

#4

COMPLETE

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Page 1: Section One

Q1 Privacy Act 1993: Please note that all submissions are public information. The content of this submission, including your personal information, will be made available on our website. Your submission will only be used for the purpose of the Waste Management and Minimisation review process. This information will be held by the Mackenzie District Council, Main Street, Fairlie. You have the right to access the information and request its correction.

Agree

Q2 Your details

Full Name	Sara Loxton
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Q3 Do you wish to be heard in support of your submission? Submissions will be heard in Fairlie on Tuesday 11 September 2018. If you wish to be heard, you will be required to keep your presentation to 10 minutes maximum. Councillors will have read your written submission prior to the hearing.

Yes, I wish to be heard in support of my submission

Page 2: Section Two

Q4 Are you answering as a:

Individual or Household

Q5 Do you live/work within the Mackenzie District?

Yes

Q6 Where in the district do you live/is your business/organisation operated?

Town:

Lake Tekapo

Rural area:

Sawdon

Q7 Which of the following best describes your household?

Family/couple with dependents (children or other family)

Q8 Can you tell us your age group?

16-24

Page 3: Section Three

Q9 Do you think that we should be doing more to reduce, reuse and recycle our waste?

Yes,

Other (please specify):

I have found that rubbish bins if the public sight them, will use them, in both locations of Four Square, and the Church of the Good Shepherd. People were looking for rubbish bins in Tekapo, and we have come to the conclusion after a trip to Canada, that we do not have enough rubbish bins in our towns, on streets, and rest areas. The rubbish provided in Tekapo are not clearly sign posted or easily seen. I have noticed a huge increase in roadside rubbish which we are collecting, and the contributing factor could be because they have visited a town, they can not find a rubbish bin. No where in your report was an indication on the amount of tourists visiting the Mackenzie area. I feel this is a very important factor. No rubbish collected was able to be recycled, we should be giving this option to the tourists.

Q10 Do you think our vision, goals and objectives cover the work Council needs to do on waste management and minimisation?

No,

Other (please specify):

Involvement of the community ie Adopt a highway, would get the community I saving the Mackenzie from Rubbish. No where in the report did I sight the Tourists who are driving through the area.

Q11 Do you think that our Action Plan will ensure that we can meet our vision of a future of minimised waste?

No,

Other (please specify):

Management of township and public place waste was sighted as a huge issue in my science fair assignment, held in July this year.

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Q12 Are there any additional comments you would like to make?

I am 13 years of age, and there was not age slot in your online submission..

I would like to speak on my submission if I am allowed time off school.

Only able to submit one support document. Unable to send through my photos.

Q13 You can upload your submission or supporting documents here.

Sara Loxton Science Fair July 18.pdf(1.1MB)

Rubbish Rubbish Everywhere

Hypothesis

The number of people at certain times of the day will have a direct link to the amount of rubbish collected.

Aim

To find out which of the two areas in Tekapo i am surveying have the most rubbish present, and identify the type the amount of rubbish collected.

Method/experimental procedure

- 1** Arrive at the location at 8:00am with book and pen. Place rubbish bin (with the bag in it) in an area that is easy to be sighted by the public, when getting out of cars or walking on the path.
- 2** Find a place to stand/sit to see people entering locations. Church there was more than one entry point.
- 3** When people walk in the entries mark them down like this, I
- 4** Every half hour put down how many you have at that time (eg 8:30 may have 23 people so put that down)
- 5** When it gets to 11:00 stop counting people. Total up all the numbers and write in the total box, also at 11:00 you need to take the rubbish bag from the bin that you placed earlier today and replace the bag with a new one so you can collect the rubbish at 5pm
- 6** When it gets to 5pm take the whole bin home to sort.
- 7** Empty the bag of rubbish to 11am onto the ground and sort into 3 different places (waste, organic and coffee cups). Looked for recycling, but all was too unclean to recycle.
- 8** When into piles weigh each pile and put it into your book so you don't forget the numbers, remember to say that it is am or pm at the top and label like this, Waste = (your number)
- 9** Now do the 5 pm bag and repeat method 8
- 10** Now repeat for 2 more days at the location you were at today

Results

We found that the Church a greater number of people visiting, between 8-11 on the three days recorded, with the highest number of people visiting the church within the 3 hours being 511 people (on the 12th July). The lowest number of people was at the Four Square at 159 people on the 9th July. *As shown by the graph.*

We found that the greater amount of rubbish collected was from the Church of the Good Shepherd on the 14th July at 5521 grams. Four Square was not far behind at 5143 grams. *As per the results table below, and the graphs.*

