

APPENDIX F

IMPACT ASSESSMENT

APPENDIX J1: IMPACT ASSESSMENT METHODOLOGY

Methodology for Assessing the Significance of Impacts

Positive or Negative: The impact is first classified as a positive or negative impact. The impact then undergoes an evaluation according to a set of criteria.

Evaluation Criteria:

Effect	Temporal Scale		
	Short term	Less than 5 years	
	Medium term	Between 5 and 20 years	
	Long term	Between 20 and 40 years (a generation) and from a human perspective also permanent	
	Permanent	Over 40 years and resulting in a permanent and lasting change that will always be there	
	Spatial Scale		
	Localised	At localised scale and a few hectares in extent	
	Study Area	The proposed site and its immediate environs	
	Regional	District and Provincial level	
	National	Country	
	International	Internationally	
	Severity	Severity	Benefit
	Slight	Slight impacts on the affected system(s) or party(ies)	Slightly beneficial to the affected system(s) and party(ies)
	Moderate	Moderate impacts on the affected system(s) or party(ies)	Moderately beneficial to the affected system(s) and party(ies)
Severe/Beneficial	Severe impacts on the affected system(s) or party(ies)	Substantially beneficial to the affected system(s) and party(ies)	
Very Severe/ Beneficial	Very severe impacts on the affected system(s) or party(ies)	Very substantially beneficial to the affected system(s) and party(ies)	
Likelihood	Likelihood		
	Unlikely	The likelihood of these impacts occurring is slight	
	May Occur	The likelihood of these impacts occurring is possible	
	Probable	The likelihood of these impacts occurring is probable	
	Definite	The likelihood is that this impact will definitely occur	

Description of Impact Significance:

Significance Rate		Description
Low	Low +	An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment
Moderate	Moderate +	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in either a positive or negative medium to long term effect on the social and/or natural environment
High	High +	A serious impact, if not mitigated, may prevent the implementation of the project (if it is a negative impact). These impacts would be considered by society as constituting a major and usually long-term change to the (natural and/or social) environment and result in severe effects or beneficial effect.
Very High	Very High +	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects, or very beneficial effects.

APPENDIX J2: IMPACT ASSESSMENT

CONSTRUCTION PHASE

Impact 1: Biodiversity Impacts

Cause and comment

Although the proposed development site consists entirely of planted grass, trees and garden areas, there remains the potential for indigenous plants to occur on site. Any indigenous vegetation which occurs on site will be lost during construction. No SCC were found on site and the likelihood of important plant species remain extremely remote, as the gardens have been cultivated and the region covered entirely by grass. The presence of invasive herb species (*Coryza*), River Red Gum (*Eucalyptus camaldulensis*) and various Pine Species (*Pinus*) on site indicate that the region has already been disturbed and previously invaded. Due to the alien invasive and the manicured gardens, the biodiversity potential of this property is deemed extremely low. Vegetation impacts from this development are thus negligible.

Mitigation measures

- An Alien Invasive Control Programme must be implemented during construction and operation.
- Care should be taken during construction to not spread seed into and from site through earth works.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Permanent	Localised	Moderate	May Occur	NEGLIGIBLE
With Mitigation	Permanent	Localised	Slight	May Occur	LOW +
No-Go					
Without mitigation	Long term	Localised	Slight	Definite	LOW -

Impact 2: Soil Compaction and Erosion

Cause and comment

There is a possibility that soil may be compacted by the operation and parking of construction vehicles. Compacted soil results in the reduced ability for plant growth and water absorption. The clearing of vegetation (gardens) will result in the exposure of soils. Exposed soils are easily susceptible to erosion by wind and water (i.e. run-off) during high wind or rainfall conditions.

