10. SOCIAL IMPACT ASSESSMENT

10.1 Project Description

10.1.1 Research Brief and Terms of Reference

- **Background to the Project**
  
  In February 2000 the Premier of Gauteng, Mbhazima Shilowa, announced a proposed rapid rail system linking Pretoria, Johannesburg and Johannesburg International Airport as one of ten Spatial Development Initiatives (SDIs), (also known as Blue IQ,) of the Gauteng Provincial Government.

  It is the Government’s stated policy to promote public transport, and to prioritise it, where appropriate, over private transport. The rapid rail link is aimed at providing an alternative public transport mode, which will attract private car-users and alleviate congestion on the roads between Johannesburg and Pretoria, where, for more than a decade, the traffic volume has been growing at a rate of approximately 7% per annum.

  In April 2000, a consortium of consultants (the Gautrain technical team) was appointed to assist the Gauteng Department of Public Transport, Roads and Works (Gautrans) with the implementation of the rapid rail project. An environmental feasibility study for the proposed rail link, amongst other technical feasibility studies, was completed in August 2001. The feasibility study concluded that there are no fatal flaws associated with the proposed project, although a number of red flag issues were identified as requiring further investigation within an Environmental Impact Assessment (EIA).

- **Motivation for the Project**

  Gauteng Province is the economic hub of South Africa, generating more than 36% of the country’s Gross Domestic Product (GDP). The Province covers less than 2% of the country’s total surface area, and much of the main road network in the Province is highly congested during peak periods. Historically, land development in the Province has, in most cases, not been supported by an efficient public transportation system. It is essential that a supportive public transportation system be developed to assist in optimising land use development, minimising congestion on the roads, reducing the number of road accidents and decreasing pollution levels, as well as moving towards the more holistic provision of an integrated transport system that includes public transport. The rapid rail link is aimed at fulfilling these goals.
• **Description of the Project**

The proposed rail link will entail the construction of a modern, state-of-the-art rail connection linking Pretoria, Johannesburg and Johannesburg International Airport (JIA). The network will consist of two spines: one linking Johannesburg and Pretoria, and the other linking Sandton and JIA. A network length of approximately 80 km is planned, with provision for future extensions.

The train (known as Gautrain) is proposed to travel at a maximum speed of between 160 and 180 km/h, with a travel time between Pretoria and Johannesburg of approximately 35 minutes. Three anchor stations are proposed at Pretoria station, Johannesburg Park Station and Johannesburg International Airport (JIA), with seven other stations proposed at Hatfield, Centurion, Midrand, Marlboro, Sandton, Rosebank and Kempton Park (Rhodesfield). Subsequently three extra stations have been added to the proposed project including a park-and-ride station east of Hatfield, a park-and-ride station at Samrand and an additional station in Arcadia.

### 10.1.2 Research Scope, Methods and Process

The purpose of the Social Impact Assessment (SIA) is to provide a systematic analysis with respect to the likely impacts that the proposed Gautrain will have on individuals, groups, organisations, neighbourhoods, communities, institutions and other social units in the affected areas. The SIA is undertaken to assist individuals, communities, and organisations to understand and anticipate the possible social consequences on individuals and communities as a result of the proposed project. Social impacts can be defined as the consequences for human populations of any public or private action that alters the way in which people live, work, play, relate to one another, organise to meet their needs, and generally cope as members of society. An SIA entails establishing the nature, magnitude and differential effects of these impacts, as well as possible mitigation. The methodology is designed to achieve these outcomes.

• **Research Aims**

In essence the research had three major areas of focus. Firstly, to identify the main anticipated impacts that the construction and operation of the proposed Gautrain Rapid Rail Link would have on the immediate community during the pre-construction, construction and operational phases. This involves a description of the social characteristics of the study area being assessed and serves as a point of departure for
estimating potential positive and negative effects of change. The broad profiling overview of the social scoping includes:

* a description of social trends and current conditions;
* an analysis of significant social and cultural values (including “sense of place”) existing in the assessment area and the relationship of these values to the proposed change;
* a description of the regional economy and potential economic links between the proposed development and the assessment area;
* a plan for the assessment of social effects, including social factors to be used;
* definitions or interpretations of key variables and their sources;
* documentation of data sources and a discussion of assumptions underlying their analysis and projection; and
* discussion of the reliability of data, inconsistencies, or gaps in the data that may affect the analysis.

Secondly, it is important to gauge the opinion of Interested and Affected Parties (I&APs) towards the proposed project.

Thirdly, the aim is to identify any potential impacts (whether negative or positive) on the social environment. This entails:

* the determination of the probability, scale, duration and intensity of effects;
* a comparison of the effects and implied social, economic and resource trade-offs;
* the integration of information with the broader EIA; and
* development of potential mitigation measures.

**Research Procedures**

A research strategy was initially designed to focus on areas affected by the reference route alignment between the three anchor stations, Pretoria Station, Johannesburg Park Station and Johannesburg International Airport (JIA), as proposed by Gautrans. As the public participation process unfolded, various alternative route alignments were identified resulting in the area of focus being modified in order to encompass all these alternatives.

The methodology applied took the form of a multifaceted approach with the use of triangulation (Brewer and Hunter, 1989; Patton, 1990:10-12; Burgess, 1994:ix; Nau, 1995 and Flick, 1998) as a data collection technique. An attempt was made to transcend the
technocratic-participatory divide in social assessments identified by Taylor et al (1990: 32-39) by involving some community representatives in the execution of the research. The research entailed both a quantitative and qualitative component and data was collected in the following manner:

* Quantitative data was obtained by means of self-administered questionnaire surveys and demographic data was obtained from Statistics South Africa.
* Qualitative data was obtained from the public participation process and minutes of focus group meetings, document analysis of letters and submissions, social mobilisation reports and an analysis of the Issues Report.

Each of these components requires a more detailed discussion.

- **Quantitative Data**

  * Self-administered Questionnaire Survey

    For the purposes of this research a community is defined as ‘a group of people that interacts in characteristic ways based on shared values to meet common needs’ (Schensul et al, 1999: 54). In terms of this definition the people living and working in the vicinity of the proposed Gautrain Rapid Rail Link could be considered to form a community that will be affected by the project.

    A three-part self-administered questionnaire was designed to gather data. In section A of the questionnaire eight questions relating to biographical data, such as age, gender and qualifications, were asked. In Section B, 37 items, posed in a five point Likert type format, were aimed at eliciting opinions and perceptions towards the proposed project, while two open ended questions provided for the gathering of more qualitative data in this respect. The ten questions asked in section C concentrated on gathering data about the community and identifying social networks that may exist in that community.

    Maps were used to identify residences and businesses affected by the reference route as well as all alternative route alignments. Trained field workers distributed the questionnaire to each of these residences and businesses by means of a knock-&-drop system. After a period ranging between three and seven days, questionnaires were collected, using a similar knock-&-collect technique. Where residents were not at home, or had not yet completed a questionnaire, letters were left urging them to
complete and either post the questionnaire, or arrange for the questionnaire to be collected. A copy of the questionnaire is attached as Appendix 10A. The questionnaire was available in both English and Afrikaans.

* Demographic Data
Where possible demographic data was acquired from Statistics South Africa. However, data was not available for all areas that could possibly be affected by the proposed rail alignments.

- Qualitative Data Collection

* Public Participation and Focus Group Meetings
A process of public participation was entered into commencing on 14 January 2002, when the EIA process was advertised and progressed with a series of open days and public meetings held between 29 January and 23 July 2002. A member of the SIA research team attended each of these meetings as an observer, while minutes and an Issues Report were generated from these meetings. The minutes of 66 focus group meetings, as well as two submissions and one petition were analysed. Further focus group meetings were held between the end of July 2002 and mid-September 2002. The information collected at these meetings was not included in the analysis as these meetings served to clarify certain information and no substantial new issues were raised. The analysis of this data is attached as Appendix 10B and a list of the key stakeholders involved in the public participation process is attached as Appendix 10C.

* Document Analysis of Letters and Submissions
Subsequent to the public announcement of the project in January 2002 and throughout the public participation process Bohlweki has received various documents in the form of applications, letters, faxes, e-mails, newspaper articles, submissions, reports and petitions. All this documentation served as a source of data, was analysed and is incorporated in the final report. All these files can be consulted at the offices of Bohlweki Environmental.

* Social Mobilisation Reports and Minutes
As the project unfolded, a process of social mobilisation emerged which often included only a part of a community in the form of interest groups. This led to mobilisation and at times, a deepening of conflicts between certain communities and
they requested an opportunity to address both the Gautrain technical team as well as the EIA consultants. Researchers attended these meetings as observers and the documentation, such as presentations and minutes that these meetings generated were used as data. The analysis of these documents also forms part of Appendix 10B.

* Analysis of the Issues Report

An Issues Report was compiled over the duration of the public participation process. This report was also used as a source of information. The relevant extracts from the Issues Report is attached as Appendix 10D.

- Processing of Data

Quantitative data collected by means of the self-administered questionnaires was coded, captured and analysed by means of the Statistical Package for the Social Sciences (SPSS). Printouts of the statistical analysis of the survey data can be consulted at the offices of Bohlweki Environmental.

Qualitative data collected during the social mobilisation and public participation process as well as by means of document analysis and the analysis of the Issues Report, was categorised, coded, captured and analysed by means of a package for the analysis of qualitative data called Non numerical Unstructured Indexing Searching and Theory-building (Nud*ist) (Gahan & Hannibal, 1998).

In this manner, data collection, interpretation and narrative report writing occurred simultaneously and accordingly, information initially collected was reduced to certain patterns, categories and themes and a schema, such as that suggested by Tesch (Creswell, 1994:153-157) was applied. Data was reviewed on a number of occasions using different coding each time, as suggested by Neuman (1997).

- Representativity of Results

Although attempts had been made to provide an opportunity to all members of the research population to participate in the survey, the results of the survey cannot be generalised to the total population. It is in the nature of a survey such as this that only those people with fairly strong views about the proposed project will take the time and effort to complete a questionnaire. Respondents in general are also expected to be those with fairly negative views towards the proposed project. The reasons why people would be unwilling to complete the questionnaire are unknown as is the kind of bias that creeps into the data as a result of non-response. In the analysis of the results we therefore draw
conclusions with regard to the characteristics and views of the concerned residents in those communities.

It is also important to recognise that survey data can at the most provide information with regard to people’s perceptions about the possible impact of the proposed rail service. While the importance of perceptions should not be overestimated, the well-known sociological saying that if people perceive things as real, they are real in their consequences, should also be kept in mind. Perceptions have real consequences and are therefore important to consider in the determination of social impacts. The same argument holds true for the qualitative data.

10.2 A Socio-economic Profile of the Region

A socio-economic profile of the entire reference route, including alternative alignments in terms of geographical descriptions of the areas, as well as demographic information, is provided below.

10.2.1 Geographical Description of Area

The geographical description of the areas is provided with reference to the sections between stations along the route. This summary is based on a more detailed description of the geographical areas, which is found in Appendix 10E.

- Hatfield Station – Pretoria Station
  The identified site for Hatfield station lies to the north of the main commercial area of Hatfield. From here the line runs in a westerly direction towards the CBD of Pretoria. The directly affected area mainly consists of residential properties, office buildings and commercial developments. The alternative alignments via Park Street would be bordered by educational facilities, residential properties (mainly in the form of blocks of flats), commercial properties and a number of embassies. Many of the offices and businesses are located in houses of architectural and historical value. The change in land-use is evidence of the change in the character of the area that has taken place over the years. The Pretoria Art Museum, a church and medical facilities are also situated in Park Street.

