

Socio-Economic Impact Assessment: Parkdene Filling Station



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Full project title **Parkdene Filling Station Update of Socio-economic Impact Assessment**

Report prepared by Urban-Econ Development Economists (Pty) Ltd

Implementation organisation report prepared for LOOKFORWARD CONSTRUCTION (PTY) LTD

Disclaimer All findings presented in this report are considered as representative of the data availed to the researchers at the time of publishing. Gaps in the data provided to the researchers are mentioned throughout the report.

Any primary data presented in this report is based on informed consent. Such consent was received either verbally or electronically. All study participants contributing towards primary data presented in this report participated in the study voluntarily and without coercion. Participants were informed that any primary data collected would be aggregated to preserve their identity. Direct quotations may be paraphrased or edited for grammatical and stylistic congruence.

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National Environmental Management Act, 1998 (Act no. 107 of 1998) and Environmental Impact Regulations, 2014 (as Amended)

Regulation GNR 326 of 4 December 2014, as amended 7 April 2017, Appendix 6	Section of Report
1. (1) A specialist report prepared in terms of these Regulations must contain- a) details of- i. the specialist who prepared the report; and ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;	Appendix A Appendix B
b) a declaration that the specialist is independent in a form as may be specified by the competent authority;	Appendix C
c) an indication of the scope of, and the purpose for which, the report was prepared;	Section 1
(cA) an indication of the quality and age of base data used for the specialist report;	Section 1
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;	Section 2, 7
d) the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 1
e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 1
f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternative;	Section 2, 5, 7
g) an identification of any areas to be avoided, including buffers;	N/A
h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Section 2
i) a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1
j) a description of the findings and potential implications of such findings on the impact of the proposed activity, (including identified alternatives on the environment) or activities;	Section 7
k) any mitigation measures for inclusion in the EMPr;	Section 7
l) any conditions for inclusion in the environmental authorisation;	Section 7

<p>m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;</p>	
<p>n) a reasoned opinion-</p> <ul style="list-style-type: none"> i. (as to) whether the proposed activity, activities or portions thereof should be authorised; (iA) regarding the acceptability of the proposed activity or activities; and ii. if the opinion is that the proposed activity, activities, or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan; 	<p>Section 7, 8, 9</p>
<p>o) a description of any consultation process that was undertaken during the course of preparing the specialist report;</p>	<p>Section 2</p>
<p>p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and</p>	<p>N/A</p>
<p>q) any other information requested by the competent authority.</p>	<p>N/A</p>
<p>2) Where a government notice <i>gazetted</i> by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.</p>	<p>N/A</p>

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1 INTRODUCTION

1.1 Project description

Urban-Econ Development Economists (Pty) Ltd was appointed by LOOKFORWARD CONSTRUCTION (PTY) LTD to update the specialist market feasibility and economic impact assessment of the Parkdene Filling Station development in George that was done in 2012. This is a supplementary report, updating the initial economic impact assessment, comparing the initial layout with the new layout and comparing the results of the initial impact assessment with this updated impact assessment.

An independent, specialist analysis regarding the capacity of the local George market to sustain a filling station as well as the Parkdene Filling Station impact on the existing filling stations in the area and in particular those located along Nelson Mandela Blvd and in the industrial area was therefore undertaken.

1.2 Scope of work

The purpose of the socio-economic impact assessment is to quantify and assess the potential positive and negative socio-economic impacts that could ensue from the Parkdene Filling Station in the context of the local communities and affected economies.

The scope of work for this assessment is in line with the NEMA protocols released in March 2020. The Socio-Economic Impact Assessment:

- Consider the findings of the previous socio-economic study (2012) with those of this updated study, as applicable to the revised layout proposal i.e. comparative assessment.
- Identified and assessed the socio-economic impacts associated with:
 - the construction phase,
 - the operational phase
- Provided a general overview of the baseline conditions associated with the affected community
- Identified and assessed any potential socio-economic impacts, either positive or negative, that may arise because of the filling station on individuals, household, agricultural related activities including forestry and commercial businesses
- Identified and assessed the economic impacts of the proposed project during construction and its operation of the economic activities (gross value added, income generation and employment due to the implementation of the project
- Identified mitigation measures to reduce the severity of negative impacts and measures to optimise the positive impacts are to be included in the report

1.3 Methodology

The approach to undertaking an environmental impact assessment consisted of the following activities:

EIA Amendment: The potential zone of influence associated with the Parkdene Filling Station was re-evaluated and defined and informed by the extent of potential visual, noise and other envisaged environmental, social, and economic impacts. Relevant government policies and other strategic documents was reviewed and alignment of the proposed project with these strategic documents assessed. Secondary data and primary data were gathered to describe the interests and needs of the public as well as socio-economic environment related to the zone of influence, within which the proposed development is to be established.

Furthermore, a detailed assessment of the potential impacts was undertaken. The assessed impacts will cover the effects of the proposed development on numerous capitals, such as natural capital, human capital, social capital, cultural and spiritual capital, physical capital, financial capital, and institutional and political capital. All socio-economic impacts identified was assessed and categorised in line with the rating provided by the environmental specialist. Special attention was paid to the identification and analysis of cumulative effects of the project, as required by the EIA Regulations. Mitigation measures was proposed whereby recommendations to reduce or eliminate the potential negative effects on the affected parties and enhance positive impacts was provided. A comparison of socio-economic impacts after mitigation was done on the original impact study of 2012 and this study in 2022.

In addition to the above, the following should be noted.

Table 1-1: Key Aspects

Aspect	Description
Information Source	Sources of information utilised for this report, include: <ul style="list-style-type: none"> - Review of planning documents - Desktop research - Traffic Impact Assessment Report, (Corli Havenga Transportation Engineers, 2021, 2022) - Engineering Services Report, Element Consulting Engineers (2022) - Economic Impact Assessment (Urban-Econ, 2012) - Quantec Easy Data - Cape EAPrac
Quality and Age of Data	The data utilised for the completion of this report is based on up-to-date information obtained through Cape EAPrac. Sources of information are of high quality.
Duration, Date and Season of Site Investigation and Relevance of Season to Outcome of Assessment	An onsite site investigation was not required from a socio-economic perspective as a site/ area understanding was obtained through provided literature from Cape EAPrac as well as during the previous economic impact report (2012). Thus, duration, date, and season of the site of site investigation are not relevant.
Identification of Areas to be Avoided	From a socio-economic perspective, no areas should be avoided.

Aspect	Description
Assumptions, Limitations and Gaps in Knowledge	<p>Key assumptions that form the basis of the assessment and discussions of the study:</p> <ul style="list-style-type: none"> - Project-related information supplied by the team involved in the project was assumed to be reasonably accurate. Thus, all potential impacts are predicted based on this information. - The secondary data sources used to compile the economic baseline can be viewed as being indicative of broad trends within the study area; and - Impacts cannot be predicted with complete accuracy and these predictions are based on research and years of experience, taking the specific set of circumstances into account.
Required Permits	From a socio-economic perspective, no permits are required.

1.4 Report outline

Section 1: Introduction (Describe the project description and scope of work as well as the research methodology and source of information)

Section 2: Development Concept (Describe the Parkdene Filling Station development and location)

Section 3: Policy Review and Project Alignment (Analyse the relevant national, provincial, and local policies and evaluate the project alignment within those policies)

Section 4: Baseline Profile (Provides socio and demographic profile of where the Parkdene Filling Station development is be located)

Section 5: Area of Impact (Assessing the direct area of impact)

Section 6: Filling Station Market Potential (Assesses the market demand for a filling station within the study area of George)

Section 7: Impact Assessment and Analysis (Assesses the positive and negative impacts, their duration and extent, as well as the intensity of the impacts)

Section 8: Project Alternatives (Assessing the project alternatives)

Section 9: Conclusion and Recommendations

2 DEVELOPMENT CONCEPT

2.1 Introduction

The purpose of the following chapter is to provide a more in-depth description of the site, as well as an assessment of site allocated for the Parkdene Filling Station. The potential of the target market is not only influenced by the local market characteristics and behaviour, but also by location factors such as accessibility, locality, and the local development perspective.

The section will provide a clear description and breakdown of the proposed distribution of land on the site which will include the layout concepts; followed by a more in-depth description of the site and its attributes such as locality and size, accessibility and visibility, the image and sense of place; and the existing and proposed infrastructure services which should still be put in place.

The development of the Parkdene Filling Station on erf 11221, Nelson Mandela Blvd, George, encompasses a filling station with 309m² convenience centre, inclusive of fast food and coffee services.

Map 2-1: Site Development Plan, New Layout



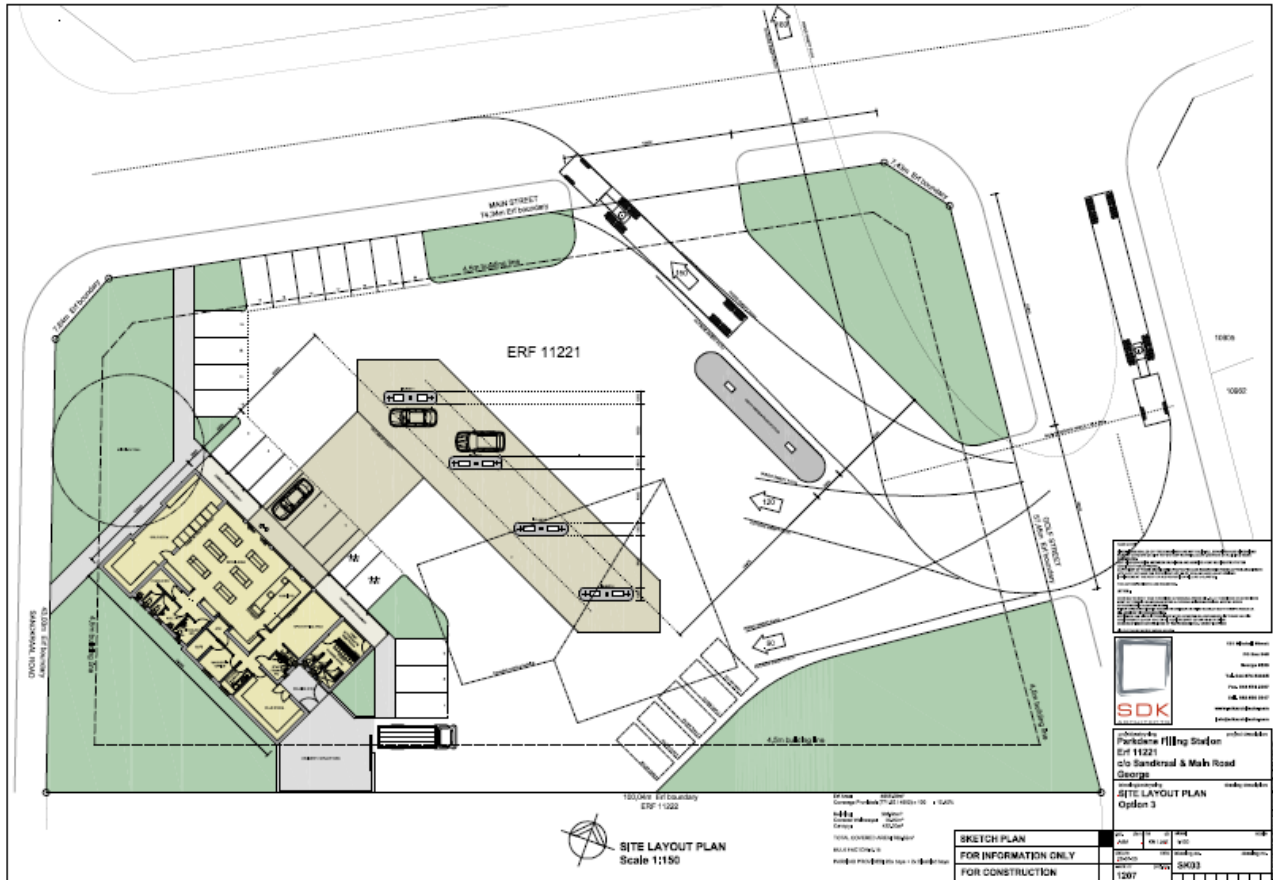
Source: Element, 2022

2.1.1 Layout Changes

The initial layout from 2012 has changed to accommodate recommendations from the local

authority as well as the Updated Traffic Impact Assessment (2021). Map 2-2 illustrates the layout from 2012 as authorised in the Environmental Authorisation (2012).

Map 2-2: Site Development Plan 2012 Layout



Source: 2012 Filling Station Application, 2012

The access design of the filling station was amended from a full access off Main Street, as originally proposed and approved in 2012, to an entrance only to accommodate the Go-George bus stop. The additional turning lane proposed at the access on Main Street was also omitted in the new design (Corli Havenga Transportation Engineers, 2022). Revised accesses proposed in the new design:

- Entrance off Main Street (no exit); and
- Widened, full access off Golf Street

The 2021 Traffic impact Study therefore made no allowance for customers to make use of the exit onto Main Street and all the trips were assigned to the full access of Golf Street. The Go-George bus service and operations are therefore not affected by trips through the existing bus stop along Main Street.

The layout changes mitigated any potential issue with the bus stop and its operation.

2.2 Development location

The Parkdene Filling Station is located on the corner of Main Street and Golf Street (which runs parallel to Nelson Mandela Blvd and connects the George Industrial area with the Thembaletu informal

settlement) in the suburb of Parkdene, in George.

Map 2-3: Parkdene Filling Station Location



Source: Google Earth, 2022

All four of the suburbs (Lawaai kamp to the west; Parkdene to the east; Thembalethu to the south; and Conville to the north) are traditionally low middle to low-income areas. A large percentage of households in the area own only one vehicle or less and rely on taxi's, lifts and walking on foot to commute.

