

Host Communities: siting and effects of facilities

An analysis of host community experience of the Temuka transfer station (Timaru District)

by

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Acknowledgements

This case study has contributed considerable knowledge that is important to a better understanding of the effects which host communities can expect to experience from the operation of a modern rural transfer station. The research would not have been possible without the co-operation of all those who were interviewed. The level of willingness to co-operate is worthy of acknowledgement - the research team met with no refusals. The research team wishes to express its gratitude to all those who participated in this case study - the residents and businesses in the vicinity of the Temuka transfer station; also to the other key informants, the operators and administrators of the transfer station.

It is to be hoped that this case study may also lead to the maintenance of good management at the Temuka transfer station, and to building a positive working relationship between those responsible for operating and overseeing the facility and members of its host community.

The research team also expresses its gratitude to the Foundation for Research, Science and Technology for its financial support of the research programme.

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A: Introduction to this case study

Public Good Science Fund Research

The research team at Taylor Baines & Associates was contracted by the Foundation for Research Science and Technology to carry out a piece of social research concerning the siting decisions and community experience of solid waste facilities. The research has been funded out of the Public Good Science Fund.

Spread over three financial years - 1997 to 2000 - the research programme aims to assist the processes of urban and rural planning (as it applies to future solid waste disposal infrastructure) by developing a body of knowledge on social factors that are relevant to the siting and operation of solid waste facilities.

In total, the research programme is intended to answer three core questions -

1. Is there a systematic pattern of solid waste facilities siting in NZ. If so, how would you characterise this historical pattern from the social perspective of host communities?
2. How do actual effects compare with effects that were projected at the time of siting?
3. What have been the longer-term effects on host communities of solid waste operations?

This research on solid waste facilities is part of a longer-term research programme currently being funded by the Public Good Science Fund into the siting and social impacts of a range of facility types. During the period 1997 to 2000, research has been carried out on solid waste facilities - landfills and transfer stations. During 1998 to 2001 other research is focussing on waste water facilities. Please refer to the TBA website - www.tba.co.nz - for more information.

The research programme has received the strong endorsement of Local Government New Zealand, the New Zealand Water and Wastes Association, the Ministry for the Environment, as well as several territorial local authorities.

Reasons for this research programme on facilities and their host communities

It is a common experience that assessing the effects of solid waste facilities at the time of site selection is a contentious process. The debates that surround such assessment activities are often informed more by prejudice and a strategic selection of hearsay information than by well-founded evidence.

This research aims to address both questions of possible social bias in site selection and lack of experienced-based information relevant to New Zealand communities. It is to be hoped that these objectives will be served by carrying out the research in a setting which is removed from the tensions of resource consent applications, and by a team of independent researchers who have no organisational affiliation with either the developers of such facilities (usually but not always Territorial Local Authorities) or the host communities involved.

Purpose of the case studies

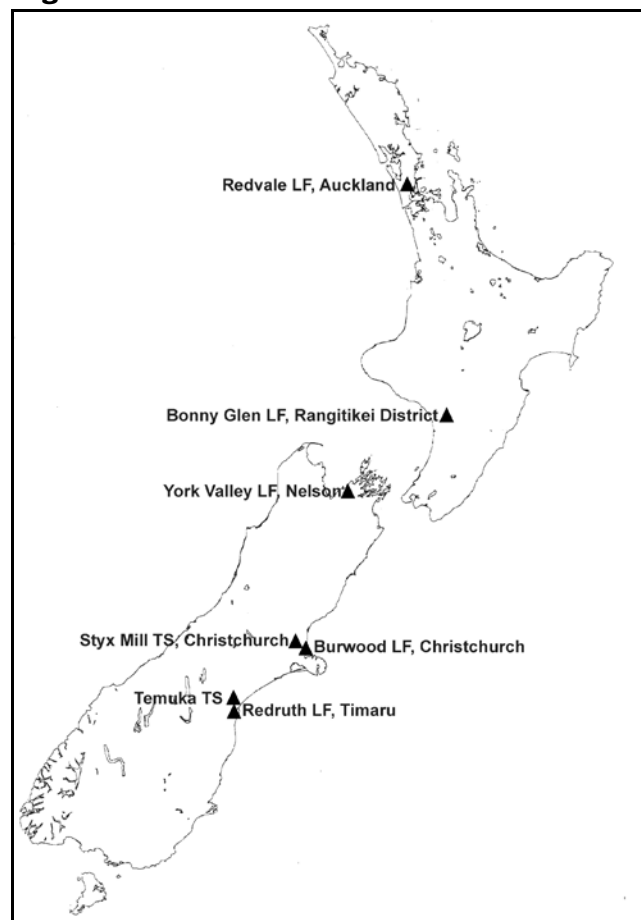
This case study on the Temuka transfer station is one of seven such case studies being undertaken as part of this research programme¹, as shown in Figure 1. The case studies were selected to provide a range of relatively recent facilities, from large metropolitan landfills and a transfer station, to the kinds of facilities more familiar in smaller cities and rural areas. As a result, the experience documented in these case studies should provide useful insights into contemporary New Zealand experience.

