

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.

Central City Impact Dashboard

Story: Central City Infrastructure Rebuild

Theme: Programme Management

A PDF of a spreadsheet used to identify the impacts of traffic management in the Central City.

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



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Traffic Impact: For the Week Beginning 15/12/2014

Forward Works Program Summary	Fletcher Construction	MacDow	City Care	Downer	Fulton Hogan	Total
Number of Projects in Asta (in construction)	23	24	32	28	30	137
Number of Projects in SDI	13	9	19	13	16	70
% of Projects in FWP	57%	38%	59%	46%	53%	51%
Number of Stages in FWP	106	129	94	68	27	424
Number of Significant Stages in FWP	264	33	142	233	78	750
Full closure on roads with more than 5,000vpd (two-way)	2	0	2	3	0	7
One-way closure on roads with more than 10,000vpd (two-way)	5	17	23	19	1	65
Lane closure on roads with more than 12,500vpd (one-way)	0	0	0	0	0	0
Any work on strategic route	257	16	117	211	77	678
Number of Bus Routes Affected	0	0	3	12	7	22
Bus Routes With Full Closure or One-way Closure	0	0	3	12	7	22
Bus Routes With Any Road Works						0

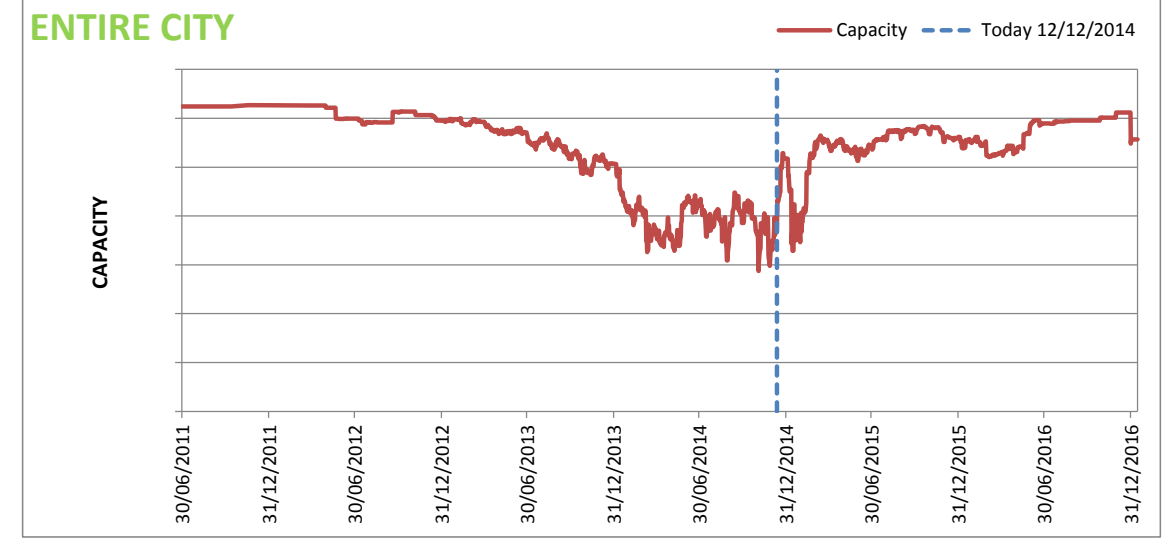
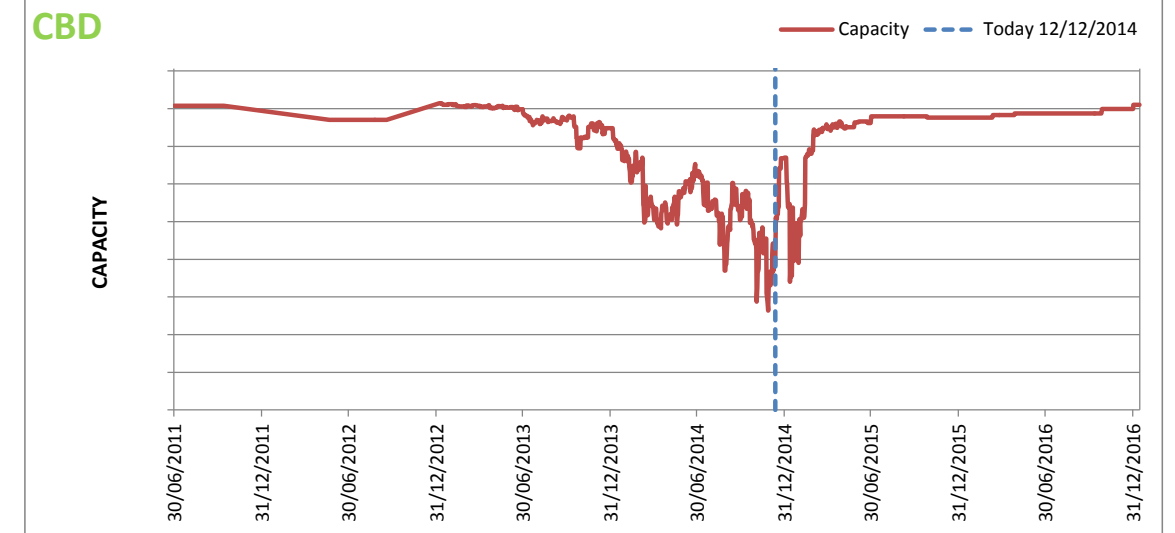
LEGEND