2.3 Image and Sense of Place

The site for the Parkdene Filling Station is located on the corner of Main Street and Golf Street, and the corner of Main Street and Nelson Mandela Blvd.



The Site

The areas to the east, west, north, and south are currently used for residential and commercial purposes, which includes the suburbs/areas of Parkdene, Lawaaiikamp and Conville, which are all low to low-middle income areas. To the immediate south of the site is the Huis Outeniekwa Plek van Veiligheid, which is secure, fenced in facility that forms the southern boundary for the erf and the filling station site.



Golf Street next to site towards Main Street

To the east and to the north of the site are middle income and informal residential properties in the suburbs of Parkdene (to the east) and Conville (to the north). Golf Street forms the eastern boundary of the site and Main Road forms the northern boundary; beyond which the suburbs of Parkdene and Conville are located. To the immediate west of the site is Nelson Mandela Blvd which serves as a Primary distributor where transient traffic can access the industrial area, as well as the main street used by Thembalethu commuters to get into and out of George. As such this distributor carries a large amount of traffic, especially during weekdays (Monday through to Friday) this includes motor vehicles, large trucks, or vehicles as well as heavy construction and agricultural vehicles looking to

transport goods and materials into the industrial area.



Nelson Mandela Boulevard towards the N2



Main Street next to site towards Nelson Mandela Boulevard

Just beyond Nelson Mandela Blvd lies the Mzoxolo Primary School in the suburb of Lawaai kamp. To the northwest of the site are a few commercial vendors, distributing mainly convenience goods and food items. The areas surrounding the site are low to low middle income households, and as such the actual vehicle ownership rate in the area is assumed to be low, with majority of the residents, using taxi's or walking to get to and from work. Although demand for the filling station from these residential areas would be considered the secondary target market as the main target market as highlighted by the developers are large trucks and heavy vehicles.



Existing bus-stops next to site

The bus stops along Main Street did not exist at the time the original traffic impact study was conducted in 2011/2012. The bus stops along Main Street have been accommodated in the access design of the revised filling station layout. Access off Main Street is limited to entrance only, exit cannot be allowed. Full access is off Golf Street.

2.4 Services

This section will discuss the engineering services of the Parkdene Filling Station development in parallel with the engineering standards and technical design criteria applicable to the project, the information in this section is from the Engineering Services Report, (Element, 2022).

2.4.1 Water

The Average Annual Daily Demand (AADD) for this development in line with accepted design consumptions, assumptions, criteria, and standards, is calculated and estimated at approximately 2 kl/day.

The site is serviced by municipal uPVC water lines along Main Road and Golf Street, respectively the northern and eastern boundaries. The water connection to the development is taken from the water line on Golf Street, on the eastern boundary of the site. The locality of these existing water lines in relation to the development site is indicated in the diagram below.

Design Criteria and Standard of Engineering Services

- Design consumption
 - Convenience shop – 400l/100m²/day
 - Filling station – 0.8kl/day
- Peak factors as prescribed
- Minimum pressures for the network are calculated for a fire flow 30l/sec and peak demand at the point of lowest pressure under peak conditions.

- Maximum of 4 valves to isolate a pipe section.
- Minimum cover to pipes to be 900mm.
- Pipe type and class to be HDPE 50mm class 9, depending on existing network pressure.
- Fire hydrants to be provided in accordance with the relevant guidelines and legislation.

2.4.2 Sewer

The site drains from west to east as confirmed with the topographical survey of the site conducted for the development. The Average Dry Weather Flow (ADWF) of the development, in line with accepted design criteria and standards, can be calculated and estimated as 2kl/day. The design peak flow, inclusive of a specified peak factor of 3.5 and 15% extraneous flow, is estimated at 0.08l/s.

A fat, oil & grease (FOG) trap is specified. The FOG trap retains all fats, oils and grease from the restaurant and prohibits these substances to flow into the sewer network. FOG trap to be cleaned on a weekly basis by the restaurant personnel and checked monthly by the restaurant's manager.

The site is serviced by municipal sewer line along Golf Street on the eastern boundary. A sewer erf connection is provided on the south-eastern corner of the erf. The locality of the existing sewer line and erf connection in relation to the development site is indicated in the diagram below.

Design Criteria and Standards of Engineering Services

- The following design flows will be utilized:
 - Convenience shop – 400l/100m²/day
 - Filling station – 0.8kl/day
- Specified peak factor of 3.5
- Allowance for 15% extraneous flow
- A conventional waterborne sewerage system will be provided.
- Minimum flow velocities designed for as 0.7m/s.
- Minimum cover to all pipes to be 800mm.
- Pipe diameters of generally 110mm for all service connections and minor lines and 160mm and above for outfall line.
- Design gradient of 1:60
- Erf connection depth to be minimum 1.0 m and at least be able to drain 80% of the erf.
- Precast concrete rings manholes with concrete floor and premanufactured concrete lid.
- Manhole covers and frames to be Polymer Concrete.
- Manholes to be central over main pipe on downstream side.
- All concrete, mortar or screed used with manholes to be from dolomite aggregate and low alkali sulphate resistant cement to SABS 471.
- Pipelines to be uPVC class 34 and to be laid on Class C bedding.

2.4.3 Stormwater

A formal stormwater reticulation system will be provided by a combination of surfaced roadways, kerbs, channels, cut-off drains, stormwater pipes and various minor structures.

The following standards and design criteria are envisaged:

- Minimum gradients for pipelines to allow minimum flow speeds of 0.7m/s at full flow.
- Maximum pipeline flow velocities to be 3.5m/s.
- Stormwater pipes to be 100D as required by specific loadings or installation conditions.
- Bedding to be Class C.
- Minimum cover on pipes to be 800mm.
- Minimum pipe diameter to be 450mm.

Contaminated runoff from the under-roof main forecourt area (concrete apron) will be collected into a closed-circuit fuel/oil separator system and will be collected by a reputable contractor on a regular basis all in line with the latest petro-chemical industry standards.

The site is serviced by municipal stormwater line along Golf Street on the eastern boundary. A storm-water connection point is available on the south-eastern corner of the erf.

2.4.4 Roads and Access

Current and proposed access to the site is obtained from Main Street to the north and Golf Street to the east. Access is not available from Nelson Mandela Blvd to the west. Sight distances at both of the proposed access points are excellent and satisfactory for development purposes in both the vertical and horizontal alignments.

Internal standards and design criteria are specified as follows:

- Access width on Golf Street 12.9m and inside radius of 7.9m
- Access width on Main Road of 8.5m and radii of 3.4m and 4.0m
- Forecourt (service area) concrete surface with cut-off drain
- Rest of forecourt asphalt surfacing 30mm
- Pavement structural materials from commercial sources
- Minimum forecourt grade of 0.4%
- Road design life of 20 years

2.4.5 Filling Station and Petrochemical Design

The specialist will oversee all petro-chemical design aspects of the development supplier to the project. All infrastructure will comply to the latest petro-chemical industry standards. Design criteria of the filling station and petro-chemical infrastructure are as follows:

- Fuel delivery truck manoeuvres accommodated on site and indicated on site development plan.
- Allowance in layout for fuel loading bay of 22m.
- Fuel serving island configuration will be four islands
- Fuel tank configuration will be 5 x 23kl (3 x diesel and 2 x ulp)
- Fuel tanks will be double walled and installed underground
- Access width on Golf Street 12.9m and inside radius of 7.9m

- Access width on Main Road of 8.5m and radii of 3.4m and 4.0m
- Forecourt (service area) concrete surface with cut-off drain
- Rest of forecourt asphalt surfacing 30mm
- Pavement structural materials from commercial sources
- Minimum forecourt grade of 0.4%
- Road design life of 20 years
- Drizit fuel & oil trap for forecourt

2.4.6 Electrical and Mechanical

A low voltage (400V) supply is available from an existing kiosk, located on the corner of Main St and Nelson Mandela Blvd. This kiosk is currently being supplied from the 500kVA SS Lawaakamp. The new development is proposed to be serviced from the existing kiosk via a new 125A circuit breaker and a new 35mm² underground copper cable for approximately 50m to the Main DB of the new building.

The following design criteria are used for calculation purposes:

- Load criteria:
 - Convenience shop – 200VA/m²
 - Forecourt – 75VA/m²
- Diversification factor – 0.7

The calculation of the after diversity maximum demand (ADMD) for the development, in line with the above design criteria, is calculated as being approximately 70 kVA. A heating, ventilation and air-conditioning design have been conducted for the new convenience shop. All design parameters are to the satisfaction of the local authority and to the national building regulations (SANS 10400).

3 POLICY REVIEW

This chapter examines the key legislation and policies relevant to the Parkdene Filling Station development and includes a review of pertinent national, provincial, and local policies that have a direct bearing on the development. Following this the chapter outlines the needs and desirability of such a development accordingly.

3.1 Policies

Table 3-1: Policy overview

Policy	Overview
National	
National Development Plan 2030	<p>This plan aims to address poverty while nurturing economic growth. To achieve this, the plan states that the government must create an enabling environment for higher levels of public and private investment in order to create jobs and increase income levels. The target for 2030 is an economy that is close to full employment. Particularly, 11 million jobs are targeted to be created by 2030 through raising exports and competitiveness. The economy is expected to create jobs specifically for young and low skilled South Africans, who are mostly unemployed. The plan sets out six interlinked priorities:</p> <ul style="list-style-type: none"> - Uniting all South Africans around a common programme to achieve prosperity and equity - Promoting active citizenry to strengthen development, democracy, and accountability - Bringing about faster economic growth, higher investment, and greater labour absorption - Focusing on the key capabilities of people and the state - Building a capable and developmental state - Encouraging strong leadership throughout society to work together to solve problems
National Environmental Management Act No. 107 of 1998	<p>The Act aims to provide co-operative governance through established principles for decision making regarding matters that affect the environment, institutions that will promote cooperative governance and procedures for coordinating environmental functions. Section 2 of NEMA establishes a set of principles and relevant factors that guide sustainable development. These principles and factors include the following:</p> <p>Development must be sustainable;</p> <ul style="list-style-type: none"> - Pollution must be avoided or minimised and remedied - Waste must be avoided or minimised, reused or recycled - Negative impacts must be minimised

Policy	Overview
	<ul style="list-style-type: none"> - Responsibility for the environmental health and safety consequences of a policy, project, product, or service exists throughout its life cycle - These principles and factors are taken into consideration when a government department exercises its powers, for example during the granting of permits and the enforcement of existing legislation or conditions of approval. NEMA also provides administration and enforcement of other environmental management laws
<p>Spatial Planning and Land Use Management Act (2013)</p>	<p>The purpose of the Act is to provide a framework for spatial planning and land use management, to provide for inclusive development and efficient spatial planning, to promote greater consistency and uniformity in the application procedures and decision-making authorities. The Act emphasizes the importance of cooperation and consistency between the national, provincial, and local governments.</p> <p>During the construction and operation of the Parkdene Filling Station development employment opportunities would be created.</p>
Provincial	
<p>Western Cape Human Settlements Strategic Plan 2020-2025</p>	<p>For the period 2020-2025, the Department will focus on providing more opportunities for people to live in better locations and to improve the places where people live. In this regard, the Department will target Priority Housing Development Areas (PHDA), which will be used for high density, mixed-use, mixed-income, and mixed-tenure developments. The Department will continue to upgrade informal, low-income settlements.</p>
<p>Garden Route Spatial Development Framework (2017)¹</p>	<p>This report outlines key spatial concerns and trends as well as spatial proposals in line with the goals and strategies from the 2017 IDP. A summary of the proposals is outlined below:</p> <ul style="list-style-type: none"> - Protect, enhance, and develop the agricultural resource base - Build long-term infrastructure to increase people's access to economic opportunities, social services, and recreational amenities - Co-ordinated growth management to protect long term financial sustainability of households, businesses, and government

¹ <http://www.gardenroute.gov.za/wp-content/uploads/2018/05/SDF-Executive-Summary-TOC.pdf>

Policy	Overview
	It is important to note that George has experienced the highest rate of economic growth, as well as the highest employment growth, unequal to other regions in the district
Integrated Human Settlements Strategic Plan (2021)²	The Minister of Human Settlements has declared 136 Priority Human Settlements and Housing Development Areas (PHSHDAs), ensuring redress regarding the spatial plan before 1994 and enabling residents to live closer to areas with economic activities and social amenities. George is one of municipalities in the Garden Route deemed to be a PHSHDA, in addition to Mossel Bay, Knysna and Bitou.
Local	
George Integrated Development Plan (2017-22)³	George has the highest population in the Garden Route District with an expected growth of 6.9 percent by 2023. According to census data, the number of households increased 17.1 percent between the period of 2011 to 2016. In terms of strategic planning, the IDP outlines five strategic goals: <ul style="list-style-type: none"> - Develop and grow George economically - Keep George safe, clean, and green - Increase access to basic services, specifically water - Establish a Call Centre to increase public input in decision-making - Ensure good governance free of corruption
George Spatial Development Framework (2019)⁴	At the municipal scale, the key challenge is to manage the development and growth of the urban settlements while providing for the needs of rural communities. The task remains to undo the spatial legacy of segregation, but the report claims that this is a "catch up process" and many areas experience different levels of growth. For one, the George City Area needs to be restructured to integrate and enhance peripheral townships. The report identifies key policies: <ul style="list-style-type: none"> - Prioritise infrastructure that invests in people and their socio-economic mobility and resilience, particularly in informal settlements - Direct public and private fixed investment to existing settlements reinforcing their economic development potential

²<http://www.gardenroute.gov.za/wp-content/uploads/2022/03/Integrated-Human-Settlements-Strategic-Plan-2021.pdf>

³<https://documentportal.george.gov.za/storage/twentyseventeen-twentytwentytwo-idps/August2020/twu0VmfkizFxcG3JwCha.pdf>

Policy	Overview
	<ul style="list-style-type: none"> - Maintain a compact settlement form to achieve better efficiency in service delivery and resource use (densifying focus areas) - Manage the use of land in the Municipal area in a manner which protects the natural ecosystem - Safeguard the municipality's farming and forestry areas as productive landscapes, equal in value to urban land - Manage the growth of urban settlement in George to ensure the optimum and efficient use of existing infrastructure and resources

3.2 Synthesis

According to the George IDP (2017-22), George is ranked second to Cape Town on the Western Cape list of rankings of "Development Potential Index". Despite this potential, the municipality faces problems of economic and employment insecurities, inequitable access to basic services and facilities, while safeguarding the natural environment. Taking into consideration the concerns raised by the SDP, it is imperative that new developments within the municipality create sustainable jobs for local communities in order to reduce unemployment in the region.

