

8. WATER AND SANITARY SERVICES ASSESSMENTS

General Manager responsible:	General Manager City Environment
Officer responsible:	Unit Manager City Water and Waste, DDI 941-6231
Author:	Mark Rykers, Business Relations Team Manager, DDI 941 8640; Paula Southen, Reticulation Asset Management Planner, DDI 941 8274; Rob Hawthorne, Strategic Property Analyst, DDI 941 6458 and Paul Dickson, Drainage Engineer, DDI 941 8392.

SECTION 1

PURPOSE OF REPORT

1. The purpose of this report is for the Council to consider the statement of proposals for the draft Water and Sanitary Services Assessments to enable these documents to be released for public consultation under the Special Consultative Procedure. The assessments cover the following water and sanitary services: Water Supply, Wastewater, Stormwater Drainage, Cemeteries and Crematoria, and Sanitary Conveniences. Copies of the statement of proposal for each service are separately enclosed (limited circulation, in view of their bulk).

EXECUTIVE SUMMARY

2. The Local Government Act 2002 requires territorial local authorities to carry out an assessment for water and sanitary services in accordance with sections 123-129 of the Act by 30 June 2005. The major objective of the requirement to undertake the assessments is to ensure future demand for services can be met and that public health is protected. The assessments cover services defined by section 25 (1) (a), (b), (c), (d), (h), and (i) of the Health Act 1956 namely:
 - Waterworks
 - Drainage works, sewerage works and works for the disposal of sewage
 - Works for the collection and disposal of refuse, nightsoil, and other offensive matter
 - Cemeteries and crematoria
 - Sanitary conveniences for the use of the public
3. As this Council has adopted a waste management plan under part 31 of the Local Government Act 1974 it is not required to undertake an assessment of works for the collection and disposal of refuse, night soil, and other offensive matter.
4. A draft assessment has now been prepared for each of the required services. A summary of the information contained in each of the assessments is provided in Section 2 of this report. As part of preparing the assessments it is a requirement to consult with the community and stakeholders using the Special Consultative Procedure under the Local Government Act 2002. Prior to this the Council must approve the statements of proposal (the draft assessments) to enable commencement of this phase.
5. The proposed programme to achieve the requirements of the LGA 2002 is:

Phase	Task	Time Frame	Comment
1	Scope the assessment, assemble information and identify issues, initial consultation	By December 2004	Completed
2	Prepare the draft assessment and gain approval to release for the Special Consultative Procedure (SCP)	By end of March 2005	Current phase
3	Consultation under the SCP	From early April to early May 2005	
4	Hear submissions and develop final assessment	By mid June 2005	
5	Final assessment report adopted by Council	By 30 June 2005	

6. Information on key findings and options to meet demand have been presented to the Council through a seminar and detailed information is provided in the attached statements of proposal. Various options are detailed in the assessments including a comment relating to suitability and cost implications where practicable. Preferred options for addressing each of the issues identified will be considered as part of the Special Consultative Procedure and indicated in the final report.
7. In terms of this report the preferred option is for the Council to approve the statements of proposal for each assessment to enable these to be released for community consultation under the Special Consultative Procedure. This action is required to meet obligations and time frames under the Local Government Act 2002. Other options such as 'doing nothing' have not been considered as these do not comply with legislative requirements.

FINANCIAL AND LEGAL CONSIDERATIONS

8. The various assessments consider options to meet demand and, where practicable and sufficient information is available, these have been evaluated in terms of their estimated financial impact. More precise financial information for some options would not be available until detailed planning work is completed. Funding of these services in terms of the Council's role is identified in the current LTCCP and this will need to be reviewed for the 2006/07 LTCCP following the adoption of these assessments.
9. The Council is required under part 7 (Sections 124-125, 127-129) of the Local Government Act 2002 to carry out an assessment of water and sanitary services within its district. Sections 83 to 89 of the Local Government Act set out the requirements in respect to the Special Consultative Procedure that are to be followed. The individual assessments also consider the requirements of the other pertinent legislation related to each service and this information is contained in the assessment documents. Some of the options considered in the assessments may require future changes to existing regulations and bylaws to enable implementation.

STAFF RECOMMENDATIONS

It is recommended that:

- (a) The Council receive the statements of proposal for the Draft Water and Sanitary Services Assessments these being:
 - Water Supply
 - Wastewater
 - Storm Water Drainage
 - Sanitary Conveniences
 - Cemeteries and Crematoria

and give approval for these documents to be made available for public comment under the Special Consultative Procedure as required in Sections 83-89 of the Local Government Act 2002.

- (b) That a hearings panel comprising a representative from each portfolio group be set up to hear submissions on the assessments and report to the Council with its recommendations.

ASSESSMENT OF OPTIONS

THE PREFERRED OPTION

10. Is for the Council to approve the statements of proposal for each assessment to enable these to be released for community consultation under the special consultative procedure and to meet the Council's obligations under the Local Government Act 2002

	Benefits (current and future)	Costs (current and future)
Social	Preparation of assessments enables community in put to future service provision. Some of the assessments will have a direct impact on ensuring future social needs are met.	None identified
Cultural	Some of the assessments will have a direct impact on ensuring cultural needs are met particularly in terms of providing for specific cultural requirements.	May be additional costs in meeting cultural requirements.
Environmental	A key focus of the assessments is to consider the protection of the environment.	May be additional costs in ensuring environmental protection
Economic	Will provide improved long term financial information on future service and infrastructural requirements.	Some assessment options may result in additional service and infrastructure costs.
<p>Extent to which community outcomes are achieved: Primary alignment with community outcome: <i>"Our City's infrastructure and environment are managed effectively, are responsive to changing needs and focus on long term sustainability."</i></p> <p>Impact on Council's capacity and responsibilities: Has the potential to identify the need for future capacity requirements with associated capital works and operational expenditure.</p> <p>Effects on Maori: Maori will have a strong interest particularly in terms of the protection of water and land from contamination</p> <p>Consistency with existing Council policies: Consistent with LGA requirements and the Council's consultation guidelines</p> <p>Views and preferences of persons affected or likely to have an interest: Initial consultation carried out with some assessments and information detailed in the individual assessments. Medical Officer of Health comments have been received and incorporated into the assessments where applicable.</p> <p>Other relevant matters: Special Consultative Procedure must be followed with the Water and Sanitary Services Assessments to meet LGA 2002 requirements.</p>		

SECTION 2: SUMMARY OF INFORMATION CONTAINED IN THE ASSESSMENTS

SECTION 2.1: SANITARY SERVICES ASSESSMENT: WATER SUPPLY

SUMMARY OF STATEMENT OF PROPOSAL

1. This assessment of water supply has been undertaken as required under Part 7 Section 125 of the Local Government Act 2002. The following paragraphs are the summary of the Council's Water Supply Assessment (Statement of Proposal) to be used as part of the Council's Assessment of Water and Sanitary Services.

HOW DRINKING WATER IS OBTAINED

2. For the purpose of making this assessment the city has been divided into two separate communities; the urban community, and the urban fringe community. The urban community includes the Christchurch City Council reticulated supply and several hospitals and schools which have independent supplies within the urban area. The urban fringe community includes supplies on the outskirts of the city. This is mostly made up of school supplies and also includes the Christchurch City Council Kainga and Brooklands supply.
3. All of the water supplies identified in the assessments source their water from wells into the aquifers which extend under the city and the Canterbury Plains. It is estimated that 1,300 properties or a population of 3,500 are not provided with a reticulated supply within the CCC boundaries. It is assumed that these properties all source their drinking water from private domestic wells.

RISK ASSESSMENT

4. The potential risks to each of the supplies are similar as the sources and methods of abstraction are similar. Contamination can occur at any point in the water supply system, being the source, treatment, storage or reticulation. The supplies provide different levels of treatment or mitigation of these risks resulting in differing probabilities of a contamination event occurring. The main risks identified are summarised below:
 - Unsecured well heads or access hatches leading to contamination of the source or stored water
 - No residual treatment provided (except for Paparua Prison) leading to increased risk of contamination of water in storage or reticulation
 - Salt water intrusion into aquifers that discharge into the sea
 - Loss of service due to lack of storage or backup electricity
 - Insufficient backflow protection leading to backflow of contaminants into reticulation
5. These risks can all be treated in order to reduce the probability of a contamination event occurring. Christchurch City Council has a Public Health Risk Management Plan in place. Operators of other supplies have some preventative measures in place.
6. Two areas have been identified where contamination risk may present a higher potential threat to the community. There are two school supplies located in an area that is not serviced by a reticulated wastewater system and the soils are not free draining. There is therefore a higher risk of contamination of the water supplies from septic tanks in the area. Additional care needs to be taken in the location and operation of these bores to ensure contamination does not occur.
7. The second higher risk area is where surface or climatic effects have an influence over the characteristics of the groundwater (non-secure groundwater). The Paparua Prison supply and some pump stations in Christchurch's North-West pressure zone are areas where this may be the case. Additional water quality testing may be necessary to monitor against any public health risks resulting from this.

