Western Cape Government
Environmental Affairs and Development Planning

**FORM NO. BAR10/2019**

# *BASIC ASSESSMENT REPORT*

## THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS.

**NOVEMBER 2019**

| (For official use only) | |
|---|---|
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### GENERAL PROJECT DESCRIPTION

(This must Include an overview of the project including the Farm name/Portion/Erf number)

**THE PROPOSED IRT PHASE 2A TRUNK ROUTE: PORTION E1, 3.5KM OF GOVAN MBEKI ROAD FROM INTERSECTION WITH HEINZ/OTTERY ROAD TO APPROX 130m EAST OF LINK ROAD, MANENBERG & GUGULETHU**

***Addressing I&AP Comments: "Manenberg" was included in the project title at the request of local Councillors.***

**Note that this the Final Basic Assessment Report (BAR). Minor changes/updates to the Draft BAR following public review have been underlined for ease of reference**

**NOVEMBER 2021**

# EXECUTIVE SUMMARY

## INTRODUCTION

This document is the final Basic Assessment Report (BAR) for the development of the proposed Integrated Rapid Transit (IRT) bus lanes as part of the IRT Phase 2A Trunk route development. The focus area of this application for Environmental Authorisation process comprises of the proposed upgrades to Govan Mbeki Road / M9 from the corner of Heinz/Ottery Road to just beyond Link Road approximately 3.5 km to the east. Refer to the duplication of Figure 1 below for the location of the affect stretch of road.


**Duplication of Figure 1**

Application has been made to the DEA&DP for Environmental Authorisation where after the draft BAR was subjected to a 35-day public review period. All comments raised in relation to the draft BAR have been considered, and where appropriate, changes have been incorporated into this final BAR and submitted to the Competent Authority (the Department of Environmental Affairs and Development Planning- DEA&DP) for their final decision-making. All contact details of I&APs have been included in the final BAR to the DEA&DP for decision-making and will become part of the public record.

The most pertinent details regarding the environmental process are captured in this Executive Summary. Full details are provided in the rest of the BAR and the Appendices, which, *inter alia*, contains the full specialist reports.

## PROJECT DESCRIPTION

Phase 2A of the City of Cape Town's MyCiTi IRT System operates along the Lansdowne-Wetton Corridor which currently Phase 2A of the City of Cape Town's MyCiTi IRT System operates along the Lansdowne-Wetton Corridor which currently carries in the order of 50% of all road-based public transport trips within the City. The proposed project for Phase 2A is to link the south-eastern suburbs of Cape Town (Metro- Southeast) with nodes along the Southern Suburbs rail line. The two principal trunk routes will operate between Mitchells Plain and Claremont and Khayelitsha and Wynberg and consists of both trunk and feeder services.

The focus area of this application for Environmental Authorisation process comprises of the proposed upgrades to Govan Mbeki Road / M9 from the corner of Heinz/Ottery Road to just beyond Link Road approximately 3.5 km to the east (refer to Figure 1 and Appendix A1). This section of road passes the Edith Stephens Nature Reserve (ESNR) to the south and the Lotus Canal to the north, as well as a sensitive biodiversity area to the north just after the Duinefontein Road intersection.

The proposed scope includes the following:

- Up to four dedicated bus lanes;
- Groundworks in the centre of certain points along the route for future construction of a bus station (note that this would only be at certain points throughout the route where they are required in terms of logistics and availability of space);
- General traffic lanes, typically comprising of four lanes (two in either direction);
- A road shoulder;
- A strip for landscaping and service (e.g., streetlights) installation; and
- A sidewalk for pedestrian and cyclist use (i.e., Non-Motorised Transport- NMT- lanes).

The proposal would also entail an elevated road link at the Govan Mbeki Road/ Duinefontein Road intersection (the maximum footprint thereof is assessed in this Basic Assessment process as part of the footprints assessed). The detailed design of the cross-section throughout the route will occur in the future and it is important to note that it may differ slightly from one section of the route to the next. The nature of the cross-section would be determined by constraints on the ground. The cross section applied (i.e., that with a bus station *versus* that without a bus station) would depend on the logistic requirements in terms of where bus stations are needed as well as whether or not there is sufficient space available for the construction of the foundation for a station. Note that, with regard to the bus stations, only the foundation works would be carried out as part of this proposed development. The bus stations themselves would be constructed at a later stage, under a separate tender process.

The proposed new bus (Bus Rapid Transit-BRT) lanes to be included within the existing carriageway would be reserved for the exclusive use of the MyCiTi buses which will be serviced by a new fleet of vehicles. Other vehicles, such as heavy vehicles, taxis, Golden Arrow Buses, and passenger vehicles, will not be permitted on the BRT-lanes and will remain on the general traffic lanes of the existing carriageways.

Part of the proposed road works would include changes to the Lotus Canal. In terms of the proposed cross-section, the pedestrian/cycle lane/sidewalk component of the proposed upgrades would encroach into the Lotus Canal by approximately 3m, but the encroachment thereof would extend further, between 3m and 6m at two points. Note that this would also expand over three existing outtake culverts opposite Edith Stephens Nature Reserve, and the culverts would be left as is. A new retaining/flood protection wall (approx 250 mm wide with height ranging up to 2 m high depending on existing slope) is proposed at specific low points identified along the Lotus Canal (which would stretch along the majority of the Lotus Canal adjacent to E1, west of the Duinefontein Intersection), along the southern bank thereof. The wall would have a balustrade on top to protect vehicles from leaving the road and crashing into the Lotus River Canal. The two existing pedestrian bridges in this stretch would also be demolished and replaced in a new position (slightly to the east of the current locations) and the existing bridge/s would remain in place during construction to provide continued access until the new bridges are built.

The proposal would also require additional stormwater infrastructure. It is proposed to construct a new minor stormwater drainage system to serve Govan Mbeki Road as part of the proposed development. This system would either tie into the existing minor stormwater drainage system or have new inlets into the Lotus River Canal constructed. The system would comprise a series of underground pipelines to convey the stormwater from the road into existing stormwater lines, or to catchpits and then to 375 mm diameter outlet pipes, which would daylight into the Lotus Canal.

There would be no new requirements for bulk services as the proposed development is the expansion of an existing road which contains existing service lines. With respect to streetlights, existing lights would be replaced with Light Emitting Diode (LED) lights, which require less energy.

A draft landscaping plan has been prepared for the proposed road upgrades. Landscaping would entail a combination of planting of grasses, trees, groundcovers, and paving (OVP, 2021). In more high traffic areas, there would be a combination of pedestrian crossings (i.e., informal, painted) as well as some resilient urban elements such as concrete seat walls (OVP, 2021). There would also be some larger palms as well as rock and stone fields for space-defining elements (OVP, 2021). At the larger nodes, the aforementioned elements would also be included (OVP, 2021).

With respect to the **National Environmental Management Act** (No. 107 of 1998), as amended (NEMA) and association Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) and associated **Listed Activities**, the following aspects of the proposed development, preferred alternative (i.e., Alternative 3) are important:

- Approximately 100 $m^2$ of Cape Flats Dune Strandveld, approximately 400$m^2$ of Cape Lowlands Freshwater Wetlands, and approximately 200 $m^2$ of Cape Flats Sand Fynbos would be cleared, however the state of vegetation in these areas is highly degraded or completely transformed (Altern, 2021), therefore Listed Activities in this regard may not be triggered, but this is not an absolute certainty, so the associated Listed Activities have been applied for and assessed as per the precautionary principal;
- Although the proposed development touches on a number of "waterbodies", the large majority of these are stormwater/ attenuation facilities which have resulted from run-off from Govan Mbeki Road and they have no ecological value (Belcher *et al*, 2021). The only area of significance is that infilling in approximately 750 $m^2$ of the wetland mapped along the fringe of ESNR would be required as well as works within the Lotus Canal for the pedestrian bridges and retaining wall (refer to Table 1 for a summary of the extent to which the Lotus Canal and wetlands would be disturbed for each alternative). Note that the wetland has been mapped to extend beyond the cadastral boundary of the reserve and into the road reserve. This is the area that would be encroached upon as part of the proposed development and not the ESNR currently within the cadastral boundaries. The ESNR is protected in perpetuity in terms of the National Environmental Management: Biodiversity Act (No. 10 of 2004); and
- In certain areas, the proposed expansion/ road widening would occur beyond the road reserve and greater than 4 m into Public Open Space.

The Department of Water and Sanitation has also previously confirmed that the proposed development could be authorised under a General Authorisation for Section 21 (c) and (i) of the **National Water Act** (No. 36 of 1998) (NWA) and application has been made in this regard.

**ALTERNATIVES:**

Along with the no-go alternative, three road geometry alternatives have been assessed, namely:

1) Alternative 1- Unconstrained alternative (15m expansion from road shoulder on either side);
2) Alternative 2- Proposed Design 1 (a much narrower design in response to a high-level baseline study conducted by specialists, which does not allow room for optimal road design); and
3) Alternative 3- Proposed Design 2 (this is the **preferred** expansion width designed in response to detailed specialist assessments and mapping of sensitivities on the ground which provides as much room as possible for optimal road design, i.e., up to 15m either side the road shoulder with narrower areas in response to environmental sensitivities).

Site alternatives have not been assessed as Govan Mbeki Road already exists as part of a major transport network and the proposed stretch forms part of an extended future MyCiTi Network as per the Municipal Spatial Development Framework (2018) (MSDF). Activity alternatives have not been assessed because the Applicant is mandated to provide transport networks for the City of Cape Town and would not proposed developments beyond this scope. The Applicant wishes to develop to IRT networks throughout the City of Cape Town and, therefore, no activity alternatives were (or could have been) considered. Technology alternatives have not been assessed because there is limited scope for implementation of a range of technology in terms of options available for a bus to drive on and people and bicycles to move safely on. Similarly, operational alternatives have also not been assessed because an IRT road network provides for little flexibility in terms of operational aspects as there are very simple and specific requirements (i.e., an efficient public transport facilitation service).

Three design/ road geometry alternatives have been assessed in order to apply for a maximum design envelope and Alternative 3 is preferred over Alternatives 1 and 2 because it provides a compromise in terms of maximising on design potential, while avoiding any sensitive environmental features. It is also a third iteration of the alternative which has been revised twice to response to comment from a ward councillor and to further void encroaching into wetland/ stormwater depression areas. It is important to be able to provide the largest cross-section possible from a design perspective as this would enable the delivery of the best possible product and service to the community in the form of a useful and valuable network for public transport. The road needs to accommodate normal vehicular traffic as well as the BRT buses such that traffic flow remains smooth and that those buses, ideally, have their own lanes. From an environmental perspective, there are some sensitive areas along the route which should be avoided, with the most notable being the ESNR. There is also one other area which is earmarked as a buffer zone which supports the CBAs and associated biodiversity targets, therefore the road geometry for the preferred alternative avoids these areas and have no other constraints to development along the stretch. Alternative 3 is also the preferred development alternative from a freshwater (Belcher *et al*, 2021) and botanical (Altern, 2021) perspective.

Alternative 1 would enable maximum design but would result in the unacceptable destruction of a portion of the ESNR, which is why it is not preferred. Alternative 2 would largely avoid environmentally sensitive areas, however, would not provide sufficient scope for design and would therefore not deliver an ideal service. Hence, Alternative 3, which is a preferred compromise of the two which also has no unacceptable environmental impact, and which responds to comments made by I&APs.

Other design alternatives were considered for the stormwater management plan and the development over/near the Lotus Canal, but these were scoped out prior to formal assessment as they were not considered appropriate for the site.

The no-go alternative has also been assessed as the *status quo* of the route would continue as is, namely a major road with transformed edges, and, although impacts would also be anticipated to be low (as with the preferred alternative), there would be significant loss (i.e. opportunity cost) of positive impacts for the local community in terms of both infrastructure provision (given the state of certain portions of Govan Mbeki Road and lack of safe NMT and pedestrian facilities, as well as landscaping) as well as potential for socio-economic improvement associated with improvements to accessibility and economic opportunities that this would bring with it. The implementation of the no-go alternative is, therefore, not preferred.

**BASELINE ENVIRONMENT**

**Geology/Soils:**
Two geological types underlie the Cape Flats (and the proposed route), namely Cape granitic outcrops and Sandveld Group Sands.

**Topography:**
The site is flat, with some areas adjacent to the road verge being slightly sloped.

**Climate:**
The site falls within the Cape Flats and, as is the case with the south-western Cape, the area has a Mediterranean climate characterized by winter rainfall.

World Weather Online provides a summary of the climatic conditions. Average high temperatures are highest from December to March and lowest from June to August. Average daily maximum temperatures show average midday temperatures ranging from 15.7° in July to 26° in February. Rainfall is highest during the winter months from June to August with average figures with the highest average rainfall in June at 155 mm. The rainy season picks up from April and continued through to August, while there is little rain from September to March where the lowest rainfall is in February at 16 mm.

The prevailing wind patterns in the area reflect those of the Cape Peninsula, namely south-easterly winds during the summer months and north-westerly winds during the winter months. The mean wind speeds range over the site from 10.46 to 22.36 km/hr.

**Botany:**
Three areas of sensitivity have been identified along the proposed route. One is no longer considered sensitive as it has been declassified, the other is the highly sensitive and Protected ESNR and the third is marked as Other Natural Area (ONA). The vegetation types affected include:

- Cape Flats Dune Strandveld;
- Cape Flats Sand Fynbos; and

- Cape Lowlands Freshwater Wetlands.

The portions of the abovementioned vegetation types within the proposed boundaries of the route have been found to be entirely transformed or degraded with little ecological value.

**Freshwater:**
A canalised section of the Lotus River runs parallel to a certain section of the proposed route. Furthermore, works are proposed to the Lotus Canal at the Duinefontein intersection.

Five wetlands have been identified nearby the proposed route. The wetland types for each of the five can be summarised as follows:

- Permanently to seasonally inundated reed dominated depression wetlands (i.e., Wetlands 3 and 5);
- Seasonally inundated wetlands that comprise of a mix of grass and sedges with some reeds (Wetland 1 and 2); and
- The ESNR which contains permanently inundated as well as seasonally inundated areas (Wetland 4). The ESNR is also a protected area.

All but the ESNR are considered to be highly modified and of low ecological significance. The ESNR is sensitive, however the approx. 750 $m^2$ area which would be encroached upon (and is beyond the cadastral boundary, and on the road verge, of the ESNR) is more transformed. Furthermore, the preferred alternative for the proposed route would not encroach on Wetland 1, 2, Wetland 3 and Wetland 5 at all.

**Heritage/cultural/archaeological aspects:**
It has been found that there are no heritage sensitivities would be encroached upon by the proposed development. Heritage Western Cape has also confirmed that no further assessment is necessary. Further engagement with local communities has indicated additional heritage resources in the area and none of these would be impacted by the proposed development either.

## SUMMARY OF IMPACTS

The baseline assessments conducted by the freshwater and botanical specialists found no highly sensitive areas or development constraints for the preferred alternative. Alternative 1 was found to encroach into a highly sensitive area in terms of biodiversity and freshwater resources (i.e., ESNR), therefore this alternative is not favoured by the Applicant or the specialists (Altern, 2021 and Belcher et al, 2021 respectively).

The botanical impacts (for Alternatives 2 and 3) were all found to be low (-) and are associated with loss of low sensitivity transformed and degraded replaced Cape Flats Sand Fynbos, transitioned Cape Lowlands Freshwater Wetlands, and replaced Cape Flats Dune Strandveld as well as an area mapped as ONV for the City of Cape Town BioNet, in addition to anticipated changes to roadside conditions and associated species as a result of increased water run-off. The only exception to this would be the medium (-) impact anticipated at the ESNR due to the edge effect on the ESNR border edge. It has been concluded that no biodiversity offset would be required. The impacts (for Alternatives 2 and 3) of the proposed expansion and the associated footprint thereof on freshwater resources were all found to be very low (-) and are associated with limited disturbance to or loss of freshwater related habitats, modification of flow, and reduction of water quality. In terms of the proposed changes to the Lotus Canal, impacts are anticipated to be very low (-). A Risk Assessment has also concluded that there would be Low risk with the implementation of the preferred alternative. No heritage impacts were identified and HWC has confirmed that no further assessment is necessary. No adverse impacts on stormwater capacity were identified and the stormwater study and overall management approach has been devised in accordance with the requirements of the biophysical specialists as well as a as the City of Cape Town Roads and Stormwater Branch. The proposed treatment of stormwater run-off relative to ESNR is also aligned with the general requirements of number of City of Cape Town's branches, namely Catchment and Stormwater Management, Biodiversity and Environmental Management (noting that the design has been re-iterated following meetings with these branches). The proposal also presents low resource requirements as no services (e.g., water, electricity, solid waste removal, and effluent management) would be required during the operational phase.

Generally, the construction phase impacts, with mitigation implementation, are anticipated to be Low (-) to Very Low (-) for the preferred alternative and the operational phase impacts, also with mitigation implementation, are anticipated to be the same (for the preferred alternative), with the exception of the Medium (-) impact anticipated for loss of transitioned Cape Lowlands Freshwater Wetlands (ESNR) as a result of the replacement of road reserve vegetation buffer and subsequent edge effect on the wetland park border edge. This particular impact would be Medium (-) for Alternative 2 as well, but High (-) for Alternative 1, and is a key consideration in the selection of the preferred road geometry alternative. Note that the impacts of the development within the Lotus Canal would be Very Low (-) from an environmental perspective.
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Generally, the construction phase impacts, with mitigation implementation, are anticipated to be Low (-) to Very Low (-) for the preferred alternative and the operational phase impacts, also with mitigation implementation, are anticipated to be the same (for the preferred alternative), with the exception of the Medium (-) impact anticipated for loss of Cape Lowlands Freshwater Wetlands (ESNR) as a result of the replacement of road reserve vegetation buffer and subsequent edge effect on the wetland park border edge. This particular impact would be Medium (-) for Alternative 2 as well, but High (-) for Alternative 1, and is a key consideration in the selection of the preferred road geometry alternative. Note that the impacts of the Canal works are considered Very Low(-) from an environmental perspective.

The impacts are summarised in the tables overleaf, which are duplications of the impact summary tables included in the Basic Assessment Report.

| PLANNING, DESIGN AND CONSTRUCTION PHASE IMPACTS: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ALTERNATIVES** | **Road Geometry Alternative 1 & Canal Works** | | **Road Geometry Alternative 2 & Canal Works** | | **Road Geometry Alternative 3 (preferred) & Canal Works** | | **No-go Alternative** | |
| **Impact:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** |
| **ALTERING THE SURFACE DRAINAGE REGIME:** Additional hard surfaces in some portions of the route would provide a marginal increase in hard areas for stormwater run-off | Medium (-) | Neutral | Medium (-) | Neutral | Medium (-) | Neutral | None | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Flats Sand Fynbos (Former CBA2 Zone) Degraded and Transformed | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Lowlands Freshwater Wetlands (ESNR) Degraded and Transformed | High (-) | High (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Flats Dune Strandveld (Other Natural Vegetation) Degraded and Transformed | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **FRESHWATER ASPECTS:** Limited disturbance to/loss of freshwater related habitats at the road- Wetlands | Medium to Low (-) | Medium to Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Impairment of downstream ***water quality impacts*** as a result of runoff from road and the construction activities | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Modification of flow during construction activities | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Limited loss/disturbance of freshwater related habitats at the road- Lotus River Canal | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **SOCIO-ECONOMIC ASPECTS:** Creation of employment opportunities as a result of development and construction on the route. Additional indirect economic impacts (stimulus) will also be experienced. | Medium (+) | Not Applicable | Medium (+) | Not Applicable | Medium (+) | Not Applicable | No impact | Not Applicable |
| **VISUAL ASPECTS:** Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **CULTURAL-HISTORICAL ASPECTS:** Damage to cultural or heritage artefacts or landscapes as a result of construction activities. | No impact | | | | | | | |
| **NUISANCE IMPACTS ON SURROUNDING LAND USERS – DUST AND NOISE:** The land clearing and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing. | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **USE OF NATURAL RESOURCES:** Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc. | Medium (-) | Low (-) | Medium (-) | Low (-) | Medium (-) | Low (-) | No impact | Not Applicable |
| **TRAFFIC:** Disturbance to local traffic conditions (both vehicular and pedestrian) as a result of construction vehicles accessing the sites during the construction activities. | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |

| OPERATIONAL PHASE IMPACTS: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ALTERNATIVES** | **Road Geometry Alternative 1 & Canal Works** | | **Road Geometry Alternative 2 & Canal Works** | | **Road Geometry Alternative 3 & Canal Works (preferred)** | | **No-go Alternative** | |
| **Impact:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** |
| **BOTANICAL ASPECTS:** Impact on associated floral species assessed as a result of wetter conditions related to increased stormwater run-off | High (-) | Low (-) *Note mitigation is implementation of another alternative | Medium (-) | Low (-) | Medium (-) | Low (-) | No impact | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Lowlands Freshwater Wetlands (ESNR) as a result of the replacement of road reserve vegetation buffer and subsequent edge effect on the wetland park border edge. | High (-) | High (-) | Medium (-) | Medium (-) | Medium (-) | Medium (-) | No impact | Not Applicable |
| **FRESHWATER ASPECTS:** Modification of flow during operational activities | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Limited ***disturbance of freshwater related habitats*** at the road | Low (-) | Very Low (-) | Low (-) | Very Low (-) | Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **VISUAL ASPECTS:** Overall improvement to the appearance of the relevant portion of Govan Mbeki | Medium (+) | Not Applicable | Medium (+) | Not Applicable | Medium (+) | Not Applicable | No impact | Not Applicable |
| **REDUCTION IN EMISSION OF GREENHOUSE GASES:** Operation of the proposed route (i.e., the use of the route for public transport) would result in an increasing number of people making use of public transport over private transport. This would reduce the per capita emission of greenhouse gases in the surrounding community and beyond. | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | No impact | Not Applicable |
| **SOCIO-ECONOMIC ASPECTS: Improved Accessibility:** Provision of improved accessibility for previously disadvantaged communities with respect to employment, economic centres and places of education and recreation. | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | Medium (+) | Not Applicable |
| **PUBLIC SAFETY (Non-Motorised Transport-NMT):** Improvements to safety for all those accessing the area via NMT. | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | No impact | Not Applicable |
| **TRAFFIC:** Improvements to traffic conditions in the area | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | No impact | Not Applicable |

It is not the intention of the Applicant to decommission the proposed development as it would provide permanent connectivity within the greater IRT system.

**MITIGATION AND RESPONSE**

It is believed that the impacts that have been identified have been adequately addressed through changes in the proposed footprint (e.g., devising alternatives which avoid sensitive areas), or would be mitigated to acceptable levels through the final design and/or the strict implementation of the EMPr. A number of specialists have been involved in order to inform the investigation which provided both independence and transparency in the process as well as appropriate skills and expertise.

None of the design alternatives under consideration would fall within any areas of heritage sensitivity (O'Donoghue, 2018) and so there are no further constraints to development that must be considered in that regard. There are other areas that have also been identified as culturally significant by local communities and a Ward Councillor, and the proposed development would not encroach into these either.

Specialist assessment in terms of terrestrial and aquatic biodiversity align on the finding that ESNR, located adjacent to the preferred alternative (and alternative 2), is a highly sensitive area and development within that Protected Area must be avoided. Hence the preference for Alternative 3, which would not encroach into the ESNR, but would only be located within the transformed wetland area adjacent to it.

With regard to wetlands, the preferred alternative (i.e., Alternative 3) has been designed to avoid as much of the wetland within the route as possible, and where it does encroach into the wetland adjacent to the ESNR, it would be in a heavily degraded area where the impact on the wetland would be low (Belcher et al, 2021). Further design considerations for protection of the wetlands are evidence in the stormwater management plan, and slope of the roadway, which would direct run-off from the road away from ESNR.

The presence of the Lotus Canal has informed the design of the proposed roadway in terms of providing for the additional design requirements for a retaining wall and balustrade as described in the project description. The design would not have a significant effect on the water flow of the canal and the wall would stop the existing flooding occurring along Govan Mbeki Road (GIBB, 2021). New pedestrian bridges would also be provided as part of these works in order to provide the communities nearby with continued access to Govan Mbeki Road. The design also considers existing flood conditions of the Lotus Canal. The stormwater management system has also been designed to respond to the current conditions of the Lotus Canal in terms of connecting into the existing minor drainage network where possible and that with the new minor drainage system, the system would be able to convey greater than the 1:10-year period and the road would convey up to- and including the 1:50- year return period (GIBB, 2021). Overall, this would provide an improvement on current flooding conditions.

The preferred alternative is intentionally comparatively narrower near/in areas which are indicated in the City of Cape Town Biodiversity network and the portions of the various vegetation types within the proposed boundaries of the route have been found to be entirely transformed or degraded with little ecological value (Altern, 2021).

The proposed landscaping design would be incorporated into the stormwater management system where needed and would also make use of appropriate plant species as recommended by the botanist. It is also appropriate for the various widths/ cross-sections of the proposed expansion, given that there are various strategies to be applied depending on the typology of the stretch in question.

Management measures for design, planning, construction, and operation phase of the proposed development have also been integrated into the specifications contained in the EMPr, which would also be conditions of Environmental Authorisation (if granted).

**NEED AND DESIRABILITY**

Overall, all development must, in terms of Section 24 of the Constitution, be ecologically sustainable, and economic and social development must be justifiable. The freshwater impact assessment and botanical impact assessment have considered the sustainability of the ecological aspects adjacent to the route and impacts have been found to be low, with mitigation and so the proposed expansion can occur sustainably from an environmental perspective. The mitigation measures are important and must be implemented. That is why they are included as specifications in the EMPr and are strongly recommended as conditions of authorisation in this Basic Assessment Report.

The economic and social aspects of the project are expected to be medium to high positive and would serve to provide connectivity, opportunity, and economic stimulus to previously disadvantaged communities, which are believed to be justifiable in the context of historic prejudice, intergenerational sustainability, and equity. Financial sustainability would be provided by the City of Cape Town through their various contracts for operations. In addition, the unconstitutional actions of a previous regime would be rectified while ensuring that society as a whole can still benefit from the improved connectivity and access provided by the proposed road widening for generations to come.

**PUBLIC PARTICIPATION**

The public participation process (PPP) has far exceeded the minimum legislative requirements prescribed in regulation 41 of the EIA Regulations, 2014 (as amended).

The pre-application PPP included the following activities (noting that no alternative sites have been considered in the impact assessment process as the relevant section of road is a major road linking key neighbourhoods and is appropriate for the proposed development):

- Compilation of a preliminary Interested and Affected Party (I&AP) database which is informed by research conducted by Chand on contemporary officials and stakeholder groups which may have an interest in the area or project. The I&AP database has been maintained throughout the Basic Assessment process as meetings with key stakeholders have been held. Therefore, the I&AP database includes parties required in terms of Regulation 41 (2) (b) of the EIA Regulations, 2014 (as amended).
- One-on-one meeting with CapeNature on 13 February 2018;
- Focus Group Meeting (FGM) with representatives from the Environment and Heritage Management, Catchment Planning: Region 2, Biodiversity Management, Asset Management Roads, and Catchment Stormwater and River Management branches of the City of Cape Town on 14 February 2018;
- FGM with representatives from the Environment and Heritage Management as well as the Edith Stephens Nature Reserve (ESNR) branches of the City of Cape Town on 5 April 2018 to discuss the need for a biodiversity offset;
- FGM with organisations which represent local culture and heritage on 11 July 2018;
- FGM with local Councillors, Sub-Council 11, on 16 February 2018;
- FGM with local Councillors, Sub-Council 14, on 16 February 2018;
- FGM with local Councillors with Wards located in the site area on 18 October 2018 to provide feedback on previous FGMs as well as the future advertisement of the proposed development and associated Basic Assessment process. Note that many municipal representatives were invited to this meeting and while eight officials initially confirmed their attendance, two attended on the day. Furthermore, at the request of one of the Councillors (made telephonically prior to the meeting), Chand attempted to move the meeting venue to a Council office (i.e., the Plumstead Municipal Office, given that eight attendees had already been confirmed in the vicinity), however the facilities manager confirmed, on 17 October 2018, that the boardroom was unavailable for the date and time required for this meeting;
- A pre-application meeting with the Department of Water and Sanitation (DWS) was held on 20 April 2018 in order to confirm the Department's requirements with regard to the need for a Water Use License Application (WULA) (note that DWS confirmed that a General Authorisation would apply so there is no need to consider the One Environment System as there will **not** be a WULA associated with this Basic Assessment process and associated proposed development) and a second pre-application meeting was held with a new DWS case officer on 28 April 2021; and
- FGM with local Councillors at Sub-Council meetings for sub-councils 23 and 14 on 20 May 2019 and sub-councils 11 and 13 on 22 May 2019. The updated proposal in response to previous comments as well as the next public participation process was presented to the Councillors.

The post-application PPP undertaken for the public review of the post-application Draft BAR included the following:

- Engagement with ward councillors to notify them of the public comment period.
- A 35-day public comment period for the post-application Draft BAR was provided.
- Knock and Drop delivery of a notification leaflet to local businesses in the informal settlements alongside the affected stretch (carried out by locals from the community).
- Placement of information posters throughout the affected community notifying them of the proposed development and Basic Assessment process (carried out by locals from the community).
- Notification of the availability of the post-application draft BAR was emailed to the preliminary I&AP database and post was sent to those who do not have email addresses.
- A knock-and drop exercise with the above-mentioned notification letter was conducted to businesses and formal institutions adjacent to the road.
- Note that in order to provide access to commenting on the report to people who may not have access to data, emails, post or fax, Chand encouraged I&APs to make telephonic contact and submit their comments to Chand in that manner, for Chand to record (in writing) as part of the Basic Assessment process.
- The post-application draft BAR was made available for download from Chand's website for the duration of the comment period.
- An executive summary for separate download (for those I&APs who have limited access to data) was also available on Chand's website for the duration of the comment period.
- Site notices were placed at the start, middle and end of the route. They were in English and isiXhosa and contained the information as prescribed by the EIA Regulations, 2014, as amended and PPP guidelines (i.e., they were of the standard format). There are six in total.
- Adverts were placed in three local newspapers, in English and one in isiXhosa, and these also contained the information as prescribed by the EIA Regulations, 2014, as amended and PPP guidelines (i.e., they were of the standard format).
- Note that no hardcopies of the post-application Basic Assessment Report were issued to I&APs, as none were requested.

Evidence for the above has been included in Appendix F of the final BAR submitted to DEA&DP.

Once the DEA&DP has reviewed the FBAR and issued their decision, the decision, date, reasons for decision, means to access the decision, and an explanation regarding the way the decision may be appealed, as well as any further requirements stipulated therein would be distributed to the registered I&AP database via email for those who have email addresses and post for those who have only postal addresses. It would also be uploaded onto Chand's website so it would be accessible for download. The applicable appeal period would be explained in accordance with that included in the decision.

The key issues raised through the targeted public participation activities carried out include the following:

- The importance of ESNR (e.g., it houses the *cacosternum platys* and Western Leopard Toad);

- The need to protect ESNR and ensure that stormwater does not flow into that area;
- The design approach of the stormwater management measures to be implemented at the interface with ESNR;
- The removal of the pavement trees should be approved by the City of Cape Town Recreation and Parks branch;
- Biodiversity Offsets (noting that, through thorough engagement and specialist investigations, it has been deemed acceptable that no biodiversity offset would be required);
- Wetland Offsets (noting that specialist assessment ha confirmed that this will not be required, but is subject to comment from DWS);
- Whether a fence would be constructed adjacent to the ESNR and who would be responsible for it;
- The extent to which the edge effect on the ESNR has been considered and would be mitigated, particularly as there are many threatened species located close to the periphery of the ESNR;
- Confirmation from the City of Cape Town Biodiversity branch that no faunal assessment would be warranted;
- The importance of local cultural and heritage beyond that which has been identified by Heritage Western Cape and how these would be affected by the proposal, and including the following:
    - Lotus Park;
    - Neighbourhood Centre;
    - Thankiso Hall (in NY1);
    - Town Hall (in Gugulethu);
    - Sport Complex (in Section 2, Gugulethu);
    - Nyanga Arts Centre;
    - Amandla;
    - Methodist Church (in Gugulethu); and
    - The initiation site at the north-west corner of the Govan Mbeki Road and Duinefontein Road intersection.
- Request for full Scoping and EIA process, rather than a Basic Assessment (from a local Ward Councillor)
- The request to provide the local community with information on the greater IRT project;
- Suggestion to enhance the Lotus Canal and make it a recreational facility and more aesthetically appealing;
- Requirement for restoration of community spaces;
- Requirement for benefits to accrue to the local community;
- The suggestion to employ local community neighbourhood watches for security on the proposal, if required;
- The Basic Assessment process should aim to achieve a balance between the natural, social, and built environment and that the needs and desires of the affected communities;
- Comment that Golden Arrow Bus Services are already in place;
- The need to involve the local Ward Councillors in the public engagement component of the Basic Assessment process;
- The request for additional public engagement activities (e.g., workshops, public meetings, additional presentations at the Sub-council Activity Day/sub-council meeting);
- Ensure updated Ward boundary information is used;
- Make use of local representatives from the community in the public engagement component of the Basic Assessment process;
- Request to realign the proposal toward the end of the route to avoid the housing development currently under construction as well as the buildings to the south of the road in that same vicinity; and
- The need to ensure that access is maintained to private properties and businesses along the route.

Engagement with local Councillors has indicated that comments on issues beyond the scope of the proposed development may be anticipated. Comments may include queries regarding the delivery of the greater IRT network as well as other projects which may be initiated within local communities. No such issues were however raised with the EPA during the public participation process of the post-application draft BAR.

In terms of issues raised specifically by State Departments, note the following:

- The Site Manager of the ESNR and a representative from City of Cape Town Biodiversity should be engaged during the compilation of final Stormwater Management Plan and associated detail design of sections of the route adjacent to ESNR (this is to include discussion on the construction and maintenance of a fence).
- The removal of the pavement trees should be approved by the City of Cape Town Recreation and Parks branch.
- While wetland offsets were initially discussed, it should be noted that the proposed geometry for the preferred alternative (i.e., Alternative 3) has been realigned and further narrowed to avoid wetlands. The impact has been assessed and confirmed to be low, and no offsets are considered necessary (Belcher *et al*, 2021). Note, however, that the DWS has been requested to provide clarity on, or a response to this, as part of the registration for a General Authorisation and the specific feedback, at the time of writing, remains awaited.
- No biodiversity offset would be required.
- The final Stormwater Management Plan (refer to Appendix G(d) for the indicative stormwater management plan) should approved by the City of Cape Town and be implemented throughout operational phase of the development.
- CapeNature commented that a wetland offset for the portion of wetland buffer to be lost should be provided and financial offsets could be appropriate in the case of botanical (biodiversity) offsets. This is in contracts to specialist findings (both freshwater and botanical) and the comment from the DWS, and a response in this regard has been provided to CapeNature in the Comments & Responses Table.
- The DWS confirmed Section 21 (c) and (i) water uses and did not confirm the need for wetland offsets. (note that other water-uses were erroneously identified by the Department in their comment which the EAP has responded to).
- The City of Cape Town submitted a consolidated comment from a number of line departments. No objections to the proposal was received and support was provided for the preferred Alternative. All Departments commented on the need for further engagement during the detailed design and planning application phase. The Biodiversity Management Branch commented on the potential impact of street lighting on the ESNR.
- Heritage Western Cape confirmed that their response to the NID submission in 2016 still stands;
- Western Cape Government: Transport and Public Works offers no objection to the proposal;
- DEADP: Air Quality highlighted the importance of dust control during the construction phase; and
- DEADP: Waste Management commented on the need for proper waste management during all phases of development.

The above issues raised have been addressed in the Basic Assessment Report through a number of ways such as amendments to the limits of the preferred development alternative footprint, updates to the specialist reports to acknowledge, consider and expand on certain additional information, measures for control in the environmental specifications have been included in the EMPr, and certain points of clarity have been included in the Basic Assessment Report.

**CONCLUSIONS**

Through Chand's investigation, which entailed inputs from the design team, the specialists and key I&APs (i.e., State Departments), a number of environmental impacts were identified and considered.

Those aspects that influenced the EAP's opinion on this question are primarily related to the following points:

- The various considerations which were applied to the selection of the route in terms of size, spatial planning, and environmental requirements related to biophysical sensitivities (and avoidance thereof) within the preferred alternative for the proposed route;
- The need and desirability of the proposal with regard to the establishment of an efficient and safe public transport system as well as increased connectivity and economic access for previously disadvantaged communities;
- The positive impact on the local community in terms of job creation as well as improvements to public transport and economic access; and
- The improvements to local NMT and the road network.

In addition, the following aims of the proposal as well as the greater network with which it is associated have also been considered:

- Development of vibrant areas by removing barriers to access;
- Improvement of connectivity throughout the Metropolitan areas;
- Increased efficiency of people's movement and as an aid to the movement of commuters and development activities.
- Improved access and transportation routes to encourage future development and intensification of use;
- Decrease in walking distances from residential and places of work to public transport facilities; and
- Reinforced convergence on core routes and access points.

The impact assessments conducted by the various specialists found no sensitivities or development constraints on the site (of the preferred alternative) other than the ESNR, which lies adjacent to the limits of the preferred alternative development footprint.

It is believed that the impacts that have been identified have been adequately addressed through the footprint for the preferred alternative as well as the design on the works proposed at the Lotus Canal or will be mitigated to acceptable levels through the final design (e.g., appropriate management of stormwater) and/or the strict implementation of the EMPr for each site. A number of specialists have been involved in order to inform the investigation which provided both independence and transparency in the process as well as appropriate skills and expertise. The public participation process currently underway would also add value to the process as well as further transparency.

