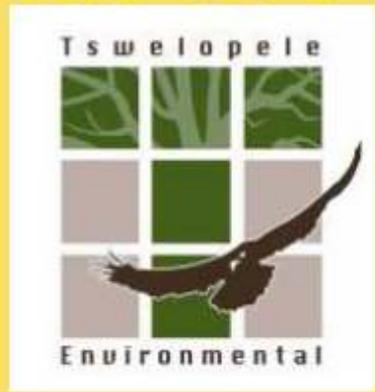




Basic Assessment Report : Upgrading
of the R 21 between the N 12
and the Hans Strijdom Interchanges

ARUP



BASIC ASSESSMENT REPORT

(For official use only)

File Reference Number:

--	--	--	--	--	--

Application Number:

--	--	--	--	--	--

Date Received:

--

Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2006

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2006 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided are not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable or **black out** the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed. In addition, if it is clear to the EAP that because of the particular circumstances of the case it is not sensible to complete any of the sections indicated under paragraph 3 of this report, he or she may apply for exemption from completing that part of the report in the spaces provided in the report. It must however be noted that if the application for exemption is turned down, the report may have to be resubmitted.

SECTION A: APPLICATION FOR EXEMPTION

The relevant parts of this section must be completed if the environmental assessment practitioner (EAP) on behalf of the applicant wishes to apply for exemption from completing or complying with certain parts of this basic assessment report.

1. APPLICATION FOR EXEMPTION FROM ASSESSING ALTERNATIVES:

At least two alternatives (site or activity) should be assessed. If that is not possible, the applicant should apply for exemption from having to assess alternatives. Such exemption will, however, not apply to the no-go alternative that must be assessed in all cases.

Provide a detailed motivation for not considering alternatives including an explanation of the reason for the application for exemption (supporting documents, if any, should be attached to this report):

The activity being applied for is the upgrade of the Regional Route 21 (R21) between the N12 and Hans Strijdom Drive Interchanges. The activity will therefore take place on an existing freeway and predominantly within the existing road reserve. Therefore, no other site alternatives are deemed necessary. Integration of alternative transport modes is being undertaken as part of the wider Gauteng Freeways Improvement Project, which takes an integrated approach incorporating public transport, travel demand management (TDM) measures, intelligent transport systems (ITS) and appropriate infrastructure, as well as the Gautrain.

All possible activity alternatives, including road surfacing material and energy efficient lighting etc. has been considered.

I declare that the above motivation is accurate and, hereby apply for exemption in terms of regulation 51 of the Environmental Impact Assessment Regulations, 2006, from having to assess alternatives in this application as required in section 24(4)(b) in the National Environmental Management Act, 1998 (Act No. 107 of 1998)

Signature of the EAP: _____ Date: _____

2. APPLICATION FOR EXEMPTION FROM COMPLYING WITH PARTS OF REGULATION 23(2) REGARDING THE CONTENT OF THIS BASIC ASSESSMENT REPORT:

Application for exemption from certain parts of regulation 23(2) regarding the completion of certain parts of this basic assessment report may be made by completing the relevant sections below.

Indicate the numbers of the sections of this report for which exemption is applied for:

Section B:	7(a)	7(b)	7(c)	7(d)	8	9	10(c)	10(e)	10(f)	10(g)	10(h)	10(j)	10(k)	12
Section C:	1	2	3	4	5	6								
Section D:	1(a)	1(b)	1(c)	1(d)	1(f)	1(g)	3							

Provide a detailed motivation including an explanation of the reason for the application for exemption (supporting documents, if any, should be attached to this report):

BASIC ASSESSMENT REPORT

The activity is a linear activity that extends over a large portion of existing freeway (62000 m). Exemption has been applied on the following sections: Section B 10 (c), B 10 (e), B 10 (f), B 10 (h), B 10 (i), B 10 (j); and C 1, C 4, C 5 and C 6 with respect to details provided on the site map and the site description respectively.

Section B10 (c): deals with the current land use and zoning and requires the zoning of each property along the route to be indicated on the site plan: The proposed activity is the improvement of an existing freeway which is mainly surrounded by urban development (Including, retail, commercial, industrial, small areas of residential as well as agricultural lands and open space). The length of the specific section of freeway makes it impractical to provide specific zoning details for each adjacent property.

Section B10 (e and h): deals with structures or features which are required to be indicated on the site plan (including trees, servitudes, streetlights, walls and fences, and others): Due to the large extent of the proposed site, the indication of all structures on a site plan is impractical. The improvements will take place within the existing road reserve where there are few if any trees or other structures.

Section B10 (f): deals with the indication of obvious sensitivities (rivers, floodlines, ridges, cultural and historic features, and indigenous vegetation) on the site plan: The R21 passes through a diverse urban (and peri-urban) environment with no obvious environmentally sensitive features (except for two river crossings). No sensitivities were identified within the existing road reserve. Where specific sensitivities occur and anticipated impacts are identified these have been included in the impact assessment section of the report.

Section B10 (i): Due to the freeway being surrounded by developed areas no sensitive areas are expected to occur near the activity. However, all river crossings are indicated on the map and will be regarded as sensitive.

Section B10 (j): deals with the requirement for 1m contour lines to be indicated on the site plan: due to the large extent of the proposed site, the indication of 1m / 500mm contours are impractical and unfeasible for the proposed site. The attached land-use map includes the 1:50 000 topographical information (20m contour intervals).

Section C1 deals with the gradient of the site. Due to the activity taking place on an existing freeway the gradient will vary considerably over the extent of the freeway, rendering it impractical to complete this section for each gradient. The general topography of the site is however characterized by undulated plains.

Section C 4 deals with ground cover. Since the proposed activity will take place on an existing freeway the ground cover will mostly consist of paved areas for the road and paved areas with alien vegetation with in the road reserves. It is therefore unpractical to complete this section for the proposed activity.

Section C 5 deals with the land use of the surrounding area. Due to the proposed activity being a freeway situated within a built-up area, most of the listed land uses can be expected to occur within a 500m radius from the site. Exemption has been applied for this section, however the most common land uses, have been selected from and completed within the list in section C 5.

Section C 6 deals with cultural and historical features. Due to the extent of development activities taking place next to the proposed freeway to be upgraded it can be anticipated that no sites of features of cultural or historical value exist with in close proximity from the site. No obvious sites of cultural and /or historical value were identified during the site inspections.

According to regulation 56 (5) of the EIA regulations (GNR 385) deviations from the process listed in this section may be acceptable if an application is for a linear based activity. Consultation has been held with the National Department of Environmental Affairs and Tourism to discuss the most appropriate and feasible advertisement strategy. The strategy which were followed is set out in Section D. Exemption from notifying land owner and occupiers of adjacent land and landowners and occupiers within a 100m boundary of the site has been applied for, due to the extent of the linear activity.

I declare that the above motivation is accurate and, hereby apply for exemption in terms of regulation 51 of the EIA Regulations, 2006, from having to complete the indicated sections of the Basic Assessment Report.

Signature of the EAP: _____ Date:

SECTION B: ACTIVITY INFORMATION

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for in detail (A1):

The South African National Road Agency Limited (SANRAL) is the custodian of all national roads. As such, it is responsible for, amongst others, the upgrade and maintenance of national roads. As a result of the current congestion taking place on the proposed section of the freeway, and as part of a bigger scheme to upgrade the Gauteng Freeway network, SANRAL proposed to upgrade a portion of the Regional Route 21(R21) between the National Route 12 (N12) in the south and Hans Strijdom (Road K69) Interchange in the north. The proposed Gauteng freeway network upgrade includes: the addition of lanes along the freeway in both directions; auxiliary lanes of appropriate length before and after on and off ramps; provision of appropriate number of lanes in the vicinity of interchanges at steep grades; and certain interchange upgrades. The upgrade further includes the provision of Intelligent Transport Systems (ITS), i.e. CCTV cameras and variable message signs implementation of concepts such as ramp metering and an integrated approach incorporating public transport, as well as additional road lighting. The proposed upgrade will provide additional capacity, which will improve traffic flow between the eastern areas of Johannesburg (including the O R Tambo International Airport) and Pretoria area and will provide an efficient and safe road network.

The proposed upgrades include the following upgrades to the road surface and associated structures:

- Addition of lanes to allow for 4 lanes in each direction. The lanes will be added mainly to the median of the existing freeway. On some sections the widening will be on the outside of the existing carriageway. The new lanes will be surfaced with an asphalt surface overlay.
- The existing road pavement will be rehabilitated and surfaced with an asphalt overlay.
- The repairing and upgrades to certain bridge and overpass structures to allow for the 4 lane freeway as well as certain structural repairs.
- The two bridges (2740A and 2740B) over the Sesmyspruit need to be widened by 4m and the two existing rows of piers will be extended to match the existing bridges. The Riet River crossing comprises of a series of pipes that needs to be lengthened by 4m on either side if the road widening is on the outside, however, if the widening is on the inside then no construction work will be needed.
- Two new pedestrian bridges are required. One at the Engen garage near Tembisa and the other at Km 17 at the northern end of the O R Tambo Airport. These bridges are intended to be aesthetically pleasing features that can serve as a landmark.
- Bridge 2669 will be demolished due to severe impact damage
- Where the existing freeway passes over culverts these will require extension to allow for the additional lanes.

The proposed upgrades include the following with respect to the affected interchanges:

- Proposed K54 I/C: This interchange will be where the current M57 crosses the R21. The proposed upgrades include the doubling of K54 over a short section and the provision of south facing on and off ramps. These upgrades will require the acquisition of land outside of the existing road reserve.
- Olifantsfontein I/C: Signalization of both the eastern off-ramp terminal and P38-1 intersection to improve capacity at these intersections.
- Bapsfontein IC: Improving the traffic flow at the ramp terminals by providing slip- and right-turning lanes.
- Benoni I/C: Utilization of the existing P68-1 bridge over the R21 as a four-lane facility and the provision of east to north and west to south loop ramps. Additional road reserve will be required at the proposed loop ramps as the off-ramps will have to be relocated.
- Pomona Road I/C: the following road improvements are envisaged:
 - Eastern ramp terminals: on the off-ramp, two right-turn lanes and a left-turn lane. On Pomona Road a left-turn lane for the east to south movement.
 - Western ramp terminals: an additional right-turn lane on the off-ramp. On Pomona Road a right-turn lane for the east to north movement and a left-turn lane from the west with a slop lane to the on-ramp.