Strategic route?	Strategic routes are defined as routes that have significant impact on the network and full closures are not recommended
Nett Lane impact	Impact to number of lanes on route compared number of through lanes
Max % Dem/ Cap	Maximum volume to capacity ratio by segments along route
Through lanes	Minimum number of lanes available on route from start to end
Impact on demand	Impact of road works to vehicles (analysed by individual route segments)
	no impact
LOW	less than 35% of max demand impacted by works
MEDIUM	35 - 75% of max demand impacted by works
HIGH	more than 75% of max demand impacted by works

North/South Routes	Strategic route?	NORTHBOUND						SOUTHBOUND											
		No works			Wk Beginning 15/12/2014 - (next week)			Wk Beginning 22/12/2014 - (2 weeks from now)			No works			Wk Beginning 15/12/2014 - (next week)			Wk Beginning 22/12/2014 - (2 weeks from now)		
		Through lanes	Route Capacity	Max Veh Demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand	Through lanes	Route Capacity	Max Veh Demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand
Montreal St (Bealey Ave to Moorhouse Ave)	YES	2	2800	1792	0	64%	0	64%		YES	2	2800	1838	0	106%		0	66%	
Durham St/Cambridge Tce (Bealey Ave to Moorhouse Ave)		1	800	573	0	48%	0	48%		1	800	415	-1	R.Closure		0	35%		
Colombo St (Bealey Ave to Moorhouse Ave - exclude Cathedral Sqr)		1	1200	564	-1	R.Closure		-1	R.Closure		1	1200	622	0	46%		0	46%	
Manchester St (Bealey Ave to Moorhouse Ave)		2	3400	1724	-1	105%		-1	100%		2	3400	1639	0	48%		0	48%	
Madras St (Bealey Ave to Moorhouse Ave)	YES	2	3400	1635	0	44%		0	44%		2	3400	1987	0	60%		0	42%	
Barbadoes St (Bealey Ave to Moorhouse Ave)	YES	2	3400	1635	0	44%		0	44%		2	3400	1987	0	60%		0	42%	
Fitzgerald Ave (Bealey Ave to Moorhouse Ave)	YES	2	3400	1635	0	44%		0	44%		2	3400	1987	0	60%		0	42%	
Total		8	11600	6288							8	11600	6501						

East/West Routes	Strategic route?	EASTBOUND						WESTBOUND											
		No works			Wk Beginning 15/12/2014 - (next week)			Wk Beginning 22/12/2014 - (2 weeks from now)			No works			Wk Beginning 15/12/2014 - (next week)			Wk Beginning 22/12/2014 - (2 weeks from now)		
		Through lanes	Route Capacity	Max Veh Demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand	Through lanes	Route Capacity	Max Veh Demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand	Nett Lane impact	Max % Dem/ Cap	Impact on demand
Hagley Ave (Moorhouse Ave to Oxford Tce)		1	1400	1409	-1	R.Closure		-1	R.Closure		1	1400	829	-1	R.Closure		-1	R.Closure	
Bealey Ave (Park Tce to Fitzgerald Ave)	YES	3	3400	2413	0	52%		0	52%		2	3400	1565	0	46%		0	46%	
Salisbury St (Park Tce to Barbadoes St)	YES	2	2800	748	0	27%		0	27%		1	1400	1787	-1	R.Closure		-1	R.Closure	
Kilmore St (Park Tce to Fitzgerald Ave)		1	1200	1717	0	123%		0	123%		1	1200	362	0	49%		0	49%	
Hereford St (Rolleston Ave to Fitzgerald Ave)		1	1200	1717	0	123%		0	123%		1	1200	362	0	49%		0	49%	
Oxford Tce/Lichfield St (Riccarton Ave to Fitzgerald Ave)		2	1400	1409	-1	R.Closure		-1	R.Closure		1	1200	1120	-1	R.Closure		-1	R.Closure	
Tuam St (Riccarton Ave to Fitzgerald Ave)		1	1200	1024	-1	R.Closure		-1	R.Closure		1	1200	1120	-1	R.Closure		-1	R.Closure	
St Asaph St (Hagley Ave to Fitzgerald Ave)		1	1400	1327	0	143%		0	115%		1	1400	1327	0	143%		0	115%	
Moorhouse Ave (Deans Ave to Fitzgerald Ave)	YES	3	3400	1821	0	54%		0	54%		3	3400	2245	0	62%		0	62%	
Total		13	14800	10542							10	13400	9234						

