

## **2 Urban Amenity and Plan Effectiveness Monitoring**

### **Auckland City Case Study - Surveys of Auckland Isthmus Business 4 zone**

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## 1.0 Background

Through the Isthmus District Plan the Council provides for a wide range of activity and development opportunities within the Isthmus Business 4 zone. While this zone still accommodates a range of light industrial and commercial activities it also makes provision for development of new residential units or conversion of existing buildings into residential units. The rules for residential development and other activities are far more liberal in the Business 4 zone than in the Isthmus residential zones. They include more permissive height limits, zero lot boundary controls and no controls on residential unit density. This, combined with market forces has resulted in an unprecedented number of residential unit developments within the Business 4 zones.

These new developments are also often blocks of residential units or terrace houses. They maximise the development of the site by “pushing the envelope” provided by the zonal controls and often include as many units as the site can physically accommodate.

The Council has heard from some residents of units within the business zones who have expressed surprise and concern at the type and scale of development, which can be established in these areas and the associated effects. It appears that often residents did not envisage these effects might occur on adjacent sites, when they moved into their particular development.

Some of the effects, which result from this level of development, may be adverse – others may be positive. However the Council does not have a reliable, objective view of how the majority of residents within these areas feel.

Council staff are also mindful that the Business 4 zone has specific District Plan objectives and policies which need to be achieved. Those which deal with effects of development within the zone follow.

### **Objective**

To provide for medium intensity business activity.

#### *Policies*

*By recognising through zoning, existing light industrial and service centres on the Isthmus.*

*By permitting a wide range of business activity in the zone, subject to controls imposed to maintain the zone’s environment.*

### **Objective**

To maintain and enhance the quality of environment in the zone.

#### *Policies*

*By imposing controls which require new activities to enhance the streetscape.*

*By limiting the scale of development to one which can be sustained by the existing infrastructure.*

*By adopting parking and traffic measures which seek to avoid congestion and parking problems.*

If the zonal objectives are not being met the Council anticipates it will need to review the zonal provisions to realign them with these objectives. To determine if the District Plan requires change to deal with effects it was considered necessary to undertake a survey to determine the range of activities and their effects and the level of satisfaction in these areas. Field work to record and assess the nature of the Business 4 environment was also seen as essential.

The Councils Liveable Communities strategy also focuses on provision of further residential accommodation on the Isthmus through intensification of the city. This is in line with the Regional Growth Strategy. Inevitably, this will result in a change in the character within these locations. The development, which may result from the Liveable Communities project, may have similarities to development within the business zones. A survey that identifies the adverse and positive effects associated with living in intensive residential developments, which already exist, is considered to be of assistance to the Liveable Communities project.

In both cases the research will be used to help evaluate whether existing or proposed controls and guidelines are appropriate. The results of the surveys will also help the Council determine the most appropriate regulatory and non-regulatory mechanisms to deal with effects and improve amenity in these areas.

The results may be used in the Environment Court if it proves necessary to justify any necessary changes to the District Plan.

## **2.0 Objective of research**

The research assesses the Business 4 zone environment and the level of effect experienced by residents living in the Business 4 zone.

## **3.0 Reasons for undertaking the research**

- (a) Identification of positive and adverse effects of development.
- (b) Assist with monitoring and review of objectives and rules of the Business 4 zone.
- (c) To meet section 32 requirements of the Resource Management Act. In particular alternative methods (other than District Plan rules) to deal with the effects of development including use of financial contributions, public works, provision for streetscape improvements including vegetation, provision of public open space.
- (d) The survey could form the basis of a further survey which could be replicated over time to determine if any of the techniques adopted result in change.
- (e) Will provide useful information to the Council regarding residential intensification which has occurred in the city to date. This may be of assistance to the Council's overall intensification project.

## **4.0 Techniques chosen to undertake research**

### **4.1 Detailed face to face qualitative survey**

This work was undertaken to ascertain the nature of people's concerns to be used as the basis for the development of the quantitative questionnaire. This part of the research allows the Council to gather information about the amenity values which are

important to residents in the Business 4 zone – in the context of the environment of that zone.