The following additional infrastructure also proposed as part of the upgrades:

Lighting and ITS for all sections of the freeway which includes extensions of the Communications and Surveillance systems (including civil, electrical and electronic works). These improvements will involve:

- Civil Works: Trenches, Miniducts, Pipe Boring, Manholes, Poles and foundations of structures;
- Electrical distribution (Cables, metering and distribution kiosks);
- Wireless and Fibre Optic communications;
- CCTV cameras; and
- Variable Message Signs

The lighting masts range from 12-30m high (12m at ramps, 20m median or side of roadway, 30m at interchanges). The following luminaries will be utilized:

- 400w and 600w HPS semi cut-off luminaries for the main route and interchanges;
- 250w and 150w HPS semi cut-off luminaries at on- and off ramps;
- 250w full cut-off HPS luminaries at restricted height areas; and
- 400w, 250w and 150w semi cut-off HPS luminaries at the R21/N12 interchange

BASIC ASSESSMENT REPORT

The Intelligent Transport System (ITS) poles for the CCTV cameras are anticipated to range from between 10-13m high.

Construction materials, including sand, gravel and aggregate, will be sourced from existing approved and adequately licensed facilities.

2. ALTERNATIVES

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

2(a) Site alternatives:

Describe site alternative 1 (S1), for the activity described above, or for any other activity alternative:

The portion of road for this application starts at the interchange with road M10 (Hans Strijdom Drive) on the southern outskirts of Pretoria. The road runs southwards and passes through Olifantsfontein, around the western side of O.R Tambo International Airport and ends at the intersection with National Road 12 (N12) situated in Boksburg. The proposed project is an upgrade of an existing road and associated infrastructure and will take place predominantly within the existing road reserve. Therefore no site alternative has been identified.

Describe site alternative 2 (S2), if any, for the activity described above, or for any other activity alternative:

Describe site alternative 3 (S3), if any, for the activity described above, or for any other activity alternative:

(2)(b) Activity alternatives:

Describe activity alternative 2 (A2), if any, for any or all of the site alternatives as appropriate:

Describe activity alternative 2 (A2), if any, for any or all of the site alternatives as appropriate:

Describe activity alternative 2 (A2), if any, for any or all of the site alternatives as appropriate:

4. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Alternative:

Alternative S1¹ (preferred or only site alternative)

Alternative S2 (if any)

Alternative S3 (if any)

Latitude (S):

Longitude (E):

°	'	°	'
°	'	°	'
°	'	°	'

In the case of linear activities:

Alternative:

Alternative S1 (preferred or only route alternative)

- Starting point of the activity

- Middle point of the activity

- End point of the activity

Latitude (S):

Longitude (E):

25°	48.850'S	28°	14.233'E
25°	58.967'S	28°	14.233'E
26°	10.167'S	28°	14.233'E

Alternative S2 (if any)

- Starting point of the activity

- Middle point of the activity

- End point of the activity

°	'	°	'
°	'	°	'
°	'	°	'

Alternative S3 (if any)

- Starting point of the activity

- Middle point of the activity

- End point of the activity

°	'	°	'
°	'	°	'
°	'	°	'

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

¹ "Alternative S.." refer to site alternatives.

BASIC ASSESSMENT REPORT

5. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Alternative A1² (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Size of the activity:

	m ²
	m ²
	m ²

or, for linear activities:

Alternative:

Alternative A1 (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Length of the activity:

Alternative A1 (preferred activity alternative)	Approximately 62000m
Alternative A2 (if any)	
Alternative A3 (if any)	

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Alternative A1 (preferred activity alternative)

Size of the site/servitude:

Alternative A1 (preferred activity alternative)	The activity takes place along an existing freeway of which the servitude varies in size, so it is difficult to establish the exact size of the site. However, it is considered that length of the freeway section is 62000 and a servitude consists of approximately 51m in width, therefore it can be anticipated that the size will be approximately 3162000 m ²
Alternative A2 (if any)	
Alternative A3 (if any)	

6. SITE ACCESS

Does ready access to the site exist, or is access directly from an existing road?

YES ✓	NO
m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

The proposed upgrade will be taking place on the existing freeway; hence there is no need for the new access road. The existing freeway will be used during construction.

Include the position of the access road on the site plan.

7. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

7(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES ✓	NO
-------	----

The project is in early stages of the proposed upgrade of the highway, and the volumes of waste that will be generated during the construction phase are still uncertain. An estimate has been given based on a figure of less than 600 m³ a week.

How will the construction solid waste be disposed of (describe)?

All construction waste will be collected, sorted and disposed of at suitably licensed disposal facilities.

Where will the construction solid waste be disposed of (describe)?

The construction waste will be disposed of at a suitably licensed disposal facility.

Will the activity produce solid waste during its operational phase?

YES	NO ✓
m ³	

If yes, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, the application should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO ✓
-----	------

² "Alternative A.." refer to activity, process, technology or other alternatives.

BASIC ASSESSMENT REPORT

During construction and maintenance of the road, asphalt will be used as overlay material. Asphalt can be regarded as an inert compound; however certain potentially hazardous chemicals may be added to the asphalt in order to render the compound more workable. It is anticipated that all mixing of asphalt will be done at a certified asphalt plant before it is transported to the site. However, should any mixing be required on site, the waste asphalt will be disposed of as hazardous at a suitably licensed facility.

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO <input checked="" type="checkbox"/>
-----	--

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

During Construction, wastes must be separated at source and disposed at relevant suitably licensed facilities. Waste should be separated into recyclable and non-recyclable materials and distributed for recycling where applicable. During the construction phase, construction waste will be used as fill material and as foundation for the proposed upgrade processes where possible. The re-use of construction waste materials will minimize the amount of waste that will need to be disposed of at registered municipal waste facilities. Only inert, non-hazardous construction material will be re-used.

Has a specialist been consulted to assist with the completion of this section?

YES	NO <input checked="" type="checkbox"/>
-----	--

If YES, please complete:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are any further specialist studies recommended by the specialist?

YES	NO <input checked="" type="checkbox"/>
-----	--

If YES, specify:

--

If YES, is such a report(s) attached?

YES	NO
-----	----

Signature of specialist:

--

Date:

--

7(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO <input checked="" type="checkbox"/>
-----	--

If yes, what estimated quantity will be produced per month?

	m ³
--	----------------

Will the activity produce any effluent that will be treated and/or disposed of on site?

Yes	NO <input checked="" type="checkbox"/>
-----	--

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO <input checked="" type="checkbox"/>
-----	--

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

--

Has a specialist been consulted to assist with the completion of this section?

YES	NO <input checked="" type="checkbox"/>
-----	--

If YES, please complete:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are any further specialist studies recommended by the specialist?

YES	NO <input checked="" type="checkbox"/>
-----	--

If YES, specify:

--

If YES, is such a report(s) attached?

YES	NO
-----	----

Signature of specialist:

--

Date:

--

BASIC ASSESSMENT REPORT

7(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO <input checked="" type="checkbox"/>
-----	--

The activity itself will not contribute directly to emissions released into the atmosphere except possible short-term dust emissions during construction. However, the upgrade of the road will increase the capacity of vehicles that will utilize the road which in turn will cause an increase in noxious gas emissions from cars into the atmosphere. The activity will therefore have an indirect effect on the release of emissions. The release of emissions from vehicles is controlled under the Air Quality Act (Act No 39 of 1998). Due to the additional and new lighting, additional light emissions can be expected.

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

--	--

Has a specialist been consulted to assist with the completion of this section?

YES	NO <input checked="" type="checkbox"/>
-----	--

If YES, please complete:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are any further specialist studies recommended by the specialist?

YES	NO <input checked="" type="checkbox"/>
-----	--

If YES, specify:

--	--

If YES, is such a report(s) attached?

YES	NO
-----	----

Signature of specialist:	Date:
--------------------------	-------

7(d) Generation of noise

Will the activity generate noise?

YES <input checked="" type="checkbox"/>	NO
---	----

If yes, is it controlled by any legislation of any sphere of government?

YES	NO <input checked="" type="checkbox"/>
-----	--

The R21 is not a controlled zone under the Gauteng Noise Regulations (GNR 5479 of 1999)

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

During the brief construction phase it is anticipated that there will be an increase in noise due to construction vehicles and machinery. Additional vehicle capacity on the road as a result of the upgrade may result in increased noise levels.

Has a specialist been consulted to assist with the completion of this section?

YES	NO <input checked="" type="checkbox"/>
-----	--

If YES, please complete:

Name of the specialist:			
Qualification(s) of the specialist:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Are any further specialist studies recommended by the specialist?

YES	NO
-----	----

If YES, specify:

--	--

If YES, is such a report(s) attached?

YES	NO
-----	----

Signature of specialist:	Date:
--------------------------	-------

8. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water <input checked="" type="checkbox"/>
-----------	-------------	-------------	----------------------------	-------	---

The proposed activity will not require water during operation. Municipal water will be used during construction phase where required.

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

	liters
--	--------

Does the activity require a water use permit from the Department of Water Affairs and Forestry?

YES <input checked="" type="checkbox"/>	NO
---	----

BASIC ASSESSMENT REPORT

An application for General Authorisation is being prepared and will be submitted to the Department of Water Affairs and Forestry due to the possibility of activities taking place within the floodlines of the Sesmylspruit and the Rietspruit river crossings.

If yes, please submit the necessary application to the Department of Water Affairs and Forestry and attach proof thereof to this application if it has been submitted.

9. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

Lighting will be supplied for the road. Design measures for the lighting employed to save energy include: reduction of luminaries e.g. from 4 to 2 for the 15m median masts, which now have improved reflectors, resulting in energy savings of 50%; and use of energy efficient high pressure sodium and mercury vapour lamps.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Solar power is being investigated as a possible source of energy for ITS surveillance cameras.

10. SITE OR ROUTE PLAN

Route plan attached as appendix A

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document. The site or route plans must indicate the following:

- 10(a) The scale of the plan which must be at least a scale of 1:500;
- 10(b) the property boundaries and numbers of all the properties within 50m of the site;
- 10(c) the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 10(d) the exact position of each element of the application as well as any other structures on the site;
- 10(e) the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 10(f) all trees and shrubs taller than 1.8m;
- 10(g) walls and fencing including details of the height and construction material;
- 10(h) servitudes indicating the purpose of the servitude;
- 10(i) sensitive environmental elements within 100m of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by DWAF);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 10(j) for gentle slopes the 1m contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 10(k) the positions from where photographs of the site were taken.