QUALITY AND ADEQUACY OF DRINKING WATER

8. All of the water suppliers have sufficient water to meet their current demand. The Council currently abstracts just over 50 million cubic metres of water a year for its reticulated supply. This represents approximately half of the water taken annually within the city boundaries. The policies and rules in Environment Canterbury's proposed Natural Resources Regional Plan (Chapter 4: Water Quality and Chapter 5: Water Quantity) have been developed to achieve, no significant long term decline in groundwater levels as a result of abstraction and, in artesian aquifers, no contamination of groundwater as a result of abstraction. These rules will ensure that the long-term sustainability of the aquifers as a water source is protected. Provided these rules and policies are adhered to, there will be sufficient water to meet future demands.
9. Christchurch is well known for the high quality of its drinking water. Because of its naturally high quality, the water does not need to be treated to meet current drinking water standards. Papanui Prison, in the Urban Fringe community is the only supply which treats its water with a chlorine solution to provide residual treatment. There is no infection incidence data suggesting that any of the sources of drinking water in either the Urban or Urban Fringe Communities have been a cause of water borne diseases.
10. The Christchurch City Council supply is operated by adequately trained staff available to ensure compliance with the New Zealand Drinking Water Standards 2000. The training and qualifications of the operators of non-council operated supplies have not been established. Supplies to schools are generally operated by school caretakers with only a rudimentary understanding of their supply systems. It is believed that preventative maintenance is generally not practised on school supplies. The hospital, airport and prison supplies appear to be operated by personnel knowledgeable in the operation and maintenance of water supply systems and have preventative maintenance systems in place.

CURRENT AND ESTIMATED FUTURE DEMANDS

11. The current total annual consumption from the Christchurch City Water Supply is around 50 million cubic metres per year. The Council has consented approvals with ECan to draw in the vicinity of 75 million cubic metres per annum from the aquifers serving the City. The peak demand for the whole City is around 21,000 cubic metres per hour. Accurate consumption figures are not available for the non-Council operated supplies.
12. Future demand for the Council operated supplies are assessed in detail in the Water Supply Asset Management Plan. The population served by the Christchurch City Water Supply is expected to increase by approximately seven percent in the next ten years. A large proportion of the peak water demands in Christchurch is for domestic irrigation. For new developments the peak demand will increase proportional to the number of households. Infill housing decreases the irrigable land area and therefore does not increase the peak demands. Only a small increase in the total annual consumption is expected because of the demand management methods that are already in place. (Page 94-98 Water Supply AMP aim to reduce consumption from 420 litres/person/day (2001) to 380 litres/person/day in 2026.)
13. Future demands are not expected to increase for the non-council urban suppliers. Of the urban fringe community only the Christchurch Airport and Papanui Prison are predicting an increase in demand. The increase is expected to be in the order of 10-15 percent.
14. The Health (Drinking Water) Amendment Bill proposes greater responsibilities with regard to the quality of water supplied. This may become too onerous for many non-council suppliers and therefore increased demand for the council provided supply may result. If all non-Council water users were to be supplied from the Council system this would increase the aquifer draw-off by approximately 1.1 million m³ per annum.

OPTIONS TO MEET THE DEMANDS

15. Demand resulting from population growth can be met in the following ways:
 - Construction of additional pumping stations, wells and other infrastructure to increase capacity to help meet peak demands up to agreed maximum take levels as stipulated in ECan consents.
 - Implementation of demand management programmes including public education to encourage efficient water use, water loss reduction programmes, water supply modelling to identify operational changes to increase system efficiencies
16. Options to meet demand related to non-secure groundwater sources can be met by:
 - Additional water quality testing.
 - Introduction of treatment.
 - Connection to Council reticulated supply (for non council supplies).
 - Drilling new wells into secure sources.
17. Options to meet demand related to wells in areas with septic tanks and insufficient drainage
 - Further investigation to establish if there is a public health risk
 - Ensure well heads are secure and operated correctly
 - Abandon existing supply and connect to Council reticulated supply
18. Options to meet demand related to the Health (Drinking Water) Amendment Bill and the greater responsibilities with regard to the quality of water supplied:
 - Continue to manage own supply ensuring staff adequately trained and risk management procedures are in place.
 - Employing external qualified staff to operate and maintain supply and manage risks.
 - Abandon existing supply and connect to Council reticulated supply.

CHRISTCHURCH CITY COUNCIL'S ROLE IN MEETING THE DEMANDS

19. Most of the responsibility for ensuring water supplies are appropriate rests with the local Medical Officer of Health (Community Public Health Unit of Christchurch District Health Board) which is charged with this responsibility through the Health Act and via administration arrangements with the Ministry of Health.
20. The Council's role will be to ensure its own public water supply system is managed in an appropriate manner to meet compliance and community needs.
21. It is expected that any new infrastructure to cater for growth will be funded by developers. The Council may consider assistance with funding of the service where there are significant public health issues. This would be assessed on a case by case basis.
22. The Council may also have a future role to liaise with schemes owners and other agencies, such as Ecan, and Community Public Health to ensure appropriate water supply arrangements are in place to meet the total communities reasonable needs. This would be assessed on a case by case basis.

PROPOSALS FOR MEETING THE DEMANDS

23. Pending legislation, the Health (Drinking Water) Amendment Act is likely to require water supply owners to construct manage and monitor the supplies in a manner that will ensure acceptable levels of risk are achieved.

24. The Christchurch City Council, for its own supply, is already implementing plans to meet the future demands. This includes:
- Capital works programmes to provide additional infrastructure for growth.
 - Demand management programmes to reduce per capita consumption.
 - development of a Public Health Risk Management Plan.
 - a projected increase in the operating budget to cover likely additional water testing and compliance requirements.
25. The Council will accept applications to connect to the supply from non council operated supplies within the reticulated area although there may be restrictions on the size of connection that can be made. Non council supplies outside the city reticulated area may also apply but permission to connect will be made on a case by case basis. Assistance with funding to connect, where there are public health issues, will also be assessed on a case by case basis.

CONSULTATION WITH MEDICAL OFFICER OF HEALTH

26. The Medical Officer of Health has been consulted in the process of making the assessment. Meetings were held with relevant staff and a draft copy of the assessment was provided for review. Comments received on the first draft have been incorporated into the assessment.

ASSESSMENT OF OPTIONS

27. Various options to meet the demands are detailed in the draft assessment. The preferred options for addressing the issues identified will be considered as part of the Special Consultative Procedure and indicated in the final report.

**SECTION 2.2: SANITARY SERVICES ASSESSMENT: WASTEWATER
SUMMARY OF STATEMENT OF PROPOSAL**

1. This assessment of Wastewater services has been undertaken as required under Part 7 Section 125 of the Local Government Act 2002. The following paragraphs are the summary of the Wastewater Services Assessment (Statement of Proposal) to be used as part of the Council's Assessment of Water and Sanitary Services.

METHODS USED TO DISPOSE OF WASTEWATER

2. For the purpose of making the assessment the City has been broken up into two separate communities, the urban community and the urban fringe community. The urban community includes the Council provided collection and disposal schemes for the City and Belfast. The urban fringe community includes the areas bordering the Christchurch metropolitan area and within the city boundaries but not served by the reticulated network.
3. Wastewater from Christchurch City is treated at the Christchurch Wastewater Treatment Plant (CWTP) and the treated effluent is currently discharged into the Avon-Heathcote Estuary. The Christchurch City Council is planning to replace the estuary discharge with an ocean outfall by 2009.
4. Wastewater from the Belfast township is treated through oxidation ponds and the effluent is currently discharged to Otukaikino Creek, a tributary of the Waimakariri River. The discharge from the ponds will be pumped to the CWTP by the end of 2006.
5. The urban fringe area utilises stand-alone schemes for wastewater treatment and disposal. These schemes mostly consist of single chamber septic tanks with gravity disposal trenches. It is estimated that there are 800 to 1,300 such properties within the Christchurch boundary.

RISK ASSESSMENT

6. The discharge of effluent from the Christchurch Wastewater Treatment Plant contributes to the health risk for users of the estuary. The risk zone is assessed as being very small and centred around the point of discharge.
7. The wet weather overflows to the Avon and Heathcote rivers significantly increase the levels of contaminants in the rivers while the overflow is occurring and for a period of time afterwards. These present a public health risk to users of the rivers. A significant mitigating factor is the prevalence of low-contact water related activities that are generally discouraged by the poor weather or high river flow conditions that coincide with the sewer overflows.
8. The effluent from the Belfast Oxidation Ponds is of inconsistent quality and currently presents a public health risk to users of the receiving stream.
9. The main risks associated with septic tanks are summarised below:
 - Treatment plant or disposal field poorly designed leading to a low level of treatment.
 - Treatment plant or disposal field poorly maintained leading to uneven distribution of effluent.
 - Shallow groundwater leading to contamination of groundwater.
 - Poor quality or hydraulically limited soils leading to surface ponding or shallow groundwater contamination.
10. The higher risk area is the Marshlands area owing to its shallow groundwater and peaty soils.
11. There is a potential health risk for properties on night soil collection because of the untreated wastewater being held on site for up to a week.

QUALITY AND QUANTITY OF DISCHARGED WASTEWATER

12. The Christchurch wastewater system collects approximately 55 million cubic metres of wastewater each year, transporting it through a series of sewers and pump stations to the treatment plant at Bromley. The advanced secondary treatment process produces a very high quality effluent which is discharged to the Avon-Heathcote Estuary. There are also 12 consented locations where diluted untreated effluent is occasionally discharged, during periods of high rainfall, to the Avon and Heathcote Rivers.
13. Approximately 0.4 million cubic metres annually are collected from the Belfast area, treated in oxidation ponds and discharged into a tributary of the Waimakariri River. The effluent from the Belfast Treatment Plant is of inconsistent quality and has occasionally failed to comply with resource consent conditions.
14. There are approximately 800-1,300 domestic septic tank systems in operation on the fringe areas of Christchurch. These systems consist mainly of single chamber septic tanks with gravity disposal trenches. The estimated volume of effluent associated with this number of tanks is 500-800 cubic metres a day. The effluent quality of these systems is highly variable and dependant on design, construction and maintenance standards adopted by the owners.
15. There are currently 11 properties in the northeast fringe area that are served by a night soil collection. Untreated effluent is kept in a holding tank which is emptied out and taken to the Christchurch Wastewater Treatment Plant. Four of these properties are currently being connected to the city reticulation, five of them are being collected on a weekly basis and two only occasionally.
16. The Christchurch and Belfast wastewater collection and treatment systems are operated by appropriately trained and qualified staff. It is assumed that the domestic tank systems are operated by property owners who have limited knowledge of wastewater treatment systems.