Four Square

	Organic		Coffee Cups With Liquid In		Waste		Total
	g	%	g	%	g	%	
Day 1 8 -11 Rubbish 11-5 Rubbish	324	8.9%	160	4.4%	3144	86.7%	3628
	35	2.3%	135	8.9%	1345	88.8%	1515
Day 2 8-11 Rubbish 11-5 Rubbish	98	5.7%	120	7.0%	1497	87.3%	1715
	731	51.0%	73	5.1%	628	43.9%	1432
Day 3 8-11 Rubbish 11-5 Rubbish	114	9.8%	50	4.3%	996	85.9%	1160
	138	14.8%	141	15.1%	652	70.0%	931
Totals	1440	13.9%	679	6.5%	8262	79.6%	10381

Church

	Organic		Coffee Cups With Liquid In		Waste		Total	
	g	%	g	%	g	%	g	
Day 1								
8 -11 Rubbish	0	0.0%	205	44.6%	255	55.4%	460	
11-5 Rubbish	104	5.3%	636	32.5%	1214	62.1%	1954	
Day 2								
8-11 Rubbish	30	6.1%	144	29.2%	319	3.9%	493	
11-5 Rubbish	145	5.6%	522	20.1%	1932	74.3%	2599	
Day 3								
8-11 Rubbish	185	6.7%	138	5.0%	2433	88.3%	2756	
11-5 Rubbish	283	10.2%	366	13.2%	2116	76.5%	2765	
Totals	747	6.8%	2011	18.2%	8269	75.0%	11027	

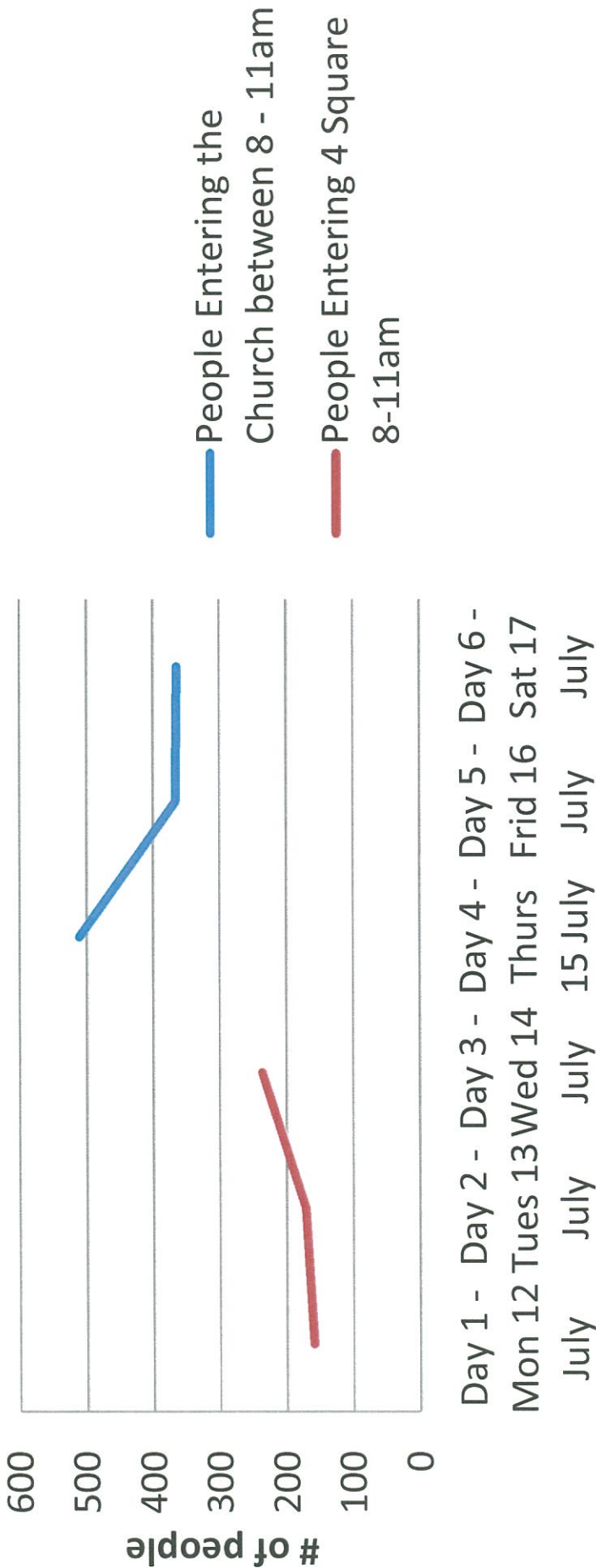
Four Square

Date	Number of people	Rubbish collected in grams between 8am to 11am		Rubbish collected in grams between 11am to 5pm		Total Rubbish in grams All 100%
		g	%	g	%	g
9th July	159	3628	70.5%	1515	29.5%	5143
10th July	171	1715	54.5%	1432	45.5%	3147
11th July	236	1160	55.5%	931	44.5%	2091
Totals	566	6503	62.6%	3878	37.4%	10381

