

February 2005



## **Community Survey 2004**

### **A Study of Attitudes & Awareness of Residents in the Lake Macquarie Catchment**

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                                  & Catchment Coordinator

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## Executive Summary

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The research project saw 600 residents from the Lake Macquarie catchment area surveyed by telephone. Interviews were conducted in December 2004.

*The points below summarise the main findings of the research:*

The community is generally positive in its perception of the Lake. When asked to give the current quality of Lake health a rating (1 being poor, 10 being excellent), the community gave a (mean score) of 6.7, a marginal increase on the result from the earlier surveys; 2003 (6.4), 2001 (6.2) and 2000 surveys (6.1).

The community is also positive about the changes in the quality of the lake environment in the past. When asked whether the state of the Lake has got better, worse or stayed the same in the past five years, 51% of people thought it had improved, 26% said it has remained the same and only 17% said it had got worse. These results are very similar to those from the 2003 wave of the survey, and an improvement in those recorded in 2001 and 2000.

The community is also positive about the future of the Lake. When asked whether the state of the Lake would be better, worse or the same in five years time, 51% of people thought it would improve, 20% said it would remain the same and 21% said it would get worse. These results seem slightly less positive than the 2003 and 2001 waves of the survey, but an improvement on those recorded in 2000.

Water movement in and out of Swansea Channel and drainage are considered the most important Lake health issues by the local community. This order is consistent with the 2000, 2001 and 2003 survey results.

## 1. Introduction

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The latest Living Lake Macquarie Survey (December 2004) was commissioned by The Office of the Lake Macquarie & Catchment Coordinator and prepared by FordComm Consulting. The study was a repeat of surveys carried out in April 2000, October 2001 and July 2003.

This document presents the results of the telephone survey of approximately 600 residents of the Lake Macquarie catchment area. The aims of the survey were to:

Obtain information on the issues that concern local residents.

Obtain information on community attitudes towards and perceptions about the local environment.

Obtain information about peoples activities and impacts on the environment

The methods of data collection and analysis are described in Section 2, and the results are presented in Section 3.

## 2. Methods Of Data Collection And Analysis

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### 2.1 Data Collection

The following methods were used to collect data from households in Lake Macquarie.

**Questionnaire development:**

The questionnaire used was developed by FordComm Consulting Pty Ltd. A copy is provided in Appendix I.

**Survey technique:**

Telephone interviews.

**Period:**

Interviews were conducted between 22 November - 4 December 2004.

**Survey area**

Residents living in the Lake Macquarie Catchment (LMC) area were surveyed. A representative suburb listing is provided in Table 1 on the following page.

**Sample selection:**

The sample of households contacted was derived from a random selection of household telephone numbers from the Telstra White Pages directory for postcodes and place names in the LMC area. On the first contact with the selected household the person answering the telephone was asked to confirm that the residence was in the LMC area. If the residence was not in the area the interview did not proceed, and a replacement telephone number was randomly selected.

**Respondent selection**

The person living in the household aged 18 or over who had the next birthday was selected as the respondent for the household contacted. If the selected household did not answer, the number was engaged, or the required respondent was not available, up to five calls back were made. Where this procedure did not result in a successful interview a replacement telephone number was randomly selected.

**Final sample size:**

600 completed interviews.

**Sample variation:**

A sample size of 600 yields a sample variation of  $\pm 5.8$  per cent at a confidence level of 95 per cent, given a response probability of 50 per cent.

In practical terms, this means that if 50 per cent of the randomly selected respondents in the sample answered "yes" in a yes/no question (the result with the highest possible variation in statistical accuracy), the true proportion of the population who would answer "yes" (if all were surveyed) would lie between 44.2 per cent and 55.8 per cent, 95 times out of 100.

**Table 1: Suburbs in the Lake Macquarie Catchment**

Cameron Park	Croudace Bay	Myuna Bay
West Wallsend	Valentine	Eraring
Holmesville	Eleebana	Dora Creek
Barnsley	Warners Bay	Cooranbong
Edgeworth	Lakelands	Martinsville
Killingsworth	Speers Point	Morriset
Glendale	Teralba	Mandalong
Argenton	Wakefield	Bonnells Bay
Cardiff Heights	Booragul	Yarrowonga Park
Cardiff	Marmong Point	Balcolyn
Garden Suburb	Woodrising	Silverwater
Macquarie Hills	Bolton Point	Sunshine
Cardiff South	Fennell Bay	Mirrabooka
Hillsborough	Fassifern	Brightwaters
Boolaroo	Ryhope	Windermere Park
Charlestown	Freemans Waterhole	Morriset Park
Gateshead	Blackalls Park	Wye Point
Mount Hutton	Awaba	Wye
Tingira Heights	Toronto	Nords Wharf
Floraville	Carey Bay	Summerland Point
Belmont North	Coal Point	Mannering Park
Belmont	Kilaben Bay	Gwandaln
Belmont South	Rathmines	Chain Valley Bay
Marks Point	Fishing Point	Point Wolstoncroft
Pelican	Balmoral	Crangan Bay
Little Pelican	Buttaba	Doyalson North
Swansea	Arcadia Vale	
Cams Wharf	Wangi Wangi	

## **2.2 Structure of the survey sample**

In summary the underlying survey sample comprised of:

Approximately 65 per cent of respondents were female and 35 percent male.

Persons aged 55 or over accounted for about 47.5 per cent of respondents, with 7.5 per cent of respondents aged between 18 and 24.

Retirees and pensioners accounted for 43 per cent of respondents while 22.2 per cent were engaged in full time work and a further 12.9 per cent in part-time or casual work

Approximately 86 per cent of respondents live in a separate house.

These raw results were then “weighted” by the age and sex distribution of the catchment area to ensure consistency with data collected in previous years.

## **2.3 Cross-tabulations**

Results relating to the attitudes and perceptions of residents about the local environment of the Lake Macquarie catchment area were cross-tabulated according to:

Age

Sex

2000, 2001, 2003 and 2004 results

## 2.4 Presentation of the results in Section 3

The significant results by age and gender are presented in tabulated form in Appendix II for each consecutive question in the survey.

Open-ended responses were coded under representative headings to enable easier analysis. The *verbatim* responses to the final general open-ended question in the survey are provided in Appendix III.

## 2.5 Average perception and satisfaction ratings

Respondents were requested to use the two scales to rate their satisfaction with or perception of environmental outcomes or amenities. One scale involved the ranking of issues on a scale of:

Poor    2    3    4    5    6    7    8    9    Excellent

Average scores were calculated by assigning the values of 1 to 'Poor' and 10 to 'Excellent', with the other ratings coinciding with their assigned numbers. 'Don't know' responses were excluded from the calculation.