Each case study has been conducted at a time which avoids conflicts with active resource consent proceedings. Care has been taken in the social assessment research method to provide accurate² and useful descriptions of the effects experienced by host communities, by canvassing a wide range of local observations, by accessing other relevant data sources where possible to corroborate the observations of neighbours, and by engaging in a process of feeding back preliminary findings for checking and validation by the research participants. As a result, the experience documented in these case studies should neither overstate nor understate the experience of the host communities involved. This is important, if the research is to assist participants in future planning.

Nevertheless, the case studies each represent experience at a particular point in time. The research process itself, and the case studies resulting from the research, have the potential to trigger changes in the way the facilities are operated and managed. Thus it is important to interpret the findings of each case study in the context of the way the facility was operated and managed at the time of the case study fieldwork³.

It is also important to keep in mind the perspective of this research - the host community perspective. Primary emphasis has been put on capturing the experience of members of the host community - the residents and businesses in the vicinity of the Temuka transfer station. It is their experience of

Figure 1: New Zealand Case Studies



¹ The full list of case studies includes Burwood Landfill, Redruth Landfill, Bonny Glen Landfill, Redvale Landfill, York Valley Landfill, Styx Mill Transfer Station, Temuka Transfer Station.

² The use of percentage figures in this case study is not intended to imply statistical analysis. Rather it should be interpreted for comparative purposes merely as indicating the proportion of respondents in any particular area of interviewing who gave a specified response.

³ The fieldwork dates are noted explicitly in the case study report. Furthermore, the report attempts to describe as fully as possible the operating regime at the time of the case study.

the off-site effects such as litter and noise, and the impacts of such effects that will be useful to others contemplating the siting of a new solid waste facility. By the same token, there are likely to be some off-site effects such as risks to groundwater quality that will not necessarily be informed by a focus on neighbours' experience, simply because such phenomena are not often readily detectable to casual observation, even if they do occur.

Methodology for the case studies

The research method drew on the practical and theoretical approach to social assessment described in Chapter Four of "Social Assessment: theory, process & techniques" (Taylor et al., 1995). Stages in the research included scoping the particular cases to clarify the appropriate time frame and communities of interest, community profiling, a structured survey of nearby residents and business people, in-depth key informant interviews, and accessing a range of existing data sources.

A structured questionnaire was developed to gather detailed information about the experience of many individuals living in the host community. The questionnaire explored people's experience of day-to-day operational effects of the transfer station, their perceptions of how the presence of the transfer station has impacted on the longer-term development of the host community, and their knowledge of what has happened in their community during the years prior to and since the transfer station was established. The detailed analysis is descriptive and sometimes quantitative, but not statistical in nature⁴.

In carrying out the comparative case assessments, the assessment team had to address several issues relevant to interpreting the results and their usefulness in providing valid comparative information. These included the debate about 'perceived' or 'real' effects, the need for corroboration, and the importance of timing or context as a potential influence on individual responses.

The assessments focussed on people's experiences of living or working near waste management facilities. The results are therefore based on a large body of individual perceptions of effects. In some feedback discussions, the distinction was made that these effects are "*only people's perceptions; they're not necessarily real.*" The question arises therefore as to what is the difference between a 'perceived' effect and a 'real' effect. Can 'perceived' effects ever become 'real' effects? In practical terms, the assessments identified clearly the proportions of those interviewed who experienced certain types of effects. Furthermore, wherever possible, the assessment sought to investigate these effects from other respondents and from independent sources (e.g. local key informants; secondary data records) or different perspectives (e.g. the facility operator)⁵. As researchers, it was pleasing to note how, in the great majority of cases, neighbours' experience was strongly corroborated by the perceptions and experience of the facility operator.

A number of factors have a bearing on individual experiences. Different people have different thresholds for noticing effects depending, for example, on their ability to hear or to smell, or on their perception of what is 'exceptional'. Increasing sample size addressed this factor. Different living or

⁴ A statistically-based analysis would have increased the scale of field work and cost several fold.

⁵ As a matter of assessment methodology, we have adopted the stance that unless more than two individual neighbours reported and corroborated the same effect, or unless a neighbour's observation could be corroborated by an independent source, the effect would not be reported in detail, but simply noted. This reflects the stance that, while social assessment acknowledges the importance of individual observations, such observations still need to be subject to verification.

recreational patterns are likely to influence people's experience of effects - whether they are on the property all day, every day, or working off the property. Day-time interviewing addressed this factor by increasing the likelihood of including individuals with a relatively high rate of occupancy. People get used to effects after a while - they can seem less exceptional. Following unprompted questions with prompted questions addressed this factor, by allowing interviewees 'a second chance' to respond.