4 BASELINE PROFILE

4.1 Social and Demographic Profile

The socio-economic profile provides insight into the main characteristics of the population residing within the market area. The socio-economic analysis informs the efficient alignment between the potential of the Parkdene Filling Station and the needs of the market area population, thus abiding to its potential success.

The following aspects were taken into consideration:

- Population and household numbers
- Age profile
- Education profile
- Employment profile
- Household income profile

4.1.1 Population and households

Table below indicates the population and household statistics for the Garden Route District Municipality and George Local Municipality. Between the period 2022 and 2027 population in George LM and the study area is expected to grow at 1.3% which is higher compared to that expected for the overall Garden Route. For the same period the number of households are expected to increase by 1.4% for George LM, with a growth of 1.3% expected for the Garden Route DM.

Table 4-1: Population and Household Statistics

Population Statistics				
Area	2022	2027*	2032*	Growth rate
Garden Route	636 233	673 111	712 126	1,1%
George LM	215 670	228 171	241 396	1,3%
Households Statistics				
Area	2022	2027*	2032*	Growth rate
Garden Route	179 803	191 589	204 148	1,3%
George LM	58 824	62 680	66 789	1,4%

Source: Urban Econ Calculations based on Quantec Easy Data, 2022

4.1.2 Age Profile

The age profile provides an overview of the age group distribution of Garden Route DM and George LM which in turn is determinative of the population's lifestyle, specific needs, and thus the development of the study area.

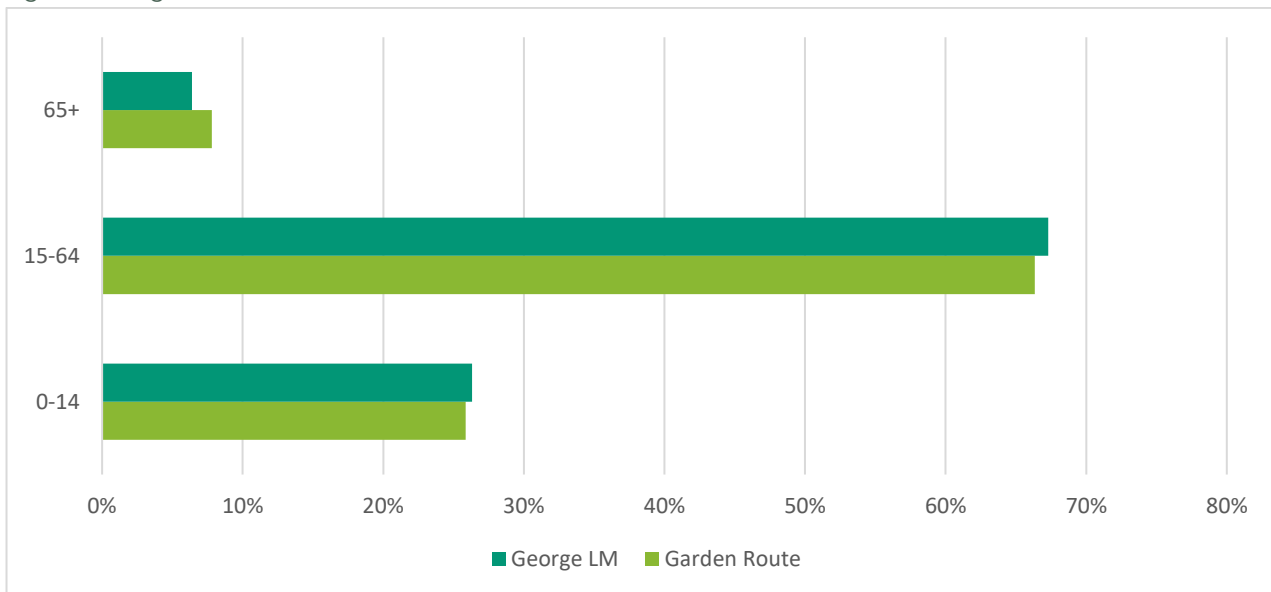
This subsection also highlights the portion of the population that qualifies as economically active and the dependency burden on this working population. The table below explains these concepts.

Table 4-2: Age Classification

Age	Category	Socio-Economic Contribution	Dependency
0 – 14 years	Youth population	Non-working; do not generate income.	Dependent on adults for provision.
15 – 64 years	Potentially economically active (PEA)	Working population; main generators of income.	Independent; provide for other groups.
65 + years	Senior population	Retired; non-working; do not generate income.	Dependent on government or PEA for provision.

As indicated in the figure below the percentage of the total population within the study area is classified as 'potentially economically active' (ages of 15 and 64) which accounts for 69%. This indicates that the Parkdene Filling Station will be utilised by a market that is actively seeking residential facilities. As a result, the majority of the population within the study area can contribute to the national economy.

Figure 4-1: Age Profile



Source: Census 2011

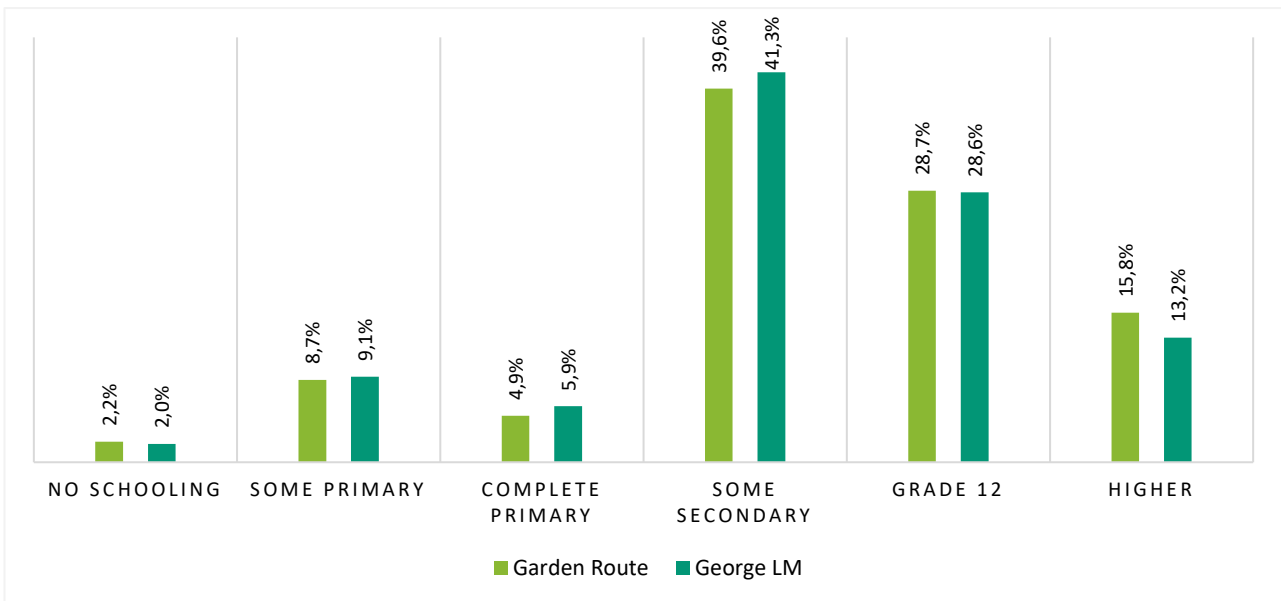
4.1.3 Education Profile

The education profile illustrates the level of education and development, which in turn provides further insight in terms of the quality and size of the potential labour force. The level of skill is often directly proportional to the income and remuneration received by workers. The education profile differentiates between the following categories:

- higher education
- grade 12 (complete secondary education)
- some secondary education
- complete primary education
- some primary education (ability to read and write) and
- no schooling

In George, 28.6% of the population have passed grade 12. Approximately 13.2% received higher education (attainment of a tertiary qualification). High levels (41.3%) of some secondary level of education are also apparent within George. A high level of education may increase household income, which in turn may increase household expenditure on the activities inherent to the Parkdene Filling Station.

Figure 4-2: Education Profile



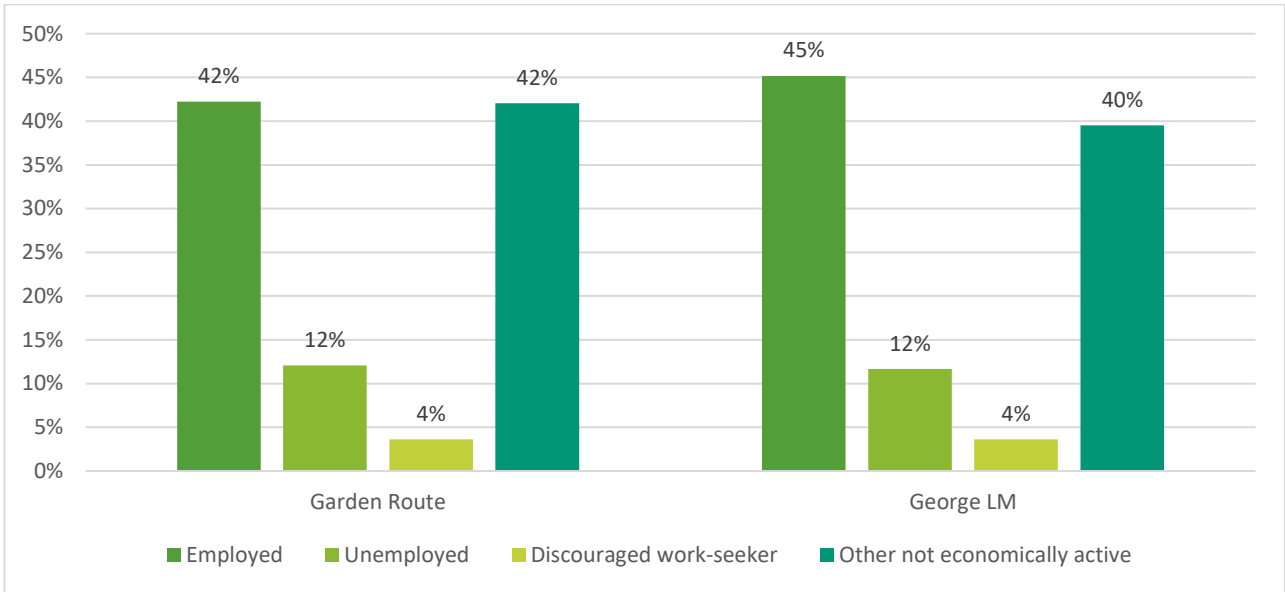
Source: Census 2011 and Urban-Econ Calculations, 2022

4.1.4 Employment Profile

The employment/unemployment profile is an important indicator of the level of disposable income and subsequently the expenditure capacity of the area of impact. Employment/Unemployment levels are an important indicator of socio-economic well-being as formal employment indicates access to an income and the ability to provide for basic needs.

Figure 4-3 indicates that a substantial amount of the population in the study area is employed but also a large proportion is not economically active.

Figure 4-3: Employment Profile



Source: Census 2011 and Urban-Econ Calculations, 2022

4.1.5 Household Income Profile

There is a direct linkage between household expenditure and economic growth. Increase in household expenditure means a greater demand for goods and services, which implies an increase in production and a positive change in the size of an economy. Therefore, knowledge of the volume of the disposable income and the expenditure patterns of households can provide insight into the sectors that are most dependent on household income, thereby being most affected in the case of a change in household income. Household income levels are shown in table below.

