

**522/116/55**

**Wastewater Collection**

**Asset Improvements**

**New Pressure Main 22**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$362,529	\$0	\$0	\$0	\$362,529

## **COST ALLOCATION**

<b>Primary Driver:</b>	To provide additional capacity to allow for future development.
<b>Secondary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Capacity discussion:</b>	Existing and Total capacity from pump curves. Existing Demand is the same as existing capacity as the Pump Station did not need to be upgraded.
<b>References:</b>	Wastewater Asset Management Plan, AWT SEWCOM Study report (Vol 1, March 2002), AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Work was completed in 2002/03 financial year. Work involved the construction of a new 300mm diameter pressure main from Pump Station 22 direct to the upgraded Pump Station 21.
<b>Location:</b>	PS22 to PS21 (Beckenham)
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the River.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/118/10**

**Wastewater Collection**

**Asset Improvements**

**Pump Station 11**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$7,410,640	\$1,283,042	\$2,256,934	\$0	\$3,870,662

## **COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Existing Demand based on calculation for No.11 Pressure Main Upgrading. (AWT SEWCOM Study report (Vol 1, March 2002) population figures for C67A, C46, C47A, C35 & C37.)
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a new wastewater Pump Station 11 with increased capacity.
<b>Location:</b>	Cnr of Bass and Randolph Streets, Linwood
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon and Heathcote Rivers to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/118/11**

**Wastewater Collection**

**Asset Improvements**

**Pump Station 21 Upgrade**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$739,524	\$0	\$689,386	\$0	\$50,137

## **COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Existing demand based on AWT SEWCOM Study report (Vol 1, March 2002) population figures for C46.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan, AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Increase capacity of Pump Station 21.
<b>Location:</b>	PS21, Beckenham
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/118/7**

**Wastewater Collection**

**Asset Improvements**

**Pump Station 20 Upgrade**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$738,543	\$0	\$601,385	\$0	\$137,157

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Existing demand based on AWT SEWCOM Study report (Vol 1, March 2002) population figures for C46 & C35.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan, AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Works to increase capacity of Pump Station 20.
<b>Location:</b>	PS20 (Opawa)
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.



**522/119/11**

**Wastewater Collection**

**Asset Improvements**

**PS60/PM60 Pressure Main Stage 1**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$1,417,759	\$18,066	\$816,487	\$0	\$583,205

## **COST ALLOCATION**

<b>Primary Driver:</b>	To provide additional capacity to allow for future development.
<b>Secondary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Capacity discussion:</b>	Project completed, capacity of pump station before and after construction has been used.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan, AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Upgrade PS60 and construct new pressure main to divert PS60 to Wigram Industrial sewer.
<b>Location:</b>	PS60 (Oaklands) to Wigram industrial Sewer (Wigram)
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme. It is also related to Local Cost Share Areas (Halswell Sewer)
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study. File PG-001-272

**522/119/6**

**Wastewater Collection**

**Asset Improvements**

**New Pressure Main 20**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$2,180,742	\$0	\$1,775,747	\$0	\$404,994

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Capacity figures are the same as for Pump Station 20. Existing demand based on AWT SEWCOM Study report (Vol 1, March 2002) population figures for C46 & C35.
<b>References:</b>	Wastewater Asset Management Plan, AWT SEWCOM Study report (Vol 1, March 2002), AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003).

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Work was completed in 2002/03 financial year. Work involved the construction of a new 750mm diameter pressure main from the upgraded PS20 to the new PS11.
<b>Location:</b>	From Pump Station 20 (Opawa) to Pump Station 11 (Woolston)
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the River.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/119/9**

**Wastewater Collection**

**Asset Improvements**

**No.11 Pressure Main Upgrading**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$4,848,645	\$0	\$4,197,440	\$0	\$651,204

## **COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Existing demand based on AWT SEWCOM Study report (Vol 1, March 2002) population figures for C67A, C46, C47A, C35 & C37.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Work involves the construction of a new 1200mm diameter Pressure Main from new Pump Station 11 to Christchurch Wastewater Treatment Plant.
<b>Location:</b>	PS11 (Woolston) to CWTP (Bromley)
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/341**

**Wastewater Collection**

**Asset Improvements**

**New Pressure Main 21**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$1,120,014	\$0	\$1,044,080	\$0	\$75,933

## **COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Capacity figures are the same as for Pump Station 21. Existing demand based on AWT SEWCOM Study report (Vol 1, March 2002) population figures for C46.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan, AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a 375mm diameter Pressure Main, and a small length of 450mm and 525mm diameter gravity, from the upgraded Pump Station 21 to the upgraded Pump Station 20.
<b>Location:</b>	PS21 (Beckenham) to PS20 (Opawa)
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.



