

# STAFF REPORT

**TO:** Chairman and Members Engineering Services  
**FROM:** Development Engineer, Dugald Ley  
**DATE:** 28 May 2008  
**SUBJECT:** **DEVELOPMENT/CUSTOMER SERVICE – THREE MONTHLY REPORT – JANUARY-MARCH 2008**

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## 1 PURPOSE

This report reviews and highlights developments and service requests received by Council during January to March 2008.

## 2 SUBDIVISION (Generally larger subdivisions)

Current construction work includes:

- Champion Road, NCC – Construction of second stage nearing completion
- Beechnest, St Arnaud – Works continuing
- CBH – South SH6 – Next stages continue
- CBH – Research Orchard Road – 12 lots, works continuing
- Washbourne – Works continuing
- Lord Rutherford Road, Katania – Works continuing
- Wensley Road – 64 lots

### Consents recently approved:

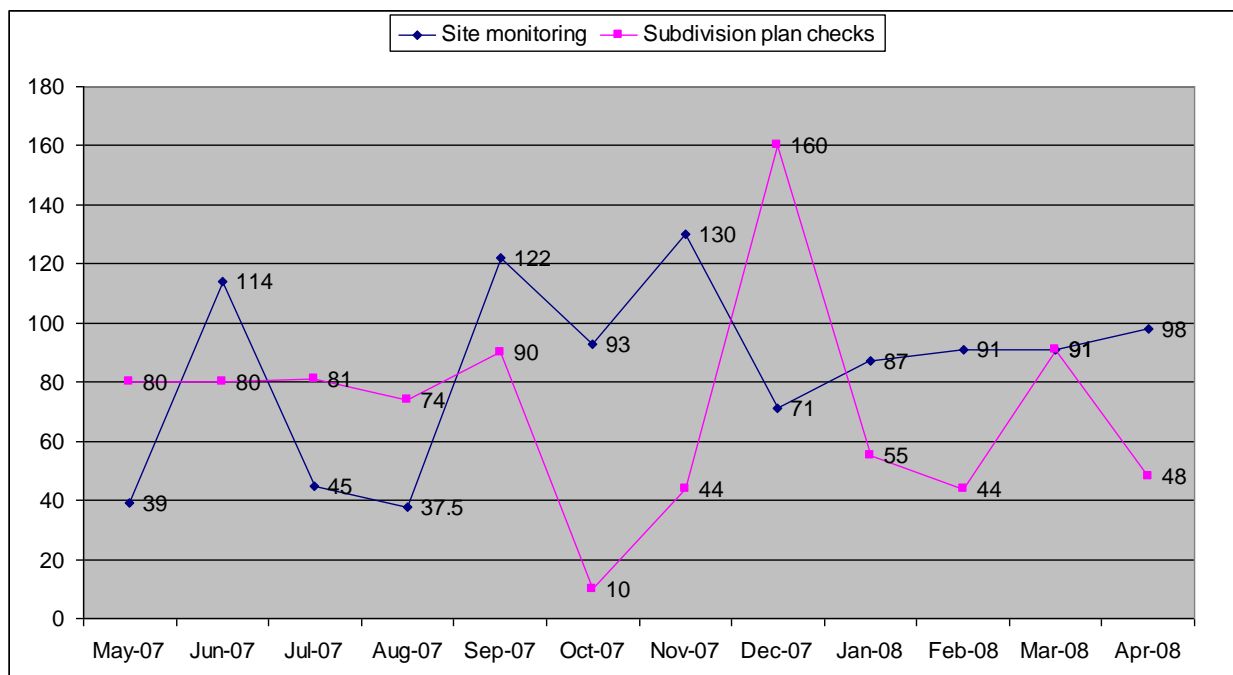
- Champion Road, NCC – 82 lots

Council's consultant MWH (NZ) Ltd provides support to Engineering with advice on resource consents and on-site audit inspections as subdivisions progress.

The graph below gives an indication of the hours spent each month – these costs are subsequently passed on to the Environment & Planning department for reimbursement.

It can be seen that generally 100 hours per month are spent in the field on site inspections whereas on average, approximately 60 hours per month are spent on advice to Council on consent applications.

**Graph 1 – Hours spent on resource consents by Council’s consultants**



### 3 SERVICE REQUESTS

The table below and graphs set out the previous 12 months service requests.

Service requests (CSRs) are entered into Council’s database and taking into account instances where more than one request for the same event, jobs will be somewhat lower, ie from January 661 CSRs were created resulting in 479 jobs being entered into Council’s database.

The table and bar chart itemise Council’s asset areas with the main complaints/investigations in the areas of water supply, roads, footpaths and car parks.

