

Lessons learned from one of New Zealand's most challenging civil engineering projects: rebuilding the earthquake damaged pipes, roads, bridges and retaining walls in the city of Christchurch 2011 - 2016.

## Work Notices in a Business Community

**Story:** Communicating Through Work Notices

**Theme:** Communication and Community

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An example of a tool SCIRT has used to communicate its projects to the business community.

This document has been provided as an example of a tool that might be useful for other organisations undertaking complex disaster recovery or infrastructure rebuild programmes.

For more information about this document, visit [www.scirtlearninglegacy.org.nz](http://www.scirtlearninglegacy.org.nz)



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## Update Notice – Central City South, West of Colombo Street

What	Update of earthquake repairs to wastewater, storm water, water and roads
When	July 2014 overview
Where	Central City — West of Colombo Street

### Wastewater



### What we are doing during July 2014



As you are aware Downer is repairing the damaged wastewater pipes in the Central City, southern sector.

We are presently working in Montreal Street. This work will be completed by about the end of July.

Once this is completed we will be working in Acton Street.

We will be working in Antigua Street when we have completed the work in Acton Street.

Before we work in each location we will notify the affected businesses and residents with more information regarding timelines, traffic management and any impacts on the businesses.

This work, called open trenching, involves excavating a section of the road to access the damaged pipe. Once this pipe is replaced we will backfill and reinstate the trench.

### Traffic impacts

- Traffic will be restricted around the work site. Traffic flow will be maintained where possible.
- Detours will be in place where access is closed. Please watch for signage and changes in traffic conditions.
- Pedestrian access on footpaths will be maintained
- Downer is working with the other SCIRT partners (Fletchers, McConnell Dowell, City Care and Fulton Hogan) coordinating the traffic movements around the work sites in the Central City. The coordinated plan is to have at all time six traffic lanes available through the central city in east/west and north/south direction.
- Due to the complex organization of traffic routes the timing of work projects are carefully planned

## Property Owner impacts

- Downer will be investigating and repairing the public laterals in the streets as shown in Map 1.
- We will be connecting your wastewater system to the new wastewater main in the street and we may need to work within your property to complete the connection. The work involves excavating a slip trench 0.800m wide, 0.600m long and approximately 1.1m deep to make the connection. We will reinstate the trench once the work is complete. We will let you know at least three days before we start work in your property with an email.
- Please contact us on the numbers shown below if you would like to discuss the work and/or if there are potential barriers restricting entry to your property.

## Business impacts

- Downer will follow this work notice with email updates to businesses adjacent to the work sites.
- Downer wish to minimize any disruption to businesses. If you have regular deliveries or access needs as well as any concerns please contact Downer on either the phone number or email at the end of this notice.



## Completed work on the wastewater pipes

### What we have completed—Open Trenching

Downer started work repairing the **wastewater pipes** in the Central City, southern sector, in November 2013.

We have completed 59% of the open trenching work on the **western side** of our sector in the Central City.

We have replaced 681m of wastewater pipes. We have a total of 1160m of pipes to replace.

We have completed working in:-

- Bath Street.
- Colombo Street, Moorhouse Avenue to Bath Street.
- Colombo Street, St Asaph Street to Welles Street.
- Durham Street South
- Alcester Street
- St David Street



59%



Traffic management and business signs on Montreal Street



Open trenching work continues on Montreal Street

### General Information:



Our standard work hours are Monday to Saturday between the hours of 7.00am to 6.00pm. All works are subject to favourable weather and on-site construction conditions.



There will be increased noise, dust and vibration levels associated with this work.



Safety is our number one priority. Safety is your responsibility too. Stay clear and stay alert - keep children and pets at a safe distance from the work site.

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# Upcoming work in the Central City

## Storm water



## Freshwater



## Roading



### Storm water pipe repairs



Downer will be repairing the storm water pipes in all the streets in the Central City, southern sector. This work will be either lining or small trenching repairs dependent on the assessed level of damage.

Storm water pipes are under the ground on one side of the road as shown in the diagram below. Traffic impact will be mainly shoulder closures.

### Roading repairs



Roading repairs in the Central City will vary dependent on the level of earthquake damage for each road. This will be in every street in Central City, southern sector. This work could include replacement of kerb and channel, footpaths and in some cases rebuilding and sealing the carriage way.

This work will start in July 2014 and take about five months.

### Freshwater pipe repairs



Downer will be repairing the freshwater pipes in a number of streets later in 2014.

Freshwater pipes are under the ground on one side of the road as shown in the diagram below. Traffic impact will be mainly shoulder closures.