The other scale involved asking respondents to rank against the scale:

Strongly disagree	(1)
Disagree	(2)
Neither agree nor disagree	(3)
Agree	(4)
Strongly agree	(5)

Average agreement ratings were calculated by assigning the value shown in parentheses next to the respective ratings, with all 'don't know' responses excluded from the calculation.

### 3. Results

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The following commentary gives the findings of the 2004 community survey compared with results obtained in earlier waves of the survey. Detailed results are included in this report as Appendix II (only the statistically “significant” results are presented).

For each section a commentary is provided on the general results obtained in the survey in 2004. Significant results for each of the sub-groups of the population are also presented, and these segments are based on the gender and age of respondents.

#### 3.1 General Issues of Concern to Local Residents

In an unprompted question respondents were asked to suggest the three (3) most important issues facing their local community.

The main five issues mentioned are tabulated below and show that the condition of Lake Macquarie was fifth on the list. Importantly, these issues have consistently been rated as most important by residents in the catchment over the four waves of the survey, although the order has changed from year to year.

Approximately 15% of respondents did not provide an answer to this question.

The results are shown in the table below:

<b>Response</b>	<b>Percent</b>
Roads	17.7%
Crime	14.2%
Traffic and speeding	12.9%
Transport and public transport	12.8%
Lake condition	11.5%
Overdevelopment	8.9%
Litter and rubbish	7.6%
Environment	7.5%
Health	7.3%
Employment	6.8%

**\*\* Note: Only the top 10 issues are recorded in this abbreviated table. Respondents were asked to list their top three issues in order of importance. Hence, the above percentages do not add to 100%.**

Due to the open ended nature of the question a direct comparison between the results of the three waves of the survey is difficult.

## 3.2 Attitudes Towards Changes in the Quality of the Environment

### Rating of the environment

Respondents in the survey rated the current overall environment of Lake Macquarie at 6.7 on a scale of 1 to 10 where 1 was equal to poor and 10 was equal to excellent. This compares with 6.4 in 2003, 6.2 in 2001 and 6.1 in 2000, and indicates that in general the rating has increased over time.

#### Report

##### RATING OF OVERALL LAKE MACQUARIE ENVIRONMENT

YEAR	Mean	Std. Deviation	N
2000	6.13	1.67	597
2001	6.24	1.50	637
2003	6.40	1.32	582
2004	6.73	1.32	591
Total	6.37	1.48	2407

These results can also be expressed in a different way, namely that 27% of respondents gave the environment a score of 8 and above, while 68% gave a score between 5 and 7 out of 10, as shown in the table below.

##### RATING OF OVERALL LAKE MACQUARIE ENVIRONMENT \* YEAR Crosstabulation

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
RATING OF OVERALL LAKE MACQUARIE ENVIRONMENT	Under 5	12.2%	9.0%	8.1%	5.2%	8.6%
	5-7	69.5%	71.4%	74.1%	67.9%	70.7%
	8-10	18.3%	19.7%	17.9%	26.9%	20.7%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

There has been an upward trend in the results between the 2000, 2001, 2003 and 2004 surveys and generally, respondents appear to be more positive in their overall rating of the Lake. The consistent decline in the proportion of respondents rating the Lake environment less than 5 out of 10 is noteworthy.

It continues to be the trend for older respondents to be more positive in their rating. For example, 46% of respondents aged 65+ gave the Lake a rating of 8-10 as compared to 15% of respondents in the 18-24 age group.

## Changes in the environment over the past 5 years

The following table shows the community's attitudes towards changes in the quality of the environment over the past four waves of the survey (2000, 2001, 2003 and 2004).

**QUALITY OF ENVIRONMENT IN LAKE MACQUARIE AREA OVER PAST 5 YRS \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
QUALITY OF ENVIRONMENT IN LAKE MACQUARIE AREA OVER PAST 5 YRS	Got better	41.7%	46.2%	49.7%	51.3%	47.2%
	Got worse	26.2%	19.9%	15.8%	17.1%	19.8%
	Remained the same	27.9%	31.5%	28.5%	26.4%	28.6%
	Don't know/cannot say	4.2%	2.4%	5.9%	5.2%	4.4%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

Over time respondents have been generally positive in their outlook on changes in the environment. In 2004 just over half of the survey sample (51%) believed the environment had improved, with only 17% believing the health of the environment had deteriorated.

Over time it seems as if respondents have become more positive and in comparison with the 2000 survey results, the response was clearly more positive. This year's survey found that 78% of respondents felt the environment had improved or remained the same, while in 2000 that figure was approximately 70%.

## Changes in the Environment Over the Next Five Years

The following table shows the community's attitudes towards anticipated changes in the quality of the Lake environment over the next five years.

**QUALITY OF ENVIRONMENT IN LAKE MACQUARIE AREA OVER NEXT 5 YRS \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
QUALITY OF ENVIRONMENT IN LAKE MACQUARIE AREA OVER NEXT 5 YRS	Get better	48.0%	56.6%	58.2%	51.3%	53.6%
	Get worse	22.9%	21.3%	17.9%	21.1%	20.8%
	Remain the same	21.9%	17.9%	16.6%	19.7%	19.0%
	Don't know/cannot say	7.2%	4.2%	7.3%	7.9%	6.6%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

The majority of people thought the quality of the environment in Lake Macquarie would improve or remain the same over the next five years. About half (51%)

said the environment would get better while another 20% thought it would stay the same.

It seems that the respondents contacted in this survey are slightly less positive than those contacted in the 2001 and 2003, and the results are more similar to those obtained in the 2000 survey. For example, while 57-58% of people thought the environment would improve in 2003 and 2001, 48% responded this way in the 2000 survey.

### 3.3 Importance of Various Environmental Issues

In an open-ended question respondents were also asked to identify the most important environmental issues facing Lake Macquarie and the surrounding area.

The major issues mentioned are shown in the table below. Approximately 12% of respondents did not provide an answer to this question.

Response	Percent
Clean water/quality	24.4%
Rubbish and litter	22.0%
Development	17.3%
Pollution	16.9%
Storm water run-off	13.6%
Clean air/pollution	7.6%
Lake health	6.4%
Lake beautification	5.9%
Drainage	5.5%
Roads	4.7%
No answer	12.3%

**\*\* Note: Only the top ten issues are included in the table. Respondents were asked to list their top three issues in order of importance. Hence, the above percentages do not add to 100%.**

Due to the open ended nature of the question a direct comparison between the results of the three waves of the survey is difficult.

Respondents were also presented with a list of environmental issues and asked how important they are to maintaining the environmental quality of Lake Macquarie. Although all of the issues were seen as important by respondents, the most important issues were water movement between the Lake and the ocean in Swansea Channel (8.6 out of 10) and drainage systems (8.5). These results suggest that community education needs to continue in relation to the Channel. The truth is that while increasing tidal exchange in Swansea Channel would have little effect overall on water quality in the Lake and cause other serious negative consequences, the level of urban development is the major contributor to nutrient and sediment levels.