11. SITE PHOTGRAPHS

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It should be supplemented with additional photographs of relevant features on the site, if applicable.

12. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

Typical bridge widening information as well as a route plan showing the proposed upgrades have been included in Appendix C.

13. ACTIVITY MOTIVATION

13(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

The total estimate project cost is R1 651 857 900
R Unknown

What is the expected yearly income that will be generated by or as a result of the activity?

Due to the proposed activity being the upgrade of an existing freeway (R21), the contribution that the upgraded freeway will have on the regional economy will be difficult to quantify. The upgrade is however anticipated to result in significant improvements and therefore to have a significant positive direct and indirect impact on the regional economy.

BASIC ASSESSMENT REPORT

Will the activity contribute to service infrastructure or is it a public amenity?	YES √	NO
How many new employment opportunities will be created in the development phase of the activity?		
It has been estimated that the whole Gauteng Freeway Upgrade Project will contribute to approximately 29 369 direct job opportunities and 138 929 indirect job opportunities during the development phase.		
What is the expected value of the employment opportunities during the development phase?	R Unknown	
Due to the proposed freeway upgrade that is being discussed within this document forming part of a bigger proposed freeway upgrading project, it is difficult to estimate the exact socio economical value that this portion will contribute.		
What percentage of this will accrue to previously disadvantaged individuals?	Unknown %	
SANRAL's procurement policy requires that all contractors should comply with specifications of a minimum of 6% of the total of a contract for a targeted labour, and for awarding of contracts, points are allocated on the scorecard for BEE status in ownership and management. Further BEE requirements will also be met at the sub-contractor level.		
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown	
What is the expected current value of the employment opportunities during the first 10 years?	R Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown %	
SANRAL's procurement policy requires that all contractors should comply with specifications of a minimum of 6% of the total of a contract for a targeted labour, and for awarding of contracts, points are allocated on the scorecard for BEE status in ownership and management. Further BEE requirements will also be met at the sub-contractor level.		

13(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

The SANRAL is the custodian of all national roads. As such, it is responsible for, amongst others, the upgrade of national roads. To enable SANRAL to effectively meet its mandate, the R21 between Hans Strijdom and the N12 need to be upgraded. Without the upgrade to developmentally improve traffic flow between the Johannesburg and Pretoria area, it will not be possible to quickly and effectively access the country's most important economic areas.

The proposed section of freeway to be upgraded is an integral link between the eastern areas of Johannesburg (including the O.R. Tambo International Airport) and Pretoria and serves some of the fastest growing urban areas in South Africa. The freeway is also known for its congestion and sensitivity to incidents.

Solving the transportation problems of metropolitan areas is complex and there is not a single solution to this challenge. An integrated approach, incorporating public transport, travel demand management (TDM) measures, intelligent transport systems (ITS) and appropriate infrastructure, is needed to improve transport in general. However, in most instances the one is dependent on the other for success. Most public transport is road based and requires appropriately designed road networks that may include dedicated facilities for these vehicles (BRT lanes) or high occupancy vehicle lanes (HOV). Furthermore, it is critical for the transport network to function effectively as majority of goods and services rely on road functionality, which in turn contribute to positive economic contributions.

Indicate any benefits that the activity will have for society in general:

- The proposed upgrade would provide benefits to both the local and regional community and through traffic by:
- Increased road capacity that would improve traffic flow and reduce travel time and traffic congestion
 - Improved safety for all road users including pedestrians and cyclists
 - Improved storm water runoff and drainage
 - Improved urban design
 - Improved level of services throughout Gauteng
 - Improved living standards for road users
 - Improved access leading to higher levels of development
 - Convenient access to public transport
 - Upliftment of individual and community spirit
 - Improved access for emergency vehicles
 - Broader economic benefits in the form of increased competitiveness
 - Contribution to the National GDP
 - Contribution to the GGP
- The installation of ITS an additional road lighting are expected to result in numerous benefits to the road users including:
- Improved road visibility during the night resulting in improved road safety;
 - The ITS system will enable road users to make informed decisions regarding travelling options by the provision of variable message signs, cell phone messaging, webpage and radio reporting.
 - The ITS system, includes surveillance of the freeway which improves traffic control and safety due to the ability to provide notification of potential situations immediately; and

14. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Administering authority:	Date:
National Environmental Management Act No. 107 of 1998	National & Provincial	27 November 1998
National Water Act (Act No 36 of 1998)	National	1998
South African Roads Act (Act No. 74 of 1998)	National and Provincial	1998

BASIC ASSESSMENT REPORT

List of activities which have been applied for under the NEMA regulations.

Number and date of the relevant Government Notice:	Activity No (s) (in terms of the relevant notice) :	Description of each listed activity: as it is written on the regulations
GNR 386 (21 April 2006)	1(m)	The Construction of Facilities or Infrastructure, including associated structures or infrastructure, for- any purpose in the one in ten year floodline of a river or stream, or within 32m from the bank of a river or stream where the floodline is unknown, excluding purposes associated with existing residential use, but including: i) Canals; ii) Channels; iii) Bridges; iv) Dams; and v) Weirs.
GNR 386 (21 April 2006)	4	The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic meters from a river, tidal lagoon, tidal river, lake, in stream dam, floodplain or wetland.
GNR 386 (21 April 2006)	7	The above ground storage of a dangerous good, including petrol, diesel, liquid petroleum, gas or paraffin, in containers with a combined capacity of more than 30 cubic meters but less than 100 cubic meters at any one location or site.
GNR 386 (21 April 2006)	14	The construction of masts of any material or type and of any height, including those used for telecommunication broadcasting and radio transmission, but excluding- a) masts of 15 meters and lower exclusively used i) by radio amateurs; or ii) for lighting purposes. b) Flag poles; and c) Lightning conductor poles.
GNR 386 (21 April 2006)	15	The construction of a road that is wider than 4 meters or that has a reserve wider than 6 meters, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 meters.

SECTION C: SITE/AREA DESCRIPTION

Important note: For linear activities (pipelines etc) as well as activities that cover very large sites, it may be necessary to complete Section C for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Exemption has been applied for various items of this Section, however general descriptions are indicated where feasible.

Section C Copy No. (e.g. A):

(Complete only when appropriate)

1. GRADIENT OF THE SITE

Indicate the general gradient of the sites.

The proposed activity takes place on an existing freeway, so the gradients will vary along the extent of the proposed portion of the freeway to be improved. The general topography of can be described as being characterised as having undulated plains.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S2:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S3:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site.

Alternative S1:

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain ✓	Undulating plain/low hills ✓	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	---------	------------------------------	------	-----------

Alternative S2:

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

Alternative S3:

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front
-----------	---------	-----------------------------	---------------	-------------	-------	----------------------------	------	-----------

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		Alternative S2:		Alternative S3:	
Shallow water table (less than 1.5m deep)	YES ✓	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES ✓	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES ✓	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES ✓	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO ✓	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO ✓	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO ✓	YES	NO	YES	NO
An area sensitive to erosion	YES ✓	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

BASIC ASSESSMENT REPORT

Has a specialist been consulted to assist with the completion of this section? YES NO

The Gauteng Open Space Project (GOSP) and Agricultural Geo-Referenced Information System (AGIS) maps were consulted in determining if any of the above is located on or near the proposed site.

If YES, please complete:

Name of the specialist: _____

Qualification(s) of the specialist: _____

Postal address: _____

Postal code: _____

Telephone: _____ Cell: _____

E-mail: _____ Fax: _____

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____

4. GROUND COVER

Tick the types of groundcover present on the site.

Alternative S1:

Due to the activity being linear, ground cover will vary along different sections of the road

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E <input checked="" type="checkbox"/>	Gardens
Sport field	Cultivated land	Paved surface (tarred and concrete surfaced) <input checked="" type="checkbox"/>	Building or other structure	Bare soil

If any of the boxes marked with an ^E "is" ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

Has a specialist been consulted? YES NO

If YES, please complete the following:

Name of the specialist: _____

Qualification(s) of the specialist: _____

Postal address: _____

Postal code: _____

Telephone: _____ Cell: _____

E-mail: _____ Fax: _____

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? YES NO

If YES, specify and explain: _____

Are there any special or sensitive habitats or other natural features present on any of the alternative sites? YES NO

If YES, specify and explain: _____

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Alternative S2:

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface (tarred and concrete surfaced)	Building or other structure	Bare soil

If any of the boxes marked with an ^E "is" ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

Has a specialist been consulted? YES NO

If YES, please complete the following:

BASIC ASSESSMENT REPORT

Name of the specialist: _____
 Qualification(s) of the specialist: _____
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: _____
 E-mail: _____ Fax: _____

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? YES NO

If YES, specify and explain: _____

Are there any special or sensitive habitats or other natural features present on any of the alternative sites? YES NO

If YES, specify and explain: _____

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____
 The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Alternative S3:

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an "E" is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn't have the necessary expertise.

Has a specialist been consulted? YES NO

If YES, please complete the following:

Name of the specialist: _____
 Qualification(s) of the specialist: _____
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: _____
 E-mail: _____ Fax: _____

Are there any rare or endangered flora or fauna species (including red data species) present on any of the alternative sites? YES NO

If YES, specify and explain: _____

Are there any special or sensitive habitats or other natural features present on any of the alternative sites? YES NO

If YES, specify and explain: _____

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____
 The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

5. LAND USE CHARACTER OF SURROUNDING AREA

The activity is linear in nature therefore most of the following will occur within 500m radius of the proposed road.

Black out land uses and/or prominent features that does not currently occur within a 500m radius of the site

Alternative S1:

Natural area	Low density residential	Medium density residential	High density residential	Informal residential ^A
--------------	-------------------------	----------------------------	--------------------------	-----------------------------------

BASIC ASSESSMENT REPORT

Retail	Commercial & warehousing	Light industrial	Medium industrial ^{AN}	Heavy industrial ^{AN}
Power station ^A	Office/consulting room	[REDACTED]	Casino/entertainment complex	Hospitality facility
[REDACTED]	[REDACTED]	Spoil heap or slimes dam ^A	[REDACTED]	Dam or reservoir
Hospital/medical center	School	Tertiary education facility	Church	Old age home
[REDACTED] ^A	[REDACTED]	[REDACTED]	Major road (4 lanes or more) ^N	Airport ^N
[REDACTED]	Sport facilities	Golf course	[REDACTED]	Filling station ^H
Landfill or waste treatment site ^A	[REDACTED]	[REDACTED]	River, stream or wetland	Nature conservation area
[REDACTED]	[REDACTED]	[REDACTED]	Graveyard	[REDACTED]
Other land uses (describe):				

If any of the boxes marked with an "N" are ticked, please consult an appropriate noise specialist to assist in the completion of this section.