Mitigation measures

- Newly cleared and exposed areas must be promptly rehabilitated to avoid soil erosion;
- Where necessary, temporary stabilization measures must be used;
- Plan for the worst case, that is, for heavy rainfall and runoff events, or high winds;
- Appropriate erosion control measures must be implemented and a monitoring programme established to ensure that no erosion is taking place. At the first sign of erosion the necessary remedial action must be taken;
- Care must be taken to ensure that runoff is well dispersed so as to limit erosion.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short Term	Study Area	Moderate	Probable	MODERATE-
With Mitigation	Short Term	Localised	Slight	May Occur	LOW -
No-Go					
Without mitigation	Long term	Localised	Slight	May Occur	LOW -

Impact 3: Stormwater and Groundwater Contamination

Cause and comment

Erosion of soil, sand or building material stockpiles may contaminate and/or block the existing stormwater system if they are stored incorrectly. Additional pollutants such as fuel, oil, construction waste and general waste may enter the stormwater system if they are not managed correctly. The development of a new filling station involves the digging of sumps for underground fuel tank placement. The implementation of the tanks produces the potential for contamination of groundwater in the unlikely case where there is a leak and seepage which traverses below the water table. Additional contaminants from construction vehicles and cement-mixing may also seep into the groundwater.

Mitigation measures

- Establish a dedicated area for material stockpiling away from the existing stormwater drainage system;
- Establish a site office with a dedicated area for construction vehicles to refuel and where cement can be mixed;
- Vehicle re-fuelling and cement mixing must only take place on impervious surfaces;
- Ensure that all construction machinery is in good working order to prevent oil leaks;
- Construction hoses should be checked for leaks on a daily basis;
- Temporary chemical toilets must be provided (separate toilets for males and females) for the duration of the construction period if no waterborne sewerage system is available. These toilets must be made available for all site staff during the construction phase;

- The developers must appoint and enter into a contract with a qualified third party service provider for the maintenance of the sanitation system;
- If toilets are not mobile they should have a concrete base and be tied down to avoid spillages etc.;
- Sanitary bins should be made available for female staff.
- Adequate waste disposal (litter) bins must be available on site. These must be properly secured and covered to prevent scavengers from tipping them;
- Any hazardous materials that need to be stored on site must be done so under lock and key. Surfaces must be bunded so that any excess water or spilled fuel can be trapped and stored in a container for disposal.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short Term	Study Area	Severe	Probable	HIGH -
With Mitigation	Short Term	Localised	Moderate	Unlikely	LOW -
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 4: Solid Waste Generation

Cause and comment

It is anticipated that the proposed development will produce solid waste in the form of building rubble, excavated soil, excess concrete and general waste, such as litter, during the construction phase.

Mitigation measures

- Rubble and other construction waste produced should be re-used if possible and, where it is not possible, must be disposed of at the nearest registered waste disposal facility;
- Rubble, which will not be reused, must be removed from site on a regular basis;
- If rubble is stored on site, it should be stored on designated portions of land away from the road;
- Litter must be controlled during construction – adequate bins must be made available on site at all times. These must be made scavenger and weather proof and must be emptied on a regular basis;
- Construction materials stored at the site camp must be secured – i.e. plastics must be covered to prevent being blown off site;
- The construction area must remain litter free and regular inspections for litter must be conducted. The activity should not contribute to any surrounding windblown litter;
- Skips must be covered and emptied regularly;
- Waste manifests must be provided by the municipality to prove legal disposal;
- Cement bags must be kept in a sealed container;
- Waste must not to be buried or burned.
- Waste may not be removed from site by staff or members of the public.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short Term	Study Area	Moderate	Definite	MODERATE-
With Mitigation	Short Term	Study Area	Slight	Probable	LOW -
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 5: Impacts on Cultural Heritage, Archaeology and Palaeontology

Cause and comment

Due to the nature of the site, it is unlikely that features of cultural heritage, archaeological or paleontological importance occur within the study area. However, in the unlikely event that some do exist, there is the risk that they could be damaged or destroyed during the construction phase.

Mitigation measures

- Should any archaeological or cultural sites or objects be located during the construction of the proposed project, it should immediately be reported to the South African Heritage Resources Agency (SAHRA). Failure to report a site or object of archaeological and/or cultural significance is a contravention of the National Heritage Act (Act No. 25 of 1999);
- All construction site staff should be briefed to immediately report any sites or objects, which are located during the construction of the facility. In the event of finding what appears to be an archaeological site or a cultural and/or historic site or object, work should be terminated until a qualified archaeologist or historian can examine the item.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Permanent	Study area	Moderate	Unlikely	LOW -
With mitigation	Permanent	Localised	Slight	Unlikely	Negligible
No-Go					
Without mitigation	Long term	Regional	Slight	Probable	LOW -

Impact 6: Air Pollution

Cause and comment

During construction, dust may be generated, especially where there is exposed ground. Specific activities that may contribute to the release of dust include offloading and stockpiling of building materials such as sand, storage of excavated materials and movement of heavy vehicles. The generation of dust may be exacerbated during windy, dry periods. In addition to dust, air pollution may result from the exhaust fumes emitted by construction vehicles, especially if the vehicles have not been serviced correctly.