  The reference alignment via Muckleneuk cuts through a number of buildings on the Sunnyside campus of the University of South Africa. Through Muckleneuk it is situated to the south of the existing Metrorail cutting and to the north of Berea Street continuing via a viaduct over Magnolia Dell. It would therefore run adjacent to, or in close
proximity to four major educational facilities. This alignment would greatly affect the quiet suburb of Muckleneuk and could potentially affect the entire area between Berea and Walker Streets, running in an East-West direction. Three refinements to the reference alignment were considered. All three these refinements cross the Sunnyside campus of the University of South Africa. The most northerly of these refinements will necessitate demolishing a number of buildings on the campus. The other two routes will not affect any buildings directly as they pass on viaduct above the buildings. The three refinements are situated at varying distances from the existing Metrorail line with refined alignment 6fd will run directly adjacent to the existing Metro Rail alignment and would affect less of the residential area. To the north of the existing Metro Rail alignment through Muckleneuk a large number of high-density residential developments are located. A hospital is also situated in this vicinity. A number of blocks of flats in Berea, to the east of Pretoria station, could potentially be affected.

- **Pretoria Station – Centurion Station**

The area directly to the south of the Pretoria station adjacent to the existing railway line mainly consists of open space in Fountains Valley. This does not include the recreational facilities of Fountains Valley adjacent to the Groenkloof Nature Reserve. From visual inspection this area does not seem to be frequented by a large number of people. The Freedom Park development is located in close proximity to the station. This development is aimed at increasing tourism in the area. Further to the south, the alignment would run through the military areas in Centurion, as well as the Denel/ Lyttelton Engineering Works (LIW) developments. The LIW development also incorporates a nature reserve, which is managed by LIW, but owned by the Tshwane Metropolitan Council and forms part of the larger Groenkloof Nature Reserve. This facility is not accessible to the public.

The alignment then impacts on a number of residential properties (mainly townhouse complexes and single residential properties) in the Lyttelton area. The alignment also passes close to two churches.

- **Centurion Station – Midrand Station**

The area to the south of the Centurion station consists mainly of commercial developments, as well as some residential properties. The alternative alignment would impact on the rugby fields used by the Centurion Rugby Club, which will need to be relocated if this alignment is selected. From here the alignment would run as close as possible to the N1 highway. This area has already been developed as commercial and office parks.
Once this alternative alignment enters the Midrand area, it stays as close as possible to the K101 (old Pretoria-Johannesburg Road). The alignment would affect a number of expensive residential properties in Randjesfontein and Glen Austin Agricultural Holdings. The station in Midrand is situated within the proposed Zonkeziswe development.

**Midrand Station – Marlboro Station**

The reference alignment would impact on the residential areas of President Park, Buccleuch, Kelvin and Marlboro Gardens. The alternative alignment would still impact on President Park, but would mainly utilise open land to the west of Buccleuch. The construction method proposed for the alternative alignment is mainly cut-and-cover, underneath Marlboro Drive in the Marlboro Gardens area and would therefore impact less on the residential community with its associated community facilities.

**Marlboro Station – Sandton Station**

The reference alignment in this section of the route would be partly tunnelled and partly aboveground. This alignment would affect two open spaces, namely Innisfree Park and Mushroom Farm Park, as well as office parks and residential properties. The proposed alternative alignments are mainly tunnelled underneath the residential areas of Sandown and Strathavon.

**Sandton Station – Park Station (Johannesburg CBD)**

This section of the alignment is completely tunnelled and follows main roads as close as possible. The area is fairly undulating and therefore the alignment is often very deep underground where it passes underneath the ridges in this area. The land-use is mixed with mainly commercial and office developments adjacent to Oxford and Rivonia Roads. A number of upmarket residential properties are also situated in this area, in close proximity to these main roads.
10.2.2 Demographic Information

A description, based on data obtained from Statistics South Africa, will now be given of the various suburbs in terms of their demographic composition. A more detailed description of the demographic composition of the areas is found in Appendix 10F.

- **Hatfield**
  The area is predominantly white with an unusually large female population in the age groups 15-19 and especially 20-25. This is probably due to the presence of educational institutions (secondary schools and the University of Pretoria) with boarding facilities. The male residences of the University fall under the suburb of Lynnwood due to the geographic boundaries of the suburb. This area has the lowest employment levels compared to other areas along the route in Pretoria.

- **Arcadia**
  The area is predominantly white with 62% employment. The area also has a fairly high student population (both male and female).

- **Sunnyside**
  The area exhibits a similar profile to that of Arcadia with an even higher number of males and females between 20 and 29 years of age. This could indicate a fairly transient population where students move from Hatfield to either Arcadia or Sunnyside and live there for only a few years. As expected, the racial distribution has become more representative of all race groups over the past few years (since the 1996 census) and is therefore now not necessarily predominantly white in nature.

- **Muckleneuk**
  The area is still predominantly white and also includes a large number of males and females between the age of 20 and 29. This could be due to the existence of blocks of flats on the northern side of the railway line and is not necessarily indicative of the age composition of the area in Muckleneuk through which the largest part of the alignment passes.

- **Berea**
  No data could be obtained from Statistics SA for this area.
- **Lyttelton Manor and Centurion**
  No data could be obtained for Lyttelton Agricultural Holdings (A.H.). When the data on age for Lyttelton Manor and Centurion is added together the familiar bell-shaped profile is obtained. A slightly larger number of males between the ages of 25 and 29 is present in the area, which could be as a result of the close proximity of the South African National Defence Force facilities. It is not anticipated that the age structure for Lyttelton A.H. would be significantly different from this.

- **Randjesfontein**
  No data could be obtained from Statistics South Africa for this area.

- **Glen Austin**
  From the data obtained the area has an almost equal distribution of black African and white populations. No apparent reason for this could be established. The area also has one of the highest employment figures for the areas along the proposed route.

- **President Park**
  No data could be obtained for this area. It is, however, expected that the area would have a similar profile to that of Glen Austin due to the geographic proximity of the two areas to each other, as well as the homogeneity that was noted during site surveys.

- **Buccleuch**
  The age profile for this area is similar to that of Glen Austin. The Buccleuch area seems to be predominantly white.

- **Marlboro Gardens**
  Marlboro Gardens has a predominantly Indian/Asian community. The area also has a large black African component and has more males in the categories 20-24 years and 25-29 years.

- **Sandown**
  The black African and white populations in this area are similar in size. Employment in this area is high compared to other areas along the route with approximately 71% of the population being employed. It is also evident from the gender profile that the area has a slightly larger female population.
• Sandton
  Data obtained from Statistics South Africa was divided into Sandton, Sandton City and Sandton Other. When the data for these three areas is combined it is clear that the community is quite diverse in terms of race, age and gender.

• Inanda
  This is a fairly small community consisting of mainly black African and white individuals. The community has a very high household income.

• Dunkeld West
  Only data for Dunkeld West could be obtained and not for Dunkeld. Although the alignment affects the Dunkeld area and not Dunkeld West, it was determined from site inspections that the areas are adjacent to each other and appears to be similar in nature. The black African and white populations in this area are similar in size. A larger number of females between the ages of 40 and 80 reside in this area. No reason for this could be determined.

• Melrose
  The black African and white populations in this area are similar in size. Employment in this area is high compared to other areas along the route with approximately 70% of the population being employed. It is also evident from the age profile that the area has a diverse age structure.

• Rosebank
  Although Rosebank is adjacent to Melrose certain differences could be detected in the demographic profile of this community. It seems that the area has a slightly older female population. The household income for the area is also slightly lower than for Melrose.

• Saxonwold
  As per many of the other areas affected by the alignment, the area has a predominantly white population. An unusually high number of females aged 40-44 reside in this area. No apparent reason for this could be detected. Employment levels are high compared to other areas along the route and the area has a high household income.

• Parkwood
  The size and structure of the community is similar to that of neighbouring Saxonwold.
- **Houghton Estate**
  Numbers for both black African and white groups are high in this area compared to some of the other formerly white areas such as Muckleneuk. The area also has a larger Indian/Asian community than most of the other formerly white areas. An unusually high number of males aged 15-19 reside in this area. This could again be as the result of boarding facilities at a secondary school.

- **Johannesburg CBD**
  The Johannesburg CBD is predominantly a black African area, although large numbers of coloured, Indian/Asian and white individuals also reside in the area. The age structure is skewed with significantly large numbers of males and females in the age categories 20-24 and 25-39. Unusually large numbers of males reside in this area. This could be attributed to the large number of people moving into the area in search of employment.

- **Cresslawn**
  The area is predominantly white with a familiar bell-shaped age structure.

- **Rhodesfield**
  The profile of this area is similar to that of Cresslawn.

### 10.2.3 Existing Social and Political Conditions

The province of Gauteng, which covers an area of some 17 010 km$^2$, is one of South Africa’s smallest provinces. Despite this, the region has an urbanization level of 97%; houses over seven million of the country’s 43 million people; generates 37.7% of the country’s GDP; and is responsible for 60% of South Africa’s research and development achievements (South African Yearbook, 2000/01).

Much of this activity in Gauteng occurs around Pretoria and Johannesburg, the region’s two major cities. Pretoria is situated some 50 km north of Johannesburg, functions as the country’s administrative capital and boasts the largest residential university in South Africa (University of Pretoria), as well as what is believed to be the largest correspondence university in the world, the University of South Africa (UNISA). Johannesburg, with its history in mining activities, has long been considered the economic heart of South Africa. Johannesburg International Airport (JIA), situated just outside of Johannesburg, in Kempton Park, is considered the gateway to South Africa for the majority of the country’s international
visitors (South African Yearbook, 2000/01). Midrand, located halfway between Johannesburg and Pretoria, is considered to be one of the most rapidly developing areas in the country, and accommodates many high-tech companies. Spread throughout the rest of Gauteng, the manufacturing sector consists of over 9300 companies who together employ over 6,000,000 people and generate a gross annual output of over R50 billion. (South African Yearbook, 2000/01). Despite this the unemployment rate still remains high and is estimated to be between 25.6% and 31.6%, according to the most recent figures obtained from Statistics South Africa (Labour force Survey, 2001).

The province’s existing road systems, particularly the Ben Schoeman Highway (N1) between Johannesburg and Pretoria, are heavily congested during peak hours and traffic on this highway is growing at an estimated rate of 7% per annum. Alternative transport systems are not of an international standard and consequently are not utilised by tourists and business people.

In an effort to stimulate growth in the region and in particular to create job opportunities, as well as to address the transport dilemma, the Gauteng Provincial Government has recently launched a R1.7 billion initiative entitled Blue IQ. This initiative, according to the Government’s Blue IQ web site (www.blueiq.co.za), is a trade and industrial strategy aimed at transforming the economy of Gauteng by:

“Building on established strengths to make Gauteng the ‘smart’ province ...
Nurturing high value-added manufacturing ...
Developing business tourism”

The Gautrain Rapid Rail Link Project forms part of this initiative and has been estimated by the project team to have the potential to generate a substantial number of jobs during the construction phase. It is also expected that a number of jobs per annum will be created throughout the operation and maintenance of the proposed Gautrain Rapid Rail Link service, while a substantial number of jobs per annum will be created through secondary benefits. On the transport front, the Rapid Rail Link is aimed at alleviating the current transport problems faced by a growing population in Gauteng.