The specific objectives of this research are to:

- Assess the level of awareness and understanding of the zoning of the area where participants live;
- Assess satisfaction with the level of controls on development (residential and commercial/industrial) in business zones;
- Identify expectations, strengths, weaknesses, and perceived amenity associated with living in a business zone generally, and living in their area specifically;
- Assess attitudes to further development in the area – identify perceived impacts on the area, and residents' likely reaction;
- Identify aspirations of those persons considering moving from the business zone (ie likelihood of moving to another high density development or elsewhere); and
- Assess residents' views on the notification of neighbours of any new development or activity in the area.

This face to face survey was undertaken by Forsyte research in August 2000. This part of the research is now complete.

The findings of this research which relate to urban amenity values include:

#### **Awareness and understanding of Business zones**

- People are generally aware that the dwelling they have purchased or are renting is in a business zone prior to purchasing or signing the lease. However, they are not necessarily familiar with the term 'business zone', instead calling it a (light) commercial or industrial area, or having no name for it at all.
- Understanding of what living in a business zone means is generally restricted to "businesses can operate here", although a couple of people assumed it means "people can operate businesses from home".
- While a few owners did their research into potential future developments and controls operating in the area prior to purchase, most did not look into this.
- Some retrospectively wished that they had looked into controls more closely, in cases where new developments impacted negatively on the owners. Examples of new developments that had adverse effects include:
  - A gym taking away visitor parking space from residents;
  - A bar making the noise levels unbearable for the owner;
  - An apartment block taking away views and sunlight; and
  - New 60 minute time limits imposed on parking taking away visitor parking space from residents.
- While restricted parking did not appear to translate into owners wishing to move away from the area, high noise levels and blocking of views and sunlight appeared to be of greater concern as they impacted adversely on quality of life, as well as on re-sale value.

### **Expectations of living in a business zone**

- Because people do not tend to understand what living in a business zone means, they tend to not have expectations of living in a business zone. Instead, their expectations centre around high density living and include:
  - They may hear the neighbours from time to time.
  - They will often see the neighbours.
  - They will need to pay body corporate fees.
  - They will need to adhere to rules set out by the body corporate.
  - They will have less space than living in a house.
  - Home maintenance will be low.
  - They will have no or a very small garden.
  - They will have easy access (by car or on foot) to shopping and entertainment facilities.
- For residents whose expectations fell short of their experiences, noise from either residential or commercial neighbours appears to be the biggest issue.

### **Strengths and Weaknesses associated with living in a business zone**

- When people move into an area they tend to assess the strengths of the area, rather than the strengths associated with living in a business zone. In terms of the area, they look at its proximity to their work, their family, their friends and shops, as well as to leisure and entertainment facilities. They assess the character of the area, the quality of the building and those around it (in terms of aesthetics and construction) and potential for re-sale in that area. They also take into account proximity to motorways, public transport, and parks and open spaces.
- When questioned specifically about living in a business zone, research participants did identify the following strengths associated with living in a business zone:
  - The ability to use the businesses close by (eg frequent the restaurants or purchase groceries).
  - Quietness outside business hours (compared with potentially hearing residential neighbours in the evening and on weekends).
  - Parking available outside business hours.
  - Greater activity in the area, which adds to the feeling that the city is alive.
- The identified weaknesses associated with living in a business zone include:
  - Noise from commercial neighbours and/or their customers and/or suppliers.
  - Commercial neighbours' customers take up street parking.
  - Commercial neighbours' customers or suppliers lead to an increase of traffic in the area.
  - Lack of open spaces, trees.

### **Levels of control on development**

- Unless people's expectations of high density living have not been met, or they have been negatively affected by further development in their area they tend to be satisfied with the levels of control on development.

- Usually, people do not know what controls are operating. They assume that the Council prescribes controls on noise, height and density, although they are usually not aware of what those controls are. People tend to be surprised when they learn that living in a business zone means less stringent controls on density, access of light, paving and so on.
- People tended to consider design guidelines to be very important for a range of reasons, including:
  - Making sure that dwellings are comfortable to live in, in terms of temperature, light, noise, privacy, space and parking.
  - Having nice looking buildings in the area to enhance quality and re-sale value of the area.
  - Ensuring that the design standard is in keeping with the standard of the area (particularly important in “classy” or “quality” areas).
  - Safety of residents in terms of building materials used and fire escapes.
  - Having some greenery around the property to make the environment look and feel more pleasant.