Alternatives have been assessed in the form of the preferred development alternative, two road geometry alternatives and the no-go or no-development alternative. In addition, alternatives within preferred development alternative have also been considered in terms of stormwater discharge point/ routing, as well as the best practicable design for the Lotus Canal and pedestrian bridges. The preferred alternative has been selected as a result of the positive impacts as well as the lack of and/r limited negative impacts and is also the preferred development alternative from an ecological perspective (Altern, 2021 and Belcher et al, 2021). In general, the impact of the proposed development is positive, while the impact of the no-go alternative would largely be zero, neutral or low negative (in the case of botanical impacts specifically). Furthermore, any positive impacts associated with the proposed development would be foregone should the no-go alternative be selected.

Overall, the long-term impacts of (preferred alternatives for) the proposal would be medium to high and would be positive, which outweigh the short-term negative impacts (mostly to be experienced locally and during the construction phase) that would result.

In conclusion, it is believed that the preferred alternative represents responsible development and would be an asset to the community and greater City of Cape Town, which is aligned with spatial planning goals, while not compromising the ecological integrity of the nearby sensitivities and having no impact on heritage/cultural areas of value to the communities and in terms of the NHRA. It is therefore believed that the preferred alternative (i.e., Alternative 3)/ the preferred expansion footprint should be authorised (noting that a specific plan should not be authorised as the details thereof may be further amended), subject to the implementation of the mitigation measures included in this report and the EMPr.

## IMPORTANT INFORMATION TO BE READ PRIOR TO COMPLETING THIS BASIC ASSESSMENT REPORT

1. **The purpose** of this template is to provide a format for the Basic Assessment report as set out in Appendix 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended) in order to ultimately obtain Environmental Authorisation.

2. The Environmental Impact Assessment ("EIA") Regulations is defined in terms of Chapter 5 of the National Environmental Management Act, 19998 (Act No. 107 of 1998) ("NEMA") hereinafter referred to as the "NEMA EIA Regulations".

3. The required information must be typed within the spaces provided in this Basic Assessment Report ("BAR"). The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided.

4. All applicable sections of this BAR must be completed.

5. Unless protected by law, all information contained in, and attached to this BAR, will become public information on receipt by the Competent Authority. If information is not submitted with this BAR due to such information being protected by law, the applicant and/or Environmental Assessment Practitioner ("EAP") must declare such non-disclosure and provide the reasons for believing that the information is protected.

6. This BAR is current as of **November 2019**. It is the responsibility of the Applicant/ EAP to ascertain whether subsequent versions of the BAR have been released by the Department. Visit this Department's website at http://www.westerncape.gov.za/eadp to check for the latest version of this BAR.

7. This BAR is the standard format, which must be used in all instances when preparing a BAR for Basic Assessment applications for an environmental authorisation in terms of the NEMA EIA Regulations when the Western Cape Government Department of Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority.

8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this BAR must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this Report must be provided to the relevant Organs of State for consultation purposes, which may, if so, indicated by the Department, include providing a printed copy to a specific Organ of State.

9. This BAR must be duly dated and originally signed by the Applicant, EAP (if applicable) and Specialist(s) and must be submitted to the Department at the details provided below.

10. The Department's latest Circulars pertaining to the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must be taken into account when completing this BAR.

11. Should a water use licence application be required in terms of the National Water Act, 1998 (Act No. 36 of 1998) ("NWA"), the "One Environmental System" is applicable, specifically in terms of the synchronisation of the consideration of the application in terms of the NEMA and the NWA. Refer to this Department's Circular EADP 0028/2014: One Environmental Management System.

12. Where Section 38 of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA") is triggered, a copy of Heritage Western Cape's final comment must be attached to the BAR.

13. The Screening Tool developed by the National Department of Environmental Affairs must be used to generate a screening report. Please use the Screening Tool link

https://screening.environment.gov.za/screeningtool to generate the Screening Tool Report. The screening tool report must be attached to this BAR.

14. Where this Department is also identified as the Licencing Authority to decide on applications under the National Environmental Management: Air Quality Act (Act No. 29 of 2004) ('NEM: AQA"), the submission of the Report must also be made as follows, for-
Waste Management Licence Applications, this report must also (i.e., another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (Tel: 021-483-2728/2705 and Fax: 021-483-4425) at the same postal address as the Cape Town Office.

Atmospheric Emissions Licence Applications, this report must also be (i.e., another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (Tel: 021 483 2888 and Fax: 021 483 4368) at the same postal address as the Cape Town Office.

## DEPARTMENTAL DETAILS

| **CAPE TOWN OFFICE: REGION 1 and REGION 2**<br><br>**(Region 1: City of Cape Town, West Coast District)**<br>**(Region 2: Cape Winelands District & Overberg District)** | **GEORGE OFFICE: REGION 3**<br><br>**(Central Karoo District & Garden Route District)** |
|---|---|
| BAR must be sent to the following details:<br><br>Western Cape Government<br>Department of Environmental Affairs and Development Planning<br>Attention: Directorate: Development Management (Region 1 or 2)<br>Private Bag X 9086<br>Cape Town,<br>8000<br><br>Registry Office<br>1st Floor Utilitas Building<br>1 Dorp Street,<br>Cape Town<br><br>Queries should be directed to the Directorate: Development Management (Region 1 and 2) at:<br>Tel: (021) 483-5829<br>Fax (021) 483-4372 | BAR must be sent to the following details:<br><br>Western Cape Government<br>Department of Environmental Affairs and Development Planning<br>Attention: Directorate: Development Management (Region 3)<br>Private Bag X 6509<br>George,<br>6530<br><br>Registry Office<br>4th Floor, York Park Building<br>93 York Street<br>George<br><br>Queries should be directed to the Directorate: Development Management (Region 3) at:<br>Tel: (044) 805-8600<br>Fax (044) 805 8650 |

## MAPS

| **Provide a location map (see below) as Appendix A1 to this BAR that shows the location of the proposed development and associated structures and infrastructure on the property.** | |
|---|---|
| Locality Map: | The scale of the locality map must be at least 1:50 000.<br>For linear activities or development proposals of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map.<br>The map must indicate the following:<br>• an accurate indication of the project site position as well as the positions of the alternative sites, if any;<br>• road names or numbers of all the major roads as well as the roads that provide access to the site(s)<br>• a north arrow;<br>• a legend; and<br>• a linear scale.<br><br>For ocean based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken.<br><br>Where comment from the Western Cape Government: Transport and Public Works is required, a map illustrating the properties (owned by the Western Cape Government: Transport and |

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| | Public Works) that will be affected by the proposed development must be included in the Report. |
| **Provide a detailed site development plan / site map (see below) as Appendix B1 to this BAR; and if applicable, all alternative properties and locations.** | |
| Site Plan: | Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:<br>• The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be clearly indicated on the plan, preferably together with a linear scale.<br>• The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan.<br>• On land where the property has not been defined, the co-ordinates of the area in which the proposed activity or development is proposed must be provided.<br>• The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be clearly indicated on the site plan.<br>• The position of each component of the proposed activity or development as well as any other structures on the site must be indicated on the site plan.<br>• Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the proposed development **must** be clearly indicated on the site plan.<br>• Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.<br>• Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to):<br>o Watercourses / Rivers / Wetlands<br>o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable);<br>o Coastal Risk Zones as delineated for the Western Cape by the Department of Environmental Affairs and Development Planning ("DEA&DP"):<br>o Ridges;<br>o Cultural and historical features/landscapes;<br>o Areas with indigenous vegetation (even if degraded or infested with alien species).<br>• Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted.<br>• North arrow<br><br>A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas. |
| Site photographs | Colour photographs of the site that shows the overall condition of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached to this BAR as **Appendix C**. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites. |
| Biodiversity Overlay Map: | A map of the relevant biodiversity information and conditions must be provided as an overlay map on the property/site plan. The Map must be attached to this BAR as **Appendix D**. |
| Linear activities or development and multiple properties | GPS co-ordinates must be provided in degrees, minutes and seconds using the Hartebeeshoek 94 WGS84 co-ordinate system.<br>Where numerous properties/sites are involved (linear activities) you must attach a list of the Farm Name(s)/Portion(s)/Erf number(s) to this BAR as an Appendix.<br>For linear activities that are longer than 500m, please provide a map with the co-ordinates taken every 100m along the route to this BAR as **Appendix A3**. |

# ACRONYMS

| | |
|---|---|
| BAR | Basic Assessment Report |
| BRT | Bus Rapid Transit |
| CBA | Critical Biodiversity Area |
| CTMSDF | City of Cape Town Municipal Spatial Development Framework |
| DAFF | Department of Forestry and Fisheries |
| DEA | Department of Environmental Affairs |
| DEA | National Department of Environmental Affairs |
| DEA&DP | Western Cape Government: Environmental Affairs and Development Planning |
| DHS | Department of Human Settlement |
| DoA | Department of Agriculture |
| DoH | Department of Health |

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|---|---|
| DWAF | Department of Water Affairs and Forestry |
| DWS | National Department of Water and Sanitation |
| EAP | Environmental Assessment Practitioner |
| EIA | Environmental Impact Assessment |
| EMF | Environmental Management Framework |
| EMPr | Environmental Management Programme |
| ESA | Ecological Support Area |
| ESNR | Edith Stephens Nature Reserve |
| FGM | Focus Group Meeting |
| GA | General Authorisation |
| HIA | Heritage Impact Assessment |
| HWC | Heritage Western Cape |
| I&APs | Interested and Affected Parties |
| IPTN | Integrated Public Transport Networks |
| IRPTN | Integrated Rapid Public Transport Networks |
| IRT | Integrated Rapid Transit |
| LC | Least Concern |
| LED | Light-emitting Diode |
| MSDF | Municipal Spatial Development Framework |
| NDP | National Development Plan |
| NEM: AQA | National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) |
| NEM: ICMA | National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) |
| NEM: WA | National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) |
| NEM:BA | National Environmental Management: Biodiversity Act (No. 10 of 2004) |
| NEMA | National Environmental Management Act, 1998 (Act No. 107 of 1998) |
| NFEPA | National Freshwater Ecosystem Protection Assessment |
| NHRA | National Heritage Resources Act, 1999 (Act No. 25 of 1999) |
| NMT | Non-Motorised Transport |
| NOI | Notification of Intent |
| NSBA | National Spatial Biodiversity Assessment |
| NWA | National Water Act, 1998 (Act No. 36 of 1998) |
| OESA | Other Ecological Support Area |
| ONA | Other Natural Area |
| ONV | Other Natural Vegetation |
| PLTF | Provincial Land Transport Framework |
| PPP | Public Participation Process |
| PSDF | Provincial Spatial Development Framework |
| SDF | Spatial Development Framework |
| STR | Screening Tool Report |
| TOR | Terms of Reference |
| WCBSP | Western Cape Biodiversity Spatial Plan |
| WCG | Western Cape Government |
| WCG:DHS | Western Cape Government: Department of Human Settlements |
| WCG:DoA | Western Cape Government: Department of Agriculture |
| WCG:DoH | Western Cape Government: Department of Health |
| WULA | Water Use Licence Application |

## ATTACHMENTS

**Note:** The Appendices must be attached to the BAR as per the list below. Please use a ✓ **(**tick) or a **x** (cross) to indicate whether the Appendix is attached to the BAR.

The following checklist of attachments must be completed.

| **APPENDIX** | | | **✓ (Tick) or x (cross)** |
|---|---|---|---|
| **Appendix A:** | **Maps** | | |
| | **Appendix A1:** | **Locality Map** | ✓ |
| | **Appendix A2:** | **Coastal Risk Zones as delineated in terms of ICMA for the Western Cape by the Department of Environmental Affairs and Development Planning** | N/A |
| | **Appendix A3:** | **Map with the GPS co-ordinates for linear activities** | ✓ |

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| **Appendix B:** | **Appendix B1:** | **Site development plan(s)** | ✓ |
| | **Appendix B2** | **A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;** | ✓ |
| **Appendix C:** | **Photographs** | | ✓ |
| **Appendix D:** | **Biodiversity overlay map** | | ✓ |
| **Appendix E:** | **Permit(s) / license(s) / exemption notice, agreements, comments from State Department/Organs of state and service letters from the municipality.** | | |
| | **Appendix E1:** | **Final comment/ROD from HWC** | ✓ |
| | **Appendix E2:** | **Copy of comment from Cape Nature** | ✓ |
| | **Appendix E3:** | **Final Comment from the DWS** | ✓ |
| | **Appendix E4:** | **Comment from the DEA: Oceans and Coast** | N/A |
| | **Appendix E5:** | **Comment from the DAFF** | N/A but they received notification of the Draft BAR for comment |
| | **Appendix E6:** | **Comment from WCG: Transport and Public Works** | **X** No comment received despite notification |
| | **Appendix E7:** | **Comment from WCG: DoA** | N/A but they received notification of the Draft BAR for comment |
| | **Appendix E8:** | **Comment from WCG: DHS** | N/A but they received notification of the Draft BAR for comment |
| | **Appendix E9:** | **Comment from WCG: DoH** | N/A but they received notification of the Draft BAR for comment |
| | **Appendix E10:** | **Comment from DEA&DP: Pollution Management** | ✓ |
| | **Appendix E11:** | **Comment from DEA&DP: Waste Management** | ✓ |
| | **Appendix E12:** | **Comment from DEA&DP: Biodiversity** | **X** No comment received despite notification |

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| | **Appendix E13:** | **Comment from DEA&DP: Air Quality** | ✓ |
| | **Appendix E14:** | **Comment from DEA&DP: Coastal Management** | N/A |
| | **Appendix E15:** | **Comment from the local authority** | ✓ |
| | **Appendix E16:** | **Confirmation of all services (water, electricity, sewage, solid waste management)** | Not Applicable, proposed development does not require new servicing, but there is a comment from the City of Cape Town on the Stormwater Management Plan – *Refer to Appendix A of the Stormwater Management Plan Appendix G (d)* |
| | **Appendix E17:** | **Comment from the District Municipality** | N/A- City of Cape Town is a Metro so they are the only municipality |
| | **Appendix E18:** | **Copy of an exemption notice** | N/A |
| | **Appendix E19** | **Pre-approval for the reclamation of land** | N/A |
| | **Appendix E20:** | **Proof of agreement/TOR of the specialist studies conducted.** | Within the body of each specialist report in Appendix G |
| | **Appendix E21:** | **Proof of land use rights**<br>**Refer to the zoning map and landowner's information in Appendix N** | ✓ |
| | **Appendix E22:** | **Proof of public participation agreement for linear activities** | ✓ |
| **Appendix F:** | **Public participation information: including a copy of the register of I&APs, the comments and responses Report, proof of notices, advertisements, and any other public participation information as is required.** | | ✓ |
| **Appendix G:** | **Specialist Report(s)**<br>**a. Freshwater Study**<br>**b. Freshwater Risk Assessment**<br>**c. Botanical Study**<br>**d. Stormwater management plan**<br>**e. NID & Heritage Study** | | ✓ |

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| **Appendix H:** | **Environmental Management Programme (EMPr)** | ✓ |
| **Appendix I:** | **Screening tool report & Site Sensitivity Verification Report** | ✓ |
| **Appendix J:** | **The impact and risk assessment for each alternative** | Within the body of the report |
| **Appendix K:** | **Need and desirability for the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013)/DEA Integrated Environmental Management Guideline** | Within the body of the report |
| **Appendix L:** | **Application Form and DEA&DP Acknowledgement** | ✓ |
| **Appendix M:** | **NOI and DEA&DP Acknowledgement** | ✓ |
| **Appendix N:** | **Property Information** | ✓ |
| **Appendix O:** | **Edith Stephens Nature Reserve Protected Area Proclamation including Provincial Notice and Associated Cadastral limits** | ✓ |
| **Appendix P:** | **Draft Landscape Plan** | ✓ |
| **Appendix Q:** | **Proof of General Authorisation application submission to the DWS** | ✓ |

**LIST OF FIGURES**

**LIST OF TABLES**

## SECTION A: ADMINISTRATIVE DETAILS

| | | | |
|---|---|---|---|
| Highlight the Departmental Region in which the intended application will fall | **CAPE TOWN OFFICE:** | | GEORGE OFFICE: |
| | **REGION 1**<br><br>**(City of Cape Town, West Coast District** | REGION 2<br><br>(Cape Winelands District & Overberg District) | REGION 3<br>(Central Karoo District & Garden Route District) |
| **Duplicate this section where there is more than one Proponent**<br>Name of Applicant/Proponent: | City of Cape Town: Transport Directorate represented by Mr. Neil Slingers | | |
| Name of contact person for Applicant/Proponent (if other): | John Hoal | | |
| Company/ Trading name/State Department/Organ of State: | GIBB (Pty) Ltd | | |
| Company Registration Number: | 1992/007139/07 | | |
| Postal address: | P.O Box 3965 | | |
| | Cape Town | Postal code: 8001 | |
| Telephone: | (021)) 469 9191 | Cell: N/A | |
| E-mail: | jhoal@gibb.co.za | Fax: (021) 424 5571 | |
| Company of EAP: | Chand Environmental Consultants | | |
| EAP name: | Marielle Penwarden<br>Sadia Chand<br>Claudette Muller | | |
| Postal address: | PO Box 238 | | |
| | Plumstead | Postal code: 7801 | |
| Telephone: | (021) 762 3050 | Cell: N/A | |
| E-mail: | marielle@chand.co.za<br>sadia@chand.co.za<br>claudette@chand.co.za | Fax: 086 665 7430 | |
| Qualifications: | Marielle Penwarden: BSc Hons Environmental Management (UNISA)<br>Sadia Chand: BSc Honours (Toronto), MPhil Environmental Science (UCT)<br>Claudette Muller: MPhil Environment, Society & Sustainability (UCT) | | |
| EAPASA registration no: | Marielle Penwarden:<br>SACNASP Candidate Natural Scientist (600001/15)<br>EAPSA Registration: 2019/1988<br><br>Sadia Chand:<br>EAPSA registration Pending<br>PRISA CPRP 73531<br><br>Claudette Muller:<br>EAPSA registration Pending | | |
| | Note that the City of Cape Town owns the road and road reserve | | |
| Name of contact person for landowner (if other): | Neil Mark Slingers | | |
| Postal address: | Civic Centre | | |
| | 12 Hertzog Boulevard, Cape Town | Postal code: 8000 | |
| Telephone: | | Cell: | |
| E-mail: | neil.slingeres@capetown.gov.za | Fax: | |
| Name of Person in control of the land: | Same as above | | |
| Name of contact person for person in control of the land: | | | |

| | | |
|---|---|---|
| Postal address: | | |
| | | Postal code: |
| Telephone: | ( ) | Cell: |
| E-mail: | | Fax: ( ) |

| | | |
|---|---|---|
| **Duplicate this section where there is more than one Municipal Jurisdiction** Municipality in whose area of jurisdiction the proposed activity will fall: | • City of Cape Town: Cape Flats District (most of the route falls within this district); and<br>• City of Cape Town: Khayelitsha/ Mitchells Plain Greater Blue Downs District (the eastern segment of the route falls within this district) | |
| Contact person: | Cape Flats District<br>Andy Greenwood (Regional Head)<br>Chad Newman (District Manager)<br><br>Khayelitsha and Mitchells Plain District<br>Azanne van Wyk (Environmental & Heritage Regional Manager)<br>Margot Muller (District Manager) | |
| Postal address: | Margot Muller: Private Bag X93, Bellville, 7535<br>Azanne van Wyk: Stocks and Stocks Building, c/o Ntlazane and Ntaba Road, Khayelitsha<br>Andy Greenwood: Plessey Building, c/o Main and Victoria Road, Plumstead, 7800<br>Chad Newman: Ledger House, c/o Aden Avenue and George Street, Athlone, 7764 | |
| Telephone | Margot Muller: 021 360 1132<br>Azanne van Wyk: 021 850 4094<br>Andy Greenwood: 021 444 2239<br>Chad Newman: 021 684 4310 | Cell: Margot Muller: 084 222 1263<br>Chad Newman: 082 254 1445 |
| E-mail: | Azanne.vanwyk@capetown.gov.za<br>Khayemitch.hub@capetown.gov.za<br>Andy.greenwood@capetown.gov.za<br>CapeFlats.hub@capetown.gov.za | Fax: Margot Muller: 086 202 9810<br>Azanne van Wyk: 021 850 4004<br>Andy Greenwood: 021 444 3802<br>Chad Newman: 086 202 9745 |

## SECTION B: CONFIRMATION OF SPECIFIC PROJECT DETAILS AS INLCUDED IN THE APPLICATION FORM

| | | | | | |
|---|---|---|---|---|---|
| 1. | Is the proposed development (please tick): | ~~New~~ | | **Expansion** | ✓ |
| 2. | Is the proposed site(s) a brownfield of greenfield site? Please explain. | | | | |
| Given that this project is an expansion of the existing Govan Mbeki Road, the majority of the proposed area for the project would be considered brownfield with minimal patches of greenfield areas.<br><br>Note that, although the IRT lanes and foundations for the bus stops do not exist at present, Govan Mbeki Road does, and the proposed development would entail the expansion of Govan Mbeki Road. The overall use of the road would remain the same (i.e., for vehicular transportation as a road and NMT along the sidewalk), however public transport would be afforded priority in the new areas/lanes proposed as part of this development. | | | | | |
| 3. | **For Linear activities or developments** | | | | |
| 3.1. | Provide the Farm(s)/Farm Portion(s)/Erf number(s) for all routes: | | | | |
| Refer to Appendix N. | | | | | |
| 3.2. | Development footprint of the proposed development for all alternatives. | | | | See below |
| Note that the existing footprint of this section of Govan Mbeki Road is approx. 129,585.67 $m^2$ and the expansion footprint would be approximately 114,000 $m^2$ for Alternative 1, and 47,546 $m^2$ (totalling 15,839 $m^2$ of medians and 31,707 $m^2$ for the area to be widened adjacent to the outer edge of the road/kerb) (*pers comms*, P. Smith, GIBB, 25/02/2021) ( for the preferred alternative , therefore the total footprint of the completed activity (i.e. upgraded Govan Mbeki Road) would be 47,546 + 129,585.67= 177,131.67 $m^2$<br><br>Note that existing footprint has been measured by the EAP using Google Earth Pro, it includes medians, roadway, embayment, and sidewalk. Refer to Appendix A3 showing measuring points.<br><br>Note the above is for the preferred alternative, other alternatives would be greater. | | | | | |
| 3.3. | Provide a description of the proposed development (e.g., for roads the length, width, and width of the road reserve in the case of pipelines indicate the length and diameter) for all alternatives. | | | | |

Phase 2A of the City of Cape Town's MyCiTi IRT System operates along the Lansdowne-Wetton Corridor which currently carries in the order of 50% of all road-based public transport trips within the City. The proposed project for Phase 2A is to link the south-eastern suburbs of Cape Town (Metro- Southeast) with nodes along the Southern Suburbs rail line. The two principal trunk routes will operate between Mitchells Plain and Claremont and Khayelitsha and Wynberg and consists of both trunk and feeder services.

The focus area of this application for Environmental Authorisation process comprises of the proposed upgrades to Govan Mbeki Road / M9 from the corner of Heinz/Ottery Road to just beyond Link Road approximately 3.5 km to the east (refer to Figure 1 and Appendix A1). This section of road passes the Edith Stephens Nature Reserve (ESNR) to the south and the Lotus Canal to the north, as well as a sensitive biodiversity area to the north just after the Duinefontein Road intersection.


**Figure 1 Locality Map (created using Google Earth Pro and layers provided by GIBB, 17/02/2021, 17/06/2021)**

The proposed scope includes the following:

- Up to four dedicated bus lanes;
- Groundworks in the centre of certain points along the route for future construction of a bus station (note that this would only be at certain points throughout the route where they are required in terms of logistics and availability of space);
- General traffic lanes, typically comprising of four lanes (two in either direction);
- A road shoulder;
- A strip for landscaping and service (e.g., streetlights) installation; and
- A sidewalk for pedestrian and cyclist use (i.e., Non-Motorised Transport- NMT- lanes).

Refer to Figure 2 for typical cross sections. The detailed design of the cross-section throughout the route will occur in the future and it is important to note that it may differ slightly from one section of the route to the next. The nature of the cross-section would be determined by constraints on the ground. The cross section applied (i.e., that with a bus station *versus* that without a bus station) would depend on the logistic requirements in terms of where bus stations are needed as well as whether or not there is sufficient space available for the construction of the foundation for a station. Note that, with regard to the bus stations, only the foundation works would be carried out as part of this proposed development. The bus stations themselves would be constructed at a later stage, under a separate tender process.

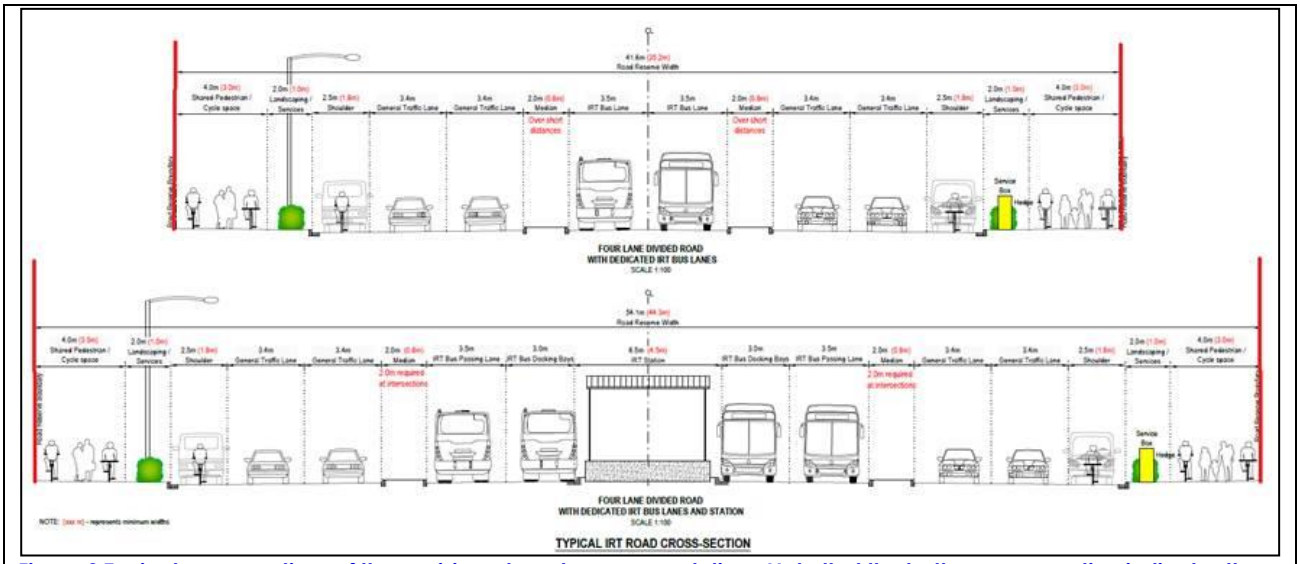


**Figure 2 Typical cross-sections of the envisioned road upon completion. Note that the bottom cross section indicates those points for which the foundation for bus stations would be included. (figure provided by Gibb (Pty) Ltd)**

Refer to Appendix B1 for a draft plan indicating the elevated road link at the Govan Mbeki Road/ Duinefontein Road intersection. Note that this is merely a draft drawing indicative of the intention which may change slightly during detail design. The maximum footprint thereof is, however, assessed in this Basic Assessment process.

The proposed new bus (Bus Rapid Transit-BRT) lanes to be included within the existing carriageway would be reserved for the exclusive use of the MyCiTi buses which will be serviced by a new fleet of vehicles. Other vehicles, such as heavy vehicles, taxis, Golden Arrow Buses, and passenger vehicles, will not be permitted on the BRT-lanes and will remain on the general traffic lanes of the existing carriageways.

Note that the exact design would change during the detail design phase, however the final design would remain within the footprint applied for in this application.

Refer to Appendix B1 for a detailed route map which illustrates the proposed expansion as well as the location of the road reserve for the preferred alternative (i.e., Alternative 3). Generally, all the proposed works would take place within the road reserve, however, there are a few portions which would occur beyond the road reserve. The preferred road geometry (i.e., development footprint) extends up to 15m either side of the existing road shoulder, but is significantly narrower for the portion along ESNR, in order to avoid encroachment beyond the road reserve and into the ESNR. Refer also to Appendix B1 for a draft plan indicating the proposed layout of the road and various components thereof (i.e., bus lanes, vehicles lanes, etc.).

**Note that an envelope/development footprint is applied for with variations of the cross-sections and plans depicted in Figure 2 to be designed during the detail design phase. It is believed that considering a development envelope is appropriate for this proposed development (essentially expansion of a road) as the land use (i.e., a road) remains consistent throughout the extent of the footprint. The Applicant will engage with each property owner outside of this Basic Assessment process (i.e., during the detailed design phase) in order to reach an appropriate agreement among all parties for the best use of the land. The proposed development, therefore, may not extend to the full provision of the proposed footprint in certain areas.**

**Proposed works at the Lotus Canal**

The existing Lotus River canal is a trapezoidal channel with a small concrete low flow at its invert (Gibb, 2021). Although the existing Lotus Canal generally has capacity to convey the 1 in 50-year return, there are a number of low points along the southern embankment of the Lotus Canal which would allow flooding into the existing Govan Mbeki Road (Gibb, 2021).

In terms of the proposed cross-section, the pedestrian/cycle lane/sidewalk component of the proposed upgrades would encroach into the Lotus Canal by approximately 3 m, but the encroachment thereof would extend further, between 3 m and 6m at two points (refer to Figure 3) (Gibb, 2021). Note that this would also expand over three existing outtake culverts opposite Edith Stephens Nature Reserve, and the culverts would be left as is (Gibb, 2021).

***Figure 3 Encroachment into the Lotus Canal (yellow indicates where the proposed sidewalks would encroach by approx 3m and the red reaches indicate where encroachment would be up to 6m), the first nearby the Edith Stephens Wetland Nature Reserve and the second under the upstream pedestrian bridge (Source: GIBB, 2021)***

A new retaining/flood protection wall (approx 250 mm wide with height ranging up to 2 m high depending on existing slope) is proposed at specific low points identified along the Lotus Canal (which would stretch along the majority of the Lotus Canal adjacent to E1, west of the Duinefontein Intersection), along the southern bank thereof. As per the encroachment described above, some segments of the proposed wall would be located within the existing channel profile (generally 3m in, but this would extent to approximately 6 m for a short reach as indicated in Figure 3) (Gibb, 2021). These retaining walls would be sufficient to prevent overtopping from the Lotus Canal onto Govan Mbeki Road. Note that existing culverts would be retained in their current state (Gibb, 2021).

The typical section for the proposed retaining wall includes a reinforced concrete wall with a concrete footing (Gibb, 2021). The concrete wall would end 150 mm below the walkway level, and a concrete balustrade (refer to Figure 4) would be bolted onto this wall (Gibb, 2021). The purpose of the concrete balustrade would be to protect vehicles from leaving the road and crashing into the Lotus River Canal (i.e., to provide a crash barrier), however it is worth noting that the lower portion of the concrete balustrade would consist of a solid wall, with structural joints located 4m c/c (Gibb, 2021). The wall would be watertight (unless vandalism removes the joints between the balustrades) (Gibb, 2021). An alternative design may be employed which would comprise a solid concrete balustrade with a suitable waterstop, but this would be resolved at detail design, noting that the typical cross section and function would apply either way (Gibb, 2021). The proposed retained wall would run along the reach between Duinefontein Road and Vygekraal Road (ending around 200m west of Duinefontein Road); but its function would be only to carry out the function of a crash barrier where the Canal does not overtop the southern embankment and inundate Govan Mbeki Road in the existing scenario (Gibb, 2021).

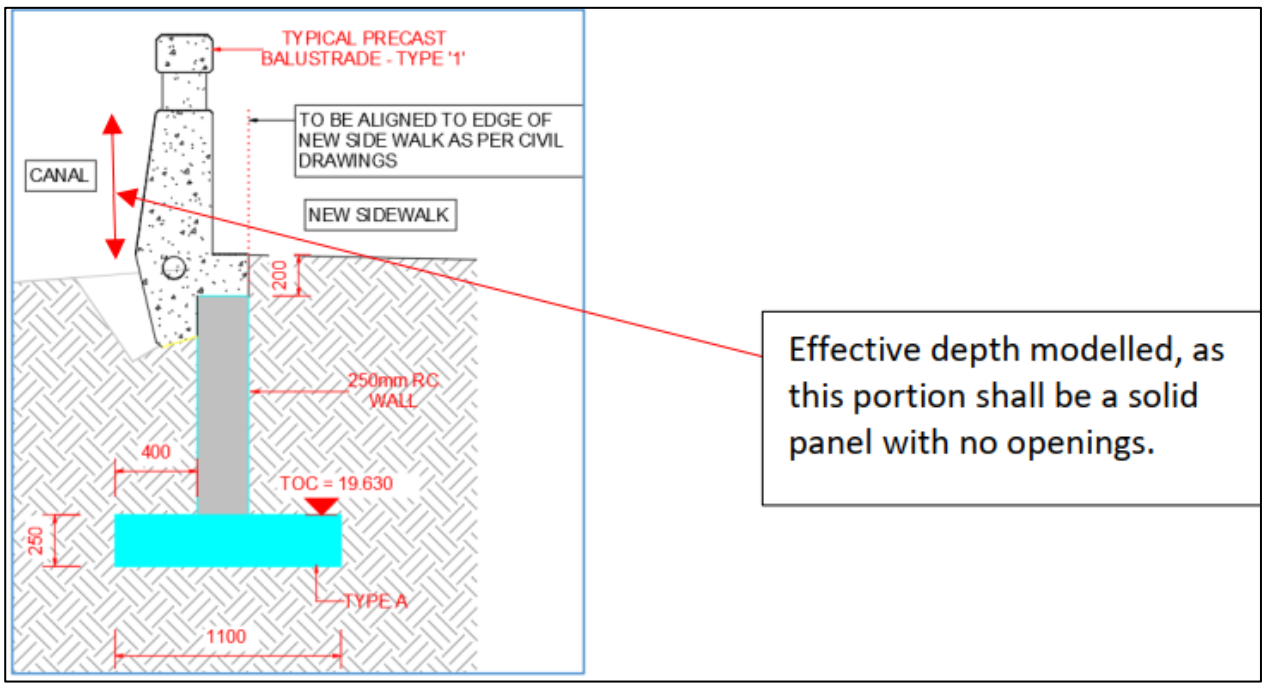


***Figure 4 Proposed concrete balustrade and stormwater modelling applied (source: GIBB, 2021)***

Note that no volumetric increase in the channel section is proposed as it is not deemed necessary (Gibb 2021).

Two existing pedestrian bridges across the canal would also be reconstructed and would each be supported by a single central pier, the footing of which would be construction within the Lotus Canal (Gibb, 2021). They would not, however, be

replaced in their exact current footprint, but would be located slightly to the west thereof. The existing bridges would be retained in order to allow for them to remain operational during the construction phase, after which they would then be demolished (Gibb, 2021). Refer to Figure 5 for the location thereof and to Figure 6 and Figure 7 for the cross section of each.


***Figure 5 Location of Bridges- Existing and Proposed (created by EAP using Google Earth Pro and layers from GIBB, February 2021 and Belcher, Grobler & Barrow, 2021 in April 2021)***

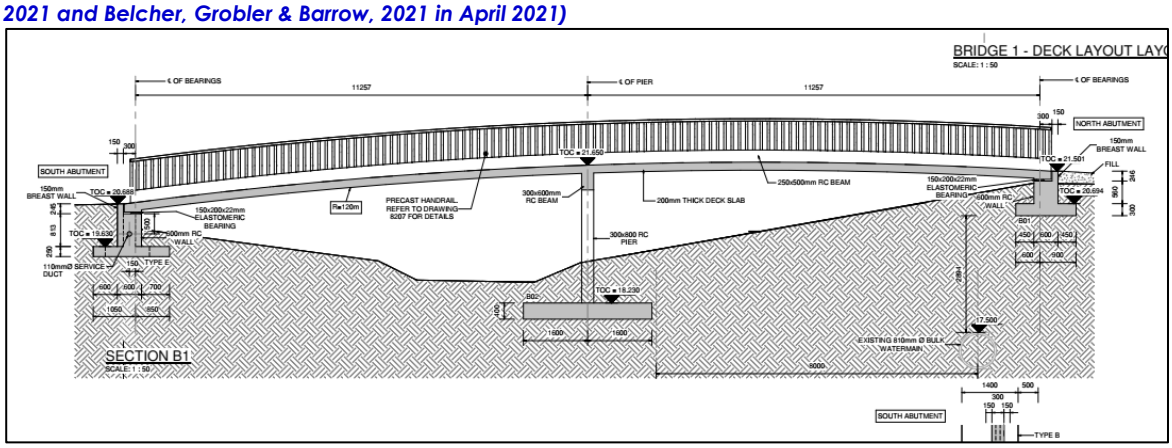


***Figure 6 Bridge 1 Cross-section (source: Gibb, 2021)***

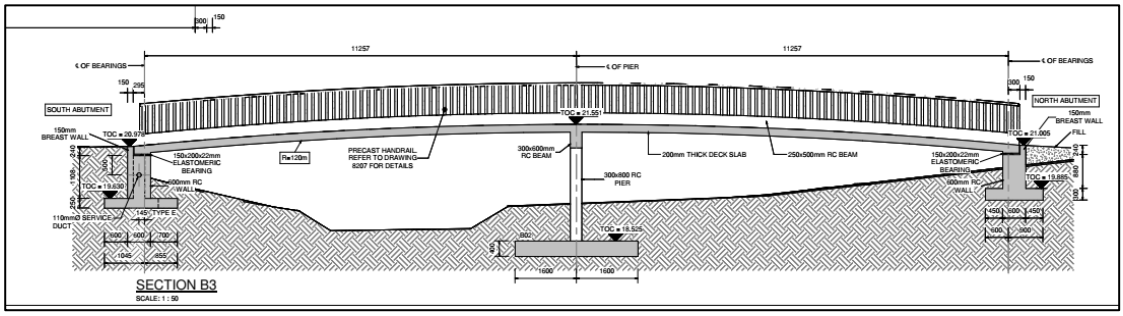


***Figure 7 Bridge 2 Cross-Section (source: GIBB, 2021)***

Because it would be located within the existing flooding area, the upstream bridge would also have a short-arched wall that would tie into the proposed concrete balustrade and the wall would cater for the 1 in 50-year water level (Gibb, 2021). The lower bridge would not require the additional wall because it would not be prone to existing flooding. Refer to Figure 8 for a 3D render of a section of the proposed retaining wall, a pedestrian bridge, as well as how they would tie-in to each other (Gibb, 2021).