Mitigation measures

- Topsoil should be cleared in a phased manner to avoid large areas of bare ground;
- Employ dust suppression measures such as wetting of the project area during dry, windy periods (Only water from a licensed source will be used);
- Where practical, do not leave large cleared areas exposed for longer than necessary;
- The area of disturbance must be kept to a minimum at all times;
- No unnecessary clearing of vegetation, digging or scraping should occur;
- Vehicle speed should be limited to the lowest possible, and should not exceed 40km/h on the construction site.
- Construction vehicles must be regularly maintained in order to ensure that no unnecessary exhaust fumes are being emitted.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Short Term	Study Area	Moderate	Definite	MODERATE-
With mitigation	Short Term	Localised	Slight	Probable	LOW-
No-Go					
Without mitigation	Long Term	Study Area	Moderate	Definite	LOW -

Impact 7: Noise

Cause and comment

Construction activities are associated with an increase in noise levels as a result of construction vehicles, plant generators and various other equipment being used on site. While these activities will produce noise, it is unlikely to have a significant impact on the surrounding industrial area which currently experiences noise from the industrial activities and vehicle traffic adjacent to the site.

Mitigation measures

- No construction activities may take place between sunset and sunrise;
- Machinery that generates noise must be regularly maintained in order to ensure that no unnecessary additional noise is produced;
- Equipment with lower sound levels should be selected where feasible;
- No construction activities after 13:00 on Saturdays, Sundays and public holidays.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short Term	Study Area	Slight	Definite	Negligible
With Mitigation	Short Term	Localised	Negligible	Probable	Negligible
No-Go					
Without mitigation	Long term	Regional	Moderate	Definite	MODERATE-

Impact 8: Visual Impacts

Cause and comment

Construction vehicles and equipment will be evident in the existing grass and garden landscape. Generation of dust and smoke will increase the visibility of the project and may become an eyesore if not managed correctly.

Mitigation measures

- Employ techniques to suppress dust and smoke generation during construction;
- The contractor should maintain good housekeeping on site to avoid litter and minimise waste;
- Night lighting of the construction sites should be minimised within requirements of safety and efficiency;
- Fires and fire hazards need to be managed appropriately.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short Term	Study Area	Slight	Probable	LOW-
With Mitigation	Short Term	Localised	Negligible	May occur	Negligible
No-Go					
Without mitigation	Long Term	Study Area	Slight	Definite	LOW-

Impact 9: Traffic Impacts

Cause and comment

During the construction phase of the proposed development, construction vehicles will be utilizing the existing road network. This may result in the impeding of traffic and damage to existing roads.

Mitigation measures

- Large construction vehicles must not be permitted to utilize public roads during peak hours (AM: 06:30 – 08:30 and PM: 16:00 – 18:30);
- Damages to public roads caused by large construction vehicles must be repaired immediately.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short term	Study Area	Moderate	Definite	MODERATE-
With Mitigation	Short term	Localised	Slight	Probable	LOW-
No-Go					
Without mitigation	Long term	Study Area	Slight	Definite	LOW-

Impact 10: Health and Safety Risks

Cause and comment

The use of construction machinery during the construction phase, together with the implementation of fuel tanks, poses a potential risk to the health and safety of people working at the construction site as well as to commuters passing the site. The movement of construction vehicles within a relatively busy area also increases the risk of road accidents. The risk of accidents, fires and explosions must be mitigated effectively.