**Please note—we will send out a more detailed work notice prior to the work starting in your street**

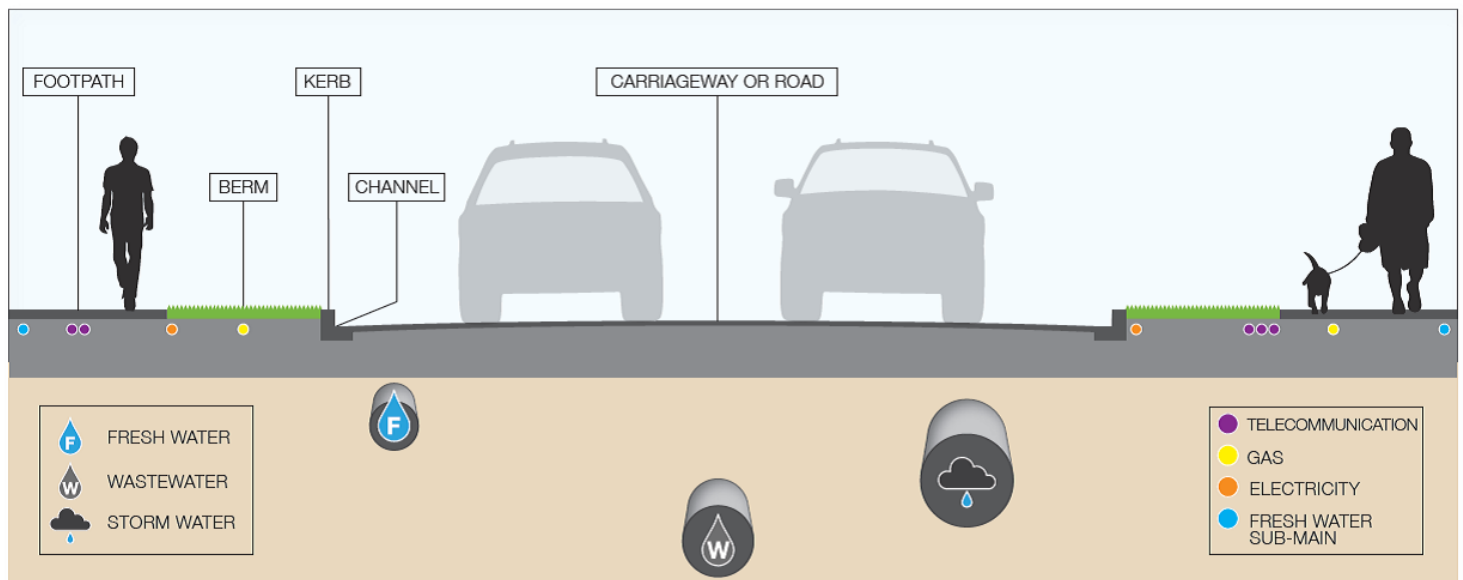


Diagram 1. Parts of a road and footpath and placement of all services within a road.

### Need more information?

Phone: 0800 400 310 (8.30am-5.00pm Monday-Friday)

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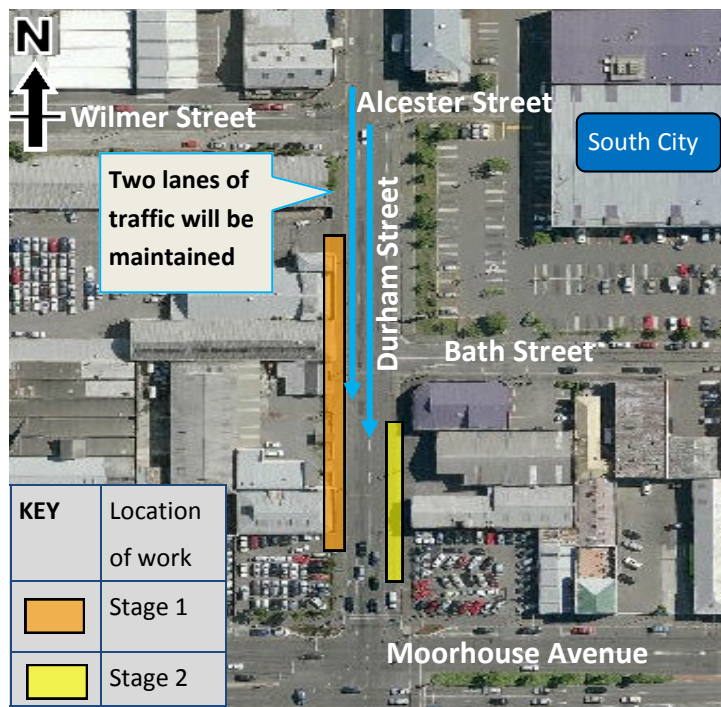