#### Report

YEAR		IMPORTANCE OF SEAGRASSES	IMPORTANCE OF URBAN DEVELOPMENT	IMPORTANCE OF DRAINAGE SYSTEMS	IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES	IMPORTANCE OF SEAWALLS AROUND THE LAKE FORESHORES	IMPORTANCE OF WATER MOVEMENT BETWEEN LAKE AND OCEAN IN SWANSEA CHANNEL
2000	Mean	7.62	6.94	8.78	8.32	7.08	8.66
	Std. Deviation	2.27	2.61	1.69	1.84	2.48	2.02
	N	541	581	592	593	569	558
2001	Mean	8.28	7.44	9.02	8.44	7.08	8.73
	Std. Deviation	2.00	2.43	1.45	1.84	2.62	1.78
	N	587	615	626	630	584	585
2003	Mean	8.23	7.30	8.76	8.49	7.36	9.05
	Std. Deviation	1.92	2.39	1.58	1.68	2.36	1.53
	N	515	555	578	582	533	548
2004	Mean	7.89	6.53	8.46	8.17	6.92	8.55
	Std. Deviation	1.87	2.65	1.78	1.67	2.50	1.61
	N	520	576	585	579	519	533
Total	Mean	8.01	7.06	8.76	8.35	7.11	8.75
	Std. Deviation	2.04	2.54	1.64	1.76	2.50	1.76
	N	2163	2328	2380	2384	2205	2225

Looking at the results in a slightly different way, the proportion of people who rated the issue between 8-10 out of 10 is summarized below:

- seagrasses (65%)
- urban development (44%)
- drainage systems (79%)
- vegetation around the lake foreshores (71%)
- seawalls around the lake foreshores (50%)
- water movement between the lake and ocean in Swansea Channel (81%)

### IMPORTANCE OF SEAGRASSES \* YEAR Crosstabulation

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
IMPORTANCE OF SEAGRASSES	Under 5	8.5%	3.6%	3.7%	4.2%	5.0%
	5-7	30.5%	22.7%	25.8%	31.2%	27.4%
	8-10	61.0%	73.8%	70.5%	64.6%	67.6%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

### IMPORTANCE OF URBAN DEVELOPMENT \* YEAR Crosstabulation

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
IMPORTANCE OF URBAN DEVELOPMENT	Under 5	16.2%	11.9%	11.0%	22.4%	15.3%
	5-7	31.0%	29.5%	33.5%	34.0%	32.0%
	8-10	52.8%	58.6%	55.5%	43.6%	52.7%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

### IMPORTANCE OF DRAINAGE SYSTEMS \* YEAR Crosstabulation

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
IMPORTANCE OF DRAINAGE SYSTEMS	Under 5	3.2%	1.4%	2.2%	3.8%	2.6%
	5-7	12.8%	11.2%	16.1%	17.8%	14.4%
	8-10	84.0%	87.4%	81.7%	78.5%	83.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

**IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES	Under 5	4.0%	4.0%	2.1%	2.4%	3.1%
	5-7	19.2%	16.5%	22.7%	26.9%	21.2%
	8-10	76.7%	79.5%	75.3%	70.7%	75.6%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

**IMPORTANCE OF SEAWALLS AROUND THE LAKE FORESHORES \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
IMPORTANCE OF SEAWALLS AROUND THE LAKE FORESHORES	Under 5	15.3%	15.9%	11.6%	14.8%	14.5%
	5-7	31.5%	31.0%	32.5%	35.3%	32.5%
	8-10	53.2%	53.1%	55.9%	49.9%	53.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

**IMPORTANCE OF WATER MOVEMENT BETWEEN LAKE AND OCEAN IN SWANSEA CHANNEL \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
IMPORTANCE OF WATER MOVEMENT BETWEEN LAKE AND OCEAN IN SWANSEA CHANNEL	Under 5	4.7%	2.2%	1.8%	2.3%	2.7%
	5-7	13.8%	16.3%	9.7%	16.7%	14.1%
	8-10	81.6%	81.5%	88.5%	81.1%	83.1%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

**3.4 Activities and Their Impacts on the Environment**

One of the key figures in the 2000 survey was the 37% of respondents who did not see the connection between domestic activities and impacts on the Lake environment. As a result, this was emphasised in media materials and focussed on in the Living Lake Macquarie newsletter. However, the data for this question

seems to be inconsistent (and this might be due to the question wording). The 2001 survey found this figure had increased marginally to 42%, it had decreased again in 2003 to 35% and up again to 40% in 2004.

The apparent increase in those who do not see the connection between domestic activities and Lake health should be seen in context with the progress made in other areas. For example, the increased importance the community is placing on the health of the environment, in particular that of the Lake, beaches and waterways.

The results are tabled below:

**PERSONAL ACTIVITIES/ACTIONS DON'T HAVE AN IMPACT ON LAKE MACQUARIE ENVIRONMENT \* YEAR  
Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
PERSONAL ACTIVITIES/ACTIONS DON'T HAVE AN IMPACT ON LAKE MACQUARIE ENVIRONMENT	Strongly agree	22.8%	16.8%	16.6%	14.7%	17.7%
	Disagree	31.4%	33.5%	31.5%	37.6%	33.5%
	Neither	8.6%	6.6%	14.2%	5.4%	8.6%
	Agree	21.5%	30.7%	25.7%	35.3%	28.4%
	Strongly agree	15.1%	11.6%	9.1%	5.2%	10.3%
	Don't know	.7%	.8%	2.9%	1.8%	1.5%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

The survey included a selection of questions relating to specific behavioural trends like the washing of cars, fertilising of lawns and gardens and the cleaning of driveways. These questions were designed to measure behaviour as opposed to attitudes. Behaviour was considered a better indicator of the effectiveness of past education programs and the messages conveyed to the community within the Lake Macquarie & Catchment Coordinator's program. Much of this education was aimed at reducing problems such as run-off into drainage systems.

### **Vehicle Washing**

Approximately 98% of respondents have access to a car or a motor cycle and these people were then asked how often they wash their vehicle and where they would normally wash it.

The following table shows the community's activities in terms of frequency for washing motor car and motor cycles, with 17% of respondents saying that they wash their vehicle once each week or more, and a further 35% saying once or

twice each month. 7% of respondents suggest that they never wash their vehicle.

**FREQUENCY WASHING CAR/MOTORCYCLE \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
FREQUENCY WASHING CAR/MOTORCYCLE	Never	3.8%	3.6%	3.3%	7.1%	4.4%
	Once a week or more	20.9%	16.7%	16.5%	16.9%	17.7%
	Once or twice a month	46.3%	50.9%	44.6%	34.6%	44.4%
	Once or twice every 6 months	15.0%	17.0%	24.7%	18.6%	18.8%
	Once or twice every 12 months	4.7%	5.7%	6.6%	6.1%	5.8%
	Irregularly	9.3%	6.1%	4.4%	16.6%	9.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

The following table shows the community's activities in terms of location for washing motor car and motor cycles, with 62% of respondents saying that they wash their vehicle on the lawn, and this has remained relatively constant over the past three waves of the survey. A further 25% said on the street or driveway.