Does the distinction between 'perceived' and 'real' effects matter? The primary purpose and value of comparative case assessment is to answer two types of questions - (i) if neighbours around a facility are experiencing certain effects, and find that they have unacceptable impacts, what can be done to reduce or eliminate the effect, or make it less likely to happen? and (ii) if neighbours around Existing Facility A experienced certain effects and impacts from its operation, what is the likelihood that neighbours around Potential Facilities B, C or D will experience similar effects and impacts? In either situation, whether such effects are labelled as 'perceived' or 'real' is probably immaterial. However, from a "technical" perspective, replication of reported effects is important to their validation, while from a "political" perspective, the perceptions of just a few people affected can be sufficient to galvanise social action.

It is also important to remember that technical experts are not necessarily in a position to offer any more than assessments of 'perceived' effects. In the case of technical experts, their perceptions are derived with the aid of technical lenses (i.e. frameworks for analysis used by the technical expert). For example, an acoustical engineer can provide measures and predictions of likely noise levels at certain distances away from the source of the noise. The acoustical engineer is not usually in a position to draw any inferences as to likely social impacts associated with these levels of noise.

The tendency for potentially affected parties to distort or exaggerate the likelihood of effects when participating in EIA activities is not an uncommon experience for SIA practitioners. Indeed, in one of the comparative case studies, background documentation from an environmental tribunal declared this point explicitly. In these comparative case assessments, this factor was addressed by ensuring that all the case studies were carried out on facilities which had no consent applications or reviews in progress.

Outputs of this research programme

Outputs from this research have taken the form of public presentations and discussion sessions, as well as a range of hard copy formats.

The latter include a series of research Working Papers, conference papers, and an abbreviated summary document for each case study.

The research provider - Taylor Baines & Associates

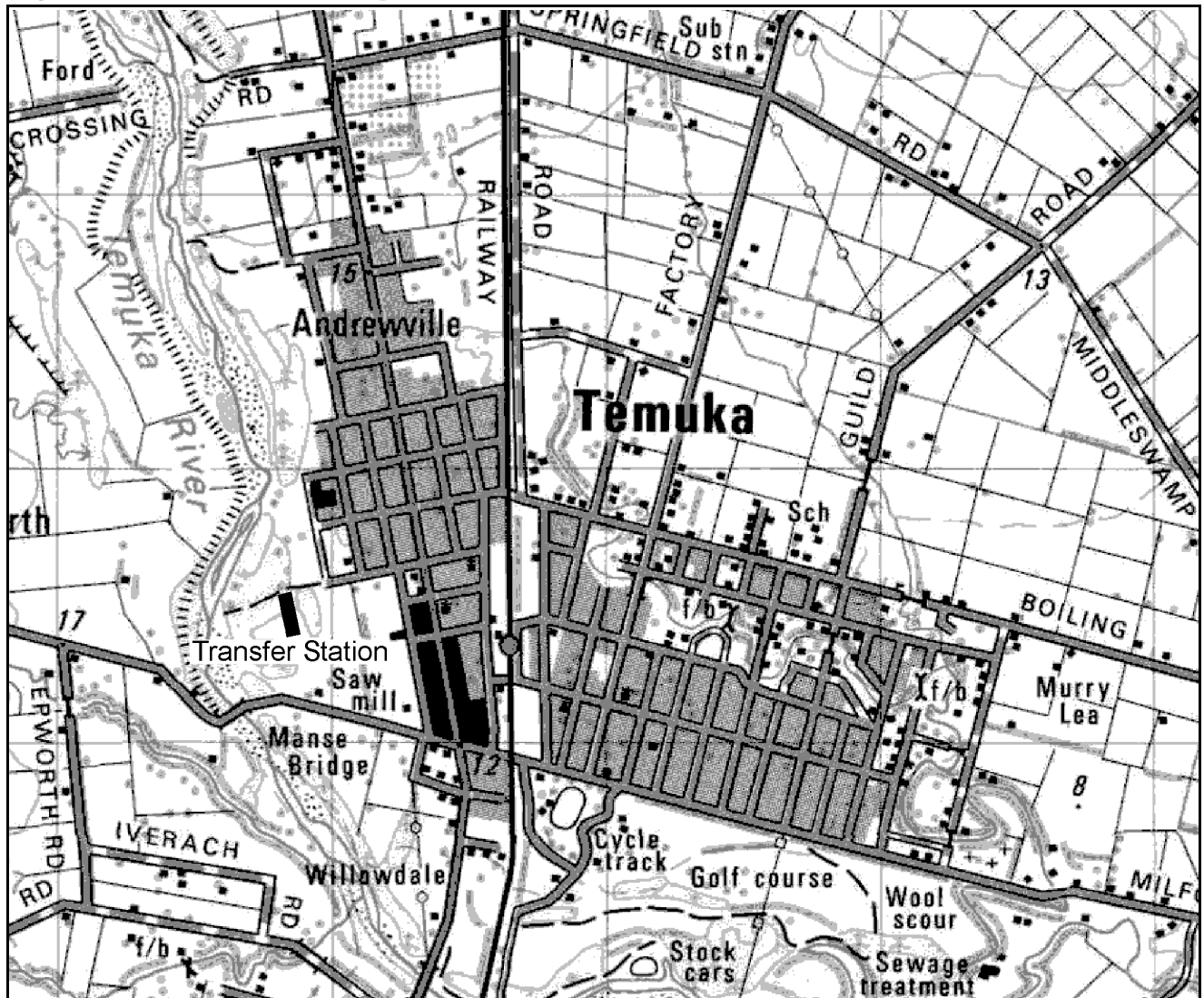
Taylor Baines & Associates has been a private provider of research, consulting and training services since 1989. The firm specialises in social research and the application of social assessment methods to a wide variety of issues in community development.