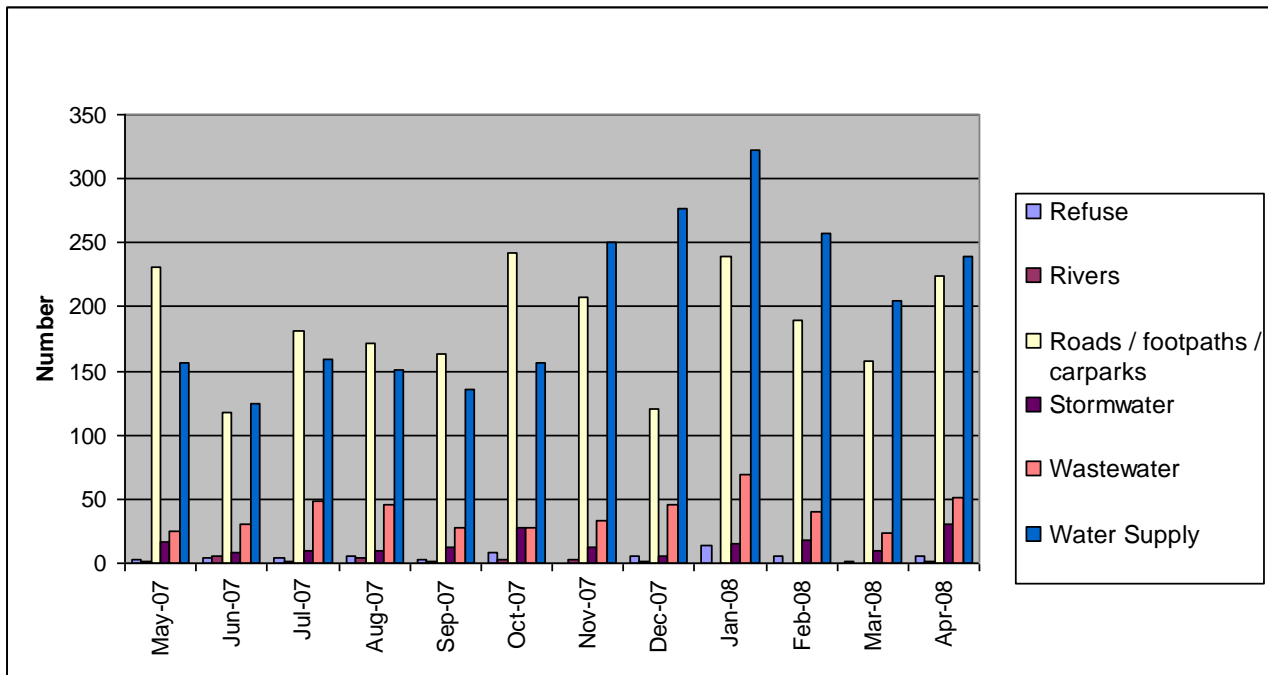
This is to be expected as these are high visibility items such as road conditions, potholes, corrugations, water leaks etc high on Council’s problem list. Asset Managers are aware of these areas and are constantly investigating ways to lower these areas of concern.

**Table 1 - Totals of Service Requests generated per month for engineering services**

Service	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08
Refuse	3	4	4	6	3	8	0	5	14	5	2	6
Rivers	1	5	1	4	2	3	3	2	0	0	0	2
Roads / footpaths / carparks	231	118	181	172	163	242	208	121	240	189	158	224
Stormwater	17	8	9	9	12	27	12	6	15	18	10	31
Wastewater	25	30	48	45	27	27	33	46	69	40	23	51
Water Supply	157	125	159	151	135	157	251	277	323	258	205	240
<b>CSRs 2007/8</b>	<b>434</b>	<b>290</b>	<b>402</b>	<b>387</b>	<b>342</b>	<b>464</b>	<b>507</b>	<b>457</b>	<b>661</b>	<b>510</b>	<b>398</b>	<b>554</b>
<b>Jobs 2007/8</b>	<b>327</b>	<b>238</b>	<b>350</b>	<b>318</b>	<b>244</b>	<b>360</b>	<b>365</b>	<b>388</b>	<b>479</b>	<b>410</b>	<b>329</b>	<b>480</b>
<b>CSRs 2006/7</b>	<b>389</b>	<b>312</b>	<b>300</b>	<b>297</b>	<b>310</b>	<b>281</b>	<b>253</b>	<b>275</b>	<b>360</b>	<b>438</b>	<b>487</b>	<b>363</b>
<b>Jobs 2006/7</b>	<b>354</b>	<b>293</b>	<b>274</b>	<b>269</b>	<b>266</b>	<b>276</b>	<b>236</b>	<b>250</b>	<b>308</b>	<b>365</b>	<b>386</b>	<b>288</b>
<b>CSRs 2005/6</b>	<b>376</b>	<b>298</b>	<b>320</b>	<b>310</b>	<b>316</b>	<b>288</b>	<b>388</b>	<b>315</b>	<b>395</b>	<b>286</b>	<b>379</b>	<b>260</b>
<b>Jobs 2005/6</b>	<b>338</b>	<b>282</b>	<b>291</b>	<b>299</b>	<b>301</b>	<b>270</b>	<b>358</b>	<b>290</b>	<b>362</b>	<b>263</b>	<b>353</b>	<b>251</b>

