis indicating a net positive benefit for the scale of harvesting proposed
- And otherwise in accordance with the Water Business Unit Business Plan

As natural water assets are not incorporated in the asset management plan we have not established service levels however, we are guided by requirements for duty of care, and provisions of the **Natural Resources Management Act 2004** and **Environment Protection Act 1993**.

These service levels will be further explored and refined and our level of compliance monitored, as part of our improvement plan.