Due to the fact that Gauteng is highly urbanised, this project is likely to affect numerous residential and commercial properties. Many properties, such as those between Rosebank and Sandton, in areas of Midrand, Centurion and some in the east of Pretoria are considered to be amongst the most expensive real estate on the continent of Africa.
10.3 Social Impact Assessment

The Social Impact Assessment should be understood against the background of the relevant social environmental and project attributes.

10.3.1 Social, Environmental and Project Attributes

- Social Profile of the Communities Surveyed

For the purposes of this research a community is defined as ‘a group of people that interacts in characteristic ways based on shared values to meet common needs’ (Schensul et al, 1999: 54). Apart from the fact that communities can be identified in terms of physical boundaries they also have a social component. This relates to factors such as “local social interaction, social class, ethnic and racial origins, life cycle characteristics of the population, length of residency and place of work…Level of education and social class affect the range of cues used to identify neighbourhoods…and their perceived size and complexity…” (Schensul et al, 1999: 71). As these characteristics could evoke a strong meaning amongst residents they could be considered to give an indication of the ‘sense of place’ of residents, which is defined as ‘the assessment of a place as distinctive based on unique characteristics’ (Schensul et al, 1999: 71).

Consequently when comparing the nature of the ‘sense of place’ of various communities it is therefore necessary to look firstly at various demographic attributes of the communities.

Secondly their transport patterns will be considered.

A third component of ‘sense of place’ is related to habitation patterns such the kind of dwelling, whether they own their dwelling and the length of time they have been residing there. A strong meaning attached to ‘sense of place’ with the resultant cohesion of the community, could give rise to a ‘sense of community’ developing. In order to determine the level of cohesion of the social networks items 4 to 8 of Section C of the questionnaire were used. This gave rise to Scale C1, which indicates the respondents’ level of cohesion, assessed in terms of a continuous scale, ranging from 1 to 5 with 1 being a low level of cohesion and 5 a high level of cohesion.
This could result in different views with regard to the Gautrain, which will lastly be discussed in terms of the scales identified in the survey. The attitude-related questions in Section B of the questionnaire gave rise to six dimensions or scales, that is their views with regard to the general impact of the train, the personal impact of the train (which is mainly concerned with the impact on property values), the adequacy of the present transport infrastructure, trust in the developers of the project, the transparency of the process and the impact of noise as well as an overall dimension or scale that indicates their overall level of support for the Gautrain. Each dimension of the various communities’ views is assessed in terms of a continuous scale, ranging from 1 to 5 with 1 being negative and 5 being positive. Significant difference in this context refers to statistical significance and does not imply a significant impact of the project. The statistical significance was determined on a 5% level of significance, which means that the probability that the differences are due to chance is smaller than 5%. The distribution of surveys in the various areas is attached as Appendix G and a detailed description of the survey results from which this analysis was drawn is provided in Appendix H.

Surveys were conducted in Rhodesfield, ‘Rest of Pretoria’ (includes Park Street, Berea, Arcadia, Sunnyside, Hatfield and Clydesdale), Centurion, Marlboro Gardens, Muckleneuk, Walker Street (Pretoria), Sandton, Randjesfontein and Rosebank. However, as only 11 respondents in Rosebank returned questionnaires a separate analysis for this area is not provided. As the alignment in both areas is mainly underground their responses are combined with those of respondents in Sandton.

The areas are discussed in terms of decreasing levels of general support for the project, from respondents in Rhodesfield showing the most support to respondents in Randjesfontein who showed the least support. It was found that in terms of their overall support for the project and their attitude towards the train, the respondents in Rhodesfield are, on a statistical level, significantly more positive than all other areas surveyed, although they remain neutral on the whole with regard to their attitudes. The respondents in the ‘Rest of Pretoria’, Centurion, Marlboro Gardens, Muckleneuk, Walker Street (Pretoria), Sandton and Randjesfontein are progressively more negative. The respondents in Randjesfontein are the most negative in their overall support of the project.

* Rhodesfield

A total of 55 responses were collected in Rhodesfield making up 4.9% of all responses. With respect to the profile of these respondents, 85.5% were white, spoke
Afrikaans (61.1%) and were male (74.1%), with a median age of 46 years and an education level equivalent to Gr 12 or N3/T1 or below (78.8%).

By means of a statistical analysis it was established that most respondents in Rhodesfield (96.2%) regularly use their own car for transport and seldom or never (100%) use either the rail or bus services. The majority, (81.5%) live in a house, and 92.5% own the property in which they live. Most respondents (58.2%) have lived in the area for over 10 years. There also seems to be a relatively high level of group cohesion (3.3055) in Rhodesfield.

With regard to their overall support of the project Rhodesfield respondents are the most positive of all areas surveyed with a mean of 2.9895 although they remain neutral. They are also significantly more positive towards the train than all the other communities surveyed. Table 10.1 illustrates the mean attitudes of Rhodesfield respondents with respect to the dimensions measured.

Table 10.1: The mean attitudes of Rhodesfield respondents with regard to the Gautrain

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General impact of project</td>
<td>3.2958</td>
</tr>
<tr>
<td>Scale A2: Personal impact of project</td>
<td>2.6508</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.0771</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>2.9636</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>3.4753</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>2.8796</td>
</tr>
<tr>
<td>Scale B1: Overall support for project</td>
<td>2.9895</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>3.3055</td>
</tr>
</tbody>
</table>

The mean values for the scales are demonstrated in Figure 10.1.
The respondents in Rhodesfield are the most positive of all the communities with regard to the general impact of the train and differ significantly from all the other communities. They are also significantly more positive about the personal impact of the train than all the other communities. Furthermore they are the most positive with respect to the transparency of the process, while differing significantly from Randjesfontein (2.8821), Muckleneuk (2.8794), Pretoria (2.8501) and Sandton (2.7077). They do not differ significantly from Marlboro Gardens in this regard. They are also significantly more positive with regard to the impact of noise (2.8796) than all the other communities.

* The ‘Rest of Pretoria’

With respect to the quantitative research, this area, is referred to as “the ‘Rest of Pretoria’”, and covers Park Street, Berea, Arcadia, Sunnyside, Hatfield and Clydesdale. The 248 respondents, from this area make up 21.9% of all respondents. The majority are white (77%), Afrikaans speaking (54.7%, including those who are both Afrikaans and English speaking), and male (52%), with a median age of 37.5 years and are educated to a graduate or post-graduate level (57.5%).
Most (88.7%) respondents in the ‘Rest of Pretoria’ use their own cars for transport, and seldom or never use the rail (94.4%) or bus (82.1%) services.

The majority live either in a flat (47.7%), or house (47.2%) and 78.1% own the property they live in. Most respondents have lived in the area for less than 10 years (68.2%). The level of cohesion in the ‘Rest of Pretoria’ (3.0215) is significantly lower than in Muckleneuk (3.5230), Marlboro Gardens (4.1450) and Randjesfontein (3.4987). It must, however, be remembered that this region is diverse and that a suburb such as Clydesdale is quite likely to show a similar level of cohesion to that of Muckleneuk.

With respect to their overall support of the project, respondents in the ‘Rest of Pretoria’ are somewhat neutral (2.6450), yet are significantly more positive than those in Muckleneuk (2.3864), Sandton (2.3840) and Randjesfontein (2.3761). They are, however, significantly more negative than respondents in Rhodesfield (2.9895). The mean attitudes of Pretoria respondents with respect to the dimensions measured are illustrated in Table 10.2.

**Table10.2:** The mean attitudes of the respondents from ‘Rest of Pretoria’ with regard to the Gautrain

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General impact of project</td>
<td>2.7757</td>
</tr>
<tr>
<td>Scale A2: Personal impact of project</td>
<td>2.0520</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.2839</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>2.6998</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>2.8501</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>2.1728</td>
</tr>
<tr>
<td>Scale B1: Overall support for project</td>
<td>2.6450</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>3.0125</td>
</tr>
</tbody>
</table>

A graphic representation of the scale values for ‘Rest of Pretoria’ is found in Figure 10.2.
Respondents in the ‘Rest of Pretoria’ (mean 2.7757) are significantly more positive with regard to the general impact of the train than Muckleneuk (2.4244), Sandton (2.4610) and Randjesfontein (2.4122). They are also significantly more positive with regard to the personal impact of the train than Muckleneuk (1.5929), Sandton (1.6909) and Randjesfontein (1.4542). They are the second most negative with regard to the transparency of the process and differ significantly from Rhodesfield (3.4753) with respect to this scale.

*Centurion*

In Centurion, 197 responses were collected, which made up 17.4% of the total responses received. The profile of these respondents is white (93.9%), Afrikaans speaking (60%), male (53.3%), with a median age of 34 years and educated at a graduate or post-graduate level (56.6%).

The vast majority of Centurion respondents (96.9%) use their own car for transport, while 97.8% seldom or never use the rail service and only 2.2% regularly use it. All respondents seldom or never make use of the bus service.

Most Centurion respondents live in a townhouse complex (65.7%) and 83.3% own the property in which they live. The majority of Centurion respondents have lived in
the area for less than five years (58.4%). Considering this, the level of cohesion is surprisingly high, with a mean of 3.1955. This could be a result of the large proportion of respondents living in townhouse complexes as townhouse residents may have an opportunity to rapidly interact due to the nature of these dwellings. Their level of cohesion is significantly lower than Marlboro Gardens (4.1450) and Muckleneuk (3.5230).

With regard to their overall support of the project Centurion respondents are somewhat neutral, yet are significantly more negative than respondents in Rhodesfield (2.9895) and more positive than respondents in Muckleneuk (2.3864) as well as Sandton (2.3840) and Randjesfontein (2.3761). Table 10.3 illustrates the mean attitudes of Centurion respondents concerning the dimensions measured.

Table 10.3: The mean attitudes of Centurion respondents with regard to the Gautrain

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General impact of project</td>
<td>2.6964</td>
</tr>
<tr>
<td>Scale A2: Personal impact of project</td>
<td>1.9680</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.2195</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>2.5599</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>3.0462</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>2.1759</td>
</tr>
<tr>
<td>Scale B1: Support for project</td>
<td>2.6242</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>3.1955</td>
</tr>
</tbody>
</table>

This information is represented graphically in Figure 10.3.
Respondents in Centurion are the second most positive with respect to the transparency of the process (3.0462) but only differ significantly from Sandton (2.7077) in this regard. They are also the second most positive with regard to impact of noise but only differ significantly from Rhodesfield respondents who are more positive about this aspect.

*Marlboro Gardens*

This area comprised 88 respondents, making up 7.8% of all respondents. The majority are Indian/Asian (78.4%), English speaking (72.7%), male (71.3%), with a median age of 45 years and an education level equivalent to Gr 12 or N3/T1 or lower (73.3%).

In Marlboro Gardens the vast majority of respondents (95.8%) use their own car for transport, and seldom or never (100%) use either the rail or bus services.

All respondents live in a house and 92.5% own the property in which they live. The majority of the respondents in Marlboro Gardens have lived in that area for more than 10 years (62.5%). There is a high level of cohesion between social networks in Marlboro Gardens, the highest mean score of all areas surveyed (mean of 4.1450). In this regard they differ significantly from all the other communities. This high level of
group cohesion is probably due to two things, firstly, the fact that most community members are of one particular religious grouping, namely Muslim. Secondly, the majority of respondents in Marlboro Gardens have lived in this community for longer than twenty years.

With respect to their overall support of the project, respondents in Marlboro Gardens are rather neutral (2.6594), yet are significantly more negative than respondents in Rhodesfield (2.9895). The mean attitudes of respondents in Marlboro Gardens with respect to the dimensions measured are illustrated in Table 10.4.