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## Works Notice – Durham Street South, Central City, wastewater repair

What	Repair of damaged wastewater and fresh water system
When	Week beginning 8 September for about two weeks
Where	Durham Street South, Central City



### What we are doing

Downer are replacing the damaged infrastructure in the central city. This notice is to advise you of further work. that will start the week beginning 8 September 2014 and take about two week to complete **subject to weather and on site conditions**.

### Repair of freshwater pipes, Map 1

- This work will be done in two stages as shown in Map 1.
- Each stage will be completed before the next stage is started.
- The sections of footpath shown on Map 1 will be cut and then excavated to access the damaged pipe. This is called open trenching.
- Once the pipe is replaced the footpath will be reinstated.



### Repair of wastewater main, Map 2

- Downer is also working in Winchcombe Street repairing the wastewater main.
- We will be working in the intersection of Winchcombe and Durham Street as shown in Map 2.

### Traffic impacts

- Durham Street will be one lane between St Asaph Street and Bath Street.
- Winchcombe Street will remain closed.
- There will be no on street parking around the work sites.
- Pedestrian access will be maintained on one side of the road at all times.

## Business impacts

- Access to businesses will be maintained when possible.
- If you have regular deliveries or access needs as well as any concerns please contact Downer on either the phone number or email at the bottom of this notice.

Road works can be challenging for businesses, residents and road users, but they are necessary to repair our earthquake damaged infrastructure. You can help with the rebuild by:

- Going the extra mile to support local businesses: It might mean a longer detour; or walking a bit further to visit your favourite shop affected by traffic or parking changes.
- Going the extra mile for other road users: It might mean rethinking the time of day you travel across town. It might mean waving someone into the queue in front of you, or keeping an eye out for cyclists and pedestrians.



**GO THE EXTRA MILE  
FOR BUSINESSES AFFECTED  
BY REBUILD ROADWORKS**



Picture 1. Open trenching the freshwater pipe in the footpath

### General Information:



Please contact Downer on 0800 400 310 if you have any specific access requirements that we need to consider e.g. deliveries, or planned works on your property.



Our standard work hours are Monday to Saturday between the hours of 7.00am to 6.00pm. On rare occasions we may have to work on a Sunday to complete essential work.



There will be increased noise, dust and vibration levels associated with this work.



Works will have no planned impact on current power, telecommunication, water or gas services. However, the network is still fragile so please be prepared in case there is an unexpected service cut off.



All works are subject to favourable weather and on-site construction conditions.



Safety is our number one priority. Safety is your responsibility too. Stay clear and stay alert - watch for signs that will direct you around the work site. Keep your vehicle safe by locking it and removing any valuables when your car is parked on the street.

### Need more Information?

**Phone** 0800 400 310

**Email** [eqinfo@downer.co.nz](mailto:eqinfo@downer.co.nz)

Want to find out more about this project or other rebuild works?

Visit our website: [www.strongerchch.govt.nz](http://www.strongerchch.govt.nz)