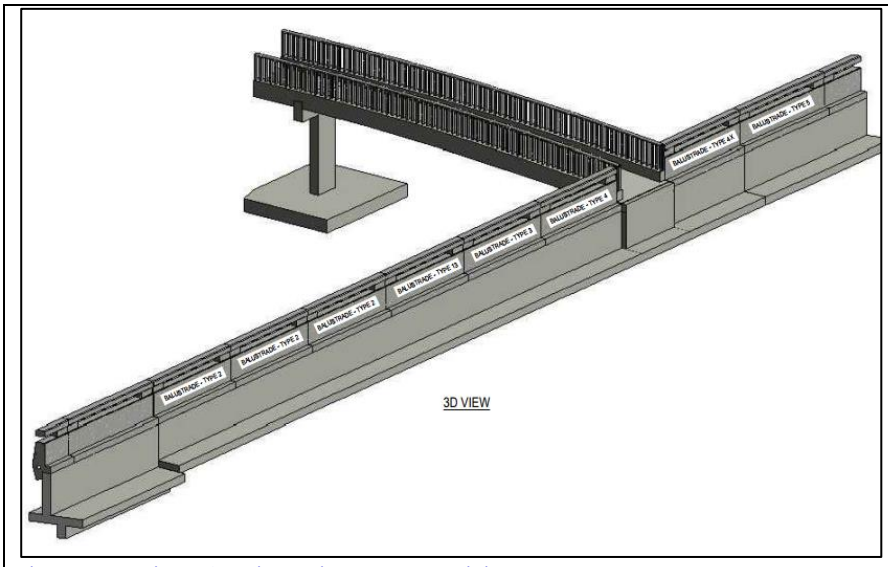


***Figure 8 3D View of Typical Bridge and Retaining Wall (source: GIBB, 2021)***

The stormwater management plan also concludes that the proposed retaining wall would have a minimal effect on the Lotus River Canal. "It can be seen that the decrease in channel width due to the encroachment has minimal impact on flow depths or maximum channel velocities, with an average increase of 30 mm and a maximum increase of 110 mm located at the upstream pedestrian bridge. It can therefore be seen that the impact of the IRT infrastructure on the Lotus River Canal is minimal; with the abutment wall stopping the existing flooding occurring within Govan Mbeki Road, and that the design is fit for purpose. (Gibb, 2021)"

Note that no stormwater upgrades/works would occur within the Edith Stephens Nature Reserve, as per the following statement in the stormwater management plan: "It is therefore considered unnecessary at this stage to upgrade the Edith Stevens Pond. (Gibb, 2021)"

**Stormwater Management**

It is proposed to construct a new minor stormwater drainage system to serve Govan Mbeki Road as part of the proposed development. This system would either tie into the existing minor stormwater drainage system or have new inlets into the Lotus River Canal constructed.

Gibb (2021) confirms that the stormwater drainage system has been designed as follows:

- The minor stormwater drainage system shall convey at a minimum a 1 in 10-year return period.
- A minimum 375 mm diameter pipe shall serve the catchpits, and 450 mm diameter pipes shall connect manholes. Due to the relatively small contributing catchments, the hydraulic assessments found that the minor stormwater drainage system would be able to convey greater than the 1 in 10-year return period.
- The road would convey up to- and including- the 1 in 50-year return period.

The system would comprise a series of underground pipelines to convey the stormwater from the road into existing stormwater lines, or to catchpits and then to 375 mm diameter outlet pipes, which would daylight into the Lotus Canal (Gibb, 2021). The stormwater drainage systems discharging into the Lotus River Canal are shown in Figure 9 and Figure 10.


***Figure 9 Proposed Minor Stormwater Drainage System (1) (source: GIBB, 2021)***

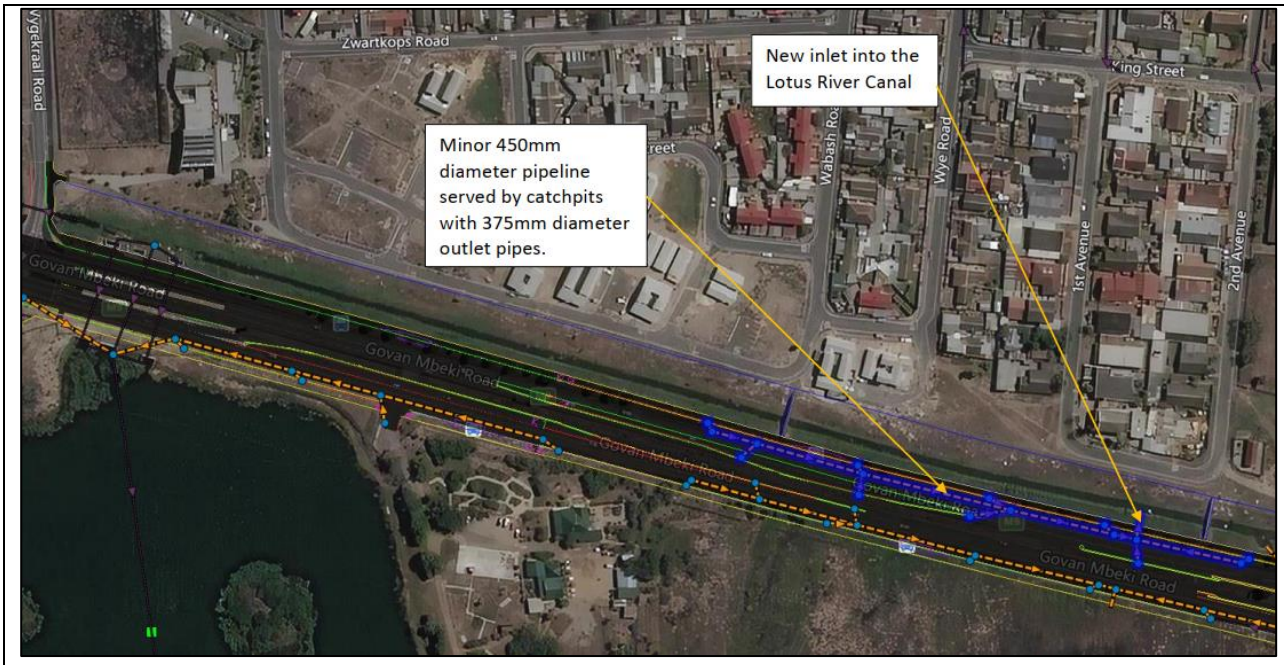


***Figure 10 Proposed Minor Stormwater Drainage System (2) (source: GIBB, 2021)***

***Addressing I&AP Comments: The detail design of the proposal and stormwater management plan is to be discussed with the Site Manager of ESNR and City of Cape Town Biodiversity, at their request. The fence has been mentioned as well. This point is included following a request from ESNR and the City of Cape Town Biodiversity branch.***

Note that it has been suggested as a condition of authorisation that when detailed design of the stormwater management system and interface with ESNR is underway, the ESNR Site Manager and a representative from City of Cape Town Biodiversity should be engaged (this discussion is to include discussion on the construction and maintenance of a fence).

There would be no requirements for **new** bulk services as the proposed development is the expansion of an existing road which has existing services in place. Any required relocation of existing service lines while road upgrade construction activities are underway would remain within the existing road and road reserve (i.e., the development footprint). With respect to streetlights, existing lights would be replaced with Light Emitting Diode (LED) lights, which require less energy.

**Landscaping**

***Addressing I&AP Comments: I&APs have requested that the design be aesthetically pleasing, and that the beautification of local areas be considered. The landscaping strategy has taken this into consideration.***

Some landscaping would be carried out beyond the basic rehabilitation and clearing requirements indicated in the Environmental Management Programme (EMPr). Landscaping would entail a combination of planting of grasses, trees, groundcovers, and paving (OVP, 2021). In more high traffic areas, there would be a combination of pedestrian crossings (i.e., informal, painted) as well as some resilient urban elements such as concrete seat walls (OVP, 2021). There would also be some larger palms as well as rock and stone fields for space-defining elements (OVP, 2021). At the larger nodes, the aforementioned elements would also be included (OVP, 2021).

Refer to Appendix P for the draft Landscape Plan.

With respect to the Listed Activities triggered, the following aspects of the proposed development, preferred alternative (i.e., Alternative 3) are important:

- Approximately 100 m$^2$ of Cape Flats Dune Strandveld, approximately 400 m$^2$ of Cape Lowlands Freshwater Wetlands, and approximately 200 m$^2$ of Cape Flats Sand Fynbos would be cleared, however the state of vegetation in these areas is highly degraded or completely transformed (Altern, 2021), therefore Listed Activities in this regard may not be triggered, but this is not an absolute certainty, so the associated Listed Activities have been applied for and assessed as per the precautionary principal;
- Although the proposed development touches on a number of "waterbodies", the large majority of these are stormwater/ attenuation facilities which have resulted from run-off from Govan Mbeki Road and they have no ecological value (Belcher *et al*, 2021). The only area of significance is that infilling in approximately 750m$^2$ of the wetland mapped along the fringe of ESNR would be required as well as works within the Lotus Canal for the pedestrian bridges and retaining wall (refer to Table 1 for a summary of the extent to which the Lotus Canal and wetlands would be disturbed for each alternative). Note that the wetland has been mapped to extend beyond the cadastral boundary of the reserve and into the road reserve. This is the area that would be encroached upon as part of the proposed development and not the ESNR currently within the cadastral boundaries. The ESNR is protected in perpetuity in terms of the National Environmental Management: Biodiversity Act (No. 10 of 2004); and
- In certain areas, the proposed expansion/ road widening would occur beyond the road reserve and greater than 4 m into Public Open Space.

**Table 1 Watercourses identified along the route of the proposed development, including the extent to which they would be filled in where applicable**

| Freshwater Resource | Extent of Encroachment (in m²) | Clarification notes |
|---|---|---|
| **Lotus Canal** | **Alternative 1 & 3: 14,400**<br>Alternative 2: Zero and no construction at the canal | The low flow channel of the canal is located within a concrete canal and thus the watercourse has little ecological functionality within this section. The ecological impacts of the proposed alterations to the canal to allow for the widening of the road would be low and can be mitigated (Belcher *et al*, 2021). |
| **Wetland 1** | Alternative 1: 1000<br>Alternative 2: 11<br>**Alternative 3: None** | Wetland 1 is a seasonally inundated mixed sedge/grass depression wetland that is of a relatively low ecological importance and a portion thereof within the road reserve would be lost (Belcher *et al*, 2021). |
| **Wetland 2** | Alternative 1: 250<br>Alternative 2: None<br>**Alternative 3: None** | Wetland 2 is a seasonally inundated grass/sedge wetland of low ecological importance (Belcher *et al*, 2021). |
| **Wetland 3** | Alternative 1: None<br>Alternative 2: None<br>**Alternative 3: None** | Wetland 3 is a permanently inundated reed wetland that holds low ecological importance. The location of this wetland further away from Govan Mbeki Road means that no infilling thereof would be required as it falls well beyond the proposed footprint (Belcher *et al*, 2021). |
| **Wetland 4** | Alternative 1: 2438<br>Alternative 2: 856<br>**Alternative 3: 750** | Wetland 4 is a permanently – seasonally inundated mixed wetland comprising of ESNR (Belcher *et al*, 2021).<br>Note that the wetland has been mapped to extend beyond the fence line of the reserve and that particular section is within the road reserve, highly degraded and artificial in nature (Belcher *et al*, 2021). This is the area that would be encroached upon as part of the proposed development and **not** at all the ESNR currently within the fence boundaries. ESNR is protected in perpetuity in terms of the National Environmental Management: Biodiversity Act (No. 10 of 2004). |
| **Wetland 5** | Alternative 1: None<br>Alternative 2: None<br>**Alternative 3: None** | Wetland 5 is a permanently-seasonally inundated *Typha* bulrush dominated depression wetland of low ecological importance (Belcher *et al*, 2021). Furthermore, it is located outside of the road reserve for Govan Mbeki Road and is thus unlikely to be impacted by the proposed works (Belcher *et al*, 2021). |

**ALTERNATIVES:**

Along with the no-go alternative, three road geometry alternatives have been assessed, namely:

4) Alternative 1- Unconstrained alternative (15m expansion from road shoulder on either side);
5) Alternative 2- Proposed Design 1 (a much narrower design in response to a high-level baseline study conducted by specialists, which does not allow room for optimal road design); and
6) Alternative 3- Proposed Design 2 (this is the **preferred** expansion width designed in response to detailed specialist assessments and mapping of sensitivities on the ground which provides as much room as possible for optimal road design, i.e., up to 15m either side the road shoulder with narrower areas in response to environmental sensitivities).

| | | | | |
|---|---|---|---|---|
| ***Addressing I&AP Comments: It was requested that the Lotus Canal be designed as a recreational facility and that the aesthetics thereof be improved. The extent to which this can be achieved as part of the proposal is indicated.*** | Note that the proposed development includes some improvements to the Lotus Canal in the area, as well as new pedestrian bridges, however further recreational aspects and beautification would not form part of the scope of the proposed development. Further requests in this regard should be directed to the City of Cape Town communications branch. | | | |
| 3.4. | Indicate how access to the proposed routes will be obtained for all alternatives. | | | |
| Not applicable. Gaining access is not relevant to this road expansion as all works pertain to an existing road (i.e., Govan Mbeki Road). | | | | |
| 3.5. | SG Digit codes of the Farms/Farm Portions/Erf numbers for all alternatives | Refer to Appendix N | | |
| 3.6. | **Starting point co-ordinates for all alternatives (note that all alternatives have the same starting, middle and end points)** | | | |
| | Latitude (S) | **33°** | **59'** | **59.53"** |
| | Longitude (E) | **18°** | **32'** | **20.72"** |
| | **Middle point co-ordinates for all alternatives** | | | |
| | Latitude (S) | **34°** | **0'** | **7.12"** |
| | Longitude (E) | **18°** | **33'** | **27.03"** |
| | **End point co-ordinates for all alternatives** | | | |
| | Latitude (S) | **34°** | **0'** | **6.57"** |
| | Longitude (E) | **18°** | **34'** | **36.53"** |
| **Note: For Linear activities or developments longer than 500m, a map indicating the co-ordinates for every 100m along the route must be attached to this BAR as Appendix A3.** | | | | |
| 4. | **Other developments** Not Applicable- proposed development is only linear | | | |
| 4.1. | Property size(s) of all proposed site(s): | | | $m^2$ |
| 4.2. | Developed footprint of the existing facility and associated infrastructure (if applicable): | | | $m^2$ |
| 4.3. | Development footprint of the proposed development and associated infrastructure size(s) for all alternatives: | | | |
| 4.4. | Provide a detailed description of the proposed development and its associated infrastructure (This must include details of e.g., buildings, structures, infrastructure, storage facilities, sewage/effluent treatment and holding facilities). | | | |
| | | | | |
| 4.5. | Indicate how access to the proposed site(s) will be obtained for all alternatives. | | | |
| | | | | |
| 4.6. | SG Digit code(s) of the proposed site(s) for all alternatives: | Refer to Appendix N | | |
| 4.7. | Coordinates of the proposed site(s) for all alternatives: | | | |
| | Latitude (S) | ° | ' | " |
| | Longitude (E) | ° | ' | " |

## SECTION C: LEGISLATION/POLICIES AND/OR GUIDELINES/PROTOCOLS

### 1. Exemption applied for in terms of the NEMA and the NEMA EIA Regulations

| | | |
|---|---|---|
| Has exemption been applied for in terms of the NEMA and the NEMA EIA Regulations. If yes, include a copy of the exemption notice in Appendix E18. | ~~YES~~ | **NO** |

### 2. Is the following legislation applicable to the proposed activity or development.

| | | |
|---|---|---|
| The National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) ("ICMA"). If yes, attach a copy of the comment from the relevant competent authority as Appendix E4 and the pre-approval for the reclamation of land as Appendix E19. | ~~YES~~ | **NO** |

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| The National Heritage Resources Act, 1999 (Act No. 25 of 1999) ("NHRA"). If yes, attach a copy of the comment from Heritage Western Cape as Appendix E1. | **YES** | ~~NO~~ |
| The National Water Act, 1998 (Act No. 36 of 1998) ("NWA"). If yes, attach a copy of the comment from the DWS as Appendix E3.<br>A pre-application meeting with the DWS was held on 20 April 2018 in order to confirm the Department's requirements with regard to the need for a WULA (refer to Appendix F for the minutes of this meeting as well as other associated documentation). It was confirmed that a GA would suffice.<br>Phase 2 online application was submitted on 17 September 2018; however, a resubmission was necessary. The pre-application for the re-submission was made on 26 August 2021, and a pre-application meeting was held on 28 April 2021.<br><br>An application for a GA was submitted on the e-wulaas system on 29 September 2021 and processing thereof is currently underway by the DWS (Refer to Appendix Q for proof of the submission) | **YES** | ~~NO~~ |
| The National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM: AQA"). If yes, attach a copy of the comment from the relevant authorities as Appendix E13. | ~~YES~~ | **NO** |
| The National Environmental Management Waste Act (Act No. 59 of 2008) ("NEM: WA") | ~~YES~~ | **NO** |
| The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004 ("NEMBA").<br>The biodiversity along the site and within that site has been assessed, as well as recommendations made, in accordance with this Act. No permits are required in terms of this Act for the proposed development. | **YES** | ~~NO~~ |
| The National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) ("NEMPAA").<br>Note that the proposed development does not require any permits in terms of the Act, but this Act was considered in the design of the proposed road geometry and the establishment of the preferred alternative, particularly with regard to the avoidance of the Edith Stephens Nature Reserve (ESNR) which is declared a Protected Area under the Act (p13/44, P.N 195/2021, 20 October 2017). Refer to Appendix O for the Provincial Notice and Associated Cadastral limits in this regard. | **YES** | ~~NO~~ |
| The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). If yes, attach comment from the relevant competent authority as Appendix E5. | ~~YES~~ | **NO** |

## 3. Other legislation

List any other legislation that is applicable to the proposed activity or development.

1. City of Cape Town Municipal Planning Amendment By-law, 2016 (Section 42(a) and (d))
2. The Constitution (RSA 1996)
3. Western Cape Provincial Spatial Development Framework ("PSDF")
4. City of Cape Town Khayelitsha/ Mitchells Plain Greater Blue Downs District Spatial Development Framework and Environmental Management Framework (2012)
5. City of Cape Town Municipal Spatial Development Framework ("CTMSDF") (April 2018)
6. City of Cape Town Integrated Development Plan

## 4. Policies

Explain which policies were considered and how the proposed activity or development complies and responds to these policies.

1. Integrated Metropolitan Environmental Policy (June 2003)- Used to guide the footprint of the proposed development and assessment of impacts related to the sensitivities located nearby. The proposed development avoids these sensitivities as far as possible.
2. City of Cape Town. (2009a). Management of Urban Stormwater Impacts Policy- These guidelines were used in the stormwater study and in the creation of the stormwater management plan (refer to Appendix G(d))).
3. City of Cape Town. (2009b). Floodplain and River Corridor Management Policy- These guidelines were used in the stormwater study and in the creation of the stormwater management plan (refer to Appendix G(d))).
4. Michaels, C, 2014. Tree Management Policy (Final), City Parks Department, City of Cape Town- This policy is considered in terms of the need to potentially remove certain pavement trees and the process required to lawfully achieve this. Measures associated with removal and permissions related to that are included in the EMPr.
5. City of Cape Town Road Network: Public Right of Way- This document was used in the conceptualization of the proposal to confirm that no future road development has been planned in the immediate vicinity of the site.
6. City of Cape Town minimum standards for Civil Engineering Services in Townships- These guidelines were used in the stormwater study and in the creation of the stormwater management plan (refer to Appendix G(d))).

## 5. Guidelines

List the guidelines which have been considered relevant to the proposed activity or development and explain how they have influenced the development proposal.

1. Guidelines on EIA Regulations 2012- These guideline documents guided the Basic Assessment process, noting that where relevant, allowance has been made to align with the 2014 EIA regulations.
2. Guidelines on Public Participation 2012- These guideline documents guided the Basic Assessment process, noting that where relevant, allowance was made to align with the 2014 EIA regulations as well as necessary State of Disaster procedural requirements.
3. Guidelines on Need and Desirability 2012 and 2010- These guideline documents guided the Basic Assessment process, noting that where relevant, allowance was made to align with the 2014 EIA regulations.
4. Guidelines on Alternatives 2012- These guideline documents guided the Basic Assessment process, noting that where relevant, allowance was made to align with the 2014 EIA regulations.
5. Standard Operating Procedure: Guidelines for new developments adjacent to conservation areas (April 2013)
6. City of Cape Town Biodiversity Network (2017) and Freshwater Ecosystem Priority Areas
7. Department of Water Affairs and Forestry. (1999). Resource Directed Measures for Protection of Water Resources. Volume 3: River Ecosystems Version 1.0. Resource Directed Measures for Protection of Water Resources, Pretoria, South Africa. - These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(b).
8. Department of Water Affairs and Forestry. (2005a). River Eco classification: Manual for Eco status Determination (Version 1). Water Research Commission Report Number KV 168/05. Pretoria. - These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(a).
9. Department of Water Affairs and Forestry. (2007). River Eco classification: Manual for Eco status Determination (Version 2). Riparian Vegetation Response Index, Water Research Commission Report Number KV 168/05. Pretoria. - These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(b).
10. DWAF Resource Directed Measures for Water Resources: Wetland Ecosystems method (DWAF, 1999b)- These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(b).
11. Department of Water Affairs and Forestry. 2005. A practical field procedure for identification and delineation of wetland riparian areas. Department of Water Affairs and Forestry, Pretoria, South Africa. - These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(b).
12. Kotze, D., Marneweck, G.C., Batchelor, A.L., Lindley, D.S. And Collins, N.B. (2005). *WET-EcoServices: A technique for rapidly assessing ecosystem services supplied by wetlands.* Dept. Tourism, Environmental and Economic Affairs, Free State.- These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(b).
13. Macfarlane, D., Holness, S.D., von Hase, A., Brownlie, S. & Dini, J., 2014. Wetland offsets: a best-practice guideline for South Africa. South African National Biodiversity Institute and the Department of Water Affairs. Pretoria. 69 pages. And Wetland Offset Calculator- These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(b).
14. Kotze, D., Marneweck, G.C., Batchelor, A.L., Lindley, D.S. And Collins, N.B. (2005). WET-EcoServices: A technique for rapidly assessing ecosystem services supplied by wetlands. Dept. Tourism, Environmental and Economic Affairs, Free State.- These guidelines were used by the freshwater ecologist when identifying and assessing the nature of freshwater resources along the proposed route as well as in the recommendation of mitigation measures. The full freshwater report can be found in Appendix G(b).
15. *Helme, N., Rebelo, T.2016, Ecosystem Guidelines for Environmental Assessment in the Western Cape, Edition 2. Fynbos Forum, Cape Town.* - These guidelines were considered in the botanical impact assessment included in Appendix G(c).
16. *Committee of Transport Officials Trip Data Manual (September 2013)*- These guidelines were used in the conceptualization and draft design of the project proposal.
17. *Western Cape Government Road Access Guidelines (March 2001)*- These guidelines were used in the conceptualization and draft design of the project proposal.
18. Geometric Design of Urban Arterial Roads (UTG1- 1986)- These guidelines were used in the conceptualization and draft design of the project proposal.
19. South African Road Traffic Signs Manual (May 2012)- These guidelines were used in the conceptualization and draft design of the project proposal.

20. Guidelines for Human Settlement Planning & Design (Red Book) - This guideline was used in the conceptualization of the project proposal.

## 6. Protocols

Explain how the proposed activity or development complies with the requirements of the protocols referred to in the NOI and/or application form

The Draft protocols were released following submission of the Notification of Intent (NOI) (i.e., January 2018) and also following the compilation of the various specialist reports, which is evidence in the dates on the reports as well as the details of site visits and associated dates referenced within those reports. Furthermore, an Open House was help during which specialists indicated their findings. This also took place before the protocols were enforced and clearly demonstrate that the protocols do not apply to this process. Therefore, it is believed that the protocols do not apply.

However, the way the issues raised in the Screening Tool Reports have been addressed are detailed in this section of the report. A Site Sensitivity Verification Report (which contains the same information as presented below) has also been prepared and included in Appendix I.

The following assessments/sensitivities were raised in the Screening Tool Reports:

- Agricultural Impact Assessment
- Landscape/ Visual Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Noise Impact Assessment
- Traffic Impact Assessment
- Geotechnical Assessment
- Hydrology Assessment
- Socio-Economic Assessment
- Ambient Air Quality Impact Assessment
- Plant Species Assessment
- Animal Species Assessment.

The way each of the above has been addressed in response to the applicable protocols is indicated in Table 2.

**Table 2 Applicable Assessment Protocols and Approach in this Assessment**

| No. | Assessment | Applicable Protocol | Response |
|---|---|---|---|
| 1 | Agricultural Impact Assessment | 1(a) Protocol for the assessment and reporting of environmental impacts on agricultural resources (GG 45421 of 10/05/2019) _ DRAFT | The STRs note that site as having Very high sensitivity, however this is erroneous as the site is within an urban area, and on an existing roadway or within a road reserve where there is no farming taking place. The proposed expansion activities are also located along a planned future MyCiTi Network as per the MSDF (refer to Figure 16). This sensitivity rating is thus disputed, and no agricultural assessment is deemed necessary. |
| 2 | Landscape/ Visual Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | A Heritage Practitioner conducted a screening assessment on the site and proposed development and completed a Notification of Intent to Develop (NID) in terms of Section 38(1) & (8) of the National Heritage Resources Act (NHRA). Among other aspects, the NID contemplates landscapes and natural features of cultural significance and the NID concluded that there are no heritage resources on the site. HWC also confirmed their agreement in this regard (refer to Appendix E(1) for the HWC response to the NID). |
| 3 | Archaeological and Cultural Heritage Impact Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | The STRs indicate low sensitivity in this regard, a finding which is supported by the NID (refer to Appendix G(e)) and the HWC response thereto (refer to Appendix E1)<br>A Heritage Practitioner conducted a screening assessment on the site and proposed development and completed a Notification of Intent to Develop (NID) in terms of Section 38(1) |

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| | | | & (8) of the National Heritage Resources Act (NHRA). Among other aspects, the NID contemplates archaeological resources and areas of cultural significance and the NID concluded that there are no heritage resources on the site. HWC also confirmed their agreement in this regard (rerefer to Appendix E1for the HWC response to the NID). |
| 4 | Palaeontology Impact Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | The STRs indicate medium sensitivity in this regard, a finding which is disputed to be low sensitivity by the NID (refer to Appendix G(e)) and the HWC response thereto (refer to (refer to Appendix E1)<br>A Heritage Practitioner conducted a screening assessment on the site and proposed development and completed a Notification of Intent to Develop (NID) in terms of Section 38(1) & (8) of the National Heritage Resources Act (NHRA). Among other aspects, the NID contemplates palaeontological resources, and this was not marked as a potential sensitivity on the site. In response to the NID, HWC confirmation is implicit in that no further assessment of palaeontological resources would be required. Therefore, this potential issue has been scoped out. |
| 5 | Terrestrial Biodiversity Impact Assessment | 3(a) Protocol for the assessment and reporting of environmental impacts on terrestrial biodiversity (GG 45421 of 10/05/2019) _DRAFT | Strangely, one STR indicates high sensitivity and the other indicates very high sensitivity in this regard.<br>A botanical impact assessment has been undertaken (refer to Appendix G(c)) and while some areas of sensitivity have been confirmed adjacent to the proposed expansion, the development footprint for the preferred alternative would be located in highly degraded, low sensitivity areas of vegetation (Altern, 2021). |
| 6 | Aquatic Biodiversity Impact Assessment | 3(b) Protocol for the assessment and reporting of environmental impacts on aquatic biodiversity (GG 45421 of 10/05/2019) _ DRAFT | The Screening Tool has marked the site as Very High Sensitivity.<br>A freshwater impact assessment has been undertaken (refer to Appendix G(b)) and while some areas of sensitivity have been confirmed adjacent to the proposed expansion (particularly the Edith Stephens Nature Reserve), the development footprint for the preferred alternative would be located in highly transformed and degraded wetland areas (Belcher, 2021). |
| 7 | Noise Impact Assessment | Protocol as per Government Gazette No. 43855 of 30 October 2020 | The proposed development (widening of the existing road) is not likely to have significant noise increases in terms of traffic/ vehicular use, given that the current stretch of Govan Mbeki Road is a major road which already experiences significant vehicular traffic. The additional lanes and facilities themselves would also not emit any noise, and the construction phase noise would be short term and controlled through measures included in the EMPr. Therefore, no further assessment is considered necessary in this regard. |
| 8 | Traffic Impact Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | The proposed draft plans (noting that these would be subject to detail design) have been compiled by transport engineers who specialist in their subject matter. The designs comply with the various policies and guidelines relevant to transport and road design. The proposed activities are also already aligned with the City of Cape Town objectives for transport infrastructure as it is located on a MyCiTi Future Network in terms of the MSDF (refer to Figure 16). |
| 9 | Geotechnical Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | Geotechnical investigations (test pits, drilling, core logging and testing of cores) for the road as well as for the new proposed overpass and retaining walls have been undertaken. The results of these investigations will inform the detail |

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| | | | design of the road. The finalisation of the Geotechnical Assessment report was still underway at the time of writing this BAR. Given the existence of the current road, there is presently sufficient information available to provide the plans indicated in Appendix B1 with high confidence and no further assessment is required as part of this process at this stage. |
| 10 | Hydrology Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | The hydrology on site has been contemplated and addressed from a variety of angles through baseline desktop research conducted by the EAP, freshwater impact assessment (refer to Appendix G(b)), as well as to hydrological modelling of the impact of the proposed development in the stormwater management plan (refer to Appendix G(d)). |
| 11 | Socio-Economic Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | The socio-economic aspects of the site and proposal have been considered and addressed in the Basic Assessment Report through inclusion of the following:<br>• Socio-economic profile of the communities adjacent to the affected stretch of Govan Mbeki Road; and<br>• Detailing the financial contribution of the project to the economy as well as to previously disadvantaged individuals. |
| 12 | Ambient Air Quality Impact Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | There are no triggers associated with the NEM: AQA and hence the need for this assessment is disputed. Furthermore, the proposed development would see widening of an existing roadway, which is earmarked for future use as a MyCiTi Network in terms of the MSDF (refer to Figure 16). |
| 13 | Plant Species Assessment | No specific protocol- consider general requirements (GG 45421 of 10/05/2019) _DRAFT | The STRS indicate medium sensitivity in this regard, but following a Botanical Impact Assessment, this is disputed to be low for the preferred alternative development footprint, given that Altern (2021) confirms that the vegetation within development footprints for both Alternative 2 and 3 is highly degraded and transformed and of low sensitivity. The component that would be high would be the area within the ESNR, but the proposed development footprint for the preferred alternative would not encroach into that area.<br>The botanical impact assessment report (refer to Appendix G(c)) does indicate the various plant species (indigenous and exotic) located within the proposed development footprint, which also includes the pavement trees. |
| 14 | Animal Species Assessment | Protocol as per Government Gazette No. 43855 of 30 October 2020 | The STRs indicate the road as having high sensitivity, however given that the site is predominantly an existing, constantly used road, with highly transformed and degraded areas/ habitat adjacent to it (Altern, 2021 and Belcher et al, 2021), this ranking is disputed as being low. It may be that the ESNR is what has resulted in a high sensitivity rating, and the preferred alternative for the proposed development would not be located in that area. ESNR is, however, fenced off and so the ground-moving fauna are not likely to enter the site area.<br><br>A list of potential species which could be found along the route is included in the Freshwater Impact Assessment (refer to Appendix G(b)) and an additional frog species noted by City of Cape Town Biodiversity branch has also been noted in the report.<br><br>Indirect impacts on fauna have been noted in the impact assessment in this report and |

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| | | | measures are included in the EMPr for management of trenching and fauna, as well as general measures for how to approach and handle any fauna found on site.<br><br>It is also worth noting that the need for a faunal assessment was one of the points discussed at a meeting with the City of Cape Town Biodiversity branch and it was agreed (by them) that no faunal assessment is necessary (refer to Appendix F). |

In addition to the above, it should be noted that civil aviation is mapped in the STR as very high sensitivity, and this is presumably as a result of the Cape Town International Airport being located nearby (approx 7.5 km away) and with the route being located within the noise cones for the airport. The proposed road expansion would, however, not affect the airport given that the structures proposed are no high (i.e., a road and station foundations) and do not comprise any telecommunications structures that may have potential to interfere with the airport. There are also no runway facilities or any other activity that could affect the airport or its operations. Furthermore, the proposal would be a continuation of an existing use that has been around for a significant period of time (i.e., a roadway, Govan Mbeki Road would be widened). This rating is therefore disputed to, in fact, be low. No specialist investigations have been deemed necessary and none are included in this post-application Basic Assessment Report.

Defence is rated as medium sensitivity in the STRs. The screening reports identify the site area as a 'defence site', but no further details area provided in this respect. The medium sensitivity for this theme is presumably due to the site falling within a 5.5 km of the Youngsfield Military Base. None of the components comprising the development proposal would compromise the ability of the defence force to defend the area against any unrest / threats on security or provide training and support to military personnel or affect the day-to-day operations of the base. The proposed development would not interfere with any communications to and from the facility (the proposal does not include telecommunications infrastructure beyond typical internet and phone connections) and would not interfere with any access points (as it is located sufficiently far from it). No specialist investigations have been deemed necessary and none are included in this post-application Basic Assessment Report.

## SECTION D: APPLICABLE LISTED ACTIVITIES

List the applicable activities in terms of the NEMA EIA Regulations

| Activity No(s): | Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 1** | Describe the portion of the proposed development to which the applicable listed activity relates. |
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| 19 | *The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;*<br><br>*but excluding where such infilling, depositing, dredging, excavation, removal or moving—*<br>*(a) will occur behind a development setback;*<br>*(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;*<br>*(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;*<br>*(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or*<br>*where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.* | Part of the proposed development would entail an expansion of the road over the Lotus Canal (i.e., a watercourse) to provide a sidewalk. This would include the development of a retaining wall along the south bank of the canal as well as two new pedestrian bridges, and demolition/removal of the existing pedestrian bridges.<br><br>Note that infilling of a wetland adjacent to the boundary of the Edith Stephens Nature Reserve (ESNR) would also occur, however this is located within the road reserve. Encroachment is anticipated to be up to 750 $m^2$ for the wetland patch adjacent to the ESNR, located within the road reserve.<br><br>Lastly, note that the details discussed above pertain to the preferred alternative (i.e., Alternative 3). Alternative 1 would result in greater encroachment into wetlands, which is why the wetlands not indicated in this listed activity have been mapped and are discussed under the freshwater baseline and assessment sections of this report. |
| Activity No(s): | Provide the relevant **Basic Assessment Activity(ies)** as set out in **Listing Notice 3** | Describe the portion of the proposed development to which the applicable listed activity relates. |
| 12 | The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. | Although no notable taxa were found within the proposed areas for expansion and there is an almost non-existence of indigenous species, the following indigenous species were found |

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| | **i. Western Cape**<br>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as **critically endangered** in the National Spatial Biodiversity Assessment 2004;<br>ii. Within critical biodiversity areas identified in bioregional plans;<br>iii Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuarine functional zone, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas;<br>iv. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned **open space,** conservation or had an equivalent zoning; or<br>v. On land designated for protection or conservation purposes in an Environmental Management Framework adopted in the prescribed manner, or a Spatial Development Framework adopted by the MEC or Minister. | scattered throughout the site (i.e., within the limits of the proposed road widening):<br>• Area A (declassified area)- *Zantedechia aethiopica*<br>• Area B (adjacent to ESNR)- *Arctotheca calendula, Cotula turbinate, Cyperus textilis, Cyperus dives* (non-native indigenous), *Cynodon dacytylon, Ficus sp, Gernaium incanum Phragmites australis, Pelargonium capitatum, Searsia laevigata, Stenotaphrum secundatum ,Trachyandra ciliate, Thypha capensis, Zantedeschia aethiopica.*<br>• Area C (ONA) - *Zantedeschia aethiopica, Cyperus dives, Stenotaphrum secundatum.*<br><br>Furthermore, there are a number of Public Open Space areas which would be encroached upon which, although are highly transformed, may contain some indigenous plants. Note, however, that most of the proposed route lies within the road reserve and that some indigenous plants would be cleared from the road reserve.<br><br>Given the length of the proposed development, it cannot be said with certainty that there would definitely be less than 300 $m^2$ of indigenous vegetation cleared, therefore this Listed Activity is included to cover the possibility of more than 300$m^2$ worth of indigenous vegetation being cleared along the entire route. The impacts of this activity are assessed in this report. |
| 18 | The **widening of a road by more than 4 metres**, or the lengthening of a road by more than 1 kilometre.<br>**i. Western Cape**<br>i. Areas **zoned for use as public open space** or equivalent zoning;<br>ii. All areas outside urban areas:<br>(aa) Areas containing indigenous vegetation;<br>(bb) Areas on the estuary side of the development setback line or in an estuarine functional zone where no such setback line has been determined; or<br>iii. Inside urban areas:<br>(aa) Areas zoned for conservation use; or<br>(bb) Areas **designated for conservation use** in Spatial Development Frameworks adopted by the competent authority. | There are 27 erven along the route, beyond the road reserve, which are zoned as Public Open Space, and which could be encroached upon from 0 to a maximum of 17 m. Given that this proposal encompasses a footprint, the maximum footprint is assumed. Some erven share a zoning with other uses. Erven with only Public Open Space zoning include the following:<br><br>Erf 113926, Manenberg, Cape Town<br>Erf CA609-83, Manenberg<br>Erf 40310, Cape Town<br>Erf 104417, Cape Town<br>Erf 104701, Cape Town<br>Erf 113926, Manenberg, Cape Town<br>Erf 161520, Cape Town<br>Erf 174068, Cape Town<br>Erf 174235, Cape Town<br>Erf 177954, Cape Town<br>Erf 21, Philippi<br>Erf 335, Sherwood Park, Manenberg<br>335-RE, Sherwood Park, Manenberg<br>Erf 344, Sherwood Park, Manenberg<br>Erf 255, Vukuzenzele<br>Erf 15395, Guguletu<br>Erf 11785, Nyanga<br>Erf 11786, Nyanga<br>Erf 32/Erf 328<br><br>Those which share a zoning, but also contain Public Open Space include:<br><br>Erf 107895 Cape Town<br>Erf 113926, Manenberg, Cape Town |

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| | | Erf 114787 Cape Town<br>Erf 330, Manenberg<br>Erf 331, Manenberg<br>Erf 332, Manenberg<br>Erf 334 Sherwood Park, Manenberg<br>Erf 340, Sherwood Park, Manenberg<br><br>These erven are indicated in Appendix N. |

**Note:**

- The listed activities specified above must reconcile with activities applied for in the application form. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted.
- Where additional listed activities have been identified, that have not been included in the application form, and amended application form must be submitted to the competent authority.