Mitigation measures

- All relevant Health and Safety legislation as required in South Africa should be strictly adhered to, including but not limited to the Occupational Health and Safety Act, 1993 (No. 85 of 1993);
- Smoking should be prohibited in the vicinity of flammable substances;
- Ensure the availability of sufficient firewater tie-in points;
- Any welding or other sources of heating of materials should be done in a controlled environment and under appropriate supervision;
- Ensure availability of fire extinguishers;
- All employees must be aware of emergency/ contingency plans to ensure an understanding of the hazards and procedures required during an emergency situation;
- An emergency preparedness and response plan must be implemented for the duration of construction;
- Records of environmental and/or health and safety related incidents should be maintained and communicated to the relevant persons;
- During construction the site shall be fenced off to prevent access;
- Fencing shall be inspected weekly and maintained properly, by the Contactor, until construction is complete;
- The Contractor shall ensure that signage, which should be pictorial and in the vernacular, is erected on all boundary fences warning against entering the construction area;
- Traffic calming and speed control measures for access to construction sites shall be instigated in consultation with the local authorities.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short term	Study area	Moderate	May Occur	MODERATE-
With Mitigation	Short term	Localised	Slight	Unlikely	LOW-
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 11: Employment Creation

Cause and comment

The construction phase of the proposed development will create a number of temporary jobs for locals within the area.

Mitigation measures

None required

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short term	Study area	Moderate Beneficial	Definite	MODERATE +
With Mitigation	Short term	Study area	Moderate Beneficial	Definite	MODERATE +
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 12: Security Risks

Cause and comment

During construction equipment on site will be exposed to the general public, unless proper access control is implemented. In addition, staff may be present on site working after hours. Furthermore, the demolition of the ATNS fencing for construction will also expose the electrical transformer building and the ATNS communications tower to the public, whereas it previously was access controlled

Mitigation measures

- No unauthorized persons should be allowed onto the site and site access should be strictly controlled.
- Unsocial activities such as consumption or illegal selling of alcohol, drug utilisation or selling of any items on site, are prohibited.
- Any persons found to be engaged in such activities shall have disciplinary and / or criminal action taken against them.
- No person shall enter the site unless authorised to do so by the contractor, Project Coordinator or ECO. All visitors must report to the site office on arrival, undergo induction training, sign an indemnity form and be in possession of the correct PPE clothing to wear while on site.
- Induction programmes must communicate the rules and regulations to be adhered to on site to all persons entering the site. NO person may remain on site without having first completed induction training.
- If any fencing interferes with the construction process, such fencing shall be deviated until construction is completed. The deviation of fences shall be negotiated and agreed with the landowner in writing by the ECO.
- Trespassing on private / commercial properties adjoining the site is forbidden.
- The site must be secured in order to reduce the opportunity for criminal activity in the locality of the construction site
- No drugs, alcohol, fire arms or weapons of any kind allowed on site (barring medication);
- No hunting, trading or selling of items of any kind allowed on or near site;
- Intoxication while on site will not be allowed. If necessary, breathalysing may be instigated for staff members.

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short term	Regional	Moderate	Probable	HIGH -
With Mitigation	Short term	Regional	Slight	May Occur	LOW -
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 13: Purchasing of Materials from Local Businesses

Cause and comment

Where possible, materials will be sourced from local businesses and this will result in a boost of the local economy of the immediate vicinity and surrounding areas.

Mitigation measures

None required

Significance rating

Impact	Effect			Risk or Likelihood	Overall Significance
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without Mitigation	Short term	Regional	Moderate Beneficial	Probable	MODERATE+
With Mitigation	Short term	Regional	Moderate Beneficial	Probable	MODERATE+
No-Go					
Without mitigation	NA	NA	NA	NA	NA

OPERATIONAL PHASE

Impact 14: Stormwater and Groundwater Contamination

Cause and comment

Contamination of stormwater may occur during the operational phase when vehicles are refuelled at the filling station. Spilled fuel, oil or other contaminants may be washed into the stormwater system unless mitigated properly. The underground fuel tanks which will be used for fuel storage have the potential to leak and result in the spillage of fuel into an underground water resource. This is a potentially cumulative impact as there are several bulk fuel tanks located east of the site where airport fuel is stored.