Find the quickest and safest routes around Christchurch at  
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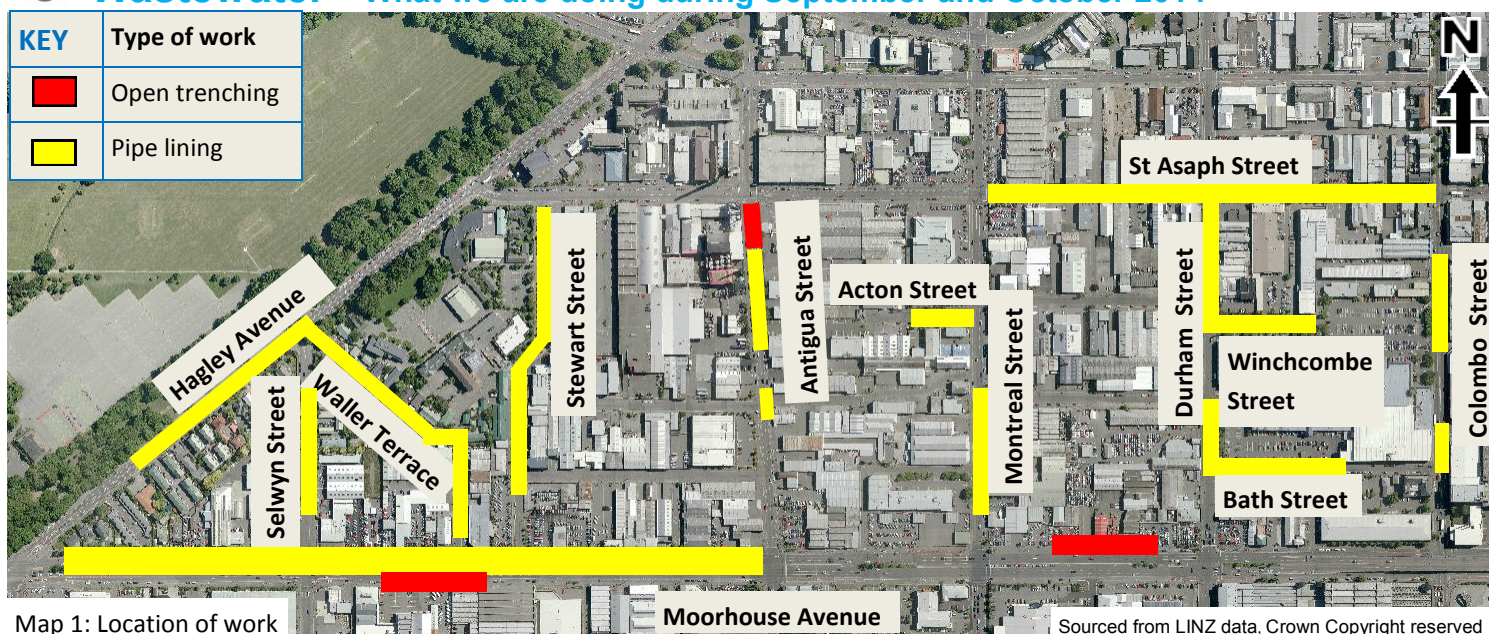


## September/October Overview – Central City South, West of Colombo Street

What	Update of earthquake repairs - Wastewater - see page 1 Storm water, water and roading - see page 3 Completed work - see page 4
When	September/October 2014 Overview



### Wastewater - What we are doing during September and October 2014



#### Open trenching

Downer is working on the final section of Antigua Street. This includes installing large wastewater pipes for the new Metro Sports Centre. This work is expected to be completed by the end of September 2014.

We will then repair two patches on Moorhouse Avenue.

#### Traffic impacts

At present Antigua Street is closed at the intersection of St Asaph Street. Once the work in the intersection is completed Antigua Street will be one way, north bound only, until this work is finished.

#### Pipe lining

Downer are continuing pipelining sections of the wastewater system in the west. We are now doing stage two, see description on page 2. We are also doing CCTV investigation of the wastewater laterals to assist us with our repair strategy.

#### Traffic impacts

Traffic management for pipelining uses road cones to mark the work area around each manhole and make safe access between manholes for the crew. Where the road is wide we will maintain traffic flow. If the road is narrow we may have to close one lane. We will notify the businesses and residents if your access will be affected.

**Please note—we will send out a more detailed work notice**



## Business impacts

- A Work Notice and email updates will be sent to businesses adjacent to the work sites before the work starts.
- Downer wish to minimize any disruption to businesses. If you have regular deliveries or access needs as well as any concerns please contact Downer on either the phone number or email at the end of this notice.
- Downer have access signs available, as shown in picture 1, to assist public being directed to your customer parking.



Picture 1— Example of an access sign

## What is pipe lining

- Pipelining is a trenchless method used to repair broken pipes. The inside of a damaged pipe is lined with a new material, which strengthens the pipe. This work is less disruptive than an open trench method.
- Pipe lining is done in a number of stages.
- **Stage one** is when the main pipe in the road is lined by inflating a liner pipe inside the main using steam and compressed air.
- **Stage two** is when holes are cut in the new liner in the main to connect the laterals (the pipes that connects to each property).
- **Stage three** is when the public laterals are lined.
- There may be times when there is a delay before the next step commences. In this case traffic management may be removed for a few days while we wait for the next stage to start.

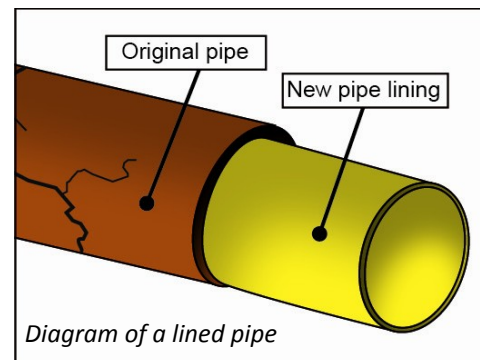


Diagram of a lined pipe



Pipe lining set up for the main wastewater pipe.