B: History and description of the facility

Location:

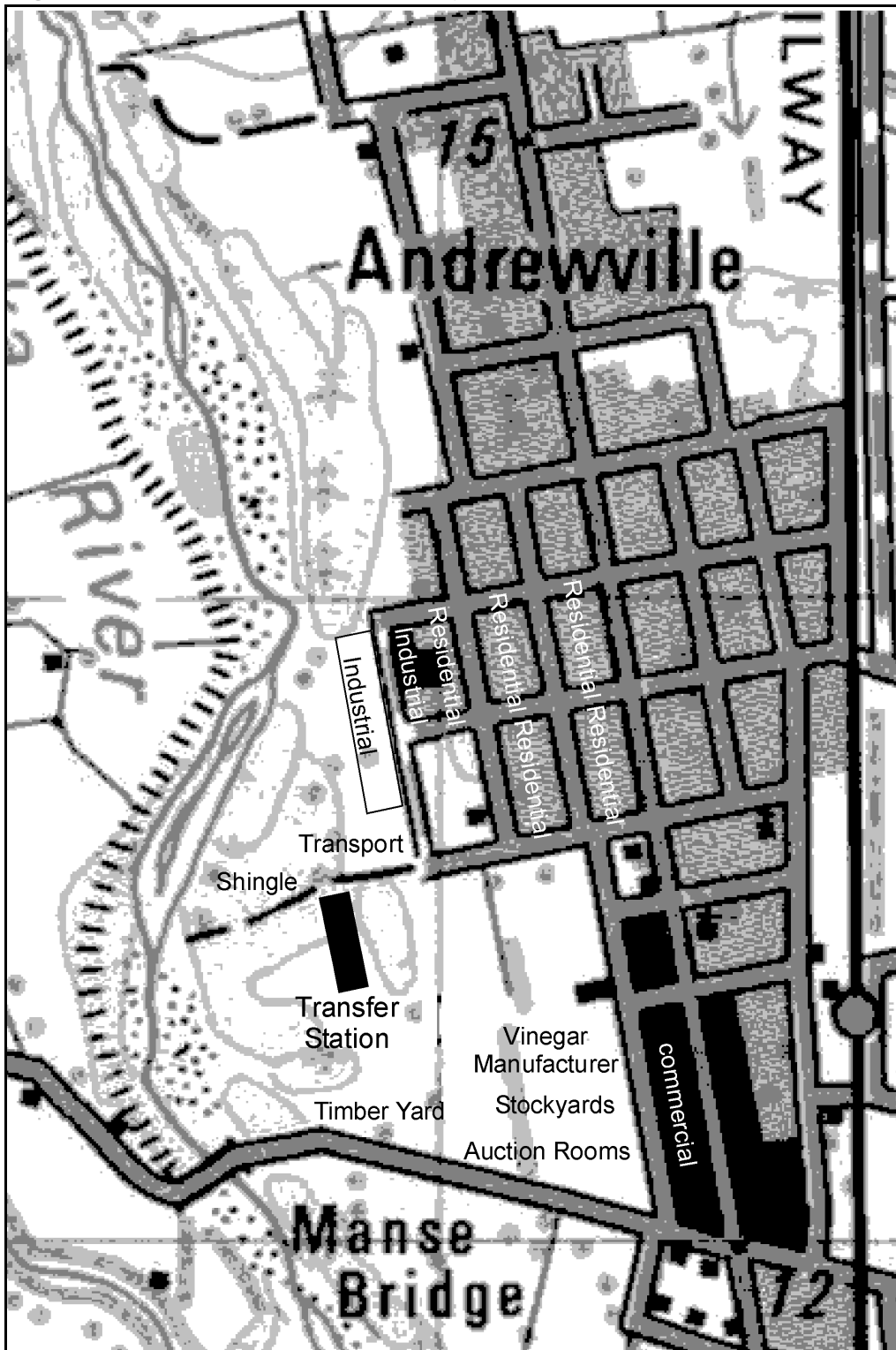
Opened in May 1993, the Temuka transfer station is situated at the south west corner of the township of Temuka (Figure 2). The facility is approximately 700 m from the town centre.

Figure 2: Temuka Township



The facility is bounded by the Temuka river to the west, which separates it from private farmland. To the south, the facility is separated from privately owned farmland by the area that used to be the Temuka dump, on part of which the facility has been built. Immediately to the east of the transfer station site are several paddocks of grazing land, with some residential properties at the eastern end of Wilmshurst Road (on the south side). To the north east is the nearest residential area, and directly north is an area of industrial land (Figure 3).

Figure 3: Land uses in the vicinity of the Temuka Transfer Station.