CURRENT AND ESTIMATED FUTURE DEMANDS

17. Future demand for the Council operated supplies are assessed in detail in the Wastewater Asset Management Plan. Wastewater flows are projected to increase as a result of:
 - Increased population (approximately seven percent in the next ten years).
 - Intensification of development of fringe areas meaning septic tank effluent disposal fields are less acceptable from a public health perspective.
 - Increases in inflow and infiltration into the system. This has been estimated to increase by 10% over the next 40 years as the collection network ages.
 - The connection of Belfast to the Christchurch Wastewater Treatment Plant (additional 0.4m cubic metres in 2007).
18. The upgrades to the CWTP have been designed to provide sufficient system capacity for future planned demands up to the year 2050. The reticulation upgrades are also being to cater for projected flows at this time.
19. The demands are also projected to increase as a result of environmental concerns regarding the wet weather overflows to the Rivers, the current discharge of treated effluent to the estuary and the discharge of Belfast's effluent to the Otukaikino Creek.
20. There is also demand to get properties currently served by night soil collection onto alternative methods of wastewater collection, treatment and disposal.

OPTIONS TO MEET THE DEMANDS

21. Options to meet demand resulting from population growth:
 - Construction of additional pumping stations and pipelines to increase capacity to help meet peak demands (Major Sewer Upgrade Project).
 - Inflow and infiltration reduction programmes (ongoing maintenance programme).

- Increase capacity of treatment plant (CWTP Upgrade Project).
- Wastewater system modelling to identify operational changes to increase system efficiencies, monitor effectiveness of capital works and rehabilitation programmes, assist with pipe sizing and capacities required.
- Investigate alternative systems such as storage or decentralised treatment systems to help cater for peak flows and cater for growth above the current CWTP Upgrade.

22. Options to meet demand related to environmental issues:

- Inflow and Infiltration reduction programmes.
- Capital works to reduce wet weather overflows.
- Diversion of Belfast's wastewater flow from the Otukaikino Creek.
- Construction of ocean outfall to replace the current estuary discharge.

23. Options to meet demand related to night soil collection:

- Investigate options to get properties off night cart collection.
- Investigate reticulated septic tank options (STEP/STEG systems).
- Extend city reticulation to service the properties.

CHRISTCHURCH CITY COUNCIL'S ROLE IN MEETING THE DEMANDS

24. In general the Christchurch City Council will play the role of facilitator in meeting the demands for wastewater services. It is expected that any new infrastructure to cater for growth will be funded by developers. The Council may consider assistance with funding of the service where there are significant public health issues. This would be assessed on a case by case basis.

PROPOSALS FOR MEETING THE DEMANDS

25. The Christchurch City Council is already implementing its plans to meet the future demands. This includes:

- Upgrade of Christchurch wastewater treatment plant to increase capacity and effluent quality.
- A major sewer upgrade programme for new sewers to cater for projected growth and pipeline rehabilitation, some of these works are also aimed at reducing the wet weather overflows to the rivers.
- Construction of an ocean outfall to divert all treated wastewater from the estuary and discharge offshore via a 3 kilometre pipeline.
- Construction of a pipeline to take wastewater from Belfast to the Christchurch Wastewater Treatment Plant.
- Inflow and Infiltration reduction programmes.
- Capital works to reduce wet weather overflows.
- Diversion of Belfast's wastewater flow from the Otukaikino Creek.
- Construction of ocean outfall to replace estuary discharge.

26. The Christchurch City Council also proposes to investigate options to get the remaining properties off night cart collection.

CONSULTATION WITH MEDICAL OFFICER OF HEALTH

27. The Medical Officer of Health has been consulted in the process of making the assessment. Meetings were held with relevant staff and a draft copy of the assessment was provided for review. Comments received on the first draft have been incorporated into the assessment. Further consultation is planned through the Special Consultative Procedure.

ASSESSMENT OF OPTIONS

28. Various options to meet the demands are detailed in the draft assessment. The preferred options for addressing the issues identified will be considered as part of the Special Consultative Procedure and indicated in the final report.

SECTION 2.3: SANITARY SERVICES ASSESSMENT: STORMWATER SUMMARY OF STATEMENT OF PROPOSAL

1. The Local Government Act 2002 requires all territorial authorities to carry out assessments of stormwater services. The objective of the assessment is to identify risks and show how these services will be managed by the Christchurch City Council to achieve community outcomes in a sustainable manner.

EXECUTIVE SUMMARY

2. The role of the Council with respect to stormwater drainage services in the City is to coordinate the setting of Community Outcomes and as a service provider. The key service functions of stormwater drainage infrastructure are:
 - Protection of property, public safety and access,
 - Protection of ecosystems,
 - Creation of productive land.

ADEQUACY OF STORMWATER SERVICES

3. The Council has invested heavily in flood relief works over the past forty years in response to a series of destructive floods through the 1960's, 1970's and 1980's. A combination of historical investment in physical upgrading works and planning measures has effectively mitigated risks associated with the inundation of dwellings and buildings, and there are very few urban development constraints in the City that cannot be mitigated by planning rules, proper subdivision design and building design.
4. In rural areas stormwater is generally disposed of by ground soakage or to watercourses and there are unlikely to be any significant constraints on additional rural type development related to the disposal of stormwater.

PUBLIC HEALTH RISKS

RISKS ASSOCIATED WITH STORMWATER SERVICES

5. Potential health impacts associated with the stormwater drainage network are:
 - Illness caused by contact with micro-biological or chemical contaminants in natural water resources through the use of streams, rivers, estuaries and beaches for recreational purposes, or drinking potable water drawn from pollution water sources.
 - Injury or death caused by falls from stormwater structures or drowning.
 - Illness from mosquito bites.
6. The range of contaminants in stormwater and the current extent of environmental impacts on the City's watercourses are:
 - (a) **Microbiological** concentrations (including bacteria, viruses and protozoa) generally exceed contact recreation guidelines. The main source of contamination in dry weather is believed to be waterfowl. The impact of wet weather pollution is lessened by rain water dilution and the low level of recreational activity at these times.
 - (b) **Chemical** contaminants include organic compounds such as hydrocarbons, pesticides and organic wastes, and inorganic compounds such as metals and metalloids. The concentration of heavy metals in stormwater and river sediments exceeds the relevant water quality guidelines for the protection of aquatic organisms,
 - (c) **Nutrients**, including nitrogen and phosphorus, can cause algal blooms and prolific growth of aquatic plants when levels are elevated. There is extensive growth of algae, especially in the Avon River, likely to be linked to nutrient enrichment in the streams.

7. Although microbiological concentrations, at times, exceed contact recreation guidelines, neither the Council or the Medical Officer of Health have any record of injury or illness that is attributable to deficiencies in the design, operation or maintenance of the stormwater network, and health risks are assessed as low.

RISKS ASSOCIATED WITH THE LACK OF A RETICULATED STORMWATER DRAINAGE SYSTEM

8. There are less likely to be stormwater systems in rural areas. Because of the much larger allotments in rural areas, and the higher proportion of permeable vegetated areas, there are few problems when reticulated stormwater disposal is unavailable.

RISKS TO STORMWATER COMMUNITIES

9. Assessments of stormwater services were carried out at a “community” level to identify risks to particular communities.

Types of Communities	Community	Risk Assessment
Communities served by public drainage systems	Urban area to receiving waters - drained by street channels, street, sumps, pipes, open water courses and streams.	Quality of water in rivers and streams continues to degrade due to urban discharges. Increasing risk of land flooding due to inner urban intensification. Risk of insect borne diseases if an exotic vector establishes in Christchurch. Risk of flooding due to climate change.
	Rural areas serviced by Council maintained streams and drains	Low levels of risk
	Brooklands - discharge to a controlled groundwater storage zone.	Low levels of risk
Communities served by private drainage systems	Rural areas discharging stormwater run-off by either direct soakage to ground or to open drains funded privately.	Low levels of risk
	Industrial areas discharging to ground via soakage basins.	Risks of ground water contamination through leakage or spills onto ground or contaminants entering soak pits.

ENVIRONMENTAL IMPACTS

10. Water quality monitoring indicates that several of the environmental parameters monitored exceed minimum guideline levels. Ecosystems in the majority of streams are in degraded condition, however the impacts on waterway habitats appears to be accepted by the majority of the community and a rigorous debate on the community costs and benefits of markedly improving environmental outcomes is required.
11. Environment Canterbury has issued for comment a draft Natural Resources Plan which will, when adopted, set the rules and water quality standards with which the Council must comply for all existing point source discharges. It is likely that the standards will require additional planning, investigations and investment in land and treatment facilities.