Heating the liner for the main wastewater pipe.

## What is open trenching

- A section of the road is excavated to access the damaged pipe.
- Once the pipe is replaced the trench is backfilled and reinstated.



Open Trenching on Montreal Street

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**Storm water**

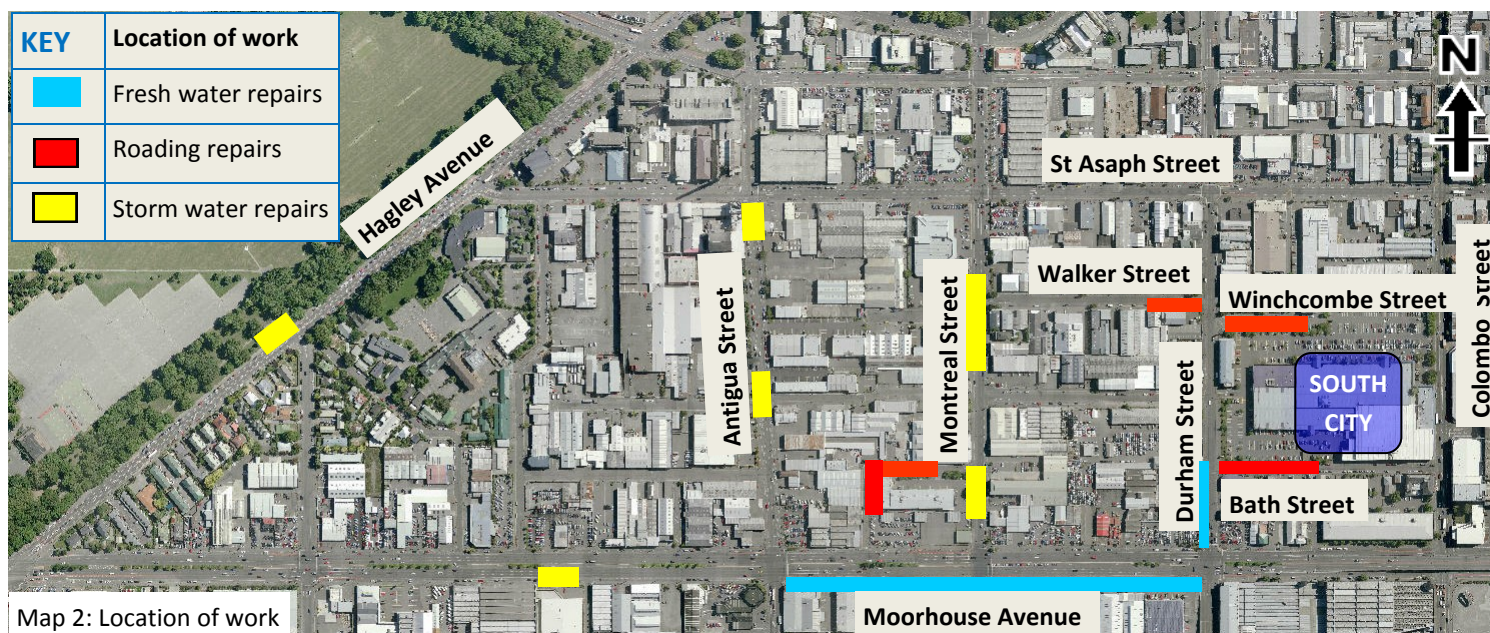


**Fresh water**



**Rooding**

## What we are doing during September and October 2014



Sourced from LINZ data, Crown Copyright reserved

**What we are doing** - see Map 2 above.

### Fresh water repairs

We are at present replacing the fresh water pipes on the south side of Moorhouse Road between Durham Street and Antigua Street. This will be finished about the middle of October 2014.

We will also be replacing the freshwater sub-main, which is in the footpath, on a small section of Durham Street south.

### Rooding, kerb, channel and footpath repairs

We are at present working in St David Street. This will be completed at the beginning of October 2014. St David Street is closed for the duration of this work.

We will be returning to Winchcombe Street to complete the road repairs once the wastewater work is completed.

We will also be working in small sections of Walker Street and Bath street in October 2014.

### Storm water repairs

We will be repairing small sections of the stormwater pipes in Antigua Street, Hagley Avenue, Moorhouse Avenue and Montreal Street.