### **Attitudes to further development in the area**

- In more affluent areas where there are a range of shops and restaurants (eg Parnell) people tend to favour further development of both residential and commercial dwellings. These are seen to add to the liveliness of the area, enhancing the character that already exists.
- The two main concerns in these types of areas are:
  - Whether the buildings will be in keeping with the quality and character of the area.
  - Whether the views and open spaces that are currently present will be maintained.
- There is also some concern that over time there will be less land available to build on and therefore more housing crammed onto small sections, resulting in a “slum-like” character to the area.
- In business zones comprising mainly residential dwellings and a few commercial neighbours (eg Harrison Road, Mt Wellington or Fleet Street, Newton), there appears to be less concern about residential development than about commercial development. Concerns appear to relate mainly to parking space, where customers and suppliers of commercial neighbours potentially reduce available parking space. Residential developments are less of a concern, as they are usually designed with off-street parking. The one concern that people in these types of areas do have is that future developments may be designed and built in a manner that is below the perceived quality of the area. This concern relates to potential resale value.

### **Notification Of Neighbours**

- A range of attitudes emerged as to the notification of neighbours of any new development or activity in the area. While some only wish to be notified about major new developments (for example the building of a new lane on the harbour bridge), others wish to be notified only if their input is actually able to effect change. Others still deem it important to be notified about any new development, purely out of courtesy to residents in the area.

## **Likelihood Of Moving Into A Business Zone In The Future**

- There appear to be two sub-groups who appear most likely to move into a business zone in the future:
  - Older people who either have no children or whose children have left home.
  - Professionals who either do not intend to have children or who see themselves as unlikely to have children in the next few years.
- The older people tend to have moved from a suburban house into a high density dwelling in a business zone that is well appointed with shops and restaurants. Benefits of high density living such as low home maintenance and being within walking distance of shops and leisure/entertainment options, coupled with a tolerance of the businesses around them make these people happy to move to a business zone in the future
- Professionals without children who live in high density dwellings tend to do so out of convenience (eg low maintenance, proximity to work, shops, restaurants and so on) and because they enjoy the liveliness associated with inner city living. They are likely to move into a business zone again in the future as it suits their lifestyle.
- For some, high density living is seen as a stepping stone that is most appropriate to their current circumstances (for example, recently divorced, able to afford an apartment but not a house, recently widowed or new to Auckland). In the future they would prefer to move to a house in a residential zone, with more space around them for themselves, any children and any pets.
- Generally, high density living is seen as less appropriate for children, particularly when they reach school-age. These children are perceived to need more parks and open spaces around them than those typically offered in high density areas.

### **4.2 Quantitative telephone survey**

The goal of the telephone survey was to ascertain how widespread people's concerns are. This allowed the Council to quantify the importance of each of the amenity values identified in the qualitative research.

#### **Research objectives**

This research was initially intended to assess the Business 4 zone environment and the level of effect experienced by residents living in that zone. It was also intended to determine the level of satisfaction of residents in the business zones with amenity in their areas. The specific objective of the research was to assess the Business 4 zone environment and the level of effect experienced by residents living in the Business 4 zone.

#### **Research methodology**

Forsyte Research in conjunction with City Planning staff undertook the research summarised in this report over a four month period. This research took the form of a post-occupancy survey of people residing in the business zones – mainly the Business 4 zone. This began with a qualitative face to face survey to ascertain the nature of people's concerns to be used as the basis for the development of the

quantitative questionnaire. This part of the research allowed Forsyte and the Council to gather information about the amenity values which are important to residents in the Business 4 zone - in the context of that environment.

Having determined the range of issues, Forsyte undertook a quantitative telephone survey to ascertain how widespread people's concerns are. This allowed the Council to quantify the importance of each of the issues identified in the qualitative research. The objectives of this research were to -

- Assess the level of awareness and understanding of the zoning of the area where participants live;
- Assess satisfaction with the level of controls on development (residential and commercial / industrial) in business zones;
- Identify expectations, strengths, weaknesses and perceived amenity associated with living in a business zone generally, and living in their area specifically;
- Assess attitudes to further development in the area - identify perceived impacts on the area and resident's likely reaction;
- Identify aspirations of those considering moving from the business zone (ie. likelihood of moving to another high density development or elsewhere);
- Find out a little about those living in the units such as age; gender; income; household structure; number of cars owned by people living in the unit; mode of transport most usually used for journey to work, entertainment or shopping.
- Where possible to determine the address of the development the respondent allowed site visits to occur to view what the respondents may consider to be good or bad examples of relatively intense residential development.