OPTIONS TO ADDRESS RISKS

12. Options to address water quality degradation.
 - (a) Prepare and implement integrated catchment management plans (ICMPs) as required by the Proposed NRRP. This option will require the Council to be aware of land use activities in the catchment and control harmful discharges.
 - (b) Prepare and implement ICMPs, investigate operational measures such as street sweeping and sump cleaning that will improve discharge quality, and implement selected measures.
 - (c) As above but in addition improve stormwater treatment by construction of in-line treatment devices.
13. Options to address the risk of land flooding due to urban intensification:
 - (a) Continuous improvement of stormwater infrastructure as proposed in the stormwater drainage asset management plan.
 - (b) A step increase in stormwater capacity at an earlier point in the urbanisation cycle.
14. Options to address the risk of insect borne diseases:
 - (a) Minimise the potential habitat for insects by minimising the number of open water bodies in the city (ie eliminate the majority of ornamental and environmental water bodies).
 - (b) Limit the number of likely habitats while monitoring for insect nuisances and maintaining an awareness of potential problems. The Council currently implements this option.
 - (c) Control insect populations only if an exotic insect establishes in Canterbury.
15. Climate change and associated effects is a risk which should be dealt with via planning measures until the timing of effects is better understood.
16. The risk of ground water contamination in industrial areas through private stormwater soakage is primarily controlled by Environment Canterbury which authorises these discharges via resource consents. Options available to the Christchurch City Council are:
 - (a) Advocate for appropriate levels of environmental protection.
 - (b) Construct additional stormwater infrastructure to provide services to at-risk areas.

ROLE OF THE COUNCIL

17. The proposed role of the Council is to continue as:
 - (a) Facilitator of community consultation to establish community outcomes and service standards for stormwater services.
 - (b) Owner of infrastructure delivering public stormwater services to the community.
 - (c) Partner to Environment Canterbury and the Ministry of Health in the achievement of regulatory outcomes, and advocate for the community in the setting of environmental standards.
 - (d) Monitor of City growth, water quality and the health of habitats, as well as the development of policies, infrastructure management and development plans, District Plan measures and public education programmes to ensure environmental and public health standards are achieved.

2.4 SANITARY SERVICES ASSESSMENT: CEMETERIES AND CREMATORIA SUMMARY OF STATEMENT OF PROPOSAL

1. The Local Government Act (LGA) 2002 requires territorial local authorities to carry out an assessment for water and sanitary services in accordance with sections 123-129 of the Act by June 30, 2005. This assessment considers the adequacy of the provision of cemeteries and crematoria in Christchurch City to meet future demands for disposal of the dead in a controlled, hygienic and dignified manner for the period 2004 - 2016.
2. Key findings are:
 - There is sufficient capacity within existing cemeteries to meet predicted demand for the next 20 years.
 - Current crematoria capacity is adequate to meet predicted demand well beyond a 20-year period.
 - Because of community preference for locally accessible cemeteries there is a requirement for a new cemetery site to service the northern part of the city and additional capacity required at Avonhead Cemetery. (Sites have been acquired to meet this need but establishment as cemeteries is subject to resource consent and planning processes)
 - There is potential to explore a partnership with the Selwyn District Council for the joint use of Shands Road Cemetery located near the southern boundary of the City.
 - Some form of limitation on the pre-purchase of cemetery plots is required to extend cemetery life spans and optimise cemetery use.
 - Additional special areas will need to be set aside for Returned Services needs and for Russian Orthodox burials.
 - Improved utilisation of less popular cemeteries and ash areas is required.
 - No public health issues were identified by the Medical Officer of Health and those raised by other agencies, particularly related to groundwater contamination from cemeteries and air discharges from crematoria, are considered in the assessment.

ASSET DESCRIPTION:

3. There are twelve cemeteries located within the Christchurch district and these cemeteries are managed by the Christchurch City Council (CCC). Six of the twelve Council cemeteries are either closed or have reached capacity with the only burials being either a second burial in an existing plot or burial in a reserved plot. In addition to the Council cemeteries a number of churches have burial grounds to provide for burial of members of their denomination. There are approximately 18 burial grounds in the district. They are typically small and the current extent of their operation is minor.
4. Cemeteries and crematoria are provided for the convenience of the community as a whole and the provision of this activity does not significantly alter based on the geography or demographic profile of different parts of a community. However the Christchurch district differs from most others around New Zealand in that most districts have only one or two operational cemeteries whereas in Christchurch there are six. The effect of this is that there tends to be a localised community around each cemetery. Analysis of cemetery requirements in the district have therefore been based on the six Christchurch ward boundaries.
5. The Christchurch City Council does not own or operate any crematoria. Cremation services within the Christchurch district are provided by two private companies. The Cremation Society of Canterbury has two facilities, one located at Linwood and the other at Harewood. The Garden City Crematory also has a cremator and is located at Sockburn. No defined catchment could be determined for each of the crematoria therefore the assessment considers the entire district of Christchurch as a single community for cremation services.

PUBLIC HEALTH ISSUES

6. Public health issues in cemeteries include work around graves, potential environmental effects from cemeteries and the ability of cemeteries and crematoria to cope with large numbers of dead following a natural disaster or pan-epidemic. The few public health issues relating to cremation relate to air discharges, radiotherapy effects and devices such as pacemakers.

7. Appropriate operating procedures are in place and documented for public health issues relating to both cemetery operations and cremations. The application of the procedures is audited as part of the ISO certification process.

FORECAST OF DEATHS

8. The figure below shows that there will be a substantial increase in predicted deaths for the resident population over the next twenty years owing to a combination of an aging population and the large increase in population in the district.

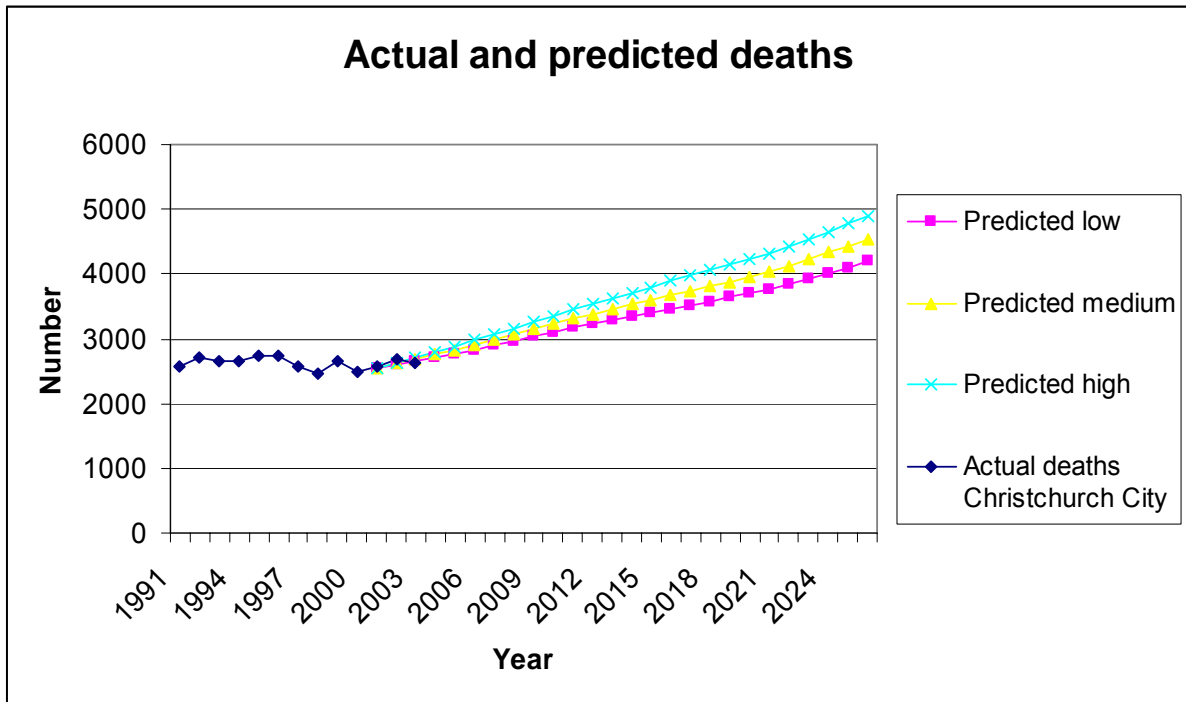


Figure: Actual (1991-2003) and Forecast (2001-2026) deaths for Christchurch City resident population

9. Low, medium and high projections for the number of grave and ash plots required are shown in the figure below. It should be noted that this only represents new plots – the calculations have taken into account second burials and trends for ashes to be buried in existing grave or ash plots.

Year	Total New Grave Plots			Total New Ash Plots		
	Low	Medium	High	Low	Medium	High
2001	401	402	403	96	97	98
2002	409	412	416	98	99	100
2003	418	423	429	100	101	103
2004	426	434	442	102	104	106
2005	435	445	456	104	107	110
2006	444	456	469	106	109	113
2007	454	469	484	108	112	116
2008	465	482	499	111	115	120
2009	476	495	515	114	118	124
2010	486	508	530	116	122	127
2011	497	521	545	119	125	131
2012	507	532	558	121	127	134
2013	516	544	572	123	130	137
2014	525	555	586	125	133	141
2015	534	567	600	128	136	144
2016	544	578	613	130	138	147
2017	553	589	627	132	141	151

Year	Total New Grave Plots			Total New Ash Plots		
	Low	Medium	High	Low	Medium	High
2018	562	600	640	134	144	154
2019	571	611	653	136	146	157
2020	580	622	666	138	149	160
2021	589	633	680	141	152	163
2022	603	649	698	144	155	168
2023	617	665	716	147	159	172
2024	630	681	735	150	163	177
2025	644	697	753	154	167	181
2026	658	713	771	157	171	185
Total 2004 - 2026	12,316	13,049	13,808	2,939	3,124	3,318

Figure: Low, medium and high projections for grave and ash plots required

CURRENT CAPACITY

- The current capacity of cemeteries is calculated by considering both the current number of available plots both for burials and ashes and the future demand projections.

BURIAL PLOTS

- Christchurch City records provide information on the number of burial plots available. This excludes plots that have been pre-sold.