### Traffic impacts

Traffic management for these repairs may include lane reductions, small closures of footpaths, road shoulders and no on street parking around the work sites.

We will be contacting you before work we will be in front of your property and will maintain access to all properties where possible.

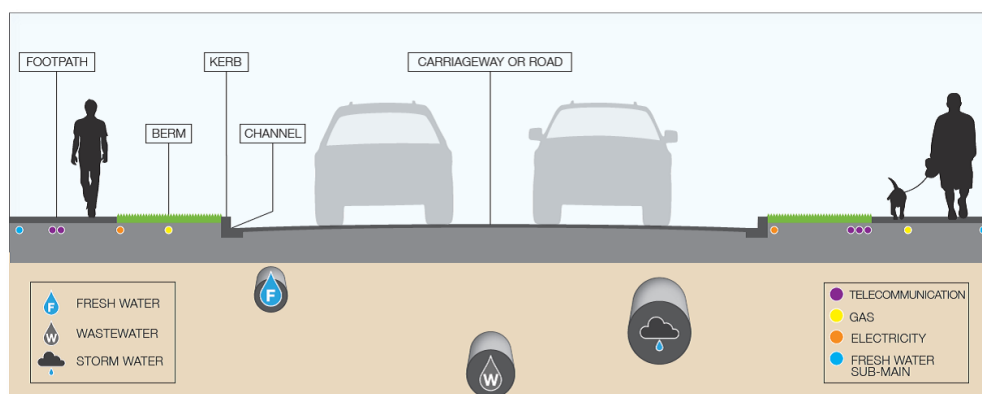


Diagram 1. Parts of a road and footpath and placement of all services within a road.

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## Completed work on the wastewater pipes, Central City - West

### What we have completed

- 96% of the open trenching. We have replaced 1115m of the wastewater main pipes.
- 69% of the pipelining of the wastewater main pipe.
- 100% of the CCTV investigations.

96% completed open trenching

69% completed pipe lining main



## Completed work on the storm water, fresh water, roading

### What we have completed

- 10% of the storm water pipe replacement
- 60% of the fresh water pipe replacement
- 40% of the roading

10% completed stormwater

60% completed freshwater

40% completed roading

We are yet to start the road maintenance on the west side of the Central City.

### General Information:



Our standard work hours are Monday to Saturday between the hours of 7.00am to 6.00pm. All works are subject to favourable weather and on-site construction conditions.



There will be increased noise, dust and vibration levels associated with this work.



Safety is our number one priority. Safety is your responsibility too. Stay clear and stay alert - keep children and pets at a safe distance from the work site.

### Need more information?

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Website: Visit [www.strongerchristchurch.govt.nz](http://www.strongerchristchurch.govt.nz)



Replacing the freshwater sub-main pipe in the footpath

Email: [info@scirt.co.nz](mailto:info@scirt.co.nz)  
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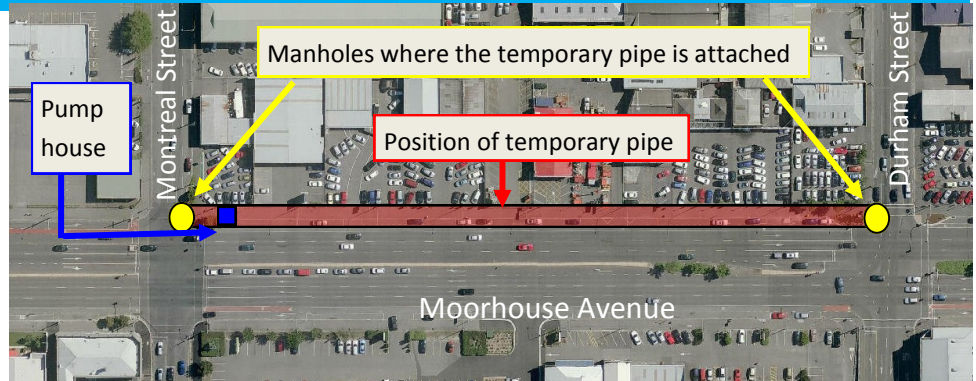


15 October 2014

What	Over pumping set up to manage wastewater levels
When	Week starting 20 October 2014 for about one week
Where	Moorhouse Avenue, north side, between Montreal Street and Durham Street

## What are we doing

Downer met with the businesses situated along the north side of Moorhouse Avenue, adjacent to this work, see Map1. As a result of this meeting Downer have decided to postpone the repair of the brick barrel wastewater main, that is in the middle of the road, until **February 2015**.