**522/431**

## **Wastewater Collection**

### **Asset Improvements**

#### **WI Stage 1**



#### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$6,038,491	\$0	\$4,388,737	\$0	\$1,649,753

#### **COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Total Capacity at Downstream end of WI from AWT report. Existing demand based on population in catchment served by WI & Southern Relief and predicted equivalent population in 2040
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a new 1600mm diameter Western Interceptor trunk sewer from the intersection of Aldwins Rd/Bass St to the Southern Relief trunk sewer.
<b>Location:</b>	Woolston
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon & Heathcote Rivers to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/446**

**Wastewater Collection**

**Asset Improvements**

**Fisher Ave & Tennyson St Overflows to Pump Station 21**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$272,485	\$0	\$234,856	\$0	\$37,628

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Existing demand based on AWT SEWCOM Study report (Vol 1, March 2002) population figures for C46 & C47A and total capacity.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan, AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Diversion of wastewater from the Fisher Ave and Tennyson St overflows to Pump Station 21.
<b>Location:</b>	Fisher Ave and Tennyson St Overflows
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/459**

**Wastewater Collection**

**Asset Improvements**

**Pump Station 11 Tie-In**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$2,535,000	\$402,877	\$785,309	\$208,312	\$1,138,500

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Existing Capacity and Demand and estimated values are based on calculation for Pump Station 11. (AWT SEWCOM Study report (Vol 1, March 2002) population figures for C67A, C46, C47A, C35 & C37.)
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Connect the new Pump Station 11 to Pressure Main 11, the local reticulation, and the start of the Western Interceptor
<b>Location:</b>	PS11, Corner of Bass and Randolph Streets, Woolston
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon and Heathcote Rivers to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/497**

**Wastewater Collection**

**Asset Improvements**

**PS 11 Surge & Transient Measures**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$1,556,800	\$0	\$1,347,711	\$8,638	\$200,449

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Capacity based on calculation for No.11 Pressure Main Upgrading. (AWT SEWCOM Study report (Vol 1, March 2002) population figures for C67A, C46, C47A, C35 & C37.)
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	PS 11 Surge & Transient Measures.
<b>Location:</b>	PS11, Cnr of Bass and Randolph Streets, Linwood
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon & Heathcote Rivers to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.



**522/590**

**Wastewater Collection**

**Asset Improvements**

**Northern Relief Duplication**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$3,100,000	\$0	\$3,100,000	\$0	\$0

## **COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	Existing Capacity and Demand and Total Capacity from AWT report.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Duplication of a section of the Northern Relief from River Rd to Woodham Rd with a 500mm-700mm diameter pipeline.
<b>Location:</b>	Avonside
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/591**

**Wastewater Collection**

**Asset Improvements**

**Grassmere Storage**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$12,200,000	\$0	\$10,443,767	\$0	\$1,756,232

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Total Capacity from GHD Trunk Wastewater Upgrade Project, Maidstone and Grassmere Wet Weather Detention Storages - LTCCP Cost Estimates report, dated September 2005. Existing Demand from AWT SEWCOM Study Options Analysis and Preparation of Management Plans, Vol 1, dated March 2002, C64, C65 & C66.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a new 8,600m <sup>3</sup> wet weather storage tank.
<b>Location:</b>	Grassmere
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/592**

**Wastewater Collection**

**Asset Improvements**

**Maidstone Storage & Pumping Main**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$10,500,000	\$0	\$8,209,090	\$695,909	\$1,595,000

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Existing Demand and Total Capacity from GHD Trunk Wastewater Upgrade Project, Maidstone and Grassmere Wet Weather Detention Storages - LTCCP Cost Estimates report, dated September 2005.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan, AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003), GHD Trunk Wastewater Upgrade Project, Maidstone and Grassmere Wet Weather Detention Storages - LTC

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	New 3,300m <sup>3</sup> wet weather storage tank and pumping main.
<b>Location:</b>	Maidstone/ Waimairi Rd Areas
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/593**

**Wastewater Collection**

**Asset Improvements**

**PS60 Pressure Main Extension Stage 2**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$3,600,000	\$0	\$0	\$0	\$3,600,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	To provide additional capacity to allow for future development.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	Pressure main extension does not exist at present so has no capacity. Extension will take 121 L/s away from Wigram Industrial Sewer, freeing up capacity for growth.
<b>References:</b>	Wastewater Asset Management Plan, AWT SEWCOM Study report (Vol 1, March 2002), AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Extension of PS60 Pumping Main from Haytons to Blenheim Rd.
<b>Location:</b>	Wigram
<b>Special features being addressed:</b>	To meet Resource Consent requirements and to provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions will not be met. The system will be unable to provide capacity for growth.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.