Cemetery	Burial	Quarter Plot	Still Born
Avonhead	1,578	91	32
Belfast	74		
Memorial Park	7,883	148	
Ruru Lawn	750		
Ruru Lawn - Returned Services Assn plots	228		
Sydenham	320		
Yaldhurst	3,101		
Total	13,934	239	32

Figure: Plots available for all Christchurch cemeteries as at September 2004

- The projection of burial requirements and capacity includes all special burial plots (RSA, ethnic and religious) in the overall calculation.
- Based on the high demand forecast for new burial plots, district wide cemetery capacity is reached in 2026 (all available plots used). Analysis of the medium and low forecasts predicts that capacity will be reached in 2027 or 2028. It is important to note that this forecast considers the total citywide plot availability and does not take into account that there appears to be quite a strong preference in the community for residents to be buried in their local cemetery rather than elsewhere in the city. There are several exceptions to this, one being the Yaldhurst Cemetery which appears to have very limited appeal even with the local community, others being Memorial Park and Sydenham Cemeteries. If the reasons for the lack of appeal could be identified and addressed this may delay the requirement to develop new cemeteries.
- No new plots are available at Bromley, Linwood and Waimairi cemeteries though there are a number of pre-sold plots still remaining at these cemeteries. The first operational cemetery predicted to reach capacity is Belfast which will have no new plots available beyond 2004/2005. This creates a significant gap in the cemetery distribution across the district as there will be no operational cemetery in the northern part of the district.
- Ruru Lawn is forecast to reach capacity in 2007. This is earlier than originally forecast as burial plots are currently being sold as ash plots because there is no dedicated ashes area provided at this cemetery.

16. Avonhead is likely to reach capacity in 2015/2016. However, this date could be affected by the mix of burial plots provided, with upright memorials allowed in some sections only (approximately 300 remaining) and the balance of plots being in the lawn cemetery with only in ground memorials permitted. These areas are not popular with plot purchasers. Although a change to the layout would provide for an increased number of cemetery sections with upright memorials there is significant resistance to any change to the cemetery layout, particularly from families of those who have already purchased in ground plots. The calculation of remaining capacity does not include the proposed 1.6 ha extension which has a capacity of approximately 1,000 additional plots. Early development of this area may be necessary to provide additional plots allowing upright memorials.
17. Sydenham is forecast to reach capacity in 2017/2018 and the two remaining cemeteries of Memorial Park and Yaldhurst will have a combined capacity until around 2026/2027 with Memorial Park likely to reach capacity first. The development of the Wigram cemetery is not likely to be required until at least 2016 following the closure of Sydenham Cemetery.
18. Capacity to meet future demand could be further enhanced by exploring the possibility of a partnership with Selwyn District Council for the joint use of Shands Road Cemetery which is located on the southern boundary of the City.
19. There are a significant number of pre-purchased burial plots in the Christchurch cemeteries which represent approximately three to five years of total burial capacity for the City. At present there is no restriction on the pre-purchase of plots, which has the consequence of accelerating the need for additional burial plots. The impact is highlighted by the number of plots sold but unoccupied at Belfast Cemetery (457) which now has only a few burial plots remaining and a new cemetery site for the northern part of the city is being sought.

ASH PLOTS

20. Ash plots are easily accommodated as they take up minimal area. At present there are approximately 3,500 plots available in CCC cemeteries. It is possible that additional ash plots could be created if required. It is noted that of the available ash plots, 75% of the capacity is at Yaldhurst and Sydenham cemeteries which over the period 2000-2003 have accommodated only 5% respectively of the total ash burials. Unless the appeal of these two cemeteries can be improved, additional capacity will need to be developed at the other cemeteries particularly Ruru Lawn Cemetery. Alternative options for the provision of ash plots could be considered to meet demand requirements and conserve space.
21. Based on the continuation of the high demand forecast for new ash plots, district wide cemetery capacity is reached in 2027 (all available plots used). Analysis of the medium and low forecasts predicts that capacity will be reached in 2028 or 2029. It should be noted that Christchurch City Council provides for only a small proportion of ash burials in the district, the majority are held or scattered by friends and relatives, or interred in an ash plot or columbarium at one of the churches, or in the memorial gardens at one of the crematoria.
22. Pre-purchased ash plots represent a small proportion of total ash plot capacity for the City, in the order of one to two years. Although allowing pre-purchase has no effect on the long term net capacity of the city's cemeteries (except where they remain unused), they accelerate the need for new areas and additional infrastructure.

SPECIAL PLOTS

23. Special burial plots available in CCC cemeteries include White Russian (35 plots, Belfast), Indian (13 plots, Sydenham), Muslim (6 plots, Ruru Lawn; 84 plots Memorial Park), non-local Maori (268 plots, Memorial Park) and Jewish (85 plots, Linwood). In addition a request has been received through the consultation process for an area to be set aside at Memorial Park Cemetery for Russian Orthodox burials. It is recommended that this request receive further consideration as required under Burial and Cremations Act 1964.

RSA PLOTS

24. Returned Services Association (RSA) plots are provided in the Ruru Lawn cemetery. Analysis of the actual burial records and plot availability indicates that the RSA ashes plots section will reach capacity within the next 2 to 5 years. RSA burial plots can be expected to reach capacity within the next 4 to 9 years. It is therefore recommended that additional RSA areas are dedicated in another cemetery (current capacity 8,000 per annum compared with predicted capacity requirements of 4,216 per annum in 2026).

CREMATORIA

25. There was a lack of detailed information provided by the crematoria operators perhaps relating to commercial sensitivities. It was therefore difficult to accurately assess the provision for cremation. However from the cremation information available and the Christchurch City burial records, assumptions could be made about the average annual resident and out of district cremations that might be expected. Analysis showed that the total capacity of the operating crematoria in the district was well in excess of forecast demand.

OPTIONS TO MEET DEMAND

26. The assessment of cemeteries and crematoria has shown that the overall provision of land for cemeteries and total number of cremators is adequate to meet overall demand within the district for the 10 year planning period and beyond.
27. The assessment highlights a community preference for the provision of local cemeteries. In order to continue to meet this need the following actions are recommended:
 - (a) A new cemetery is provided in the northern part of the City as a replacement for Belfast Cemetery.
 - (b) Additional capacity for upright memorials is developed at Avonhead Cemetery.
 - (c) A denominational area for Russian Orthodox burials is developed at Memorial Park Cemetery.
 - (d) A new area is developed at Memorial Park Cemetery for RSA burials.
 - (e) A limitation on the pre-purchase of plots is established.
 - (f) Options for the shared development and use of Shands Road Cemetery are explored with Selwyn District Council.
 - (g) Options for improved utilisation of plots are investigated, particularly ash plots.
 - (h) A public promotion plan for less popular cemetery sites is developed and implemented.

ROLE OF CCC

28. The Council owns and operates all of the operational cemeteries in the city (excluding the church cemeteries) and has purchased land for new cemeteries and extensions to several of the existing cemeteries. It provides a service for interment by burial and of ashes. The management, design, development and maintenance of both operational and closed cemeteries is also provided by Christchurch City Council.
29. In order to meet future demand the Council will plan for and develop new areas for cemeteries. It will provide funding for cemetery infrastructure such as landscape treatment, roads, footpaths, water supply and drainage. Appropriate funding provision for cemetery infrastructure will be made in the Christchurch City Council Long Term Council Community Plan.

IDENTIFICATION OF ISSUES

30. Discussions were held with the following persons/organisations in order to identify any issues relating to the provision of cemeteries and crematoria and/or any public health issues. It was considered important to ensure that any issues were identified and addressed through the assessment.
- The Medical Officer of Health did not identify any current public health concerns relating to cemeteries and crematoria in the Christchurch district.
 - Environment Canterbury raised potential issues as being air discharges from crematoria or contamination of groundwater from cemeteries.
 - Christchurch City Council Environmental Health raised a number of issues including high water tables in some cemeteries, potential hazards from unstable headstones and ensuring that burials are performed at correct depths. Measures have been taken to eliminate or manage all of these concerns to mitigate any public health risks.
 - The Selwyn District Council raised the possibility of joint development with Christchurch City Council of the Shands Rd cemetery, located close to the Christchurch City boundary. Further investigation into this option has been proposed.

INITIAL CONSULTATION

31. Letters seeking identification of issues to be considered during the assessment were sent to religious denominations, ethnic groups, Maori and funeral directors. Discussions were held with specific agencies including the Medical Officer of Health, ECAN, Christchurch City Council Environmental Health, crematoria operators and Veterans Affairs. Comment from the general public was also sought by way of media release and public notice. A summary of responses from these other stakeholders has been included in the assessment report.

ADEQUACY OF ASSESSMENT

32. The assessment is considered to fully meet the requirements for a sanitary services assessment as set out in Part 7 Subpart 1 of the Local Government Act 2002.
33. The information used in the assessment is considered to be adequate to provide an informed view about the adequacy of cemeteries services and facilities in the Christchurch district. In preparing the assessment a number of assumptions have been made relating to death rates, the ratio of burials to cremations, and the number of out of district burials. The information used in calculating future demand is based on statistical information provided by the Department of Statistics and burial and cremation records held by Christchurch City Council. This information has been extrapolated to provide a comprehensive view of capacity and future demand.
34. There was a lack of detailed information provided by the crematoria operators perhaps relating to commercial sensitivities that made it difficult to accurately assess the provision for cremation. However enough information was gathered to determine that neither operator is operating at anywhere near capacity and therefore this is unlikely to become an issue within the assessment period. If capacity were to become an issue it is likely that one of the operators would install an additional cremator or one of the larger funeral directors would consider purchase of a cremator.
35. The assessment has not been compromised by a lack of information or by cost of obtaining information and is considered to be a full and balanced assessment of cemeteries and crematoria.