**Table 10.4:** The mean attitudes of Marlboro Gardens with regard to the Gautrain

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General impact of project</td>
<td>2.7561</td>
</tr>
<tr>
<td>Scale A2: Personal impact of project</td>
<td>1.9317</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.5220</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>2.9943</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>3.0402</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>2.0412</td>
</tr>
<tr>
<td>Scale B1: Overall support for project</td>
<td>2.6594</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>4.1450</td>
</tr>
</tbody>
</table>

These mean values are given in Figure 10.4.
Respondents in Marlboro Gardens are the most positive with respect to their trust in the developers. In this respect they differ significantly from Muckleneuk (2.4672), Walker Street (2.3632), Sandton (2.3153) and Randjesfontein (1.9750). They were also the most positive about the adequacy of the existing transport infrastructure (2.5220) and differed significantly from Centurion (2.2195), Walker Street (2.0789), Rhodesfield (2.0771) and Randjesfontein (2.0531).

* **Muckleneuk**

There were 143 responses from Muckleneuk making up 12.6% of all responses received. The majority of these respondents are white (95.8%), Afrikaans speaking including those who are both Afrikaans and English speaking (58.8%), and male (55.6%) with a median age of 53 years and are educated to a graduate or post-graduate level (69.2%).

In the Muckleneuk area the vast majority of respondents (97.8%) use their own car for transport, and seldom or never use the rail service (100%). The majority (97.3%) seldom or never use the bus service, with only 2.7% using a bus on a regular basis.

Most respondents (95.6%) live in a house and own the property in which they live (94.2%). The majority of Muckleneuk respondents (56.7%) have lived in this
community for longer than ten years. There is a comparatively high level of cohesion between social networks in Muckleneuk, which is indicated by a mean score of 3.5230. This group cohesion is probably as a result of the length of time that respondents have lived in the area.

With respect to their overall support of the project respondents in Muckleneuk are somewhat negative (mean 2.3864). They are significantly more negative than Centurion (2.6242), ’Rest of Pretoria’ (2.6450) and Rhodesfield (2.9895). The mean attitudes of Muckleneuk respondents, with respect to each of the dimensions measured, are illustrated in Table 10.5.

Table 10.5: The mean attitudes of Muckleneuk respondents with regard to the Gautrain

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General attitude to project</td>
<td>2.4244</td>
</tr>
<tr>
<td>Scale A2: Personal impact of the project</td>
<td>1.5929</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.3402</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>2.4672</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>2.8794</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>1.9014</td>
</tr>
<tr>
<td>Scale B1: Support for project</td>
<td>2.3864</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>3.5230</td>
</tr>
</tbody>
</table>

The views of the respondents of Muckleneuk in terms of the scales are represented graphically in Figure 10.5.
Respondents in Muckleneuk are significantly more negative in their assessment of the personal impact of the project (1.5929) than Rhodesfield (2.6058), Marlboro Gardens (1.9317), Centurion (1.9680) and ‘Rest of Pretoria’ (2.0520) and are the second most negative in this regard. They are also the most negative about the perceived impact of noise (1.9014) and differ significantly from Rhodesfield (2.8796).

* **Walker Street**

In Walker Street only 41 responses, were collected, which made up 3.6% of the total responses received. Most were white (80.5%), 50% speak Afrikaans (including those who are Afrikaans and English speaking), and most are male (53.7%) with a median age of 48 years. 53.7% of respondents in Walker Street have a Grade12 or N3/T1 or lower education.

The vast majority of respondents in Walker Street (96.7%) use their own car for transport and seldom or never use the rail (84%) or bus services (88%).

All respondents live in a flat and 72.2% own the property in which they live. The majority of Walker Street respondents have lived in that area for 10 years or less.
Group cohesion in the area is not of a particularly high level with a mean score of 3.1282.

With regard to their overall support of the project Walker Street respondents are somewhat neutral, (2.3832) yet are significantly more negative than respondents in Rhodesfield (2.9895). Table 10.6 illustrates the mean attitudes of Walker Street respondents with respect to the dimensions measured.

Table 10.6: The mean attitudes of Walker Street respondents with regard to the Gautrain

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General impact of project</td>
<td>2.3514</td>
</tr>
<tr>
<td>Scale A2: Personal impact of project</td>
<td>1.9017</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.0789</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>2.2632</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>2.8860</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>2.0375</td>
</tr>
<tr>
<td>Scale B1: Overall support for project</td>
<td>2.3832</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>3.1282</td>
</tr>
</tbody>
</table>

The mean values for the scales for Walker Street are represented in Figure 10.6.

Figure 10.6: Walker Street
Respondents in Walker Street are the most negative about the general impact of the project (2.3514) and differ significantly from Rhodesfield (3.2958) in this regard. Respondents in Walker Street show the second highest degree of distrust in the developers and are significantly more distrustful than Marlboro Gardens (2.9943).

* Sandton and Rosebank

In Sandton 268 responses were collected comprising 23.7% of all responses. As only 11 respondents in Rosebank returned questionnaires a separate analysis for this area is not provided. The alignment in both areas is mainly underground; therefore their responses are combined with those of respondents in Sandton. Sandton and Rosebank combined therefore consisted of 279 respondents, which comprise 24.6% of the total respondents.

Whites comprise 92.5% of all respondents in Sandton and Rosebank, 88.8% speak English, most are male (53.4%), with a median age of 50 and most have a graduate or post-graduate education (65.8%).

Most of the respondents in Sandton and Rosebank regularly use their own car for transport (99.3%), while the vast majority of respondents seldom or never use either the rail (99.3%) or bus services (98.6%). Most Sandton and Rosebank respondents (58.5%) live in a townhouse complex and the majority (92.9%) own the property in which they live. Most Sandton and Rosebank respondents (57%) have lived in the area for 10 years or less. Levels of group cohesion in Sandton and Rosebank are relatively low with a mean of 3.1665.

Sandton and Rosebank respondents are fairly negative with respect to their overall support of the project with a mean of 2.3840. They are significantly more negative than Centurion (2.6242), ‘Rest of Pretoria’ (2.6450) and Rhodesfield (2.9895). Table 10.7 illustrates the mean attitudes of Sandton and Rosebank respondents with respect to the dimensions measured.
Table 10.7: The mean attitudes of Sandton and Rosebank with regard to the Gautrain

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General impact of project</td>
<td>2.4610</td>
</tr>
<tr>
<td>Scale A2: Personal impact of project</td>
<td>1.9860</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.4720</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>2.3153</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>2.7077</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>2.1759</td>
</tr>
<tr>
<td>Scale B1: Support for project</td>
<td>2.3761</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>3.1665</td>
</tr>
</tbody>
</table>

This information is demonstrated by means of Figure 10.7.

Sandton and Rosebank respondents are the second most positive with respect to the adequacy of the existing transport infrastructure (2.4720) and differ significantly from Centurion (2.2195), Rhodesfield (2.0771) and Randjesfontein (2.0531). These respondents are the most negative with regard to the transparency of the process and differ significantly from Marlboro Gardens (3.0402), Centurion (3.0462) and Rhodesfield (3.4753).
* Randjesfontein

In Randjesfontein 82 respondents, comprising 7.2% of all respondents, returned their questionnaires. Based on an analysis of these questionnaires, the profile of the respondents can be described as follows: 90.2% were white, English speaking (76.5%), male (59.3%), with a median age of 47 years and are educated to a graduate or post-graduate level (67.1%).

All respondents in Randjesfontein use their own cars for transport and seldom or never use either the rail or bus services. The majority of respondents (94.7%) live in a house and 97.5% own the property in which they live. Most respondents (54.8%) have lived in Randjesfontein for longer than 10 years and the level of cohesion is of a relatively high level with a mean of 3.4987. They are significantly less cohesive than Marlboro Gardens (4.1450) but more cohesive than the ‘Rest of Pretoria’ (3.0215) and Sandton (3.1665).

With respect to their overall support of the project respondents in Randjesfontein were the most negative of all communities surveyed (2.3761). This view is significantly different from those of respondents in Centurion (2.6242), Rest of Pretoria (2.6450) and Rhodesfield (2.9895). The mean attitudes of respondents in Randjesfontein with respect to the dimensions measured are illustrated by means of Table 10.8.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale A1: General impact of project</td>
<td>2.4122</td>
</tr>
<tr>
<td>Scale A2: Personal impact of project</td>
<td>1.4542</td>
</tr>
<tr>
<td>Scale A3: Adequacy of transport infrastructure</td>
<td>2.0531</td>
</tr>
<tr>
<td>Scale A4: Trust in developers</td>
<td>1.9750</td>
</tr>
<tr>
<td>Scale A5: Transparency of process</td>
<td>2.8821</td>
</tr>
<tr>
<td>Scale A6: Impact of noise</td>
<td>2.0732</td>
</tr>
<tr>
<td>Scale B1: Overall support for project</td>
<td>2.3761</td>
</tr>
<tr>
<td>Scale C1: Social networks</td>
<td>3.4987</td>
</tr>
</tbody>
</table>

The views of the respondents in Randjesfontein are represented graphically in Figure 10.8.
Respondents in Randjesfontein were the most negative in their assessment of the impact that they perceive the project will have on them personally (1.4542). They also differ significantly from respondents in all the other communities, except those living in Muckleneuk, who were the second most negative. With regard to the general impact of the train they were the second most negative (2.4122) and differed significantly from ‘Rest of Pretoria’ (2.7757) and Rhodesfield (3.2958). Respondents in Randjesfontein showed the least trust in the developers and differed significantly from Muckleneuk (2.4672), Marlboro Gardens (2.9943), Centurion (2.5599), ‘Rest of Pretoria’ (2.6998) and Rhodesfield (2.9636).

**Project Timeframes of the Gautrain Rapid Rail Link**

February 2000: Mbhazima Shilowa, Premier of Gauteng, announced the proposed project.


February 2003: Record of Decision issued by GDACEL.

March/April 2003: Expropriation commences.

January 2004: Construction commences.

10.3.2 Impact Assessment

The Social Impact Assessment (SIA) aims to ascertain the nature, extent, duration, probability, significance and status of identified impacts that may result from the pre-construction, construction and operation of the proposed Gautrain Rapid Rail Link. The following characteristics of each of the potential significant impacts are identified and tabulated:

- The *nature*, which includes a description of what causes the effect, what will be affected and how it will be affected.

- The *extent*: A prediction of the magnitude of the impact (or change), which may result from the implementation of the project. The size of an impact is described in terms of three possibilities. In the first place the impact could be local (L), where the impact is restricted to the properties adjacent to the rail or in the direct vicinity of the rail. Secondly, the impact could affect a bigger area, which would include the immediate surroundings (I) of the rail, such as the neighbourhood in which the railway line or station is located. Thirdly, the impact could be regional (R).

- The *duration*: The lifetime or anticipated length of time during which the impact will be felt. This is indicated in terms of whether the lifetime of the impact will be
  
  * short term (ST) (<5 years);
  * medium term (MT) (5-20 years);
  * long term (LT) (>20 years): where the impact will cease after the operational life of the activity, either because of natural processes, or by human intervention; or
  * permanent (P): where mitigation either by natural process or by human intervention will not occur in such a way, or in such a time span, that the impact can be considered temporary.

- The *probability*: The likelihood of the impact actually occurring, indicated as
  
  * improbable (I), where the possibility of the impact occurring is very low;
  * probable (P), where there is a distinct possibility of the impact occurring;
  * highly probable (HP), where it is most likely that the impact will occur; or
  * definite (D), where the impact will occur regardless of any prevention measures.