Forsyte undertook 348 telephone interviews. This sample comprised the phone numbers of high intensity dwellers in the Isthmus business zones. The sample comprised both owner-occupiers and renters. The average interview was 21 minutes.

The survey included respondents from around 148 residential developments in a variety of areas zoned business throughout the Isthmus. The developments the respondents lived in ranged in value and development intensity.

### **Summary of research results**

A presentation of the results of the research was given by Forsyte Research to the Council's Planning and Regulatory Committee. A copy of the research report was available at the meeting. A brief summary of some of the main findings of the research follow. There are also more detailed survey results attached as Appendix 1 to this report.

- There is general satisfaction with the Business 4 zone as a living environment.
- Concern was expressed by many of the respondents about the level of regulation which applies in this zone ie. the fact that there are no controls relating to the location of buildings on abutting sites; no requirement for private open space for units; no limits on paving or building coverage; no requirement

for natural light between buildings and no density limits on the number of units per site.

- Many respondents placed some importance on some type of amenity/design controls in these areas.
- Many respondents were happy with the building or unit they live in
- Many respondents reported reduced use of private motor vehicles since moving to the Business 4 zone.
- Many respondents have positive feelings towards further residential development occurring in their areas.
- Overall residents tended to be high income households, couples with no children and were highly represented in the 20-39 age group. The residents were culturally diverse.
- Many of the respondents had aspirations to stay in their current home or move to another intensive residential development.

See detailed survey results attached as **Appendix 1**.

### **4.3 On-ground detailed survey**

This survey involved a detailed on-the-ground analysis of the Business 4 environment including on-site and off-site elements. The survey includes site visits to each part of the city zoned Business 4.

This survey records:

- Activity occurring on each site
- Building type and scale
- Number of units if residential
- Availability of off street parking
- Condition of the building
- Whether the building is for sale or lease
- Orientation of the site
- Outlook
- Topography of the street
- Road width
- Proximity to residential areas
- Proximity to retail / commercial areas
- Proximity to open space
- Standard of streetscape
- Proximity to public transport
- Whether or not construction is occurring on the site
- Owner of the site
- Site of the site
- Age of buildings

This survey also includes a photographic record of each site / group of sites. This survey enables the Council to identify and to some extent quantify the characteristics of the Business 4 zone environment and the activity which is occurring in that

environment. Many of the elements being recorded make up the overall character and amenity value of these areas.

See survey form attached as **Appendix 2**.

#### **4.4 Site visits to developments identified in qualitative survey**

This involves follow up work on 'good' and 'bad' developments identified through the quantitative survey. This will include an assessment to determine the elements which have created good or bad development. This will include the age and value of the developments and the characteristics of the development which make them more or less desirable from a theoretical urban design point of view as compared with the occupant's point of view. This survey will reveal how well individual developments and the local environment within the Business 4 zone have met resident's expectation in terms of the amenity values they identified in the qualitative and quantitative surveys.

#### **4.5 Work done by others which will contribute to this project**

- (a) ARC survey of intensive residential (4 examples of residential development across the region)
- (b) Auckland City resource consent monitoring which includes residential development in the business zones
- (c) The Council's Livable Communities strategy
- (d) Monitoring of other aspects of the Isthmus District Plan.

### **5.0 Summary of Processes for Qualitative and Quantitative Surveys**

#### **5.1 Surveyer:**

The face to face qualitative survey was undertaken by Forsyte Research in August 2000.

#### **5.2 Timing**

The survey was initially commissioned in April 2000. It was expected that the survey would be undertaken in mid-2000 and completed by August 2000. Difficulties arose particularly in relation to accessing sufficient phone numbers and addresses in the Business 4 zone to provide a satisfactory sample. This slowed the survey process considerably.

#### **5.3 Determine issues**

- Feedback from Councillors and Community Board members
- Contact with members of the community
- Monitoring resource consents issued for residential development in the Business 4 zones from the Council's coded database of resource consents
- Staff knowledge of development in the Business 4 zones

#### **5.4 Determine area to be surveyed**

- Map of location of areas zoned Business 4. This was sourced from the Council's GIS (Geographical Information System).
- Staff knowledge of areas zoned Business 4 and the residential development which is occurring in those areas.

#### **5.5 Select residents to be surveyed**

Selection of residents was achieved through several means:

- a. Selection through electoral role and overlay the electoral role database with the Council's GIS which includes the location of areas zoned Business 4.