August Roads figure excludes 385 Road opening notices logged retrospectively for 2 years

**Graph 2 – Service requests generated for Engineering Services**

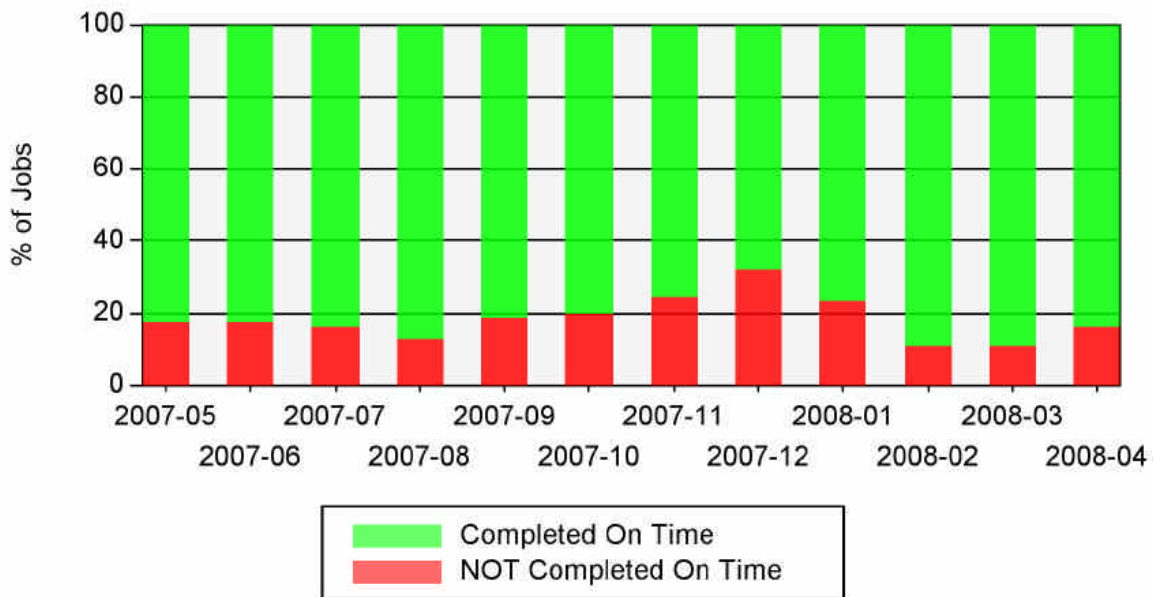


The majority of jobs are subsequently forwarded via Council’s consultant to Council’s contractors to carry out any remedial action. The performance of Council’s contractor is gauged in many ways, one being how quickly they complete or investigate the jobs that are forwarded to them.

The bar chart below shows that Council’s contractor is completing over 80% of the tasks within the specified times which is deemed reasonable.

The bar chart also indicates that around the Christmas period the contractor is stretched to perform their duties on time.

**Graph 3 – Performance of jobs due to complete each month**



#### 4 LOW IMPACT STORMWATER DESIGNS IN SUBDIVISIONS

With the advent of new rules in the TRMP regarding stormwater disposal and the release of the new Engineering Standards, there has been interest in low impact stormwater designs both from developers and the media.

Councillors will be aware that new low-impact designs can contain the following and the common terms and details are outlined for Council’s benefit.

Design type	Problems
<u>Green roofs</u> – These are buildings specifically designed to allow planting of vegetation on the roof – an example in our district is at the new Woolaston Estate winter.	Correct selection of plants and soil medium are required.
<u>On-site rain/detention tanks</u> – These can have two functions: Detention – This detains a certain volume of water and controls the release of the detained water via a restricted orifice. This restricts water downstream and therefore lowers the peak flows in Council’s system. Rain Harvesting Tank – This is much like a rural on-site roof collection tank but in an urban environment. Water can be used within the dwelling, ie toilet flushing.	If not monitored orifice plates are removed or tanks disconnected. Ongoing maintenance required. Potential contamination and backflow into Council’s system; cross connection of internal dwelling pipe work.
<u>Rain garden</u> – This is the process where stormwater is directed over land into a depression that has a mixture of topsoil, sand and compost material which allows filtration of stormwater (may contain lead, zinc, copper, hydrocarbons) through the media and thence in to the underlying drainage system. The soil media is planted with appropriate species that take up moisture and discharge this via evapo-transpiration (the soil media will need to be replaced every	These have to be constructed <u>after</u> all construction works have been completed. Any likelihood of silt blinding/blocking out the soil media should be eliminated

five to ten years and the contaminated soil disposed of). A number of these are presently being constructed in the new Richmond Town Centre development at Croucher Street.	
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Note: Council should be actively discouraging:

- Building developments that promote the use of copper products in roofing, cutters etc.
- Zinc unpainted products such as unpainted roofs.
- Lead products such as roof flashings, nails etc.