This reflects the high level of awareness built up by a range of community education programs over the years, both in relation to water conservation and stormwater run-off. Respondents who never wash their vehicle are excluded from this question.

**WHERE DO YOU WASH IT \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
WHERE DO YOU WASH IT	On the lawn	65.2%	65.0%	65.0%	61.9%	64.4%
	On the street/driveway	23.7%	24.7%	23.3%	24.9%	24.1%
	At a commercial car wash	9.2%	10.0%	9.5%	11.9%	10.1%
	Carport	.4%	.2%	.9%	.4%	.5%
	Footpath	.4%	.2%			.1%
	Rain washes it	.4%				.1%
	On nature strip	.2%				.0%
	Varies	.2%				.0%
	Work	.4%		.7%	.6%	.4%
	Doesn't			.4%	.2%	.1%
	Boat Ramp			.2%		.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

## Maintaining Lawns, Gardens and Paths

About 95% of people contacted said they had a lawn or garden. Of these respondents, 42% said that they fertilise their lawn or garden.

The following table shows a comparison in the habits of respondents who fertilise their lawns or gardens over the three waves of the survey.

**FERTILISE LAWN/GARDEN \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
FERTILISE LAWN/GARDEN	Yes	44.9%	51.5%	48.5%	42.0%	46.8%
	No	55.1%	48.5%	51.5%	58.0%	53.2%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

**FREQUENCY FERTILISE LAWN/GARDEN \* YEAR Crosstabulation**

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
FREQUENCY FERTILISE LAWN/GARDEN	Never	4.7%	.3%	3.2%	11.8%	4.9%
	Once a week or more	1.1%	1.6%		1.7%	1.1%
	Once or twice a month	5.8%	5.0%	3.6%	11.1%	6.3%
	Once or twice every 6 months	25.6%	27.0%	17.8%	16.3%	21.8%
	Once or twice every 12 months	44.8%	59.6%	61.9%	46.7%	53.4%
	Irregularly	18.1%	6.6%	13.5%	12.5%	12.4%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

About half of the people surveyed said that they fertilise their gardens once or twice every 12 months (47%).

In response to a question on methods of cleaning household pathways, the majority of those people surveyed said they used a broom (50%). A further 13% said they either used a blower or never cleaned them (31%). This left 7% of people who used a hose to clean their paths.

The results for the three waves of the survey are tabled on the following page:

### METHOD USED TO CLEAN PATHS \* YEAR Crosstabulation

% within YEAR

		YEAR				Total
		2000	2001	2003	2004	
METHOD USED TO CLEAN PATHS	Sweep with a broom	54.5%	55.9%	55.3%	49.5%	53.8%
	Hose	16.8%	17.6%	15.0%	7.3%	14.2%
	Use a blower	6.9%	11.3%	12.5%	12.6%	10.8%
	I don't clean them	21.5%	15.3%	16.8%	30.6%	21.0%
	Other	.3%		.4%		.2%
Total		100.0%	100.0%	100.0%	100.0%	100.0%

### 3.5 Recreational Usage of Lake Macquarie

There is only a small proportion (12%) of households in the Lake Macquarie catchment where there is no-one in the household that uses Lake Macquarie for recreational purposes. In 17% of households one person uses the Lake, in 35% of households there are two people, in 12% of households three people and in 23% of households four or more people.

For respondents involved in this survey the majority (51%) suggest that they use the Lake at least once each week and a further 17% of people suggest once or twice each month. Only 4% of people suggest that used the Lake once or twice every 12 months and a further 7% suggest that they use it irregularly.

The survey suggests that the local community still regularly base recreational activities around the Lake. The following table breaks down the way in which people use the Lake.

Activity	Irregularly	Never	Other
<b>Recreational fishing</b>	3.1%	65.4%	31.5%
<b>Sailing</b>	2.8%	83.2%	14.0%
<b>Boating</b>	5.4%	56.7%	37.9%
<b>Swimming</b>	6.1%	52.1%	41.8%
<b>Windsurfing</b>	0.6%	95.6%	3.8%
<b>Cycling around the foreshore</b>	4.1%	66.9%	29.0%
<b>Walking along the foreshore</b>	4.4%	17.2%	78.4%
<b>Picnicking on the foreshore</b>	7.0%	29.7%	63.3%

**Note: The 'Other' category includes once a week or more, once or twice a month, once or twice every six months and once or twice every 12 months.**

The most popular Lake related activities continue to be walking and picnicking. The least popular were windsurfing and sailing.

These results were consistent with the findings of the 2003, 2001 and 2000 survey reports. Picnicking and walking around the Lake would suggest a familiarity with foreshore areas and this continues to be generally true in reference to the question which asked respondents to allocate a rating of importance to a list of key issues.

## **Appendix I**

### **Questionnaire used in the Community Survey**

**LAKE MACQUARIE CATCHMENT TELEPHONE SURVEY – November / December 2004**

Telephone Number: \_\_\_\_\_ Questionnaire No: \_\_\_\_\_

Time of interview: \_\_\_\_\_ Date of interview: \_\_\_\_\_

Good morning/afternoon/evening. My name is ..... from Precision Research in Newcastle. We are carrying out a study in the local area. As part of this study I need to select a person from your household to interview. May I speak to the person in your household who is at least 18 years of age and who has the next birthday. **[IF PERSON NOT HOME ARRANGE TIME TO CALL BACK]**

Q.a **[TO RESPONDENT]** I would like to ask your opinions about various issues affecting the local area. What is the postcode of the suburb or locality you live in?

\_\_\_\_\_

Q.b Which Council area do you live in (i.e. where do you pay your Council rates)?

- |   |                |   |            |
|---|----------------|---|------------|
| 1 | Lake Macquarie | 3 | Wyong      |
| 2 | Newcastle      | 4 | Don't know |

Q.c **[IF RESPONDENT STILL UNSURE OF COUNCIL AREA]** What is the name of your street or road? **[IF RESPONDENT DOES NOT LIVE IN CATCHMENT TERMINATE INTERVIEW]**

\_\_\_\_\_

Q.d The interview will take about 10 minutes. Is now a convenient time to do the interview?

- |   |   |
|---|---|
| 1 | Yes -----> Commence interview (Go to Q.1) |
| 2 | No -----> Go to Q.e                       |

Q.e Could I call back at a more convenient time?