***Addressing I&AP Comments: The above listed activities trigger the need for a Basic Assessment process and not a full Scoping and EIA process. Therefore, a Basic Assessment process is being undertaken.***

It should be noted that **Listed Activity 14 of Listing Notice 3** has been contemplated, particularly regarding with works to be located within the Lotus Canal (i.e., pedestrian bridges and widening into canal limits), however this activity does not apply because the Western Cape triggers/thresholds are limited to those located outside urban areas, and the proposed development would be located within an urban area.

A similar case is present in terms of considering **Listed Activities 12 and 48 of Listing Notice 1** because such development within an urban area is excluded, and therefore these activities also do not apply to the proposed development.

In terms of **Listed Activity 15 of Listing Notice 3** it is noted that there would be encroachment into land zoned as open space, however these "slithers" along the road alignment (i.e., not entire public open space properties) would be "transformed" for transport use and not for any of the land-uses listed by the activity (i.e., residential, retail, commercial, industrial or institutional use). As such this activity is not triggered. The widening of the road into public open space is furthermore more fittingly described by Listed Activity 18 of Listing Notice 3 (which has been applied for, as described in the table above) and for which associated impacts have been assessed by this Basic Assessment.

List the applicable waste management listed activities in terms of the NEM: WA

| Activity No(s): | Provide the relevant **Basic Assessment Activity(ies)** as set out in **Category A** | Describe the portion of the proposed development to which the applicable listed activity relates. |
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| Not applicable | The proposed development does not store, treat, or process waste in any volumes which related to triggers in terms of the NEM: WA. | Not applicable |

List the applicable listed activities in terms of the NEM: AQA

| Activity No(s): | Provide the relevant **Listed Activity(ies)** | Describe the portion of the proposed development to which the applicable listed activity relates. |
|---|---|---|
| Not applicable | The activities conducted during all phases of the proposed development will not directly emit any emissions related to the NEM: AQA.<br>The only emissions related to the proposed development would be the vehicular emissions from the vehicles using the road. | Not applicable |

## SECTION E: PLANNING CONTEXT AND NEED AND DESIRABILITY

***Addressing I&AP Comments: This section of the report explains how the proposal is contextually appropriate and would be aligned with the spatial planning and service requirements of the Municipality and area. E.g., even though Golden Arrow bus services exist, there is a greater spatial planning goal which the proposal would aim to serve.***

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| 1. | Provide a description of the preferred alternative. |

Refer to Section B 3.3 above, but to summarise, the preferred alternative comprises road geometry **Alternative 3**, which provides for some room to design, but avoids botanical and aquatic sensitivities as far as possible.

This includes a typical cross-section as depicted in Figure 2, and an elevated road link at the Govan Mbeki Road/ Duinefontein Road intersection, as well as widening over a stretch of the Lotus Canal (note that a retaining wall would be built along the bank) as well as two new pedestrian bridge s across the canal (and demolition of the two existing pedestrian bridges within that stretch). There would also be new, minor stormwater drainage system installed that would be a combination of tie-in with the existing minor stormwater drainage system along the road and/or have new inlets into the Lotus Canal. The system would comprise a series of underground pipelines to convey the stormwater from the road into existing stormwater lines, or to catchpits and then to 375mm diameter outlet pipes, which would daylight into the Lotus Canal.

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| 2. | Explain how the proposed development is in line with the existing land use rights of the property as you have indicated in the NOI and application form? Include the proof of the existing land use rights granted in Appendix E21. |

Most of the proposed works would be located within the road reserve and it would all expand upon existing roadway, which is appropriate for road widening. Works along the Lotus Canal (and the two new bridges) would fall outside the current road reserve.

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| 3. | Explain how potential conflict with respect to existing approvals for the proposed site (as indicated in the NOI/and or application form) and the proposed development have been resolved. |

Where the proposed road widening moves beyond the road reserve into land not zoned as public road/ public transport, then the necessary land use application would need to be undertaken as part of a separate process (i.e., separate to this Basic Assessment process). Therefore, there may be certain cadastral boundaries which would be encroached upon. The nuances of this will be further explored during detail design, as that is the point which the exact footprint would be determined. However, if it is required, a separate town planning process will be undertaken in terms of the City of Cape Town Municipal Planning Amendment By-law, 2016.

This process, however, if the proposed development is granted Environmental Authorisation, would serve to allow for the proposed development to legally encroach into Public Open Space, clear the necessary indigenous vegetation and develop within the affected watercourses in terms of the NEMA. A separate process is also underway in terms of the NWA, through a General Authorisation registration for works in the watercourses, which, if processed by the DWS, would allow for legal development in terms of the NWA.

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| 4. | Explain how the proposed development will be in line with the following? |
| 4.1 | The Provincial Spatial Development Framework. |

Overall, the PSDF significantly and consistently promotes the establishment of a sustainable public transport system. A key component of such a system is the proposed IRT network. The proposed development would serve to expand on the IRT network, thus providing a much-needed service (and the resultant accessibility thereof) to previously segregated communities.

The PSDF is guided by a number of plans relevant to the proposed development, namely the National Development Plan (NDP), OneCape2014, and Western Cape Provincial Land Transport Framework, 2013 (PLTF).

One of the goals of the National Development Plan under the improvement of infrastructure is to roll out a public transport system in order to better link rural and urban nodes and provide people with better, quicker, safer access to their places of work and education.

Two key transition requirements identified in the OneCape2014 vision would be partially addressed through the implementation of the proposed development, namely economic access, and settlement transition. These transitions would serve to provide greater economic access to all people as well as access from various settlement areas to urban nodes.

The PLTF sets out a long term vision for transport in the Western Cape. The PLTF's targets are that by 2050 the transport system in the Western Cape will have:

- Fully Integrated Rapid Public Transport Networks (IRPTN) in the higher- order urban centres of the province.
- Fully Integrated Public Transport Networks (IPTN) in the rural regions of the province.
- A safe public transport system.
- A well maintained road network.
- A sustainable, efficient, high speed, long distance rail network (public and freight transport) with links to the Northern Cape, Gauteng, and the Eastern Cape.
- An efficient international airport that links the rest of the world to the choice gateway of the African continent.
- International-standard ports and logistics systems.
- A transport system that is resilient to peak oil.

The following guiding Principles of the PSDF are relevant to the proposed development and would be partially realised through the implementation thereof:

- Spatial justice- Past spatial and other development imbalances should be redressed through improved access to and use of land by disadvantaged communities.
- Spatial efficiency- residential areas close to work opportunities as opposed to dormitory settlement, and prioritisation of public transport over private car use. When a settlement is compact higher densities provide thresholds to support viable public transport, reduce overall energy use, and lower user costs as travel distances are shorter and cheaper.

Accessibility- Improving access to services, facilities, employment, training and recreation, and safe and efficient transport modes is essential to achieving the stated settlement transitions of the NDP and OneCape 2040. Good and equitable access systems must prioritise the pedestrian, as well as provide routes for bicycles, prams, wheelchairs, and public transport.

One of the expressions of the spatial vision of the PSDF is to connect the Cape and ensuring that urban and rural communities are inclusive, integrated, connected, and collaborate. It is also important that urban and rural markets and consumers, fragmented settlements and critical biodiversity areas are connected and one of the means of doing so is through public transport.

A priority is the establishment of an access system within and between functional regions. The strengthening of functional linkages and transport connections between rural settlements and regional service centres is also critical to ensure for spatial integration and associated economic resilience at all scales. The spatial agenda of the PSDF is to use infrastructure investment as a primary lever to bring about the required urban and rural spatial transitions and the agenda encompasses the following:

- Aligning infrastructure, transport and spatial planning, the prioritisation of investment and on the ground delivery.
- Using public transport and ICT networks to connect markets and communities. Policy S2 under the PSDF aims to improve inter and intra-regional accessibility through the following:
  - Rank, prioritise and develop fully Integrated Rapid Public Transport Networks (IRPTN) in the regional urban centres of the province.
  - Develop Integrated Public Transport Networks (IPTN) in the rural regions of the province that are connected to regional centres.
- With respect to the ecological goals of the PSDF, the site has been assessed by a botanist and freshwater ecologist and all sensitive areas have been avoided. Particular attention has been paid to the ESNR to ensure that it is not affected by the proposed development.

| 4.2 | The Integrated Development Plan of the local municipality. |
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The SDF forms part of the IDP and shows that the site lies within the urban edge.

| 4.3. | The Spatial Development Framework of the local municipality. |
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The previous District Plans indicate the subject stretch of Govan Mbeki Road (i.e., the M9) as an activity route.

The CTMSDF (2018) indicates the subject stretch of Govan Mbeki Road (i.e., the M9) as future MyCiti Network (refer to Figure 16).

| 4.4. | The Environmental Management Framework applicable to the area. |
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The Biodiversity Network of the CTMSDF shows that there are some wetlands adjacent to the route (refer to Figure 11). When using the spatial data (i.e. the kmz files) from the City of Cape Town of the Biodiversity Network (2017), these indicate that a portion of the proposed widening would extend over an ONA (refer to Figure 14 and Figure 15), however the ONA and wetlands have been ground-truthed and found to be completely transformed and degraded (Altern, 2021 and Belcher *et al*, 2021), thus providing no ecological value.

The ESNR would be protected from any works required for the proposed development through strict implementation of mitigation measures provided by the freshwater ecologist and botanist and no development would encroach into the ESNR Protected Area. Therefore, the proposed road widening is aligned with the EMF.

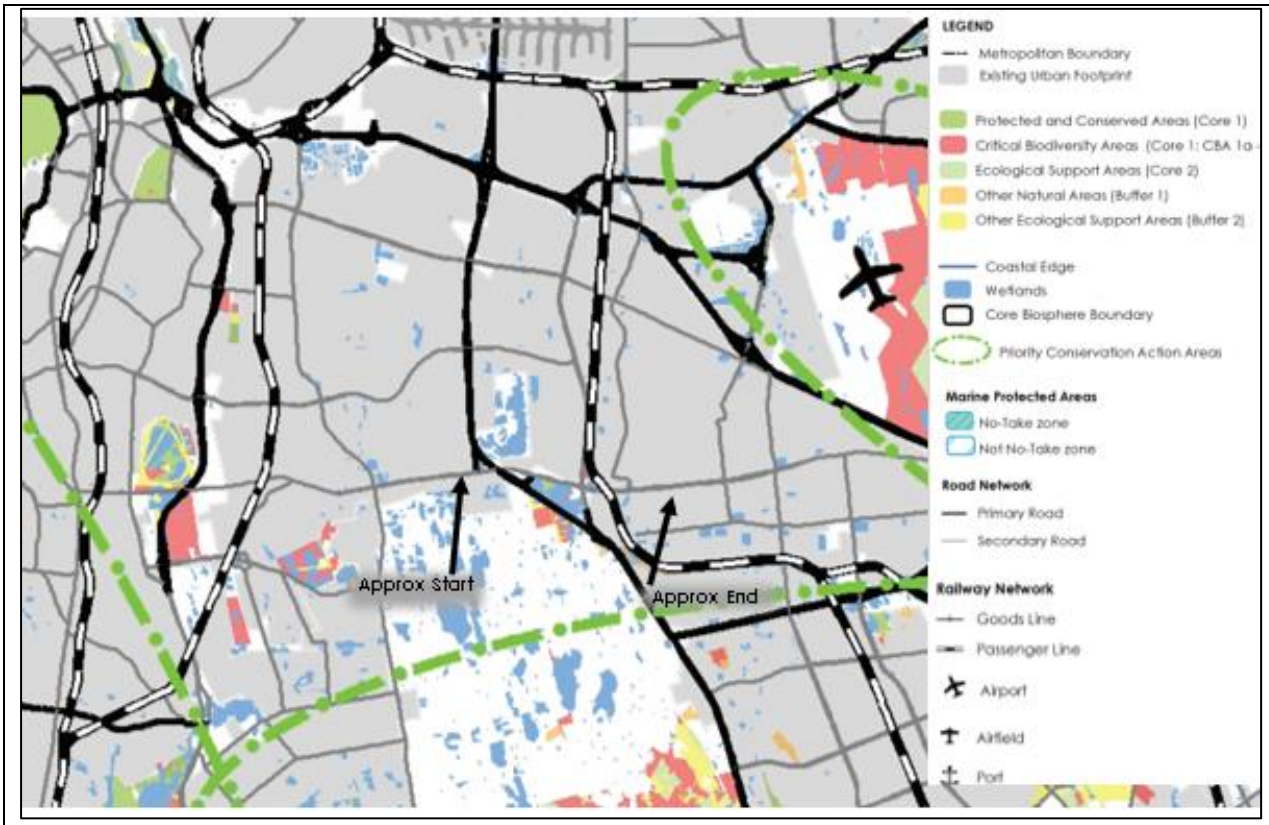


**Figure 11 Biodiversity Network for City of Cape Town in terms of the CTMSD (2018) (created by the EAP using the CTMSDF (2018), 18/06/2021)**

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| 5. | Explain how comments from the relevant authorities and/or specialist(s) with respect to biodiversity have influenced the proposed development. |

The findings of the botanist have influenced the proposed development as follows:

- No sensitivities or development constraints found within the limits of the footprint provided by the preferred alternative, other than the ESNR, which lies adjacent to the site.
- Intentional design to avoid any sensitivities adjacent to the road where unacceptable adverse impacts would occur.
- Limit development footprint of preferred alternative to be within highly degraded, transformed areas which would result in low impact in this regard.
- The loss of pavement trees would also be compensated for from an aesthetic perspective by the landscaping component of the proposed development.

From an aquatic biodiversity perspective, the presence of the Lotus Canal has informed the design of the proposed roadway in terms of providing for the additional design requirements for a retaining wall and balustrade as described in the project description. The design would not have a significant effect on the water flow of the canal and the wall would stop the existing flooding occurring along Govan Mbeki Road (GIBB, 2021). New pedestrian bridges would also be provided as part of these works in order to provide the communities nearby with continued access to Govan Mbeki Road. The design also considers existing flood conditions of the Lotus Canal. The stormwater management system has also been designed to respond to the current conditions of the Lotus Canal in terms of connecting into the existing minor drainage network where possible and that with the new minor drainage system, the system would be able to convey greater than the 1:10-year period and the road would convey up to- and including the 1:50- year return period (GIBB, 2021). Overall, this would provide an improvement on current flooding conditions. With regard to wetlands, the preferred alternative (i.e., Alternative 3) has been designed to avoid as much of the wetland within the route as possible, and where it does encroach into the wetland adjacent to the ESNR, is in a heavily degraded area where the impact on the wetland would be low (Belcher *et al*, 2021). Further design considerations for protection of the wetlands are evidence in the stormwater management plan, and slope of the roadway, which would direct run-off from the road away from ESNR. There are also general management measures which have been included in the environmental specifications in the EMPr to prevent significant and unacceptable adverse impacts of the watercourses associated with the proposed development. The EMPr also strictly requires that the ESNR be a no-go area.

The following issues have been raised through meetings held with City of Cape Town Environmental, Biodiversity, Roads and Stormwater as well as ESNR Management:

- The importance of ESNR (e.g., it houses the cacosternum platys and Western Leopard Toad);
- The need to protect ESNR and ensure that stormwater does not flow into that area;
- The design approach of the stormwater management measures to be implemented at the interface with ESNR;
- The removal of the pavement trees should be approved by the City of Cape Town Recreation and Parks branch;
- Biodiversity Offsets (noting that, through thorough engagement and specialist assessments, it has been deemed acceptable that no biodiversity offset would be required);
- Wetland Offsets (noting that specialist assessment has confirmed that this will not be required, and neither has the DWS);
- Whether a fence would be constructed adjacent to the ESNR and who would be responsible for it;

- The extent to which the edge effect on the ESNR has been considered and would be mitigated, particularly as there are many threatened species located close to the periphery of the ESNR;
- Confirmation from the City of Cape Town Biodiversity branch that no faunal assessment would be warranted;

At the meeting held with CapeNature on 13 February 2018, fewer but similar issues to those discussed with the City of Cape Town were echoed, namely the importance of avoiding ESNR, the need for a Stormwater Management Plan, as well as advising that there may be a potential need for a wetland offset, depending on the extent of wetland to be infilled and feedback from DWS in this regard, noting that CapeNature would like to be part of the wetland offset discussions if they are needed.

Note that specialist investigations and DWS have since not identified the need for any biodiversity offsets.

The above issues have been largely addressed through the freshwater impact assessment and botanical impact assessment which both indicate the ESNR is highly sensitive and must be avoided and protected from potential impacts. The freshwater impact assessment report also makes mention of the cacosternum platys and Western Leopard Toad being found in ESNR. There are mitigation measures in this regard in both reports. Furthermore, the preferred alternative would have a development footprint that does not extend into ESNR. The Stormwater management plan also includes measures for stormwater run-off to move away from ESNR, which would prevent contamination/ run-off from entering the area. The Stormwater Management Plan has also received in principal approval/support from City of Cape Town Roads and Stormwater branch (refer to Appendix G(d)). Practical/ logistical matters such as the needs to obtain approval for removal of pavement trees and to engage ESNR Management during detail design of the interface of the road with ESNR are included as specifications in the EMPr. The reasons for not pursuing biodiversity and freshwater (i.e., wetland) offsets are included in the specialist reports, and in this Basic Assessment Report. Lastly, the botanical impact assessment report and the impact assessment tables in this report have provided further clarity in terms of edge effects and how this has been afforded due consideration in the impact assessment process.

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| 6. | Explain how the Western Cape Biodiversity Spatial Plan (including the guidelines in the handbook) has influenced the proposed development. |

The preferred alternative is depicted graphically within the context of the Western Cape Biodiversity Spatial Plan (WCBSP) in Figure 12.

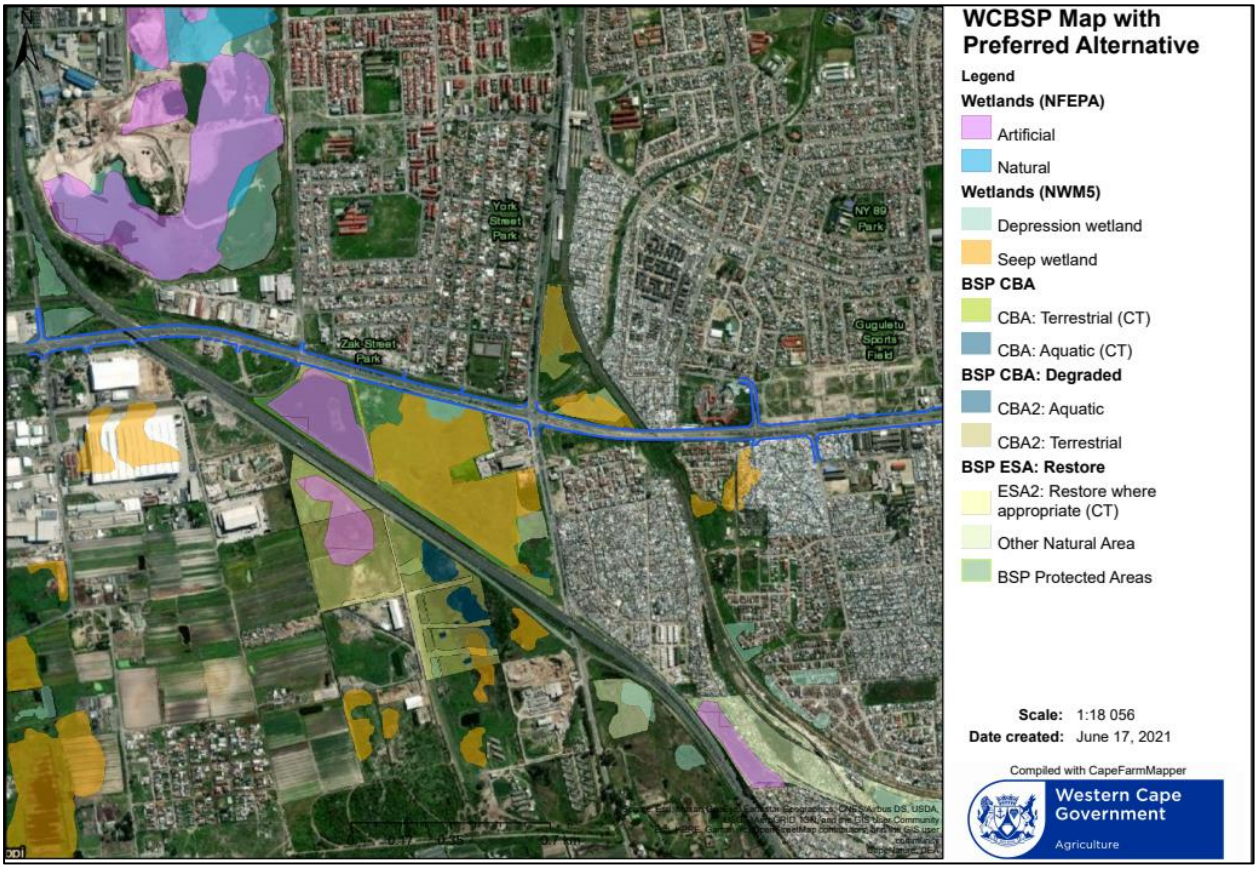


**Figure 12 WCBSP Relative to Alternative 3 Limits (created using Cape Farm Mapper and Site Layers from GIBB, 17/02/2021)**

Although there are several areas nearby the proposed road widening which are mapped as wetlands and/or Other Natural Area, most of the biodiversity sensitivities fall within the ESNR, which itself holds biodiversity labels such as wetland, Protected Area, and ESA 2. The preferred alternative (i.e., Alternative 3), as well as Alternative 2, for the proposed road widening would not encroach into the ESNR (i.e. the Protected Area).

There are two areas where the proposed development (Alternatives 2 and 3) would encroach into some areas indicated in the WCBSP, namely a strip of ESA 2 adjacent to ESNR and a strip of CBA wetland (refer to Figure 13). The WCBSP mapping

defers to the City of Cape Town Bioregional Plan for more data, which states that the area is Other Ecological Support Area (OESA) and Protected Area, therefore the BioNet goals have been considered in that regard. The mapping indicated in Figure 13 initiated the need for further assessment by an independent botanist to confirm the status thereof.

Altern (2021) notes that the road verge area up to the fence (the limit of receiving environment for the preferred alternative and alternative 2) is in a "transformed" state comprising barren patches of hardpacked soil/tar along with dense swathes of invasive *Pennisetum clandestinum* and annual weeds and that this area bears little evidence of the listed vegetation type Cape Flats Sand Fynbos however there are very sporadic Cape Flats Dune Strandveld taxa found further eastwards providing a semblance of the listed vegetation type. The vast majority of the CFSF zone within this particular section that is within the proposed route is shown and listed as an OESA (Altern, 2021). This is a buffer zone listed as, Open space irreversibly modified by agriculture or other activities (Altern 2021). Essential for protected sites (Altern, 2021). Local significance: These areas may be required for long-term ecological functioning of neighbouring natural ecosystems. Loss would result in degradation of ecological processes & potential loss of biodiversity elements (Altern, 2021). In regard to the route section pertaining to Edith Stephens Nature Reserve the road verges between the shoulder of the M9 up to the boundary fence are considered "**Replaced Adventive**" and comprises a mowed graminoid land (lawn-like in appearance) (Altern, 2021). This is further confirmed by the site assessment conducted by the specialist on 25 July 2017 in which it was noted that the dominant structuring species of the native vegetation community's composition and structure have been removed (Altern, 2021). This 'pavement' marks the extent of the preferred alternative's footprint along this stretch (Altern, 2021).

The wetland area has also been assessed by an independent freshwater ecologist. The wetland is located in the road reserve and that portion is confirmed to be highly degraded and largely artificial in nature (Belcher *et al*, 2021).

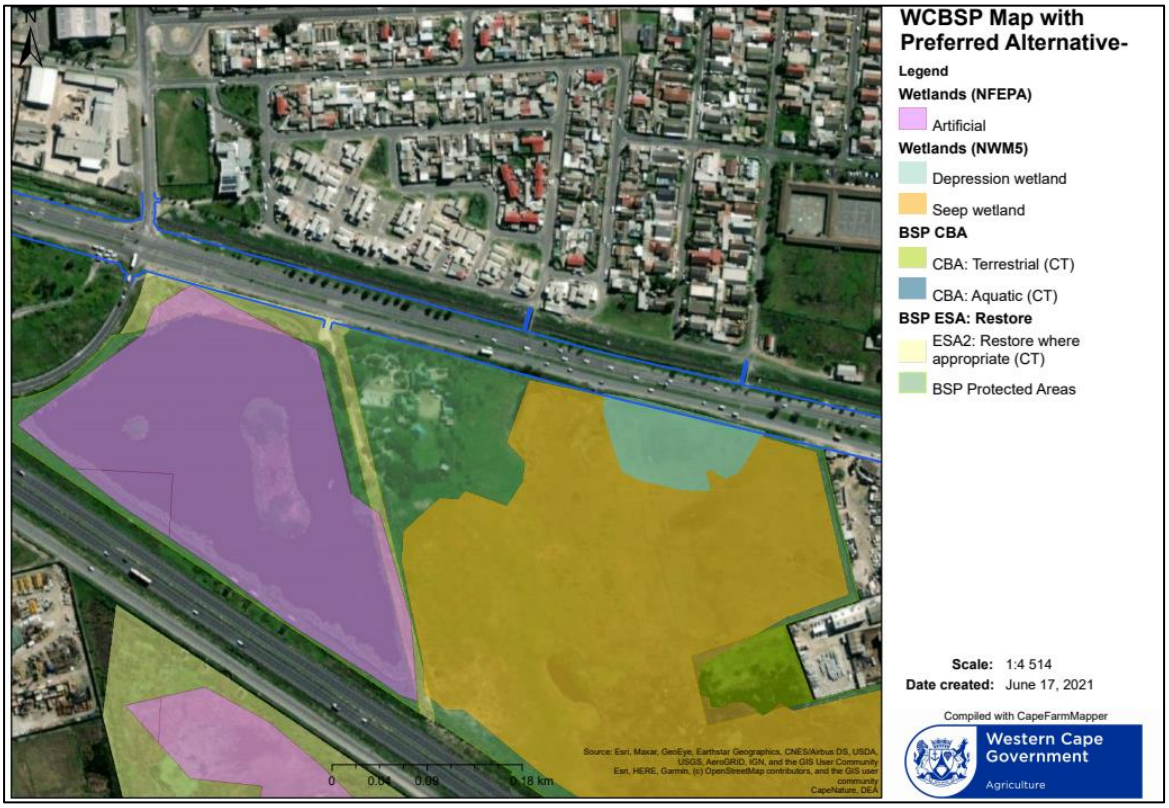


**Figure 13 Closer view of areas where proposed road widening encroaches into ESA 2 and wetland mapped areas (created using Cape Farm Mapper and Site Layers from GIBB, 17/02/2021)**

Furthermore, when reviewing the limits of the preferred alternative using the City of Cape Town shapefiles and site layers in the same system (i.e., Google Earth Pro), the limits of the proposed development do not encroach significantly in the CBA area (refer to Figure 14).


**Figure 14 Proposed Preferred Alternative and City of Cape Town Biodiversity Network (created using Google Earth Pro with site layers from GIBB, 17/02/2021 and City of Cape Town 2017 BioNet)**

The biodiversity status of the CBA wetland area indicated in Figure 14 is evidenced in Figure 15 and is stated as "Local, National & International significance. Loss of habitat will probably result in extinction of some species & inability to attain conservation targets" (City of Cape Town BioNet, 2017) with suitable activities including "Conservation, low impact recreation & environmental education as outlined in the management plan for the site; hard infrastructure should not be situated in CBAs, but outside & adjacent to these, or in existing highly degraded areas only".

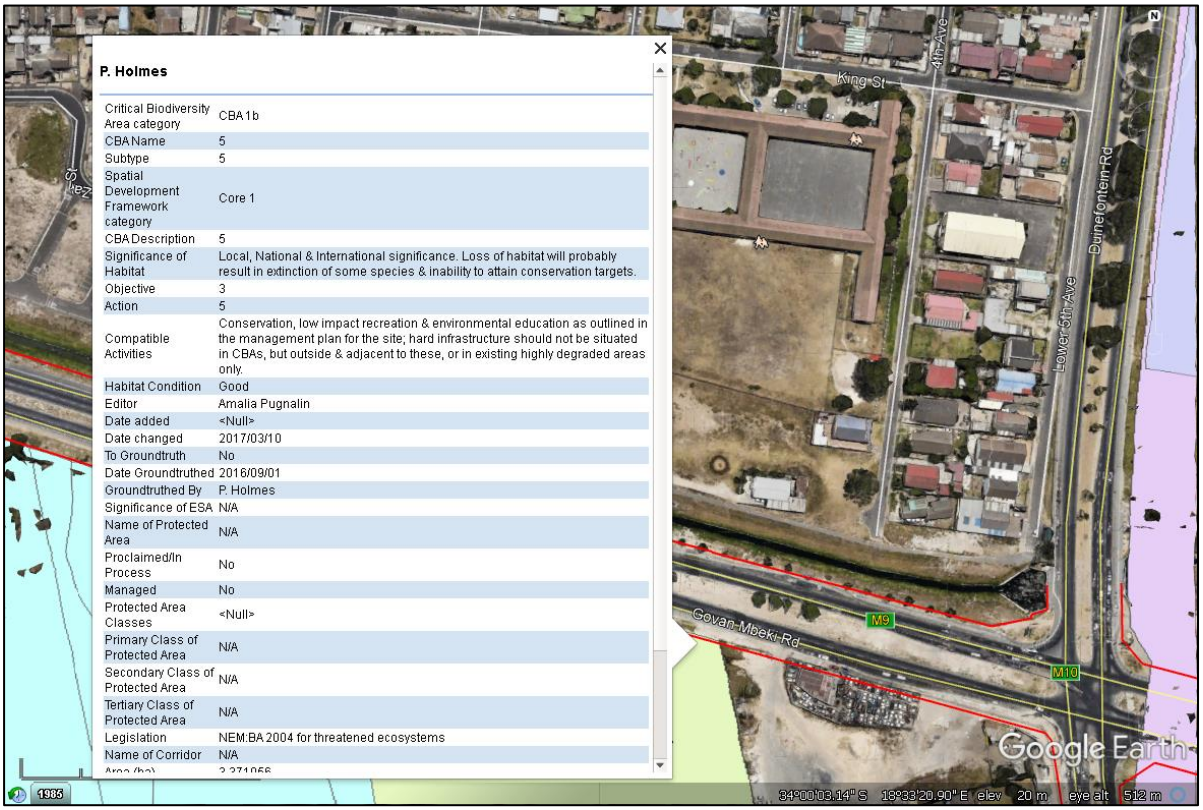


**Figure 15 Wetland CBA Biodiversity Status Data (created using Google Earth Pro with site layers from GIBB, 17/02/2021 and City of Cape Town 2017 BioNet)**

The Basic Assessment process has responded to the sensitivities mapped nearby through conducting independent specialist assessment by both a botanist and freshwater ecologist in order to ascertain the baseline conditions, impacts and mitigation measures.

In terms of the variety of biodiversity areas nearby the proposed route, the proposed development has responded to these to ensure that it does not encroach into them. Regarding the ESNR Protected Area, the proposed development has been contrived such that it would not encroach into the Protected Area. The OESA which extends beyond the limits of ESNR toward the road has been assessed as being completely transformed (Altern, 2021) and should be considered "replaced-adventive". However, given the local significance that this area could have in terms of buffering and protection of long-term functioning of the neighbouring natural systems, the stormwater management plan considers road run-off in these areas and intentionally directs it away from the ESNR, and toward the Lotus Canal (which already serves as a catchment for stormwater run-off). This design would prevent stormwater run-off from entering ESNR. The wetlands within the proposed road expansion footprint have also been assessed and is highly degraded and largely artificial in nature (Belcher *et al*, 2021). The proposed expansion has been devised to remain within the road reserve limits in this area and would not encroach into the ESNR. It is also aligned with the intentions associated with the CBA rating indicated in the City of Cape Town Biodiversity Network because hard infrastructure would not encroach into it, but rather be adjacent to it, and in an area which highly degraded. This is the case for both alternative 2 and 3 (preferred).

Alternative 1 is a larger footprint and there would be greater encroachment into mapped biodiversity resources which would have extended into an aquatic CBA1b area, a Protected Area (i.e., ESNR) an ESA wetland and a terrestrial ONA area beyond the road reserve. The widening of the road within the CBA1b and Protected Area (i.e., within ESNR) would not be aligned with the WCBSP or the City of Cape Town Biodiversity planning intentions, and is, therefore, not the preferred alternative. While the proposed development could be appropriate within a highly degraded CBA1b area, the area within ESNR is not degraded and so Alternative 1 would not align with these intentions. The proposed development within the ONA (denoted as a buffer zone Natural vegetation in Endangered, Vulnerable & Least Concern in good, fair, or restorable condition, Local significance. Will result in impaired ability to meet biodiversity targets, given that higher categories will not always be achievable) would be aligned in this instance given the highly transformed nature of the site (Altern, 2021), however the preference is to avoid any sensitivities where possible, which would be achieved through the preferred alternative. Therefore, overall, Alternative 1 would not fully align with the biodiversity/conservation objectives of the WCBSP or City of Cape Town Bioregional Plan and so, an alternative that avoids encroaching into these areas is put forward as the preferred alternative as a response.

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| 7. | Explain how the proposed development is in line with the intention/purpose of the relevant zones as defined in the ICMA. |
| Not applicable, given that the proposed development is not in a coastal area. | |
| 8. | Explain whether the screening report has changed from the one submitted together with the application form. The screening report must be attached as Appendix I. |
| The screening tool report appended to this report is the same as the one from the Application form. | |
| 9. | Explain how the proposed development will optimise vacant land available within an urban area. |
| The proposed development proposes to expand on an existing road, the full stretch of which is located in an urban area. The expansion would, for the most part, occur within the existing road reserve and, where this is not the case, form additional road expanding into adjacent erven. Much of the road reserve is vacant because it is a road reserve and not earmarked for other development. Therefore, the proposed use is the best fit for land immediately adjacent to an existing road. | |
| 10. | Explain how the proposed development will optimise the use of existing resources and infrastructure. |
| The existing stretch of Govan Mbeki Road would be widened to increase accessibility through the area and to provide safe, reliable transport to those who reside in the communities nearby. The widening and creation of public transport capacity within an existing system is preferable to creating a new system for several reasons, some of which include the following:<br>• There are existing communities in the area which would benefit from this service;<br>• There is an existing roadway that would benefit from an upgrade, both in terms of integrity and capacity; and<br>• There is limited space available within the local communities to develop new road infrastructure and so it would be preferable to enhance infrastructure which already exists. | |
| 11. | Explain whether the necessary services are available and whether the local authority has confirmed sufficient, spare, unallocated service capacity. (Confirmation of all services must be included in Appendix E16). |
| No new bulk services are required to support the proposed development.<br><br>The only item related to this issue is that or stormwater management, therefore a Stormwater Management Plan has been devised (refer to Appendix G(d)) and the City of Cape Town has provided their in-principal approval of this plan (refer to Appendix E16).<br><br>Electricity would only be used for street lighting, which would see the existing structures replaced with LED lights, which use less energy. The fact that the existing lights already receive power from the City implies sufficient capacity which, along with the small amount of power required, is considered sufficient evidence for capacity in the absence of such written confirmation from the City of Cape Town. | |
| 12. | In addition to the above, explain the need and desirability of the proposed activity or development in terms of this Department's guideline on Need and Desirability (March 2013) or the DEA's Integrated Environmental Management Guideline on Need and Desirability. This may be attached to this BAR as Appendix K. |
| | Urban edge / edge of **built environment** for the area. |

The entire site falls well within the urban edge.