Has a specialist been consulted? YES NO

The nature of the proposed activity is such that ambient noise levels will not have an impact on the activity itself. However, it is anticipated that the proposed activity will contribute to the current ambient noise

If YES, please complete the following:

Name of the specialist: _____
 Qualification(s) of the specialist: _____
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: _____
 E-mail: _____ Fax: _____

Will the ambient noise level have a negative impact on the proposed activity? YES NO

If YES, specify and explain: _____

Are any further specialist or studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____

If any of the boxes marked with an "Au" are ticked, please consult an appropriate air quality specialist to assist in the completion of this section.

Has a specialist been consulted? YES NO

The proposed activity will take place on a freeway, and is therefore not expected to be affected by ambient air pollution created by surrounding land uses.

If YES, please complete the following:

Name of the specialist: _____
 Qualification(s) of the specialist: _____
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: _____
 E-mail: _____ Fax: _____

Will the ambient air pollution level have a negative impact on the proposed activity? YES NO

If YES, specify and explain: _____

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____

If any of the boxes marked with an "H" are ticked, please consult an appropriate health assessment specialist to assist in the completion of this section.

Has a specialist been consulted? YES NO

BASIC ASSESSMENT REPORT

If YES, please complete the following:

Name of the specialist: _____
 Qualification(s) of the specialist: _____
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: _____
 E-mail: _____ Fax: _____

Will the surrounding land use pose any unacceptable health risk on the proposed activity? YES NO

If YES, specify and explain: _____

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____

Alternative S2:

Natural area	Low density residential	Medium density residential	High density residential	Informal residential ^A
Retail	Commercial & warehousing	Light industrial	Medium industrial ^{AN}	Heavy industrial ^{AN}
Power station	Office/consulting room	Military or police base/station/compound	Casino/entertainment complex	Hospitality facility
Open cast mine	Underground mine	Spoil heap or slimes dam ^A	Quarry, sand or borrow pit	Dam or reservoir
Hospital/medical center	School	Tertiary education facility	Church	Old age home
Sewage treatment plant ^A	Train station or shunting yard ^N	Railway line ^N	Major road (4 lanes or more) ^N	Airport ^N
Harbour	Sport facilities	Golf course	Polo fields	Filling station ^H
Landfill or waste treatment site ^A	Plantation	Agriculture	River, stream or wetland	Nature conservation area
Mountain, koppie or ridge	Museum	Historical building	Graveyard	Archeological site
Other land uses (describe):	_____			

If any of the boxes marked with an ^{"N"} are ticked, please consult an appropriate noise specialist to assist in the completion of this section.

Has a specialist been consulted? YES NO

If YES, please complete the following:

Name of the specialist: _____
 Qualification(s) of the specialist: _____
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: _____
 E-mail: _____ Fax: _____

Will the ambient noise level have a negative impact on the proposed activity? YES NO

If YES, specify and explain: _____

Are any further specialist studies recommended by the specialist? YES NO

If YES, specify: _____

If YES, is such a report(s) attached? YES NO

Signature of specialist: _____ Date: _____

If any of the boxes marked with an ^{"An"} are ticked, please consult an appropriate air quality specialist to assist in the completion of this section.

Has a specialist been consulted? YES NO

If YES, please complete the following:

Name of the specialist: _____
 Qualification(s) of the specialist: _____
 Postal address: _____
 Postal code: _____

BASIC ASSESSMENT REPORT

Telephone: Cell:
 E-mail: Fax:
 Will the ambient air pollution level have a negative impact on the proposed activity?

YES	NO
-----	----

 If YES, specify and explain:
 Are any further specialist studies recommended by the specialist?

YES	NO
-----	----

 If YES, specify:
 If YES, is such a report(s) attached?

YES	NO
-----	----

 Signature of specialist: _____ Date: _____

If any of the boxes marked with an ^{“H”} are ticked, please consult an appropriate health assessment specialist to assist in the completion of this section.
 Has a specialist been consulted?

YES	NO
-----	----

If YES, please complete the following:
 Name of the specialist:
 Qualification(s) of the specialist:
 Postal address:
 Postal code:
 Telephone: Cell:
 E-mail: Fax:
 Will the surrounding land use pose any unacceptable health risk on the proposed activity?

YES	NO
-----	----

 If YES, specify and explain:
 Are any further specialist studies recommended by the specialist?

YES	NO
-----	----

 If YES, specify:
 If YES, is such a report(s) attached?

YES	NO
-----	----

Signature of specialist: _____ Date: _____

Alternative S3:

Natural area	Low density residential	Medium density residential	High density residential	Informal residential ^A
Retail	Commercial & warehousing	Light industrial	Medium industrial ^{AN}	Heavy industrial ^{AN}
Power station ^A	Office/consulting room	Military or police base/station/compound	Casino/entertainment complex	Hospitality facility
Open cast mine	Underground mine	Spoil heap or slimes dam ^A	Quarry, sand or borrow pit	Dam or reservoir
Hospital/medical center	School	Tertiary education facility	Church	Old age home
Sewage treatment plant ^A	Train station or shunting yard ^N	Railway line ^N	Major road (4 lanes or more) ^N	Airport ^N
Harbour	Sport facilities	Golf course	Polo fields	Filling station ^H
Landfill or waste treatment site ^A	Plantation	Agriculture	River, stream or wetland	Nature conservation area
Mountain, koppie or ridge	Museum	Historical building	Graveyard	Archeological site
Other land uses (describe):				

If any of the boxes marked with an ^{“N”} are ticked, please consult an appropriate noise specialist to assist in the completion of this section.
 Has a specialist been consulted?

YES	NO
-----	----

If YES, please complete the following:
 Name of the specialist:
 Qualification(s) of the specialist:
 Postal address:
 Postal code:
 Telephone: Cell:
 E-mail: Fax:

BASIC ASSESSMENT REPORT

Will the ambient noise level have a negative impact on the proposed activity?	YES	NO
---	-----	----

If YES, specify and explain:

Are any further specialist studies recommended by the specialist?	YES	NO
---	-----	----

If YES, specify:

If YES, is such a report(s) attached?	YES	NO
---------------------------------------	-----	----

Signature of specialist: Date:

If any of the boxes marked with an ^{“A”} are ticked, please consult an appropriate air quality specialist to assist in the completion of this section.

Has a specialist been consulted?	YES	NO
----------------------------------	-----	----

If YES, please complete the following:

Name of the specialist:	<input style="width: 500px; height: 20px;" type="text"/>		
Qualification(s) of the specialist:	<input style="width: 500px; height: 20px;" type="text"/>		
Postal address:	<input style="width: 500px; height: 20px;" type="text"/>		
Postal code:	<input style="width: 500px; height: 20px;" type="text"/>		
Telephone:	<input style="width: 180px; height: 20px;" type="text"/>	Cell:	<input style="width: 150px; height: 20px;" type="text"/>
E-mail:	<input style="width: 180px; height: 20px;" type="text"/>	Fax:	<input style="width: 150px; height: 20px;" type="text"/>

Will the ambient air pollution level have a negative impact on the proposed activity?	YES	NO
---	-----	----

If YES, specify and explain:

Are any further specialist studies recommended by the specialist?	YES	NO
---	-----	----

If YES, specify:

If YES, is such a report(s) attached?	YES	NO
---------------------------------------	-----	----

Signature of specialist: Date:

If any of the boxes marked with an ^{“H”} are ticked, please consult an appropriate health assessment specialist to assist in the completion of this section.

Has a specialist been consulted?	YES	NO
----------------------------------	-----	----

If YES, please complete the following:

Name of the specialist:	<input style="width: 500px; height: 20px;" type="text"/>		
Qualification(s) of the specialist:	<input style="width: 500px; height: 20px;" type="text"/>		
Postal address:	<input style="width: 500px; height: 20px;" type="text"/>		
Postal code:	<input style="width: 500px; height: 20px;" type="text"/>		
Telephone:	<input style="width: 180px; height: 20px;" type="text"/>	Cell:	<input style="width: 150px; height: 20px;" type="text"/>
E-mail:	<input style="width: 180px; height: 20px;" type="text"/>	Fax:	<input style="width: 150px; height: 20px;" type="text"/>

Will the surrounding land use pose any unacceptable health risk on the proposed activity?	YES	NO
---	-----	----

If YES, specify and explain:

Are any further specialist studies recommended by the specialist?	YES	NO
---	-----	----

If YES, specify:

If YES, is such a report(s) attached?	YES	NO
---------------------------------------	-----	----

Signature of specialist: Date:

BASIC ASSESSMENT REPORT

6. CULTURAL/HISTORICAL FEATURES

Alternative S1

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	NO ✓
Uncertain		
If YES, explain: <div style="border: 1px solid black; height: 15px; width: 100%;"></div>		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist: <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
Will any building or structure older than 60 years be affected in any way?	YES	NO ✓
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO ✓
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.		

Alternative S2

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	NO
Uncertain		
If YES, explain: <div style="border: 1px solid black; height: 15px; width: 100%;"></div>		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist: <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 2 of 1999)?	YES	NO
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.		

Alternative S3

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	NO
Uncertain		
If YES, explain: <div style="border: 1px solid black; height: 15px; width: 100%;"></div>		
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist: <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		
Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.		

SECTION D: PUBLIC PARTICIPATION

Information regarding the following section can be found in Appendix E and G.

According to regulation 56 (5) of the EIA regulations (GNR 385) deviations from the process listed in this section may be acceptable if an application is for a linear based activity. Consultation has been held with the National Department of Environmental Affairs and Tourism and the following advertisement strategy was implemented:

- Placement of newspaper advertisement in the Sunday Times and Rapport Newspapers;
- Placement of newspaper advertisements in the relevant local newspapers;
- Placement of A2 size, laminated notices, at on and off ramps of the proposed upgrade (where feasible);
- Placement of A3 size notices at selected public venues along the proposed upgrade (e.g. libraries, police stations, shops, etc);
- Placement of A5 flyers and comment sheets in the post boxes of all relevant post offices;
- Letters of notification were sent to the relevant municipal ward councillors as well as any known rate payers or community based organisations;
- Letters of notification were sent to the relevant municipalities as well as any other obvious organs of state having jurisdiction, regarding the proposed activities; and
- Placement of a notification in the Provincial Government Gazette

Further a Background Information Document and Comment Sheet were made available to registered I&APs.