##### Challenges

A large portion of the residential development in the business zones is relatively recent, ie less than 3 years old. Also these areas have a high turn over of residents. Often people enrolled to vote at one dwelling in 1999 had moved on by the time the survey was to be undertaken.

- b. Achieve a spread of residents throughout the zone.

##### Challenges

These areas are not like residential zones which generally comprise entire streets of residential development. Instead the development is sporadic through the zones.

- c. Telephone book search by address

##### Challenges

Residential development in the business zones appear to have a high turnover of occupants. Many of these residents have unlisted telephone numbers.

- d. Search the Council's property information database (TCS)

##### Challenges

There is a high proportion of rented or leased accommodation in the business zones. The Council's database contains owners rather than occupiers.

Overall, an amalgam of information from all of these techniques has been used and has produced a list of around 1000 telephone number matches.

#### **5.6 Selection of survey technique**

Face to face interviews were used to obtain the qualitative information.

For the quantitative survey CATI telephone surveying was selected which would provide wide coverage at lowest cost and could easily be replicated in the future.

These techniques were selected over the option of surveying only a few selected blocks of development within select areas which may not capture the range of development which has occurred through the city.

## **5.7 Develop Survey and Questionnaire**

Initial face to face interviews were undertaken using the issues identified by Auckland City staff. The information and further issues identified in these interviews were used to develop the questionnaire for the quantitative surveys.

## **5.8 Undertake surveys**

Qualitative surveys were undertaken by survey staff in people's homes within the Business 4 zone. These surveys took 1-1.5 hours.

### Challenges

- Length of tenure. Generally residents had not lived in these areas very long. It is acknowledged that this may produce different results than if these had been longer term residents.
- Difficulty of recruitment. See 6.5 above.
- Timing of interviews needs to coincide with the availability of occupants.
- Most interviewees were in full time employment and were only available early morning or immediately after work. This meant all interviews were undertaken in the evenings.
- Survey staff and some interviewees were conscious that they felt unsafe going into people's homes at night.
- The telephone survey took around 18.5 minutes. This is a little longer than initially hoped and may affect the number of people who are prepared to complete the survey.

## **5.9 Undertake analysis of surveys**

Analysis of quantitative survey complete – see report in **Appendix 1**.

## **5.10 Resource management assessment of results**

Undertake resource management assessment of results of this survey, the on ground survey and site by site assessment of individual residential developments.

## **6.0 Summary of processes for on-ground survey within the Business 4 zone**

### **6.1 Survey undertaken by**

This survey is being undertaken within the City Planning Group by one full time graduate and one part time student supervised by staff within City Planning. This will increase to 2 full time students from November.

## 6.2 Timing

To date one graduate and one student have been working on the survey for around 2 months. This has completed around 20% of the area. It is likely that this survey will take a further 4 months using 2 full time temporary staff.

### Challenges

- Size of the area. The Business 4 zone accounts for around 840 hectares of land on the Isthmus.

## 6.3 Develop survey form and results spread sheet

A survey form which could be used in the field was developed to record all relevant characteristics of sites zoned Business 4. See form attached as **Appendix 2**. The survey form was piloted and then modified to take account of some initial field work.

A results spread sheet has been developed in Excel to record field work.

### Challenges

- Because of the number of sites to be surveyed, a relatively easy quick survey process was required, which on the other hand did not miss any detail.
- The survey form needed to record elements in a numerical form so they can be analysed in the future. This is difficult for subjective elements.
- The data needed to be in an electronic form to deal with the volume of information and the analysis which will be done in the future.
- The records needed to include a photographic record of each site or group of sites. This has been achieved using a digital camera and creating a hyperlink within the excel spread sheet to the photo which relates to each row in the spread sheet.
- Survey needed to include a location map for each site to describe its location to future users.

## 6.4 Undertake on ground survey

Includes site visits to each part of the Business 4 zoned site by site analysis using the survey form. This work is currently underway.

### Challenges

- Size of the area. At around 840 hectares this area took around 6 months to survey.
- A balance is needed between having sufficient staff undertaking field research to get the job done in a reasonable time period but not too many people involved to achieve consistency of assessment of the subjective elements.
- By collecting information on such a small scale, there is a chance of missing larger patterns within each area. These patterns may get lost in the data, or not be included in the information collected by the survey sheet. Surveyors

now take a notebook out, and record any patterns they notice. This will also aid in the final analysis of the data, as it will indicate patterns that should be investigated further.