- The *status*: An appraisal of the type of effect the activity would have on the affected environment, which is described as either positive (Pos), negative (Neg) or neutral (Neu).
The significance of the impacts: Whether an impact alters an important aspect of the environment. This is determined and rated as:

- No effect (NI): The social environment and people’s daily lives are not affected.
- Low (L), where it will have very little influence on the decision. This level of impact is of little significance and likely to have no effect. Social, cultural and economic activities are unlikely to change. There is no apparent benefit.
- Medium (M), where it should have an influence on the decision, unless fairly easily mitigated. At this level the impact is both real and extensive. Although social, cultural, and economic activities are changed, mitigation remains feasible. With some modification to the project, its effects on the community can be limited. The social, cultural and economic activities of the community can continue in a modified form.
- High (H), where it would influence the decision, regardless of any possible mitigation. Benefits are of the highest order, within the confines of all anticipated impacts.
- Severe (S), at this level mitigation is extremely difficult or not possible. Social, cultural and economic activities are most likely to change to the extent that the community is seriously disrupted, or that these activities are terminated.

Impacts with respect to both the reference and alternative alignments are assessed on the basis of the analyses described in Appendices 10B, 10D, and 10H. For each section of the route, a table is provided that indicates the relevant social impacts for each of the alignments under consideration. The assessments of social impacts for particular areas are provided in Appendix 10I. Based on these assessments, the social impacts applicable to each section of the route will now be discussed.

- **Hatfield Station to Pretoria Station**

  This section of the route is probably going to experience the greatest social impact and all the issues, as well as possible mitigation options, need to be carefully considered. The relevant alignments are indicated in Table 10.9.
### Table 10.9: Alignments between the proposed Hatfield Station and Pretoria Station

<table>
<thead>
<tr>
<th>Area</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hatfield</td>
<td>Reference Alignment</td>
</tr>
<tr>
<td>Muckleneuk</td>
<td>Reference Alignment (Muckleneuk via Salvokop)</td>
</tr>
<tr>
<td></td>
<td>Refined Reference Alignment 6d (Muckleneuk via Salvokop)</td>
</tr>
<tr>
<td></td>
<td>Refined Reference Alignment 6e (via Fountains Valley &amp; Inner City)</td>
</tr>
<tr>
<td></td>
<td>Refined Reference Alignment 6f (via Salvokop &amp; Berea)</td>
</tr>
<tr>
<td>Park Street</td>
<td>Alignment 6c (via Salvokop &amp; Nelson Mandela Ave/ Park St. - Open Cut)</td>
</tr>
<tr>
<td></td>
<td>Alignment 6c (via Salvokop &amp; Nelson Mandela Ave/ Park St. - Cut &amp; cover/tunnel)</td>
</tr>
<tr>
<td></td>
<td>Alignment 6a/6c (via Fountains Valley &amp; Inner City - tunnel/ Park St. - Open Cut)</td>
</tr>
<tr>
<td></td>
<td>Alignment 6a/6c (via Fountains Valley &amp; Inner City - cut &amp; cover/tunnel)</td>
</tr>
<tr>
<td></td>
<td>Alignment 6b/6c (via Fountains Valley &amp; Inner City tunnel/ Park St. - Open Cut)</td>
</tr>
<tr>
<td></td>
<td>Alignment 6b/6c (via Fountains Valley &amp; Inner City tunnel/ Park St. - Cut &amp; cover/tunnel)</td>
</tr>
<tr>
<td></td>
<td>Alignment 6f/6c (via Salvokop &amp; Nelson Mandela Ave/ Park St. - Open Cut)</td>
</tr>
<tr>
<td></td>
<td>Alignment 6f/6c (via Salvokop &amp; Nelson Mandela Ave/ Park St. - Cut &amp; cover/tunnel)</td>
</tr>
</tbody>
</table>

* **Hatfield**

As is clear from Table 10.9, the reference alignment is the only option provided for this area. The Hatfield area could, in the medium and long term, experience an increase in population density and it is quite likely that existing business opportunities will be expanded as a result of the station. On the other hand the loss of business properties as a result of the building of the rail could lead to a loss of jobs in the short-term. The introduction of security measures around the station might reduce current crime levels in the vicinity. Accessibility to and from the station as well as a possible increase in the granting of business rights, might lead to an increase in property values for properties in close proximity to the station.

Members of the business community will also experience a loss of income during relocation of businesses. Some businesspeople are already affected as a result of property developments being put on hold.
In order to reduce the traffic congestion around Hatfield Station a Park-and-Ride facility was proposed situated on the northern border of the “Proefplaas” of the University of Pretoria. The full impact of this proposal needs to be established in consultation with the university.

* Alignments Via Park Street (Arcadia, Sunnyside and Clydesdale)

There are two possible alignments along Park Street. The first is cut-and-cover under Park Street. This alignment will have a relatively small effect on the reduction in housing, as only two small blocks of flats will be demolished. However, it should be noted that these blocks have architectural significance. There is a possibility that the Hamilton Business Centre will have to be demolished, which would lead to a loss of business opportunities as well as a loss of jobs. The main negative impact in this area will be as a result of the disruption during the construction phase.

The second alternative is an open-cut, which runs parallel to Park Street on the southern side. This alternative will have a significant, negative permanent impact on the wider community of Arcadia, Sunnyside and Clydesdale and beyond. These impacts are as follows:

- The destruction of the Cornerstone Assembly of God church with the resultant loss of opportunities for religious expression. According to the AAPSA (Alliance Against Park Street Alignment) submission this church has been able to adapt to socio-political change where other churches have failed; has a growing congregation currently estimated to be in the region of 900; is housed in a building of historical relevance; addresses a range of social needs of the surrounding flat dwellers, which includes spiritual, educational, health and support needs; all of which will be lost. As there is no other available affordable open space to relocate the church in the immediate vicinity, this impact will be permanent.
- Pretoria Technical High School will lose part of the school hall building, half if not all of their workshops, the swimming pool, all basketball and tennis courts, athletic tracks and soccer field and Rissik House, which has historical significance. This will result in a significant reduction in their teaching capacity as well as sports activities.
- Pretoria High School for Girls will lose part of their boarding house and living quarters for staff. Apart from the loss in accommodation that could result in a
decrease in the number of students, the boarding house also has historical significance as Sir Herbert Baker designed it.

- There will be a significant and permanent loss of both residential and business properties along Park Street, some of which have historical value. The loss of the Hamilton Business Centre will lead to a short-term loss of jobs. It will also lead to a loss of income during the relocation of these businesses as well as other businesses to the south of Park Street.

- The dramatic changes that this alignment will bring to the Park Street area will result in a severe loss in sense of place. The Clydesdale community will also experience a loss of sense of community.

- Along this route there will be a significant permanent disruption of pedestrian movements, as pedestrian crossings will be considerably reduced.

- The open-cut alignment along Park Street will result in severe impacts with regard to noise and vibration during construction as well as operation.

- The Canadian Embassy will lose part of its parking area.

- Both these alignments could have an impact on the functioning of the Heart Hospital. Further investigation needs to be done to determine the exact nature of this impact.

- This alignment will lead to a severe and permanent breakdown in neighbourhood support networks.

There is a possibility that this section could be tunnelled, which would of course reduce the disruption during the construction phase and would have minimal social impact. The tunnelled option would be the preferred method of construction, with the only impact being restricted to noise and vibration during construction. However, cut-and-cover would also be acceptable if disruption during construction is minimised.

* Alignments Via Muckleneuk

In this area four route alignments will be considered, namely the reference alignment and three refined alignments.

- Impact on educational facilities

    - Although all the alignments would encroach upon the Pretoria High School for Girls’s property, no facilities will be affected. They are concerned,
however, that increased noise during construction will negatively affect the learners’ ability to concentrate.

- Afrikaanse Hoër Seunskool will lose some of their cricket nets and part of the sports hall, as well as the scout hall. The school is upgrading the latter and they are also planning to build accommodation for staff on this property. They claim that they have no other space available for this purpose. The functioning of the school will also be affected due to the noise and vibration caused by the project during the construction as well as the operational phases. On the other hand, the construction of the Gautrain rail line will act as a buffer between the school and the existing Metro Rail line and will reduce the problem of vagrancy.

- The refined alignment 6e will cut through the south western corner of Oosteind Laerskool. The alignment moves from a tunnel to open-cut fairly close to the entrance to the school. The main entrance to the school will have to be relocated. This alignment will also have a significant impact on school activities in terms of noise and vibration, particularly where the train exits the tunnel. Safety aspects for learners as well as staff will also have to be seriously considered.

- All four alignments through Muckleneuk impact on the Sunnyside campus of the University of South Africa to varying degrees. Apart from dividing the Sunnyside campus into two, these alignments will seriously affect planned new developments on the campus to an estimated amount of about R70 million. Architects have just completed building plans for a building of R10.5 million that will have to be abandoned. Future plans that could be in danger are the expansion of the Science Centre for an estimated R25 million, the building of an Arts Centre, a Students Centre and a Technopark. Unisa is also involved in negotiations with the World Bank with regard to future developments in this area, which will significantly impact the University’s expansion into Africa. The Sunnyside campus provides the only possibility for expansion and development for Unisa. If the proposed mergers with Technikon SA and Vudec as well as the rapid increase in student numbers at Unisa are considered, it is clear that expansion possibilities for Unisa are essential. The proposed alignments would therefore have a severe negative social impact on this institution and many who use the Unisa facilities. In the case of the most southerly of the refined alignments (6fd) the impact could be mitigated in consultation with Unisa, in particular with regard to the design of an integrated plan that incorporates future developments on the Sunnyside
campus as well as the Gautrain project. These issues are explored in the section on mitigation (Section 10.4).

- Potential Loss of Jobs
  The possibility exists that due to the expropriation of residential and commercial properties numerous job opportunities for people, such as domestic workers and gardeners, will be lost.

- Loss of Income
  Businesspeople in Muckleneuk will experience a loss of income as a result of a loss of rental income and property developments being put on hold. They will also have to face a short-term loss of income during the relocation of businesses.

- Loss of Dwellings
  In the case of the reference alignment about 190 dwellings will have to be demolished. This number is reduced to about 53 dwellings in the case of the refined alignment 6e. Although the latter does not sound like a large number it will have a significant impact if one considers that the total number of dwellings in Muckleneuk is only about 300.

- Decrease in Property Values and Inadequate Compensation
  A decrease in property values is foreseen for this area. Such a decrease could result in substantial financial losses if residents are compensated at market value at the time of expropriation. It is believed that this decrease will not be balanced by a possible simultaneous increase in property values as a result of rezoning. Apart from the psychosocial stress that the decrease in property values creates, the financial resources of residents might be depleted to such an extent that they are unable to replace their residential property with a residence of a similar nature.

- Loss of Sense of Community and Sense of Place
  Muckleneuk is characterised by a well-developed ‘sense of place’ as well as a strong ‘sense of community’. The reference alignment will divide the community into one bigger residential area and a smaller residential area. Although the refined alignment will have a smaller impact in this regard it would still significantly reduce the size of the community. In both cases the implementation of the Gautrain will lead to severe social disruption in the form of a reduction in
the sense of community, group identity and sense of place. Inter- and intra-community contact will be disrupted. There will be a loss of accommodation for extended families and senior citizens. Another consequence will be a breakdown of kinship and neighbourhood support networks. MLPORA has for example argued in their presentation that

“[s]ocial connections such as that are spatially based, in other words, social connections that are dependent on people's continued residence in this area. These bonds are important sources of social support. Relocation disrupts these and is therefore bad for the individuals concerned.”