Map 1: Location of work

Sourced from LINZ data, Crown Copyright reserved

To progress with the wastewater repairs at the western end of Moorhouse Avenue Downer will now set up over pumping between Montreal Street and Durham Street, as shown in Map 1. Over pumping is where a temporary pipe is installed in the kerb to bypass the restriction, see diagram on page two.

This will be done in stages:

- **Stage one** - we will excavate at the intersection of Durham Street and Moorhouse Avenue to install the discharge point at the manhole. This will take about two days.
- **Traffic** - Durham Street will maintain three lanes of traffic at the intersection. There will be no parking on Durham Street and Moorhouse Avenue around the work site.
- **Stage two** - the temporary pipe will be laid out on the footpath, welded together and laid along the kerb. Ramps will be setup to give access to the businesses.
- **Traffic** - There will be a shoulder closure along Moorhouse Avenue. Some parking will be available in spaces where the crew is not working.
- **Stage three** - A pump house will be set up near the Montreal Street intersection.
- **Stage four** - we will excavate at the intersection of Montreal Street and Moorhouse Avenue to install the suction point at the manhole. This will take about two days.
- **Traffic** - Montreal Street will have reduced lanes of traffic at the intersection. There will be no parking on Durham Street and Moorhouse Avenue around the work site.

This over pumping system will remain in place until the brick barrel wastewater main repair is completed in 2015.

The pump house will be removed when it is not in use.