Is the proposal aligned with the existing SDF and associated timeframes and is the proposed development in line with the projects and programmes identified as priorities within the credible IDP?

The previous District Plans indicate the subject stretch of Govan Mbeki Road (i.e., the M9) as an activity route.

The CTMSDF (2018) indicates the subject stretch of Govan Mbeki Road (i.e., the M9) as future MyCiTi Network (refer to Figure 16).

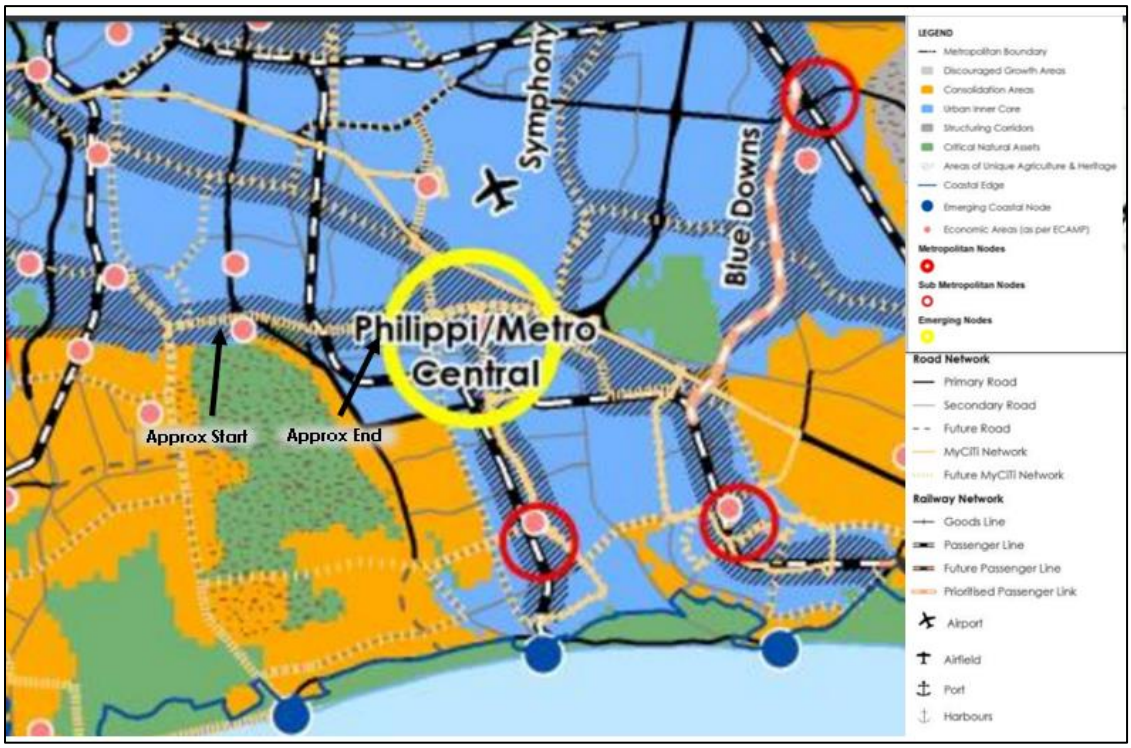


**Figure 16 MSDF and Proposed Expansion Route (created by the EAP using the CTMSDF (2018), 18/06/2021)**

Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur on the proposed site at this point in time?

The selection of the location of the proposed route has been driven by the systems planning team of the City of Cape Town and has been earmarked as suitable for servicing the eastern region through the implementation of the IRT network in the area (refer to the CTMSDF in Figure 16). This would promote accessibility for the communities and businesses in the area to other centres of work or development nodes. Govan Mbeki Road also already exists and is a well-used road with an existing footprint.

Does the community/area need the project and the associated land use concerned (is it a societal priority)?

The affected local communities have historically been excluded from the Cape Town urban centres which makes it challenging for the inhabitants to travel to and from their places of work and education on a daily basis. It is an important provincial and national priority to provide improved accessibility to these areas. Furthermore, the commercial and industrial activities in the area would benefit from improved accessibility.

The proposed development also provides the City of Cape Town with an opportunity to re-structure and intensify the south-east portion of the Metro, previously neglected and subject to apartheid era planning. These opportunities are as follows:

- Develop vibrant areas by removing barriers to access;
- Improve connectivity throughout the Metropolitan areas;
- Increase efficiency of people's movement and as an aid to the movement of commuters and development activities.
- Improve access and transportation routes to encourage future development and intensification of use;
- Decrease walking distances from residential and places of work to public transport facilities;
- Reinforce convergence on core routes and access points; and
- Reinforce the use of the existing rail stations.

Are the necessary **services** available together with adequate unallocated municipal capacity (at the time of application), or must additional capacity be created to cater for the project?

No new bulk services are required to support the proposed development.

The only item related to this issue is that or stormwater management, therefore a Stormwater Management Plan has been devised (refer to Appendix G(d)) and the City of Cape Town has provided their in-principal approval of this plan (refer to Appendix E16).

Electricity would only be used for street lighting, which would see the existing structures replaced with LED lights, which use less energy. The fact that the existing lights already receive power from the City implies sufficient capacity which, along with the small amount of power required, is considered sufficient evidence for capacity in the absence of such written confirmation from the City of Cape Town.

Is this project provided for in the **infrastructure planning** of the municipality and if not, what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (

The proposed development falls along a key connector route, designated as future MyCiTi Network in the CTMSDF (2018) (refer to Figure 16) and provides for the expansion of the IRT system, therefore it is aligned with the forward infrastructure planning of the City and the province.

Is this project part of a **national programme** to address an issue of national concern or importance?

One of the goals of the NDP under the improvement of infrastructure is to roll out a public transport system in order to better link rural and urban nodes and provide people with better, quicker, safer access to their places of work and education.

Do location factors favour this land use (associated with the development proposal and associated listed activity(ies) applied for) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.)

The route has been selected as it meets the following requirements for an IRT trunk route:

- Size (i.e., area) requirements in terms of roadway/ land available for the necessary development components;
- Location requirements in terms of the catchment area/communities which they would be required to support;
- Location requirements in terms of the proposed road (i.e., Govan Mbeki Road) being a key connector route which would be utilised by the IRT buses and provide an efficient, effective transport route; and
- Location requirements in terms of the proposed road (i.e., Govan Mbeki Road) being a key connector route which would also provide safe NMT facilities along a high traffic and pedestrian volume road.

Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?

Given the location of the proposed route deep within an urban context, there will be little to no impact of the natural environment. The only area of natural sensitivity to be aware of is the adjacent ESNR and, provided the mitigations measures recommended by the freshwater ecologist (refer to Appendix G(b) for the full freshwater impact assessment) are implemented, the impacts on the ESNR would be very low.

In terms of the cultural sensitivity of the area, a heritage screener was conducted and a NID submitted which confirmed that the sites do not hold any particular value or house any sensitivities. HWC has confirmed that no further assessment is necessary (refer to their comment in Appendix E1). Furthermore, in response to comments raised by I&APs, the Heritage Baseline Report (entitled "Heritage Comment") was further updated following a FGM with local cultural and heritage representatives. The HIA provides a record of the place of significance to the local community and confirms that the proposed development would not encroach upon any such areas.

***Addressing I&AP Comments: Note that the local culture and heritage was explored in more detail and documented in an updated Heritage Baseline Report as a result of requests by local Councillors to further consider the cultural aspects of the area most significant to the local people.***

Will the proposed development or the land use associated with the proposed development applied for, result in unacceptable opportunity costs?

There is no opportunity cost for the road reserve areas as no other development would be permitted within the road reserve. There would be opportunity costs for those informal settlements encroaching into the road reserve, however the settlements are illegal and would be removed whether or not the proposed development goes ahead.

As a point of clarity, in order to allow for the proposed road widening, these structures would need to be removed, and occupants relocated elsewhere. This would be undertaken in line with the City of Cape Town's applicable protocols which have been established on a number of other City projects. Should this project be authorised, members of the City's Integrated Transport Communication's team will liaise with the City's Human Settlements branch and officials would engage directly with the affected occupants. This interaction would take place well before construction commences on site.

There is also a potential opportunity cost for those land-owners whose properties would be encroached upon by the proposed development where it falls beyond the road reserve, however, should the City of Cape Town require the land for development, the landowners would be engaged on the issue and appropriately compensated.

What will the **cumulative impacts** (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be?

From a botanical perspective, the primary cumulative impact is considered to be the ongoing loss of an Endangered vegetation types, however given the state of the vegetation within the footprint of the proposed route, the impact is considered low (Altern, 2021). From a freshwater perspective, surrounding urban activity and the existing Govan Mbeki Road have cumulatively contributed to the modification of the instream and riparian aquatic habitat of the Lotus Canal and wetland areas, therefore the cumulative impact of the proposed development would be considered to be of a low to very low significance, with most of the impacts occurring during the construction phase (Belcher *et al*, 2021).

In general, changes in drainage regime from stormwater would be neutral, socio-economic impacts related to the generation of economic stimulus would be medium (+), improved accessibility would be high (+), and impacts to public safety through provision of NMT facilities in that stretch would be medium (+). There would also be aesthetic improvements to the area which would provide for Medium (+) cumulative impact. Cumulative impacts on traffic would also be high (+) and there would be a general reduction in greenhouse gas emissions with the use of the new buses (noting that the City of Cape Town is investigating the use of electric busses for the future). Cumulative construction phase impacts would generally be low (-) or very low (-) with mitigation, noting that these are anticipated to be short-term.

Is the development the **best practicable environmental option** for this land/site?

The road already exists and the proposed expansion for the IRT system would serve to provide a much-needed service to the surrounding community and would improve the safety of that portion of Govan Mbeki Road for pedestrians and other NMT users.

What will the benefits be to society in general and to the local communities?

The affected local communities have historically been excluded from the Cape Town urban centres which makes it challenging for the inhabitants to travel to and from their places of work and education on a daily basis. It is an important provincial and national priority to provide improved accessibility to these areas. Furthermore, the commercial and industrial activities in the area would benefit from improved accessibility.

The proposed development also provides the City of Cape Town with an opportunity to re-structure and intensify the south-east portion of the Metro, previously neglected and subject to apartheid era planning. These opportunities are as follows:

- Develop vibrant areas by removing barriers to access;
- Improve connectivity throughout the Metropolitan areas;
- Increase efficiency of people's movement and as an aid to the movement of commuters and development activities.
- Improve access and transportation routes to encourage future development and intensification of use;
- Decrease walking distances from residential and places of work to public transport facilities;
- Reinforce convergence on core routes and access points; and
- Reinforce the use of the existing rail stations.

How the **general objectives of Integrated Environmental Management** as set out in Section 23 of the NEMA have been taken into account:

The general objectives of environmental management are to:

*(a) Promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment.*

This assessment has been undertaken in accordance with the National Environmental Management Act (Act 107 of 1998), as amended, as well as with the EIA Regulations of April 2017. Furthermore, the development is supported by the relevant development plans (and in fact contributes to one of the key drivers thereof), thereby providing a process and proposed project that complies with the relevant frameworks.

The needs of the people as well as of the city as a whole have been considered and the proposed development is socially, environmentally and economically sustainable with a view to creating accessibility for previously disadvantaged communities.

*(b) Identify, predict, and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2.*

All potential impacts of the proposed development have been assessed in this report. The sensitive areas of the biophysical environment (i.e., ESNR) were considered and appropriate mitigation measures have been recommended. The socio-economic aims have been aligned with the various goals presented in the national, provincial, and local development plans and encourage economic growth, social inclusivity, sustainability, and access for all citizens to a beautiful city. These are positive impacts for the affected communities and the City as a whole. Cultural impacts have been considered and not found to be significant.

A number of geometry alternatives have been considered for the proposed development.

Lastly, the mitigation of adverse impacts as well as the enhancement of positive impacts has been considered and detailed in the EMPr for each site (Appendix H).

*(c) Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them.*

The effects of the various activities on the environment have been well taken into consideration by various relevant specialists (i.e., heritage, botanical, freshwater, and civil engineering) through this process and are detailed in Section I, as well as appended as Appendix G of this report.

*(d) Ensure adequate and appropriate opportunity for public participation in decisions that may have a significant effect on the environment.*

Meaningful public engagement has taken and will continue to take place as part of this Basic Assessment process. Over and above the legislated requirements, several FGMs have been held with the City of Cape Town Environmental Management and Biodiversity Branches, ESNR as well as local Ward Councillors. Meetings have also been held with CapeNature and the DWS. Refer to Appendix F for the detailed methodology.

*(e) Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment.*

Comments received from all I&APs have been taken into consideration in the development of the current proposal and the drafting of this Basic Assessment Report. Further comments received during the 35-day public comment period for this report will be incorporated into the final BAR and proposal.

*(f) Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.*

The proposed development and its associated activities have been assessed in terms of their fit with regard to current and future development and management plans for the area (i.e., the road already exists), the socio-economic development of the area and the impacts that the proposed development would have on the surrounding environment as well as the greater community and Cape Town area. Mitigation measures to reduce adverse impacts have been proposed and, conversely, measures have also been put in place to enhance potential positive impacts that the development would have. The proposed development is driven by the social need for connectivity and accessibility of previously disadvantaged communities.

Furthermore, the report informs authorities of uncertainties and assumptions to ensure that a cautious approach is adopted in decision-making.

In summary, the modes of environmental management employed in the assessment of the impacts of the proposed development are considered to be adequate.

18 Describe how the **principles of environmental management** as set out in Section 2 of the NEMA have been taken into account:

The principles of environmental management as set out in Section 2 of NEMA have been taken into account. The principles relevant to the proposed development include the following:

This process, as well as the proposed development places people and their needs at the forefront of its concern, and serves their physical, psychological, cultural, and social interests equitably, where relevant. This is particularly true of improving sustainable public transport and therefore, accessibility, for previously disadvantaged communities as well as general accessibility through the City of Cape Town.

The proposed development is predicted to be socially, environmentally, and economically sustainable, provided the recommended mitigation measures (particularly with respect to freshwater impacts on the ESNR) are implemented.

4a) The proposed development has applied sustainable development to the following factors:

- That the disturbance of ecosystems and loss of biological diversity has been avoided through the preference for a road geometry which does not encroach upon sensitive areas;
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised, and remedied through the reduction in private transport;
- That the disturbance of landscapes and site that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied (note that the proposed route is not considered to be sensitive from a cultural or heritage perspective);
- That waste is avoided, or where it cannot be altogether avoided, minimised, and re-used or recycled where possible and otherwise disposed of in a responsible manner (i.e., the proposed development would not produce waste during the operational phase and all construction phase waste will be managed according to the requirements provided in the EMPr);
- That the use and exploitation of non-renewable resources is responsible and equitable through providing a sustainable public transport service to previously disadvantaged communities, noting that an additional aim of the proposal is to reduce private vehicle use and, therefore, reliance on fossil fuels;
- That a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions, particularly through the design which will consider climate change as well as future development in the area; and
- That negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

These impacts are documented in this report, with corresponding mitigation measures in the report and in the EMPr (refer to Appendix H).

a) This Basic Assessment process has employed sound Environmental Management as integrated, acknowledging that all elements of the environment are linked and interrelated, and has taken into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option through the evaluation of alternatives and a meaningful public participation process.

b) Environmental justice has been pursued such that the social benefits of the proposal will accrue to previously disadvantaged communities and these communities will not bear significant adverse impacts. Furthermore, the adverse impacts anticipated would be mitigated.

c) The principal of equitable access to environmental resources, benefits, and services to meet basic human needs and ensure human well-being has been pursued through the provision of improved accessibility to previously disadvantaged communities and improvements to NMT in the area.

d) The proposed development has considered its responsibility for the environmental health and safety consequences throughout its life cycle through the assessment and implementation of certain services as well

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| | as design features (e.g., narrowed road geometry in certain sensitive areas) that will reduce the impact of the in the area.<br><br>e) The participation of all interested and affected parties in environmental governance has been promoted throughout this process and all people have been provided the opportunity to develop an understanding of the project through the required I&AP liaison as well as the detailed responses which will be contained within the comments and response report. Furthermore, this Basic Assessment report has been written in such a way that it is easy to understand, with illustrations providing further clarification where required.<br><br>f) The decision taken by the authorities would be based on the contents of the Basic Assessment Report, which will include all comments received from I&APs, which will serve to ensure that the interests, needs and values of all I&APs are considered.<br><br>i) The social, economic, and environmental impacts of activities, including disadvantages and benefits, have been considered, assessed and evaluated, and it is believed that enough information has been presented to support confident and informed decision making.<br><br>k) The principal of transparency and access to information must be provided in accordance with the law is adhered to throughout the Basic Assessment process with the publication and distribution of all information required by I&APs.<br><br>o) The consideration of the fact that the environment is held in public trust for people has been considered and the principle applied through the implementation of avoiding the sensitive areas of the ESNR.<br><br>p) The "polluter pays" principal will be implemented through the EMPr for each site for all phases of the proposed development.<br><br>r) The selection of the preferred road geometry was based on a number of factors but sought to avoid highly sensitive environments as far as possible. |
| | Conclusion<br>Overall, all development must, in terms of Section 24 of the Constitution, be ecologically sustainable, and economic and social development must be justifiable. The freshwater impact assessment and botanical impact assessment have considered the sustainability of the ecological aspects adjacent to the route and impacts have been found to be low, with mitigation and so the proposed expansion can occur sustainably from an environmental perspective. The mitigation measures are important and must be implemented. That is why they are included as specifications in the EMPr and are strongly recommended as conditions of authorisation in this Basic Assessment Report.<br><br>The economic and social aspects of the project are expected to be medium to high positive and would serve to provide connectivity, opportunity, and economic stimulus to previously disadvantaged communities, which are believed to be justifiable in the context of historic prejudice, intergenerational sustainability, and equity. Financial sustainability would be provided by the City of Cape Town through their various contracts for operations. In addition, the unconstitutional actions of a previous regime would be rectified while ensuring that society as a whole can still benefit from the improved connectivity and access provided by the proposed road widening for generations to come. |

## SECTION F: PUBLIC PARTICIPATION

The Public Participation Process ("PPP") must fulfil the requirements as outlined in the NEMA EIA Regulations and must be attached as Appendix F. Please note that If the NEM: WA and/or the NEM: AQA is applicable to the proposed development, an advertisement must be placed in at least two newspapers.

1. Exclusively for linear activities: Indicate what PPP was agreed to by the competent authority. Include proof of this agreement in Appendix E22.

Refer to Appendix F for more detail, however, to summarise, an initial PPP strategy had been put forward in the NOI (dated 22 January 2018) and the DEA&DP provided notes on the PPP requirements in their response thereto (dated 30 January 2018). Further to that, an update and further PPP strategy for the distribution/ notification of the post-application draft BAR had been approved by the DEA&P in a letter dated 26 March 2019. Following the approval of this, further work on the reports and stakeholder engagement continued and this eventually occurred in parallel with the COVID-19 global pandemic and South African State of Disaster Response which necessitated that the DEA&DP issue certain guidelines and circulars for execution of EIA processes during this time. One of the requirements of the said circulars (with the latest one at time of writing being Circular DEA&DP No 0001/2021dated 6 January 2021), a PPP Plan was provided to the DEA&DP (dated 21 December 2020) and approved in their letter dated 21 January 2021. The PPP Plan re-iterated the updated PPP approach with some minor alterations in light of COVID-19.

The PPP has far exceeded the minimum legislative requirements prescribed in regulation 41 of the EIA Regulations, 2014 (as amended).

The pre-application PPP included the following activities (noting that no alternative sites have been considered in impact assessment process as the relevant section of road is a major road linking key neighbourhoods and is appropriate for the proposed development):

***Addressing I&AP Comments: Requests for additional public engagement activities such as workshops or focus group meetings, etc., have been made by I&APs. This component of the report provides information on the extent of public engagement undertaken as part of this Basic Assessment process, which has gone beyond the minimum legal requirements.***

- Compilation of a preliminary Interested and Affected Party (I&AP) database which was informed by research conducted by Chand on contemporary officials and stakeholder groups which may have an interest in the area or project. The I&AP database has been maintained throughout the Basic Assessment process as meetings with key stakeholders have been held. Therefore, the I&AP database includes parties required in terms of Regulation 41 (2) (b) of the EIA Regulations, 2014 (as amended).
- One-on-one meeting with CapeNature on 13 February 2018;
- Focus Group Meeting (FGM) with representatives from the Environment and Heritage Management, Catchment Planning: Region 2, Biodiversity Management, Asset Management Roads, and Catchment Stormwater and River Management branches of the City of Cape Town on 14 February 2018;
- FGM with representatives from the Environment and Heritage Management as well as the Edith Stephens Nature Reserve (ESNR) branches of the City of Cape Town on 5 April 2018 to discuss the need for a biodiversity offset;
- FGM with organisations which represent local culture and heritage on 11 July 2018;
- FGM with local Councillors, Sub-Council 11, on 16 February 2018;
- FGM with local Councillors, Sub-Council 14, on 16 February 2018;

***Addressing I&AP Comments: The FGM with local cultural and heritage representatives was held in response to comments raised by the local Ward Councillors.***

***Addressing I&AP Comments: The 18 October 2018 FGM with local Councillors was arranged at the request of local Councillors (which was recording during the meetings in February 2018) with a view to providing feedback on previous issues raised as well as to provide information on the upcoming public participation process.***

- FGM with local Councillors with Wards located in the site area on 18 October 2018 to provide feedback on previous FGMs as well as the future advertisement of the proposed development and associated Basic Assessment process. Note that many municipal representatives were invited to this meeting and while eight officials initially confirmed their attendance, two attended on the day. Furthermore, at the request of one of the Councillors (made telephonically prior to the meeting), Chand attempted to move the meeting venue to a Council office (i.e., the Plumstead Municipal Office, given that eight attendees had already been confirmed in the vicinity), however the facilities manager confirmed, on 17 October 2018, that the boardroom was unavailable for the date and time required for this meeting;
- A pre-application meeting with the Department of Water and Sanitation (DWS) was held on 20 April 2018 in order to confirm the Department's requirements with regard to the need for a Water Use License Application (WULA) (note that DWS confirmed that a General Authorisation would apply so there is no need to consider the One Environment System as there will **not** be a WULA associated with this Basic Assessment process and associated proposed development) and a second pre-application meeting was held with a new DWS case officer on 28 April 2021; and
- FGM with local Councillors at Sub-Council meetings for sub-councils 23 and 14 on 20 May 2019 and sub-councils 11 and 13 on 22 May 2019. The updated proposal in response to previous comments as well as the public participation process was presented to the Councillors.

***Addressing I&AP Comments: The updated specialist findings and feedback on previous issues raised by Councillors as well as the upcoming public participation period were presented at the sub-council meetings. This was suggested by two sub-council managers at the meeting held on 18 October 2018.***

Evidence of the abovementioned actions is included in Appendix F, with I&AP contact information included.

The post-application PPP undertaken for the public review of this post-application Draft BAR included the following:

- Engagement with ward councillors to notify them of the public comment period (virtual meeting, email and phone calls).
- A 35-day public comment period for the post-application Draft BAR was provided.
- Knock and Drop delivery of a notification leaflet to local businesses in the informal settlements alongside the affected stretch (carried out by locals from the community).
- Placement of information posters throughout the affected community notifying them of the proposed development and Basic Assessment process (carried out by locals from the community).

- Notification of the availability of the post-application draft BAR was emailed to the preliminary I&AP database and post was sent to those who do not have email addresses.
- A knock-and drop exercise with the above-mentioned notification letter was conducted to businesses and formal institutions adjacent to the road.
- Note that in order to provide access to commenting on the report to people who may not have access to data, emails, post or fax, Chand has encouraged I&APs to make telephonic contact and submit their comments to Chand in that manner, for Chand to record (in writing) as part of the Basic Assessment process.
- The post-application draft BAR was made available for download from Chand's website for the duration of the comment period.
- An executive summary for separate download (for those I&APs who have limited access to data) was also available on Chand's website for the duration of the comment period.
- Site notices were placed at the start, middle and end of the route. They were in English and isiXhosa and contained the information as prescribed by the EIA Regulations, 2014, as amended and PPP guidelines (i.e., they were of the standard format). There were six in total.
- Adverts have been placed in three local newspapers, in English and one in isiXhosa, and these also contained the information as prescribed by the EIA Regulations, 2014, as amended and PPP guidelines (i.e., they were in standard format).
- Note that no hardcopies of the post-application Basic Assessment Report were issued to I&APs, as none were requested.

Evidence for the above has been included in Appendix F of this report.

All registrations and comments received during the 35-day public comment period have been I&AP database, Appendix F, and this final BAR which has been submitted to the DEA&DP for decision-making.

Once the DEA&DP has reviewed the final BAR and issued their decision, the decision, date, reasons for decision, means to access the decision, and an explanation regarding the way the decision may be appealed, as well as any further requirements stipulated therein would be distributed to the registered I&AP database via email for those who have email addresses and post for those who have only postal addresses. It would also be uploaded onto Chand's website so it would be accessible for download. The applicable appeal period would be explained in accordance with that included in the decision.

2. Confirm that the PPP as indicated in the application form has been complied with. All the PPP must be included in Appendix F.

All PPP as per the application form has been carried out. Refer above for the PPP process.

3. Confirm which of the State Departments and Organs of State indicated in the Notice of Intent/application form were consulted with.

Table 3 provides a summary of consultation with State Departments as indicated in the NOI. All departments indicated in the NOI have been consulted to varying degrees.

**Table 3 State Department Consultation to-date as indicated in the NOI**

| State Department / Organ of State | Date request was sent: | Date comment received: | Support / not in support |
|---|---|---|---|
| **CapeNature:** Mr. Rhett Smart (Tel: 021 866 8000, Fax: 021 086 529 4992, Email: rsmart@capenature.co.za) | Meeting was held 13 February 2018 (refer to Appendix F for minutes and other associated documentation)<br><br>Notification of availability of Post-application Draft BAR during public review period | | Generally supported, however CapeNature commented that a wetland offset for the portion of wetland buffer to be lost should be provided and financial offsets could be appropriate in the case of botanical (biodiversity) offsets. This is in contrast to specialist findings (both freshwater and botanical) and the comment from the DWS, and a response in this regard has been provided to CapeNature in the Comments & Responses Table (refer to Appendix F) |
| **City of Cape Town:** Mr. Rashaad Samaai (Tel: 021 444 2171, Fax: 021 444 3802, Email: | Meetings were held on 14 February 2018 and 5 April 2018 (refer to Appendix F for the | | Comment received on Draft BAR. This has been included in the Comments |

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| rashaad.samaai@capetown.gov.za). Note that the ERM branch will distribute to the relevant line departments- it is important that they also distribute to the Stormwater Management and Parks branches | minutes of this meeting as well as other associated documentation).<br><br>Notification of availability of Post-application Draft BAR during public review period | | & Responses Report and responded to. Support provided from various line departments. |
| **Department of Water and Sanitation**: Ms. Lelethu Zepe (Previous Case Officer) (Tel: 021 941 6002, Fax: 021 9416077, Email: zepel@dws.gov.za ) Mr. Raphael Julie (current case officer) (Tel: 021 941 6002, Fax: 021 9416077, Email: JulieR2@dws.gov.za ) | A pre-application meeting with the DWS was held on 20 April 2018 in order to confirm the Department's requirements with regard to the need for a WULA (refer to Appendix F for the minutes of this meeting as well as other associated documentation). It has been confirmed that a GA would suffice. Phase 2 online application was submitted on 17 September 2018; however, a resubmission was necessary. The pre-application for the re-submission was made on 19 August 2021, and a pre-application meeting was held on 28 April 2021.<br><br>Notification of availability of Post-application Draft BAR during the public review period was made. | | Generally supported and confirmed that the proposed road expansion can be registered under a General Authorisation. No wetland offset was requested. |
| **Heritage Western Cape:** Ms. Heidi Boise (Tel: 021 483 9680, Email: Heidi.boise@westerncape.gov.za) | NID submitted on 28 September 2016 and HWC comment thereof received on 19 October 2016. Another NID for the elevated intersection was submitted on 26 October 2018 and HWC response received on 17 November 2017. | | Support for the proposed development is implicit in the fact that no further heritage assessment was considered necessary. |
| **Provincial Department of Transport and Public Works:** Ms. Dru Martheze (Tel: 021 483 2177, Fax: 021 4832166, Email: nmartheze@pgwc.gov.za) | The Department was notified on the same day as all I&APs for the public review period of this report. | Comment received on 10th September 2021 | The Draft BAR was submitted merely for their information as the affected roadway falls under the mandate and management of the City of Cape Town.<br><br>The department offered no objection to the proposal. |

Other State Departments were consulted through the notification of the availability of the post-application draft Basic Assessment Report for comment. The following departments provided comment and these comments have been incorporated into this BAR and Comments & Responses Report (Refer to Appendix F).

- DEA&DP: Pollution Management
- DEA&DP: Waste Management
- DEA&DP: Air Quality

The following State Department did not provide comment, despite notification by Chand:

- Department of Forestry, Fisheries & the Environment (noting that they are not the Competent Authority on the application)
- Western Cape Government: Department of Agriculture
- Western Cape Government: Department of Human Settlements
- Western Cape Government: Department of Health
- Department of Environmental Affairs and Development Planning: Biodiversity

As per Regulation 3 (4) of the EIA Regulations, 2014 (as amended), it is assumed that these State Departments have no comment on the application.

4. If any of the State Departments and Organs of State were not consulted, indicate which and why.

Note that HWC will not be consulted further, given that they have confirmed no further assessment is necessary.

Beyond this, the following State Departments have not been consulted:

- DEA: Oceans and Coast- the site is not located nearby a coastline
- DEA&DP: Coastal Management - the site is not located nearby a coastline

5. if any of the State Departments and Organs of State did not respond, indicate which.

The following State Department did not provide comment, despite notification by Chand:

- Department of Forestry, Fisheries & the Environment (noting that they are not the CA on the application)
- Western Cape Government: Department of Agriculture
- Western Cape Government: Department of Human Settlements
- Western Cape Government: Department of Health
- Department of Environmental Affairs and Development Planning: Biodiversity

As per Regulation 3 (4) of the EIA Regulations, 2014 (as amended), it is assumed that these State Departments have no comment on the application.

6. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated into the development proposal.

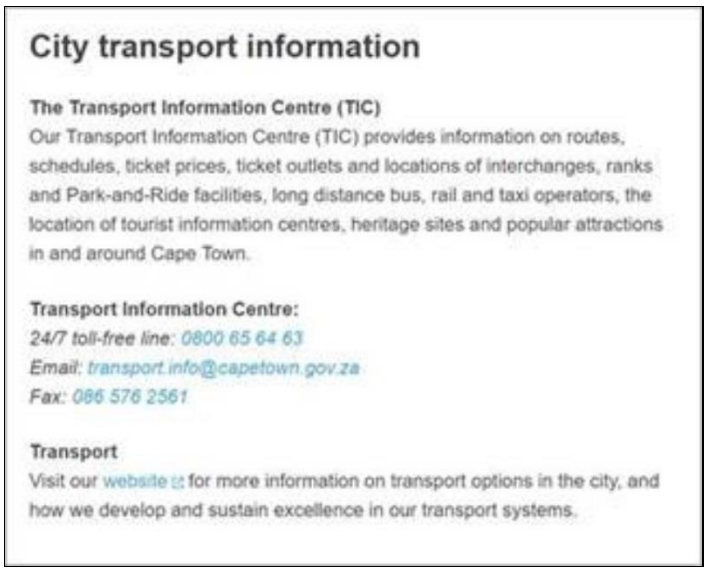
The activities undertaken have elicited numerous valuable inputs, which were considered and incorporated into the development proposal. Throughout the DBAR, we have also included a text box entitled "addressing I&AP Comments" which notes key factors in the report and proposal which have been included or clarified in response to I&AP comments received to-date.

The key issues raised through the targeted public participation activities carried out to date include the following:

- The importance of ESNR (e.g., it houses the *cacosternum platys* and Western Leopard Toad);
- The need to protect ESNR and ensure that stormwater does not flow into that area;
- The design approach of the stormwater management measures to be implemented at the interface with ESNR;
- The removal of the pavement trees should be approved by the City of Cape Town Recreation and Parks branch;
- Biodiversity Offsets (noting that, through thorough engagement and specialist investigations, it has been deemed acceptable that no biodiversity offset would be required);
- Wetland Offsets (noting that specialist assessment ha confirmed that this will not be required, but is subject to comment from DWS);
- Whether a fence would be constructed adjacent to the ESNR and who would be responsible for it;
- The extent to which the edge effect on the ESNR has been considered and would be mitigated, particularly as there are many threatened species located close to the periphery of the ESNR;
- Confirmation from the City of Cape Town Biodiversity branch that no faunal assessment would be warranted;
- The importance of local cultural and heritage beyond that which has been identified by Heritage Western Cape and how these would be affected by the proposal, and including the following:
    - Lotus Park;
    - Neighbourhood Centre;
    - Thankiso Hall (in NY1);
    - Town Hall (in Gugulethu);
    - Sport Complex (in Section 2, Gugulethu);
    - Nyanga Arts Centre;
    - Amandla;
    - Methodist Church (in Gugulethu); and
    - The initiation site at the north-west corner of the Govan Mbeki Road and Duinefontein Road intersection.
- Request for full Scoping and EIA process, rather than a Basic Assessment (from a local Ward Councillor)
- The request to provide the local community with information on the greater IRT project;
- Suggestion to enhance the Lotus Canal and make it a recreational facility and more aesthetically appealing;
- Requirement for restoration of community spaces;
- Requirement for benefits to accrue to the local community;
- The suggestion to employ local community neighbourhood watches for security on the proposal, if required;
- The Basic Assessment process should aim to achieve a balance between the natural, social, and built environment and that the needs and desires of the affected communities;
- Comment that Golden Arrow Bus Services are already in place;
- The need to involve the local Ward Councillors in the public engagement component of the Basic Assessment process;
- The request for additional public engagement activities (e.g., workshops, public meetings, additional presentations at the Sub-council Activity Day/sub-council meeting);
- Ensure updated Ward boundary information is used;
- Make use of local representatives from the community in the public engagement component of the Basic Assessment process.
- Request to realign the proposal toward the end of the route to avoid the housing development currently under construction as well as the buildings to the south of the road in that same vicinity;
- Request that access to private properties and businesses along the road alignment be maintained.

Engagement with local Councillors has indicated that comments on issues beyond the scope of the proposed development may be anticipated. Comments may include queries regarding the delivery of the greater IRT network as well as other projects which may be initiated within local communities. If such issues are raised in the public participation process of this Basic Assessment process, they will be directed to the relevant contact in the City of Cape Town. For ease of reference, it was recommended in the post-application DBAR that such issues be lodged with the City of Cape Town's Transport Information Centre directly in order that they may be considered and responded to appropriately. The relevant contact details are indicated in Figure 17.

***Addressing I&AP Comments: An explanation as to how comments on the greater IRT project would be addressed is included, along with the contact details of the appropriate City of Cape Town branch. Furthermore, this branch of the City of Cape Town is responsible for communication in terms of the greater IRT vision and requests for additional public engagement activities such as workshops or open days may be directed to them. Furthermore, while the public participation process for this Basic Assessment process and that carried out by the City of Cape Town for the greater IRT project could not be aligned (given the different purpose of the two processes, the different role-players, and the different scape of stakeholder participation) the notification letters included a chart to explain how the processes fit together. Note that a request was made by a sub-council manager to have the Basic Assessment process project team introduced to the community at a community meeting arranged by the City of Cape Town Public Participation Unit for the greater IRT project with a view to avoiding confusion regarding projects and various role-players and their responsibilities. This could not be achieved, but the relationship and components of the process have been explained in the notification letters for the public review of the draft BAR.***



City transport information

The Transport Information Centre (TIC)

Our Transport Information Centre (TIC) provides information on routes, schedules, ticket prices, ticket outlets and locations of interchanges, ranks and Park-and-Ride facilities, long distance bus, rail and taxi operators, the location of tourist information centres, heritage sites and popular attractions in and around Cape Town.

Transport Information Centre:

24/7 toll-free line: 0800 65 64 63

Email: transport.info@capetown.gov.za

Fax: 086 576 2561

Transport

Visit our website for more information on transport options in the city, and how we develop and sustain excellence in our transport systems.

**Figure 17 Contact details for lodging comments which fall beyond the scope of the proposed road widening**

In terms of issues raised specifically by State Departments, note the following:

- The Site Manager of the ESNR and a representative from City of Cape Town Biodiversity should be engaged during the compilation of final Stormwater Management Plan and associated detail design of sections of the route adjacent to ESNR (this is to include discussion on the construction and maintenance of a fence).