Mitigation measures

- A site specific spill contingency plan for the operation and transportation of fuel must be compiled and implemented;
- Monitoring of volumes of the underground storage tanks must take place on a daily basis to detect unexplained losses due to leakages;
- The condition of the tanks, associated piping and the monitoring wells must be inspected on a regular basis;
- Integrity testing of the tank must take place 5 years after installation, with repetition on a 5-year cycle thereafter;
- At the end of the life span of the tanks, as governed by the supplier specification, tanks are to be replaced;
- All waste oils, greases, fuels, chemicals etc. should be collected and disposed of in an appropriate manner off site. The contents of grease traps or other waste oil, grease and/ or fuel disposal/ storage containers should under no circumstances be emptied and dumped to the surrounding area.
- No fuels/ oils must be allowed to discharge directly into stormwater pipes or drains and sewage manholes/pipes;
- The clean water (e.g. surface runoff) and dirty water (e.g. contaminated water from the forecourt and filling points) must be separated to prevent contaminated run-off from entering the stormwater, groundwater and soil;
- The forecourt area and the filling points should be concreted and graded so that any effluent run-off will not flow to the street, or into stormwater/ sewer systems but pass through the oil water separator sump/s before discharge into the sewer system;
- The oil/ water separator sump/s must be checked regularly and kept clean to prevent blockage and overflow. In addition, regular monitoring and clearing of the oil/ water separator sump/s will prevent hydrocarbon liquids from discharging into the sewer/ stormwater systems. Waste from the separator must be disposed of at a suitable waste handling site where Safe Disposal Certificates will be issued.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long term	Regional	Severe	Probable	HIGH –
With mitigation	Long term	Study area	Slight	Unlikely	MODERATE –
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 14: Solid Waste Generation

Cause and comment

Solid waste during the operational phase will primarily consist of the generation of litter from the convenience store, take-away outlet and minor solid waste from the filling station itself. Solid waste has the potential to pollute the surrounding land or enter stormwater and sewerage systems unless it is managed correctly. Solid waste can also be considered a cumulative impact as it will contribute to the overall waste produced within the Ekurhuleni Metropolitan Municipality and the decrease in available landfill space.

Mitigation measures

- Adequate waste disposal (litter) bins must be available on site. These must be properly secured and covered to prevent scavengers from tipping them;
- A responsible person must be appointed to manage the solid waste generated at the filling station in order to ensure that it is properly stored and refused regularly by municipal refuse services.
- Sufficient refuse collection must occur to ensure no build-up of refuse occurs on site.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long term	Study area	Moderate	Definite	MODERATE-
With mitigation	Long term	Localised	Slight	Definite	LOW -
No-Go					
Without mitigation	Long term	Study area	Slight	May Occur	Negligible

Impact 16: Sewerage and Wastewater Generation

Cause and comment

The operation of a new filling station, convenience store and take-away outlet will contribute to additional effluent and wastewater being generated and disposed into the municipal sewerage system. Sewerage and wastewater has the potential to leak and contaminate the soils, stormwater and groundwater in the area.

Mitigation measures

- Waste water and effluent management must be implemented on site;
- Ablution facilities and associated piping must be adequately lined and checked for leaks on a regular basis.
- All sewage generated from the site must be discharged into the Municipal sewerage reticulation system.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study Area	Moderate	Definite	MODERATE-
With mitigation	Long Term	Localised	Slight	Definite	LOW -
No-Go					
Without	Permanent	Study Area	Slight	Definite	LOW-

mitigation					
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Impact 17: Hazardous Waste Generation

Cause and comment

Hazardous waste is likely to occur as a result of a large number of vehicles entering and exiting the filling station on a daily basis. The filling station management will have limited control with regards to which vehicles may enter the filling station and therefore a number of vehicles which may be leaking oil or fuel may enter onto site. In addition to this, hazardous waste will be generated during the cleaning of oil separators and may occur as a result of spilt fuel or oil during refuelling or servicing of vehicles.