- |   |                               |
|---|-------------------------------|
| 1 | Yes -----> Go to Q.f          |
| 2 | No -----> Terminate interview |

Q.f What time and day. Thank you. I will call back at \_\_\_\_\_ on \_\_\_\_\_.

Q.1 I'd like to ask you some general questions about the local area. What do you think are the three most important issues affecting your community? **[RECORD ANSWER IN FULL]**

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

Q.2 Looking back, over the past five years do you think that the quality of the environment in Lake Macquarie area has .....? **[READ OUT OPTIONS 1 TO 3 - CIRCLE ONE ANSWER ONLY]**

- |   |            |   |                   |
|---|------------|---|-------------------|
| 1 | Got better | 3 | Remained the same |
|---|------------|---|-------------------|

2 Got worse

4 Don't know/cannot say

Q.3 Looking ahead, over the next five years do you think that the quality of the environment in Lake Macquarie area will .....? **[READ OUT OPTIONS 1 TO 3 - CIRCLE ONE ANSWER ONLY]**

- |   |                  |   |                   |
|---|------------------|---|-------------------|
| 1 | Get better       | 3 | Remain the same   |
| 2 | Get worse<br>say | 4 | Don't know/cannot |

Q.4 On a scale of 1 to 10 where 1=poor and 10=excellent, how would you rate the current overall environment of Lake Macquarie? **[CIRCLE ONE RESPONSE - CIRCLE 11 IF THE RESPONDENT CAN NOT GIVE AN ANSWER]**

- |             |   |   |   |   |                  |   |   |   |    |                   |
|-------------|---|---|---|---|------------------|---|---|---|----|-------------------|
| <b>Poor</b> |   |   |   |   | <b>Excellent</b> |   |   |   |    | <b>Don't Know</b> |
| 1           | 2 | 3 | 4 | 5 | 6                | 7 | 8 | 9 | 10 | 11                |

Q.5 On a scale of 1 to 5 where 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree and 5=strongly agree, what is your attitude towards the following statement? **[DON'T READ OUT DON'T KNOW BUT CIRCLE 6 IF THE RESPONDENT CANNOT GIVE AN ANSWER]**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Don't Know</b>
My activities and actions do not have an impact on the Lake Macquarie environment	1	2	3	4	5	6

Q.6 Now specifically thinking of environmental issues. What do you think are the three most important environmental issues affecting Lake Macquarie and the surrounding area, in order of importance i.e. from most to least important? **[RECORD ANSWER IN FULL]**

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_

Q.7 What actions would be most effective in solving each of these issues? **[READ OUT THE ANSWERS GIVEN IN Q.6 ABOVE AND RECORD ANSWERS IN FULL]**

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_

Q.8 And now some questions about specific environmental issues in Lake Macquarie. On a scale of 1 to 10 where 1=not important and 10=extremely important, how important are the following issues in maintaining the environmental quality of Lake Macquarie? **[CIRCLE ONE RESPONSE FOR EACH ISSUE - CIRCLE 11 IF THE RESPONDENT CAN NOT GIVE AN ANSWER]**

	Not Important								Extremely Important	Don't Know
Seagrasses	1	2	3	4	5	6	7	8	9	10
Urban development	1	2	3	4	5	6	7	8	9	10
Drainage systems	1	2	3	4	5	6	7	8	9	10
Vegetation around the lake foreshores	1	2	3	4	5	6	7	8	9	10
Seawalls around the lake foreshores	1	2	3	4	5	6	7	8	9	10
Water movement between the lake and ocean in Swansea Channel	1	2	3	4	5	6	7	8	9	10

Q.9 Do you own or have access to a car or motorcycle?

- 1 Yes
- 2 No → Go to Q.12

Q.10 How often do you USUALLY wash it? **[DO NOT READ OUT ANSWERS - ALLOW ONE ANSWER ONLY]**

- |   |                            |   |                               |
|---|----------------------------|---|-------------------------------|
| 1 | Never → Go to Q.12         | 4 | Once or twice every 6 months  |
| 2 | Once a week or more months | 5 | Once or twice every 12 months |
| 3 | Once or twice a month      | 6 | Irregularly                   |

Q.11 Where do you USUALLY wash it? **[ALLOW ONE ANSWER ONLY]**

- 1 On the lawn
- 2 On the street/driveway
- 3 At a commercial car wash
- 4 Other (please specify where) \_\_\_\_\_

Q.12 Do you have a lawn or garden?

- 1 Yes
- 2 No → Go to Q.16a

Q.13 Do you fertilise your lawn or garden?

- 1 Yes
- 2 No → Go to Q.15

Q.14 How often [do you USUALLY fertilise your lawn or garden]? **[DO NOT READ OUT ANSWERS - ALLOW ONE ANSWER ONLY]**

- 1 Never → Go to Q.15
- 2 Once a week or more
- 3 Once or twice a month
- 4 Once or twice every 6 months
- 5 Once or twice every 12 months
- 6 Irregularly

Q.15 How do you clean the paths in your garden? **[DO NOT READ OUT ANSWERS - ALLOW ONE ANSWER ONLY]**

- |   |                    |   |                    |
|---|--------------------|---|--------------------|
| 1 | Sweep with a broom | 3 | Use a blower       |
| 2 | Hose               | 4 | I don't clean them |

And now some questions on usage of the lake

Q.16a How many members of your household, including yourself, use Lake Macquarie (i.e the lake itself) for recreational activities, including walking along the foreshore and using the cycleways?

- 1 None → Go to Q.18
- 2 One
- 3 Two
- 4 Three
- 5 Four or more

Q.16b How often do you personally use Lake Macquarie for recreational activities, including walking along the foreshore and using the cycleways?

- 1 Never → Go to Q.18
- 2 Once a week or more
- 3 Once or twice a month
- 4 Once or twice every 6 months
- 5 Once or twice every 12 months
- 6 Irregularly

Q.17 Specifically, how often have you been involved in the following activities in the past 12 months? **[READ OUT ACTIVITIES AND CIRCLE ONE ANSWER ONLY]**

	Once a week Never	Once or twice week or more	Once/twice a month	Once/twice every 6 months	Irregularly each year				
Recreational fishing	1		2		3	4	5		
Sailing		1		2		3	4	5	6
Boating		1		2		3	4	5	6
Swimming		1		2		3	4	5	6
Windsurfing		1		2		3	4	5	6
Cycling around the foreshore		1		2		3	4	5	6
Walking along the foreshore		1		2		3	4	5	6
Picnicing on the foreshore		1		2		3	4	5	6

Q.18 Do you have any other comments about environmental issues affecting Lake Macquarie? **[RECORD ANSWER]**

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**And now a few questions to help classify your answers**

Q.19 What is the gender of the respondent? **[CIRCLE ONE ANSWER ONLY]**

1 Male 2 Female

Q.20 What is your age?