***Addressing I&AP Comments: Requirements in terms of ESNR engaged and tree removal have been included as specifications in the EMPr.***

- The removal of the pavement trees should be approved by the City of Cape Town Recreation and Parks branch.
- While wetland offsets were initially discussed, it should be noted that the proposed geometry for the preferred alternative (i.e., Alternative 3) has been realigned and further narrowed to avoid wetlands. The impact has been assessed and confirmed to be low, and no offsets are considered necessary (Belcher *et al*, 2021). The DWS have furthermore not identified the need for wetland offsets.
- No biodiversity offset would be required.
- The final Stormwater Management Plan (refer to Appendix G(d) for the indicative stormwater management plan) should approved by the City of Cape Town and be implemented throughout operational phase of the development.

***Addressing I&AP Comments: The Stormwater Management Plan has received in-principal approval from the City of Cape Town Roads and Stormwater branch.***

- CapeNature commented that a wetland offset for the portion of wetland buffer to be lost should be provided and financial offsets could be appropriate in the case of botanical (biodiversity) offsets. This is in contracts to specialist findings (both freshwater and botanical) and the comment from the DWS, and a response in this regard has been provided to CapeNature in the Comments & Responses Table (Refer to Appendix F).
- The DWS confirmed Section 21 (c) and (i) water uses and did not confirm the need for wetland offsets. (note that other water-uses were erroneously identified by the Department in their comment which the EAP has responded to).
- The City of Cape Town submitted a consolidated comment from a number of line departments. No objections to the proposal was received and support was provided for the preferred Alternative. All Departments commented on the need for further engagement during the detailed design and planning application phase. The Biodiversity Management Branch commented on the potential impact of street lighting on the ESNR.
- Heritage Western Cape confirmed that their response to the NID submission in 2016 still stands;
- Western Cape Government: Transport and Public Works offers no objection to the proposal;
- DEADP: Air Quality highlighted the importance of dust control during the construction phase; and
- DEADP: Waste Management commented on the need for proper waste management during all phases of development.

**Note:**

A register of all the I&AP's notified, including the Organs of State, and all the registered I&APs must be included in Appendix F. The register must be maintained and made available to any person requesting access to the register in writing.

The EAP must notify I&AP's that all information submitted by I&AP's becomes public information.

Your attention is drawn to Regulation 40 (3) of the NEMA EIA Regulations which states that *"Potential or registered interested and affected parties, including the competent authority, may be provided with an opportunity to comment on reports and plans contemplated in subregulation (1) prior to submission of an application but **must** be provided with an opportunity to comment on such reports once an application has been submitted to the competent authority."*

All the comments received from I&APs on the pre -application BAR (if applicable and the draft BAR must be recorded, responded to and included in the Comments and Responses Report and must be included in Appendix F.

All information obtained during the PPP (the minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded) and must be included in Appendix F.

Please note that proof of the PPP conducted must be included in Appendix F. In terms of the required "proof" the following is required:

- a site map showing where the site notice was displayed, dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
  - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
  - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
  - if a facsimile was sent, a copy of the facsimile Report;
  - if an electronic mail was sent, a copy of the electronic mail sent; and
  - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

# SECTION G: DESCRIPTION OF THE RECEIVING ENVIRONMENT

All specialist studies must be attached as Appendix G.

## 1. Groundwater

| | | | |
|---|---|---|---|
| 1.1. | Was a specialist study conducted? | ~~YES~~ | **NO** |
| 1.2. | Provide the name and or company who conducted the specialist study. | | |
| NA, research has, however, been conducted by the EAP in this regard and the high-water table in certain areas has been considered in the freshwater impact assessment and associated mitigation measures, as well as in the stormwater management plan (refer to Appendix G(b) and Appendix G(d) respectively). | | | |
| 1.3. | Indicate above which aquifer your proposed development will be located and explain how this has influenced your proposed development. | | |

The underlying aquifer at the site is classified by the Department of Water Affairs and Forestry (DWAF, 2002) (and indicated in Cape Farm Mapper) as a major intergranular aquifer considered to be most vulnerable, with very high susceptibility (Cape Farm Mapper, accessed 18 June 2021). Refer to Figure 18, Figure 19, Figure 20, and Figure 21. The Groundwater Dictionary provided by the Department of Water and Sanitation (DWS) describes an intergranular aquifer as "an aquifer in which groundwater flows in openings and void space between grains of unconsolidated material or weathered rock"[1].

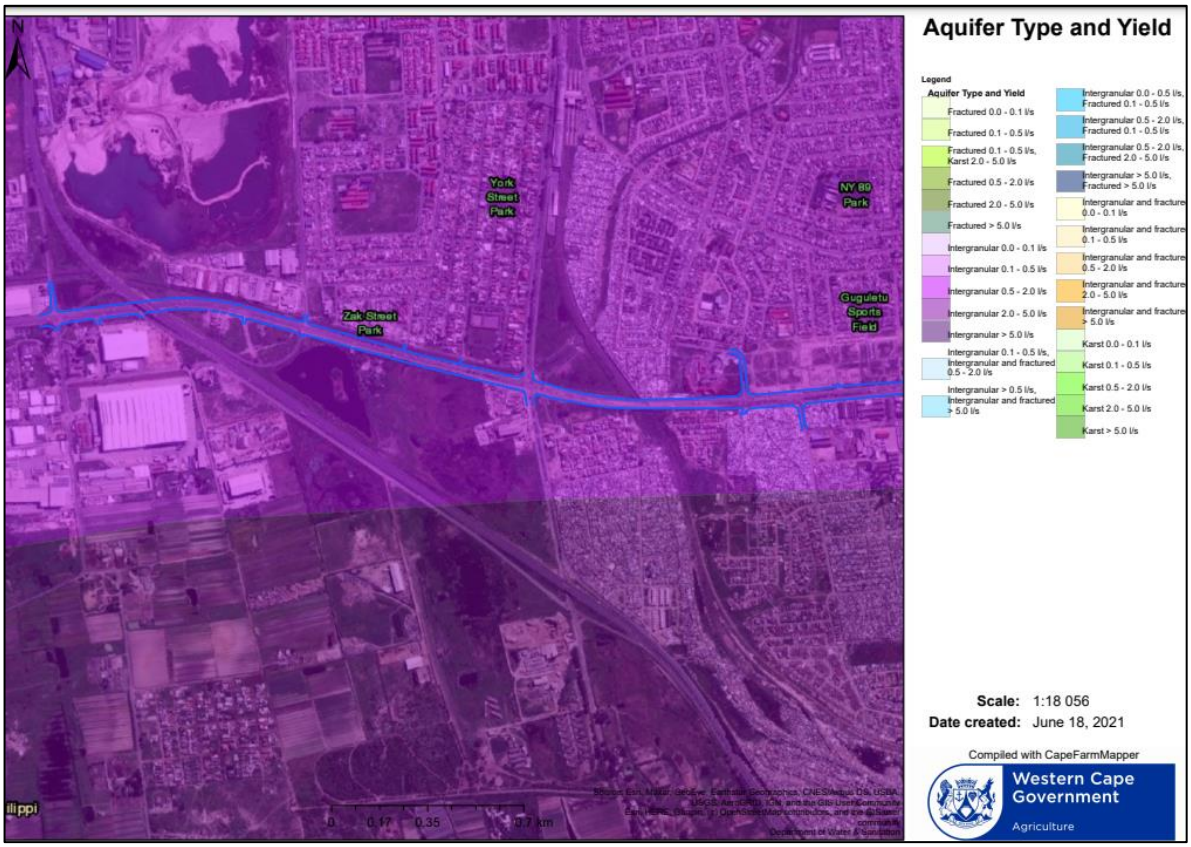



**Figure 18 Aquifer Type and Yield (created using Cape Farm Mapper with site layers from GIBB, 17/02/2021, on 18 June 2021)**

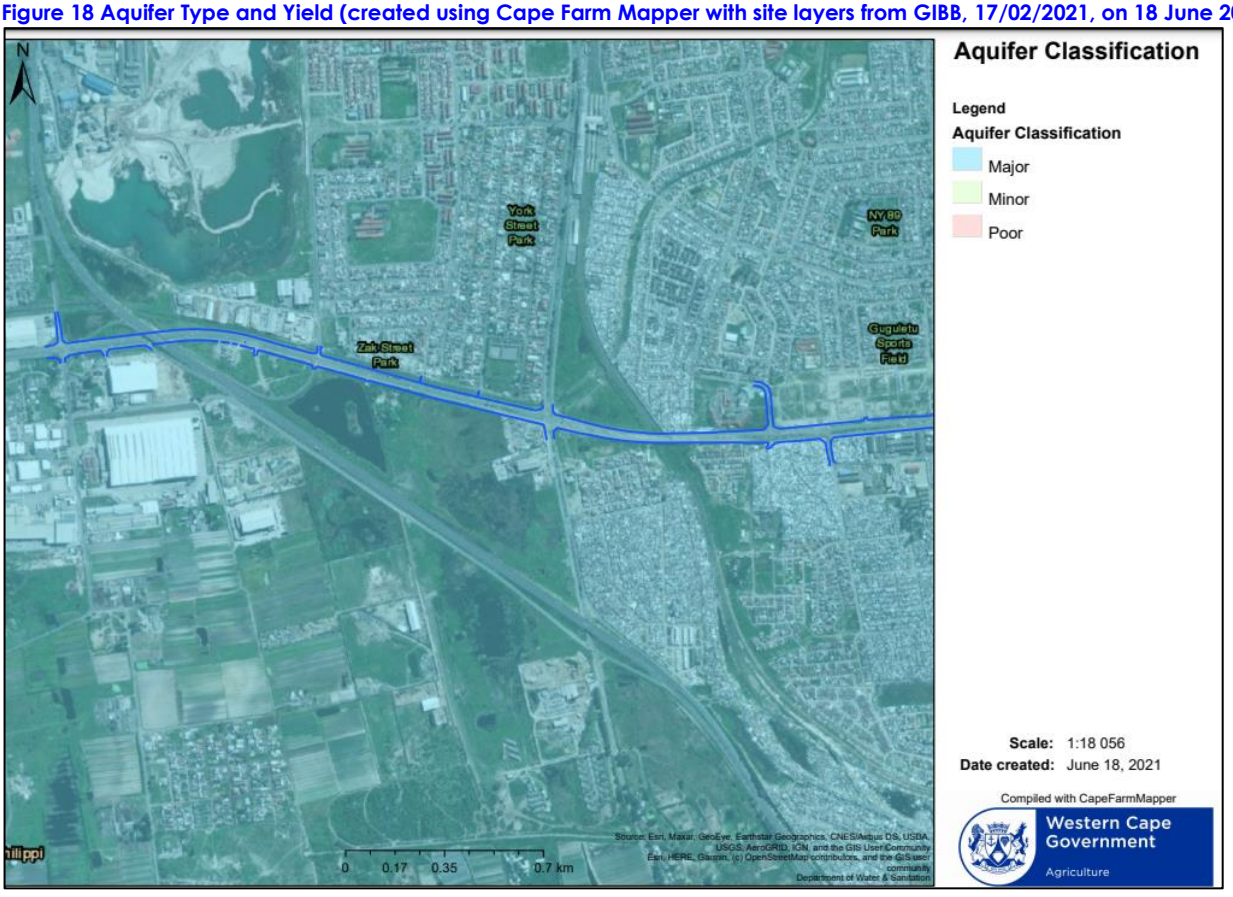



**Figure 19 Aquifer Classification (created using Cape Farm Mapper with site layers from GIBB, 17/02/2021 on 18 June 2021)**

[1] https://www.dws.gov.za/Groundwater/Groundwater_Dictionary/index.html?intergranular_aquifer.htm[accessed 19/01/2021]

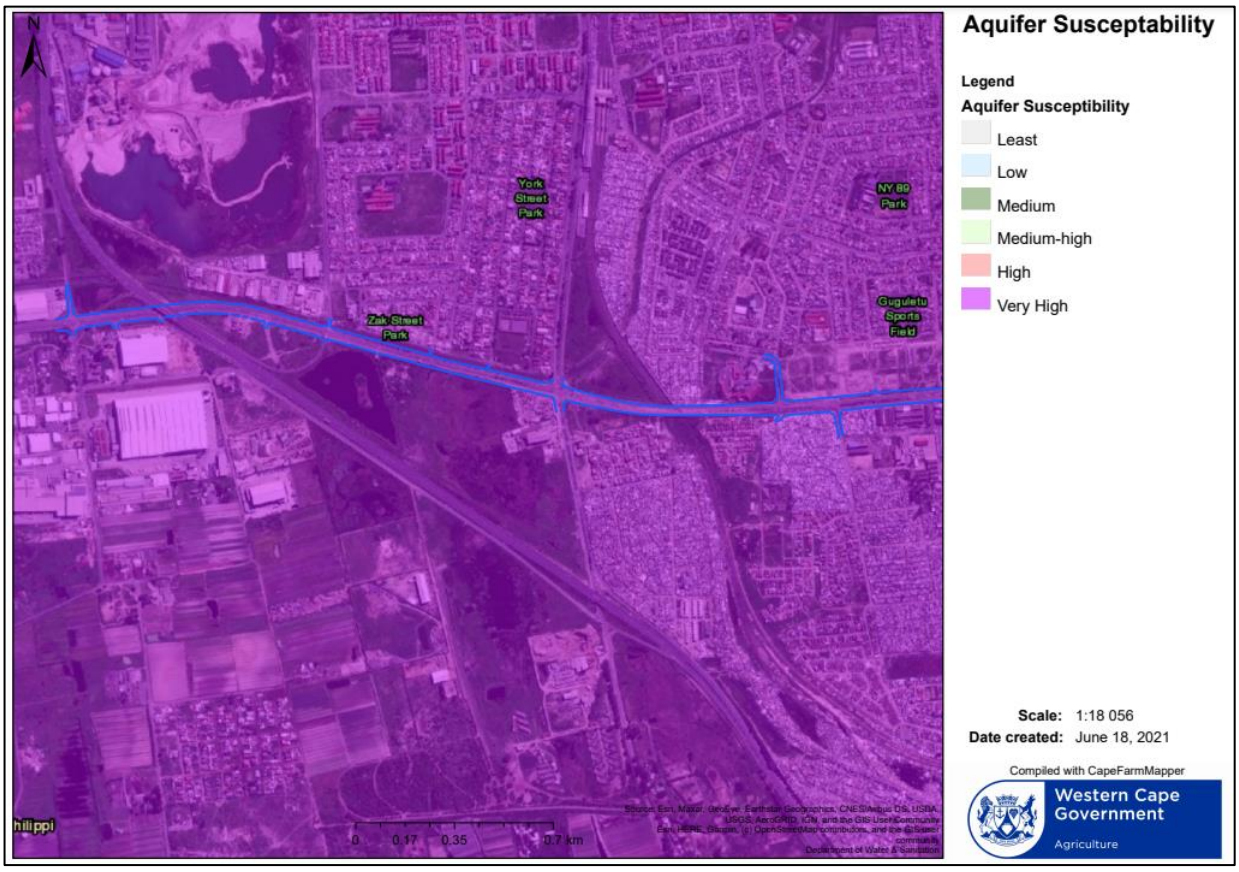



**Figure 20 Aquifer Susceptibility (created using Cape Farm Mapper with site layers from GIBB, 17/02/2021 on 18 June 2021)**

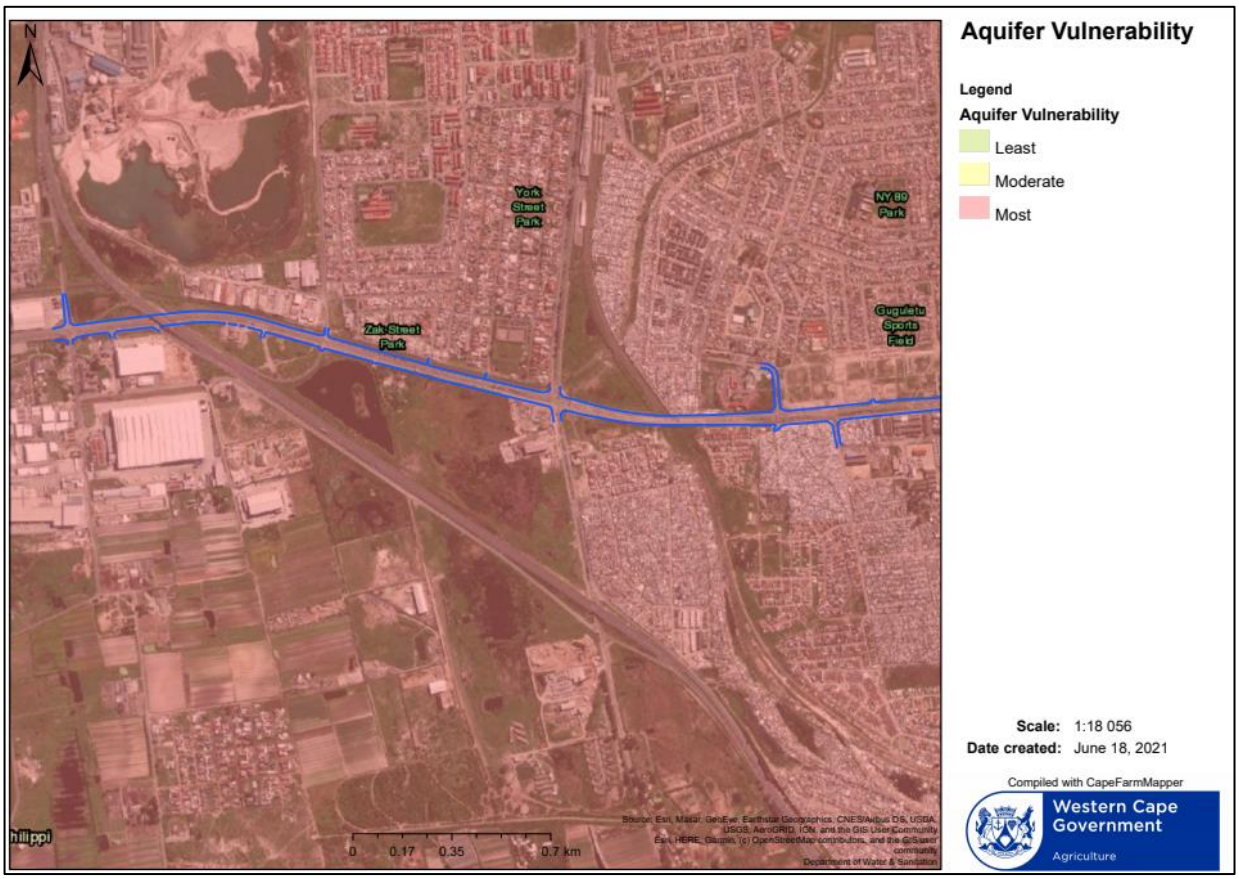



**Figure 21 Aquifer Vulnerability (created using Cape Farm Mapper with site layers from GIBB, 17/02/2021 on 18 June 2021)**

Refer to the section below for more information on the response of the proposal and process to the aquifer conditions in the general site area (and beyond).

| | |
|---|---|
| 1.4. | Indicate the depth of groundwater and explain how the depth of groundwater and type of aquifer (if present) has influenced your proposed development. |

Baseline conditions have been summarised by the EAP in Table 4, noting that desktop research as well as information from the freshwater impact assessment report has informed this summary.

**Table 4 Summary of Groundwater Conditions relevant to route**

| | | | |
|---|---|---|---|
| Shallow water table (less than 1.5m deep)<br>Note that the site is located adjacent to the ESNR which is inundated all year round.<br>However, most of the site (i.e., Govan Mbeki Road and associated road reserve) is not inundated. | **YES** | ~~NO~~ | ~~UNSURE~~ |
| Seasonally wet soils (often close to water bodies) | ~~YES~~ | **NO** | ~~UNSURE~~ |
| Unstable rocky slopes or steep slopes with loose soil | ~~YES~~ | **NO** | ~~UNSURE~~ |
| Dispersive soils (soils that dissolve in water) | ~~YES~~ | **NO** | ~~UNSURE~~ |
| Soils with high clay content | ~~YES~~ | **NO** | ~~UNSURE~~ |
| Any other unstable soil or geological feature | ~~YES~~ | **NO** | ~~UNSURE~~ |
| An area sensitive to erosion | ~~YES~~ | **NO** | ~~UNSURE~~ |
| An area adjacent to or above an aquifer. | ~~YES~~ | **NO** | ~~UNSURE~~ |
| An area within 100m of a source of surface water<br>There are a number of areas along the route where there is intermittent/ seasonal surface water present (i.e., 5 wetlands located nearby the route), however the only significant waterbodies are the ESNR (which has ecological significance) and the Lotus River (which is canalised, and certain works are proposed over the canal as part of the proposed development). | **YES** | ~~NO~~ | ~~UNSURE~~ |
| An area within 500m of a wetland | **YES** | ~~NO~~ | ~~UNSURE~~ |
| An area within the 1:50 year flood zone<br>Note that this pertains only to the works within the Lotus Canal and the design has considered a 1:50 year rain event. | **YES** | ~~NO~~ | ~~UNSURE~~ |
| A water source subject to tidal influence | ~~YES~~ | **NO** | ~~UNSURE~~ |

The route is located within a surface and groundwater strategic water source area (SWSA) (refer to Figure 22).

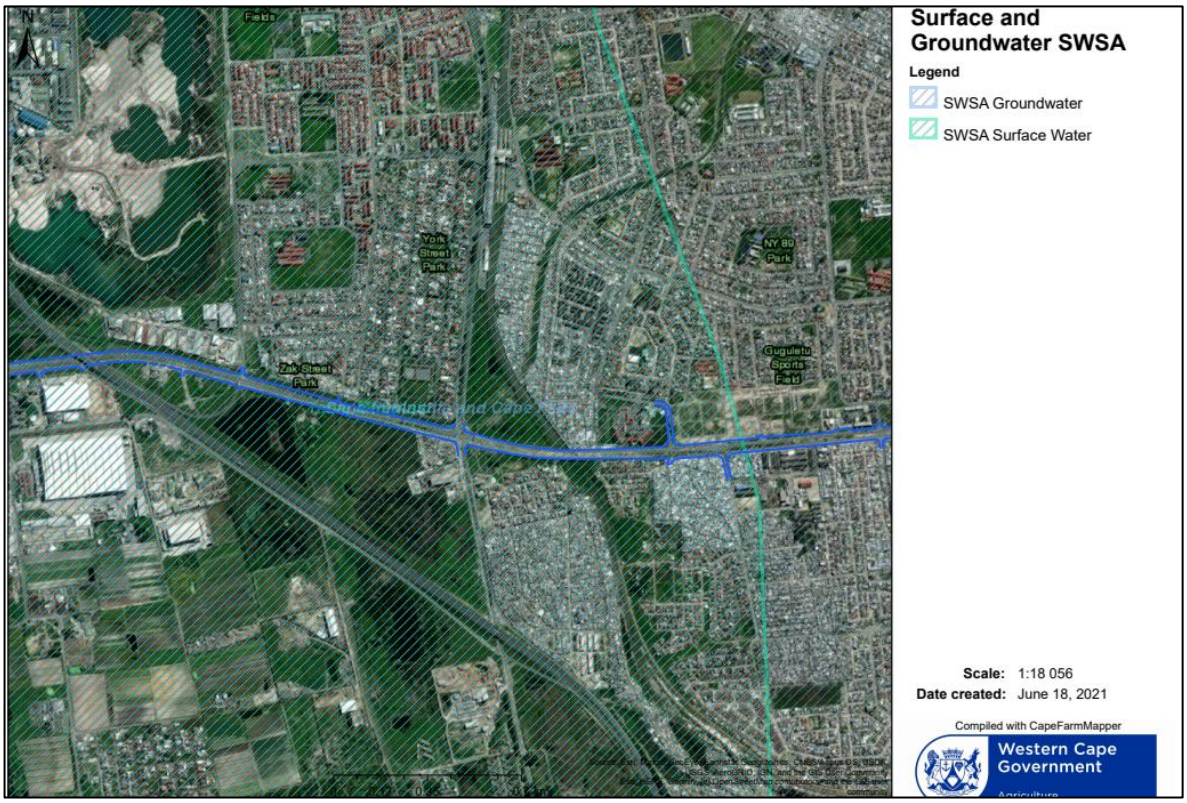



**Figure 22 Surface Water and Groundwater SWSA (created using Cape Farm Mapper and site layer from GIBB, 17/02/2021, on 18 June 2021)**

Data on Cape Farm Mapper suggests and average depth to groundwater of 5.92 mbgl. In some instances, this would not be accurate, given the potential for some pooling adjacent to the roadway in the wetlands as identified in Belcher et *al* (2021), noting that these are essentially stormwater ponds because they are primarily fed by run-off from the existing road. Refer to Section G2 below for more information on surface water.

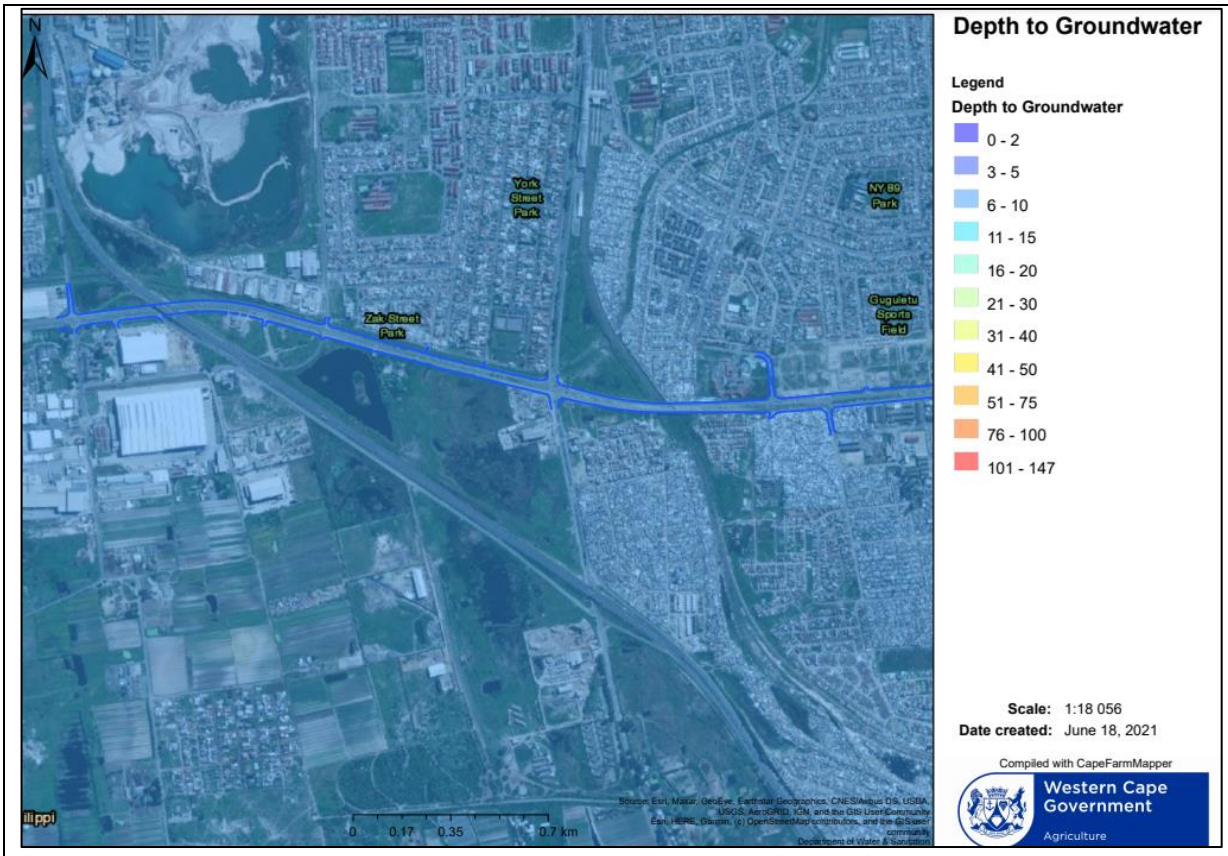



**Figure 23 Depth to Groundwater (created using Cape Farm Mapper and site layer from GIBB, 17/02/2021, on 18 June 2021)**

In terms of addressing groundwater and site drainage, mitigation measures have been included in the EMPr to address construction-phase drainage (and to avoid this flooding into neighbouring properties, particularly ESNR) as well as the design specifications regarding stormwater management (which aligns with requirements stipulated in the freshwater impact assessment). Further, the design of the stormwater system would be in accordance with the SUDS policy, noting that in-principal approval has been provided by the City of Cape Town (refer to Appendix G(d)).

Furthermore, the extent (i.e., width, or cross section) of the proposed widening for the preferred has been narrowed to avoid as much wetland as possible and it would certainly be located outside of the ESNR.

Mitigation measures provided by the freshwater ecologist for all phases of development have also been included in the relevant specifications of the EMPr.

## 2. Surface water

| | | | |
|---|---|---|---|
| 2.1. | Was a specialist study conducted? | **YES** | ~~NO~~ |
| 2.2. | Provide the name and/or company who conducted the specialist study. | | |
| BlueScience, Antonia Belcher and colleagues- referenced as "Belcher *et al*, 2021" throughout this report. | | | |
| 2.3. | Explain how the presence of watercourse(s) and/or wetlands on the property(ies) has influenced your proposed development. | | |

**Baseline/ Watercourses Present Near and On the Site**

With regard to freshwater features on or near the site, five wetlands and one watercourse were identified (refer to Figure 24). The watercourse is the Lotus River, and the wetlands are a mixture of seasonally to permanently inundated areas with the ESNR being the only ecologically important wetland in the area (Belcher *et al*, 2021).


**Figure 24 Location of Wetlands and the Lotus River Canal along the assessed route (source: Belcher et al, 2021)**

**The Lotus River Canal**

The river in question is the Lotus River which is described by the freshwater ecologist as comprises largely of an artificial canal system having naturally occurred as a series of wetland areas rather than a channelled aquatic ecosystem (Belcher *et al*, 2021). The geomorphological and physical characteristics of the Lotus River as it is on site are indicated in Figure 25.

| | |
|---|---|
| Geomorphological Zone | Lowland |
| Lateral mobility | Completely confined |
| Channel form | Simple, canalized |
| Channel pattern | Single thread: no sinuosity |
| Channel type | Canal- concrete and earthern |
| Channel modification | Large scale modification (95% of river is canalized and the earthern section is heavily invaded by alien flora) |
| Hydrological type | Perennial |
| Ecoregion | South Western Coastal Belt |
| DWA catchment | G22D |
| Vegetation type | Cape Flats Sandstone Fynbos and Cape Flats Dune Strandveld |
| Rainfall region | Winter |

**Figure 25 Geomorphological and Physical Features of the Lotus River (*source: BlueScience, 2018*)**

The Lotus River is considered to be in an extensively to critically modified ecological state and the ecological importance and sensitivity is considered to be **low** (Belcher *et al*, 2021). An important aspect of the river is the wetland areas associated with it, most notably the Zeekoevlei (Belcher *et al*, 2021). Most of the fish species in the Zeekoevlei are alien with the only indigenous fish being the Cape Galaxias (Belcher *et al*, 2021). A number of frog species are found in the area (e.g., Clicking Stream Frog, Common Platanna, Arum Lily From and, most notably, the endangered Western Leopard Toad (Belcher *et al*, 2021).

**Wetlands**

With respect to the **greater context** of the area, although natural wetland features would have historically existed in the Cape Flats, the nature thereof has been significantly modified by urbanisation (Belcher *et al*, 2021). The Cape Flats would naturally be characterised with dines and vegetated areas and some Cape Lowlands Freshwater Wetlands would have been found along some sections of the Kuils River where inundation was more permanent (Belcher *et al*, 2021). All wetlands identified along the route (and those currently map as such by the City of Cape Town) were not historically present (i.e. in 1944) (refer to Figure 26 and to Figure 14) (Belcher *et al*, 2021).

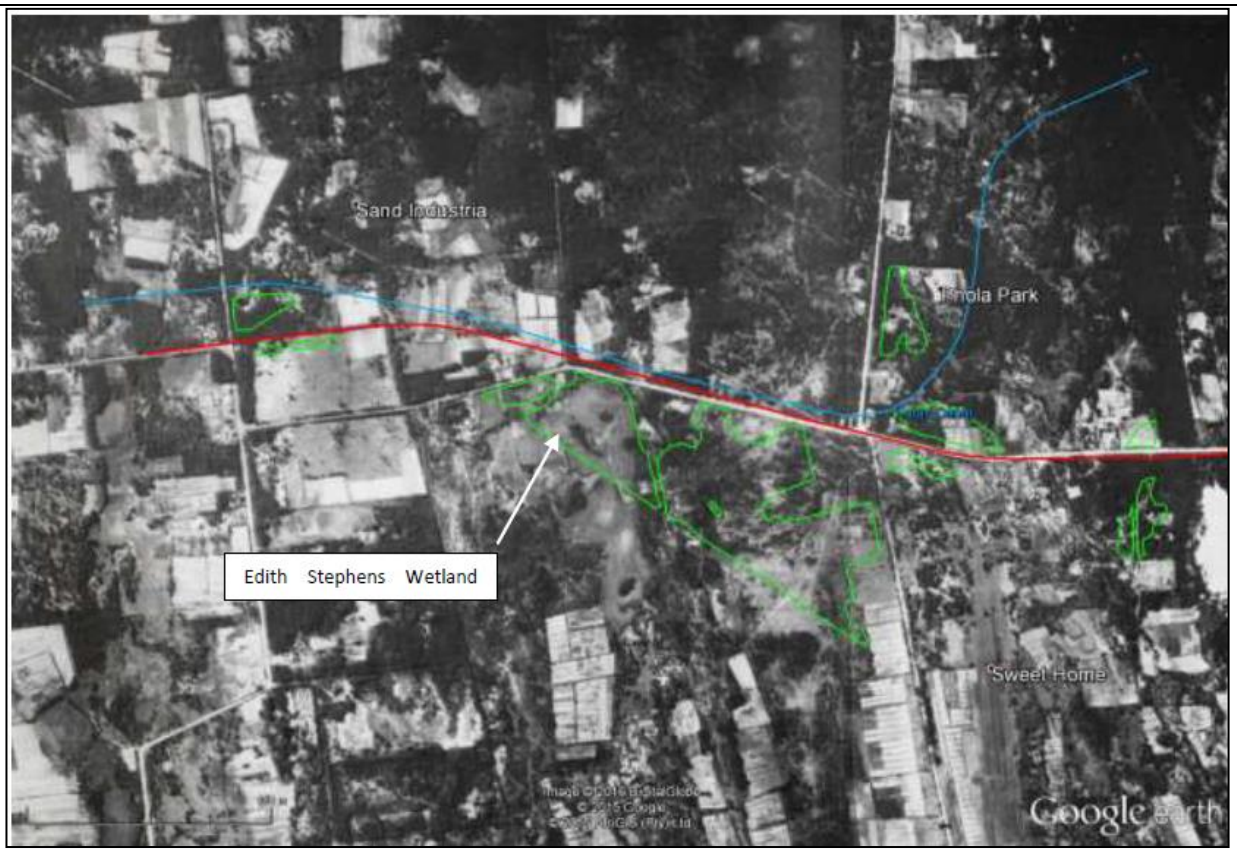



**Figure 26 A 1944 aerial photograph for the study area where the Edith Stephens Nature Reserve currently exists. The proposed Rapid Bus Transport Route on Govan Mbeki Road is indicated in red, and the current location of City of Cape Town mapped wetlands is indicated by the green polygons (*source: Belcher et al, 2021*)**

Following a present-day assessment by a freshwater ecologist, five wetlands were identified along the route as depicted in Figure 24.

The classification of wetland areas alongside the proposed route is depicted in Figure 27.

| Name | Permanent wetlands | Edith Stephens wetland areas | Seasonal wetlands |
|---|---|---|---|
| System | Inland | | |
| Ecoregion | South Western Coastal Belt | | |
| Landscape setting | Plain | | |
| Hydrogeomorphic Type | Depression | | |
| Longitudinal zonation | Not Applicable | | |
| Drainage | Storm water and High water table – groundwater. | Rainfall and High water table – groundwater. Some stormwater | Rainfall, stormwater and potential irrigation water |
| Seasonality | Permanent – Seasonal | Permanent, Seasonal and Temporary | Seasonal to Temporary |
| Anthropogenic influence | Adjacent to the road, largely maintained by stormwater. | Protected reserve. Stormwater attenuation ponds on south eastern edge. | Open area depressions adjacent to the road and urban areas |
| Vegetation | Cape Lowland Freshwater Wetlands | Cape Lowland Freshwater Wetlands, Cape Flats Dune Strandveld and Cape Flats Sand Fynbos | Cape Flats Dune Strandveld and Cape Flats Sand Fynbos |
| Substrate | Sand | | |
| Salinity | Fresh | Mixed, areas of fresh and saline wetlands | Fresh |

**Figure 27 Classification of Wetlands along the proposed route (source: Belcher et al, 2021)**

The wetlands within the study area, with the exception of the ESNR wetland areas are thus considered to be seriously and close to critically modified (Belcher *et al*, 2021). The ESNR wetlands (i.e., wetland 4) are considered to be moderately modified, as alien flora and urban encroachment has been relatively reduced through the protection of the area (Belcher *et al*, 2021).

All wetlands, with the exception of the ESNR wetlands, maintain low levels of biodiversity, with the sedge dominated wetlands providing less than that of the reed dominated wetlands (Belcher *et al*, 2021). The reed dominated wetlands offer ecosystem services in terms of stormwater management and trapping of sediment, nutrients, and toxicants. The sedge dominated wetlands also provide such services, but on a minor scale (Belcher *et al*, 2021).