1. ADVERTISEMENT

The environmental assessment practitioner must follow any relevant guidelines adopted by the competent authority in respect of public participation and must at least –

- 1(a) Fix a notice in a conspicuous place, on the property where it is intended to undertake the activity which states that an application will be submitted to the competent authority in terms of these regulations and which provides information on the proposed nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations on the application may be made.
- 1(b) inform landowners and occupiers of adjacent land of the applicant's intention to submit an application to the competent authority
- 1(c) inform landowners and occupiers of land within 100 metres of the boundary of the property where it is proposed to undertake the activity and whom may be directly affected by the proposed activity of the applicant's intention to submit an application to the competent authority;
- 1(d) inform the ward councillor and any organisation that represents the community in the area of the applicant's intention to submit an application to the competent authority;
- 1(e) inform the municipality which has jurisdiction over the area in which the proposed activity will be undertaken of the applicant's intention to submit an application to the competent authority; and
- 1(f) inform any organ of state that may have jurisdiction over any aspect of the activity of the applicant's intention to submit an application to the competent authority; and
- 1(g) place a notice in one local newspaper and any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of these regulations.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

Advertisements and notices must indicate that an application will be submitted to the competent authority in terms of the EIA regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made;

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for site alternatives where appropriate.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

BASIC ASSESSMENT REPORT

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

6. LOCAL AUTHORITY PARTICIPATION

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

Has any comment been received from the local authority?

YES	NO ✓
-----	------

If "YES", briefly describe the feedback below (also attach any correspondence to and from the local authority to this application):

7. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES ✓	NO
-------	----

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Most of the issues received were related to traffic problems during construction. See attached Appendix E.

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2006, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the issues raised by interested and affected parties.

- Impacts on Rand Water servitudes traversing the freeway.
- Impact of the development on heritage resources
- Impacts on water resources
- Traffic impacts during construction
- Concerned that the upgrade will not be big enough/ Sufficient.
- Impacts on transmission powerlines.
- Possible extension of road reserve. Possible new interchange in our vicinity.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

Impacts	Response
Impacts on Rand Water servitudes traversing the proposed road	SANRAL is aware of all legal servitudes currently traversing the R21 and these will be taken into consideration during the detailed design phase to ensure that these are adequately accommodated.
Impact of the development on heritage resources	The freeway upgrades are to occur within the existing road reserve and thus impacts on heritage resources are not anticipated. During the site inspections no obvious signs of cultural and/or historical sensitive features of significance were identified. Should heritage resources be discovered during construction, work will cease immediately and notification made to suitably qualified relevant authorities, namely SAHRA..
Impacts on water resources.	Measures will be taken to minimize possible impacts that might arise as a result of construction activities. The proposed upgrades may impact on the Rietspruit and Sesmyspruit due to widening of the bridges. This impact has been assessed in this report and an application for relevant DWAF authorisation prepared.
Traffic impacts during construction	During the construction phase carefully planned traffic accommodation plans will be developed to manage traffic and construction works to minimise the impact of the construction works.
Concerned that the upgrade will not be big enough/ Sufficient.	The proposed upgrade is aimed on addressing the current traffic problems within Gauteng freeways and it is anticipated that the upgrade will improve the condition and allow for efficient use in future.
Impacts on transmission power-lines.	SANRAL is aware of all legal servitudes currently traversing the R21 and these will be taken into consideration during the detailed design phase to ensure that these are adequately addressed in cooperation with the relevant parties.
Possible extension of road reserve. Possible new interchange in our vicinity.	The proposed upgrade will be undertaken within the existing road reserve and currently there is no intention to create new intersections.

Impact Assessment Methodology

The assessment of impacts will largely be based on DEAT's (1998) Guideline Document: EIA Regulations. The assessment will consider impacts arising from the construction and operation phases of the proposed project both before and after the implementation of appropriate mitigation measures.

It is proposed that the impacts will be assessed according to the criteria outlined in this section. Each issue is ranked according to extent, duration, magnitude (intensity) and probability. From these criteria, a significance rating is obtained, the method and formula is described below. Where possible, mitigatory recommendations have been made and are presented in tabular form.

Status of Impact

The impacts are to be assessed as either having a:

- negative effect (i.e. at a 'cost' to the environment),
- positive effect (i.e. a 'benefit' to the environment), or
- neutral effect on the environment.

Extent of the Impact

- (1) Site (site only),
- (2) Local (site boundary and immediate surrounds),
- (3) Regional,
- (4) National, or
- (5) International.

Duration of the Impact

The length that the impact will last for is described as either:

- (1) immediate (<1 year)
- (2) short term (1-5 years),
- (3) medium term (5-15 years),
- (4) long term (ceases after the operational life span of the project),
- (5) permanent.

Magnitude of the Impact

The intensity or severity of the impacts is indicated as either:

- (0) none,
- (2) Minor,
- (4) Low,
- (6) Moderate (environmental functions altered but continue),
- (8) High (environmental functions temporarily cease), or
- (10) Very high / Unsure (environmental functions permanently cease).

Probability of Occurrence

The likelihood of the impact actually occurring is indicated as either:

- (0) None (the impact will not occur),
- (1) improbable (probability very low due to design or experience)
- (2) low probability (unlikely to occur),
- (3) medium probability (distinct probability that the impact will occur),
- (4) high probability (most likely to occur), or
- (5) definite / don't know.

Significance of the Impact

Based on the information contained in the points above, the potential impacts are assigned a significance rating (**S**). This rating is formulated by adding the sum of the numbers assigned to extent (**E**), duration (**D**) and magnitude (**M**) and multiplying this sum by the probability (**P**) of the impact.

$$S=(E+D+M)P$$

The significance ratings are given below:

- (<30) low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- (30-60) medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- (>60) high (i.e. where the impact must have an influence on the decision process to develop in the area).

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN PHASE

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, including impacts relating to the choice of site alternatives.

Alternative S1 (preferred alternative)

The proposed upgrade will take place on an existing freeway, and therefore no impacts from the planning and design phase are expected for the proposed site

Direct impacts:

No direct impact are expected from the planning and design phase of the activity

Indirect impacts:

No direct impact are expected from the planning and design phase of the activity

Cumulative impacts:

No direct impact are expected from the planning and design phase of the activity

Alternative S2

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative S3

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absence of ITS.

Indirect impacts:

Not Applicable

Cumulative impacts:

Not Applicable

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1	Alternative S2	Alternative S3
No impacts are expected during planning and design phase of the activity.		

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase:

Alternative A1 (preferred alternative).

Direct impacts:

Job creation and investment into the project result in opportunities during the planning and design phase. This impact will typically only be limited to skilled engineers and planning professionals.

It is anticipated that the whole Gauteng freeway upgrading project will contribute to the creation of approximately 29 369 direct employment and a further 138 929 indirect employment opportunities.

Rating criteria	Job Creation
------------------------	---------------------

BASIC ASSESSMENT REPORT

	Nature / Extent	Not Applicable	Local (2)
	Duration	Not Applicable	Short term (2)
	Intensity/ Magnitude	Not Applicable	Low (4)
	Probability	Not Applicable	High Probability (4)
	Significance	Not Applicable	Medium (36)
	Status	Not Applicable	Positive
	Corrective Actions	<ul style="list-style-type: none"> no corrective measures recommended. 	

Indirect impacts:
Not Applicable

Cumulative impacts:
Not Applicable

Alternative A2 (Preferred Alternative)

Direct impacts:

Indirect impacts:

Cumulative impacts:

Indirect impacts:

Cumulative impacts:

Alternative A3

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absences of ITS.

Indirect impacts:

Not Applicable

Cumulative impacts:

Not Applicable

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1:

Alternative A2:

Alternative A3:

--	--	--

3. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION PHASE

BASIC ASSESSMENT REPORT

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

Alternative S1 (preferred alternative)

Direct impacts:
 There are no site related impacts to be expected during the construction phase which would only be dependant on this specific locality. Most of the impacts that are identified and which may arise during construction will be directly related to the proposed activity itself.

Indirect impacts:
 Not Applicable

Cumulative impacts:
 Not Applicable

Alternative S2

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative S3

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:
 None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absences of ITS.

Indirect impacts:
 Not Applicable

Cumulative impacts:
 Not applicable

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1	Alternative S2	Alternative S3
<ul style="list-style-type: none"> • No site related impacts are expected to occur during construction phase. 		

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the construction phase:

Alternative A1 (proposed Activity)

Direct impacts:
 The following impacts have been identified during the construction phase of the proposed improvement. With mitigation measures in place the impacts can be reduced to a minimum during construction phase of the activity.

Surface Water Pollution

During Construction there is a risk that construction materials may pollute the surface and/or ground water on the site. Substances such as cement residue is especially important and must be adequately controlled. In addition exposed surfaces during construction would provide a source of sediments to be taken up by stormwater resulting in downstream sedimentation of the water resources.

Rating criteria	Impacts on Surface and Ground Water Quality	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Local (2)	Regional (3)

BASIC ASSESSMENT REPORT

Duration	Short term (2)	Short term (2)
Intensity/ Magnitude	Minor (2)	Moderate (6)
Probability	Improbable (1)	Medium probability (3)
Significance	Low (6)	Medium (33)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> Concrete and/or cement must not be mixed directly on the ground but must be mixed off-site or on a mortar board. Visible remains of concrete as a result of construction must be physically removed and disposed of as building wastes. 	

Impacts of Noise Generated on Site

Noise will be generated during the construction phase. Some of the activities which could constitute a noise nuisance during construction are power tools, driving, loading and off loading, vehicle hooters and reverse sirens. This impact is specifically important in this development because of the proximity to the neighboring residential properties.

Rating criteria	Impact of Noise	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Local (2)	Local (2)
Duration	Immediate (1)	Short term (2)
Intensity/ Magnitude	Low (4)	Moderate (6)
Probability	Medium probability (3)	Highly probable (4)
Significance	Low (21)	Medium (40)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> All reasonable precautions must be taken to minimize noise generated on site. Construction vehicles must be kept in good working order so as not to generate excessive noise. The contractor may not use sound amplification equipment on site. Activities which will lead to excessive noise near residential areas, should be limited to take place during the day. 	