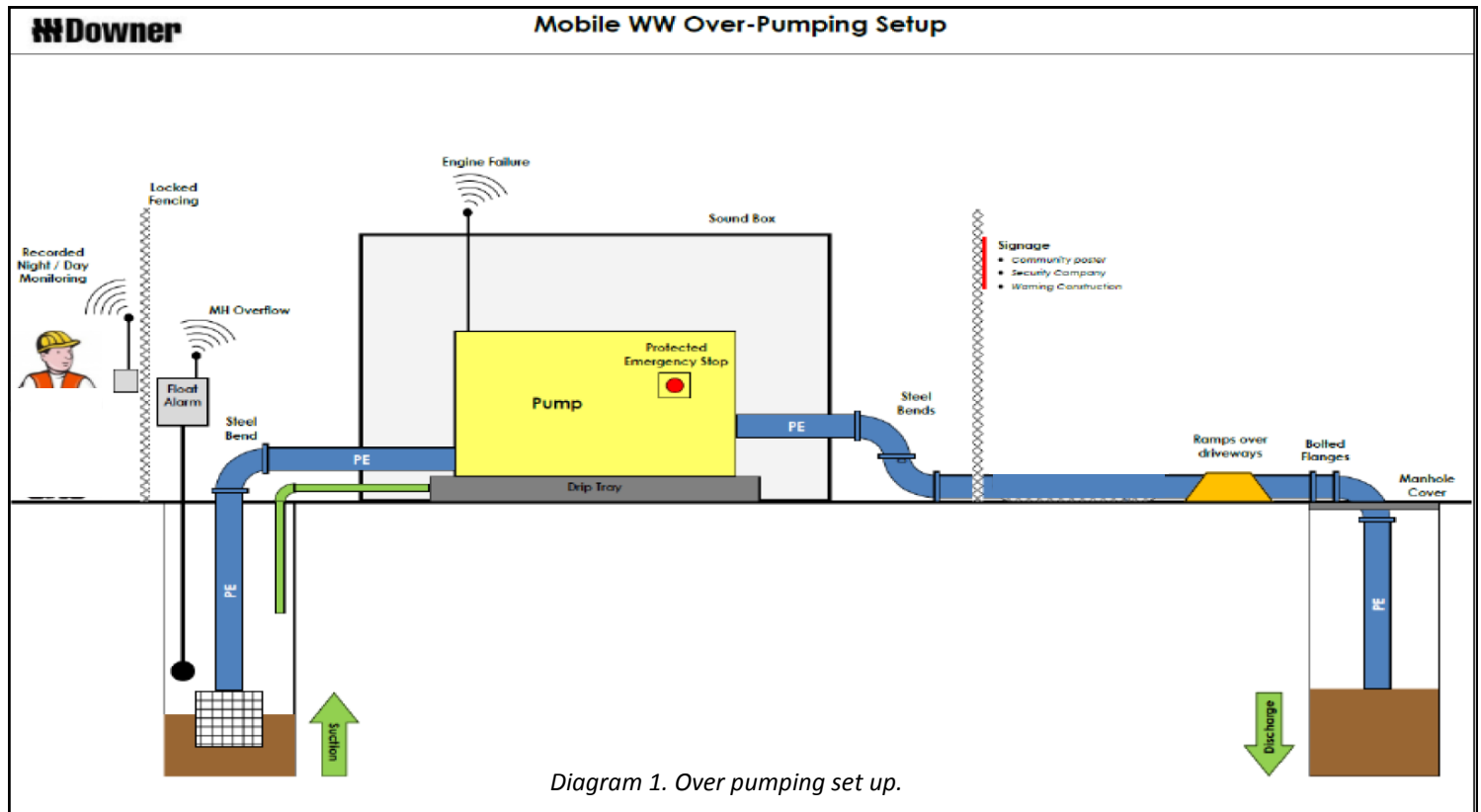


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## Traffic management

- No parking road cones will be placed around the work site areas. These will be for no more than two days at a time.
- Please be on the look out for signage directing traffic.
- The footpath will remain open to pedestrians.



### General Information:



Please contact Downer on 0800 400 310 if you have any specific access requirements that we need to consider e.g. nurse/ doctor visits, Meals on Wheels, or planned works on your property.



Our standard work hours are Monday to Saturday between the hours of 7.00am to 6.00pm.



There will be increased noise, dust and vibration levels associated with this work.



Works will have no planned impact on current power, telecommunication, water or gas services. However, the network is still fragile so please be prepared in case there is an unexpected service cut off.



All works are subject to favourable weather and on-site construction conditions.



Safety is our number one priority. Safety is your responsibility too. Stay clear and stay alert - keep children and pets at a safe distance from the work site. Keep your vehicle safe by locking it and removing any valuables when your car is parked on the street.

### Need more information?

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## End of Year Notice — Central City, South

As you know, Downer has been working in the Central City, south of St Asaph Street, repairing the earthquake damaged infrastructure. This notice is to let you know what we will be doing over the holiday period, and to give you an update on SCIRT progress.

SCIRT will be closing down our worksites over the holiday period to give the crews, businesses and the residents a well deserved break. During this time all traffic management will be lifted. We will be closing down our sites from Friday 19 December, and our last day of work will be Tuesday 23 December.

**We will be starting back the week beginning Monday 5 January 2015, with storm water repairs only. The other sites will start the week beginning 12 January 2015.**

### What will we be doing before the end of the year?

- We will be completing some work in Rope Street.
- We will complete CCTV investigations of laterals in Hagley Avenue, Acton Street and Waller Terrace.
- We will be around the streets making sure all sites are tidy
- We will be backfilling any open lateral holes that are not fenced.



Tracy Wilkinson from L4 LUNCH Food Bar on Moorhouse Avenue treated the crew from Hydrotech with afternoon tea. Tracy's table is the large concrete block that was put in front of her shop to support a power pole while the lateral was being excavated.





## We have completed in the Central City, south

	EAST	WEST
Open Trenching	100%	100%
Pipelining main	100%	85%
Lining connections	97%	2%
Wastewater laterals	92%	2%
Storm water repairs	75%	90%
Roading and footpaths	95%	100%

## What is coming up next year?

After the holiday break we will be starting the following work:

### Colombo Street

- We will be repairing the wastewater laterals on Colombo Street between St Asaph Street and Moorhouse Avenue.

### Pipelining night work

- We will be continuing with pipelining connections in the wastewater mains on the western side of the Central City. This work will be done at night.

### Storm water repairs

- In January 2015 we will be working in Moorhouse Avenue, near Fitzgerald Avenue, repairing sections of the storm water pipe.

### Wastewater laterals, west of Colombo Street

- We will be returning in the new year to repair the wastewater laterals. This work is in the streets where we have already done investigation work in the last few months. We will notify you when we are working in your street.

### Repair of the wastewater main in Moorhouse Avenue

- This is a large repair between the intersections of Durham Street and Montreal Street on the north side of Moorhouse Avenue.

## Overall SCIRT progress statistics

82% of the infrastructure to be repaired in as been designed

82%

52% of the construction has been completed

52%

81% of the repairs in the Central City have been completed

81%

57% of the whole SCIRT programme is complete

57%



From the Team at Downer and our sub-contractors, we would like to wish you a safe and enjoyable holiday season.

### Need more information?



Call Downer on: 0800 400 310 between 8.30am and 5.00pm Monday to Friday



Email Downer at: [eqinfo@downer.co.nz](mailto:eqinfo@downer.co.nz)



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