Table 4-3: Household Income Profile

	Garden Route	George LM
No income	13.2%	12.1%
R1 - R4 800	2.7%	2.6%
R4 801 - R 9 600	4.5%	4.5%
R9 601 - R 19 200	14.5%	13.6%
R19 201 - R 38 400	19.9%	19.2%
R38 401 - R 76 800	16.7%	16.8%
R76 801 - R153 600	11.9%	12.6%
R153 601 - R307 200	9.1%	9.9%
R307 201 - R614 400	5.2%	6.4%
R614 401 - R1 228 800	1.4%	1.6%
R1 228 801 - R2 457 600	0.5%	0.5%
R2 457 601 and more	0.3%	0.3%

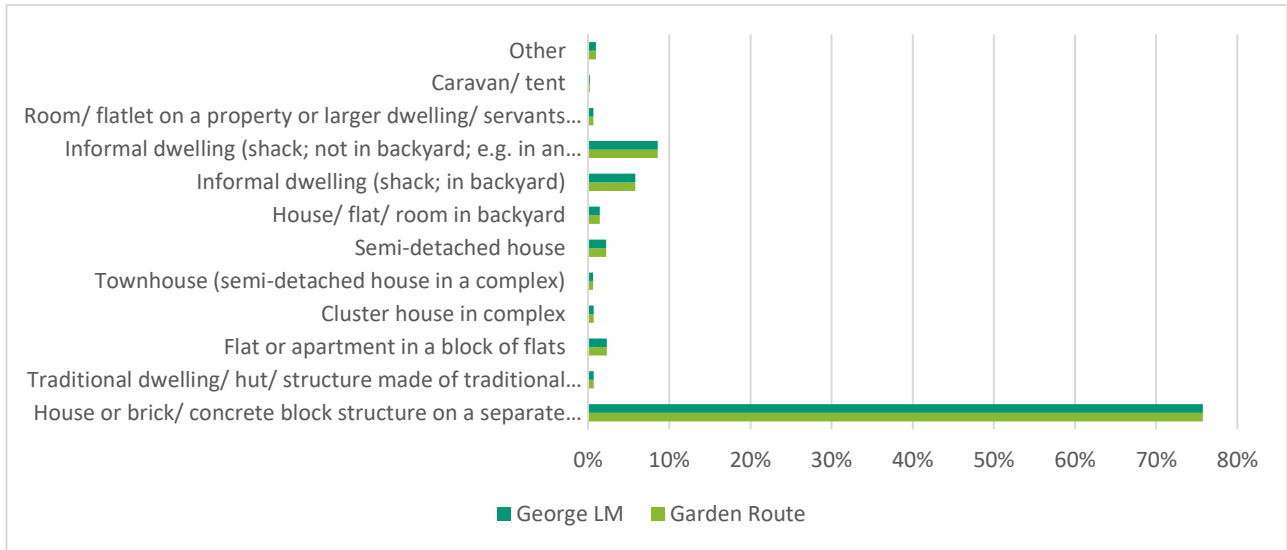
Source: Census 2011 and Urban-Econ Calculations, 2022

4.1.6 Household Typologies

Housing typologies focuses on the various dwelling typologies within the study area and their prominence within the market.

The dominant housing typology in the study area is a formal housing unit on a separate stand (78%). Based on the findings of the housing typology investigation, a house on a separate stand occupies the highest percentage of the dwelling typology in the study area, which suggests that this is the preferred housing typology.

Figure 4-4: Housing Typologies

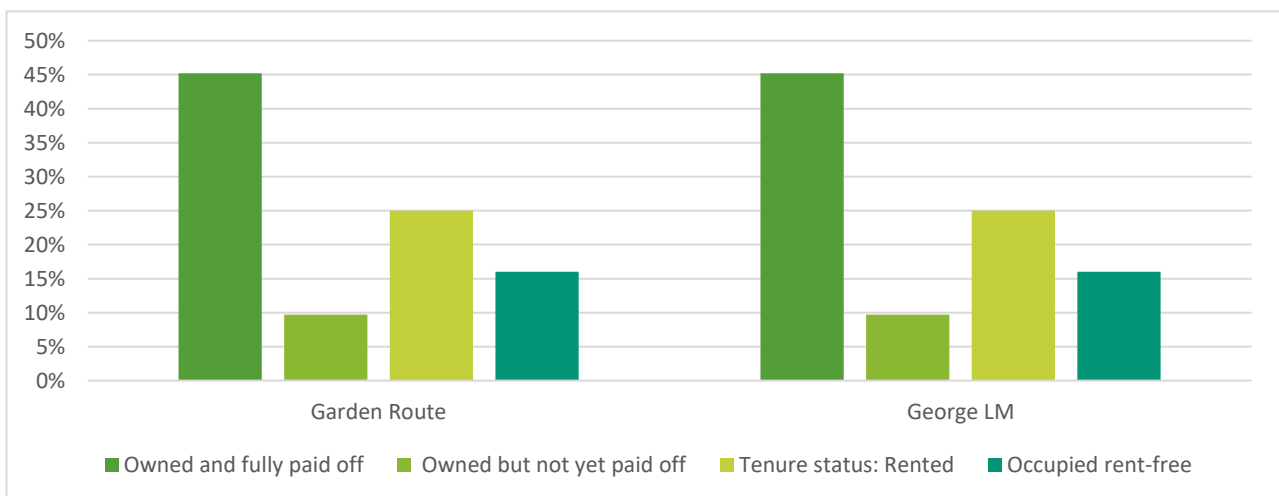


Source: Census 2011 and Urban-Econ Calculations, 2022

4.1.7 Housing Tenure Status

Tenure refers to the extent of home ownership within the study area. The tenure status aims to present the distribution of tenure within the market area.

Figure 4-5: Housing Tenure Status



Source: Census 2011 and Urban-Econ Calculations, 2022

Based on the tenure profile, most of the households own the dwelling they reside in. The high

percentage of rental and bonded units in the study area suggests that a demand for both typologies of housing units exist. The low to middle average household income of the study area suggests that the local market has the means to afford formal housing stock this is a positive indication for the market potential.

4.1.8 Gross Value-Added Trends

Economic growth is measured by the increasing contribution of each economic sector to the geographic area in which it functions. This growth is measured in Gross Value Added (GVA) to the overall production value of the economy. The following figure indicates the latest GVA contribution per economic sector expressed in basic prices (R millions).

The GVA of George LM increased by 1.8% between the 2011 and 2021 period which is higher than that of Garden Route which increased by 1.3% within the same period as shown in the table below.

Table 4-4: GVA figures for district and local municipality (Constant Prices)

Year	GVA (R Millions)		%
	2011	2021	
Garden Route	R 85 856	R97 261	1,3%
George LM	R 32 896	R39 509	1,8%

Source: Urban Econ Calculations based on Quantec Easy Data, 2022

The structure of the economy in both Garden Route and George LM is dominated by the tertiary sector. In 2021 the sector contributed 62.3% towards the district economy and 58.3% towards the local economy. Of this contribution the majority comes from the finance and business services with George LM contributing 30.6% and 28.4% for Garden Route. The secondary sector is also contributing significantly to both economies. This is evident by surrounding areas to the Parkdene Filling Station. Table 4-5 provides detail of sectoral contributions.

Table 4-5: GVA Sectoral Contribution, 2021

	Garden Route	George LM
	%	
Primary sector	8,9%	6,3%
Agriculture, forestry, and fishing	8,6%	6,2%
Mining and quarrying	0,3%	0,2%
Secondary sector	28,8%	28,9%
Manufacturing	21,5%	22,1%
Electricity, gas, and water	2,1%	2,3%
Construction	5,2%	4,5%
Tertiary sector	62,3%	58,3%
Wholesale and retail trade, catering, and accommodation	11,5%	11,6%
Transport, storage, and communication	8,4%	10,4%
Finance, insurance, real estate, and business services	28,4%	30,6%
General government	6,8%	5,7%
Community, social and personal services	7,2%	0,0%

Source: Urban Econ Calculations based on Quantec Easy Data, 2022

5 THE AREA OF IMPACT

5.1 Introduction

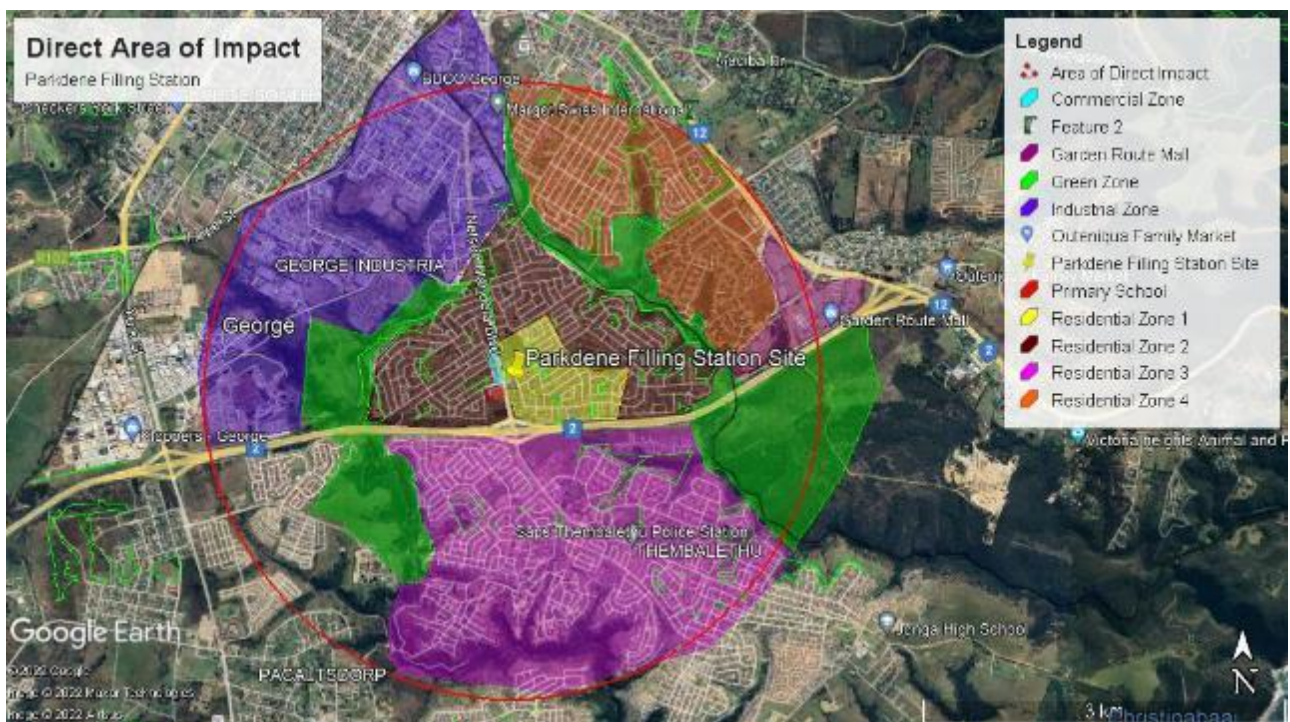
In this section a description of the area that will be impacted on is provided. The geographic area (referred to hereafter as the Area of Impact/Influence - AOI) for which the socio-economic baseline is developed assumes that the people, communities, and businesses immediately surrounding the project are likely to experience the greatest socio-economic impacts as a result of the construction and operation of the Parkdene Filling Station. The socio-economic AOI is determined based on the following:

- Assessment of the area of impact based on the construction and operation activities on the sites.
- The nature of the activities such as the operation of heavy machines and equipment described in the preceding section, blasting on site, heavy vehicles and trucks moving to and from the site.
- Distances of communities and people living from the site and areas where the activities including the transport activities will take place.
- The likely impact of air quality, visual and noise generated on the site and along the transport routes. Note that separate air, noise, and visual specialist reports are prepared that deals with these impacts in more detail.

5.2 Direct Area of Impact

The direct or immediate socio-economic AOI of the Parkdene Filling Station is indicated in Map 5-1 below by the red circle. In order to determine the impact specific attention was given to existing land uses, movement corridors, industrial, green zones and commercial zones defining 9 zones.

Map 5-1: Direct Area of impact



Source: Google Earth, 2022

Table 5-1 below provides a description of the zones.

Table 5-1: Description of the Zones

ZONES OF IMPACT	DESCRIPTION OF THE AOI
# Residential Zone 1	This zone consists of the Huis Outeniekwa, directly south of the site and the suburb of Ballotsview to the east of the site.
# Residential Zone 2	This zone consists of the following suburbs: Lawaaikamp, Borchers, Conville and Parkdene.
# Residential Zone 3	This zone also consists primarily of the Thembalethu suburb to the south of the N2.
# Residential Zone 4	This zone consists of the suburbs Rosemore and Protea Park.
# Green Zone	There are a number of green areas within the direct area of impact. Most of these are located to the west and east of the site within the residential zones mentioned above.
# Commercial Zone	The small commercial zone is located directly to the northwest of the site and include Usave, Mafouta Electronics and a few other retail vendors.
# Primary School	The Mzoxolo Primary School is located opposite the site across from Nelson Mandela Blvd to the west.
# Industrial Zone	The large industrial zone is located to the west and northwest of the site and includes most of George Industria and a portion of Tamsui Industria
# Garden Route Mall Area	Garden Route Mall is located to the east on the edge of the direct area of impact.

Residential Zone 1, Primary School and the commercial Zone will have the greatest impact during construction and the operational phases, the biggest impacts will be the impact of movement patterns during construction as heavy vehicles will be utilising the surrounding roads for access to bring in building material on site. Nuisance impacts will also be present in the form of noise and dust, with construction taking place during work hours, most likely 8:00 to 17:00. During the operational phase the only noticeable impact will be the impact on movement patterns as the vehicles utilising the filling station will put some pressure on the mobility and movement of traffic on Main Street and Golf Street where they will turn in and out of the filling station.

The negative impacts on the remaining zones will be insignificant.

The positive impact that the new development brings in terms of local and regional economic stimulus, both through the construction and the operational phases will be significant. The impacts during the construction phase and the operational phase will be defined and examined in more detail in the next section of this report.

6 FILLING STATION DEMAND POTENTIAL

The following section of the economic impact assessment study involves an assessment of the Filling Stations market potential within the local fuel industry in George. The primary purpose of this section is to analyse the demand and supply profile of petrol in the study area and ascertain as to whether there is an actual demand for another filling station based on the local markets demand for fuel and that which is supplied.

6.1 Supply Profile

There are a total of 22 filling stations located within the George area, including Wilderness and Harold's Bay and the surrounding areas that make up the George Municipal area. Additional filling station developments have been proposed to be constructed in York Street near the Mount View and Lifestyle Resort as well as the Kraaibosch Filling Station on Knysna Road adjacent to the Garden Route Mall and a filling station in Thembaletu, which bring the total number of filling station developments to 25.

Of the filling stations (19) located within the George area, 16 of these falls within the 5km radius of the Parkdene Filling Station and only 3 filling stations are located within the 2km radius of the Parkdene filling Station. Table 6.1 below shows the location of the all the filling stations that are located within the 2km buffer zone for the development, excluding the Engen filling station located in Heatherlands/Heather Park and the 2 filling stations by the old Radermacher's junction.