***Addressing I&AP Comments: The sensitivity and value of the ESNR has been indicated, along with the presence of the cacosternum platys and Western Leopard Toad, as requested by the City of Cape Town Biodiversity branch.***

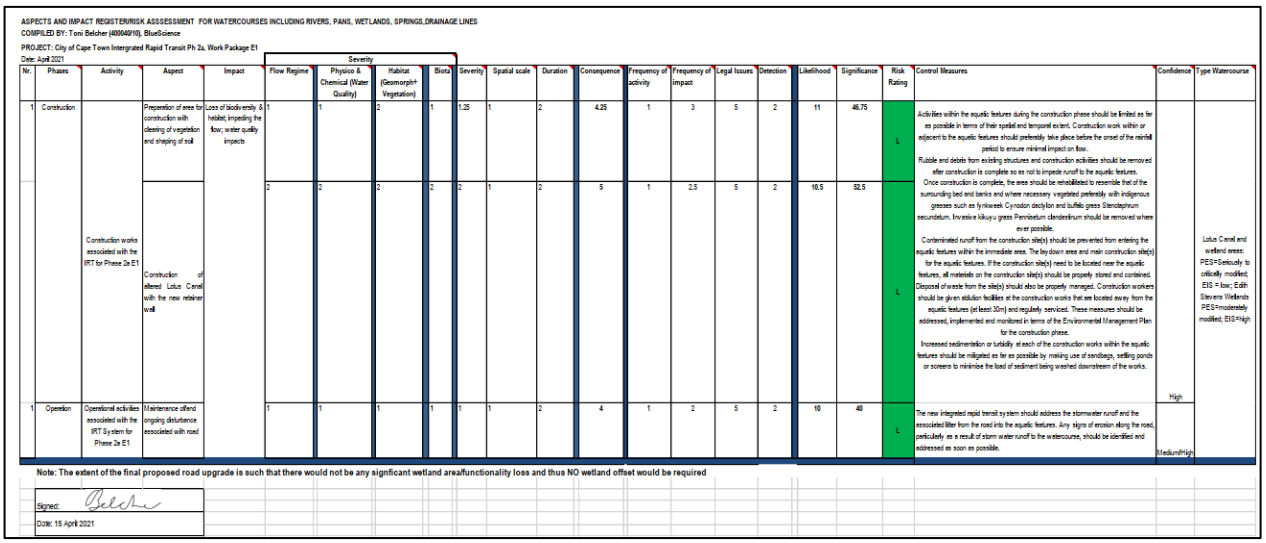
The ESNR wetland, however, is unique in the services it provides in that it has value from a biodiversity conservation (i.e., it houses the *cacosternum platys* and Western Leopard Toad) and education/research perspective. It also supplies stormwater management and sediment, nutrient, and toxicant trapping services (Belcher *et al*, 2021).

The seasonally to temporarily inundated sedge depression wetlands (wetlands 1 and 2) as well as the permanently and seasonally inundated wetlands (wetlands 3 and 5) are considered to have moderate to low ecological importance and sensitivity (Belcher *et al*, 2021). The ESNR (wetland 4) is considered to have high ecological importance and sensitivity (Belcher *et al*, 2021).

**Specifically with regard to the proposed expansion**, those portions of wetlands 1, 2, 3, 4 and 5 that occur within the road reserve and the proposed boundaries of the expansion activities are of very low significance, are often subject to disturbance and do not provide any valued goods and service with the exception of the mitigation of stormwater impacts (Belcher *et al*, 2021). If disturbed, these wetland areas and functionality will easily re-establish (Belcher *et al*, 2021). It has also been confirmed that the larger areas beyond the road reserve and site boundaries are unlikely to be impacted by the proposed activities. **Note that the preferred alternative (i.e., Alternative 3) does not encroach onto Wetlands 2, 3, and 5 at all.**

The anticipated encroachment within each area is summarised in Table 1 (Belcher *et al*, 2021). The most sensitive wetland along the route is the ESNR and, although the proposed route would encroach approximately 750m$^2$ into this wetland, it would only be on areas beyond the fence line/ cadastral boundary and within the road reserve (i.e. not within the ESNR or the defined protected area indicated in Appendix G(b)), which are more transformed (Belcher *et al*, 2021).

A Risk Assessment Matrix has also been compiled for the proposed development, which indicates low risk for the preferred alternative (refer to Figure 28).



ASPECTS AND IMPACT REGISTER/RISK ASSESSMENT FOR WATERCOURSES INCLUDING RIVERS, PANS, WETLANDS, SPRINGS,DRAINAGE LINES

COMPILED BY: Toni Belcher (400040118), BlueScience

PROJECT: City of Cape Town Intergrated Rapid Transit Ph 2a, Work Package E1

Date: April 2021

| Nr. | Phases | Activity | Aspect | Impact | Severity: Flow Regime | Severity: Physico & Chemical (Water Quality) | Severity: Habitat (Geomorph+ Vegetation) | Severity: Biota | Severity | Spatial scale | Duration | Consequence | Frequency of activity | Frequency of impact | Legal Issues | Detection | Likelihood | Significance | Risk Rating | Control Measures | Confidence | Type Watercourse |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Construction | Construction works associated with the IRT for Phase 2a E1 | Preparation of area for construction with clearing of vegetation and shaping of soil | Loss of biodiversity & habitat, impeding the flow; water quality impacts | 1 | 1 | 2 | 1 | 1.25 | 1 | 2 | 4.25 | 1 | 3 | 5 | 2 | 11 | 46.75 | L | Activities within the aquatic features during the construction phase should be limited as far as possible in terms of their spatial and temporal extent. Construction work within or adjacent to the aquatic features should preferably take place before the onset of the rainfall period to ensure minimal impact on flow.<br>Rubble and debris from existing structures and construction activities should be removed after construction is complete so as not to impede runoff to the aquatic features.<br>Once construction is complete, the area should be rehabilitated to resemble that of the surrounding bed and banks and where necessary vegetated preferably with indigenous grasses such as fynkweek Cynodon dactylon and buffalo grass Stenotaphrum secundatum. Invasive kikuyu grass Pennisetum clandestinum should be removed where ever possible.<br>Contaminated runoff from the construction site(s) should be prevented from entering the aquatic features within the immediate area. The lay-down area and main construction site(s) for the aquatic features. If the construction site(s) need to be located near the aquatic features, all materials on the construction site(s) should be properly stored and contained. Disposal of waste from the site(s) should also be properly managed. Construction workers should be given ablution facilities at the construction works that are located away from the aquatic features (at least 30m) and regularly serviced. These measures should be addressed, implemented and monitored in terms of the Environmental Management Plan for the construction phase.<br>Increased sedimentation or turbidity at each of the construction works within the aquatic features should be mitigated as far as possible by making use of sandbags, settling ponds or screens to minimise the load of sediment being washed downstream of the works. | | Lotus Canal and wetland areas: PES=Seriously to critically modified; EIS = low; Edith Stevens Wetlands PES=moderately modified; EIS=High |
| | | | Construction of altered Lotus Canal with the new retainer wall | | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 8 | 1 | 2.5 | 5 | 2 | 10.5 | 52.5 | L | | | |
| 1 | Operation | Operational activities associated with the IRT System for Phase 2a E1 | Maintenance of/and ongoing disturbance associated with road | | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 4 | 1 | 2 | 5 | 2 | 10 | 40 | L | The new integrated rapid transit system should address the stormwater runoff and the associated litter from the road into the aquatic features. Any signs of erosion along the road, particularly as a result of storm water runoff to the watercourse, should be identified and addressed as soon as possible. | High<br>Medium/High | |

Note: The extent of the final proposed road upgrade is such that there would not be any significant wetland area/functionality loss and thus NO wetland offset would be required

Signed:

Date: 15 April 2021

**Figure 28 Risk Assessment Matric (source: Belcher et al, 2021)**

Refer to Appendix G(b) for the full freshwater impact assessment report.

**Response**

The presence of the Lotus Canal has informed the design of the proposed roadway in terms of providing for the additional design requirements for a retaining wall and balustrade as described in the project description. The design would not have a significant effect on the water flow of the canal and the wall would stop the existing flooding occurring along Govan Mbeki Road (GIBB, 2021). New pedestrian bridges would also be provided as part of these works in order to provide the communities nearby with continued access to Govan Mbeki Road. The design also considers existing flood conditions of the Lotus Canal. The stormwater management system has also been designed to respond to the current conditions of the Lotus Canal in terms of connecting into the existing minor drainage network where possible and that with the new minor drainage system, the system would be able to convey greater than the 1:10-year period and the road would convey up to- and including the 1:50-year return period (GIBB, 2021). Overall, this would provide an improvement on current flooding conditions.

With regard to wetlands, the preferred alternative (i.e., Alternative 3) has been designed to avoid as much of the wetland within the route as possible, and where it does encroach into the wetland adjacent to the ESNR, is in a heavily degraded area where the impact on the wetland would be low (Belcher *et al*, 2021). Further design considerations for protection of the wetlands are evidence in the stormwater management plan, and slope of the roadway, which would direct run-off from the road away from ESNR.

There are also general management measures which have been included in the environmental specifications in the EMPr to prevent significant and unacceptable adverse impacts of the watercourses associated with the proposed development. The EMPr also strictly requires that the ESNR be a no-go area.

## 3. Coastal Environment

Not Applicable, there is no coastal environment nearby the proposed road expansion.

| | | | |
|---|---|---|---|
| 3.1. | Was a specialist study conducted? | YES | NO |
| 3.2. | Provide the name and/or company who conducted the specialist study. | | |
| | | | |
| 3.3. | Explain how the relevant considerations of Section 63 of the ICMA were taken into account and explain how this influenced your proposed development. | | |
| | | | |
| 3.4. | Explain how estuary management plans (if applicable) has influenced the proposed development. | | |
| | | | |
| 3.5. | Explain how the modelled coastal risk zones, the coastal protection zone, littoral active zone and estuarine functional zones, have influenced the proposed development. | | |

## 4. Biodiversity

| | | | |
|---|---|---|---|
| 4.1. | Were specialist studies conducted? | **YES** | ~~NO~~ |
| 4.2. | Provide the name and/or company who conducted the specialist studies. | | |
| NCC Environmental Services (Pty) Ltd (NCC)<br>Sean Altern (referenced as Altern, 2021 throughout this report) | | | |
| 4.3. | Explain which systematic conservation planning and other biodiversity informants such as vegetation maps, NFEPA, NSBA etc. have been used and how has this influenced your proposed development. | | |
| Refer to Section E 4.4 and E6 above. | | | |
| 4.4. | Explain how the objectives and management guidelines of the Biodiversity Spatial Plan have been used and how has this influenced your proposed development. | | |
| Refer to Section E 4.4 and E6 above.<br>Note that these have influence the proposed road widening in terms of the extent to which widening is intended and, where widening is anticipated nearby such areas, an independent botanist has conducted a baseline and impact assessment in this regard and impacts have been found to be low. The footprint has intentionally been limited to transformed areas. | | | |
| 4.5. | Explain what impact the proposed development will have on the site-specific features and/or function of the Biodiversity Spatial Plan category and how has this influenced the proposed development. | | |

In order to provide context, the baseline assessment found that the proposed route abuts three sensitive areas, noting that **in some cases the preferred alternative avoids these areas entirely and, importantly, the preferred alternative (i.e., Alternative 3) does not encroach into any of these areas beyond the road reserve**. The assessment focuses on ground-truthed (refer to Appendix G(c) for the full Botanical Impact Assessment report) botanically sensitive areas beyond the road reserve. Three key areas have been identified in Altern (2021), namely:

1) **Section A**: An area of Cape Flats Sand Fynbos from the intersection with Vanguard/Jakes Gerwel Drive running approximately 450m to the east (refer to Figure 29).
2) **Section B**: An area of Cape Lowlands Freshwater Wetlands which is part of the ESNR (refer to Figure 29).
3) **Section C**: An area of Cape Flats Dune Strandveld mapped as "Other Natural Area" from the intersection with Duinefontein Road running approximately 350 m to the east (refer to Figure 29).

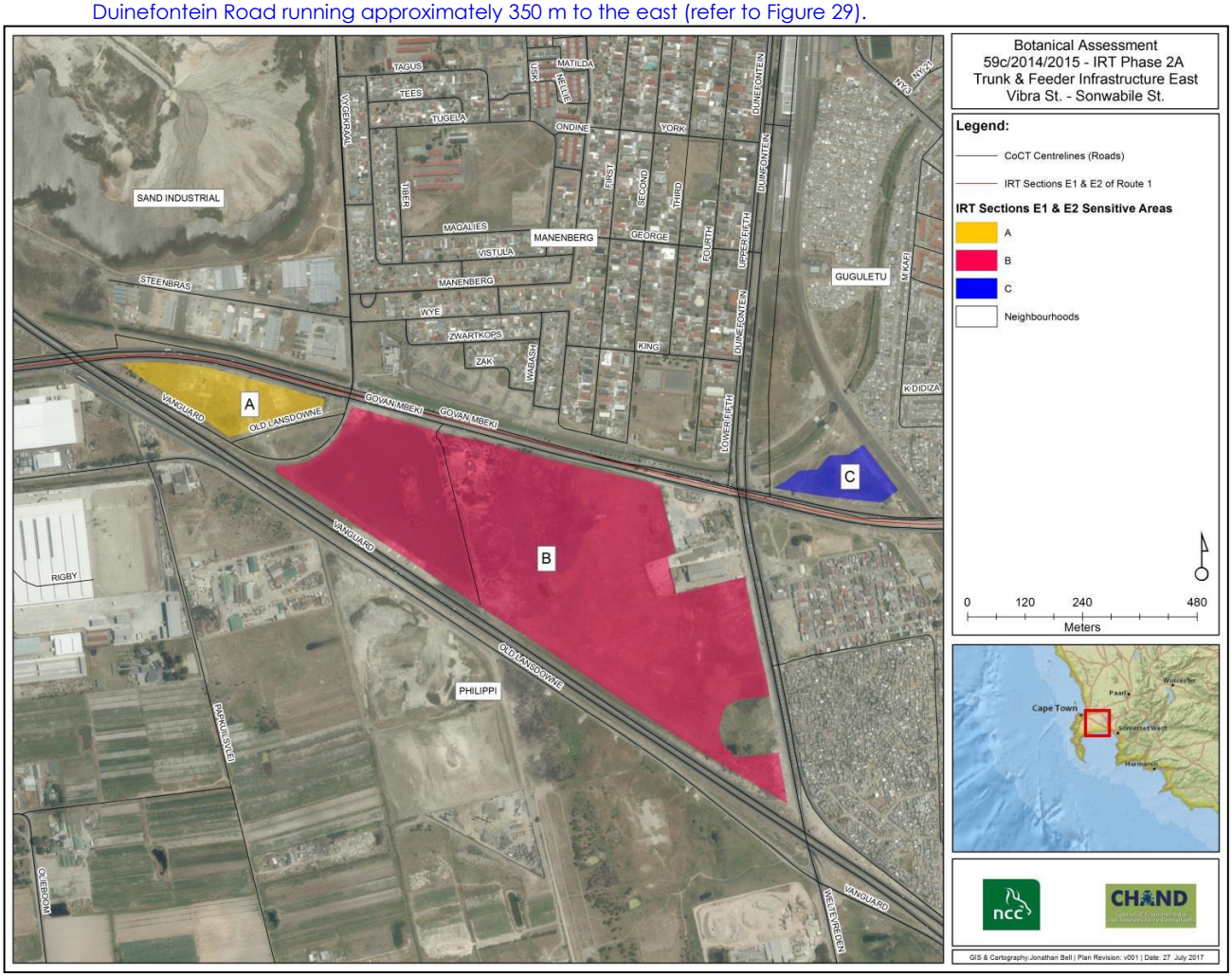



**Figure 29 Botanically sensitive areas along the proposed route (*source: NCC, 2018*)**

**Section A** was formerly classified as a CBA2, however, given the state of the area, this classification has been removed and there is no longer a classification attached to it at all (Altern, 2021). No notable species were found during the site visit and a dense covering of invasive alien plants were identified (Altern, 2021). The entire section (i.e., not just the area which falls under the site) has little biodiversity value and is of low sensitivity (Altern, 2021). It is considered to be completely degraded, with the only possible function being (again, of the whole section) a slight buffer zone to ESNR (Altern, 2021). One indigenous species was identified during the botanist's site visit, namely *Zantedechia aethiopica* (Altern, 2021). The entire portion of the section which would be developed on as part of the proposed development (for all alternatives) has been heavily disturbed and is degraded being in an advanced state of transition from native to non-native cover resulting in the almost non-existence of indigenous species, associated vegetation type and eco-system function (Altern, 2021).

The preferred alternative (i.e., Alternative 3) shows minimal encroachment (approximately 200m2) into this area beyond the road reserve in this section (Altern, 2021).

**Section B** comprises of the ESNR, and three different vegetation types have been identified in the greater section, namely Cape Flats Sand Fynbos, Cape Flats Dune Strandveld, and Cape Lowlands Freshwater Wetlands (Altern, 2021). Much of the Cape Flats Sand Fynbos within the proposed route is listed as Other Ecological Support Area (OESA), which serves as a buffer zone listed as open space irreversibly modified by agriculture or other activities which is essential for protected sites (Altern, 2021).

The Cape Flats Dune Strandveld located in the eastern section of the ESNR is listed as Protected: In Perpetuity (Altern, 2021). In regard to the route section pertaining to ESNR (i.e., the *transitioned* Cape Lowlands Freshwater Wetlands) the road verge between the shoulder of the M9 up to the boundary fence is considered "Replaced-Adventive" and comprises a mowed graminoid land (lawn-like in appearance) (Altern, 2021). Some sporadic indigenous species were found during the site

assessment, however **invasive alien plants encompass large tracts of the road verge section** (i.e., the footprint within which the proposed development would be constructed) (Altern, 2021). Following a site investigation by an independent botanist, the road verge is rated as least-sensitive and is degraded and transformed, however the botanical assessment has indicated that the road verge does play "a very slight buffering role for the Edith Stephens Nature Reserve thereby protecting the more sensitive areas further within and contributing to the hydrological state of the area through absorption and directing of water run-off" (NCC, 2018)and therefore holds some local significance (Altern, 2021). The entire portion of the section which would be developed on as part of the proposed development (for Alternative 2 and 3) occurs on vegetation that is in a degraded and transformed state with the native vegetation community structure, composition, and regenerative capacity lost (Altern, 2021). This is a result of pedestrian traffic, mowing practices and excessive exotic grass growth, exaggerated as a result of result of edge effect and associated run-off from the road (Altern, 2021). The preferred alternative would be associated with a loss of about 400m$^2$ of the Cape Lowlands Freshwater Wetlands, noting that this would fall within transformed vegetation within the road reserve and not in the ESNR (Altern, 2021).

The area within the fenced boundaries of the ESNR is of a high sensitivity and must be conserved, however the preferred alternative (as well as Alternative 2) does not encroach into this area (Altern, 2021). Alternative 1 would encroach into the highly sensitive area, which is part of the rationale behind why it is not considered the preferred alternative (Altern, 2021).

**Section C** comprises replaced Cape Flats Dune Strandveld and is listed as Other Natural Vegetation (ONV) which is of local significance and is described as a buffer zone of Natural vegetation in Endangered, Vulnerable and Least Concern in good, fair, or restorable condition (Altern, 2021). Following the site assessment, it has been found that alien invasive species dominate the site and that it has a very low conservation value. The entire portion of the section which would be developed on as part of the proposed development (for all alternatives) occurs on vegetation that is in a degraded and transformed state with the native vegetation community structure, composition and regenerative capacity lost and amounts to an extent of approximately 100m$^2$ for the preferred alternative (Altern, 2021).

Note that throughout the route the preferred Alternative (as well as Alternative 2) would have no direct footprint outside the road reserve in the abovementioned sensitive sections, with the exception of approximately 200m$^2$ of the replaced Cape Flats Sand Fynbos in the delisted CBA2 area where Alternative 3 would encroach (Altern, 2021). However Alternative 1 would encroach beyond the road reserve into these areas (Altern, 2021), hence part of the reason for not preferring Alternative 1.

**With regard to the proposed route envelope, the areas of vegetation identified are all transformed or degraded and are of low sensitivity (Altern, 2021).**

Some trees were also identified along the route, however none have been found to be of significant age (25+ years) or are protected, as they are listed as least concern (LC) on the Red List of South African Plants (Altern, 2021). The trees are not considered to be of botanical importance, but rather trees which have been planted along the road for scenic value. A row of Ficus trees abuts the ESNR (refer to Figure 30) and other species of trees have been identified at various points along the route (Altern, 2021).

**Figure 30 *Ficus* Trees adjacent to ESNR (*source: Altern, 2021*)**

Overall, the portions of the abovementioned vegetation types within the proposed boundaries of the route have been found to be entirely transformed or degraded with little ecological value (Altern, 2021).

| |
|---|
| **Response**<br>The impact assessments conducted by the various specialists found no sensitivities or development constraints on the site (of the preferred alternative) other than the ESNR, which lies adjacent to the site. This is partly a result of the general conditions adjacent to the subject stretch of road, and partly through design of a cross-section/ road width for a preferred alternative which does not encroach into areas mapped as part of the City of Cape Town Biodiversity Network. Therefore, in response to these areas, the design for the preferred road geometry alternative is intentional in terms of limiting adverse impact on these systems and would only fall within highly degraded, transformed areas which would result in low impact in this regard.<br><br>The loss of pavement trees would also be compensated for from an aesthetic perspective by the landscaping component of the proposed development. |

| | |
|---|---|
| 4.6. | If your proposed development is located in a protected area, explain how the proposed development is in line with the protected area management plan. |
| This is not applicable as the proposed development footprint would not encroach into any Protected Area, noting that ESNR is protected (refer to Appendix O for evidence thereof) and that the proposed development footprint would not encroach into the declared ESNR. | |
| 4.7. | Explain how the presence of fauna on and adjacent to the proposed development has influenced your proposed development. |
| Given the urban context and the fact that much of the site is an existing roadway, limited fauna are located on the site. However, in areas where they would be present, such as the open areas indicated in Figure 29, and particularly ESNR, the likelihood of coming across faunal activity is possible. The proposed limits of the development footprint proposes to encroach into these possible habitats as little as possible and certainly avoids the ESNR which holds significant biodiversity. ESNR is, however, fenced off and so the ground-moving fauna are not likely to enter the site area.<br><br>Indirect impacts on fauna have been noted in the impact assessment in this report and measures are included in the EMPr for management of trenching and fauna, as well as general measures for how to approach and handle any fauna found on site.<br><br>It is also worth noting that the need for a faunal assessment was one of the points discussed at a meeting with the City of Cape Town Biodiversity branch and it was agreed (by them) that no faunal assessment is necessary (refer to Appendix F). | |

## 5. Geographical Aspects

| |
|---|
| Explain whether any geographical aspects will be affected and how has this influenced the proposed activity or development. |
| The earthworks and hardening of the surfaces adjacent to the existing road would result in some minor changes to the surface water drainage regime on site. These potential changes have been considered and accommodated in the Stormwater Management Plan. The impacts are further discussed and assessed in the impacts assessment component of this report and the Stormwater Management Plan is located in Appendix G(d). |

## 6. Heritage Resources

| | | | |
|---|---|---|---|
| 6.1. | Was a specialist study conducted? | **YES** | NO |
| 6.2. | Provide the name and/or company who conducted the specialist study. | | |
| Bridget O'Donoghue, referenced as "O'Donoghue, 2019" throughout this report | | | |
| 6.3. | Explain how areas that contain sensitive heritage resources have influenced the proposed development. | | |
| | No sensitive heritage areas would be affected by the proposed road widening. A Notification of Intent to Develop has been submitted to HWC and HWC has confirmed that no further assessment is necessary (refer to their comment in Appendix E(1)). | | |

## 7. Historical and Cultural Aspects

| |
|---|
| Explain whether there are any culturally or historically significant elements as defined in Section 2 of the NHRA that will be affected and how has this influenced the proposed development. |

The proposed development would trigger Section 38(1)(3)(a) of the NHRA given that the proposed development would be linear and longer than 300m.

Historic movement routes:
Archaeological evidence in the Cape Flats area of the study area is currently considered negligible although some surface scatters occur particularly along the coastal areas of False Bay (O'Donoghue, 2019). Pre-colonial use by transhumant pastoralists occurred on the Cape Flats for hunting collecting and in search of grazing although this was likely to be sparse (O'Donoghue, 2019). Some early settlers used the area of the Cape Flats for grazing and for hunting, although the size of the leased areas suggests that large tracts of land were necessary to sustain livestock (O'Donoghue, 2019). It is possible that early colonial movement and transportation routes followed the same movement patterns, which followed the hard ground skirting the area between the base of the mountain and the sandy wastes of the Cape Flats (O'Donoghue, 2019).

Throughout the early settlement of the Cape, it is noted that the development of a series of paths, grazing paths and short cuts throughout the Cape Flats which however would have been easier to traverse on horseback (O'Donoghue, 2019). Early settlement in the South-west Peninsula followed the development of routes from Cape Town extending along the lower reaches of back of Table Mountain in the vicinity of Newlands and Wynberg (O'Donoghue, 2019). Sandy soils on the Cape Flats precluded route development and such areas were only developed by the mid to late nineteenth century when improved technology allowed for the development of suitable roads. Settlement followed road development eastwards from the Main Road (O'Donoghue, 2019).

Early settlement on the Cape Flats 1830- 1880: the Philippi area
The first settlement to the east was the Klipfontein Mission established in 1833 by the Wesleyan Mission operating in South Africa (O'Donoghue, 2019). The mission acted as a place of safety for the dispossessed the poverty stricken and homeless emancipated slaves (O'Donoghue, 2019). The Wesleyan Mission Society acquired the land in 1865 administering it on behalf of the inhabitants of the mission itself (O'Donoghue, 2019). This settlement and the settlement at Wynberg were not connected by road and remained apart until the use of further land by the German agricultural settlers of the 1870's and 1880's (O'Donoghue, 2019). Routes extending west from the Peninsula development occurred in the mid nineteenth century in particular after 1877 when German agricultural settlers were established on the Cape Flats (O'Donoghue, 2019). Core to the settlement was the establishment of a Lutheran Church (O'Donoghue, 2019). The first school was built in1884 followed by the first Lutheran Church in 1886 (O'Donoghue, 2019). The Philippi smallholdings remained intact as agricultural areas until subdivision of the area between Hazendal and the Klipfontein Road and settlement in the north of Phillip, began a process of encroachment (O'Donoghue, 2019).

***Addressing I&AP Comments: Additional assessment in terms of cultural and heritage aspects of significance to the community has been conducted in response to a request from local Councillors.***

A Notification of Intent to Develop has been submitted to Heritage Western Cape (HWC) and HWC has confirmed that no further assessment is necessary (refer to their comment in Appendix E(1). In spite of this, at the request of local Councillors, further investigation into important cultural and heritage spaces in the area was undertaken and the findings thereof confirm that none of those significant aspects would be affected by the proposed development.

The updated heritage report (i.e., Heritage Comment) found (refer to Appendix E(1)) that there are four key sites adjacent to the proposed road expansion which may have heritage significance, but upon closer examination would either not be affected or do not hold cultural significance (O'Donoghue, 2019). The sites identified are indicated in Figure 31, Figure 32, Figure 33, and Figure 34.

| No | Site | Location | Assessment of significance |
|---|---|---|---|
| 1 | Edith Stevens Nature Reserve & associated structures | CA 609/13 | Grade IIIB (natural heritage, social, contextual) |
| 2 | Mature Eucalyptus trees | Corner of Govan Mbeki and Ottery Road | Contextual |
| 3 | Four single storey detached buildings | Farm CA 616 | No cultural significance |
| 4 | Two storey building (CCT offices). | Erf 8610/RE | No cultural significance |

**Figure 31 Potentially significant heritage sites (*source: O'Donoghue, 2019*)**


**Figure 32 Section of road works from Vibra Road to Vanguard Drive (on the Govan Mbeki / Ottery Road corner). Four 60 year old buildings within orange circle, and Eucalyptus trees with white circles *(source: O'Donoghue, 2019)***


**Figure 33 ESNR (*created using Google Earth Pro and site layers from GIBB, 17/02/2021, on 18 June 2021*)**


**Figure 34 Proposed Road works adjacent to the CCT buildings pre 1953 on Erf 8610/RE (*created using Google Earth Pro and site layers from GIBB*, 17/02/2021, on 18 June 2021)**

Note that the four buildings identified in item number 3 in Figure 31 constitute the traffic school and the building identified in item 4 (Figure 31) is the Fezeka building. Neither of the buildings/ structures identified or the ESNR fall within the scope of the proposed road expansion and would not be affected. There is a possibility that the *Eucalyptus* trees would be removed, however this would be suitably mitigated through the implementation of planting new suitable trees in appropriate road reserve positions suggested by a Landscape Architect, as per the requirement of O'Donoghue (2019).

Beyond the immediate context of the site, the updated report also identified a list of sites in Gugulethu and Nyanga which hold cultural significance to the local communities. Refer to Figure 35 as well as to the full Heritage Comment in Appendix E(1) for a larger, clearer image. It is important to note that none of the sites identified in Figure 35 would be encroached upon by the proposed road expansion.

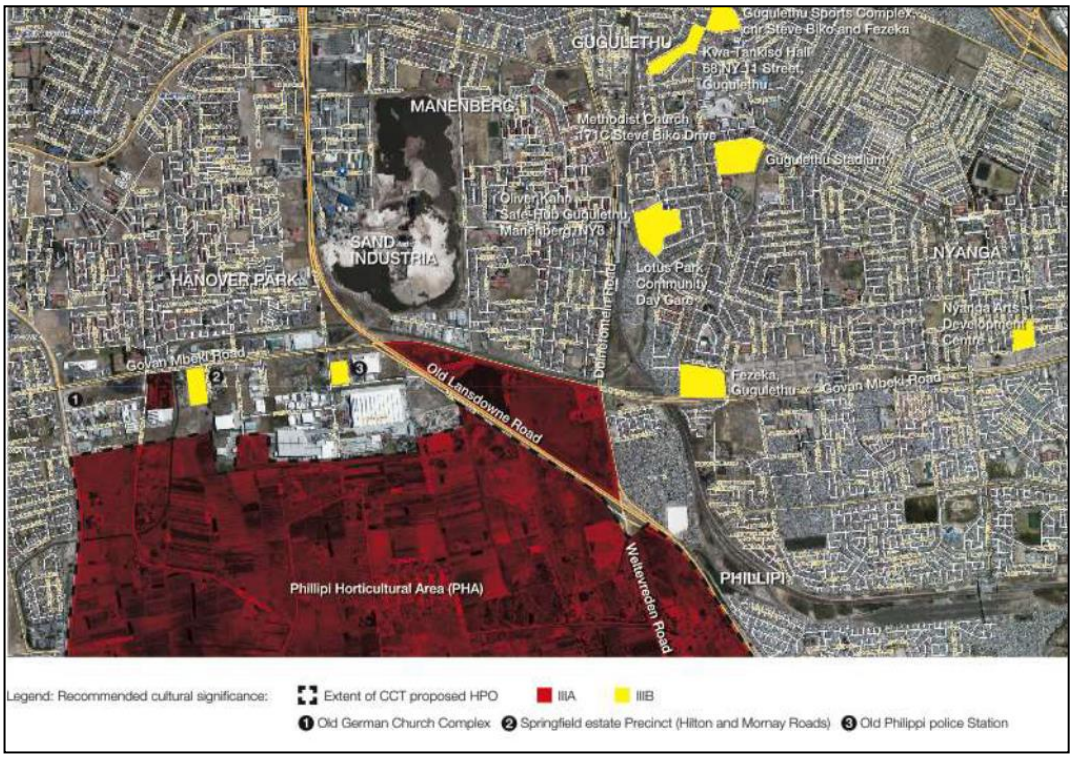



**Figure 35 Significant cultural and heritage sites, as indicated my members of the local communities (*source: O'Donoghue, 2018*)**

***Addressing I&AP Comments: The initiation site with respect to its proximity to the footprint of the proposed development has been considered and indicated in response to a request from a local sub-council manager.***

Finally, an additional site of importance was highlighted by one of the local sub-council managers as being important to the community. The property is across the railway line at the Lotus Canal (refer to Figure 36) and initiation ceremonies take place thereon. It was further indicated that the community would like to enclose the area by planting some trees and that the site be used as an initiation school. With respect to the proposed road widening, the proposal would not encroach upon the cadastral boundary of the site. The development and landscaping on that particular erf is not part of this proposal, however it is suggested that the local community engage their relevant Ward Councillor on their needs for the site.


**Figure 36 Initiation Site (indicated by purple triangle) (note that the community would like to use this to develop an initiation school**

**Response**

The proposed development would not encroach into any sensitive heritage or cultural areas, and therefore there are no further constraints to development that require consideration of response in this regard.

## 8. Socio/Economic Aspects

| | |
|---|---|
| 8.1. | Describe the existing social and economic characteristics of the community in the vicinity of the proposed site. |

Given the fact that the proposed road upgrade would pass through a number of neighbourhoods, the socio-economic status of each is described below.

**Hanover Park**

The boundaries of Hanover Park are depicted in Figure 37.


**Figure 37 Aerial image showing extent of Hanover Park (source: https://census2011.adrianfrith.com/place/199029030/map, accessed 19/01/2018)**

According to the 2011 figures, Hanover Park houses a population of approximately 34,625 residents with around 6,962 households. This averages to a household size of five people.

The demographic profile is predominantly Coloured (96.47%) with more female (52.49%) inhabitants. The most spoken language in Hanover Park is Afrikaans (70.74%), followed by English at 27.85%. There is not much more information regarding Hanover Park from Statistics South Africa.

**Philippi**

The boundaries of Philippi are depicted in Figure 38.


**Figure 38 Aerial image showing extent of Philippi (source: https://census2011.adrianfrith.com/place/199033/map, accessed 19/01/2018)**

According to the 2011 figures, Philippi houses a population of approximately 200,603 residents with around 64,411 households. This averages to a household size of 3.1 people.

The following provides key features of the Philippi area:

- The population is predominantly black African (90.3%);
- 31.7% of those aged 20 years and older have completed Grade 12 or higher;
- 6.4% of households have a monthly income of R4 800 or less;
- 26.7% of households have access to piped water in their dwelling;
- 75.3% of households have access to a flush toilet connected to the public sewer system;
- 82.7% of households have their refuse removed at least once a week; and
- 84.5% of households use electricity for lighting in their dwelling.

The demographic profile is predominantly black African (90.33%) with an even split between female (49.74%) and male (50.26%) inhabitants (refer to Figure 39).

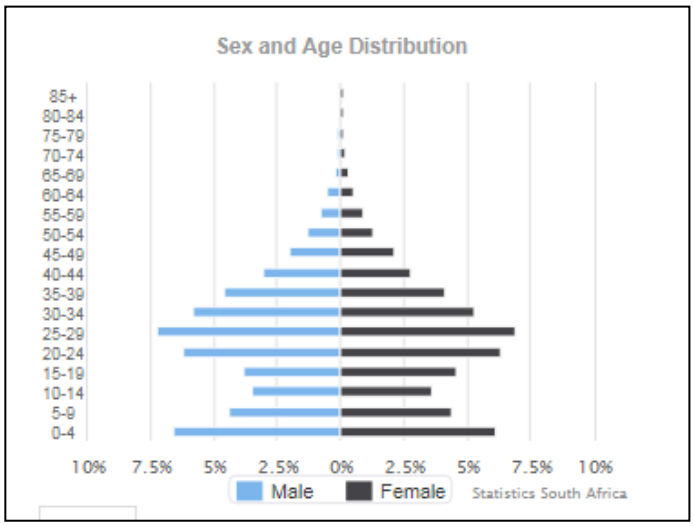



**Figure 39 Philippi Population Pyramid (*source: http://www.statssa.gov.za/?page_id=4286&id=323, accessed 22/01/2018)***

The most spoken language in Philippi is isiXhosa at 78.69%, followed by Afrikaans at 7.32%.

Just fewer than 20% of households earn no income, however there is a sizable percentage of households which earn over R19,601 per month. A significant portion of the population owns or is paying off a house, however there are still many households residing in informal dwellings.

**Manenberg**

In terms of the 2011 Census by Statistics South Africa on Manenberg, the suburb Manenberg includes the following sub-places: Manenberg, Primrose Park, Sand Industria, and Surrey as depicted in Figure 40. Sand Industria abuts the proposed route.