\_\_\_\_\_

Q.21 What is your work status? **[CIRCLE ONE ANSWER ONLY]**

1 Full-time 3 Unemployed 5 Student  
2 Part-time/casual 4 Home duties 6 Retired/Pension

Q.22 What type of dwelling do you live in? **[DO NOT READ OUT ANSWERS - ALLOW ONE ANSWER ONLY]**

1 Separate house  
2 Townhouse  
3 Flat/unit  
4 Other (please specify) \_\_\_\_\_

Q.22a How many years have you resided in the Lake Macquarie area?

\_\_\_\_\_

Q.23 How many people aged **18 years and over** are there living **permanently** in your household, **including yourself**?

\_\_\_\_\_

Q.24 This space is for any additional comments made by the person or any comments you would like to make about the interview? **[RECORD ANSWER]**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Thank you for your co-operation today**

## **Appendix II**

### **Detailed significant results of the 2004 Community Survey**

**RATING OF OVERALL LAKE MACQUARIE ENVIRONMENT \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
RATING OF OVERALL LAKE MACQUARIE ENVIRONMENT	Under 5	6.9%	4.9%	6.4%	4.0%	3.6%	5.2%
	5-7	77.8%	74.2%	68.4%	68.0%	50.5%	67.7%
	8-10	15.3%	20.9%	25.1%	28.0%	45.9%	27.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.605 <sup>a</sup>	8	.000
Likelihood Ratio	28.343	8	.000
Linear-by-Linear Association	21.710	1	.000
N of Valid Cases	592		

a. 2 cells (13.3%) have expected count less than 5. The minimum expected count is 3.77.

**Report**

RATING OF OVERALL LAKE MACQUARIE ENVIRONMENT

GENDER	Mean	Std. Deviation	N
Male	6.73	1.27	291
Female	6.74	1.36	300
Total	6.73	1.32	591

**Report**

RATING OF OVERALL LAKE MACQUARIE ENVIRONMENT

AGE	Mean	Std. Deviation	N
18-24	6.55	1.11	71
25-39	6.65	1.06	163
40-54	6.69	1.46	172
55-64	6.71	1.40	75
65 over	7.06	1.46	111
Total	6.73	1.32	591

**PERSONAL ACTIVITIES/ACTIONS DON'T HAVE AN IMPACT ON LAKE MACQUARIE ENVIRONMENT \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
PERSONAL ACTIVITIES/ACTIONS DON'T HAVE AN IMPACT ON LAKE MACQUARIE ENVIRONMENT	Strongly agree	11.1%	15.9%	18.6%	11.8%	11.4%	14.7%
	Disagree	45.8%	47.0%	29.7%	44.7%	26.3%	37.6%
	Neither	13.9%	2.4%	2.3%	2.6%	10.5%	5.4%
	Agree	19.4%	29.3%	40.1%	39.5%	43.9%	35.3%
	Strongly agree	5.6%	.6%	9.3%	1.3%	7.9%	5.2%
	Don't know	4.2%	4.9%				1.8%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	82.593 <sup>a</sup>	20	.000
Likelihood Ratio	88.410	20	.000
Linear-by-Linear Association	5.425	1	.020
N of Valid Cases	598		

a. 9 cells (30.0%) have expected count less than 5. The minimum expected count is 1.32.

**WHERE DO YOU WASH IT \* GENDER Crosstabulation**

% within GENDER

		GENDER		Total
		Male	Female	
WHERE DO YOU WASH IT	On the lawn	53.8%	70.3%	62.1%
	On the street/driveway	31.2%	18.7%	24.9%
	At a commercial car wash	13.4%	10.2%	11.8%
	Carport	.4%	.4%	.4%
	Work	1.2%		.6%
	Doesn't		.4%	.2%
Total		100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.143 <sup>a</sup>	5	.003
Likelihood Ratio	19.792	5	.001
Linear-by-Linear Association	7.238	1	.007
N of Valid Cases	493		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is .50.

**FERTILISE LAWN/GARDEN \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
FERTILISE LAWN/GARDEN	Yes	31.4%	25.6%	50.9%	54.8%	50.0%	42.0%
	No	68.6%	74.4%	49.1%	45.2%	50.0%	58.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.477 <sup>a</sup>	4	.000
Likelihood Ratio	34.408	4	.000
Linear-by-Linear Association	19.519	1	.000
N of Valid Cases	572		

<sup>a</sup>. 0 cells (.0%) have expected count less than 5. The minimum expected count is 29.37.

**FREQUENCY FERTILISE LAWN/GARDEN \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
FREQUENCY FERTILISE LAWN/GARDEN	Never	9.4%	26.3%	10.4%	8.9%	4.9%	12.0%
	Once a week or more	9.4%		1.0%			1.4%
	Once or twice a month	34.4%	3.5%	10.4%	8.9%	8.2%	11.0%
	Once or twice every 6 months	12.5%	14.0%	16.7%	13.3%	21.3%	16.2%
	Once or twice every 12 months	25.0%	33.3%	53.1%	57.8%	52.5%	46.7%
	Irregularly	9.4%	22.8%	8.3%	11.1%	13.1%	12.7%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	65.603 <sup>a</sup>	20	.000
Likelihood Ratio	53.089	20	.000
Linear-by-Linear Association	10.569	1	.001
N of Valid Cases	291		

<sup>a</sup>. 9 cells (30.0%) have expected count less than 5. The minimum expected count is .44.

**METHOD USED TO CLEAN PATHS \* GENDER Crosstabulation**

% within GENDER

		GENDER		Total
		Male	Female	
METHOD USED TO CLEAN PATHS	Sweep with a broom	45.9%	52.7%	49.4%
	Hose	4.7%	9.7%	7.3%
	Use a blower	14.0%	11.3%	12.6%
	I don't clean them	35.5%	26.3%	30.7%
Total		100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.085 <sup>a</sup>	3	.011
Likelihood Ratio	11.237	3	.011
Linear-by-Linear Association	6.206	1	.013
N of Valid Cases	579		

<sup>a</sup>. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.24.

**METHOD USED TO CLEAN PATHS \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
METHOD USED TO CLEAN PATHS	Sweep with a broom	46.5%	35.6%	59.8%	49.3%	54.9%	49.6%
	Hose	4.2%	9.4%	7.7%	5.3%	6.2%	7.1%
	Use a blower	9.9%	14.1%	9.5%	18.7%	13.3%	12.7%
	I don't clean them	39.4%	40.9%	23.1%	26.7%	25.7%	30.7%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.295 <sup>a</sup>	12	.005
Likelihood Ratio	28.396	12	.005
Linear-by-Linear Association	7.480	1	.006
N of Valid Cases	577		

<sup>a</sup>. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.05.