Capacity and Value of Time: From Mid 2011 to End of 2016



Critical Routes Weekly Summary (for 31 weeks, starting from current week)

Week	Starting Day	Number of Traffic Lanes - with FWP					% Drop in Number of Traffic Lanes				
		CBD (NB)	CBD (SB)	CBD (EB)	CBD (WB)	Bridges (Avon)	CBD (NB)	CBD (SB)	CBD (EB)	CBD (WB)	Bridges (Heathcote)
Without FWP		8	8	17	13	51	20				
0	9/12/2014	5	6	11	8	41	20	-38%	-25%	-35%	-38%
1	16/12/2014	6	8	13	8	41	20	-25%	0%	-24%	-38%
2	23/12/2014	6	8	13	10	42	20	-25%	0%	-24%	-23%
3	30/12/2014	5	8	9	9	41	20	-38%	0%	-47%	-31%
4	6/01/2015	4	6	7	5	41	20	-50%	-25%	-59%	-62%
5	13/01/2015	4	6	7	5	41	20	-50%	-25%	-59%	-62%
6	20/01/2015	4	6	8	7	41	20	-50%	-25%	-53%	-46%
7	27/01/2015	4	6	10	7	41	20	-50%	-25%	-41%	-46%
8	3/02/2015	4	7	11	9	42	20	-50%	-13%	-35%	-31%
9	10/02/2015	4	7	11	9	42	20	-50%	-13%	-35%	-31%
10	17/02/2015	5	7	11	11	46	20	-38%	-13%	-35%	-15%
11	24/02/2015	5	7	11	11	46	20	-38%	-13%	-35%	-15%
12	3/03/2015	5	8	14	11	46	20	-38%	0%	-18%	-15%
13	10/03/2015	5	8	14	11	48	20	-38%	0%	-18%	-15%
14	17/03/2015	5	8	14	10	48	20	-38%	0%	-18%	-23%
15	24/03/2015	6	8	14	10	48	20	-25%	0%	-18%	-23%
16	31/03/2015	6	8	14	10	49	20	-25%	0%	-18%	-23%
17	7/04/2015	6	8	14	9	49	20	-25%	0%	-18%	-31%
18	14/04/2015	7	7	14	10	49	20	-13%	-13%	-18%	-23%
19	21/04/2015	7	8	14	10	49	20	-13%	0%	-18%	-23%
20	28/04/2015	7	8	14	11	49	20	-13%	0%	-18%	-15%
21	5/05/2015	7	8	13	11	49	20	-13%	0%	-24%	-15%
22	12/05/2015	7	8	13	11	49	20	-13%	0%	-24%	-15%
23	19/05/2015	7	8	13	11	49	20	-13%	0%	-24%	-15%
24	26/05/2015	7	8	13	11	47	20	-13%	0%	-24%	-15%
25	2/06/2015	8	8	13	11	47	20	0%	0%	-24%	-15%
26	9/06/2015	8	8	14	11	47	20	0%	0%	-18%	-15%
27	16/06/2015	8	8	14	11	47	20	0%	0%	-18%	-15%
28	23/06/2015	7	7	14	11	47	20	-13%	-13%	-18%	-15%
29	30/06/2015	7	7	14	11	48	20	-13%	-13%	-18%	-15%
30	7/07/2015	7	7	15	12	48	20	-13%	-13%	-12%	-8%
31	14/07/2015	7	7	15	12	48	20	-13%	-13%	-12%	-8%