Impact on Traffic

Traffic may be generated during the improvement of the freeway, These impacts would include the delivery of construction supplies, staff and equipment. This impact would of short duration as it would be restricted to the improvement period. After the proposed improvement the traffic flow will be generally improved.

Rating criteria	Impact on Traffic	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Local (2)	Local (2)
Duration	Short term (1)	Short term (1)
Intensity	Low (2)	Low (4)
Probability	Medium probability (3)	High probability (4)

BASIC ASSESSMENT REPORT

Significance	Low (15)	Low (28)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> Schedule the construction process to limit obstruction to traffic flows during peak traffic hours. Provide feedback to road users using ITS. 	

Employment creation during construction period.

Rating criteria	Employment creation during construction period	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Regional (3)	National (4)
Duration	Short (2)	Short term(2)
Intensity/ Magnitude	Minor (4)	Low (4)
Probability	High probability (4)	Medium probability (3)
Significance	Moderate (36)	Moderate (30)
Status	Positive	Positive
Corrective Actions	<ul style="list-style-type: none"> No corrective measures recommended 	

Impact on river banks

Bridge widening will take place at the section crossing the river. It is anticipated that if this activity were to take place within the river bank area a negative impact may be expected..

Rating criteria	Impact on river banks	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Local (2)
Duration	Short (2)	Permanent (5)
Intensity/ Magnitude	Moderate (6)	High (8)
Probability	Medium probability (3)	High probability (4)
Significance	Low (27)	Moderate (60)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> Re-enforce river banks with gabions where applicable to prevent instability of the river banks. Rehabilitate after construction. Restrict disturbance to riparian areas to as close as practically possible to the proposed bridge expansion footprint. Areas outside of the footprint and reasonable construction access to be marked as no-go areas. 	

BASIC ASSESSMENT REPORT

Indirect impacts:

Soils erosion

Soil erosion may occur during the construction phase. This impact is however expected to be limited due to the nature of the proposed activity. Provided that adequate soil erosion measures are implemented in the construction phase of the development this impact can be deemed to have a low significance

Rating criteria	Potential erosion problems	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Local (2)
Duration	Short term (2)	Long term (4)
Intensity/ Magnitude	Minor (2)	Moderate (6)
Probability	Improbable (1)	High probability (4)
Significance	Low (5)	Medium (48)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> • During construction adequate dust suppression techniques must be implemented including but not limited to: regular wetting of exposed soil and stockpiles; use of dust retardant sprays; and where applicable covering of soil stockpiles. • On completion of the construction all exposed soil must be revegetated, preferably with indigenous vegetation. • Implementation of erosion control measures were applicable 	

Impact of Construction Camp

Construction camps might further contribute to possible indirect impacts due to the possible fuel spillage, and erosion due to various activities and movements of construction vehicles. Spillage may lead to contamination of soil and adjacent water bodies.

Rating criteria	Impact of Construction Camps	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site(1)	Local (2)
Duration	Short term (2)	Long term (4)
Intensity/ Magnitude	Moderate (6))	High (8)
Probability	Low probability (2)	Medium probability (3)
Significance	Low (18)	Medium (51)
Status	Negative	Negative

BASIC ASSESSMENT REPORT

Corrective Actions	<ul style="list-style-type: none"> • Maintenance done on construction vehicles must be done in such a manner to prevent spillage of fuel and oils. • After the completion of construction, any possible soil compaction and spillage of substances within the construction camp must be rehabilitated. • No construction workers are permitted to be accommodated over night on the site or in the site construction camp except for skeleton security personnel. • Maintain construction vehicles. • Construction camp should be erected where it will have the least environmental impacts. • Appointment of an ECO
--------------------	---

Dumping of Asphalt material and other construction waste

During the construction phase it is possible, however highly unlikely that unanticipated scheduling delays may result in the emergency dumping of asphalt during transportation. This is primarily to prevent hardening of the asphalt inside the transport vehicles.

Rating criteria	Dumping of Asphalt material and other construction waste	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site(1)	Local (1)
Duration	Immediate (1)	Long term (4)
Intensity/ Magnitude	Low (4))	Moderate (6)
Probability	Low probability (2)	Medium probability (3)
Significance	Low (12)	Medium (33)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> • Ensure efficient scheduling for the delivery of asphalt • SANRAL (or appointed contractors) must immediately arrange to collect and suitably dispose of dumped asphalt. • Areas where dumping occurs need to be rehabilitated to their original (pre-dumping) conditions. 	

Impact on Borrow pits

It might be necessary to obtain additional fill material from borrow pits, and should be obtained from existing borrow pits to reduce the impacts that the creation of new borrow pits will have on the environment. SANRAL is also investigating the possibility of utilising fill material found in road reserve as part of the cut-to-fill road-building process.

Rating criteria	Impacts of borrow pits	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Local (2)	Regional (3)
Duration	Short term (2)	Long term (4)
Intensity/ Magnitude	Low (4)	Moderate (6)
Probability	Medium probability (3)	High probability (4)
Significance	Low (24)	Medium (52)
Status	Negative	Negative

BASIC ASSESSMENT REPORT

Corrective Actions	<ul style="list-style-type: none"> Use construction waste as fill material where possible Obtain fill material from road reserve to minimize the impact of creating new borrow pits. 																										
<p>Cumulative impacts:</p> <p>Impact of removal of riparian vegetation</p> <p>Removal of riparian vegetation to facilitate construction could contribute to erosion of road verges, resulting in increased sediment loads to nearby watercourses. It is therefore recommended that the removal of riparian vegetation be reduced where possible and to follow the recommended mitigations to reduce the impact which removing this vegetation might have.</p>																											
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2" style="width: 25%;">Rating criteria</th> <th colspan="2" style="text-align: center;">Impact of removal of riparian vegetation</th> </tr> <tr> <th style="width: 35%;">With Corrective Actions</th> <th style="width: 35%;">Without Corrective Actions</th> </tr> </thead> <tbody> <tr> <td>Nature / Extent</td> <td style="text-align: center;">Site(1)</td> <td style="text-align: center;">Local (1)</td> </tr> <tr> <td>Duration</td> <td style="text-align: center;">Immediate (1)</td> <td style="text-align: center;">Short term (2)</td> </tr> <tr> <td>Intensity/ Magnitude</td> <td style="text-align: center;">Low (4)</td> <td style="text-align: center;">Moderate (6)</td> </tr> <tr> <td>Probability</td> <td style="text-align: center;">Medium probability (3)</td> <td style="text-align: center;">Medium probability (3)</td> </tr> <tr> <td>Significance</td> <td style="text-align: center;">Low (18)</td> <td style="text-align: center;">Medium (27)</td> </tr> <tr> <td>Status</td> <td style="text-align: center;">Negative</td> <td style="text-align: center;">Negative</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Corrective Actions</td> <td colspan="2"> <ul style="list-style-type: none"> Erosion control measures should be implemented Re-vegetate and rehabilitate after construction Where possible limit the removal of riparian vegetation. </td> </tr> </tbody> </table>		Rating criteria	Impact of removal of riparian vegetation		With Corrective Actions	Without Corrective Actions	Nature / Extent	Site(1)	Local (1)	Duration	Immediate (1)	Short term (2)	Intensity/ Magnitude	Low (4)	Moderate (6)	Probability	Medium probability (3)	Medium probability (3)	Significance	Low (18)	Medium (27)	Status	Negative	Negative	Corrective Actions	<ul style="list-style-type: none"> Erosion control measures should be implemented Re-vegetate and rehabilitate after construction Where possible limit the removal of riparian vegetation. 	
Rating criteria	Impact of removal of riparian vegetation																										
	With Corrective Actions	Without Corrective Actions																									
Nature / Extent	Site(1)	Local (1)																									
Duration	Immediate (1)	Short term (2)																									
Intensity/ Magnitude	Low (4)	Moderate (6)																									
Probability	Medium probability (3)	Medium probability (3)																									
Significance	Low (18)	Medium (27)																									
Status	Negative	Negative																									
Corrective Actions	<ul style="list-style-type: none"> Erosion control measures should be implemented Re-vegetate and rehabilitate after construction Where possible limit the removal of riparian vegetation. 																										

Alternative A2

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative A3

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:

None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absences of ITS.

Indirect impacts:

Not Applicable

BASIC ASSESSMENT REPORT

Cumulative impacts:

Not Applicable

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1:

Alternative A2:

No-go Alternative :

<ul style="list-style-type: none"> • Concrete and/or cement must not be mixed directly on the ground but must be mixed off-site or on a mortar board. • Visible remains of concrete as a result of construction must be physically removed and disposed of as building wastes. • All reasonable precautions must be taken to minimize noise generated on site. • Construction vehicles must be kept in good working order so as not to generate excessive noise. • The contractor may not use sound amplification equipment on site. • Activities which will lead to excessive noise near residential areas, should be limited to take place during the day. • Schedule the construction process to limit obstruction to traffic flows during peak traffic hours. • Provide feedback to road users using ITS. • Re-enforce river banks with gabions where applicable to prevent instability of the river banks. • Rehabilitate after construction. • Restrict disturbance to riparian areas to as close as practically possible to the proposed bridge expansion footprint. Areas outside of the footprint and reasonable construction access to be marked as no-go areas. • During construction adequate dust suppression techniques must be implemented including but not limited to: regular wetting of exposed soil and stockpiles; use of dust retardant sprays; and where applicable covering of soil stockpiles. • On completion of the construction all exposed soil must be revegetated, preferably with indigenous vegetation. • Implementation of erosion control measures were applicable • Maintenance done on construction vehicles must be done in such a manner to prevent spillage of fuel and oils. • After the completion of construction, any possible soil compaction and spillage of substances within the construction camp must be rehabilitated. • No construction workers are 		
--	--	--

<p>permitted to be accommodated over night on the site or in the site construction camp except for skeleton security personnel.</p> <ul style="list-style-type: none"> • Maintain construction vehicles. • Construction camp should be erected where it will have the least environmental impacts. • Appointment of an ECO • Ensure efficient scheduling for the delivery of asphalt • SANRAL (or appointed contractors) must immediately arrange to collect and suitably dispose of dumped asphalt. • Areas where dumping occurs need to be rehabilitated to their original (pre-dumping) conditions. • Use construction waste as fill material where possible • Obtain fill material from road reserve to minimize the impact of creating new borrow pits. • Erosion control measures should be implemented • Re-vegetate and rehabilitate after construction • Where possible limit the removal of riparian vegetation. 		
---	--	--

4. IMPACTS THAT MAY RESULT FROM THE OPERATIONAL PHASE

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the operational phase:

Alternative S1 (proposed site)

<p>Direct impacts: There are no site related impacts to be expected during the operation phase which would only be dependant on this specific locality. Most of the impacts that are identified and which may arise during operation will be directly related to the proposed activity itself.</p> <p>Indirect impacts: Not Applicable</p> <p>Cumulative impacts: Not Applicable</p>

Alternative S2

<p>Direct impacts:</p> <p>Indirect impacts:</p> <p>Cumulative impacts:</p>

Alternative S3

<p>Direct impacts:</p> <p>Indirect impacts:</p> <p>Cumulative impacts:</p>

No-go alternative (compulsory)

<p>Direct impacts: None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absences of ITS.</p> <p>Indirect impacts:</p>

BASIC ASSESSMENT REPORT

Not Applicable

Cumulative impacts:
Not Applicable

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1 (proposed site) Alternative S2 (preferred site alternative) Alternative S3

- No site related impacts are expected to occur during operation phase.