**522/598**

**Wastewater Collection**

**Asset Improvements**

**2nd Pressure Main 11**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$7,450,000	\$2,865,789	\$0	\$0	\$4,584,210

**COST ALLOCATION**

<b>Primary Driver:</b>	To provide additional capacity to allow for future development.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	Existing capacity is the capacity of the existing 600mm diameter pressure mains with 1 Large KSB pump at PS11. Existing demand is nil as the existing demand is met by the 1st Pressure Main 11 (No. 11 Pressure Main).
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a second Pressure Main from Pump Station 11 to the Christchurch Wastewater Treatment Plant.
<b>Location:</b>	PS11 (Woolston) to CWTP (Bromley)
<b>Special features being addressed:</b>	To meet Resource Consent requirements and to provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions will not be met. The system will be unable to provide capacity for growth.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/600**

**Wastewater Collection**

**Asset Improvements**

**Pumping Station 60 Upgrade**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$120,000	\$0	\$0	\$0	\$120,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	To provide additional capacity to allow for future development.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	The upgrade is being carried out entirely to provide capacity for new development.
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002) Wastewater Asset Management Plan, AWT Further Investigation of C60 and PS20 Systems report (Vol 1, March 2003)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Upgrade capacity of PS60.
<b>Location:</b>	PS60, Halswell
<b>Special features being addressed:</b>	To meet Resource Consent requirements and to provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions will not be met. The system will be unable to provide capacity for growth.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/645**

**Wastewater Collection**

**Asset Improvements**

**Major Trunk Expansion (inc. SW expansion)**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$4,000,000	\$0	\$0	\$0	\$4,000,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	To provide additional capacity to allow for future development.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	The trunk expansion is being carried out entirely to provide capacity for new development.
<b>References:</b>	Wastewater Asset Management Plan, South West Area Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of new trunk sewers to provide for developmet in the city, particularly the South West
<b>Location:</b>	South West Christchurch
<b>Special features being addressed:</b>	To provide additional capacity to allow for future growth.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Do nothing or construct sewers.
<b>Implications of not doing the project:</b>	New Development will be unable to proceed as there will be no infrastructure in place to provide for it.
<b>Linkages with other projects:</b>	New Mains Programme.
<b>Location of other relevant supporting information:</b>	South West Area Plan. Belfast Area Plan.

**522/646**

**Wastewater Collection**

**Asset Improvements**

**WI Blenheim Road At Mandeville**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$1,200,000	\$0	\$811,620	\$0	\$388,379

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Total Capacity at Upstream end of WI from AWT report. Existing demand based on population in catchment served by WI & Southern Relief and predicted equivalent population in 2040
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002), Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a section of WI at Blenheim Road being constructed early to coincide with roading works
<b>Location:</b>	Blenheim Rd Near Deans Ave
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Avon & Heathcote Rivers to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.



**522/647**

## **Wastewater Collection**

### **Asset Improvements**

#### **WI - Future Stages**



#### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$27,226,000	\$0	\$19,787,684	\$0	\$7,438,315

#### **COST ALLOCATION**

<b>Primary Driver:</b>	To meet the requirements of the Resource Consent for wet weather wastewater overflows (CRC991222).
<b>Secondary Driver:</b>	To provide additional capacity to allow for future development.
<b>Capacity discussion:</b>	Total Capacity at Downstream end of WI from AWT report. Existing demand based on population in catchment served by WI & Southern Relief and predicted equivalent population in 2040
<b>References:</b>	AWT SEWCOM Study report (Vol 1, March 2002)

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Future stages of Western Interceptor Construction
<b>Location:</b>	City
<b>Special features being addressed:</b>	To reduce the number of wet weather sewage overflows to the Heathcote River to meet Resource Consent requirements. To provide additional capacity for future growth in the catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This project was one of many options considered as part of the AWT Trunk Sewer Modelling Study. The AWT study produced an optimised programme of works that make up the Major Sewer Upgrade Programme. Options put forward include combinations of do nothing, Inflow and Infiltration reduction work within the catchment, storage, trunk sewer amplification or duplication, pump station upgrades and redirection of flows from catchments.
<b>Implications of not doing the project:</b>	The Resource Consent conditions for the wet-weather wastewater overflows will not be met. The system will be unable to provide capacity for growth. Increase in number of wet weather sewage overflows to the Rivers.
<b>Linkages with other projects:</b>	This is one of the projects that make up the Major Sewer Upgrade programme.
<b>Location of other relevant supporting information:</b>	Resource Consent CRC991222. AWT Study.