Mitigation measures

- Paved surfacing coming in contact with vehicles must be bunded such that stormwater flows into an oil/water separator, to allow for treatment of hydrocarbons and other hazardous wastes.
- Hazardous substances should be disposed of at an appropriate classified waste site (unless it is to be recycled by approved methods), as per the National Environmental Management Waste Act 59 of 2008;
- Sludge from the oil separators must be disposed of to a suitable waste-handling contractor where Safe Disposal Certificates are to be issued;
- All product spills within the bunded area must be appropriately cleaned up;
- All contaminated spill fighting material such as fibres, soil, sandbags, etc. must be disposed of in an appropriate hazardous waste landfill site. Proof of this must be made available upon request;
- Ensure safe disposal of Methanol/water mixture used for removal of any residual water from the fuel tanks;
- Any spilt material must be disposed of at a suitable licensed waste disposal facility, with chain of custody documentation supplied as proof of end recipient;
- The transportation, handling and storage of hazardous and flammable substances must comply with all the provisions of the Hazardous Substances Act 1973, (Act No. 15 of 1973) associated regulations as well as a SANS 10228 and SANS 10089 codes.
- A site-specific stormwater management plan must be implemented to manage the increased stormwater runoff

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study area	Severe	Probable	HIGH-
With mitigation	Long Term	Localised	Slight	May Occur	LOW-
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 18: Increased Stormwater Runoff and Erosion Potential

Cause and comment

The proposed development will consist of more impervious surfaces than what currently exists on site and this will result in increased runoff and potentially increased erosion.

Mitigation measures

- A site-specific stormwater management plan must be implemented to manage the increased stormwater runoff;
- Storm-water structures need to be implemented as part of the development and must link up with the current storm-water infrastructure in order to navigate stormwater and minimise soil erosion;
- At the first signs of erosion, the correct procedures must be undertaken to manage, resolve and prevent it from occurring.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study area	Moderate	Definite	MODERATE-
With mitigation	Long Term	Localised	Slight	Definite	LOW-
No-Go					
Without mitigation	Long Term	Localised	Slight	Definite	LOW-

Impact 19: Air Pollution

Cause and comment

Vapour emissions may result from the exhaust fumes emitted by vehicles passing through the filling station, especially if the vehicles have not been serviced correctly. In addition to this, vapour emissions are likely to be produced during the refuelling of the fuel tanks when hydrocarbon vapours are displaced by the liquid petrol and diesel.

Mitigation measures

- Stage 1 Volatile Organic Compound (VOC) Vapour Recovery Systems, should be installed onto fuel dispensing nozzles at the refuelling and forecourt areas;
- Operators must ensure that every effort is made to limit gaseous emissions;
- All equipment used must be manufactured to limit VOC vapour emissions;
- Operational refuelling procedures must be put in place to limit vapour emissions during refuelling of vehicles and storage tanks.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study area	Severe	Definite	HIGH-
With mitigation	Long Term	Localised	Slight	Probable	MODERATE-
No-Go					
Without mitigation	Long Term	Regional	Moderate	Definite	MODERATE-

Impact 20: Noise

Cause and comment

The operation of a filling station, convenience store, take-away outlet and other related activities on the site will create a constant noise on a 24 hour basis. The movement of

vehicles to and from site will also produce noise, but should not be any more than what is currently experienced on site. The close proximity to the OR Tambo International Airport, which produces constant noise, means that the noise from the proposed development will be negligible.

Mitigation measures

- Workers must not produce any unnecessary noise e.g. no loud music to be played, no whistles to be used etc.;
- The Ekurhuleni Metropolitan Municipality by-laws relating to noise must be adherer to at all times.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study area	Moderate	Definite	LOW-
With mitigation	Long Term	Localised	Slight	Definite	Negligible
No-Go					
Without mitigation	Long term	Regional	Moderate	Definite	MODERATE-

Impact 21: Visual Impacts

Cause and comment

The visibility of the proposed development will be noticeable as a result of the proximity to Jones Road. The completed facility and associated facilities will be a significant visual transformation of the land that is currently an open plot however, in relation to the nature of the surrounding industrial areas, it will not be a significant visual transformation.

Mitigation measures

- Building finishes should be of appropriate design and quality;
- Buildings should be designed in such a way that it fits into the surrounding industrial environment;
- Waste must be removed from site regularly and disposed of at a registered landfill site in order to avoid unnecessary litter being viewed on site;
- General good housekeeping must be maintained at all times.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study area	Slight	Definite	LOW-
With mitigation	Long Term	Localised	Negligible	Definite	LOW-
No-Go					
Without mitigation	Long Term	Study Area	Slight	Definite	LOW-

Impact 22: Traffic Impacts

Cause and comment

The operation of the proposed filling station will result in the interception of traffic along Jones Road. This could result in increased delays to motorists and an increase in potential accidents in the area. In addition to this, refuelling tankers will be required to access the fuel station and will have a limited impact on traffic and contribute to road damages.