Alternative A1 (proposed activity).

Direct impacts:

Visual Impact

The installation of lights and ITS will have a slight change on the visual character of the site. It is anticipated that the impacts of camera and light poles will not be significant due to the fact that there are already existing lights and other infrastructure within close proximity to the freeway.

Rating criteria	Visual Impact	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Local (2)
Duration	Immediate (1)	Immediate (3)
Intensity/ Magnitude	Minor (4)	Low (6)
Probability	improbable (1)	Medium probability (3)
Significance	Low (21)	Medium(33)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> Non sensitive colours should be used when painting lights and camera pole structures. 	

Carrying capacity of the road

The increase in carrying capacity of the road after the improvement will improve the current traffic problem and allow free flow of vehicles in future thereby contributing to efficient utilization of the road in general. This can be considered as the positive impact of the proposed improvement.

Rating criteria	Impact of increased road capacity	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Regional (3)	Local (2)
Duration	Long Term (4)	Short term (2)
Intensity/ Magnitude	High (8)	Moderate (6)
Probability	High probability (4)	Medium probable (3)
Significance	Medium (60)	Medium (30)
Status	Negative	Negative

BASIC ASSESSMENT REPORT

Corrective Actions	<ul style="list-style-type: none"> Ensure that ITS function at all times to promote efficient utilization of the road.
--------------------	---

Pedestrian Bridges

Construction of new pedestrian bridges at the Engen garage and northern end of O.R Thambo Airport will positively contribute on improving pedestrian safety.

Rating criteria	Construction of Pedestrian bridge	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Not Applicable	Local (2)
Duration	Not Applicable	Long term (4)
Intensity/ Magnitude	Not Applicable	High (8)
Probability	Not Applicable	Definite (5)
Significance	Not Applicable	Medium (30)
Status	Not Applicable	Positive
Corrective Actions	<ul style="list-style-type: none"> No corrective measures recommended. 	

Impacts of bridge demolition

During demolition wastes must be separated at source and disposed at relevant suitably licensed facilities. Waste should be separated into recyclable and non-recyclable materials and distributed for recycling where applicable. The re-use of construction waste materials will minimize the amount of waste that will need to be disposed of at registered municipal waste facilities. Only inert, non-hazardous construction material will be re-used..

Rating criteria	Impact of bridge demolition	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Site (1)
Duration	Immediate (1)	Short term (2)
Intensity/ Magnitude	Minor (2)	Low (4)
Probability	Low probability (2)	Medium probability (3)
Significance	Low (8)	Low (21)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> Wastes must be separated at source and disposed at relevant suitably licensed facilities. Waste should be separated into recyclable and non-recyclable materials and distributed for recycling where applicable 	

Instability due to dolomite

Majority of the northern half of the route is underlain by dolomite and chert which forms a NW-SE trending band which dips in under the younger Pretoria Group sediments to the north-east. Normal precautions and measures regarding dolomite need to be undertaken throughout those section in order to avoid possible impacts of dolomite.

Rating criteria	Impacts of dolomite
-----------------	---------------------

BASIC ASSESSMENT REPORT

	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Site (1)
Duration	Short term (2)	Permanent(5)
Intensity/ Magnitude	Minor (2)	Low (4)
Probability	Improbable (1)	Medium probability (3)
Significance	Low (5)	Medium (33)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> The engineers will investigate the dolomitic conditions in details and design the road structures accurately. 	

Indirect impacts:

Surface water run-off contamination

An increase in traffic will contribute to an increase in contamination of roadside soils due to particulates from tyres, brake and road wear, petrochemical products leaking from vehicles. The impacts which these objects might have on the surrounding environments can be mitigated by implementing the corrective measures.

Rating criteria	Surface water run-off contamination	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Site (1)
Duration	Short Term (2)	Short term (2)
Intensity/ Magnitude	Low (4)	Low (4)
Probability	Medium probability (21)	Medium probable (3)
Significance	Low (21)	Low (21)
Status	Neutral	Neutral
Corrective Actions	<ul style="list-style-type: none"> If excessive spillage of oil and fuel etc. should occur due to accidents, it should be cleaned-up immediately. ITS should be used to notify relevant parties of accidents. Regular monitoring and maintenance of the road to ensure that foreign items are collected and suitably disposed of e.g. collection and disposal of spent retreads and other debris. 	

Cumulative impacts:

Noise Pollution

An increase in noise can be expected during the operational phase due to the increase in carrying capacity of the proposed freeway. It is anticipated that the proposed improvement will not significantly increase the cumulative noise impact associated with the current freeway.

Rating criteria	Impact of Noise	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Local (2)
Duration	Short Term (2)	Short term (2)
Intensity/ Magnitude	Low (4)	Low (6)

BASIC ASSESSMENT REPORT

Probability	Medium probability (3)	Medium probable (3)
Significance	Low (21)	Medium (30)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> All reasonable precautions must be taken to minimize noise generated on site. Construction vehicles must be kept in good working order so as not to generate excessive noise. The contractor may not use sound amplification equipment on site. Activities which will lead to excessive noise near residential areas, should be limited to take place during the day. 	

Light Pollution

The installation of lights will positively contribute much in enhancing our night-time environment but, if not properly controlled, light pollution can present physiological and ecological impacts.

Rating criteria	Light Pollution	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site(1)	Local (2)
Duration	Long term (4)	Long term (4)
Intensity/ Magnitude	Minor (2)	Moderate (6)
Probability	Medium probability (3)	High probability (4)
Significance	Low (21)	Medium (44)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> Use of specifically designed lighting equipment that minimizes the upward spread of light near to and above the horizontal, (i.e. use of full cut off lighting fixture). 	

Energy Requirements

By adding additional lighting, the electrical need for the proposed activity will increase. This can be mitigated by using energy efficient lighting.

Rating criteria	Energy Requirements	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Local (2)	National (4)
Duration	Long term (4)	Long term (4)
Intensity/ Magnitude	High (8)	Moderate (6)
Probability	High probability (4)	High probability (4)
Significance	Medium (56)	Medium (56)
Status	Negative	Negative

BASIC ASSESSMENT REPORT

Corrective Actions	<ul style="list-style-type: none"> Use energy efficient lights such as sodium vapour or compact florescent bulbs and incorporating other energy efficiency concepts such as use of reduced luminaries.
--------------------	---

Alternative A2
Direct impacts:
Indirect impacts:
Cumulative impacts:

Alternative A3
Direct impacts:
Indirect impacts:
Cumulative impacts:

No-go alternative (compulsory)

Direct impacts:
None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absences of ITS.

Indirect impacts:
Economic Growth
An indirect impact which can be associated with the no-go alternative is that there will be a lower economic growth potential for Gauteng due to time and cost of traffic congestion.

Rating criteria	Economical Growth	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Not Applicable	Local (2)
Duration	Not Applicable	Long term (4)
Intensity/ Magnitude	Not Applicable	High (8)
Probability	Not Applicable	Definite (5)
Significance	Not Applicable	High (70)
Status	Not Applicable	Negative
Corrective Actions	<ul style="list-style-type: none"> No corrective measures recommended. 	

Cumulative impacts:
Not Applicable

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:
Alternative A1 (proposed activity) **Alternative A2 (preferred alternative)** **Alternative A3 preferred**

<ul style="list-style-type: none"> • Non sensitive colours should be used when painting lights and camera pole structures. • Ensure that ITS function at all times to promote efficient utilization of the road • Wastes must be separated at source and disposed at relevant suitably licensed facilities. • Waste should be separated into recyclable and non-recyclable materials and distributed for recycling where applicable. • The engineers will investigate the dolomitic conditions in details and design the road structures accurately. • If excessive spillage of oil and fuel etc. should occur due to accidents, it should be cleaned-up immediately. • ITS should be used to notify relevant parties of accidents. • Regular monitoring and maintenance of the road to ensure that foreign items are collected and suitably disposed of e.g. collection and disposal of spent retreads and other debris • All reasonable precautions must be taken to minimize noise generated on site. • Construction vehicles must be kept in good working order so as not to generate excessive noise. • The contractor may not use sound amplification equipment on site. • Activities which will lead to excessive noise near residential areas, should be limited to take place during the day. • Use of specifically designed lighting equipment that minimizes the upward spread of light near to and above the horizontal, (i.e. use of full cut off lighting fixture). • Use energy efficient lights such as sodium vapour or compact florescent bulbs and incorporating other energy efficiency concepts such as use of reduced luminaries. 		
---	--	--

5. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

At present it is not anticipated that the Freeway will ever be decommissioned in its entirety. Ongoing maintenance and upgrades, where necessary, will be carried out. In the unlikely event that decommissioning is necessary it is recommended that a detailed decommissioning strategy and rehabilitation plan is prepared and implemented.

List the potential site alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning or closure phase:

Alternative S1 (proposed site)

BASIC ASSESSMENT REPORT

Direct impacts:

Indirect impacts:
Not applicable

Cumulative impacts:
Not applicable

Alternative S2

Direct impacts:

Indirect impacts:

Cumulative impacts:

Alternative S3

Direct impacts:

Indirect impacts:

Cumulative impacts:

No-go alternative (compulsory)

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative S1 (proposed site) Alternative S2 (preferred site alternative) Alternative S3

<ul style="list-style-type: none"> No site related impacts are expected to occur during decommissioning phase. 		
---	--	--

List the potential activity/technology alternative related impacts (as appropriate) that are likely to occur as a result of the decommissioning and closure phase:

Alternative A1 (proposed activity)

Direct impacts:

There is at present no intention or indication of future intentions, to decommission the freeway and associated infrastructure (including the lighting and ITS). Should the lighting and ITS be decommissioned then impacts resulting from such may include removal and disposal of decommissioned electronic equipment and wastes.