Planning

The consequences of local government amalgamation

In 1989, the four local authority areas - Timaru District, Strathallan County, Temuka Borough and Geraldine Borough - amalgamated and became the present Timaru District. From the former councils and boroughs, the Timaru District Council (TDC) inherited five dumps, bringing the number under its control to six.

Timaru District Council's Solid Waste Management Plan

The Temuka dump had been of concern for some time as it was sited in the Temuka River bed, and close to areas of recreational use in the river. Under normal conditions, leachate from the dump would percolate down to the water table. Even moderate flows in the river caused the water table to rise and mix with leachate⁶.

In 1991 the, TDC's technical services engineer announced to the Temuka Community Board that "*Temuka's rubbish tip was poorly sited and not environmentally safe.*" (Timaru District Herald p.2 19/11/1991) The Council's General Manager in 1992, stated that there had been "*numerous complaints*" regarding the operation of the present dump site.

The Council accepted that it had responsibility for the District's waste disposal, and resolved to establish a Waste Management Strategy. Having already established an environmentally sound disposal site in Timaru ahead of the Resource Management Act (RMA), it remained to resolve the fate of the other five dumps. The TDC recognised that the cost of waste disposal had become more expensive, and therefore cheaper alternatives needed to be explored. Other associated problems were related to difficulties in finding new landfill sites in the District. As well as problems with bringing the existing dumps up to standards that would comply with the RMA, the Temuka dump had reached its capacity even with high-density compaction and previous extensions. This prompted the development of a solid waste disposal strategy focusing on waste minimisation. The strategy had the twin objectives of reducing waste by thirty percent and increasing the life of the Redruth landfill in Timaru by ten years.

Recognising the problems associated with landfills sited in river beds, the TDC proposed that currently existing landfills should be closed, and a network of new transfer stations should be built in their place. These transfer stations were to have entirely paved dumping pits so that any leachate could be collected into a holding tank and transported by tanker to the Timaru waste water treatment plant.

The network would allow all of the waste produced in the Timaru District to be collected at the transfer stations, compacted and transported by truck to the Redruth landfill for disposal. To date, the TDC is in the process of drafting a "zero waste" plan.

⁶

Similar situations existed for most of the TDC's other satellite dumps

Planning at Temuka

In 1990, the Temuka Community Board received a petition signed by 128 residents calling for “a closure of the town tip and for the introduction of a wheelie bin⁷ collection [system]⁸. As a result, the Temuka transfer station was notable for its lack of contention, as the building of the facility marked the end of an unpopular dump. The construction of the transfer station was not notified to the general public. The TDC received only one submission regarding the station’s construction, which was later disallowed. The land was already owned by the District Council and designated in the Strathallan District Scheme Plan for waste.

From a Maori perspective, the facility was certainly better for the environment, yet it was felt by some representatives of the Maori community that there was inadequate consultation. In terms of the application of Treaty partnership principles related to kaitiakitanga, the Arowhenua Runanga did not believe that proper consultation was carried out. To date, the TDC does not have a formal policy on consultation with tangata whenua. In the past, issues that may have been of interest to tangata whenua were dealt with on an “informal basis.” Depending upon the nature of the issue, meetings were arranged at the marae, at the TDC premises, or at some other venue. For the Temuka transfer station, several informal meetings occurred with some of the local kaumatua as well as the local Runanga liaison person for the Canterbury Regional Council.

A formal consultation procedure is currently being developed for liaison with tangata whenua.

No formal Environmental Impact Assessment or Environmental Impact Report was prepared for this facility, because no formal application for resource consents was required. However, the potential effects of the proposal were considered at meetings between regional council representatives and TDC staff.

Site development and access

The Temuka transfer station was built at the entrance to what was previously the town’s dump site. The transfer station is accessed via Wilmshurst Road, which leads off Vine Street, the by-pass road for the town centre.

The facility was designed to be clean and easy to use from the point of view of the general public. Users of the facility simply back up, and dump their rubbish into a 220 m³ bay. A loader then pushes the rubbish into a hopper at the end of the pit, and a hydraulic ram pushes the rubbish into a 25 m³ container. When the container is full, it is transported by truck to the Redruth landfill for disposal.

After the construction of the transfer station, the TDC introduced the wheelie bin system of refuse collection.

⁷ “Wheelie bins” are mobile plastic refuse containers, ranging in size from 120 litres to 240 litres. In the Timaru District they are the predominant method for weekly refuse collections.

⁸ TDC Refuse Discussion document, p.3

The TDC decided that all transfer stations should become drop-off points for organic waste. The organics are then transported to the Redruth landfill for composting, the larger amounts having economic and process benefits. Composting of organic waste at Redruth began in 1994.

The present situation (1999)

The Temuka transfer station is attended by one ticket booth operator (employed by the TDC) and a contracted facility operator, who runs the waste compactor. In the latest year, the facility processed 815 tonnes of waste.