Mitigation measures

- The proposed external road upgrades and site access routes must be constructed in line with the relevant design standards;
- Fuel tankers required on site must avoid peak hour traffic (AM: 06:30 – 08:30 and PM: 16:00 – 18:30);
- Any damage to roads caused by fuel tankers must be reported to the municipality and repaired immediately;
- All mitigation aspects referred to in the Traffic Access Study (WSP, 2013) must be adhered to fully.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study area	Moderate	Definite	MODERATE-
With mitigation	Long Term	Localised	Slight	Probable	LOW-
No-Go					
Without mitigation	Long Term	Study Area	Slight	Definite	MODERATE-

Impact 23: Health and Safety Risks

Cause and comment

The operation of flammable liquids on site poses a potential fire and explosion risk throughout the lifespan of the proposed development. In addition to this, health and safety risks occur with regards to onsite vehicle movement, as well as cooking within the convenience shop and take-away outlet.

Mitigation measures

- All relevant Health and Safety legislation as required in South Africa should be strictly adhered to, including but not limited to the Occupational Health and Safety Act, 1993 (No. 85 of 1993);
- Smoking should be prohibited in the vicinity of flammable substances;
- Ensure the availability of sufficient firewater tie-in points;
- Ensure availability of fire extinguishers;
- All employees must be aware of emergency/ contingency plans to ensure an understanding of the hazards and procedures required during an emergency situation;
- An emergency preparedness and response plan must be implemented for the operational phase;
- Records of environmental and/or health and safety related incidents should be maintained and communicated to the relevant persons;
- Fencing shall be inspected weekly and maintained properly, by the Contactor, until construction is complete;
- Traffic calming and speed control measures for access to the site shall be instigated in consultation with the local authorities;
- Kitchens must be fully equipped with necessary safety and fire-fighting equipment;

- All staff to be trained in relevant health and safety aspects;
- A qualified first-aider must be present on site at all times.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study area	Severe	May Occur	HIGH-
With mitigation	Long Term	Localised	Slight	Unlikely	LOW-
No-Go					
Without mitigation	NA	NA	NA	NA	NA

Impact 24: Employment

Cause and comment

The operational phase of the proposed development will create a number of permanent jobs for locals within the area as well as a small number of temporary jobs during routine maintenance procedures.

Mitigation measures

None required.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Study Area	Beneficial	Definite	MODERATE+
With mitigation	Long Term	Study Area	Beneficial	Definite	MODERATE+
No-Go					
Without mitigation	Long term	Study Area	Slight	Definite	MODERATE-

Impact 25: Increase consumer choice, convenience and service points.

Cause and comment

The implementation of a filling station in this area will provide additional choice and convenience for people and businesses in the immediate surrounds including those travelling to and from the Emperor's Palace hotel and casino as well as the OR Tambo International Airport. The implementation of the filling station in this location also relieves the existing pressure placed on the capacity of surrounding filling stations.

Mitigation measures

None required.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					

Without mitigation	Long Term	Study area	Beneficial	Definite	MODERATE+
With mitigation	Long Term	Study area	Beneficial	Definite	MODERATE+
No-Go					
Without mitigation	Long term	Study Area	Moderate	Definite	MODERATE-

Impact 26: Economic Benefits

Cause and comment

The filling station and associated convenience and take-away outlet is likely to create a profit from the sale of fuel, food, drinks and other items. This will contribute to the overall economy of the area and have a positive influence on the Gross Domestic Product at a municipal level.

Mitigation measures

None required.

Significance rating

Impact	Effect			Risk or Likelihood	Total Score
	Temporal Scale	Spatial Scale	Severity of Impact		
Alternative 1					
Without mitigation	Long Term	Regional	Slight Beneficial	Probable	MODERATE+
With mitigation	Long Term	Regional	Slight Beneficial	Probable	MODERATE+
No-Go					
Without mitigation	Long term	Regional	Slight	Definite	LOW -