**522/662**

**Wastewater Collection**

**Asset Improvements**

**PS16 Pressure Main - Extension Stg 2**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$420,000	\$0	\$298,612	\$0	\$121,387

## **COST ALLOCATION**

<b>Primary Driver:</b>	To provide additional capacity to allow for future development.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	Based on land area served by PS16 and addition of PS90 to system. Existing capacity is 0 as PM extension does not exist yet.
<b>References:</b>	Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a 225mm PVC_U pressure main from the end of stage 1 (#50 Lake Tce Rd) to intersection New Brighton Rd and Basset St, effectively diverting catchment of PS16 from Northern Relief to PS36 system
<b>Location:</b>	Marshlands
<b>Special features being addressed:</b>	To divert the PS16 catchment from PS39 to the PS36 catchment.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Leave pressure main discharging into overloaded PS39 catchment or extend pressure main into the PS36 catchment which has spare capacity.
<b>Implications of not doing the project:</b>	New development would not be able to occur in the PS16 & PS90 catchments.
<b>Linkages with other projects:</b>	Clearbrook Palms Local Cost Share Area
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan

**522/**

**Wastewater Collection**

**New Assets**

**Aidanfield Cost Share Buyout**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$200,000	\$0	\$0	\$0	\$200,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan, File SU-001-4375

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Developer-funded cost share area set up in 2002 to cover sewer pipelines. Council has agreed to take over all outstanding obligations of the banker on the 10th anniversary of the scheme.
<b>Location:</b>	Aidanfield
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing, plan, construct & fund new sewer reticulation, and require developer to act as banker and then Council take over financial responsibility in the future.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	New Mains Programme
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, File SU-001-4375

**522/122/6/6**

**Wastewater Collection**

**New Assets**

**Subdivision Reticulation Cost Share Contributions**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$1,375,000	\$0	\$0	\$0	\$1,375,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Contributions to Sewer Cost Shares
<b>Location:</b>	Various
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and contribute towards cost shares.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	New Mains Programme
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan



**522/499**

**Wastewater Collection**

**New Assets**

**Mt Pleasant Sewer Extension**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$200,000	\$0	\$0	\$0	\$200,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Council contribution to developer provided asset to service future growth.
<b>Location:</b>	Mt Pleasant
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing, plan, construct & fund new sewer reticulation, and require developer to act as banker and then Council take over financial responsibility in the future.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	New Mains Programme
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan

**522/608**

**Wastewater Collection**

**New Assets**

**Alpine View Cost Share Buyout**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$195,000	\$0	\$0	\$0	\$195,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan. File SU-001-0899. Report RR 10387 to City Services Committee 26/08/99.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Developer-funded cost share area set up in 1999 for new sewer pipeline, rising main and pump station. Council has agreed to take over all outstanding obligations of the banker on the 10th anniversary of the scheme.
<b>Location:</b>	Alpine View, Burwood
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing, plan, construct & fund new sewer reticulation, and require developer to act as banker and then Council take over financial responsibility in the future.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	New Mains programme
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, File SU-001-0899.

**522/609**

**Wastewater Collection**

**New Assets**

**Worsleys Sewage Scheme ( Blocks 1,2 & 7 )**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$709,222	\$0	\$0	\$0	\$709,222

**COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Worsleys Spur Sewerage, Report by SKM, July 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Design and construction of reticulation to service blocks 1, 2 & 7 on Worsleys Spur
<b>Location:</b>	Worsleys Spur
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new sewer reticulation.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Worsleys Sewer, Cracroft Sewer
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, Worsleys Spur Sewerage, Report by SKM, July 2005

**522/610**

**Wastewater Collection**

**New Assets**

**New Mains programme**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$4,950,000	\$0	\$0	\$0	\$4,950,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	The planning, design and construction of sewer mains to service new development.
<b>Location:</b>	Various locations within Christchurch.
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new mains.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Other new mains projects.
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan.



**522/612**

**Wastewater Collection**

**New Assets**

**New Stations for Growth**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$1,120,000	\$0	\$0	\$0	\$1,120,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Design and Construction of new wastewater pumping stations
<b>Location:</b>	Various locations within Christchurch.
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new pump stations.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Other new stations. Belfast Area Growth - Pumping.
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan

**522/661**

**Wastewater Collection**

**New Assets**

**Belfast Area growth - reticulation**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$550,000	\$0	\$0	\$0	\$550,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Belfast Area Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Reticulation to service growth areas in Belfast
<b>Location:</b>	Belfast
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new sewer reticulation.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	New Mains, Replacement Mains. Belfast area growth - Pumping.
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan. Belfast Area Plan.

**522/663**

**Wastewater Collection**

**New Assets**

**Shalamar Drive Sewer**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$610,267	\$0	\$0	\$0	\$610,267

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Worsleys Spur Sewerage, Report by SKM, July 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Design and construction of sewer reticulation in Shalamar Drive
<b>Location:</b>	Shalamar Drive
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new sewer reticulation.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Worsleys Sewer, Cracroft Sewer
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, Worsleys Spur Sewerage, Report by SKM, July 2005

**522/664**

**Wastewater Collection**

**New Assets**

**Worsleys sewer ( lower blocks 3 & 4)**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$700,000	\$0	\$0	\$0	\$700,000

**COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Worsleys Spur Sewerage, Report by SKM, July 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Design and construction of Worsleys Sewer to service lower blocks 3 & 4
<b>Location:</b>	Worsleys Spur
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new sewer reticulation.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Cracroft Sewer
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, Worsleys Spur Sewerage, Report by SKM, July 2005