**SECTION 2.5: SANITARY SERVICES ASSESSMENT: SANITARY CONVENIENCES
SUMMARY OF STATEMENT OF PROPOSAL**

1. The Local Government Act (LGA) 2002 requires territorial local authorities to carry out an assessment for water and sanitary services in accordance with sections 123-129 of the Act by June 30, 2005. Section 124 specifically states the term assessment is defined in relation to "communities" and "does not include assessments in relation to individual properties".
2. While property specific assessments have been conducted the intent of these is to inform the wider metropolitan or city wide assessment in terms of the adequacy of the provision of public conveniences on a metropolitan basis, in terms of meeting hygienic standards and meeting current and future demands for the period 2004-2016.
3. To do this it:
 - (a) Identifies the current and forecast metropolitan situation relative to the total supply (levels of service) and demand for public access conveniences, as distinct from those provided in residential dwellings, in order to ensure that appropriate and adequate provision is made.
 - (b) Identifies the Council's current response, both regulatory and through direct provision of services, to the demand and to the maintenance of appropriate health outcomes for the community.
 - (c) Identifies and presents option(s) for ongoing and future provision, including options to reduce, maintain, change or enhance levels of service provided directly and/or indirectly to the public.
 - (d) Recommends the Council's preferred option(s) to meet ongoing demand and maintain appropriate health outcomes for the community.

GENERAL BACKGROUND

4. People leave their residences for a range of purposes, for example to work, shop, pursue an education, play sport and enjoy leisure pursuits. While remote from home at these "public spaces" people need access to toilets.
5. For the purpose of this assessment "public place" relates to all non-residential locations where people are either invited onto a property by the owner/operator or alternatively where they have a right of entry or passage, as a resident of or visitor to the City.
6. This assessment considers the public access to non-residential toilets in terms of the:
 - (a) Contribution to achieving public health outcomes through ensuring the public have adequate access to clean and safe toilet facilities, while remote from their homes.
 - (b) Capacity to meet reasonable expectations of Christchurch residents visiting public places.
 - (c) Capacity to meet reasonable expectations of tourists visiting public places.

INITIAL CONSULTATION - IDENTIFICATION OF PUBLIC HEALTH AND OTHER ISSUES

7. Discussions have been held with specific agencies to identify any issues relating to the provision of public conveniences and/or any public health issues. These include the Medical Officer of Health, Ngai Tahu, CCC Staff and commercial operators perceived as having toilet conveniences available for public access, such as shopping centres, large fast food outlets and garages.

8. Dialogue with and views of individuals and groups on site specific issues have also been considered, in most cases through complaints, requests for specific provision or changes. These extended from issues around cleanliness, opening hours, safety, additional facilities and specific features. Such enquiries came from members of the public, representatives of the Prostitutes Collective, community garden groups and retailers. The intent of this review is not to resolve individual site specific issues but identify issues for different communities or parts of communities relative to their access to non residential toilet facilities. The options considered do need to address the generic concerns identified by the above consultation.
9. Ngai Tahu expressed few concerns with the provision of public toilets except in relation to the location of toilet blocks to water-ways primarily from a sanitary perspective. This is normally covered by Council consultation with Ngai Tahu, when proposing a new public toilet, on a range of issues including the specific location. Specific opportunity to contribute during the SCP is anticipated.
10. The Medical Officer of Health identified a number of public health concerns relating to the provision of public conveniences in the Christchurch district. None were identified as significant however issues requiring further monitoring and improvement are as follows;
 - (a) Public toilets need to be available in areas which the public frequent:

This also extends to when public and private events are undertaken, and toilets are necessary, ie that sufficient quantities (access to toilets) are available to the consumers and appropriate checks and audits are undertaken to ensure compliance.
 - (b) Public toilets need to be hygienic, safe and secure. In particular the following issues need to be addressed:
 - (i) Cleanliness factors and ensuring a hygienic environment at all times.
 - (ii) Ensuring that all toilets have sufficient and safe hand washing facilities.
 - (iii) Safe disposal of articles left by those members of the public who frequent such locations for sexual or drug related activity - includes condoms, syringes, etc.
 - (iv) Where septic tanks or composting toilets are utilised (semi-rural) maintenance and cleaning regimes are put into effect with an appropriately managed emptying programme.
11. The concerns raised by the Medical Officer of Health relate equally to private sector provision as they do to Council owned or operated facilities or properties.

COUNCILS ROLE AND OTHER SERVICE PROVIDERS

12. Public access to toilets, other than those in residential homes, is currently provided by a wide range of businesses activities, educational institutions and other organisations, with toilets located either within or associated with their facilities. These businesses employ staff and attract customers to their facilities/properties and have an obligation to provide toilet facilities of some description for their staff and in most cases for their customers or patrons.
13. The Council also provides a number of facilities as such libraries, community centres, parking buildings and service centres and all provide toilets, both for their staff and other visitors to the property, during the hours these facilities are open. Within the assessment private business operators are referred to as **Public Domain sites** while Council operated facilities are referred to as **Secondary CCC sites**.
14. The provision of access to public toilets is not the primary driver of any of the organisations referred to above and accordingly the fundamental determinant of the extent and quality of provision is through regulatory compliance and from customer expectations.

15. Some of the organisations do, however, also view the provision of toilets as part of a complementary service mix to the public that add to the reasons for visiting their business. For example garages generally provide public access to their toilet facilities, in much the same way they provide free air for tyres. In general, the presence of staff at these businesses and the requirements of customers results in reasonable levels of monitoring toilets in terms of cleanliness, supplies and condition.
16. Separate from the public domain and secondary CCC sites, public toilets as a service in its own right, are provided by both the Christchurch City Council and hire companies. The latter generally provide portable toilets for specific events or work sites.
17. Within the Christchurch district there are over **171 Council owned Public Toilets**, referred to as **Primary CCC sites** in this assessment. These comprise;
 - (a) **(158)** located in or associated with **Parks**,
 - (b) **(13)** located in predominantly **retail areas**, (includes only staffed toilet - Cathedral Square).
18. A map identifying the location of primary and secondary CCC sites, together with those private domain sites included in the audit, is attached to the assessment showing a very broad geographic spread across the city. There are in fact many other providers, in addition to the public domain sites identified. A circle depicting a radius of 250 meters has been mapped over these sites to indicate a possible walking distance catchment. This is only one measure of access but is indicative of the substantial coverage across the city. The map also identifies core retail zoned locations, with an aggregate area greater than 4000m². This area threshold was chosen as indicative of the smallest retail location in which we have a non parks primary site. On a comparative basis there are over 50 such locations where we don't provide stand-alone public toilets.

LEVEL OF SERVICE AND ASSET DESCRIPTION

19. There is a wide disparity in the size, format, material finish, hours of operation and provisioning of public access toilets. Within most sectors the public domain and secondary CCC sites are subject to the Building Act and Building Code, in terms of design and capacity. Local authorities have specific powers over "insanitary" buildings where a building "does not have sanitary facilities that are adequate for its intended use". As such the public have safeguards available to them but only if local authorities are aware of the inadequacies. The occupancy of the majority of these properties, however, have a high level of "ownership" by the user groups in terms of the standard of toilet facilities provided. For example, on-site staff expectations or those of paying/regular users of a property tend to have a significant input into the standard of toilet (public) conveniences provided at a property through direct requests or complaints.
20. The assessment process involved a city wide audit of levels of service on primary CCC sites and a sample survey of both secondary CCC and public domain sites in retail locations. In addition, a building condition assessment was completed on primary CCC sites to determine current maintenance issues and long term maintenance and renewal requirements.
21. The results of the condition assessment showed that on the whole the buildings were in relatively good condition, with some notable exceptions. The future maintenance and renewal requirements for surfaces, fixtures and fittings are planned for through consideration of periodic renewals based on the passing of time and industry standards or a decline in condition. It can also be triggered by other enhancement programs associated with the facility.
22. Some level of overlap exists between issues identified within the condition assessment inspection and the level of service audit - completed separately. These have been reconciled and, in most cases, significant deficits in condition or levels of service have been, or are being, responded to as a result of the audit.

23. Some of the performance issues relate to design and materials used at certain sites and often these are difficult to address unless a substantial refurbishment or renewal is effected. Accordingly the consistent delivery of some levels of service across the portfolio may require implementation over a period of time. These strategies are discussed further in the options section of this report.
24. During the audit, sites that performed well were identified and the best of these, located at different generic types of parks or locations, were selected to represent an achievable standard. These have been referred to as Best Appropriate Practice (BAP), within the context of non-staffed public toilets in parks.
25. The table below shows a comparative assessment of toilets available to the public throughout the city, on the basis of a levels of service audit of current provision. The audit graded sites on the basis of availability, locational features, cleanliness, and general amenity values.
26. While it is acknowledged that access rights to toilets are limited to patrons of the secondary CCC sites and public domain sites many, in fact most, of these businesses turn a blind eye to usage by wider public or even encourage it.