<u>Grassed Swales</u> – These are usually grassed longitudinal depressions beside the road carriageway or paved area. They are sited on flattish grades and most likely have a grass cover of approximately 100-150mm in height. These areas allow for containment of road runoff, ie hydrocarbons to be filtered through the grass and infiltrate the soil media and then discharge to an underlying drainage system. The soil media will need to be replaced every five to ten years depending on contaminant loading.	Compaction of the soil media by parking of vehicles, ruts formed by vehicle tyres in wet weather conditions and lack of grass maintenance. An example can be seen at the ASB Aquatic Centre car park.
<u>Sump Filter Screens</u> – These are woven mesh filter cloths inserted into a sump/catch pit which collect sediments and hydrocarbons.	Regular maintenance and cleaning regime required.
<u>Infiltration trenches, beds or dams</u> – In essence this is a specifically-designed soakpit that allows contaminants to drain through a soil media and discharge to an underlying gravel aquifer. Well used in the Christchurch area where gravel layers are abundant.	Regular maintenance required to keep infiltration rates high and susceptible to silt blocking the pores. Not suitable in areas of high ground water.
<u>Permeable pavers</u> – These are pervious pavers or gaps between pavers which allow for infiltration into underlying drainage layers.	Pavers being sealed off through silt blocking the drainage pore.
<u>Underground detention cells</u> – These are structures surrounded by filter cloth laid underground in large void areas that detain stormwater for later discharge to ground or to a piped system – presently being installed in the new Pegasus town near Kaiapoi.	Sealing off of void areas via siltation of pore areas. Not suitable in areas of high ground water.
<u>Stormwater treatment device</u> – These can be a proprietary product that may remove litter, sediments, hydrocarbons, metals etc. and may come in many forms and cost options. They are usually installed underground in a manhole or large vault – one is under construction at the new Bunnings complex and at the Beach Road recycling plant.	Ongoing maintenance regime and require difference in inflow/outflow elevation.
<u>Floating litter trap</u> – usually a floating device secured to either side of a bank that directs floatable debris to a control collection point.	ongoing maintenance regime and problems during storm events
<u>Sand filters</u> – Stormwater is led into a sand bed that removes metals and litter – particularly useful in boat de-fouling areas.	High cost of maintenance and disposal of contaminants.

<p><u>Tree pit</u> - This is a small area that collects road run-off water via the kerb and channel and can be filtered via soil media. A single tree is planted within the area to assist in the evapotranspiration process. These are being installed in Wellington near Te Papa.</p>	<p>Ongoing maintenance and replacement of the soil media in five to ten years.</p>
<p><u>Wetlands</u> – Stormwater is “polished” with the removal of metals and hydrocarbons through a series of off-line ponds which are planted with various plant species. These need to be designed “to one side”, ie offline of the main stormwater as the pond will be flushed out in storm events.</p>	<p>May create more contaminants via bird excrement. Birds eat the plant species, not a desirable area for public. Desludging expensive and large areas required.</p>

Councillors will see a number of themes emerging on the above devices that have been used principally by Auckland Councils for the last ten years. They are:

- Increased maintenance costs for clearing the devices and disposal of contaminants to landfill.
- Ongoing monitoring of “private” on-site systems by Council’s compliance departments and the ability of Council to “tag” titles for their ongoing use. Rain tanks known to be removed and sold after the first year by the landowner.
- The ability at consent stage to impose conditions that will not place undue risk on Councils, ie Five-year maintenance period after construction.
- The ability to take the equivalent of construction costs in dollars so that the device is constructed by Council “after” the last house is built on the development.

The key for imposing the above is for Council to:

- Enhance water quality by removal of contaminants and then discharging stormwater to streams, rivers and the coast.
- Reduce stormwater quantity by holding back storm flows and slow release after the storm has passed.
- Enhancement of aquatic habitats.

The above comes at a cost that will ultimately reflect in the LTCCP and increased maintenance costs in Council’s budgets. However overall some costs can be offset in the long-term by reduced water consumption from Council’s potable water supply and less renewals on capital works due to Council not requiring upgrades to downstream systems.

Finally I attach a copy of a recent article from the NZ Water and Wastes Association where Kapiti District Council’s District Plan has been amended, as has ours, to enforce rain tanks and re-use systems.

## RECOMMENDATION

**THAT the Development/Customer Services – Three Monthly Update January to March 2008 be received.**

Dugald Ley  
**Development Engineer**