The station's operating hours are: average vehicle count:

Tuesday 9.30 am - 12.30 pm	12/hr
Thursday 2.00 pm - 5.30 pm	17/hr
Saturday 10.00 am - 4.00 pm	26/hr

It is closed on public holidays. The transfer station is operated under contract to the TDC by a private operator. Recent average figures, provided by the TDC administrators, for the numbers of private vehicles calling at the transfer are shown above. At present, one truck services all transfer stations in the area, calling twice a week.

Liaison between the facility and the host community

No formal liaison mechanism exists between the operators and administrators of the Temuka transfer station and its host community in the immediate vicinity of the facility. However, the operator of the transfer station reported that he had never received any complaints from members of the host community since the new facility opened.

C: The host community

Overview

The host community for Temuka Transfer Station is defined by a combination of proximity to the facility and other natural or human-made barriers. To the west, the Temuka River provides a natural boundary, and immediately to the east of the transfer station are several paddocks of grazing land, with some residential properties at the eastern end of Wilmshurst Road (on the south side). Further to the east, the SH1 passing through the town (as King and Vine Streets) constitutes a human-made geographic and social boundary. The locality north of the site⁹ comprises a mix of residential (east of Thomas Street) and industrial property (west of Thomas Street).

Interviews indicate that in the vicinity of the transfer station, the eastern bank of the Temuka River is not much used for recreation.

Population change 1991-96

Table 1 summarises changes in the usually resident population between 1991 and 1996 and compares the trend for the host community with that for the source community of Temuka township.

Table 1: Trends in usually resident population

Area	1991 census	1996 census	% change 91-96
Transfer station host community	135	141	+4.4%
Temuka township - source community	4002	3981	-0.5%

Source: Statistics NZ (1997)

Table 2 compares similar changes for occupied dwellings.

Table 2: Trends in usually occupied dwellings

Area	1991 census	1996 census	% change 91-96
Transfer station host community	51	51	n.c.
Temuka township - source community	1503	1596	+6.2%

Source: Statistics NZ (1997)

⁹ The area bounded by Wilmshurst Street (S), King Street (E) and Cass Street (N).

Businesses in the host community locality

The nearest business neighbours are located either north or east or south of the transfer station site. Across Wilmshurst Road immediately to north (~50 m) are a shingle pit and transport yard, while several businesses are located further north along Thomas St (~150-250 m). The eastern side of Vine St/SH1 is the location of a cluster of businesses (~300 m), while a food processing plant and the stock yards and auction rooms are located on the western side of Vine St/SH1 (~200 m) north of its intersection with Temuka Road. On the north side of Temuka Road at a point directly south of the transfer station (~100 m) is a timber yard.

Most of these businesses have existed for a long time. Indeed, their average time-span so far has been 19 years. Thus, they tend to have preceded the establishment of the transfer station by many years.

Recent commercial development

There has been very little development in the host community. In 1995 a New World supermarket was built on King street, approximately 600 metres from the facility. The transfer station itself would be the only other significant, recent new construction in the host community.

D: Coverage of consultation and Interviews

Numbers and categories of interviewee

Interviews were conducted during May 1999.

In all, 65 structured interviews were conducted, including 55 with residents and ten with businesses. All but two of the businesses occupying premises in the designated host community area were interviewed.

This case study sought to assess the effects of the new transfer station operation (opened in May 1993) and not the effects of the older refuse disposal activities which had taken place for many years previously. Of the 55 local residents interviewed, 27 (49%) had moved into the host community since the transfer station began operations. Thirteen residents (27%) had lived in the locality for more than 10 years. As noted earlier, all business operators had been in the locality long before the transfer operation began.

List of other key informants

- Representative of the Arowhenua Runanga
- Staff at the Temuka transfer station
- Past and present members of the Temuka Community Board
- Members of a Temuka recreational fishing group
- TDC solid waste engineer

E: Operational effects of the landfill on neighbours

Generally, neighbours' comments suggest very noticeable improvements in the off-site effects experienced from the solid waste facility, having been converted from an open dump to a controlled transfer station. In fact, there is no evidence that the transfer station itself causes any negative off-site effects at all. This case study was notable, among the seven solid waste case studies, for the low levels of respondents reporting any off-site effects at all.

Roadside litter from insecure trailer loads and illegally-dumped rubbish are the most notable effects still experienced by people in the host community.

Other off-site effects such as odours, vermin, road safety and traffic noise which were discussed by relatively few nearby residents and businesses, were not found to be linked to the transfer station.

Six types of effect were discussed unprompted by residents and businesses in the vicinity of the transfer station -

- litter
- seagulls
- odour
- flies
- traffic volumes
- vermin

When prompted, more respondents commented on - as well as -

litter	noise
odour	traffic hazards
flies	

Since no EIA was reported for this facility, it is not possible to compare the actual experience of members of the host facility with effects assessed prior to its establishment.

Litter

What effect do they notice? Source of effect?