This impact is especially important to consider taking into account the age distribution in the community. According to a survey undertaken by the MLPORA and presented in their submission to Bohlweki, it is suggested

“Most of those who will be directly affected are in the older age groups. Almost three quarters (73%) are 46 years and older. Research on the impact of population relocation has shown that the experience of relocation varies, depending on the age, gender and income of those who are relocated (De Wet 1995:4-5). In general, older people experience much more stress during the process of relocation, because they are more risk averse. According to Colson (quoted in De Wet 1995:5), older people do not adapt easily to the experience of relocation, and some time after the process 'were still mourning all they had lost'. In the case of Muckleneuk residents who are owners, and who will be expropriated, their middle class status will insulate them somewhat from the negative impact of relocation (more affluent people having a greater range of coping responses, according to De Wet [1995:4]), but this is unlikely to offset the increased stress they experience during the process as a result of age.”

In addition, all proposed Muckleneuk routes would seriously compromise any sense of community and place that Unisa is attempting to establish on its Sunnyside campus. In the case of refined alignment 6fd this impact could be mitigated through an integrated planning strategy in consultation with Unisa.

The proposed project has already led to disputes with neighbouring communities such as AAPSA as well as significant psychosocial stress. The announcement of
the base route alignment resulted in a public reaction that in turn resulted in the announcement of various alternate route alignments. The consequences of this were that certain sectors of the community began to oppose each other. This was clearly evident after the MLPORA proposed the alternative route down Park Street and the AAPSA was formed in reaction to this. In this respect the AAPSA made the following comment to in their submission to Bohlweki.

“It is very unfortunate that the newly established local-level democratic principle of community participation led to conflict between two separate affected communities (Muckleneuk-Lukasrand and AAPSA). It is deeply regretted that we were not consulted by our counterparts right from the start when they initiated their Park Street submission.”

- Disruption of Movement Patterns

The Muckleneuk Lukasrand Property owners and Residents Association (MLPORA) stated that the proposed rail link

“… will result in the permanent closure of access routes into Muckleneuk and routes distributing traffic within Muckleneuk. The developer has not presented the community with proposals of how the layout plan of Muckleneuk will be changed to accommodate the proposed alignment nor has data been made available to show how the proposal will affect present traffic patterns in the area.”

The reference alignment will also have a severe negative impact on the freedom of movement with regard to pedestrian crossings.

- Comparison Between Reference Alignment and the Refined Alignments:

- The refined alignments will result in a smaller loss in residential properties, which means that it will also lead to a smaller reduction in population density, with refined alignment 6fd having the smallest impact.
- The refined alignments could have an impact on the functioning of the Jacaranda Hospital. Further investigation needs to be done to determine the exact nature of this impact.
- All three alignments will have a severe social impact on future developments on the Unisa Sunnyside campus although the impact is smaller in the case of refined alignment 6fd.

It is clear that the reference alignment as well as two of the three refined alignments would have severe social impacts and should therefore not be considered. Refined alignment 6fd could be acceptable provided that mitigation is done in consultation with both Unisa and affected residents.

* **Salvokop Versus Fountains Valley**
  The Salvokop alignment will result in the destruction of a small number of houses, all of which have historical significance. Therefore the alignment via Fountains Valley is preferred.

* **Berea**
  The reference alignment through Berea along Tulleken Street will result in a significant reduction in residential accommodation in the area and a resultant decrease in the population density. The proposed alternative to the south, across the McCarthy Motor City (alternative alignment 6f) would avoid this impact and is therefore preferred. Alternative 6f will, however, result in the loss of sports facilities at Berea Park.

Due to external market forces, property values in this area have decreased to such an extent that expropriation at market value could leave some residents with a substantial amount to pay on their bonds and no capital to purchase alternative accommodation.

* **Preferred Alignment for This Area**
  The social impact assessment indicates alignment 6a/6c (via Fountains Valley & Inner City – tunnel/Park St. - Cut & cover/tunnel) or 6b/6c (via Fountains Valley & Inner City – tunnel/Park St. - Cut & cover/tunnel) to be the preferred alignments in this area. The tunnelled option would be the preferred method of construction. However, cut-and-cover would also be acceptable if disruption during construction is minimised. The reference alignment in Muckleneuk, as well as any of the open-cut alternative alignments along Park Street will have severe impacts on the affected communities. Although not preferred, it is possible to develop ways to mitigate the impact of refined alignment 6fd in Muckleneuk, by for example developing a
functional park on remainders of expropriated properties as well as integrating the proposed developments at Unisa into the Gautrain project. The negative impacts are significantly reduced in the case of refined alignment 6fd in Muckleneuk which are directly adjacent to the existing Metrorail line for most of the route through Muckleneuk.

- **Pretoria Station to Centurion Station**

The relevant alignments are indicated in Table 10.10.

<table>
<thead>
<tr>
<th>Area</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centurion – north of station</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 5a (West of Ben Schoeman Highway)</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 5b (Via Military Area)</td>
</tr>
</tbody>
</table>

Impacts that would affect all of the alignments to a greater or lesser extent will be discussed first. This will be followed by a discussion of particular impacts with regard to each of the alignments.

* **Loss of Income**
  
  A loss of income will occur during the relocation of businesses. This will be less of a problem on alignment 5a. A loss of rental income is a particular problem with regard to the reference alignment, while the withholding of rezoning applications is affecting the reference alignment and 5b and property developments being put on hold is affecting alignments 5a and 5b.

* **Property Values**
  
  There will be a decrease in property values of residential properties due to proximity to the line. Those properties closer to the station could experience an increase in property values as a result of business rights being awarded.

* **Loss of Jobs**
  
  In the case of the reference alignment as well as alignment 5b jobs will be lost due to the relocation of businesses.
* Religious Expression

The Church of Christ of Latterday Saints is fairly close to the station and will experience an increase in noise and vibration during construction as well as during the operational phase of the project.

* Reference Alignment

The reference alignment crosses the South African National Defence Force (SANDF) property, as well as going through Lyttelton Manor Extension 1 and Lyttelton.

- South African National Defence Force property
  The reference alignment could have a significant impact on the military facilities, as it will destroy the training hangar and auction centre. This alignment also runs in close proximity to the medical research facilities and any impact in this regard may need to be investigated in more detail. The SANDF has abandoned any attempt to expand their facilities due to the geohydrological nature of this area. It would therefore not be possible to replace the facilities that may be lost.

- Lyttelton Manor Extension 1
  This small community will be even further reduced as a result of the train. Most of the houses are fairly old, which means that the owners of expropriated properties may not be able to replace it with a property of a similar size if they are recompensed at market value. Residents have also complained that they are going to feel boxed in, as a result of having a road on one side, and two railway lines on two other sides of the community.

- Lyttelton
  In this area the reference alignment will affect a number of single residential properties as well as townhouse complexes. The alignment will also pass in close proximity to a retirement village.

  The social impacts with regard to the reference alignment in this area could be considerable and it is therefore not preferred.
* **Alternative Alignment 5a**

Alternative 5a crosses a large tract of open land at Snake Valley, which belongs to the SANDF. The reference alignment therefore affects more residential and business properties than alternative 5a.

* **Alternative Alignment 5b**

Alternative 5b affects more townhouse complexes than 5a, as well as a larger portion of the military area, than the reference alignment. However this alignment affects fewer residential properties than the reference alignment. A number of military houses will be lost and can be replaced elsewhere. Sports facilities used by the military will also need to be replaced. This alignment would also have an impact on LIW as this area is classified as a national key point and could result in a security risk. Some rezoning applications have been put on hold as a result of the uncertainty with regard to the selection between alternative alignments.

The preferred alignment is alternative alignment 5a.

- **Centurion Station to Midrand Station**

The relevant alignments are indicated in Table 10.11.

**Table 10.11:** Alignments between Centurion Station and Midrand Station

<table>
<thead>
<tr>
<th>Area</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centurion - south of the proposed station</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 4 (Via rugby fields)</td>
</tr>
<tr>
<td>Randjesfontein</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Refined alignment (Closer to K101)</td>
</tr>
<tr>
<td>Glen Austin</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Refined alignment (Closer to K101)</td>
</tr>
</tbody>
</table>

* **Centurion - South of the Proposed Station**

- The reference alignment affects a number of newly built townhouse complexes and blocks of flats and will result in a reduction in the number of dwellings.
- There will be a decrease in property values of residential properties due to proximity to the line. Those properties closer to the station could experience an increase in property values as a result of business rights being awarded.

- Alternative 4 does not affect any residential properties. However, this alternative would result in the loss of the rugby fields to the west of Supersport Park.

- Both these alignments would impact on a number of businesses, which will lead to a short-term loss of income as well as a short-term of jobs during relocation of businesses.

- Some of the office buildings in Highveld Technopark have already suffered negative financial impacts. Prospective lessees are not prepared to rent office space if they run the risk of having to move again in a few month’s time. The owners of these buildings have therefore suffered a financial loss due to a loss of rental income.

- The religious organisation “Homes for Christ” will have to be relocated.

The preferred alignment is alternative alignment 4.

* Randjesfontein

There is a perception that properties adjacent to the railway line will decrease in value. It is also anticipated that the directly affected properties could significantly reduce in size should the entire property not be expropriated. This will lead to an impact on the nature of community life and will disrupt the tranquillity of the area. There will also be some reduction of recreational facilities, as some horse trails will have to be re-routed. There is a concern that the train might frighten the horses and have an impact on their breeding. This community has a strong ‘sense of place’, as well as ‘sense of community’, and any disruption should therefore be minimised. There is a concern about a decrease in security during construction, therefore serious consideration should be given to the erection of a new security fence prior to construction.

This community shows the least overall support for the project, as well as the most distrust in the developers. Serious consideration should therefore be given to further engaging with the community in order to develop ways to minimise the impacts.

The community would prefer an alignment to the east of Randjesfontein, which is opposed by the residents of Glen Austin.
For this area the refined alignment closest to K101 is preferred.

* Glen Austin

This community accepts the proposed project, provided that the railway line is located as close as possible to the existing K101. This will, however, mean that a number of businesses will have to relocate, resulting in a short-term loss of income. A property development has been put on hold as a result of the announcement of the alignment of the train.

Apart from the loss of dwellings, both alignments will result in a disruption of movement patterns, as a primary access road will have to be closed.

The social impact assessment shows lesser social impacts with regard to the refined alignment closest to K101 and this alignment is therefore preferred.

- **Midrand Station to Marlboro Station**

The relevant alignments are indicated in Table 10.12.

<table>
<thead>
<tr>
<th>Area</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midrand</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Refined alignment (Closer to K101)</td>
</tr>
<tr>
<td>President Park</td>
<td>Reference alignment</td>
</tr>
<tr>
<td>Buccleuch</td>
<td>Reference alignment (Via Marlboro Gardens/Jukskei River)</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 3 (Via Marlboro Drive/Modderfontein Spruit)</td>
</tr>
</tbody>
</table>
Midrand Station

The station will be located in the Zonkeziswe development. It will increase business opportunities in close proximity to the station but has no other significant social impacts.

* President Park

The alignment here follows the Old Johannesburg Road as closely as possible in order to minimise the impact. A small number of agricultural holdings will have to be expropriated, which implies a relatively small loss, in terms of residential properties.

* Buccleuch

Of the two possible alternatives considered in Buccleuch, the community opposes the reference alignment, as this route would run along the Jukskei River through the residential area. This would have a negative impact with regard to an increase in noise levels, a decrease in property values and a considerable visual impact. It will also negatively affect their sense of place and sense of community. An alternative alignment (No 3) to the west of Buccleuch was proposed, which significantly reduces the social impact. This alignment seems to meet the needs of the community and is therefore preferred.