Table 6-1: Filling Stations within 5km zone

Nr	Type	Street Address	Distance	Relevance	Level of Competition
1	Agri-Fuel Filling Station	York Street	4.18 km	<input type="checkbox"/>	Low
2	BP Filling Station	York Street	5.04 km	<input type="checkbox"/>	Low
3	Caltex Filling Station	York Street	5.21 km	<input type="checkbox"/>	Low
4	Caltex Filling Station	Discovery Street	3.56 km	<input type="checkbox"/>	Low
5	Engen Filling Station	Discovery Street	3.51 km	<input type="checkbox"/>	Low
6	Atlantic Oil Station	Nelson Mandela Blvd	1.91 km	<input checked="" type="checkbox"/>	Moderate
7	Total (Bonjour) Filling Station	Nelson Mandela Blvd	0.84 km	<input checked="" type="checkbox"/>	High
8	Caltex Filling Station	c/o Courtenay Street & Symmonds Street	5.86 km	<input type="checkbox"/>	Low
9	Total (Bonjour) Filling Station	Courtenay Street	5.38 km	<input type="checkbox"/>	Low
10	Shell Filling Station	29 Courtenay Street	5.85 km	<input type="checkbox"/>	Low
11	Caltex Filling Station	12 Courtenay Street	6.16 km	<input type="checkbox"/>	Low
12	Engen Filling Station	41 Knysna Road	4.42 km	<input type="checkbox"/>	Low
13	Excel Filling Station	42 Albert Street	2.26 km	<input type="checkbox"/>	Low
14	Engen Filling Station	Albert Street	3.69 km	<input type="checkbox"/>	Low
15	Sasol Filling Station	Albert Street	2.5 km	<input type="checkbox"/>	Low
16	Puma Filling Station	c/o Nelson Mandela Blvd & Ngcakani Road	0.94km	<input checked="" type="checkbox"/>	High

Of the 16 filling stations located within the buffer zone; 5 are located along York Street (which is one of the primary distributors and connects with the N2); 5 are located along Courtenay Street (which a primary distributor and also connects with the N2 via Knysna Road); 3 are located along Albert Street (which links with Nelson Mandela Blvd); and 3 are located along Nelson Mandela Blvd, which is a primary distributor and connects with the N2. Nelson Mandela Blvd serves as the main access route for transient traffic looking to enter the Industrial area from the N2 highway, which is purported to carry large amounts of trucks and heavy vehicles. Currently there are three existing filling stations in Nelson Mandela Blvd; however, two of these (Atlantic Oil and Total) are located on the western side of the road catering for vehicles travelling in a northerly direction into the George Industrial area away from the N2, while only the Puma Filling Station is located on the eastern side, but south of the N2 in Thembaletu. A traffic island which stretches the length of Nelson Mandela Blvd creates complications for vehicles travelling in a southerly direction (eastern side of street) to access the current filling stations located on the western side, and these complications and inconvenience increases with the size of the motor vehicle, in other words, it is a lot easier for a small motor vehicle to do a complete 180° turn than it is for a large motor vehicle or truck.

The filling stations located within the 2 km buffer zone will serve as the main competition for the Parkdene Filling Station development, however all the various filling stations in the George area (including Wilderness) will be included in the supply analysis. The 16 filling stations included in the 5km buffer zone are all owner operated and operate as an individual franchise unit for the respective petroleum companies.

Of the 16 filling stations only 3 are located within a 2km radius are regarded as relevant competitors, the remaining 13 filling stations are located in other market segments more than 2km from the Parkdene Filling Station.

Findings regarding the supply audit that was conducted by Urban-Econ are as follow:

- Majority, if not all, the filling stations in the George area operate on a 24-hour basis, in other words, they provide fuel and service to customers on 24 hours a day.
- All the fuel stations located within the buffer zone have at least ablution facilities; a retail component (be it a fast-food vendor, a convenience store, or a car dealership); and ATM facilities.
- The filling stations located in George Industria supply a greater percentage of diesel as opposed to petroleum by the greater number of diesel pumps as opposed to petroleum pumps.
- Filling stations located in Courtenay and York streets supply a greater percentage of petroleum as opposed to diesel. This is simply due to the nature of the target market the filling stations aim to service, with those in the Industrial area and Nelson Mandela Blvd, servicing mainly trucks and heavy vehicles, while those in Courtenay and York service conventional smaller passenger vehicles.
- On average, filling stations in the Industrial area (which will not include those located at Stanmar Motors) are much larger than those located in Courtenay and York Street, with an average size of 608m² making the Parkdene Filling station (771m² coverage) slightly larger than the average filling station located in the site area.

- The three filling stations within the two km radius of the proposed Parkdene Filling Station, the Total filling station have 18 pumps, while Atlantic Oil and Puma both have 24 pumps.
- A number of the filling stations located in the Industrial area and Nelson Mandela Blvd have a pump exclusively for paraffin. This is due to the high demand that low-income households have for paraffin as a source of energy which the household can afford for cooking, lighting, and heating of requirements.

A monthly pump rate of more than 300,000 litres is considered by most service providers to be the marginal amount sold in order for a filling station to be regarded as feasible. As a result, an excess of 3.6 million litres needs to be sold within the market area per annum in order to ensure that the existing filling stations are feasible.

6.2 Demand Profile

In this sub-section the market demand for fuel will be determined as a function of a number of factors. The market demand is determined as a function of transient traffic passing the Parkdene Filling Station on a regular basis. For the purpose of this study the transient market would include mainly the northbound traffic passing the site daily heading towards the Industrial Area, as well as the southbound traffic heading towards Thembaletu and the N2.

Factors utilised to determine the Market Demand include the following:

- residential units
- vehicle ownership ratio
- average monthly fuel consumption
- total vehicles
- inception rate
- average fill

6.2.1 Local Market Demand Factors

Residential size of the local market: Using Quantec EasyData (2022) the total number of households in the George Local Municipality region amounted to 58 824 in 2022. This includes both the urban and rural areas surrounding the city of George.

Vehicle Ownership Ratio: The vehicle ownership rate for the area was calculated using the Garden Route District Socio Economic Survey which was conducted in 2006 for all the wards in the George Municipal area. From this data a vehicle ownership rate was calculated to be 26% and therefore 10, 351 households own at least one motor vehicle (1 out of every 4 households). As the greatest concentration of the population is concentrated in the city of George, the low vehicle ownership rate can be attributed to a large number of individuals that make use of alternated transport, such as bus and minibus service or walk on foot. Another possible reason for the relatively low vehicle ownership rate is the National Credit Act (NCA) which has restricted, especially the low-income households from accessing funds in order to purchase property and motor vehicles.

Average Monthly Fuel Consumption: National driveway surveys have revealed that the average consumption of the first car in the household varies from 120 – 150 litres per month, while the second car owned by a household consumed between 80 and 100 litres of fuel per month. These figures are accepted as industry standard and utilised in this fashion for the purpose of this study. It is clear from the analysis in previous sections that the income categories in the local market are high. However,

for conservative calculations the low end of these figures was used for the demand calculation purposes. These figures are:

- 1st vehicle per household: 120 litres per month; and
- 2nd vehicle per household: 80 litres per month

Support for Existing Filling Stations: The interception rate refers to the percentage of the total transient traffic which would turn into the Parkdene Filling Station. The interception rate is estimated between 2% and 5%. This figure is based on the research of the National Roads Agency and is regarded as industry standard. For the purpose of the filling station calculations a more standard inception rate of 3.5% will be used, thus making the inception rate not too conservative, while at the same time not pushing the maximum industry inception rate, making the results more realistic and applicable to the Parkdene Filling Station development. The purpose of capturing the total local market demand is to include members of the local municipal communities which may make use of the Parkdene Filling Station, however as they do not work in the industrial area or use Nelson Mandela Blvd on a regular basis and thus where not included in the transient market demand (calculated in Section 6.3 below).

Support for a new filling station marks the number of individuals that would make use of the station or expressed a demand (Urban-Econ Local Market Survey) for the Parkdene Filling Station in Nelson Mandela Blvd. The expected inception rate or support for the new filling station is calculated to be 3.5% for the transient market, as with the local market.

Average Transient Market Fill: This is an indicator of the average fill for each vehicle type based on the average tank capacity and the assumption that each vehicle is filled up to 65% of its capacity when visiting the filling station. Table 4.2 below shows the average fill per vehicle for the transient demand.

Table 6-2: Average fill per vehicle (litres)

Vehicle Type	L/L Truck	Bus	Minibus	Private car	Motorcycle
Average Fill	97.5	227.5	45.5	29.25	19.5

As the transient demand model is broken up into light and heavy vehicles specifically, the average fill figures that will be used from the table above are the 97.5 litres for large trucks (heavy vehicle) and the 29.25 litres for private motor vehicles (light vehicles) as these two categories made up the largest percentage of light and heavy vehicles in the traffic counts.

Active Days/Months: For this study the day's variable represents the number of days in which the development will be operational. As fuel supplies, average fill are the traffic count volumes were calculated on a weekly basis, the number of active weeks will be 52, representing the total number of days/weeks in which the filling station will be operative. Thus, the number of active weeks used within the transient demand model below is 52.

Leakage factor: The leakage factor is a consideration of vehicles that choose to be fuelled at alternative filling stations in the area. For the purpose of the study the leakage factor is disregarded since only the intercepted transient traffic is considered.

6.3 Transient Market

The transient market in George is defined as those motorists or vehicles which do not have a permanent residence in George but are rather passing through the city on route to another

destination. In George, the majority of the transient market originates from the N2 highway, either via York Street from the Mossel Bay side; along Knysna and Courtenay Streets from the Knysna, Wilderness and Mossel Bay directions via the N2; or via Nelson Mandela Blvd into the Industrial area with traffic coming from the N2 from both the Mossel Bay and Knysna directions. As Nelson Mandela Blvd is the primary distributor of traffic from the George Industrial area to the N2 and vice versa, it is expected that the Parkdene Filling Station will experience a large amount of transient traffic passing by the site, from those vehicles that conduct their business within the industrial area or use the Street to access to the N2 in order to conduct business outside the industrial area (for example deliveries, construction work outside the George area, loading and offloading of labour etc.). The transient traffic is expected to be high along this Street throughout the business year.

The purpose of the transient demand model and thus capturing demand for this market is that this represents the demand from motorists that make use of Nelson Mandela Blvd on a weekly basis which is then converted to a monthly demand total. The demand derived from this market will represent the primary market of the Parkdene Filling Station. The transient demand represents the fuel demand at the site is purported to be significantly larger than the local market demand.

The demand for fuel in terms of the transient market is a function of the total petroleum that is consumed monthly, and the diesel consumed in the same time period by the transient market. This is presented in the following function.

$$D_{tt} = f(p_v; d_v)$$

D_{tt} = Demand for transient trade

P_v = Petrol Consumption

D_v = diesel consumption

The demand for fuel by local taxis and commercial vehicles (large vehicles or trucks) forms the crux of the study, as is the intended target market for the filling station development and are included in the demand figures, as traffic count data was used to derive these figures. The overall demand for both petrol and diesel, during the peak and off-peak times of an average working week is determined by the following functions:

Petrol Volumes:

$$D_{pv} = f(v; s; a; d)$$

D_{pv} = petrol volumes
v = vehicles (12/24 hour)
s = % support to new filling station
af = average fill
d = days

Diesel Volumes:

$$D_{dv} = f(t; s; a_f; a_d)$$

D_{dv} = demand for diesel volumes
t = trucks (12/24 hours)
s = % support for new filling station
a_f = average fill
a_d = active days

The above formulas apply to the total number of vehicles which (including cars, taxi's (minibus), buses, trucks, and motorcycles) that would pass by the site of the Parkdene Filling Station on an average working weekday (Monday through to Friday).

Traffic counts were done in 2011, 2018 and 2020. The following tables illustrate the peak morning and afternoon counts on Nelson Mandela Blvd and Main Street.

Table 6-3: In and Out bound traffic along Main Street

Year	Morning peak hour			Afternoon peak hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
2011	225	284	509	273	140	413
2018	275	324	599	329	285	614
2020	170	231	401	224	232	456

Source: Corli Havenga Transportation Engineers, 2022

Table 6-4: In and Out bound traffic along Nelson Mandela Blvd

Year	Morning peak hour			Afternoon peak hour		
	Inbound	Outbound	Total	Inbound	Outbound	Total
2011	809	585	1394	462	901	1363
2018	851	656	1507	715	995	1710
2020	834	745	1579	802	958	1760

Source: Corli Havenga Transportation Engineers, 2022

The traffic flow on Main Street shows a significant drop from 2018 to 2020 but along Nelson Mandela Boulevards a slight increase from 2018 to 2020. Total 12-hour (06:00-18:00) traffic volume through intersection: **17 225 vehicles.**

Table 6-5: Transient Traffic Fuel Demand

Demand Variables	
Average Daily Traffic (ADT) (vehicles per day, 12 hours – (06:00-18:00)	17 225 vehicles
Average fill (litre per vehicle)	29.25 litres
Trading Days (days in the month)	30 days
Interception Rate (%)	3.5%
Transient Market Total (06:00-18:00)	529,022 litres/month

The total fuel demand for vehicles at the Parkdene Filling Station is an estimated 529,022 litres/month between the hours of 06:00 and 18:00 in line with the traffic count. Additional fuel sales will occur between 18:01 and 5:59 but at a much lower level due to traffic patterns. The conservative calculations of 529,022 litres/months is still well in excess of the 300,000 litres of fuel a month that is considered the minimum to be sustainable.

7 IMPACT ANALYSIS

7.1 Social and Socio-Economic Impacts

Socio-Economic Impact Assessments (SEIA) are instruments intended to identify and where possible quantify both economic and socio-economic impacts. Typically, socio-economic impacts are assessed from the perspective of the specific local people, households, community, business, and other land-uses in the environment.