Impact of dust pollution

Dust pollution may occur during the decommissioning phase of the freeway. The potential impact of dust during decommissioning will be insignificant due to the nature of the activity. Vehicle exhaust emission can be considered another source of air pollution, but in this case such impact will be minimal. Provided that adequate measures are implemented in the decommissioning phase of the development this impact can be deemed to have a low significance. These measures include adequate dust suppression techniques, regular wetting of exposed soil and use of dust retardant sprays.

Rating criteria	Impact of dust pollution	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Site (1)	Local (2)
Duration	Short term (1)	Short term (2)
Intensity/ Magnitude	Minor (2)	Low (4)
Probability	Improbable (2)	Low probability (4)
Significance	Low (8)	Medium (36)
Status	Negative	Negative

BASIC ASSESSMENT REPORT

Corrective Actions	<ul style="list-style-type: none"> During decommissioning phase adequate dust suppression techniques must be implemented including but not limited to: regular wetting of exposed soil and stockpiles; use of dust retardant sprays; and where applicable covering of soil stockpiles. After decommissioning exposed soil must be revegetated, preferably with indigenous vegetation.
--------------------	---

Impacts of waste materials

During decommissioning waste material from light and CCV camera structures will be insignificant. It is recommended that waste materials from decommissioning be disposed of at a registered waste disposal site. Non hazardous material should be recycled and utilised in other construction processes.

Rating criteria	Waste Materials	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Regional (3)	Regional (3)
Duration	Short Term (2)	Long term (4)
Intensity/ Magnitude	Moderate (6)	High (8)
Probability	Medium probability (3)	High probable (4)
Significance	Medium (33)	Medium (60)
Status	Negative	Negative
Corrective Actions	<ul style="list-style-type: none"> Disposal of waste at a registered waste disposal site. Non-hazardous material should be recycled and utilised in other construction processes. An appropriate rehabilitation plan should be in place. Only indigenous vegetation should be utilised during rehabilitation. Rehabilitation success should be monitored 	

Job losses

Continues maintenance of the freeway will contribute to employment opportunities for the operational life span of the freeway. If the freeway was to be decommissioned, it will contribute to job losses.

Rating criteria	Job losses	
	With Corrective Actions	Without Corrective Actions
Nature / Extent	Regional (3)	Regional (3)
Duration	Long Term (4)	Long term (4)
Intensity/ Magnitude	High (8)	High (8)
Probability	Medium probability (3)	Medium probable (3)
Significance	Medium (45)	Medium (45)
Status	Negative	Negative

BASIC ASSESSMENT REPORT

Corrective Actions	<ul style="list-style-type: none"> Alternative skills development, such as rehabilitation of the decommissioned freeway site
<p>Indirect impacts: Not applicable</p> <p>Cumulative impacts: Not applicable</p>	

<p>Alternative A2</p> <p>Direct impacts:</p> <p>Indirect impacts:</p> <p>Cumulative impacts:</p>
--

<p>Alternative A3</p> <p>Direct impacts:</p> <p>Indirect impacts:</p> <p>Cumulative impacts:</p>
--

<p>No-go alternative (compulsory)</p> <p>Direct impacts: None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absences of ITS.</p> <p>Indirect impacts: Not Applicable</p> <p>Cumulative impacts: Not Applicable</p>
--

Indicate mitigation measures that may eliminate or reduce the potential impacts listed above:

Alternative A1 (proposed activity)	Alternative A2 (preferred alternative)	Alternative A3 (preferred alternative)
<ul style="list-style-type: none"> During decommissioning phase adequate dust suppression techniques must be implemented including but not limited to: regular wetting of exposed soil and stockpiles; use of dust retardant sprays; and where applicable covering of soil stockpiles. After decommissioning exposed soil must be revegetated, preferably with indigenous vegetation. Disposal of waste at a registered waste disposal site. Non-hazardous material should be recycled and utilised in other construction processes. An appropriate rehabilitation plan should be in place. Only indigenous vegetation should be utilised during rehabilitation. Rehabilitation success should 		

BASIC ASSESSMENT REPORT

be monitored <ul style="list-style-type: none"> Alternative skills development, such as rehabilitation of the decommissioned freeway site 		
---	--	--

6. PROPOSED MANAGEMENT OF IMPACTS AND MITIGATION

Indicate how identified impacts and mitigation will be monitored and/or audited.

Alternative S1	Alternative S2	Alternative S3
<ul style="list-style-type: none"> Monitoring with regard to the site related impacts is not necessary because no impacts were identified during all phases of the proposed improvement.. 		

Alternative A1	Alternative A2	Alternative A3
<ul style="list-style-type: none"> An Environmental Control Officer should be appointed to ensure implementation of mitigation measures. All ITS systems should be in working order. 		

7. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative S1 (Proposed Site) and Alternative A1 (Proposed Activity)

All negative impacts identified for this proposed upgrade can be mitigated provided the proposed mitigation measures are correctly implemented.

PLANNING AND DESIGN PHASE

No significant impacts have been identified for the Alternative S1 (Proposed Site) and Alternative A (Proposed Activity) during design and planning phase except job creation which is positive without mitigation measures.

CONSTRUCTION PHASE

During construction phase various impacts were identified for Alternative A1 (Proposed Activity). These include Soil erosion, surface and ground water pollution, noise pollution, traffic impact, removal of riparian vegetation, impacts of borrow pits, construction camp, impacts on river banks, construction waste and employment creation. Majority of the impacts identified under construction phase were **MEDIUM IN SIGNIFICANCE** before mitigation measures except employment creation which is positive by itself before any mitigation measure. With mitigation measures in place all the identified impacts can be minimize into **LOW LEVEL OF SIGNIFICANCE**. No site (Alternative S1) related impacts were identified during construction phase of the proposed improvement.

OPERATION PHASE

Visual impacts from new pole structures to be installed for cameras and lights, light pollution, noise pollution, bridge demolition, surface water run-off, energy consumption, impacts of dolomite, construction of pedestrian bridge and impact of increased capacity were among the identified impacts to be expected during operation phase for Alternative A1 (Proposed Activity). Their impacts were **MEDIUM IN SIGNIFICANCE** before mitigation measures. With mitigation measures their impacts can further be reduced into a **LOW LEVEL OF SIGNIFICANCE** except impacts of increased road capacity which is positive and still has medium significance after mitigation. No site (Alternative S1) related impacts were identified during operation phase of the proposed improvement

DECOMMISSIONING PHASE

There is at present no intention or indication of future intentions, to decommission the facility. Should the lighting and ITS be decommissioned then impacts resulting from such may include removal and disposal of decommissioned equipment and wastes (e.g. concrete), dust, job loses and surface disturbance due to the digging of trenches to remove the infrastructure. The impacts of those activities for both Alternative S1 (Proposed Site) and Alternative A1 (Proposed Activity) during decommissioning were identified as having **MEDIUM SIGNIFICANCE** as well before mitigation measure. With mitigation measures the impact can be further minimized into a **LOW LEVEL OF SIGNIFICANCE**. No site (Alternative S1) related impacts were identified during decommissioning phase of the proposed improvement

NO-GO ALTERNATIVE

BASIC ASSESSMENT REPORT

None of the impacts identified for the proposed activity will occur (including positive and negative impacts) if the proposed activity does not proceed. There would be inefficiency on the use of our freeways and the transport problem being experienced currently will not be addressed. In addition there would be a continuation of road safety risks associated with insufficient lighting and less efficient road transport due to the absences of ITS.

Alternative S2

Alternative S3

Alternative A2

Alternative A3

8. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to

YES √	NO
----------	----

make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner).

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures, that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- The following conditions must be included in the environmental authorization:
- Schedule the construction process to limit obstruction to traffic flows during peak traffic hours.
 - Provide feedback to road users using ITS where it already exists.
 - Activities which will lead to excessive noise near residential areas, should be limited to take place during the day.
 - Re-enforce river banks with gabions where applicable to prevent instability of the river banks.
 - Rehabilitate after construction.
 - Restrict disturbance to riparian areas to as close as practically possible to the proposed bridge expansion footprint. Areas outside of the footprint and reasonable construction access to be marked as no-go areas.
 - Implement erosion control measures where applicable.
 - Construction camp to be erected where it will have the least environmental impact.
 - Maintenance done on construction vehicles must be done in such a manner to prevent spillage of fuel and oils.
 - After the completion of construction, any possible soil compaction and spillage of substances within the construction camp must be rehabilitated.
 - No construction workers are permitted to be accommodated over night on the site or in the site construction camp except for skeleton security personnel.
 - Appointment of an Environmental Control Officer
 - Use inert construction waste (e.g. old road surface and foundations) as fill material where possible.
 - Obtain fill material from existing borrow pits to minimize the impact of creating new borrow pits.
 - Re-vegetate and rehabilitate after construction
 - Where possible limit the removal of riparian vegetation.
 - Ensure that ITS functions at all times.
 - If excessive spillage of oil and fuel etc. should occur due to accidents, it should be cleaned-up immediately.
 - ITS should be used for accident notifications.
 - Regular monitoring and maintenance of the road to ensure that foreign items are collected and suitably disposed of e.g. collection and disposal of spent retreads and other debris.
 - Whilst the proposed upgrades specifically are not anticipated to add significantly to the current ambient noise levels from the freeway, it is recommended that the on-going noise study be used to quantify the current noise levels.
 - Use energy efficient lights such as sodium vapour or compact florescent bulbs and incorporating other energy efficiency concepts such as use of reduced luminaries.
 - Only indigenous vegetation should be utilised during rehabilitation.
 - Rehabilitation success should be monitored.
 - Disposal of waste at a registered waste disposal site.
 - Non-hazardous material should be recycled and utilised in other construction processes.
 - No lights are to be directed to the neighbouring residential area.
 - Visible remains of concrete as a result of construction must be physically removed and disposed of as building wastes.
 - All reasonable precautions must be taken to minimize noise generated on site.
 - Construction vehicles must be kept in good working order so as not to generate excessive noise.
 - Surrounding residents should be notified in advance of construction schedule.
 - During construction all staff must be adequately identified

SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Comments and responses report

Appendix F: Information in support of applications for exemption

Appendix G: Other information