In the Marlboro/Buccleuch area Alignment No. 3 (Via Marlboro Drive/Modderfonteinspruit) is preferred.

- Marlboro Station to Sandton Station

The relevant alignments are indicated in Table 10.13.
Table 10.13: Alignments between Marlboro Station and Sandton Station

<table>
<thead>
<tr>
<th>Area</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marlboro Gardens</td>
<td>Reference alignment (Via Marlboro Gardens/Jukskei River)</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 3 (Via Marlboro Drive/Modderfontein Spruit)</td>
</tr>
<tr>
<td>Sandton</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 2a (Daisy St.)</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 2b (Straight tunnel)</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 2c (Refined alignment)</td>
</tr>
</tbody>
</table>

* Marlboro Gardens

According to the community representatives the positioning of the station in the reference alignment would have a serious negative social impact on the ‘...social environment in Marlboro. The mosque is visited five times per day for prayers. The community centre is situated across from the mosque. A nursery school is also located in the community centre. During funerals bodies are simply carried across the road to the cemetery and no hearse is used’. Increased traffic in the area could potentially have a significant negative impact on the movement of people visiting the mosque, as well as on school children. At a meeting of the Marlboro Community Representatives at the offices of Bohlweki Environmental (March 20 2002) the following comment was made: “Zinia Drive in Marlboro Gardens is a typical example of where the rich and poor in the community are separated by the road. The station will cause disruption to the movement of children to school, worshippers to the Mosque and people using community facilities in the area.”

This community has a strong ‘sense of place’, as well as being highly cohesive. It is therefore important that the disruption of their community life should be minimised as far as possible.

The alternative alignment (Alternative 3) that was proposed entails the route being located underneath Marlboro Drive and a relocation of the station close to the interchange of Marlboro Drive and the N3 Highway. During construction, access to the residential area could be somewhat problematic. This alignment would have minimal impact on the community during the operational phase and is therefore preferred.
* Sandton, Sandown, Atholl and Strathavon

Both the reference alignment and alternative alignment 2c are above ground with 2c being a refinement on the reference alignment. Alternative alignment 2a is tunnelled except for a small section that surfaces above the Sandspruit, while alternative alignment 2b is completely tunnelled. The main impacts in this area are the following:

- Loss of Open Space

Some representatives of the community expressed a concern about the potential loss of open space with regard to Mushroom Farm Park and Innisfree Park. Mr Rick Snowden of ARUP Consulting Engineers stated that ‘Innisfree Park and Mushroom Farm Park were some of the last remaining green areas or green belts in the Sandton area.’ Mr Richard Lurie, of Innisfree Park, pointed out that the ‘…ground was donated to the Sandton Town Council to be preserved as an open space…It is used regularly by football teams and walkers’. On the other hand the Sandown, Strathavon and Eastgate Residents Association has indicated that Innisfree Park is perceived to be dangerous and therefore not utilised by the local community due to a number of muggings that have occurred in the park. This impact is mainly associated with the reference alignment and alternative alignment 2c.

- Decrease in Property Values

A possible decrease in property values, and the resulting financial loss, is a general concern with all the alignments. At the Sandton/Atholl focus group meeting on 4 June 2002 a resident stated that the property market could be in a state of flux for the next five years as a result of the Gautrain project. There is a perception that the uncertainty surrounding the chosen alignment has already negatively affected property values during the pre-construction phase. Such a decrease could result in substantial financial losses if residents are compensated at market value at the time of expropriation. Apart from the psychosocial stress that this creates, the financial resources of residents might be depleted to such an extent that they are unable to replace their residential property with a residence of a similar nature.
As the reference alignment and alternative alignment 2c will be above ground, it is anticipated that property values will be negatively affected to a greater extent in the long-term, than is the case with the alternatives that are tunnelled.

At a meeting in Strathavon on 17 July 2002 it was stated that property values had decreased in the area of alternative alignment 2a as a result of the announcement of the alignment. Similarly, people in the Daisy Street area think that 2a has been chosen and that this has affected property prices (Sandown/Strathavon meeting, 23 July 2002).

- **Vagrancy**
  Concerns have been raised about the possibility of vagrants sheltering in the tunnel with the accompanying increase in crime. With proper mitigation it is anticipated that the probability of this occurring is low.

- **Potential Loss of Jobs**
  The possibility exists that due to the expropriation of residential and commercial properties numerous people employed as domestic workers, gardeners and security staff, could lose their jobs. There will also be a temporary loss of jobs due to the relocation of businesses.

The preferred alignment is alternative alignment 2b.

- **Sandton Station to Rosebank Station**

  The relevant alignments are indicated in Table 10.14.

<table>
<thead>
<tr>
<th>Suburb</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inanda, Hyde Park, Dunkeld</td>
<td>Reference alignment (Melville Road)</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 1a (Fricker Rd.)</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 1b (Oxford Rd.)</td>
</tr>
<tr>
<td>Rosebank</td>
<td>Reference alignment (Oxford Road)</td>
</tr>
<tr>
<td>Melrose</td>
<td>Reference alignment (Oxford Road)</td>
</tr>
</tbody>
</table>
* **Inanda, Hyde Park, Dunkeld**

A possible decrease in property values, and the resulting financial loss, is again a general concern with all the alignments. At the Dunkeld Village Association meeting on 9 May 2002 it was stated that the announcement of the route had caused panic in an area ‘...with some of the most expensive real estate in South Africa. Residents want to sell urgently and there were concerns from buyers as well. There was a negative impact on top class real estate (issue endorsed by all present)’.

The reference alignment is tunnelled under residential properties. Alternatives 1a and 1b are mainly tunnelled under commercial properties. The selection of either alignment 1a or 1b will probably increase acceptance of the train by residents.

* **Rosebank**

As the station and alignment is located underground, no social impacts are foreseen for this area. However, the effects of disruption, as well as noise and vibration, during construction should be mitigated.

* **Melrose**

The main concern in this area is related to the location of the parking facilities associated with the train. It is believed that the potential increase in traffic would negatively affect accessibility to the school (Kingsmead College) and would also impact on the safety of learners. Furthermore, the increase in traffic could negatively impact on the quiet atmosphere of the neighbourhood.

The preferred alignment is alternative 1a (Fricker Road) or 1b (Oxford Road).

- **Rosebank Station to Park Station Johannesburg**

The relevant alignments are indicated in Table 10.15.

**Table 10.15:** Alignments between Rosebank Station and Park Station Johannesburg

<table>
<thead>
<tr>
<th>Area</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkwood, Saxonwold and Houghton Estate</td>
<td>Reference alignment</td>
</tr>
<tr>
<td>Johannesburg CBD</td>
<td>Reference alignment</td>
</tr>
</tbody>
</table>
* Parkwood, Saxonwold and Houghton Estate
As the alignment is located fairly deep underground no social impacts are foreseen for this area.

* Johannesburg CBD
Similarly to the Hatfield area, the Johannesburg CBD could experience an increase in population density. It is quite likely that existing business opportunities will be expanded in the medium and long-term as a result of the station. The introduction of security measures around the station might reduce current crime levels in the vicinity. The increase in accessibility could result in a rejuvenation of the CBD.

- Marlboro Station to JIA
The relevant alignments are indicated in Table 10.16.

Table 10.16: Alignments between Marlboro Station and Johannesburg International Airport

<table>
<thead>
<tr>
<th>Area</th>
<th>Alignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linbro Park</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 7 (Avoiding most of Linbro Park)</td>
</tr>
<tr>
<td>Modderfontein</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Refined alignment (via golf course)</td>
</tr>
<tr>
<td>Cresslawn</td>
<td>Reference alignment</td>
</tr>
<tr>
<td>Rhodesfield</td>
<td>Reference alignment</td>
</tr>
<tr>
<td></td>
<td>Alignment No. 8 (Refined alignment)</td>
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</table>

* Linbro Park
The reference alignment would affect a fairly large number of properties negatively as they would be separated from the rest of Linbro Park and will therefore negatively affect their sense of place and sense of community. In the case of the alternative alignment fewer properties would be affected and therefore alternative alignment 7 is preferred.
* **Modderfontein**

The proposed train will have a minimal social impact on Modderfontein, except for the potential loss of recreational and sports facilities such as the golf course, depending on which alignment is selected.

* **Cresslawn**

The main impact is with regard to the loss of housing, relocation of residents and the resultant decrease in population. It will also have a negative impact on the residents who remain, in terms of decrease in property values and heightened noise levels, which will be exacerbated during the construction phase.

* **Rhodesfield**

Rhodesfield is a relatively small community that would probably experience a decrease in population in the short-term. The development of the station holds the possibility of positive impacts in terms of business development opportunities in the long-term if the existing infrastructure is upgraded. The greatest negative impact will probably be felt by pensioners unable to replace their properties as well as the Rhodesfield High School, which may experience a decline in pupils as a result of the anticipated decline in population. The increase in traffic as a result of activities around the station will also negatively impact on the safety and security of pupils and staff. Alternative alignment 8 will possibly reduce the negative impact in terms of safety and security and is therefore preferred.

### 10.3.3 Summary of Social Impact Assessment

This section consists of two parts. Firstly a summary of the preferred alternatives with respect to the total route is provided. Secondly, the general social impacts of the Gautrain Rapid Rail Link are discussed by distinguishing between the relevant impacts during the pre-construction, construction and operational phases.
Summary of the Preferred Alignments

Based on the evaluation of the impacts, as they affect each of the communities along both reference and alternative route alignments, the following routes are suggested as preferred alignments.

**Pretoria** – Alignment 6a/6c (via Fountains Valley & Inner City – tunnel/Park St. - Cut & cover/tunnel) or 6b/6c (via Fountains Valley & Inner City – tunnel/Park St. - Cut & cover/tunnel). The tunnelled option would be the preferred method of construction. However, cut-and-cover would also be acceptable if disruption during construction is minimised.

**Centurion south of station** – Alignment No. 4 (Via rugby fields)

**Centurion north of station** – Alignment No. 5a (West of Ben Schoeman Highway)

**Midrand** – Refined alignment (Closest to K101)

**Marlboro/Buccleuch** – Alignment No. 3 (Via Marlboro Drive/Modderfontein Spruit)

**Sandton** – Alignment No. 2b (Straight tunnel)

**Rosebank** – Alignment No. 1a (Fricker Rd.) or 1b (Oxford Rd.)

**Modderfontein to Kempton Park: Linbro Park** – Alignment no 7 (Avoiding most of Linbro Park)

**Modderfontein to Kempton Park: Modderfontein** – Reference alignment or refined alignment (via golf course)

**Modderfontein to Kempton Park: Rhodesfield** – Alignment No. 8 (Refined alignment)

General Social Impacts of the Gautrain Rapid Rail Link Project

In this section a distinction will be made between the main social impacts during the pre-construction, the construction and the operational phases. Where relevant, a distinction is also made between impacts related to tunnelling, cut-and-cover, open-cut and sections above ground.

* **Pre-construction Phase**

Uncertainty about the location of alternative alignments has already led to a decrease in property values in certain areas. Such a decrease could result in substantial financial losses if residents are compensated at market value at the time of expropriation. Apart from the psychosocial stress that this creates, the financial resources of residents might be depleted to such an extent that they are unable to replace their current properties with a residence of a similar nature.
Difficulties in renting and selling of properties leading to psychosocial stress have been evident. Certain property owners have indicated that they have already experienced a loss of rental income, as potential tenants are reluctant to sign longer-term leases.