- A set of clearly defined objectives would have been valuable at the onset of the project as the survey could then have been designed around these. However the survey process is quite quick and we took the 'collect as much information as possible' approach so that any patterns identified in the process can be investigated.
- More time should have been spent at the beginning of the process defining areas. The 17 areas chosen for this project were quite large, and will need to be redefined at a later stage. A good knowledge of land use patterns are required to do this successfully.
- The scalar measures of neighbourhood characteristics are not additive. They are on different scales and are not weighted to indicate their relative importance. It is possible to change the weightings after data collection, but this is notoriously difficult.
- There is little variation in the total for neighbourhood characteristics. With a maximum of 30 and minimum of 9, the majority of sites are bunched around 22-24. This may be because the distance of 500m is too large.
- We should have measured the distance from retail areas separately from commercial. However this can be easily done on GIS.
- The database has been designed to be compatible with the GIS system. This means that once entered into the system, spatial patterns will be easier to identify and will allow more detailed spatial analysis.
- Some factors are inherently subjective; this is a potential source of error when there is more than one surveyor.
- The values assigned to factors by a surveyor will change as the surveyor assesses more sites.
- The survey sheet works well in the field. Especially the fact that you can add extra categories to a question very easily throughout the process.

## **6.5 Input survey results**

Survey results are added to the excel spreadsheet as survey areas are completed by the staff member who has undertaken the field work.

## **7.0 Strengths and Weaknesses of the Process**

### **7.1 Strengths**

- Empirical data will be useful to take to persuade politicians that changes to the District Plan or use of other non-regulatory means is necessary to achieve improvements in local amenity.

- Data will be useful if it is necessary to defend changes to the District Plan through the submission process or against references to the Environment Court.
- The results will be robust enough to be useful for assessing alternatives under Section 32 of the Resource Management Act including regulatory and non-regulatory techniques for addressing effects and achieving improved amenity and the costs and benefits of those alternatives.
- The survey work has been done by staff from outside the City Planning Group which will result in improved objectivity.
- Results will be useful for a variety of projects so the cost will spread across a range of outcomes.
- Good and bad examples of development will be identified which will be helpful for the Liveable Communities project in developing appropriate mechanisms for dealing with the effects of more intense residential and mixed use development.
- The surveys could be replicated over time.
- The surveys could form the basis of a longer term monitoring process.
- The database has been designed to be compatible with the GIS system. This means that once entered into the system, spatial patterns will be easier to identify and will allow more detailed spatial analysis.
- The survey sheet works well in the field. Especially the fact that you can add extra categories to a question very easily throughout the process.

## **7.2 Weaknesses**

- The process has been time consuming.
- Costs associated with the processes and techniques used because they were time consuming.
- Ability to access information necessary to undertake the research eg. bringing address and telephone number databases together.
- Challenges along the way which were unforeseen increased the time taken for the telephone survey.
- Change of occupancy of the units surveyed over the time of the survey and more development within the zone at the time or immediately after the survey occurred.
- By collecting information on such a small scale, there is a chance of missing larger patterns within each area. These patterns may get lost in the data, or not be included in the information collected by the survey sheet. To solve this issue surveyors took a notebook out, and recorded any patterns they noticed. This will also aid in the final analysis of the data, as it will indicate patterns that should to be investigated further.

- A set of clearly defined objectives would have been valuable at the onset of the project as the survey could then have been designed around these. However the survey process is quite quick and we took the 'collect as much information as possible' approach so that any patterns identified in the process can be investigated.
- More time should have been spent at the beginning of the process defining areas. The 17 areas chosen for this project were quite large, and will need to be redefined at a later stage. A good knowledge of land use patterns are required to do this successfully.
- The scalar measures of neighbourhood characteristics are not additive, they are on different scales and are not weighted to indicate their relative importance. It is possible to change the weightings after data collection, but this is notoriously difficult.
- Distances from retail areas should have been measured separately from commercial. However this can be easily done on GIS.
- Some factors are inherently subjective; this is a potential source of error when there is more than one surveyor.
- The values assigned to factors by a surveyor will change as the surveyor assesses more sites.

**APPENDIX 1**  
**Detailed Survey Results**

## **APPENDIX 2**

### **Survey Form**