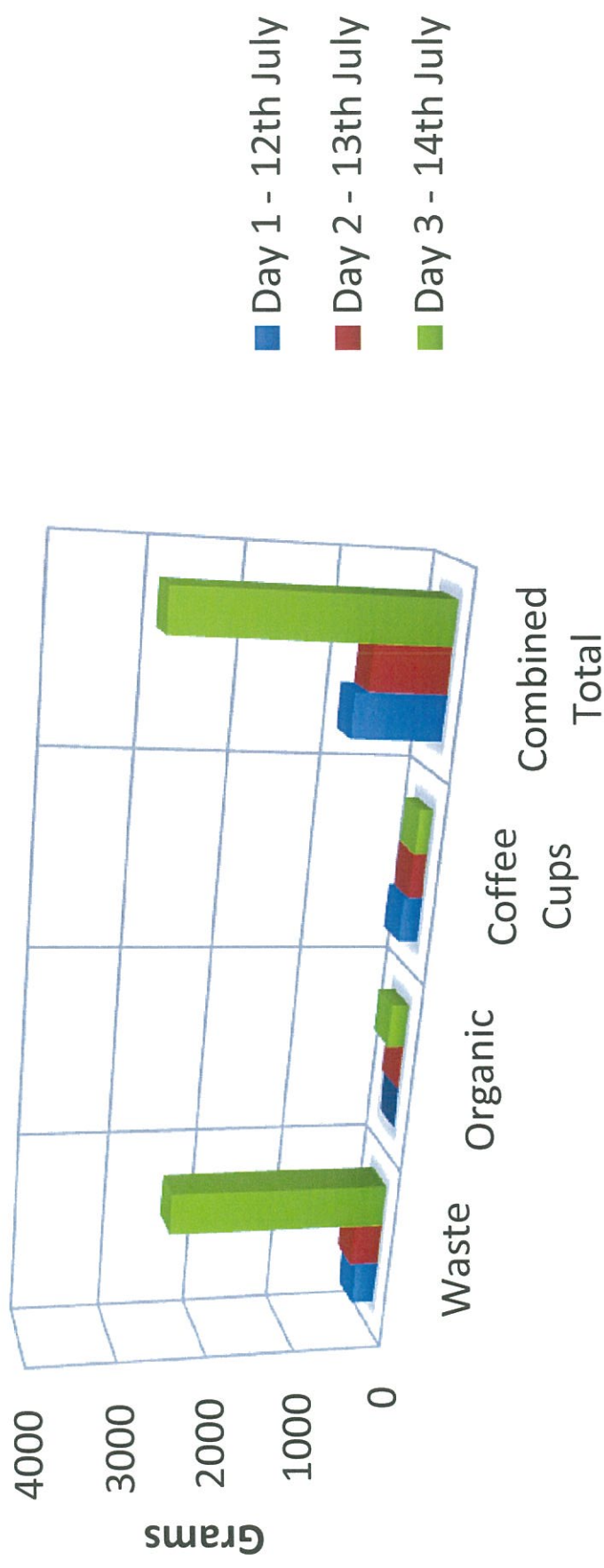
Church

Date	Number of people	Rubbish collected in grams between 8am to 11am		Rubbish collected in grams between 11am to 5pm		Total Rubbish in grams All 100%
		g	%	g	%	g
12th July	511	460	19.1%	1954	80.9%	2414
13th July	366	493	15.9%	2599	84.1%	3092
14th July	449	2756	49.9%	2765	50.1%	5521
Totals	1326	3709	33.6%	7318	66.4%	11027