Only one resident commented unprompted about the litter, described as “branches, greenery and boxes” This resident noted the observations were made on Richard Pearce Drive¹⁰, on days when the transfer station is open. In prompted questioning, the proportion rose to eight residents (15 %), who stated that they had noticed litter. Typically, the litter is plastic bags, boxes and organic waste such as leaves and branches, coming from the general public and unsecured trailers. However, it

¹⁰ Richard Pearce Drive is not in the host community, as designated. It is a main street in Temuka leading from the main part of the township west of the railway line to the location of the transfer station, via one of the three level crossings.

should be noted that five residents made unprompted positive comments that the new transfer station itself was much cleaner than the old dump.

No businesses commented unprompted on litter. When prompted, two businesses reported rubbish from illegal dumping on the Temuka River bank. Visual inspection confirmed these reports, revealing boxes and bags of rubbish, as well as other larger discarded items such as bicycle frames, a battered car body, and smashed concrete. Both business interviewees attributed this practice to a combination of price resistance when fees were introduced¹¹ at the new transfer station, and the limited hours of opening.

Spatial distribution?

Street-side litter has been noted mainly on Wilmshurst Road, Cass Street and Birkett Street¹² - one resident noted the apparently random locations of the litter observed in the host community area - as well as the main routes from Temuka township towards the facility. Nearby areas of riverbank are the other location where litter is found.

Timing; frequency; trends?

Temuka transfer station is open on only three days of the week (Tuesday, Thursday, Saturday). Residents made a clear association between the presence of litter and these opening days, noting particularly Saturdays and Tuesdays, and also days which are particularly windy. Very little was observed by the researchers over the three-day period of field work. One respondent suggested that street-side litter had decreased in recent times, due to the introduction of wheelie bins.

Mitigation attempts?

While there is provision in the service contract for litter clean-ups by the transfer station contractor, this had never been activated yet in response to a complaint.

Impacts?

Of their responses to litter, most stated that they picked it up themselves without complaint or took no action. When asked how the effect impacted on them, virtually all replied that it did not impact on them in any way.

However, several did comment on the possible hazard to traffic that could arise from larger tree branches left behind on the street.

Summary evaluation

While roadside litter is still noticeable in the vicinity of the transfer station, there is no suggestion that it results from the activities on the transfer station site itself. Almost as many residents have reported improvement in the cleanliness of the location. Litter results from the actions of users of the facility, in not securing loads onto their trailers adequately, or dumping illegally nearby. No litter was reported as being blown off the transfer station site and thus resulting from the way the facility is operated.

¹¹ It should be noted that charging fees for waste disposal (rather than meeting costs out of general rates) is new to the residents of Temuka. Although one resident commented that it “*felt like being ripped off*”, only four out of 55 residents indicated that they objected to the level of charges.

¹² Respondents reported seeing litter at distances from 50 m to 300 m from the transfer station along various streets in the host community locality.

Increased traffic volumes

What effect do they notice? Source of effect?

Three residents (one unprompted and two prompted) reported an increase in traffic volumes over the days that the transfer station is open. This can be explained by the fact that the old dump used to be open six days a week. Thus, users' visits to the transfer station are now focussed on fewer days and much shorter opening hours. Indeed, several observations suggest that the introduction of the kerb-side wheelie bin service has led to a reduction in visits to the transfer station by local residents.

TDC estimates from past vehicle counts showed that in 1994, when tipping was free, there was an average of 520 vehicles per week, with sometimes as many as 350 on a Saturday, although some of these did not involve large loads of rubbish. When fees and wheelie bins were introduced in 1995, these numbers reduced to about 250 vehicles per week. Since then, the areas serviced by wheelie bins has been extended to include more peripheral areas of Temuka, thus reducing even further the need for private vehicle visits to the transfer station.

Spatial distribution?

The highest traffic volumes are reported to occur mainly along Vine Street and particularly Wilmshurst Road which leads directly to the transfer station and therefore where most of the facility's traffic converges.

Timing; frequency; trends?

The weekend is when this effect was noticed, with one respondent suggesting a recent increase.

Impacts?

No one reported any traffic incidents or accidents.

Summary evaluation

Traffic related to the transfer station does not appear to pose any significant negative impact on nearby residents or businesses in Temuka.

Offensive odours

What effect do they notice? Source of effect?

One resident on Cass Street who has lived in the area for twelve months, reported (unprompted) a "general rubbish smell". Two other residents volunteered unprompted comments that there is now less smell than there used to be from the old dump on the same site. One business owner on Thomas Street, roughly 500 metres away stated that the transfer station had no noticeable smell.

Spatial distribution?

The resident who reported low-level odour lived about 300 m from the facility.

Timing; frequency; trends?

The resident indicated the frequency of experiencing such odours was weekly.

Mitigation attempts?

There have never been any complaints about odour from the transfer station.

Impacts; acceptability?

Not a single person interviewed described any impact from waste-related odours.

Summary evaluation

Offensive off-site odour does not appear to be a problem for any neighbours of the Temuka transfer station. Indeed, replacing the dump with a transfer station has resulted in unpleasant odours no longer occurring.

Vermin

What effect do they notice? Source of effect?