7.1.1 Construction Phase Impacts

The following sub-sections indicate the impacts that are likely to occur during the construction phase of the Parkdene Filling Station. Since the development are expected to have both positive and negative effects in terms of the same indicator, the evaluation of impacts has been grouped accordingly.

7.1.1.1 Temporary stimulation of the national and local economy (GDP and Production)

The greatest effects on production and GDP stimulated during construction activities will be created through the multiplier effects, specifically through a combination of production and consumption induced effects. The former refers to the impact generated along backwards linkages when the project creates demand for goods and services required for construction and subsequently stimulates the business sales of the suppliers of inputs that are required to produce these goods and services. The latter refers to the effects of household spending which is derived from an increase in salaries and wages directly and indirectly stimulated by the project's expenditure.

Sectors and industries that will experience the greatest stimulus from this expenditure include:

- Basic metals, structural metal products and other fabricated metal products industries
- Trade
- Insurance
- Transport services
- Electrical machinery and apparatus

The initial investment spend on the project will inject significant business sales/ production for the local and regional economy. The economic impact arising from the initial investment will be felt throughout the economy with windfall effects benefitting related sectors in the economy. The effect is allocated according to direct, indirect, and induced impacts, together forming the "multiplier effect".

Nature: Temporary stimulation of the national and local economy (Production)		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Regional	Regional
Duration	Short Term	Short Term
Magnitude / Severity	High	High
Probability	Highly Probable	Highly Probable

Significance	Moderate	Moderate
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	Low Sensitivity	Low Sensitivity
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	<p>The project developer should use locally sourced inputs where feasible in order to maximize the benefit to the local economy.</p> <p>Sub-contracting of local construction companies to occur as far as possible for the construction of facilities.</p>	

Temporary increase in country's GDP due to capital expenditure during construction. The primary method of expanding GDP levels is through investment into infrastructure and enterprises that generate goods and services. Investment into the creation of new and improved goods and services, creates heightened levels of value added within the economy. Industries that will experience the largest temporary growth in value added, as a result of this, will include the building and construction, manufacturing and trade and accommodation sectors.

Nature: Temporary stimulation of the national and local economy (GDP)		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Regional	Regional
Duration	Short Term	Short Term
Magnitude / Severity	High	High
Probability	Highly Probable	Highly Probable
Significance	Moderate	Moderate
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	<p>The project developer should use locally sourced inputs where feasible in order to maximize the benefit to the local economy.</p>	

7.1.1.2 Temporary increase employment in the local economies

The construction of the project will positively impact on the community and beyond by creating a number of job opportunities (albeit temporary).

Given that a significant portion of the multiplier effects will be generated through backward linkages, more than half of these employment positions will be created along the supply chain and amongst industries providing inputs to the businesses in the supply chain. Throughout the construction phase it is recommended that the developer encourage the contractor to fill as many local positions as

possible using labour from within the Local Municipality rather than from outside of the municipal boundaries.

Nature: Temporary increase employment in the local economies		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Regional	Regional
Duration	Short Term	Short Term
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Low to Moderate	Low to Moderate
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	Organise local community meetings to advise the local labour on the project that is planned to be established and the jobs that can potentially be applied for. Where feasible, effort must be made to employ locally in order to create maximum benefit for the communities.	

7.1.1.3 Contribution to skills development in the local economy

The construction of the Parkdene Filling Station is likely to have a positive impact on the skills development in South Africa. During the construction phase, high skilled labour will be involved with the design and approval of the development. This will present an opportunity for skills and knowledge transfer between these experts and local manufacturers. It is also expected that the construction staff involved in the project will gain knowledge and experience in respect of the development of residential development.

Employees will develop and enhance skills thereby increasing experience and knowledge. Skills are imperative for satisfying job requirements and adequately performing tasks that ultimately boost the economy. The construction of the project requires a variation of skill sets ranging from semi-skilled construction workers to skilled engineers.

Nature: Contribution to skills development in the local economy		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Regional	Regional
Duration	Short Term	Short Term
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Low	Low

Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	<p>In order to maximise the positive impact, it is suggested that the project company provide training courses for employees where feasible to ensure that employees gain as much as possible from the work experience.</p> <p>Facilitate the transfer of knowledge between experienced employees and the staff.</p> <p>Perform a skills audit to determine the potential skills that could be sourced in the area.</p>	

7.1.1.4 Improved Standard of Living

Employed individuals will increase the income of their respective households and thereby experience an improvement in their standard of living. Although temporary, this increase in household earnings will have a positive effect on the standard of living for these households. This is especially applicable to the households benefitting from the project that reside in the Local Municipality.

Nature: Improved Standard of living		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Regional	Regional
Duration	Short Term	Short Term
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Moderate	Moderate
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	Local employment will benefit local households and the local area.	

7.1.1.5 Safety and Security

The perception exists from the development that an influx of jobseekers, and / or construction workers to an area is a contributor to increased criminal activities in an area, such as increased safety and security risk for neighbouring properties and damage to property. Mitigation measures identified should be adhere to, this will ensure that the impact being minimal.

Nature: Safety and Security		
	Without Mitigation	With Mitigation
Extent / Spatial Scope	Local	Local
Duration	Short Term	Short Term
Magnitude / Severity	Moderate	Moderate
Probability	Probable	Probable
Significance	Moderate	Low
Status	Negative	Negative
Reversibility	Partially Reversible	Partially Reversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated?	Yes	
Mitigation:	24-hour security on site and increased patrol in the neighbourhood	

7.1.1.6 Impacts on daily movement patterns

During the construction phase of the Parkdene Filling Station, there will be an increase in construction vehicles on the local roads. This will impact the traffic control in the area and slowing down travel time for road users using the roads near the development site. Mitigation measures such as restricted travel times that fall outside peak hours will help to reduce the impact on traffic. The use of local roads and transport systems may cause road deterioration and congestion.

Nature: Impact on Daily Movement Patterns		
	Without Mitigation	With Mitigation
Extent / Spatial Scope	Local	Local
Duration	Short Term	Short Term
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Moderate	Low
Status	Negative	Negative
Reversibility	Partially Reversible	Partially Reversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated?	Yes	
Mitigation:	Comply to traffic regulations and management to ensure minimal impact	

	on traffic. Limit traveling times of construction vehicles in peak times.
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7.1.1.7 Nuisance impact (noise and dust)

During the construction phase of the Parkdene Filling Station, there will be land clearing taking place, as well as other activities relating to constructing a residential development that causes additional noise in the local area. The impact is estimated to be low, as the extent of the impact will be limited to the site and neighbouring properties. With the identified mitigation measures the impact can have a very low significance.

Nuisance impacts (noise and dust). Nuisance impacts in terms of temporary increase in noise and dust, and wear and tear on access roads to the site. The impact will negatively impact sensitive receptors and could cause disruptions for neighbouring properties.

Impacts associated with construction related activities include noise, dust and disruption or damage to adjacent properties. Site clearing activities increase the risk of dust and noise being generated, which can in turn negatively impact on adjacent properties.

Nature: Nuisance Impact (noise and dust)		
	Without Mitigation	With Mitigation
Extent / Spatial Scope	Local	Local
Duration	Short Term	Short Term
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Low to Moderate	Low
Status	Negative	Negative
Reversibility	Fully Reversible	Fully Reversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated?	Yes	
Mitigation:	Comply to policies regarding noise and dust regulation methods close to roads and other existing infrastructure.	

7.1.1.8 Sense of Place (visual)

During the construction phase of the Parkdene Filling Station, there will be visual intrusions relating to constructing a residential development that may impact surrounding receptors. The impact is estimated to be medium, as the extent of the impact will be limited to the site and neighbouring properties. With the identified mitigation measures the impact can have a low significance.

Sense of place impacts (visual) during construction activities which will impact adjacent properties are associated with site excavations, construction activities and the operation of construction vehicles and machinery on site. These activities would result in the following:

- Potential dust, and wind-blown sand caused by heavy construction vehicles/ machinery
- Potential visual detracting and scarring of the landscape resulting from the construction activities, earthworks, and removal of vegetation.
- Increased construction vehicle traffic on Main Street and Nelson Mandela Blvd

Nature: Sense of Place (visual)		
	Without Mitigation	With Mitigation
Extent / Spatial Scope	Local	Local
Duration	Short Term	Short Term
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Low to Moderate	Low
Status	Negative	Negative
Reversibility	Partially Reversible	Partially Reversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated?	Yes	
Mitigation:	Comply to mitigation measures proposed within the visual impact assessment.	

7.1.2 Operational Phase Impacts

The following sub-section describes the impact that the Parkdene Filling Station will have once it is operational. The development is envisaged to have a long lifespan, which means that the impacts observed during this phase, regardless of whether the impacts are positive or negative, will be long-lasting.

7.1.2.1 Sustainable increase in production and GDP nationally and locally

Expenditure associated with the operation of the Parkdene Filling Station will have a positive impact on production. The operational spend on the project will inject business sales/ production for the local and regional economy. In addition to the positive production and GDP impacts arising from expenditure related to the operation of the development, the local economy is anticipated to be positively stimulated by expenditure related to the developer's intended socio-economic development contributions in the immediate area. The contribution to the Local Municipality, although small relative to the combined size of the municipality's economy, will nevertheless be positive and more importantly, a sustainable contribution.

Nature: Sustainable Increase in production of local economy (Production)		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Regional	Regional
Duration	Permanent	Permanent
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Moderate	Moderate
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	<p>The project developer should make effort to use locally sourced inputs where feasible in order to maximize the benefit to the local economy.</p> <p>Local Small and Medium Enterprises are to be approached to investigate the opportunities for supplying inputs required for the maintenance and operation of the facility, as far as feasible.</p>	

Positive impact on GDP due to operating expenditure during operations. The primary method of expanding GDP levels is through investment into infrastructure and enterprises that generate goods and services. Industries that will experience the largest growth in value added, as a result of this, will include the transport, storage, and manufacturing sectors. The operational spend on the project will create value added for the local and regional economy.

Nature: Sustainable Increase in production of local economy (GDP)		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Regional	Regional
Duration	Permanent	Permanent
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Low to Moderate	Low to Moderate
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	<p>The project developer should make effort to use locally sourced inputs where feasible in order to maximize the benefit to the local economy.</p> <p>Local Small and Medium Enterprises are to be approached to investigate the opportunities for supplying inputs required for the</p>	

	maintenance and operation of the facility, as far as feasible.
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7.1.2.2 Creation of sustainable employment positions locally

The operational phase of the development will create additional employment opportunities for security, general, cleaners and filling station attendants. Due to the spatial allocation of procurement spending and direct employment created, most of the indirect and induced positions will also be created within the local area.

Nature: Creation of Sustainable Employment Positions		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Local	Local
Duration	Permanent	Permanent
Magnitude / Severity	Low	Low
Probability	Highly Probable	Highly Probable
Significance	Low	Low
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	Where feasible, effort must be made to employ locally in order to create maximum benefit for the communities.	

7.1.2.3 Improved standards of living for benefiting households

Employed individuals will increase the income of their respective households and thereby experience an improvement in their standard of living. Given the average household size in affected local municipalities and nationally, this increase in household earnings will support several people. The sustainable income generated as a result of the Project's operation will positively affect the standard of living of all benefiting households.

Nature: Improved Standard of Living		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Local	Local
Duration	Permanent	Permanent
Magnitude / Severity	Very Low	Very Low
Probability	Highly Probable	Highly Probable

Significance	Very Low	Very Low
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	Employing locally will increase benefit to local households and the local area.	

7.1.2.4 Positive impact on skills development

The level of skill for the labour that will be created during the operational phase will remain relatively constant throughout the project's lifespan. The employees will gain experience in terms of years of service, but the impact will be insignificant.

Nature: Positive impact on skills development		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Local	Local
Duration	Permanent	Permanent
Magnitude / Severity	Very Low	Very Low
Probability	Highly Probable	Highly Probable
Significance	Very Low	Very Low
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	No	
Mitigation/enhancement:	None	

7.1.2.5 Sustainable increase in national and local government revenue

The Parkdene Filling Station will, through property taxes and salaries and wages payments, contribute towards both local and national government revenue. At a local level, the development will contribute to local government through payments for utilities used in the operation of the development. It is also important to note that all the internal infrastructure is paid for by the developer and does not put additional strain on the municipal budget for the infrastructure.

Nature: Sustainable Increase in National and Local Government Revenue		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Local	Local
Duration	Permanent	Permanent
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Moderate	Moderate
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	No	
Mitigation/enhancement:	None	

7.1.2.6 Impact on daily movement patterns

According to the Traffic Impact Assessment that was conducted, access off Main Street is limited to entrance only, exit cannot be allowed, and a full access is proposed off Golf Street. The results of the capacity analysis indicate that both the intersections analysed operate at acceptable levels of service during both peak hours and for both design scenarios. It must be noted that a traffic survey was conducted in 2018 and heavy congestion was observed on the outbound direction along Nelson Mandela Boulevard during the afternoon peak period. The same occurred during the afternoon peak hour in October 2020 as depicted in the photos below.

Nature: Impact on Daily Movement Patterns		
	Without Enhancement	With Enhancement
Extent / Spatial Scope	Local	Local
Duration	Permanent	Permanent
Magnitude / Severity	Moderate	Moderate
Probability	Highly Probable	Highly Probable
Significance	Moderate	Moderate to Low
Status	Positive	Positive
Reversibility	Irreversible	Irreversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated/enhanced?	Yes	
Mitigation/enhancement:	Access off Main Street is limited to entrance only, exit cannot be allowed, and a full access is proposed off Golf Street	

7.1.2.7 Sense of Place

During the operation phase of the Parkdene Filling Station, there will be visual intrusions relating to operation a residential development that may impact surrounding receptors. The impact is estimated to be low, as the extent of the impact will be limited to the site and neighbouring properties. With the identified mitigation measures the impact can have a low significance.