**HOW MANY HOUSEHOLD MEMBERS USE LAKE MACQUARIE FOR RECREATION \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
HOW MANY HOUSEHOLD MEMBERS USE LAKE MACQUARIE FOR RECREATION	None	5.6%	4.3%	5.9%	11.8%	26.1%	10.1%
	One	4.2%	6.8%	8.2%	18.4%	20.9%	11.1%
	Two	20.8%	29.0%	25.9%	51.3%	45.2%	33.1%
	Three	11.1%	17.3%	16.5%	10.5%	5.2%	13.1%
	Four or more	58.3%	42.6%	43.5%	7.9%	2.6%	32.6%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	160.806 <sup>a</sup>	16	.000
Likelihood Ratio	178.029	16	.000
Linear-by-Linear Association	123.436	1	.000
N of Valid Cases	595		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.26.

**HOW OFTEN DOES RESPONDENT USE LAKE MACQUARIE FOR RECREATION \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
HOW OFTEN DOES RESPONDENT USE LAKE MACQUARIE FOR RECREATION	Never	4.4%	3.7%	1.2%	5.8%	20.8%	6.3%
	Once a week or more	60.3%	63.4%	58.3%	56.5%	44.8%	57.5%
	Once or twice a month	20.6%	15.5%	22.1%	14.5%	13.5%	17.6%
	Once or twice every 6 months	2.9%	8.7%	3.7%	5.8%	3.1%	5.2%
	Once or twice every 12 months	4.4%	1.9%	5.5%	4.3%	7.3%	4.5%
	Irregularly	7.4%	6.8%	9.2%	13.0%	10.4%	9.0%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	61.794 <sup>a</sup>	20	.000
Likelihood Ratio	53.295	20	.000
Linear-by-Linear Association	.175	1	.676
N of Valid Cases	557		

a. 8 cells (26.7%) have expected count less than 5. The minimum expected count is 3.05.

**Report**

GENDER		IMPORTANCE OF SEAGRASSES	IMPORTANCE OF URBAN DEVELOPMENT	IMPORTANCE OF DRAINAGE SYSTEMS	IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES	IMPORTANCE OF SEAWALLS AROUND THE LAKE FORESHORES	IMPORTANCE OF WATER MOVEMENT BETWEEN LAKE AND OCEAN IN SWANSEA CHANNEL
Male	Mean	7.67	6.32	8.36	8.04	6.64	8.41
	Std. Deviation	1.87	2.65	1.89	1.67	2.63	1.70
	N	259	282	288	285	265	273
Female	Mean	8.10	6.72	8.56	8.29	7.20	8.69
	Std. Deviation	1.85	2.63	1.66	1.65	2.34	1.51
	N	261	294	296	294	254	261
Total	Mean	7.89	6.53	8.46	8.17	6.92	8.55
	Std. Deviation	1.87	2.65	1.78	1.67	2.50	1.61
	N	520	576	585	579	519	533

**Report**

AGE		IMPORTANCE OF SEAGRASSES	IMPORTANCE OF URBAN DEVELOPMENT	IMPORTANCE OF DRAINAGE SYSTEMS	IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES	IMPORTANCE OF SEAWALLS AROUND THE LAKE FORESHORES	IMPORTANCE OF WATER MOVEMENT BETWEEN LAKE AND OCEAN IN SWANSEA CHANNEL
18-24	Mean	7.09	5.57	7.89	7.99	6.44	8.17
	Std. Deviation	1.67	2.46	1.98	1.80	2.36	1.55
	N	66	68	70	70	67	67
25-39	Mean	8.01	6.66	8.85	8.37	6.88	8.42
	Std. Deviation	1.81	2.43	1.45	1.50	2.62	1.56
	N	143	161	160	160	146	142
40-54	Mean	7.89	6.67	8.57	8.19	7.03	8.80
	Std. Deviation	1.89	2.65	1.66	1.62	2.45	1.45
	N	146	162	167	167	152	156
55-64	Mean	8.31	7.02	8.46	8.20	7.02	8.66
	Std. Deviation	1.92	2.63	2.03	1.63	2.42	1.95
	N	66	75	75	74	65	71
65 over	Mean	7.97	6.37	8.09	7.95	7.06	8.50
	Std. Deviation	1.90	2.94	1.92	1.88	2.56	1.67
	N	98	109	113	108	90	98
Total	Mean	7.89	6.53	8.46	8.17	6.92	8.55
	Std. Deviation	1.87	2.65	1.78	1.67	2.50	1.61
	N	520	576	585	579	519	533

**IMPORTANCE OF SEAGRASSES \* GENDER Crosstabulation**

% within GENDER

		GENDER		Total
		Male	Female	
IMPORTANCE OF SEAGRASSES	Under 5	4.2%	4.2%	4.2%
	5-7	36.5%	25.7%	31.1%
	8-10	59.2%	70.1%	64.7%
Total		100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.333 <sup>a</sup>	2	.026
Likelihood Ratio	7.361	2	.025
Linear-by-Linear Association	4.775	1	.029
N of Valid Cases	521		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.98.

**IMPORTANCE OF SEAGRASSES \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
IMPORTANCE OF SEAGRASSES	Under 5	1.5%	4.9%	4.8%	3.0%	5.1%	4.2%
	5-7	53.8%	30.6%	33.3%	18.2%	22.4%	31.2%
	8-10	44.6%	64.6%	61.9%	78.8%	72.4%	64.6%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.854 <sup>a</sup>	8	.001
Likelihood Ratio	25.495	8	.001
Linear-by-Linear Association	7.984	1	.005
N of Valid Cases	520		

a. 3 cells (20.0%) have expected count less than 5. The minimum expected count is 2.75.

**IMPORTANCE OF URBAN DEVELOPMENT \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
IMPORTANCE OF URBAN DEVELOPMENT	Under 5	36.2%	17.4%	22.1%	14.5%	27.5%	22.5%
	5-7	34.8%	41.0%	31.3%	34.2%	27.5%	34.1%
	8-10	29.0%	41.6%	46.6%	51.3%	45.0%	43.4%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.048 <sup>a</sup>	8	.010
Likelihood Ratio	19.874	8	.011
Linear-by-Linear Association	2.475	1	.116
N of Valid Cases	578		

<sup>a</sup>. 0 cells (.0%) have expected count less than 5. The minimum expected count is 15.52.

**IMPORTANCE OF DRAINAGE SYSTEMS \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
IMPORTANCE OF DRAINAGE SYSTEMS	Under 5	10.0%	1.9%	2.4%	5.3%	3.6%	3.8%
	5-7	21.4%	13.1%	19.0%	13.3%	23.2%	17.8%
	8-10	68.6%	85.0%	78.6%	81.3%	73.2%	78.5%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.651 <sup>a</sup>	8	.024
Likelihood Ratio	15.877	8	.044
Linear-by-Linear Association	.006	1	.937
N of Valid Cases	585		

<sup>a</sup>. 3 cells (20.0%) have expected count less than 5. The minimum expected count is 2.63.

**IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES \*  
GENDER Crosstabulation**

% within GENDER

		GENDER		Total
		Male	Female	
IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES	Under 5	3.5%	1.4%	2.4%
	5-7	29.1%	24.8%	26.9%
	8-10	67.4%	73.8%	70.6%
Total		100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.602 <sup>a</sup>	2	.100
Likelihood Ratio	4.687	2	.096
Linear-by-Linear Association	4.020	1	.045
N of Valid Cases	579		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.89.

**IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES \* AGE Crosstabulation**

% within AGE

		AGE					Total
		18-24	25-39	40-54	55-64	65 over	
IMPORTANCE OF VEGETATION AROUND THE LAKE FORESHORES	Under 5	7.0%		1.2%	4.1%	4.6%	2.6%
	5-7	26.8%	26.3%	28.7%	20.3%	29.4%	26.9%
	8-10	66.2%	73.8%	70.1%	75.7%	66.1%	70.6%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.870 <sup>a</sup>	8	.044
Likelihood Ratio	18.227	8	.020
Linear-by-Linear Association	.261	1	.609
N of Valid Cases	581		

a. 5 cells (33.3%) have expected count less than 5. The minimum expected count is 1.83.

**IMPORTANCE OF SEAWALLS AROUND THE LAKE FORESHORES \*  
GENDER Crosstabulation**

% within GENDER

		GENDER		Total
		Male	Female	
IMPORTANCE OF SEAWALLS AROUND THE LAKE FORESHORES	Under 5	19.6%	9.8%	14.8%
	5-7	34.7%	36.2%	35.5%
	8-10	45.7%	53.9%	49.7%
Total		100.0%	100.0%	100.0%

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.231 <sup>a</sup>	2	.006
Likelihood Ratio	10.431	2	.005
Linear-by-Linear Association	8.057	1	.005
N of Valid Cases	519		

<sup>a</sup>. 0 cells (.0%) have expected count less than 5. The minimum expected count is 37.68.

## **Appendix III**

### **General comments made by respondents**

<b>Survey No.</b>	<b>Comments made by participants in the survey</b>
17	Council is on the correct path
24	Keep it clean: less seaweed and more sand
25	Still waiting for extensions to Green Point. Am looking forward to it. Low impact to lake and it will attract more people
29	More flow into the ocean, more flushing, bigger channel
32	Don't like high rises in Charlestown area
33	Very happy with the Lake on the East
35	Have more lighting and more paths for walking
39	More burning off to reduce bush fires
41	Dog poo issues
42	Stop tree cutting
48	Enjoys taking children to Marmong Point
50	Keep it natural
55	Has improved
57	Fishing has improved
58	Council get away with too much
62	Better Council planning
63	More walking paths
64	The water issue
72	The Lake is getting better
81	Increase in urban density equals poor lake quality
92	Man is killing the planet
93	Leave the developments away from the Lake
96	Air pollution, public transport, new buses at more regular intervals
100	Council should do something to help
102	Carey Bay Park is quite polluted in fishing and swimming
108	Rain water tanks more used for lawns, introduce incentives
118	Good upkeep, worried about Charlestown reserves
119	Enforce laws more, less alcohol, improve playgrounds
123	Will spoil area by modernization
140	Speers point Park needs amenities, need to be cleaner
147	People dump things like trolleys in the Lake
148	Make the Lake better than Tuggerah Lake. Razor fish, need to be removed from Lake Macquarie
149	It is getting worse; children must be educated to care for the beach
150	People should be more careful with waste and worry about what happens to water when they're done with it
151	Better maintained - more green
152	Tree poisoning occurs in Stinky Corner - large gum trees between Warners Bay and Speers Point
153	Nature walks are being built up - Burton Road
158	Car pollution
171	More recreational areas - facilities, shelters and bbqs
180	Do something with the run off water
186	Development on the foreshore
190	Not enough movement between the channel and the Lake
192	Walkways must be completed
193	Abolish Indian Minor birds
211	Grey water tanks required
218	Too much fishing
220	Development of foreshore at Croudace Bay is excellent - less paths is better
222	Everybody should look after the environment
223	The foreshore is an asset

<b>Survey No.</b>	<b>Comments made by participants in the survey</b>
225	Wouldn't like to see overdevelopment on beach at Catherine Hill Bay
226	Doing a good job as it is
227	Clean up the Lake, get more fish back into it
232	Lake Macquarie is best place I have lived in Australia
234	Not enough car parks
236	Dubious of rush toward high rise development in the area
238	Council needs to be educated and updated. Council needs to catch up on scientific ways to improve the environment. Urban bush land needs to be protected
247	Does visit Lake Macquarie
264	Beautiful area
265	More parkland, reserves to be kept
266	Roads are too narrow
272	Need less jet skis
277	Clean harbour of the silt
279	High rises are bad
280	Doing good job
283	Lake is wonderful
291	It's going alright
292	Everything is improving, in particular walkway at Swansea
297	Schools/Preschools in the area have started education about environment - very happy about that
298	Glad we have dolphins back - happy with the improvement
299	Beautiful
317	Lantana
320	Council should be congratulated
328	Weeds
331	Fish license a problem
336	We need to care for the Lake
343	More walkways needed
345	More dredging in channel
347	Provide more facilities
352	Development in the west is ok
374	Smog
377	Love the area
389	Upset by seeing areas cleared for housing
390	Pollution
391	Litter a problem
393	Better when I was a child
419	Lake has improved out of sight
422	Need to care for the foreshore
426	Lake has come a long way
427	Water waste
430	Would like channel opened between Lake Macquarie and Tuggerah Lake
431	Glass on beach a problem
450	New landscaping is pleasant along shoreline
453	Lack of facilities at Nords Wharf
455	Over developing
460	Water pollution
461	Lake is grotty
464	Council needs to take action on developers restricting access to waterfront
467	Lake is improving now
468	Moving in the right direction but cannot slack off
469	Not enough politicians concerned about Lake

<b>Survey No.</b>	<b>Comments made by participants in the survey</b>
474	Need 2nd inlet at Belmont
475	Love the area
476	More policing
477	Stop vandalism
486	Fishing control
487	Channel
494	Conservation of water
495	Development
510	Has had good dealings with Council
523	Wonderful area
528	Like to see the channel dredged
532	Need to work on channel
542	Lakeside beautification excellent
543	Litter
549	Council addressing most of the issues
556	Littering especially cigarette butts
557	Keep cats inside
566	Mangroves
567	Awareness important
579	Council is doing a good job
584	We used to have seahorses when I was a kid
592	The environment is very healthy where we are
593	It is pleasant to walk around the Lake as it is much better than it was
597	The Lake is in fantastic condition, could get better, but ultimately very, very good
598	Razor fish are a problem
600	There are unclean facilities around the foreshore