Improvements on properties, which may be impacted by the alignment, have in certain instances been put on hold. This has financial implications for property owners, as well as property developers. In some instances rezoning applications have also been withheld until there is certainty about the selected route of the railway line, as well as the location of the stations.

* Construction Phase

It is estimated that a substantial number of new job opportunities will be created during the construction phase. This is considered to be the main positive social impact for the larger community.

The uncertainty regarding the route alignment has resulted in difficulty in selling of properties. It is anticipated that this trend would cease soon after operation has commenced.

Many people have raised the fear that they will be inadequately compensated for properties that need to be expropriated. This has led to considerable conflict and psychosocial stress.

In the short-term there will be a loss of income due to the relocation of businesses, during construction.

The construction period will result in an increase in construction vehicles in most of the areas through which the alignment would pass. This could be an inconvenience to residents.

Slight increase in crime may be experienced during the construction period. With an increase in construction activities, it may be more difficult to identify strangers in an area.
- **Tunnel**
  
  Although restriction of access to properties may occur, this will be very limited.

  Where the tunnel is located close to the surface, a loss of residential properties could occur. The impact of this is however not as significant as in areas where the alignment is in an open cut or on ground level.

- **Cut-and-cover**
  
  The impact with regard to restriction of access to properties would likely be more severe than in a tunnel situation. In areas where cut-and-cover under roads is considered, disruption of traffic flow may occur. Reduction in pedestrian crossings may occur, especially where an alignment runs parallel to an existing road. This could result in a disruption of movement patterns of pedestrians.

  It is perceived that noise and vibration during construction may have an impact on the property values of residential properties, but this is substantially lower than areas where the alignment is to be located above ground or in an open cut.

  It is anticipated that any potential decrease in property values would be short term.

  The uncertainty regarding the route alignment has also resulted in difficulty in selling of properties. It is anticipated that this trend would cease soon after operation has commenced.

  The possible loss of residential properties could be limited by using this construction method. The impact of this is however not as significant as in areas where the alignment is in an open cut or on ground level.

- **Open Cut or at Ground Level**
  
  The impact with regard to restriction of access to properties would be the most severe with this type of alignment. Reduction in pedestrian crossings will occur, especially where an alignment runs parallel to an existing road or an open area used by pedestrians. This could result in a disruption of movement patterns of pedestrians.
In areas where the alignment is to be constructed in an open cut, on ground level or on elevated structures, it is perceived that noise and vibration will seriously disrupt people’s daily activities. Where this construction takes place in the vicinity of a school, it will also affect the ability of learners to concentrate. Noise and vibration, as well as visual impact, may have an effect on the property values of residential properties. It is anticipated that the decrease in property values of residential properties adjacent to the alignment will be of a long-term nature, as it will continue to have an effect during the operational phase.

As a result of the decrease in property values, the fear exists that inadequate compensation would be received, and not compensation at market value as at the time of announcement of the train (February 2000).

The uncertainty regarding the route alignment has also resulted in difficulty in the selling of properties. It is anticipated that this trend would cease soon after construction has commenced.

In many areas a substantial loss of residential properties would occur. In areas, such as Muckleneuk, the impact of this could be significant.

Reduction in pedestrian crossings may again occur where an alignment runs parallel to an existing road. This could result in a disruption of movement patterns of pedestrians.

The construction period will result in an increase in construction vehicles in most of the areas through, which the alignment would pass. This could be an inconvenience to residents.

* Operational Phase

The main positive impact of the project is the increased access to public transport, especially in areas where adequate public transport is not provided. It will therefore have a positive impact on the time spent by people in congested traffic if they start using the train rather than their private motorcars. Travel time during peak hour periods will be decreased for patrons of the train and could have a resultant positive impact on the stress levels of people. It will also significantly reduce air pollution on major roads.
The improved accessibility of areas in close proximity to the stations could lead to an increase in property values of these areas.

It is anticipated that job creation would continue during the operational phase. The sustainability of job creation could have a significant economic impact on the entire region.

Rather than an increase in crime levels in and around the stations, an increase in safety and security in the immediate vicinity of the stations is anticipated due to the stringent security measures that the operators of the Gautrain will be required to implement.

A permanent reduction in pedestrian crossings may occur in some areas. However, it is not anticipated that this would have a significant impact during operation.

In certain areas a continued decrease in property values may occur, until such time as people realise that the newly introduced system would not have any significant impact on them.

10.4 Mitigation Measures

The underlying assumption of the mitigation measures recommended below is that the preferred alignments as set out above have been accepted.

10.4.1 Dealing with Perceptions

It is clear from the survey results as well as the public and focus group meetings that there are a number of incorrect perceptions with regard to the EIA process, as well as the impacts of the project itself. It is therefore important that a comprehensive communication strategy should be developed in order to ensure that the relevant information reaches and is understood by the public.

In particular, there is a perception in most of the areas that the Gautrain would be similar to the existing Metro Rail system. Providing the public with detailed information regarding the types of trains that will be used could easily negate this perception. Written information should be supplemented with visual information.
In areas where it is proposed that the route be tunnelled people have the perception that they would experience noise and vibration. This should also be addressed during the communication strategy. There is also a perception that tunnelling should preferably take place under commercial properties rather than residential properties. Although there is no real difference in impact this perception should be mitigated by ensuring that ventilation shafts are not placed near residential properties but rather in the road reserves or close to commercial properties.

10.4.2 Expropriation

With regard to expropriation two issues need to be considered, the first one being partial versus full expropriation of particular properties. The second issue deals with the possibility of inadequate compensation.

- Partial versus Full Expropriation
  In areas such as Muckleneuk and Randjesfontein many people are concerned that they would only be compensated for a portion of their property while they would need to continue living on the remaining section. In instances where partial expropriation is being considered by Gautrans, this should be done in consultation with the relevant property owners. Specific mitigation measures should be developed in these instances. Where acceptable mitigation measures are not possible, the entire property should be expropriated. This is especially important in the case of Muckleneuk alignment 6fd where a few residents could find themselves stranded between the Gautrain and the existing Metrorail. This whole area should be expropriated and could be turned into a park.

- Inadequate Compensation
  Due to external market forces, property values in some area (e.g. Berea and Rhodesfield) have decreased to such an extent in recent years that expropriation at market value could leave some residents with a substantial amount to be paid on their bond and no capital to purchase alternative accommodation. In these cases, expropriation at replacement value should be considered.

A possible decrease in property values and the resulting financial loss as a result of the announcement of the proposed train is a general concern with all the alignments. There is a perception that the uncertainty surrounding the chosen alignment has already negatively affected property values during the pre-construction phase. Such a decrease could result in substantial financial losses if residents are compensated at market value at the time of
expropriation. Apart from the psychosocial stress that this creates, the financial resources of residents might be depleted to such an extent that they are unable to replace their current property with a residence of a similar nature. Careful consideration should be given to the determination of market values prior to the announcement of the project. This could be obtained from records of estate agents and property valuators in the specific areas. It may be necessary to give special consideration to pensioners in this regard, especially in areas such as Rhodesfield, Muckleneuk, Centurion and Berea.

10.4.3 Loss of Sport and Recreational Facilities

In certain areas there could be a reduction of recreational facilities, such as the horse trails in Randjesfontein, the rugby fields in Centurion and the Modderfontein Golf Course. These facilities should be replaced prior to the construction of the railway line through these areas.

10.4.4 Parking Facilities in Melrose

The main concern in this area is related to the location of the parking facilities associated with the train. It is proposed that the parking facilities be moved to the western side of Oxford Road to avoid the negative impacts on the residential areas and the Kingsmead College.

10.4.5 Job Creation

As far as possible local employment should be used during the construction phase. This would ensure that the areas that would be directly affected by the project, would also receive benefits from the project.

10.4.6 Disruption

The effects of disruption as well as noise and vibration during construction should be mitigated. Construction should not be allowed to take place at night or on Sundays. Where construction takes place in close proximity of schools, construction should preferably be phased in, in such a manner that construction takes place during school holidays or in the afternoon when classes are not in session.

Disruption of access and people’s daily movement and living patterns should be kept to a minimum. Access to properties should at all times be maintained or alternative access be provided.
10.4.7 Security

There is a concern about a decrease in safety and security during construction. Specific attention should be given to security areas and complexes and new security walls and fences should be erected on the new boundaries prior to construction.

Construction workers need to be easily identifiable. This could be achieved by providing workers with the same clothing and nametags.

Construction camps should not be erected within residential areas. Where possible, workers should rather be transported from a central point everyday.

Stringent security measures must be implemented at stations and on the trains. This should include measures such as closed circuit television, plain-clothes police officers or security personnel (both in the station and on trains). Hawkers or beggars should not be allowed in the stations.

Concerns have been raised about the possibility of vagrants sheltering in the tunnel with the accompanying increase in crime. Entrances to tunnels should be adequately fenced off on all sides.

10.4.8 Impact on Sunnyside Campus of the University of South Africa

Refined alignment 6fd can only be considered as an acceptable alignment if serious attention is paid to mitigation measures for the possible impacts on proposed developments on the Sunnyside campus of Unisa, such as the soundproofing of buildings in the vicinity of the Gautrain, the provision of walkways connecting the two parts of the campus as well as creating designs that would enhance the sense of place that Unisa is attempting to establish on the campus. The best option would be to develop an integrated plan that would facilitate the proposed developments by Unisa while simultaneously providing for the most viable solution for the Gautrain.

The possibility of locating the station on the Sunnyside campus rather than at Pretoria station should be investigated. The Pretoria railway station could be connected to this station by means of a walkway. In particular issues such as a transport facility between the Unisa campus and Johannesburg International Airport, that would service both national and
international students, lecturers and other users of the Unisa campus, should be seriously considered. It is possible that such a facility could strengthen Unisa’s hand in their negotiations with the World Bank in expanding the Unisa facility into and beyond Africa. The timing of both the planned Unisa developments and the Gautans project is such that it provides an ideal opportunity for Unisa and Gautrans to embark on a joint venture that could add substantial value to both projects. The extent of this opportunity must not be underestimated and should be explored much deeper by both parties.

10.5 Conclusion and Recommendations

In conclusion, it was found that the long-term positive benefits of the project are such that they outweigh the negative consequences. Nevertheless, it is strongly suggested that the mitigation measures, to minimise the social impacts, as outlined in this chapter, are closely followed.

It is also recommended that a further investigation be undertaken with regard to the particular possible impacts on the functioning of the Heart Hospital and Jacaranda Hospital, depending on which alignment is selected.

In areas where some embassies may be affected the correct protocol should be followed. The staff of the embassies should be consulted to ensure the least possible disruption of their activities.

Finally, it is recommended that the alternative under Park Street be followed. The tunnelled option would be the preferred method of construction. However, cut-and-cover would also be acceptable if disruption during construction is minimised. The reference alignment in Muckleneuk, as well as any of the open-cut alternative alignments along Park Street will have severe impacts on the affected communities.

Although the refined alignment 6fd in Muckleneuk is not preferred, it is possible to develop ways to mitigate the impact of this alignment, should it be selected, by for example developing a functional park on remainders of expropriated properties, as well as the development of an integrated plan with regard to the impacts on the Sunnyside campus of Unisa. Even if this is done, it should be noted that the social impacts in respect of this alignment, such as the loss of property and consequent impact on community life are of a serious nature and it is strongly advised that mitigation is done in close consultation with the community.
In conclusion, we would like to stress the importance of close consultation with all communities with regard to the implementation of mitigation measures.

10.6 References