	Primary Public Toilets		Secondary Council Sites	Public Domain Toilet Sites			Comments
	All	BAP		Shopping Centres	Fast Food Outlets	Petrol Stations	
Availability	9.7	9.9	9.5+	9.5	9.6	9.0	
Location	8.7	9.2	9.5	9.9	9.9	9.9	
Cleanliness	7.0	8.4	8.0	9.0+	8.9	8.4	McDonalds cleaning exemplary
Amenities	9.0	9.3	9.0	9.5	9.5	9.0	

27. Shopping Centres and major fast food outlets perform well in terms of the provision of public conveniences due to their location at high usage points, availability during all normal shopping hours, high standard of amenity and in particular frequency and standard of cleaning.
28. Petrol stations also performed well but with less consistency in terms of access for non-patrons, the standard of amenity and the level and frequency of cleaning.
29. As a large, diverse portfolio of properties, the Council's secondary sites scored better than petrol stations in terms of availability but inferior to other providers, with some facilities providing staff only access. The general level of amenity was also inferior to shopping centres and fast food outlets as was the standard and frequency of cleaning. Location factors were however high. Within the secondary CCC sites are several sub-groupings and their performance varied markedly. In general terms, for example, libraries performed very well on all criteria whereas other community facilities such as parking buildings did not, mostly relating to availability and cleanliness.
30. It is clear that the overall assessed performance of private domain toilets is at a consistently high level against the criteria used in the audit and that in general Council owned facilities are inferior, in particular with regard to cleanliness.
31. While most of the primary CCC sites scored well, the cleanliness criteria was the poorest performing category by a significant factor and highlights the difficulty of keeping these sites clean with a lack of on site monitoring by staff, and the open nature of the facilities. The following details criteria used in the evaluation with the average scores for the 171 primary site toilets.

Toilets are clean and hygienic with no build up of excessive litter	80%
Litter bins are installed internally and available adjacent externally to the site	57%
The site is free of unpleasant odour	84%
Sanitary bins are supplied and clean	46%
Automatic flush unit is operational and sufficient to dispose of waste	97%
Soap dispensers and automatic hand driers are fully functional	35%
Overall Average	66%

32. Particular issues that impact on the performance of cleaning at primary and secondary CCC sites are:
- Only one public toilet is staffed (Cathedral Square).
 - Cleaning regimes are only as good as the last person using the facility therefore frequency of cleaning.
 - Some surfaces more difficult to clean and maintain hygiene standards than others.
 - Toilet facilities managed and cleaned by a range of different parties/contractors with a lack of consistent standards.
 - Audits of cleaning standards required.
 - Accountability for public toilets as a service is managed by different parts of Council.
33. The Council's options, and proposed response to these issues, are detailed later in the report and in more detail within the assessment.

CURRENT AND FUTURE DEMAND

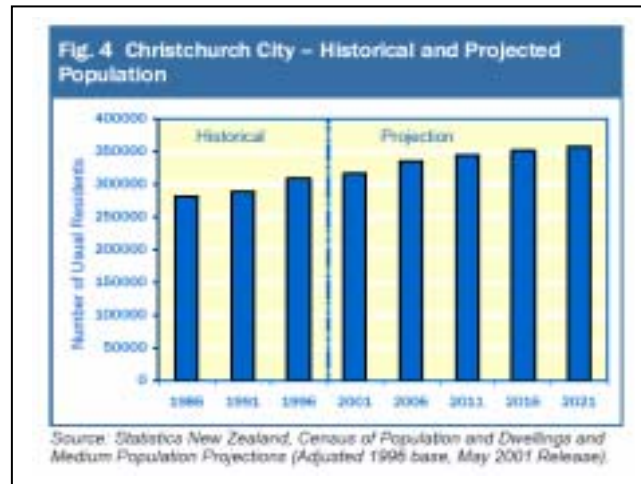
35. Demand for public conveniences (both Council and private sector provision) within the area covered by the assessment is influenced and modified by compliance and customer expectation issues, however, in total capacity terms is driven by population expansion. Accordingly current and projected population volumes will have an impact on future provision. This needs to account not only for resident populations but also tourist numbers and those outside the immediate geographic area who frequent the city for work, leisure or other reasons.

POPULATION FORECAST

- (a) Geographic location and outline of Christchurch City 2021



(b) 2001 population projections to the year



36. Key facts about Christchurch City (as context for this assessment):

- The second largest city in New Zealand and the largest city in the South Island.
- Population of approximately 344,100 people and expected to grow to 372,700 in 2021, an increase of 8.3% (14,000 increase over 2001 projections). Low and high projections
- Median age projection have also increased to 41.1 in 2021, reinforcing the trend to an aging population.
- Median projections as at 2021 for surrounding territorial authorities have also increased with Waimakariri District now being 52,700, Selwyn District 41,400 and Banks Peninsula now 9,100.

37. Additional access to public conveniences (in the wider context) will be required as businesses and other facilities expand to cater to growing populations. Most of this provision is catered for within building and resource consent requirements, for example a new office block or movie theatre must provide adequate public conveniences for their staff or patrons. The exception to this is with retail expansion, other than those clearly defined as shopping centres. In particular bulk and other large format stores and supermarkets can draw large numbers of patrons to specific locations with limited or no requirement for them to provide dedicated toilets for their patrons.

38. Information provided by the public domain providers assessed show that;

- **Shopping Centres** normal usage is between 150–250/day (some larger centres can be up to 300/day).
- **Large Fast Food** outlets have usage of between 150 and 350/day.
- **Petrol Station** usage rates range typically from 10 to 60 per day, although the large stations match the larger fast food outlets.

39. Expansion of Council owned secondary sites, such as the new library at Upper Riccarton, will also make appropriate provision for public conveniences as a compliance requirement. Council policy supports the availability of these toilets to the wider public during normal trading hours.

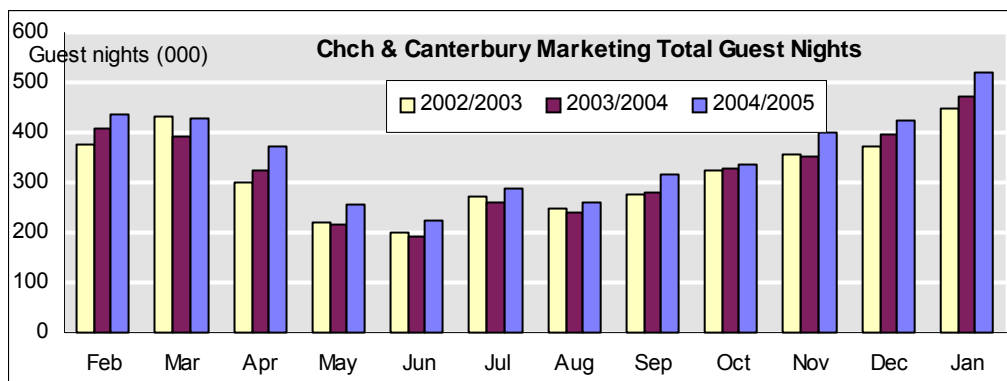
40. Site specific data on demand/usage of primary CCC sites is in most cases non-existent or based on anecdotal information. This is also true of the demand/usage patterns for the immediate location, for example total patronage numbers visiting a park. This lack of data has been substantially driven by the lack of on-site presence at most of the sites and the expense or limitations of other monitoring techniques.

41. The only other Council, we are aware of, that has tracked usage of their public toilets is the Dunedin City Council, which has 16 sites. The analysis shows;
- **Satellite Towns** usage ranged from 38 to 96 per day.
 - **Suburban sites** usage averaged 36/day.
 - **Suburban - Tourist/Beach** areas ranged from 15 to 45 per day, a very busy site (the Railway Station) reached 125 usages per day.
 - **Commercial** (adjacent to) **Shopping Mall** locations average 160 visits/day. This ranges from 60 visits/day for the lower traffic areas to over 280 visits/day for a busy shopping mall/commercial area.
42. We have extrapolated the usage data from Dunedin CC and the data from public domain sites for use in assessing the Councils primary sites. This does, however, lack the level of credibility and reliability desired on which to base a firm proposal for meeting future demand at a sub-portfolio level. Without the benefit of this information it is also difficult to assess the adequacy of provision at a specific site in terms of total numbers using the toilets or the peak demand periods, where demand may exceeds the supply. Consideration is currently being given to installation of monitors at up to 30 representative sites to more accurately assess demand at different types of locations. To provide accurate profiles of usage for specific sites at different times of the year would require at least 12 months monitoring. The results would however contribute to the Councils formation of the next LTCCP.
43. In the interim no expansion of the existing 12 primary Council sites in suburban retail locations has been proposed. Potential exists for the closure of some of these facilities owing to health and safety and maintenance issues. Closures could also eventually occur as a consequence of completing more detailed site specific assessments of demand in the future, alternate means of delivering the service being identified and potential changes to the Building Code coming into effect.
44. Current expansion plans for primary sites on parks over the next five years include an additional four additional toilet blocks and approximately 12 existing toilet blocks being replaced or substantially upgraded. Beyond this an additional six new toilet blocks are planned for, driven by the changing nature of use at certain parks and additional parks being created as a result of anticipated urban growth and vesting. This represents a growth of over 6% on the existing provision.
45. Separate to the above, potential exists for site specific concerns to result in the building of new public toilets, within both categories of primary Council sites. While this provision, in a reactive as opposed to planned manner, is less than ideal it is an appropriate response to community needs, given the current evolution of asset management within the Christchurch City Council.

TOURISM DRIVEN DEMAND

46. A significant component of demand at locations such as the Botanic Gardens, Arts Centre, Art Gallery, Cathedral Square and Victoria Square are the number of tourists visiting the sites and the arrival patterns experienced. The graph below shows total guest nights in Christchurch, one indicator of tourism volumes visiting the city. The seasonal pattern and growth experienced over the last three years is indicative of the tourism sector's performance and comes on the back of significant world growth in tourism throughout the last 30 years. While annual performance can be influenced by factors such as the value of the NZ dollar and concerns with (international) terrorism and health scares, the overriding trends indicate tourism will continue to prosper and NZ in particular will experience further growth in the medium term considered by this review.