**522/665**

**Wastewater Collection**

**New Assets**

**Worsleys Sewer ( Upper Blocks 3)**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$600,000	\$0	\$0	\$0	\$600,000

**COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Worsleys Spur Sewerage, Report by SKM, July 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Design and construction of Worsleys Sewer to service upper blocks 3
<b>Location:</b>	Worsleys Spur
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new sewer reticulation.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Cracroft Sewer
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, Worsleys Spur Sewerage, Report by SKM, July 2005

**522/666**

**Wastewater Collection**

**New Assets**

**Cracroft PS & Rising Main CCC Contribution**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$150,000	\$0	\$0	\$0	\$150,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Worsleys Spur Sewerage, Report by SKM, July 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	CCC contribution to Cracroft Pump Station and Rising Main
<b>Location:</b>	Cracroft
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new sewer reticulation.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Worsleys Sewer, Shalamar Drive Sewer
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, Worsleys Spur Sewerage, Report by SKM, July 2005

**522/667**

**Wastewater Collection**

**New Assets**

**Cracroft Rising Main Extension to Cashmere Road**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$225,000	\$0	\$0	\$0	\$225,000

**COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Worsleys Spur Sewerage, Report by SKM, July 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Design and Construction Extension of Cracroft Rising Main to Cashmere Road
<b>Location:</b>	Cracroft
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct new sewer rising main.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Worsleys Sewer, Cracroft Sewer
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan, Worsleys Spur Sewerage, Report by SKM, July 2005

**522/668**

**Wastewater Collection**

**New Assets**

**Belfast Area Growth - Pumping**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$250,000	\$0	\$0	\$0	\$250,000

**COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan; Belfast Area Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	New Pumping to serve new development in Belfast
<b>Location:</b>	Belfast
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and plan & construct additional pumping capacity.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Belfast area growth - Reticulation
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan. Belfast Area Plan.



**522/669**

**Wastewater Collection**

**New Assets**

**Land Purchase PS62 Storage**



## **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$300,000	\$0	\$0	\$0	\$300,000

## **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	Wastewater Asset Management Plan

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Land Purchase for PS62 (Belfast) storage
<b>Location:</b>	Belfast
<b>Special features being addressed:</b>	Planning for future demand
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and purchase land.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Belfast Pressure Main, Belfast Pump Station upgrade
<b>Location of other relevant supporting information:</b>	Wastewater Asset Management Plan

## Wastewater Collection

### New Assets

### Clearbrook Palms Cost Share



#### COSTS

Total	Renewal	Backlog	Unallocated	Growth
\$822,035	\$0	\$0	\$0	\$822,035

#### COST ALLOCATION

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	
<b>Capacity discussion:</b>	All work (100%) is attributable to growth. Actual capacities have not been used in calculations.
<b>References:</b>	File SU-001-4004.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Cost share area established in 2001 for sewer pipeline and rising main
<b>Location:</b>	Clearbrook Palms area
<b>Special features being addressed:</b>	To provide capacity for new development.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered included, do nothing and set up cost share area.
<b>Implications of not doing the project:</b>	Sewer capacity will not be available for new developments.
<b>Linkages with other projects:</b>	Local Cost Share Areas
<b>Location of other relevant supporting information:</b>	Wastewater Asset Managemetn Plan, File SU-001-4004

**522/120**

**Wastewater Treatment and Disposal**

**Asset Improvements**

**Miscellaneous expansion items 1999-04**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$8,827,750	\$0	\$2,648,325	\$0	\$6,179,425

**COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	Improved reliability and operational flexibility, with improved odour capture and water quality
<b>Capacity discussion:</b>	Improved air flow through trickling filters for more load capacity, new fine screens and additional channels for higher peak flow capacity, deepening and reshaping of ponds, and new piped connections between ponds to allow peak flow through all ponds in series, new 6 arm distributors on trickling filters for increased hydraulic capacity.
<b>References:</b>	Capacity of CWTP and Options for Upgrading 1996 to 2026 - Beca August 1996. CWTP Upgrading Process Design report (Rev 3) - Beca - March 1999.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Clarifier channels, screens, trickling filter air flow, preaeration tank covers and ventilation, trickling filter capacity increase and pumping station and pond deepening and reshaping.
<b>Location:</b>	Christchurch Wastewater Treatment Plant
<b>Special features being addressed:</b>	Load carrying capacity of treatment plant.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	All secondary treatment options.
<b>Implications of not doing the project:</b>	Overload of treatment plant and failure of wastewater treatment.
<b>Linkages with other projects:</b>	Part of capacity upgrade of the treatment plant, with the main elements of this part being new final clarifiers and associated channels providing increased final treatment before ponds.
<b>Location of other relevant supporting information:</b>	Beca Capacity report 1996 and subsequent design report

**522/120/10**

**Wastewater Treatment and Disposal**

**Asset Improvements**

**Conversion of tanks to aeration tanks 2000-2001**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$4,948,884	\$0	\$1,254,646	\$0	\$3,694,237

**COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	Wastewater quality improvement.
<b>Capacity discussion:</b>	New secondary process in addition to existing trickling filters.
<b>References:</b>	Beca report. ChCh Wastewater Treatment Plant Upgrading. Process Design Report Revision No 3. March 1999.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Conversion of existing tank (secondary sedimentation) volume to aeration basins to increase secondary treatment capacity of the treatment plant, including provision of aeration system and waste sludging thickening facility.
<b>Location:</b>	Christchurch Wastewater Treatment Plant
<b>Special features being addressed:</b>	Load carrying capacity of Treatment Plant.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	All feasible treatment upgrade options.
<b>Implications of not doing the project:</b>	Failure of wastewater treatment in Chch, overload of pond system, failure to meet discharge consent conditions.
<b>Linkages with other projects:</b>	Part of overall treatment plant upgrade.
<b>Location of other relevant supporting information:</b>	Beca Capacity report 1996 and subsequent design report.



**522/628**

## **Wastewater Treatment and Disposal**

### **Asset Improvements**

#### **11 kV Electrical Loop Expansion**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$375,000	\$0	\$37,500	\$0	\$337,500

### **COST ALLOCATION**

<b>Primary Driver:</b>	Robust power supply to Clarifiers and Digesters
<b>Secondary Driver:</b>	Provision of capacity for growth.
<b>Capacity discussion:</b>	project completes power supply loop to clarifiers and digestors, and completes those projects. Capacity calculations pro rated on % growth from digestors project
<b>References:</b>	Beca proposal. Ref 6512640/350 13 April 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Extend 11kV reticulation around CWTP site to allow for growth of plant and associated electrical load.
<b>Location:</b>	Christchurch Wastewater Treatment Plant
<b>Special features being addressed:</b>	Capacity to reliably supply power to all parts of the plant.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Three options of ring main upgrade considered.
<b>Implications of not doing the project:</b>	Inability to run parts of plant - failure of treatment processes - widespread odour.
<b>Linkages with other projects:</b>	Required as plant increases in capacity.
<b>Location of other relevant supporting information:</b>	Beca Report on 11 Kv upgrade 2005.

**522/628**

## **Wastewater Treatment and Disposal**

### **Asset Improvements**

#### **Additional Aeration Capacity**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$15,000,000	\$0	\$0	\$0	\$15,000,000

### **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	Wastewater quality improvement.
<b>Capacity discussion:</b>	Secondary process in addition to trickling filters. Anticipated additional capacity required for growth.
<b>References:</b>	Beca report. CWTP - Cost Estimates for Ammonia reduction. Oct 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Additional aeration tanks for wastewater treatment at CWTP to cope with load growth.
<b>Location:</b>	Christchurch Wastewater Treatment Plant
<b>Special features being addressed:</b>	Capacity of treatment plant to meet increasing biological and solids load.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Extension of existing systems.
<b>Implications of not doing the project:</b>	Poor effluent quality and breaching of resource consents. Odour generation at CWTP due to overloading of aeration tanks and oxidation ponds.
<b>Linkages with other projects:</b>	Compatibility with current upgraded processes - Trickling Filter Solids Contact Process.
<b>Location of other relevant supporting information:</b>	Beca Report - CWTP Cost Estimates for Ammonia Reduction

**522/120/19**

## **Wastewater Treatment and Disposal**

### **New Assets**

#### **Pump Station B Original Build 2002**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$1,659,652	\$0	\$829,826	\$0	\$829,826

### **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	Operational flexibility and reliability
<b>Capacity discussion:</b>	This second pump station provides for 3 m <sup>3</sup> /sec flow over and above the 2.7m <sup>3</sup> /sec flow from the existing pump station and will allow full secondary treatment for the peak flow. Also allows the old station to be refurbished.
<b>References:</b>	Capacity of CWTP and Options for Upgrading 1996 to 2026 - Beca August 1996. CWTP Upgrading Process Design report (Rev 3) - Beca - March 1999.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of a second pumping station feeding primary effluent to secondary treatment processes.
<b>Location:</b>	Christchurch Wastewater Treatment Plant
<b>Special features being addressed:</b>	Provision of capacity for growth.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and construct second pump station.
<b>Implications of not doing the project:</b>	Treatment plant unable to handle flows, breaching of resource consents.
<b>Linkages with other projects:</b>	Part of CWTP major upgrade.
<b>Location of other relevant supporting information:</b>	Capacity of CWTP and Options for Upgrading 1996 to 2026 - Beca August 1996. CWTP Upgrading Process Design report (Rev 3) - Beca - March 1999.