Total Number of People at 4 Square and Church

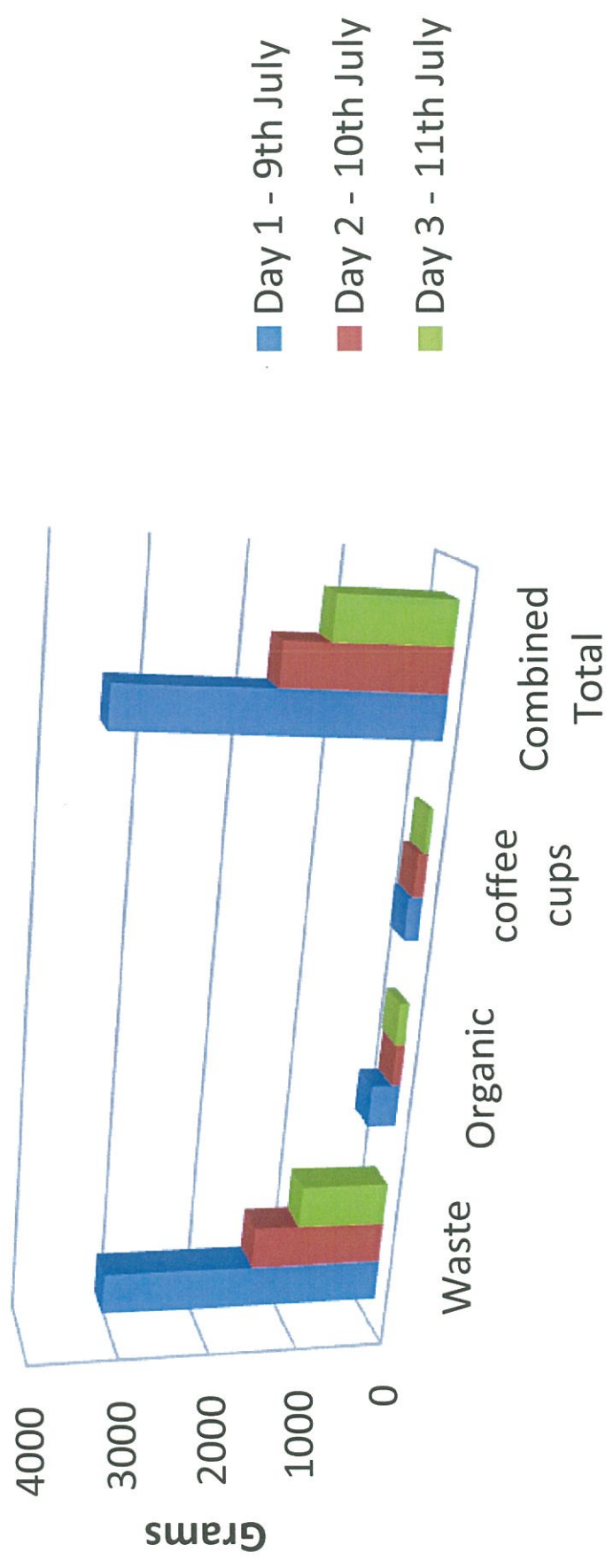


Tekapo Church - Types of Rubbish



Types of Rubbish

Four Square -Types of Rubbish



Types of Rubbish

Conclusion

- In conclusion there was no correlation between the number of people and the amount of rubbish in the bins in both locations.
- When sorting the rubbish we found that there was other rubbish being put into the bins at both locations, and this was a contributing factor.
- The other rubbish was outside rubbish ie Household rubbish from holiday homes, and takeaway (fish and chips) rubbish. Day 1 at four square, McDonalds and Fish and chip rubbish found. Day 3 at the Church, three separate lots of household rubbish sighted. See photos.
- None of the items in the rubbish were able to be recycled, therefore a higher portion of the rubbish was waste rubbish for the land full. Coffee mugs were a higher portion at the Church, than Four square, as there was liquids contained (yuck). Without Liquids in the coffee mugs the organic materials in both locations would have been second, and coffee mugs third.
- We can only assume that with the rubbish bin placed at the church specifically for the project - people used them. If they saw the bin, they would empty their pockets, or cars!
- The weather for the 6 days of the experiment was ranging between -3 to 3 degrees, and on looking at Niwa documentation from the 2017 year the maximum of -5.7 to 3.2, was extremely similar. The weather seemed more settled with fine clear days, compared to prior years. This could have been a contributing factor to why the numbers of tourists around.
- What my experiment has informed us, is that there is a requirement for rubbish bins to be put around the Tekapo Village in more locations than the three illustrated on the Tekapo Map. People are looking for rubbish bins, and trying to do the right thing.
- On a recent overseas trip to Canada, we sited rubbish bins and toilets at every stop on the side of the road. The towns also had rubbish bins on all streets. These bins were closed over to stop the wild life getting into which we felt was important in New Zealand also.

Discussion

There needs to be a longer period of time for the experiment. Including counting the numbers in both locations between 11-5 as well. And also the collection of rubbish overnight, in both locations. If we were to extend the trial time it would show a greater understanding of the types of rubbish, and how the rubbish increases with population numbers.

The numbers of tourists have increased from prior years. On average there was 120 people between 8-11am at the church, July 2017(Data supplied by Church Committee member).

The council has removed bins from locations in Tekapo, and introduced pay as you go rubbish collection. Is this a good thing?

Evaluation

Future Plan - When I do this science fair again in year ten (2 years away).

- Testing will be done at peak times Christmas 2018, July 2019 (same times), and Christmas 2019 (same time as 2018). I will be doing this because more testing is required to give us more understanding of the results.
- The council has recently brought in 'Waste Management & Minimisation Plan' - this I would like to advise my findings and conclusion from the experiment above in the submission. This has to be completed by the 3rd September 2018.