- (c) Tourism growth over three years and seasonal variance for Christchurch City and Canterbury region (Statistics NZ)



47. Demand levels at the Cathedral Square toilet have grown to approximately 500,000 people per year, or an average of 1,370 per day. This facility is staffed 12 hours a day, with a full time equivalent staff of more than five people. The lack of charging for access and the general quality of the service as a whole is often commented on by tourists. Less than five formal complaints have been received over the last few years which in light of the high volume and varied nature of the clientele is a credit to the operational staff. The provision of after hours toilet access is less successful with issues of vandalism, mis-use, odour and safety needing constant monitoring and attention.
48. While not staffed the three public conveniences provided in the Botanic Gardens have a relatively high level of monitoring from Parks staff working in the vicinity on a daily basis. While no data exists on usage of the toilets, staff vary cleaning regimes between once and twice daily, primarily on a seasonal basis.
49. A number of examples exist of well known tourist destinations, where the Council provides a primary site, (such as Mona Vale and the Sign of the Takahe) and in general terms the standard of provision is high. In part this has been driven by the frequency of use, relative to other parks toilets, and the effective monitoring of standards by regular user groups. The transportation of large numbers of tourists to these locations, mostly by bus, could result in pressure building over time in terms of peak demand and the existing sites capacity to cope. Again only anecdotal information exists at this time.
50. No current plans or budget provision exist to build new facilities specifically catering to tourists apart from those provided within other buildings, such as the new information centre proposed for the Botanic Gardens. Anecdotal information suggests improved information for tourists on the location and availability of primary and secondary toilets would be advantageous.

DEMAND SUMMARY

51. In the context of a total city wide provision of toilets in "Public Places" by primary, secondary and public domain providers, the current supply is considered adequate. The standard of some facilities however is less than adequate and presents a modest degree of public health concerns.
52. More detailed demand analysis is required to inform site specific requirements, with options to expand, maintain or contract (over time) the number and nature of facilities provided at individual sites. While site specific provision falls outside the statutory requirements of the assessment it is anticipated that the Special Consultative Procedure will provide a legitimate vehicle for individuals, groups and the wider community to express their desires for additional or different facilities at specific locations.

OPTIONS TO MEET DEMAND

53. In achieving given community outcomes, the Council generally has three fundamental means of effecting change and/or achieving/maintaining societal standards. These are;
- Education and Facilitation,
 - Regulatory Mechanisms, and
 - Service Delivery provision (be it direct, through partnering agencies or funding assistance).
54. This is true with regard to the wider provision of public access, non - residential toilets. If considered in isolation, and acted on without cohesion, these three options can result in duplication, lost accountability and less than optimal solutions in terms of achieving the community outcome desired, in the most efficient and effective way.
55. The Council's current role does not extend to providing direct public toilet facilities for businesses and organisations like movie theatres, restaurants, offices, schools, universities etc. These organisations all take responsibility for their own staff and patrons and are governed by the Building Code requirements. The rationale for the Council providing toilet facilities for staff and patrons at its own businesses such as libraries, parking buildings, art galleries and other community facilities is clear, and also governed by the building code requirements. This rationale also applies to parks and locations where the Council encourages large numbers of residents and tourists to congregate, such as Cathedral Square.
56. The rationale for the provision of Council operated public toilets in retail locations around the City is less clear. While they are perceived to be public spaces in terms of street access the primary reason people congregate in these areas is to visit shops. The Building Code has clear requirements on shopping plazas to provide public toilet facilities but appears to make the assumption, perhaps influenced by the Council's historic provision, that other retailers do not have to provide for their customers in the same way businesses like a shopping centre or a private sector gym do. While true for all retailers, the inconsistent approach this represents is more noticeable with the larger retail outlets such as supermarkets, large format warehouse styled retailers and bulk retailers.
57. In light of the less than consistent approach presented by current legislation, and central Government's regulatory framework, the Council's ability to clarify and resolve this apparent inequity is limited to lobbying central government. In the interim the Council faces some difficulty determining whether it can or should rely on private sector provision or not.
58. In light of these factors the following options are available;
- (a) Status Quo
- The assessment of public conveniences indicates that the existing and planned provision by a mix of Council and non-Council providers is adequate to meet the overall demand within the district, over the 10-year planning period considered.
- This does not address issues of equity and fairness in how the Council delivers its services to the community and does not address issues of sanitation identified in the assessment.
- (b) Improved Level of Service at existing Council owned Public Conveniences.
- Issues of availability, amenity and cleanliness have been identified at both primary and secondary Council sites. Options to address these are;
 - Staffing all or more public toilets (only Cathedral Square currently staffed).
 - Increasing the frequency of cleaning to improve the standards and public perceptions.
 - Rationalising the number of cleaning contracts and developing more consistent cleaning standards or specifications across council owned facilities.

- Improved signage providing call centre details for reporting damage or cleanliness problems or other service failure.
- Develop a fast tracked reactive cleaning service when notified by public or other Council staff of service failure.
- Establishing or increasing the frequency of audits of cleaning standards delivered.
- Upgrading surfaces, fixtures and fittings to those more resistant to vandalism and easier to clean and maintain hygiene standards.
- Address remedial issues highlighted in level of service audit.
- Resolving improved accountability for the management of public toilets as a discrete service and improving communication lines between different parts of Council.

- (c) Increased provision of Council owned Public Conveniences in retail locations.

The Council could, for the purpose of determining its own role, choose to ignore the provision of toilet facilities by the private sector. If, in doing so, it determined that adequate provision in retail locations should be at least that currently provided by existing Council toilets, in excess of 50 additional sites would need to be acquired and developed (based on retail conglomerations of 4,000m² or more). While site specific costs would vary considerably it is not unreasonable to allocate approximately \$250,000 per site as an indicative capital requirement for land and buildings. This would aggregate to a capital cost in excess of \$12.5 million. In addition, average ongoing operational costs associated with these sites, applying the current levels of service, have been assessed at approximately \$4,150. per site, per year. This amounts to an increase in ongoing operational expenditure of over \$200,000 per year.

- (d) Reduced provision of Council owned Public Conveniences in retail locations.

Reliance on private sector and other Council businesses to provide the public with access to toilet facilities in suburban areas, removes the current inconsistent provision of service to the city as a whole. The impact of this on public health is likely to be modest and potential exists that provision by the private sector could result in improved health out-comes. The likely public debate, however, over a reduction in what has been considered a core Council service may be substantial. The financial savings related to the existing 12 toilets is not large as this is limited to operational expenditure, already having paid for the land and buildings in the past. What may however, be avoided, is the legitimate requests from other businesses and organisations for the Council to provide toilets for their patrons in the same way it does for the existing retailers and businesses at the current 12 locations.

- (e) Lobbying central Government and/or its agencies for clarification of and potential amendment to retail sector requirements for sanitary facilities.

Potential to resolve inequity within current requirements, in particular for the retail sector, may result in greater availability of toilet facilities for the public within the retail environment, with potential for a higher standard of cleanliness and amenity than currently provided at un-staffed public toilets.

- (f) Complete site specific monitoring of demand.

Commission site monitoring to develop demand profile for specific groups of sites, identifying current demand on a seasonal basis and at peak demand periods. This provides the ability to customize the provision of appropriate types of facilities for different types of locations to meet site specific demand. In turn this will form a more clear threshold for the provision of new facilities at different types of locations.

- (g) Improve community awareness of availability and standards.

Explore opportunities to improve awareness of the availability of public conveniences for residents and tourists, the standards they should expect and the options available for them to raise concerns. Also extends to encouraging the private sector and other organisations to collectively contribute to health outcomes associated with public conveniences within the City and improve the mix of services they provide to their patrons.

- (h) Charge for Access to Public Toilets at Some or All Sites

Some cities in other parts of the world charge for access to public toilets as a means to fund the service. As a general rule such arrangements relate primarily to staffed toilet facilities, such as the Cathedral Square toilets. These tend to be more common in tourist locations as opposed to suburban sites such as parks etc. The charge like any service is driven by the standard of amenity and service provided, the cost of providing this and the customers' willingness to pay.

It is difficult for staff to differentiate between residents and visitors to a city and accordingly most international examples identified do not differentiate. There are a number of options available and variations on these are detailed within the assessment.

COUNCIL'S PREFERRED OPTION(S)

59. The recommendation of the assessment is for adoption by the Council of a combination of options included **within (a), (b), (e), (f) and (g) outlined** above. The final mix chosen by the Council, identified in more detail within the assessment document, should take into consideration the feed-back provided within the Special Consultative Procedure.
60. Once detailed site specific demand profiles have been identified and improved clarity exists around the private sector's provision of toilet facilities for public access, the assessment recommendation would be for the Council to indicate clearly and consistently its provision of service, relating to options (c) or (d). The timeline for such a decision is unlikely to be within the timeframe of this review.

ASSESSMENT OF OPTIONS

61. Various options are detailed in the assessment including comments relating to suitability and cost implications. Preferred options for addressing each of the issues identified will be considered as part of the Special Consultative Procedure and indicated in the final report.

ADEQUACY OF ASSESSMENT

62. The assessment is considered to fully meet the requirements for a sanitary services assessment as set out in Part 7 Subpart 1 of the Local Government Act 2002. The information used in the assessment is considered to be adequate to provide an informed view about the existing wider provision of public conveniences and the Council's role in this.
63. In preparing the assessment a number of assumptions have been made relating to current and future demand. The information used in assessing current and future demand is based on statistical information provided by the Department of Statistics and data held by CCC and other Councils, and on anecdotal information and feedback from patrons, the public and other service providers. This information has been extrapolated to provide an overview of capacity and future demand.
64. While there was a lack of detailed demand information at a site specific level the assessment on a metropolitan basis has not been compromised by a lack of information or by the cost of obtaining information and is considered to be a reasonable and balanced assessment of public conveniences.