**522/120/25**

## **Wastewater Treatment and Disposal**

### **New Assets**

#### **Clarifiers 3 & 4 finished 2004**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$7,067,860	\$0	\$706,688	\$0	\$6,361,171

### **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	Improved water quality
<b>Capacity discussion:</b>	Existing final clarifiers (sedimentation tanks) converted to aeration tanks and new final clarifiers constructed in two stages - 1 and 2 first followed by the 3rd and 4th second. Each of the new clarifiers has approximately the same volume as the total of the original 4 final tanks combined. The new style of final clarifiers (circular) provides for better solids capture and therefore improved water quality.
<b>References:</b>	Capacity of CWTP and Options for Upgrading 1996 to 2026 - Beca August 1996. CWTP Upgrading Process Design report (Rev 3) - Beca - March 1999.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Construction of No 3 and 4 Clarifiers.
<b>Location:</b>	Chch Wastewater Treatment Plant
<b>Special features being addressed:</b>	Secondary Treatment Plant capacity.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This option provided for best use of existing tank volumes for increasing capacity.
<b>Implications of not doing the project:</b>	Poor effluent quality and breaching of resource consents.
<b>Linkages with other projects:</b>	Part of CWTP major upgrade.
<b>Location of other relevant supporting information:</b>	Beca Capacity Report dated 1996.



**522/120/9**

## **Wastewater Treatment and Disposal**

### **New Assets**

#### **CWTP Clarifiers 1 and 2 finished 2001**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$5,034,008	\$1,194,210	\$3,839,797	\$0	\$0

### **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	Improved water quality
<b>Capacity discussion:</b>	Existing final clarifiers (sedimentation tanks) converted to aeration tanks and new final clarifiers constructed in two stages - 1 and 2 first followed by the 3rd and 4th second. Each of the new clarifiers has approximately the same volume as the total of the original 4 final tanks combined. The new style of final clarifiers (circular) provides for better solids capture and therefore improved water quality.
<b>References:</b>	Capacity of CWTP and Options for Upgrading 1996 to 2026 - Beca August 1996 CWTP Upgrading Process Design report (Rev 3) - Beca - March 1999

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Design and construction of two new clarifiers as part of CWTP Upgrade project
<b>Location:</b>	CWTP, Pages Road, Bromley
<b>Special features being addressed:</b>	Secondary Treatment Capacity
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	This option provided for best use of existing tank volumes for increasing capacity.
<b>Implications of not doing the project:</b>	Poor effluent quality and breaching of resource consents.
<b>Linkages with other projects:</b>	Part of CWTP major upgrade.
<b>Location of other relevant supporting information:</b>	Beca Capacity Report dated 1996

**522/352**

## **Wastewater Treatment and Disposal**

### **New Assets**

### **Digesters 5 and 6**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$18,717,299	\$156,260	\$1,856,103	\$0	\$16,704,934

### **COST ALLOCATION**

<b>Primary Driver:</b>	Provision of capacity for growth.
<b>Secondary Driver:</b>	Providing Grade A Biosolids.
<b>Capacity discussion:</b>	Design figures used.
<b>References:</b>	CH2M Beca Design Report dated 26 July 2005.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste.
<b>Work Planned:</b>	Design and construction of two additional solids processing digesters.
<b>Location:</b>	CWTP - Pages Road, Bromley
<b>Special features being addressed:</b>	Extra solids processing capacity.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City. LoS - A. - No Major or persistent breaches of Resource Consents occur from the treatment and disposal of wastewater. LoS - B. - Number of widespread a
<b>Options considered:</b>	See CH2M Beca Predesign Report 2004
<b>Implications of not doing the project:</b>	Insufficient solids processing capability leading to poor digestion or digestion failure due to overload, extreme odour across the City and increased operational costs.
<b>Linkages with other projects:</b>	Integral to overall CWTP plant upgrade commenced in 1999.
<b>Location of other relevant supporting information:</b>	CH2M Beca Design Report dated 26 July 2005. Tender documents (including drawings) for contract number 04/05-238 dated September 2005.

**522/353**

## **Wastewater Treatment and Disposal**

### **New Assets**

### **Ocean Outfall**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$80,960,454	\$0	\$64,768,363	\$0	\$16,192,090

### **COST ALLOCATION**

<b>Primary Driver:</b>	To meet resource consent requirement to cease discharge into the Avon Heathcote Estuary before 30 September 2009.
<b>Secondary Driver:</b>	To provide allowance for growth for life of asset (80 to 100 years).
<b>Capacity discussion:</b>	Existing Peak flow rate and Design Peak Flow Rate for 2050.
<b>References:</b>	Ocean Outfall AEE and associated technical reports and submissions.

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Consenting, design and construction of a 3km Ocean Outfall, 1.5 km landline. Consenting, design and construction of ocean outfall pumping station on edge of Pond 6 CWTP.
<b>Location:</b>	CWTP through Estuary and into Pegasus Bay.
<b>Special features being addressed:</b>	Resource Consent Conditions, future growth.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Continue discharge to Estuary (do nothing), Upgrade treatment and continue discharge to Estuary, Construct Ocean Outfall, Upgrade treatment and construct Ocean Outfall.
<b>Implications of not doing the project:</b>	Breach of resource consent. Current discharge consent to estuary expires on 30 september 2009.
<b>Linkages with other projects:</b>	Major Sewer Upgrade, CWTP Upgrade.
<b>Location of other relevant supporting information:</b>	Ocean Outfall AEE and associated technical reports and submissions.