One resident was prompted to comment on vermin, having seen “lots of mice” inside his house on King Street, approximately 500 metres distance. He was not prepared to suggest that the mice had any link at all with the transfer station, and said they posed no problem. Furthermore, two other residents (both living on King Street 500 m from the facility) volunteered unprompted comments that fewer vermin are seen in the area than previously. It should be remembered that the site is semi-rural in nature, being bounded on three sides by undeveloped land.

Impacts?

There was absolutely no evidence reported to implicate the transfer station with the vermin problems for neighbours.

Summary evaluation

There does not appear to be any problem for nearby residents with vermin escaping from the transfer station at Temuka.

Flies

What effect do they notice? Source of effect?

Two residents and a business owner noted the presence of flies. The two residents reported noticing large numbers of flies coming inside their homes. The unprompted response suggested that the transfer station was the likely source, while the prompted response expressed some degree of doubt as to source. The prompted business response suggested that flies were more likely to come from a variety of other sources including the stock sale yards nearby, the riverbed and nearby areas of swamp, and did not attribute their presence specifically to the transfer station operations, but did suggest that the old dump site is still a source of flies. In this context, it is notable that five residents (11%) made unprompted positive comments regarding the cleanliness of the transfer station when compared with the previous dump operation.

Spatial distribution

All three respondents were on premises approximately 500 m from the facility - one resident on Birkett Street, and the second on Thomas street. The business owner was also on Thomas Street.

Timing; frequency; trends?

All three respondents noted the presence of flies on a daily basis, appearing especially in the warmest part of the day, and more in summer.

Mitigation attempts?

There have never been any complaints about flies from the transfer station.

Summary evaluation

The very low level of comment combined with the distances and other more likely sources of flies in the neighbourhood suggest that the Temuka transfer station does not cause any observable fly nuisance to its neighbours.

Other effects

Single, uncorroborated comments about seagulls, traffic hazards and noise were not analysed any further.

Other comments

At the end of the interviews, respondents were asked if there were any comments they would like to add to the interview. Most replied in a positive manner suggesting that the transfer station was an improvement on the previous dump, mentioning its lower environmental impact and lesser general effects. Accessibility was mentioned in terms of operating hours, with many residents expressing dissatisfaction at the limited operating hours.

Generally, both residents and business people expressed a high level of approval for the manner in which the transfer station is run, as reflected by the relatively low numbers of comments on any specific effects (Table 3), when compared with other case studies in this series. This conclusion is supported by a variety of comments -

"Tidied up a lot"

"Great dump - tidy, clean"

"Very clean; no trouble, cost-wise not a problem; like the recycling"

"Must be an asset; the operation's better"

"Big improvement on the tip"

"Nice and tidy"

"No smoke and tidier"

"Excellent recycling and managing"

"Better and cleaner now"

"Easier for businesses to dispose of cartons, cans and bottles"

"Good for the community - but people don't like paying"

"Well kept station"

"It's wonderful for the town"

"Clean - out of the way"

"The transfer station has a positive effect on the environment"

Table 3: Summary table of residents' responses (N=65)

Effect noticed	% Unprompted	% Unprompted + prompted
Litter	2	15
Odour	3	6
Vermin	5	5
Traffic volumes	5	5
Flies	3	5

F: Longer-term effects on the landfill on settlement patterns and development in the locality

In exploring the longer-term effects of the Temuka transfer station, respondents in the host community were asked for their observations on whether the facility had influenced host community development.

It was noted earlier that Temuka has not experienced much obvious new development in the past five years. Residents comments indicate that the most significant effect from the advent of the transfer station may have been to break down the stigma attached to the locality. Several commented explicitly on this -

“The area is improving ... it’s reputation is improving”

“No stigma any more - people don’t say ‘oh, you live by the dump’”

“It’s made it more acceptable to live in the area”

while others noted changes in the mix of those taking up residence in the locality¹³ -

“Younger people moving in”

“More mixed ages in the vicinity”

“Cheaper prices attracting ex-urban families”

“Seen as a good place to raise families”

Six out of the ten businesses interviewed replied that the development and operation of the new transfer station had not been a significant factor in local development trends, while four respondents suggested that it had - all of them suggesting a positive effect. The positive influence they attributed to “more recycling”, “tidier”, “less smell” and “less stigma” associated with the locality. Some linked the new transfer station with the advent of the wheelie bin kerb-side collection service, noting “less accumulation of rubbish” on their premises.

Members of the Arowhenua Runanga were very positive about the improvement of the transfer station over the original dump. However, they made the point that the site itself continues to be a landfill regardless of what is built on top of it, and this continues to be a concern because of its proximity to the Temuka River. Secondly, there was a perception that the transfer station, because it is constructed adjacent to a waterway, would inevitably have a negative effect¹⁴.

Regarding recreational use of the locality - principally the river nearby - local commentators suggested that the legacy of the dump remains. There is still a perception that the dump is there - “so people don’t tend to go there”.

¹³ Recall that half of the residents interviewed in the immediate locality have moved in since the transfer station began operating.

¹⁴ The Runanga representatives emphasized that a waste processing plant should never be constructed near such an important component of the ecosystem as a river, that the Temuka River is a place of importance to Maori people of the area, and that waterways are central to Maori belief systems.