Nature: Sense of Place (visual)		
	Without Mitigation	With Mitigation
Extent / Spatial Scope	Local	Local
Duration	Long Term	Long Term
Magnitude / Severity	Low	Low
Probability	Probable	Probable
Significance	Low	Very Low
Status	Negative	Negative
Reversibility	Partially Reversible	Partially Reversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated?	Yes	
Mitigation:	Comply to mitigation measures proposed within the visual impact assessment	

7.1.2.8 Impact on Existing Filling Stations within a 2km radius

There are three filling stations within a 2km radius of the Parkdene Filling Station.

Atlantic Oil Filling Station, located along Nelson Mandela Blvd on the western side is approximately 1.91km north from the Parkdene Filling Station site. As it is located on the western side of Nelson Mandela Blvd it caters mostly for vehicles traveling in a northerly direction towards the CBD of George. Almost all vehicles intercepted here will be travelling north on Nelson Mandela Blvd. The impact significance will therefore be low to moderate.

Total Filling Station, located along Nelson Mandela Blvd on the western side is approximately 0.84km north from the Parkdene Filling Station site. As it is located on the western side of Nelson Mandela Blvd it caters mostly for vehicles traveling in a northerly direction away from the N2. Almost all vehicles intercepted here will be travelling north on Nelson Mandela Blvd. The impact significance will therefore be moderate in nature.

Puma Filling Station, located along Nelson Mandela Blvd on the eastern side is approximately 0.94km south from the Parkdene Filling Station site, and south of the N2 route in Thembaletu. This filling station is on the eastern side of Nelson Mandela and intercepts vehicles travelling in a southerly direction south of the N2 towards Thembaletu, with access from the shopping centre as well as Ngcakani Road. The impact significance will therefore be Moderate to High.

Nature: Impact on Existing Filling Stations within a 2km radius		
	Without Mitigation	With Mitigation
Extent / Spatial Scope	Local	Local
Duration	Long Term	Long Term
Magnitude / Severity	Moderate	Moderate
Probability	Probable	Probable
Significance	Moderate	Moderate
Status	Negative	Negative
Reversibility	Not Reversible	Not Reversible
Irreplaceable loss of resources / Sensitivity of receiving environment.	No	No
Can impact be mitigated?	Yes	
Mitigation:	Changes made to the layout has reduced the impact mostly to fillings stations on the eastern side of Nelson Mandela Blvd.	

As the Atlantic Oil and Total Filling stations are mostly reliant on the traffic moving north on Nelson Mandela Blvd towards the George CBD the impact on their feasibility as a result of the Parkdene Filling Station will be minimal considering the Parkdene Filling Station will be reliant on intercepting traffic moving south towards the N2. The Puma Filling Station in Thembalethu will be impacted more significantly in that they are reliant on the same traffic stream moving south. As the Puma Filling Station serves mainly the communities and traffic moving in and around Thembalethu, as well as traffic moving south of the N2 from the George CBD the impact on the will be more severe. However, considering the low interception rate utilised in this study to determine the fuel sales volume for feasibility purposes it is expected that the impact on the Puma Filling Station will be moderate in nature.

7.1.3 Decommissioning Phase

Due to the nature of the Parkdene Filling Station, it is unlikely that it would be decommissioned. The Parkdene Filling Station does not have a limited lifespan but is rather ongoing in duration. However, if the Parkdene Filling Station was to be decommissioned, the land will be rehabilitated to return it to pre-project conditions. This also means that all impacts, whether positive or negative, which take place during the operation phase will cease to exist. **The loss of positive impacts would be negative for local and national economies/ communities, while the loss of negative impacts would be positive for associated communities and facilities, as the status quo before the construction and operation of the Parkdene Filling Station would be restored.** However, the spending on the disassembly of the components and rehabilitation of land will increase the demand for construction services and other industries, thus stimulating economic activity in the local area, albeit over a temporary period.

Socio-economic impacts stimulated during the decommissioning phase are expected to be similar to those that took place during the construction phase. They will also be temporary, but most likely will take a much shorter time than the construction phase. They will also be associated with some expenditure, although it will be considerably less than the investment required during the construction phase. Besides the positive impacts on production, employment, household income and government revenue that could be gained from the projects, some negative impacts could also occur. These would largely be related to a slight increase in noise in the area surrounding the

site, an increase in traffic congestion and concerns over local safety and security due to a greater number of people accessing the area. All of the positive impacts can be enhanced to increase the benefits to the local communities, while the negative impacts could be mitigated to acceptably low levels. Mitigations and enhancement measures suggested for the construction phase would apply. Overall, the impact that would ensue during the decommissioning phase will mostly be of low significance and should not affect the decision regarding the Parkdene Filling Station.

7.2 Comparison between 2012 Impact Assessment and 2022 Impact Assessment

The impacts have largely remained the same, the impact ratings and methodology has changed as a result of the changes to EIA legislation and the introduction of NEMA guidelines/protocols. As a result of that we will compare the significance ratings of the impacts during construction and the impacts during operations between the 2012 impact assessment and the 2022 impact assessment.

Table 7-1: Comparison of socio-economic post-mitigation impacts during construction phase

Impacts	Status	Impact Significance (2012)	Impacts Significance (2022)
Impact on Production	Positive	Moderate	Moderate
Impact on GDP	Positive	Medium	Moderate
Impact on Employment Creation	Positive	Low to very low	Low to Moderate
Skills Development	Positive	N/A	Low
Improved Standard of Living	Positive	N/A	Moderate
Safety and security impacts	Negative	N/A	Low
Impacts on daily movement patterns	Negative	N/A	Low
Nuisance impact (noise and dust)	Negative	N/A	Low
Sense of Place	Negative	Low to very low	Low

Table 7-2: Comparison of socio-economic post-mitigation impacts during operational phase

Impacts	Status	Impact Significance	Impact Significance
		(2012)	(2022)
Impact on Production	Positive	Medium	Moderate
Impact on GDP	Positive	Low to very low	Low to Moderate
Impact on Employment Creation	Positive	Low to very low	Low
Improved Standard of Living	Positive	N/A	Very Low
Skills Development	Positive	N/A	Very Low
Increased Government Revenue	Positive	N/A	Moderate
Impact on daily movement patterns	Negative	N/A	Low to Moderate
Sense of Place	Negative	Low to very low	Very Low
Impact on Filling Stations within a 2km radius of the Parkdene Site	Negative	N/A	Moderate

The number of impacts evaluated during 2022 is higher than in 2012, however the impacts that were evaluated in 2012 and 2022 are still very similar with no significant change in the significance of impacts.

8 PROJECT ALTERNATIVES

8.1 Site Area

A comprehensive iterative design process has been undertaken to inform the layout for the Parkdene Filling Station. In addition, the layout of the Parkdene Filling Station has been informed by the identified sensitive and/or 'no-go' areas. All highly sensitive and/or 'no-go' areas identified by the specialists have been avoided by the project infrastructure and all recommended buffer areas will be respected. There are no highly sensitive and/or 'no-go' areas associated with the site area from a socio-economic perspective, and thus no fatal flaws. The location for the site area is thus deemed acceptable from a socio-economic perspective and should be authorised.

8.2 No Go Alternative

The 'no-go' alternative is the option of not constructing the Parkdene Filling Station, where the *status quo* of the current status and/or activities on the project sites would prevail. This alternative would result in no additional impact on the receiving environment. Should the 'no-go' alternative be considered, there would be no impact on the existing environmental baseline and no benefits to the local economy and affected communities. The alternative also bears the opportunity cost of missed socio-economic benefits to the local community.

Despite the fact that the 'no-go' alternative will result in the avoidance of negative impacts from a socio-economic perspective, this would also result in the positive effects / impacts not being realised. Since positive effects and impacts would outweigh the negative effects, the construction and operation of the Parkdene Filling Station is preferred over the 'no-go' alternative (i.e., it is preferable from a socio-economic perspective that the Parkdene Filling Station be constructed).

9 CONCLUSION

This updated socio-economic impact assessment have shown that there are no material changes in the receiving environment or an increase in the socio-economic impacts as a result of the changed layout or timeframe between 2012 and 2022.

The Parkdene Filling Station development will diversify economic base and lead to the improvement of standards of living among local households through the increased income levels and access to improved services, which can be achieved by raising the local municipality's revenue base through taxes and rates paid by owner of the filling station. The Parkdene Filling Station is therefore likely to create a positive impact on the local economic development and the socio-economic environment in the municipality in general. Overall, numerous positive socio-economic impacts will occur as a result of the filling station development and these positive impacts outweigh the potential negative impacts that might occur.

The layout changes have accommodated the bus stop in Main Street by altering the Main Street to only be used as an entrance. The layout does not affect the socio-economic impacts, these impacts remain the same as in 2012. The changes in the layout will also minimise the potential impact on the existing Total and Atlantic Oil filling stations as they are reliant on the northbound traffic whereas the Parkdene Filling Station is reliant on southbound traffic. The moderate impact on the Puma Filling Station in Thembaletu is due to the fact that they share a partial traffic stream, traffic heading south out of the George CBD towards the N2 and further south into Thembaletu.

A summary of the potential positive and negative impacts identified during the construction and operation phases are presented in Table 9-1 and Table 9-2.

Table 9-1: Summary of socio-economic impacts during construction phase

Impacts	Status	Significance before Mitigation / Enhancement	Significance after Mitigation / Enhancement
Impact on Production	Positive	Moderate	Moderate
Impact on GDP	Positive	Moderate	Moderate
Impact on Employment Creation	Positive	Low to Moderate	Low to Moderate
Skills Development	Positive	Low	Low
Improved Standard of Living	Positive	Moderate	Moderate
Safety and security impacts	Negative	Moderate	Low
Impacts on daily movement patterns	Negative	Moderate	Low
Nuisance impact (noise and dust)	Negative	Low to Moderate	Low

Sense of Place	Negative	Low to Moderate	Low
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Table 9-2: Summary of socio-economic impact during the operational phase

Impacts	Status	Significance before Mitigation / Enhancement	Significance after Mitigation / Enhancement
Impact on Production	Positive	Moderate	Moderate
Impact on GDP	Positive	Low to Moderate	Low to Moderate
Impact on Employment Creation	Positive	Low	Low
Improved Standard of Living	Positive	Very Low	Very Low
Skills Development	Positive	Very Low	Very Low
Increased Government Revenue	Positive	Moderate	Moderate
Impact on daily movement patterns	Negative	Moderate	Low to Moderate
Sense of Place	Negative	Low	Very Low
Impact on Filling Stations within a 2km radius of the Parkdene Site	Negative	Moderate	Moderate

9.1 Recommendations

Based on the information presented in this report, the following can be recommended from the socio-economic perspective. The net positive impacts associated with the development and operation of the Parkdene Filling Station are expected to outweigh the net negative effects. There are no material changes in the receiving environment or increased impact due to the layout change or timeframe between 2012 and 2022. The Project is also envisaged to have a positive stimulus on the local economy and employment creation, leading to the economy's diversification and a small reduction in the unemployment rate. The Project should therefore be considered for development.

APPENDIX A: SPECIALIST DETAILS

Company Name:	Urban-Econ Development Economists (Pty)Ltd
Company Profile:	<p>URBAN-ECON Development Economists (Pty) Ltd is a professional consultancy firm specialising in the field of development economics. Development economics, as advocated by URBAN-ECON, refers to the field of research where spatial principles are applied in an economic context. URBAN-ECON combines specialised skills, extensive experience, professional ethics, and personal service delivery to provide appropriate and practical economically viable solutions. A personal approach in efficient service delivery ensures that project deliverables align with the clients' needs, therefore equipping the client with the necessary knowledge to make informed decisions.</p>
Economic Assessment Practitioner Managing the Report	<p>Pierre van Jaarsveld</p> <p>Cell: +27 82 828 9374 Email: pierre@urban-econ.com Position: Manager and Senior Development Economist Qualification: B.TRP HONS (Town and Regional Planning) Experience: 15 Years Memberships: Economics Society of South Africa (ESSA) - 00116 Brief Profile: Pierre van Jaarsveld completed his B.TRP Town and Regional Planning degree at the University of Pretoria, South Africa. His expertise lies in property market analysis, economic impact assessment, feasibility analysis, project management, and project implementation. He built up valuable experience in Local Economic Development, agricultural development, enterprise development and impact modelling.</p> <p>He has managed projects for various property and economic studies, such as integrated housing projects and socio-economic impact assessments. He has also facilitated a number of urban and rural renewal and development projects focusing on job creation opportunities and broadening the local economic base through investment attraction in bankable projects. Pierre is also a member of the Economics Society of South Africa (ESSA).</p>

APPENDIX B: SPECIALIST CURRICULUM VITAE

Pierre van Jaarsveld

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Date of Birth: 14 November 1982
 Profession: Mpumalanga Regional Manager
 Profession: Senior Development Economist
 Specialisation: Infrastructure and Enterprise Development
 Years within Firm: 15 Years
 Nationality: RSA
 Years of Experience: 15 Years
 HDI Status: White Male



Education:

University of Pretoria - 2007	B.TRP HONS (Town and Regional Planning)
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Professional Membership:

The Economic Society of South Africa (ESSA)
SAPOA Urban-Econ Development Economists (Pty) Ltd

Language Proficiency:

	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

Work Experience:

2007 - Current	Urban-Econ Development Economists
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Key Qualification:

Pierre van Jaarsveld completed his B.TRP Town and Regional Planning degree at the University of Pretoria, South Africa. His interests lie in property market analysis, feasibility analysis, project management, and project implementation. He built up valuable experience in Local Economic Development, agricultural development, enterprise development and impact modelling. He has managed feasibility studies for various property and economic studies, such as integrated housing projects. He has also facilitated a number of urban and rural renewal and development projects focusing on job creation opportunities and broadening the local economic base through investment attraction in bankable projects.