**522/418**

**Wastewater Treatment and Disposal**

**New Assets**

**Belfast Pressure Main**



**COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$6,672,351	\$739,541	\$1,913,809	\$0	\$4,018,999

**COST ALLOCATION**

<b>Primary Driver:</b>	To meet resource consent requirements.
<b>Secondary Driver:</b>	Provision of capacity for growth.
<b>Capacity discussion:</b>	Capacity from design report. Pressure main has been sized to allow for future growth - will require future pump upgrade to utilise.
<b>References:</b>	Belfast Pressure Main, Belfast to Beach/Frosts Road Corner, Overview Design Report, City Solutions February 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	450mm diameter, 9.2 km long pressure main from Belfast to intersection of Frosts Road and Beach Road (CHCH)
<b>Location:</b>	PS62, Tyrone St, Belfast to Frosts Rd/Beach Rd Christchurch
<b>Special features being addressed:</b>	Resource Consent Compliance. Planning for future growth.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered included, do nothing, upgrade treatment at Belfast and construct pressure main to Christchurch.
<b>Implications of not doing the project:</b>	Resource Consent Conditions not met. Pollution of waterway. Growth unable to be accommodated in Belfast Area.
<b>Linkages with other projects:</b>	Belfast Pump Station
<b>Location of other relevant supporting information:</b>	Belfast Pressure Main, Belfast to Beach/Frosts Road Corner, Overview Design Report, City Solutions February 2005



**522/421**

## **Wastewater Treatment and Disposal**

### **New Assets**

### **Belfast Pump Station**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$712,896	\$18,867	\$129,777	\$0	\$564,250

### **COST ALLOCATION**

<b>Primary Driver:</b>	To meet resource consent requirements.
<b>Secondary Driver:</b>	Provision of capacity for growth.
<b>Capacity discussion:</b>	Capacity from design report. Pressure main has been sized to allow for future growth - will require future pump upgrade to utilise.
<b>References:</b>	Belfast Pressure Main, Belfast to Beach/Frosts Road Corner, Overview Design Report, City Solutions February 2005

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Upgrade of existing pump station, to pump wastewater to CHCH.
<b>Location:</b>	PS62, Tyrone St, Belfast.
<b>Special features being addressed:</b>	Resource Consent Compliance. Planning for future growth.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Options considered include do nothing and upgrade pump station.
<b>Implications of not doing the project:</b>	Resource Consent Conditions not met. Pollution of waterway. Growth unable to be accommodated in Belfast Area.
<b>Linkages with other projects:</b>	Belfast Pressure Main.
<b>Location of other relevant supporting information:</b>	Belfast Pressure Main, Belfast to Beach/Frosts Road Corner, Overview Design Report, City Solutions February 2005.

**522/629**

## **Wastewater Treatment and Disposal**

### **New Assets**

### **Biosolids Thermal processing**



### **COSTS**

<b>Total</b>	<b>Renewal</b>	<b>Backlog</b>	<b>Unallocated</b>	<b>Growth</b>
\$22,000,000	\$0	\$16,500,000	\$0	\$5,500,000

### **COST ALLOCATION**

<b>Primary Driver:</b>	Processing of biosolids to reduce cost of disposal.
<b>Secondary Driver:</b>	Provision of capacity for growth.
<b>Capacity discussion:</b>	Capacity measured in terms of tonnes of wet sludge at approx 20% dry solids.
<b>References:</b>	Beca report. No 215b Biosolids Strategy - cost estimate review

## ATTRIBUTES

<b>Project Manager:</b>	City Water & Waste
<b>Work Planned:</b>	Development of thermal drying or incineration/power project.
<b>Location:</b>	Likely CWTP
<b>Special features being addressed:</b>	Capacity to process and reuse increasing digested solids load. Beneficial reuse of biosolids in line with Ministry for the Environment Guidelines.
<b>A statement of the outcomes being addressed (LoS, Community Outcomes):</b>	A City of People who Value and Protect the Natural Environment. An Attractive and Well-designed City.
<b>Options considered:</b>	Issues and Options report to be progressed in Feb-Jun 06.
<b>Implications of not doing the project:</b>	Carting sludge to Kate Valley landfill at opex cost of approximately \$ 3.6 million per annum based on current cartage and disposal costs (\$ 112/tonne).
<b>Linkages with other projects:</b>	Associated with CWTP Upgrade project and digesters 5 and 6.
<b>Location of other relevant supporting information:</b>	CH2M Beca report 8 Nov 2005