Pierre currently serves as manager of Urban-Econ Mpumalanga in Mbombela and is responsible for the day to day operations of the office.

Experience Record:

Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Ehlanzeni DM LED Strategy and Economic Recovery Plan 2021 Ehlanzeni District, Mpumalanga, South Africa Ehlanzeni District Municipality Local Economic Development Strategy and Economic Recovery Plan Project Director To review the existing Local Economic Development Strategy and develop an economic recovery plan to combat the negative impact of Covid-19 on the local and regional economy. The review of the LED strategy includes an updated status quo, opportunity analysis as well as a strategic framework which forms the key component of the economic recovery plan for the district. An implementation plan with detailed actions and tasks was developed to allow for an effective implementation of the economic recovery plan.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	South Africa – Cuba Technical Support Programme (SACTSP) Evaluation 2020 South Africa National Department of Human Settlements (DHS) Programme Evaluation Project Manager To conduct an evaluation of the South Africa-Cuba Technical Support Programme (SACTSP). The SACTSP was initiated mainly to accelerate the implementation of Human Settlement development

	<p>based on the Cuban experience and to improve the lives of the housing beneficiaries in South Africa. The evaluation was done on the programme to determine the effectiveness of the programme in delivering on the initial objectives of the programme. The programme evaluation determined the effectiveness of the project and made recommendations on how the programme can be improved.</p>
<p>Project: Year: Location: Client: Project Features: Position held: Activities Performed:</p>	<p>Mpumalanga Red Tape Reduction Strategy 2020 Mpumalanga, South Africa Mpumalanga Department of Economic Development and Tourism (DEDT) Red Tape Reduction Strategy Project Manager To develop a Red Tape Reduction Strategy which will provide targets for both the municipalities and the provincial departments to reduce bureaucracy and improve service delivery specifically on SMMEs. The project included a literature review of current policies and legislation that deals with the reduction of red tape, case studies and detailed interviews with the business sector and the governmental organisations dealing with Red Tape. Identification of Red Tape Processes and Systems and developing a strategy to reduce red tape processes and streamlining these systems.</p>
<p>Project: Year: Location: Client: Project Features: Position held: Activities Performed:</p>	<p>Steve Tshwete Mining Sector Analysis 2020 Steve Tshwete LM, Mpumalanga, South Africa Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and Mpumalanga DEDT Comprehensive Mining Sector Analysis, Spatial Mapping and SLP Monitoring Mechanism Design Project Manager To conduct an analysis on the impact made by the social labour plans regarding their social responsibility within the Steve Tshwete Local Municipality boundaries. A detailed mining sector analysis in Steve Tshwete LM, including existing mines, SLP projects, mining rehabilitation, and spatial mapping. The project also includes recommendations/model for a better overall steering and monitoring for SLPs and CSR Projects</p>
<p>Project: Year: Location: Client: Project Features: Position held: Activities Performed:</p>	<p>Mpumalanga Steel and Metal Fabrication "Centre of Excellence" Business Plan 2019 Middelburg, Mpumalanga, South Africa Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and Mpumalanga DEDT Feasibility Study and Business Plan Project Manager To develop a detailed feasibility study to test the viability of a steel and metal fabrication hub in Middelburg that will focus on incubation and skills development. The Centre of Excellence (CoE) also includes a high-tech testing centre and research and development lab. The market viability was tested, and opportunities identified in the stainless steel, aluminium and carbon steel markets. Once feasibility was determined a bankable business plan was developed for investment marketing, funding application and implementation.</p>
<p>Project: Year: Location: Client: Project Features: Position held: Activities Performed:</p>	<p>Role and Impact of the Informal Economy in Mpumalanga 2018 Mpumalanga, South Africa Mpumalanga Department of Economic Development and Tourism Economic Impact Study on the Informal Economy Project Manager To determine the role and impact of the informal economy in Mpumalanga. The study includes a literature review and case studies both local and international on the informal economy dynamics, future and contributions. The project also entailed a primary survey of 1000 informal business across the province through a statistical sampling using informal employment and economic contribution as criteria. The economic impact assessment determined the size of the economy and assisted with identifying opportunities and barriers that exist in the informal economy of Mpumalanga.</p>
<p>Project: Year: Location: Client: Project Features: Position held:</p>	<p>MMC Socio-Economic Impact Assessment and Value Determination 2018 Mpumalanga Manganese Metal Company (MMC) Economic Impact Assessment/Company Value Determination Project Manager</p>

Activities Performed	Socio-Economic Impact assessment of the Manganese Metal Company, to determine the economic and social impact that the company has on the local economy and local communities. The study was done in order for MMC to submit to Eskom reasons for lower electricity tariffs as well as to NERSA.
Project: Year: Location: Client: Project Features: Position held: Activities Performed	Pole Treatment Plant Business Plan 2018/2019 Mpumalanga SAFCOL Feasibility Study/Business Plan Junior Development Economist Element 2030, in partnership with Urban-Econ Development Economists and Green Consulting Engineers, was appointed by SAFCOL (South African Forestry Company SOC Limited) to undertake a specialist market potential investigation for the development of a pole treatment plant in Mpumalanga. An important component of this study is to inform development and investment decisions relating to the envisioned development to optimise its industrial function and oversee the optimal use of available resources.
Project: Year: Location: Client: Project Features: Position held: Activities Performed	Chief Albert Luthuli LED Strategy 2018/2019 Mpumalanga Chief Albert Luthuli Local Municipality LED Strategy Project Manager Urban-Econ Development Economists have been appointed by the Chief Albert Luthuli Municipality to develop a Local Economic Development (LED) Strategy. LED involves identifying and using local resources, ideas and skills to stimulate economic growth and development. The aim of the LED Strategy is to create employment opportunities for local residents, alleviate poverty and redistribute resources and opportunities to the benefit of all local residents.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Swaziland Mixed-Use Development 2018 Eswatini Stanlib Swaziland Market Feasibility Research and Demand Analysis Project Manager Conduct research to conclude if a mixed-use development would be feasible in the area of Manzini, Eswatini. The study includes a review in the economic dynamics and future contributions of a mixed-use development. The study reveals opportunities and barriers in local economic sectors. The project also entailed a statistical supply and demand analysis to determine the economic contribution to the local economies.
Project: Year: Location: Client: Project Features: Position held: Activities Performed	Business Plan for DR JS Moroka Hydroponic project 2018 Mpumalanga Department of Rural Development and Land Reform Business Plan Project Manager Urban-Econ was appointment by the Department of Rural Development and Land Reform to provide advisory services for two years; this includes the development of business plans for projects identified as potential funding beneficiaries. As part of the advisory services, Urban-Econ Development Economists was appointed to compile a bankable business plan for the proposed DR JS Moroka Hydroponic project.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Greater Tzaneen Local Municipality LED Strategy 2017 Limpopo Greater Tzaneen Local Municipality LED Strategy Project Manager/Senior Development Economists The project entailed a situational analysis consisting of a thorough review of the socio-economic factors and the economic performance of the local municipality, together with a spatial analysis in order to identify new opportunities to generate economic growth and create employment opportunities within

	the local municipality. The Strategy outlines projects to be implemented to reach the identified goals, as well as an implementation plan.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Business Cases for Agri-Hubs and FPSUs in Mpumalanga 2016 – 2017 Mpumalanga Department of Rural Development and Land Reform Business Plan Project Manager/Senior Development Economist Urban-Econ was appointment by the Department of Rural Development and Land Reform to provide advisory services for two years; this includes the development of business plans for projects identified as potential funding beneficiaries. As part of the advisory services, Urban-Econ was appointed for business cases for Agri-Hubs in each District as well as business cases two Farmer Production Support Units (FPSU). The business cases consist of a farmer needs analysis, site visit, concept analysis, ownership and operational plan as well as an implementation plan and recommendations.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Mkhuhlu Tourism and Agricultural Development 2017 Mkhuhlu, Bushbuckridge LM, Mpumalanga Mr. Conrad van Eyssen Business Plan Project Manager/Senior Development Economist The project consisted of developing a comprehensive business for a 350-room hotel and property development along the Sabie River, bordering the Kruger National Park as well as business plan a 750-hectare fruit, nut and vegetable farm. The projects will utilised state owned land where the land owners will have a majority share in the respective enterprises, with a strategic partner who will develop and manage the facilities for a period of 25 years.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Gert Sibande Economic Feasibilities 2013-2014 South Africa Gert Sibande District Municipality Economic Feasibilities and Business Plans Project Manager To conduct an economic viability study on the following four projects; Regional Airport, Convention Centre, Fresh Produce Market and a Growth and Development Strategy to move Ermelo from a town to a city. The feasibility studies include market feasibility assessments, financial feasibility assessment and implementation plans. A Growth and Development Strategy (GDS) will be developed in order to realise the vision of building Ermelo from a town to a city. The GDS will result in a strategic framework, with a vision and objectives, and an implementation plan to create an enabling environment for growth and development in Ermelo.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Marula Beneficiation Feasibility Study 2011-2012 South Africa (Ba-Phalaborwa) Ba-Phalaborwa Local Municipality Market Assessment and Feasibility Study Project Manager The study identified additional uses for Marula products and tested the feasibility of processing and developing such products in the market place. The study developed projects to expand the existing Marula activities and to utilise maximum beneficiation from the Marula fruit and tree in Ba-Phalaborwa.
Project: Year: Location: Client: Project Features: Position held: Activities Performed:	Limpopo Agro-Processing Strategy 2012-2013 Limpopo Province Limpopo Department of Agriculture Agro-Processing Strategy Project Manager To develop an Agro-Processing Strategy for the Limpopo Province. The strategy aims to create an enabling environment for the development and advancement of agro processing in the province.

enhancing value addition activities to increase local revenue and create sustainable livelihoods in rural and agriculture focused areas.
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Other Projects:

- **Inyaka Dam Master Plan.** Urban-Econ was responsible for economic analysis and scoping as well as potential identification and feasibility analysis of identified projects.
- **Crossing Centre Expansion Feasibility.** Urban-Econ was appointed by Laeveld Trust (PTY) Ltd to examine the viability of expanding the existing Crossing's Shopping Centre by an additional 12,000m².
- **Mogale City Local Economic Development Plan.** To assist with the review of the Local Economic Development Strategy. Urban-Econ was also responsible for project identification, prioritisation and costing.
- **Makhado Business Survey.** The study comprised of the compilation of a comprehensive business database as well as an analysis of the business environment by means of a business survey.
- **Ekurhuleni Land Release Strategy.** Urban-Econ was appointed by Johan Visser Consulting Planner to assist with a land release strategy for Ekurhuleni Metropolitan Municipality with regards to municipal owned land earmarked for residential development.
- **Taung Regeneration Strategy.** Urban-Econ was appointed by ProPlan Technologies CC to assist with the Taung regeneration strategy with emphasis on local economic development and market analysis.
- **Schoemansville Filling Station Impact Assessment.** Urban-Econ was appointed by Envirovolution Consulting to conduct a feasibility and impact assessment for a new filling station in Schoemansville, Hartbeespoort.
- **Anglo Gold Ashanti Project Feasibility Studies.** Urban-Econ was appointed by Bigen Africa to compile pre-feasibility studies for 5 identified projects in the O.R Tambo District Municipality and Merafong Local Municipality.
- **Varkenslaagte Property Development Project.** Urban-Econ was appointed by Daya as lead consultants for a property development in Merafong Local Municipality. The project entailed project management and economic market research to be conducted.
- **Modimolle IDP Analysis.** Urban-Econ was appointed by the Modimolle Local Municipality to assist them with the yearly IDP analysis of the local economy, demographics and housing sector plans. The project also entailed the integrating of relevant sector plans into the Integrated Development Plan (IDP).
- **Merafong GDS Update.** Urban-Econ was appointed by Merafong Local Municipality to update the municipality's Growth and Development Strategy to reflect the municipality's demarcation to Gauteng Province instead of North West Province.
- **Bapo Local Economic Development Plan.** Urban-Econ was appointed by Basis Points Capital (BPS) to assist with the development of an Economic Development Plan for the Traditional Authority of Bapo, Ba Mogale. The plan was developed to identify underlying development potential and assist with the identification and implementation of economic developmental projects.
- **Gauteng Hospital Revitalisation Project.** Urban-Econ was appointed by GIBB to assist with the development of a Hospital Revitalisation Report for the DBSA and the Gauteng Department of Health. The two hospitals in question were the Sebokeng Hospital in Emfuleni and the Tambo Memorial Hospital in Ekurhuleni. Urban-Econ's contribution to the project was to compile a socio-economic profile and report as well as to assist with current and future demand modelling for hospital and medical services.
- **Donkerhoek Economic Scoping.** Urban-Econ was appointed by WSM Leshika to assist with an economic scoping report for the Donkerhoek area in Mkhondo. A comprehensive economic and demographic analysis was done as well as sector specific analysis for all nine economic sectors to develop project opportunities for the region.
- **Thaba Chweu LED.** Urban-Econ was recently appointed by the Ehlanzeni District Municipality to assist with the review and formulation of the Thaba Chweu LED strategy.

Countries of Work Experience:

- South Africa

References:

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APPENDIX C: SPECIALIST DECLARATION

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

I, PJ van Jaarsveld, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
 - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
 - am not independent, but another specialist (the "Review Specialist") that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work. (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.

PJ Jaarsveld
Signature of the Specialist:

21/09/2022
Date:

Urban-Econ Development Economists (Pty) Ltd
Name of company (if applicable):