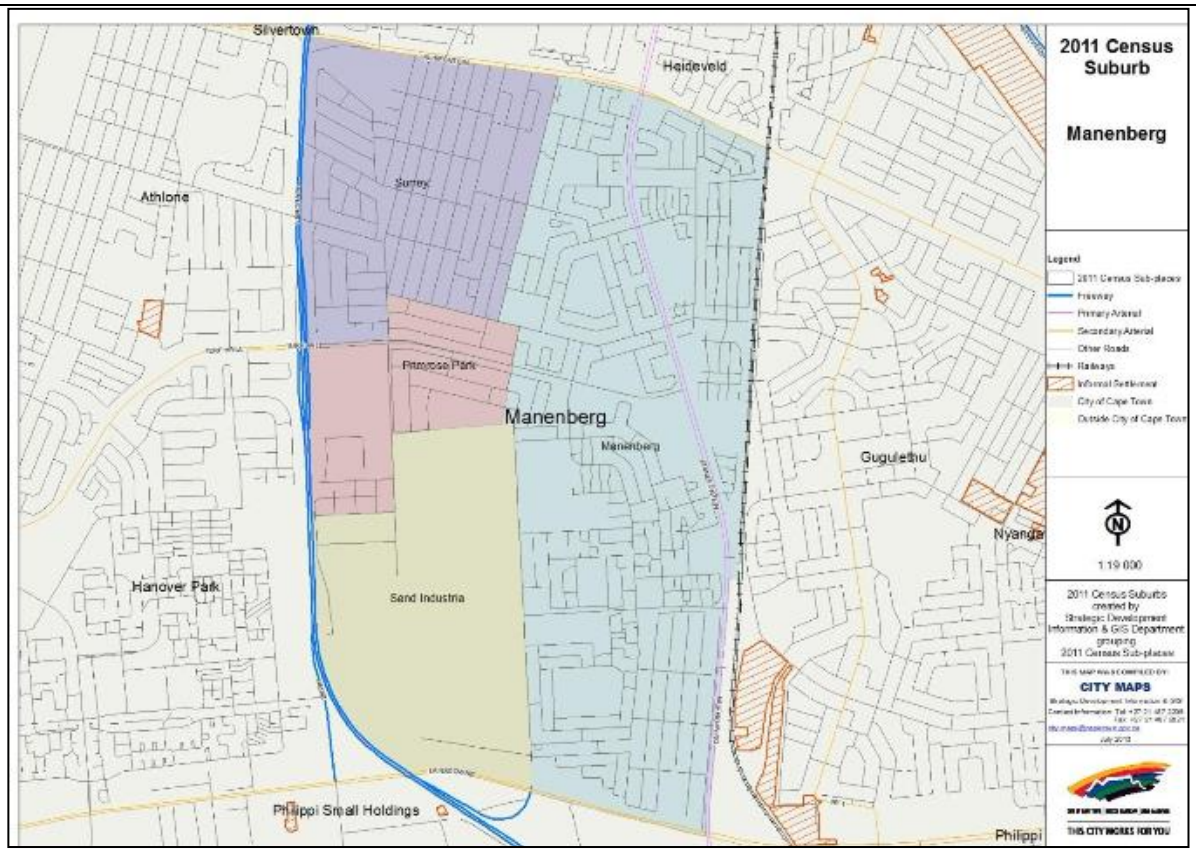



**Figure 40 Manenberg Suburb and Related Sub-Places**

According to the 2011 figures, Manenberg houses a population of approximately 61,615 residents with around 12,834 households. This averages to a household size of 4.8 people.

The demographic profile is predominantly Coloured (85%) with more female (52.2%) inhabitants. Most of Manenberg is of a working age, however there is a sizable portion of the remaining population under 15 (Refer to Figure 41).

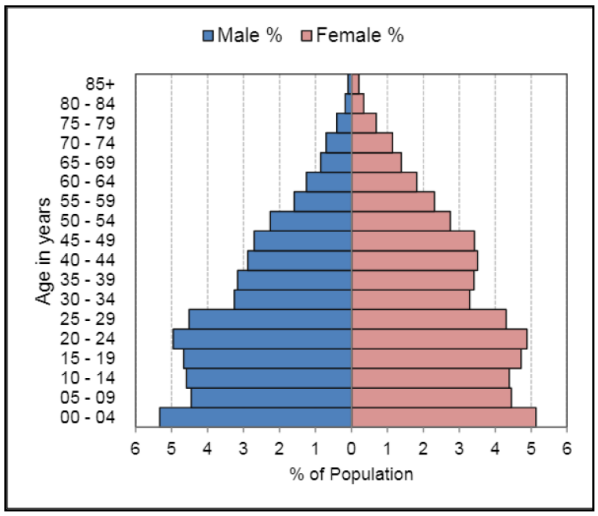



**Figure 41 Age Pyramid for Manenberg**

The following provides key features of the Manenberg area:

- The population is predominantly Coloured (85%);
- 26% of those aged 20 years and older have completed Grade 12 or higher;
- 64% of the labour force (aged 15 to 64) is employed;
- 61% of households have a monthly income of R3 200 or less;
- 90% of households live in formal dwellings;
- 98% of households have access to piped water in their dwelling or inside their yard;
- 94% of households have access to a flush toilet connected to the public sewer system;
- 99.7% of households have their refuse removed at least once a week; and
- 99% of households use electricity for lighting in their dwelling.

Manenberg is a poor suburb with 12% of its households earning no income and the majority earning less than R6,400.00 per month. A small percentage of the population has a Grade 12 qualification (at 22.2%), but the large majority have education levels at secondary schooling level or lower. Unemployment is at 36.20% for the area.

Most of Manenberg speaks Afrikaans (71.82%), while the bulk of the remaining population speaks English (17.78%) followed by isiXhosa (6.79%).[2]

The living conditions are fair with most people renting their homes. Over a third of the population own or are paying off their dwellings and most have sufficient access to the necessary services. A portion of the population makes use of gas and paraffin, but electricity use remains heavily dominant.

**Nyanga**

In terms of the 2011 Census by Statistics South Africa on Nyanga, the suburb Nyanga includes the following sub-places: Black City, KTC Informal, and New Crossroads, Nyanga SP, as detailed in Figure 42. New Crossroads abuts the proposed route.

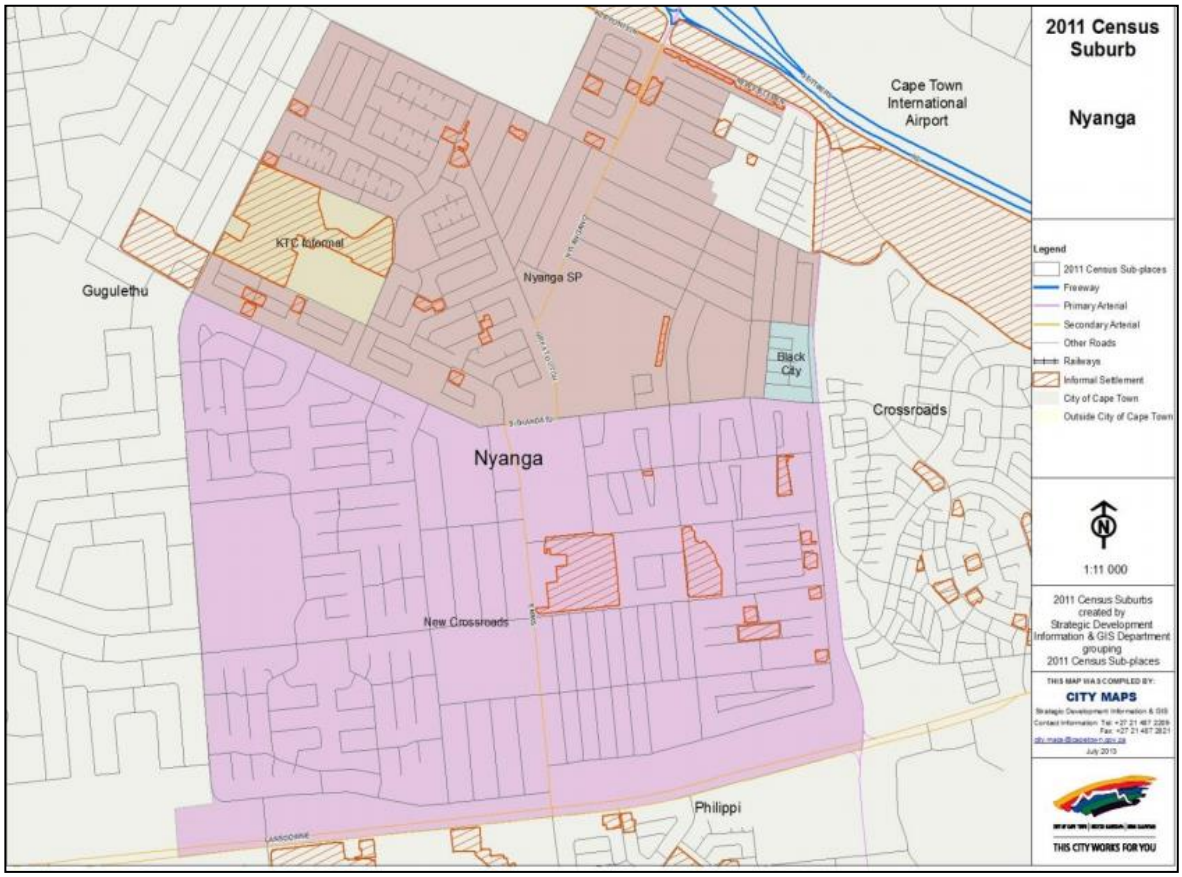



**Figure 42 Nyanga Suburb and Related Sub-Places**

According to the 2011 figures, Nyanga houses a population of approximately 57,996 residents with around 15,993 households. This averages to a household size of 3.63 people.

The demographic profile is predominantly black African (98.8%) with a relatively even split between male (48.4%) and female (51.6%) inhabitants. Most of Nyanga is of a working age, with the bulk of the remaining population being under 15 (Refer to Figure 43). There is quite a substantial proportion of young children aged four and under (i.e., 11.9%).

[2] Source: https://census2011.adrianfrith.com/place/199029032

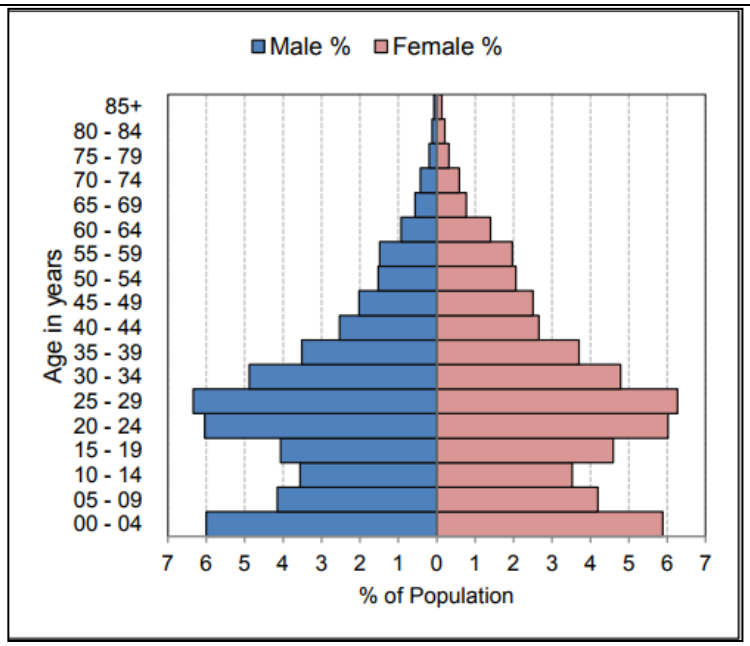



**Figure 43 Nyanga Age Pyramid**

The following provides key features of the Nyanga area:

- The population is predominantly Black African (99%);
- 31% of those aged 20 years and older have completed Grade 12 or higher;
- 55% of the labour force (aged 15 to 64) is employed;
- 74% of households have a monthly income of R3 200 or less;
- 67% of households live in formal dwellings;
- 79% of households have access to piped water in their dwelling or inside their yard;
- 81% of households have access to a flush toilet connected to the public sewer system;
- 92% of households have their refuse removed at least once a week; and
- 95% of households use electricity for lighting in their dwelling.

Nyanga is a poor suburb with 18.8% of its households earning no income and the majority earning less than R6,400.00 per month. A small percentage of households earn between R6,401 and R25,600 per month, however anything higher than that is incredibly rare. These income figures may be skewed somewhat by the high percentage of very young children. Roughly a quarter of the population over 20 has a Grade 12 qualification (at 25.3%), but the large majority have education levels at secondary schooling level or lower. Higher education is at 5.8%, which is higher than surrounding areas. Unemployment is generally high as well as higher than surrounding areas at 45.15% for the area.

The large majority of Nyanga speaks isiXhosa (90.24%), followed by English (2.97%) and Sesotho (1.64%).[3]

The living conditions are relatively poor as, although there are a significant number of people living in formal dwellings, the percentage of the population living in informal dwellings remains high at 31.7%. There are a fair number of homeowners in the area as well as those living in rentals. Not enough people have access to basic services, particularly with regard to water. Only 53.5% of residents have access to water within their dwellings. This is a testament to the fact that the area is largely an informal settlement. A portion of the population uses gas and paraffin, but electricity use remains dominant, with the interested exception of heating where 45.8% of the population make use of paraffin, while 23% of the population does not use energy for heating at all.

**Crossroads**

The boundaries of Crossroads are depicted in Figure 44.

[3] Source: https://census2011.adrianfrith.com/place/199031

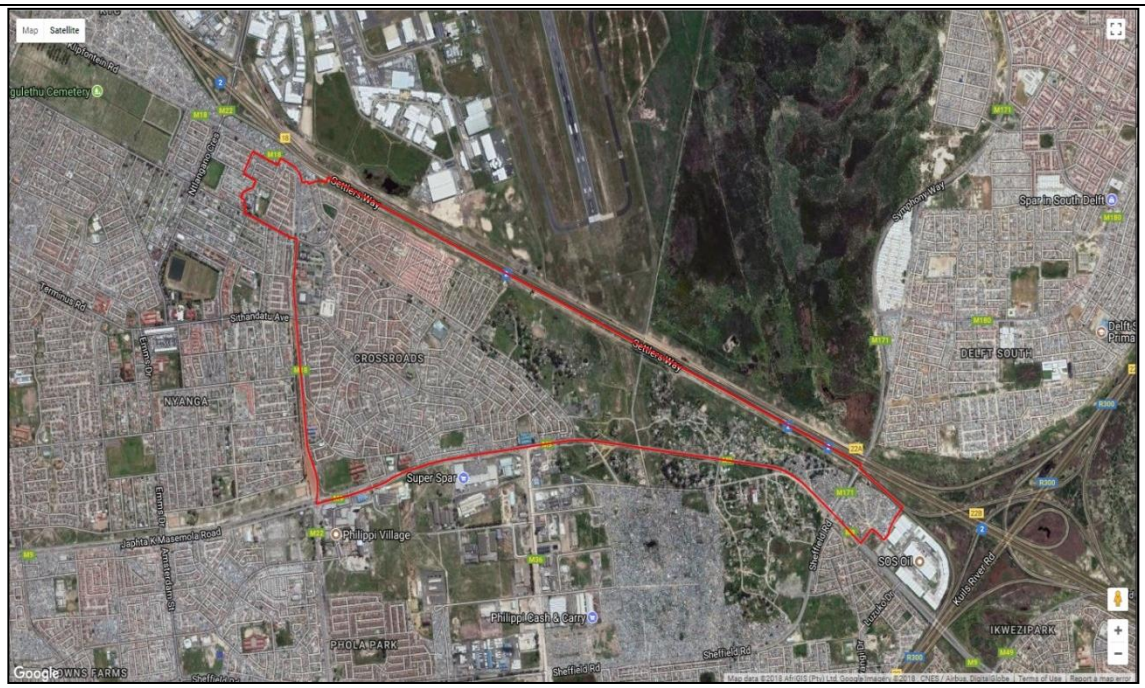



**Figure 44 Aerial image showing extent of Crossroads (source: https://census2011.adrianfrith.com/place/199032/map, accessed 19/01/2018)**

According to the 2011 figures, Crossroads houses a population of approximately 36,043 residents with around 10,657 households. This averages to a household size of 3.4 people.

The following provides key features of the Crossroads area:

- The population is predominantly black African (96.7%);
- 27.2% of those aged 20 years and older have completed Grade 12 or higher;
- 7% of households have a monthly income of R4 800 or less;
- 53.9% of households have access to piped water in their dwelling;
- 64.1% of households have access to a flush toilet connected to the public sewer system;
- 82.7% of households have their refuse removed at least once a week; and
- 84.1% of households use electricity for lighting in their dwelling.

The demographic profile is predominantly black African (96.71%) with more female (51.94%) inhabitants.

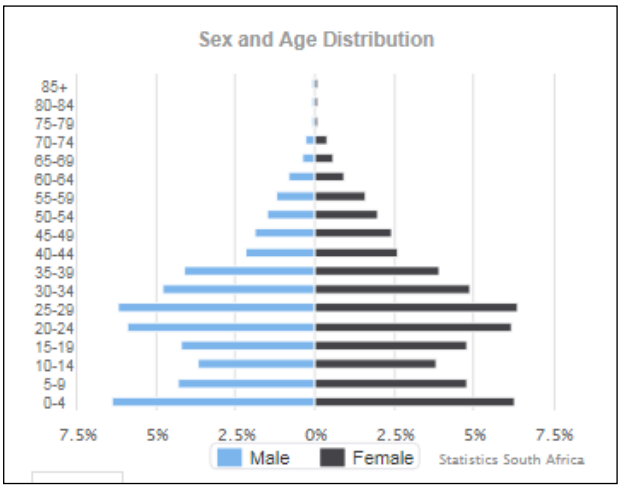



**Figure 45 Crossroads Age Pyramid (source: http://www.statssa.gov.za/?page_id=4286&id=322, accessed 22/01/2018)**

The most spoken language in Crossroads is isiXhosa (88.97%), followed by Afrikaans (3.40%) and English at 3.22%[4]. There is not much more information regarding Crossroads from Statistics South Africa.

Just under a quarter (23%) of households earn no income, however there is a sizable percentage of households which earn over R19,601 per month. Most households earn between R9,601 and R76,400 per month. A significant portion of the population owns or is paying off a house, however there are still many households residing in informal dwellings.

[4] Source: https://census2011.adrianfrith.com/place/199032

**Gugulethu**

In terms of the 2011 Census by Statistics South Africa on Khayelitsha, the suburb Khayelitsha includes the following sub-places: Barcelona, Europe, Gugulethu SP, Kanana, Lusaka, New Rest, Phola Park (Gugulethu), Vukuzenzele, and Zondi, as detailed in Figure 46.

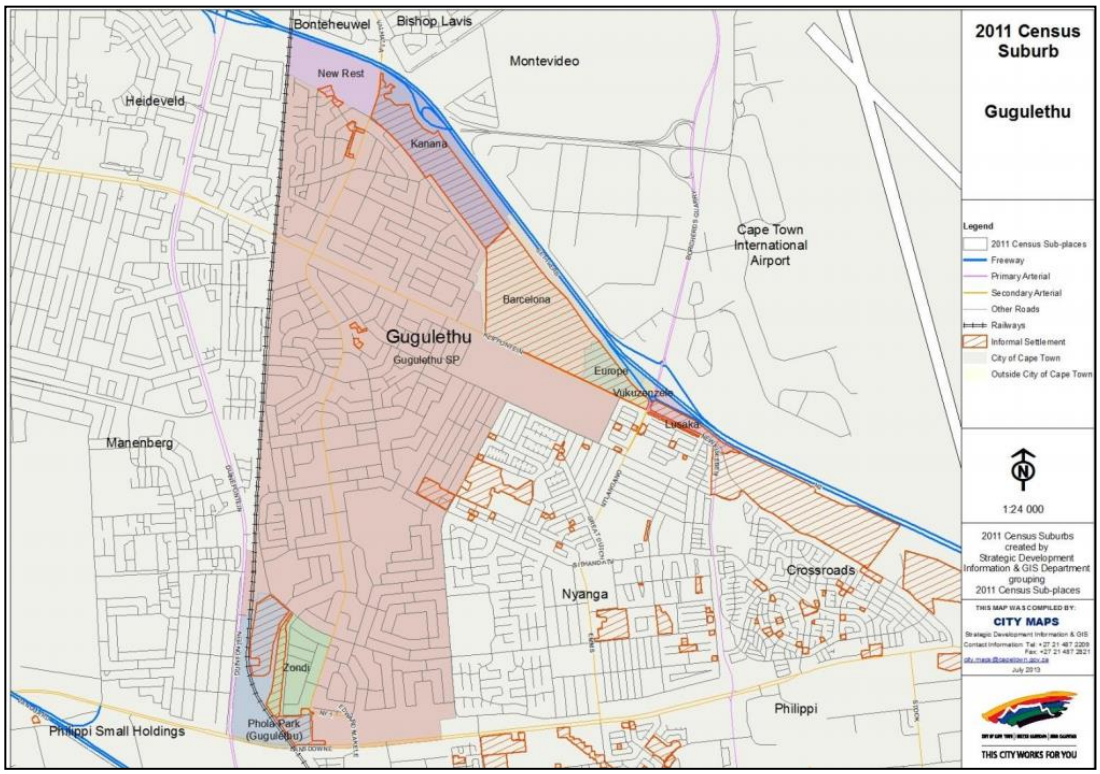



**Figure 46 Gugulethu Suburb and Related Sub-Places**

According to the 2011 figures, Gugulethu houses a population of approximately 98,468 residents with around 29,577 households. This averages to a household size of 3.33 people.

The demographic profile is predominantly black African (98.6%) with a relatively even split between male (49%) and female (51%) inhabitants. Most of Gugulethu is of a working age, with the bulk of the remaining population being under 15 (Refer to Figure 47). There is, however, a much larger proportion of the population in the 20 – 24 age group when compared to the other age groups.

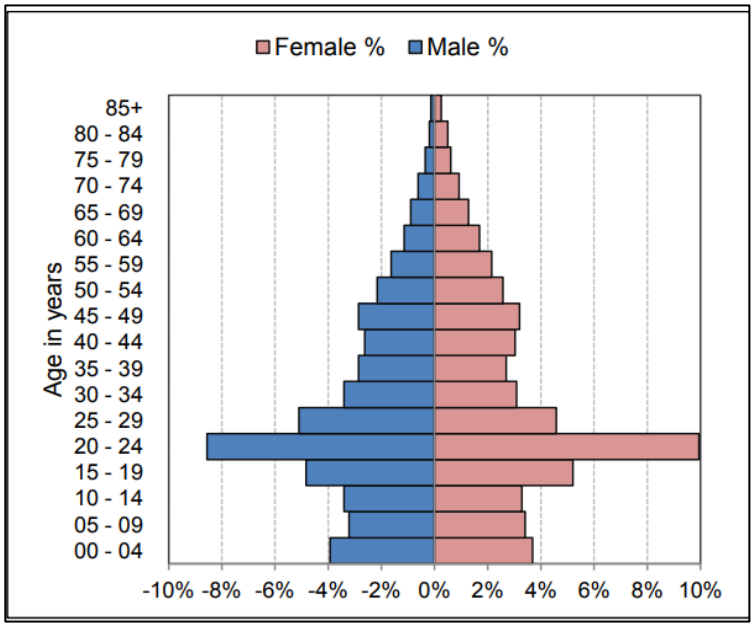



**Figure 47 Age Pyramid for Gugulethu**

The following provides key features of the Gugulethu area:

- The population is predominantly Black African (99%);
- 37% of those aged 20 years and older have completed Grade 12 or higher;
- 60% of the labour force (aged 15 to 64) is employed;

| | |
|---|---|
| | • 71% of households have a monthly income of R3 200 or less;<br>• 52% of households live in formal dwellings;<br>• 58% of households have access to piped water in their dwelling or inside their yard;<br>• 63% of households have access to a flush toilet connected to the public sewer system;<br>• 89% of households have their refuse removed at least once a week; and<br>• 97% of households use electricity for lighting in their dwelling.<br><br>Gugulethu is a poor suburb with a significant portion of its households (19.3%) earning no income and the majority earning less than R6,400.00 per month. A small percentage of households earn between R6,401 and R25,600 per month, however anything higher than that is incredibly rare. Most of the population has a qualification of Grade 12 or lower, with a small percentage of people holding a qualification higher than Grade 12 and unemployment is at 39.66% for the area.<br><br>The living conditions are fair with a large proportion of homeowners and most people living in a formal dwelling. However, there is a significant portion of the population which lives in informal dwellings and also a significant number of residents who do not have access to adequate services. A portion of the population uses paraffin, but electricity use remains dominant. There is also a significantly large group (20.2%) which has no access to heating. |
| 8.2. | Explain the socio-economic value/contribution of the proposed development. |

The contribution will be providing a subsidised public transport system in the east metro which will help uplift the communities and help create an economic knock-on.

Further socio-economic aspects of the proposed development are included in Table 5.

**Table 5: Socio-economic aspects of the proposed development**

| | | |
|---|---|---|
| What is the expected capital value of the project on completion? | Approximately R575 million | |
| What is the expected yearly income or contribution to the economy that will be generated by or as a result of the project? | The contribution will be providing a subsidised public transport system in the east metro which will help uplift the communities and help create an economic knock-on. | |
| Will the project contribute to service infrastructure? | **YES** | ~~NO~~ |
| Is the project a public amenity? | **YES** | ~~NO~~ |
| How many new employment opportunities will be created during the development phase? | The number of persons required for the construction phase is probably in the region of 60 workers for targeted labour (temporary employment). | |
| What is the expected value of the employment opportunities during the development phase? | The expected value of employment value would be in the region of R75 million for targeted labour and enterprises. | |
| What percentage of this will accrue to previously disadvantaged individuals? | The exact percentage would only be determined in the "Empowerment Management Plan" which is required as part of the Contractor's bid. It Is important to note that the applicant will comply with the Preferential Procurement Policy Framework Act 5 of 2000 and the Public Finance Management Act 1 of 1999. | |
| How will this be ensured and monitored (please explain): | | |
| The Contractor would be responsible for recruiting targeted labour in accordance with the contract specifications.<br><br>***Addressing I&AP Comments: Clarity in terms of sourcing of employment for the proposal has been included here. Note that this pertains to all goods (e.g., construction materials) and services (e.g., security).***<br><br>The EMPr provides for the use of previously disadvantaged individuals for the bulk of the unskilled labour as well as for the skilled labour, where feasible and in accordance with City of Cape Town procurement processes and requirements. | | |
| How many permanent new employment opportunities will be created during the operational phase of the project? | Given that the proposed development constitutes a small section of road, no direct operational employment opportunities would be created as nobody would "work on site". | |
| What is the expected current value of the employment opportunities during the first 10 years? | R0.00 | |
| What percentage of this will accrue to previously disadvantaged individuals? | Not Applicable | |
| How will this be ensured and monitored (please explain): | | |
| Not Applicable | | |
| Any other information related to the manner in which the socio-economic aspects will be impacted: | | |
| The accessibility and connectivity for the surrounding communities and businesses will be significantly improved upon. The communities will have safe, efficient, reliable, and affordable access to economic opportunities and the businesses would benefit from improved access for staff and clients. | | |

| | |
|---|---|
| 8.3. | Explain what social initiatives will be implemented by applicant to address the needs of the community and to uplift the area. |

| | |
|---|---|
| The entire proposed development is a social initiative by the City of Cape Town in order to provide improved infrastructure and transport facilities to the affected surrounding communities. | |
| 8.4. | Explain whether the proposed development will impact on people's health and well-being (e.g. in terms of noise, odours, visual character and sense of place etc) and how has this influenced the proposed development. |

The affected local communities have historically been excluded from the Cape Town urban centres which makes it challenging for the inhabitants to travel to and from their places of work and education on a daily basis. It is an important provincial and national priority to provide improved accessibility to these areas. Furthermore, the commercial and industrial activities in the area would benefit from improved accessibility.
The proposed development also provides the City of Cape Town with an opportunity to re-structure and intensify the south-east portion of the Metro, previously neglected and subject to apartheid era planning. These opportunities are as follows:

- Develop vibrant areas by removing barriers to access;
- Improve connectivity throughout the Metropolitan areas;
- Increase efficiency of people's movement and as an aid to the movement of commuters and development activities.
- Improve access and transportation routes to encourage future development and intensification of use;
- Decrease walking distances from residential and places of work to public transport facilities;
- Reinforce convergence on core routes and access points; and
- Reinforce the use of the existing rail stations.

Impacts regarding well-being in terms of noise, dust and aesthetics during the construction phase would be experienced in the short-term and would be Low (-) to Very Low (-). There are several positive operational phase impacts anticipated regarding aspects such as the following:

- Overall improvement to the appearance of the relevant portion of Govan Mbeki
- Operation of the proposed route (i.e., the use of the route for public transport) would result in an increasing number of people making use of public transport over private transport. This would reduce the per capita emission of greenhouse gases in the surrounding community and beyond.
- Improved Accessibility: Provision of improved accessibility for previously disadvantaged communities with respect to employment, economic centres and places of education and recreation.
- Improvements to safety for all those accessing the area via NMT.
- Improvements to traffic conditions in the area

Overall, the long-term impacts of the proposal would be medium to high and would be positive, which outweigh the short-term negative impacts (mostly to be experienced locally and during the construction phase) that would result and so generally, impacts on people's health and well-being are considered to be positive and acceptable.

## SECTION H: ALTERNATIVES, METHODOLOGY AND ASSESSMENT OF ALTERNATIVES

***Addressing I&AP Comments: The Basic Assessment process aims to balance the natural, social, and built environment impacts as well as the needs and desires of the affected communities, as they all pertain to the scope of the proposed development. The impact assessment tables below show the impacts assessed and considered.***

### 1. Details of the alternatives identified and considered

| | |
|---|---|
| 1.1. | **Property and site alternatives** to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts. |
| Provide a description of the preferred property and site alternative. | |
| The preferred alternative is indicated as the approximately 3.5km stretch of Govan Mbeki Road from the corner of Heinz/Ottery Road to just beyond the intersection with Link Road.<br><br>Note that an envelope/development footprint has been applied for as the exact plans may be revised somewhat during the detail design phase. This approach is considered appropriate given the fact that the only significant impacts of this component of the proposed development would be those on freshwater resources, which have been found to be the same regardless of which option is preferred (refer to Appendix G(b) for the freshwater impact assessment). | |
| Provide a description of any other property and site alternatives investigated. | |
| Not Applicable, as no alternative sites have been considered. | |
| Provide a motivation for the preferred property and site alternative including the outcome of the site selection matrix. | |
| The City of Cape Town transport systems planning team have identified key access routes throughout the metro (refer to Figure 16) and this proposed development falls on a small stretch of that route. Govan Mbeki Road already exists as part of a major transport network.<br><br>Alternatives sites per se were not considered as part of this Basic Assessment process as the primary site which requires expansion is Govan Mbeki Road. However, there are three road geometry alternatives which were considered, and each has a different footprint in terms of the width of expansion from the existing road shoulder. Alternative 3 is preferred as it provides a compromise between ultimate design flexibility and protection of important biodiversity and would have a comparatively low impact on ESNR it would have when compared to the other two alternatives. | |
| Provide a full description of the process followed to reach the preferred alternative within the site. | |

Refer above, as well as to Section H 1.3 below.

Provide a detailed motivation if no property and site alternatives were considered.

The proposed development forms part of a much wider IRT system that the City of Cape Town is rolling out throughout the City. This particular portion of the route triggers the need for Environmental Authorisation, however most of the entire network does not.

Given that the proposed development is merely a segment of a much greater system, an alternative site would not be feasible. Furthermore, the assessment of the greater network and specific routes which should be established falls outside this Basic Assessment process and the activity itself does not trigger the need for Environmental Authorisation, but rather the environmental sensitivities present on the site. The proposed route was established by the City of Cape through various studies which considered routes which are most popular where existing infrastructure is present and as well as those which would provide the most accessibility to the most people.

Furthermore, Govan Mbeki Road already exists and is a key transport route within the current City planning system. The siting of the proposed development on this route is a logical choice which would provide additional transport support where it is most needed and would avoid the need for the construction of an entire new road- which would save time, materials, resources, and money for the City of Cape Town.

List the positive and negative impacts that the property and site alternatives will have on the environment.

Refer to Section J 1.3 and to Table 7 and Table 8 for more detail, noting that these all apply to the same "site" (i.e. the affected stretch of Govan Mbeki Road).

| 1.2. | **Activity alternatives** to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts. |
|---|---|

Provide a description of the preferred activity alternative.

The preferred activity alternative comprises the proposed provision of the MyCiTi network in the subject stretch of Govan Mbeki Road. Note that the MyCiTi Network would extend well beyond the particular stretch indicated in this Basic Assessment process, however this is a stretch where there are triggers associated with the NEMA, hence the need for this process.

Provide a description of any other activity alternatives investigated.

No other activity alternatives have been considered.

Provide a motivation for the preferred activity alternative.

The Applicant is mandated to provide transport networks for the City of Cape Town and would not propose developments beyond this scope. The Applicant wishes to develop to IRT networks throughout the City of Cape Town and, therefore, no activity alternatives were (or could have been) considered.

Provide a detailed motivation if no activity alternatives exist.

The Applicant is mandated to provide transport networks for the City of Cape Town and would not propose developments beyond this scope. The Applicant wishes to develop to IRT networks throughout the City of Cape Town and, therefore, no activity alternatives were (or could have been) considered.

List the positive and negative impacts that the activity alternatives will have on the environment.

Not Applicable.

| 1.3. | Design or layout alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts |
|---|---|

Provide a description of the preferred design or layout alternative.

There are three design alternatives (also referred to as "road geometry" alternatives) assessed as part of this Basic Assessment process, along with the no-go alternative. These relate to the proposed cross-section/ width of the road and thus, the extend of expansion proposed.

Alternative 3 (also referred to Proposed Design 2 in some specialist reports) is the **preferred** expansion width which has been designed in response to detailed specialist assessments and mapping of sensitivities on the ground which provides as much room as possible for optimal road design (i.e., up to 15m either side the road shoulder with narrower areas in response to environmental sensitivities). Note that a development footprint is applies for, and so the specific design within that footprint would be resolved during detail design of the route.

***Addressing I&AP Comments: The end portion of the preferred alternative road geometry was narrowed in response to a request made by a local Ward Councillor.***

Furthermore, it is also important to note that the proposed Alternative 3 is a third iteration of the alignment, whereby the first iteration was amended toward the end of the route to clearly indicate that the works would remain within the road reserve, and the second was narrowed to avoid more wetland along the route. This change was made in response to a request made by a Ward Councillor at the FGM held on 16 February 2018 (refer to Appendix F for the minutes of the meeting).


**Figure 48 Revised footprint in response to request by local Ward Councillor (*the first iteration of Alternative 3 is indicated in green, while the second, and proposed, iteration is indicated in red. The road reserve is indicated in dark blue) (Created by the EAP using Google Earth Pro and spatial data layers from GIBB, 2018 and 2021, on 21/06/2021)***

Refer to Appendix P for maps of the three alternatives.

Provide a description of any other design or layout alternatives investigated.

Alternative 1comprises an "unconstrained design" alternative which provides for maximum opportunity for cross-section design and extents 15m from the existing road shoulder on either side.

Alternative 2 is also referred to as Proposed Design 1and comprises a narrow design in response to a high-level baseline study conducted by specialists, which does not allow room for optimal road design and constrains the proposed widening according to high-level data, and not site-specific analysis.

Refer to Appendix P for maps of the three alternatives.

Provide a motivation for the preferred design or layout alternative.

Alternative 3 is the preferred road geometry alternative as it provides a compromise in terms of maximising on design potential, while avoiding any sensitive environmental features. It is important to be able to provide the largest cross-section possible from a design perspective as this would enable the delivery of the best possible product and service to the community in the form of a useful and valuable network for public transport. The road needs to accommodate normal vehicular traffic as well as the BRT buses such that traffic flow remains smooth and that those buses, ideally, have their own lanes. From an environmental perspective, there are some sensitive areas along the route which should be avoided, with the most notable being the ESNR. There is also one other area which is earmarked as a buffer zone which supports the CBAs and associated biodiversity targets, therefore the road geometry for the preferred alternative avoids these areas and have no other constraints to development along the stretch.

Alternative 1 would enable maximum design but would result in the unacceptable destruction of a portion of the ESNR, which is why it is not preferred. Alternative 2 would largely avoid environmentally sensitive areas, however, would not provide sufficient scope for design and would therefore not deliver an ideal service. Hence, Alternative 3, which is a preferred compromise of the two.

Provide a detailed motivation if no design or layout alternatives exist.

In terms of alternatives considered and subsequently scoped out, there were two aspects considered, namely stormwater drainage and the design along the Lotus Canal.

Regarding stormwater drainage, it should be noted that from a routing perspective, it would have been ideal to route all runoff within Govan Mbeki Road underground for the 1 in 50-year return period, and to discharge the runoff into the Lotus River Canal below Vygekraal Road. However, this was found to be impractical from a detailed design perspective, as minimum gradients

and minimum covers could not be achieved and was therefore not considered to be an appropriate solution. Therefore, this alternative was discarded.

In terms of the intentions proposed along and over the affected stretch of the Lotus Canal, it should be noted that there were three other design alternatives that were considered, but subsequently scoped out by the engineering team in favour of that described in the project description (i.e., the retaining wall in certain stretches with a walkway and balustrade atop, and two new pedestrian bridges). These, provided by GIBB in 2019, include the following:

- Canal Option 1- Further canalisation of the Lotus Canal, reducing the channel from 32 000mm to 24 710mm. The new channel would have a level concrete floor with vertical concrete retainer walls of 2100mm in height as well as a 300mm thick concrete slab covering the canal;
- Canal Option 2- Further canalisation of the channel where a low flow channel would still remain however the horizon channel floor and horizontal channel sides would comprise of concrete. A partial cantilever cover would be constructed to accommodate the 4000mm wide walkway on the northern side of the road. Two pedestrian bridges are proposed to accommodate access over the canal. The canal width would be reduced from 32 000 mm to 20 000 mm; and
- Canal Option 3- The existing channel shape would be retained with only the southern bank being altered with a retainer wall to reduce the existing channel with from 32 000 mm to 20 800 mm. While some vegetation would be retained within the channel along the grassed banks, the low flow portion of the canal has already been formalised with concrete.

The above were scoped out (noting that the third option is similar to a degree) in favour of the proposed design as indicated in the project description in response to a stormwater study of the flow of the Lotus Canal and to address existing flooding conditions as well the requirements for NMT and pedestrian facilities and in order to ensure a design that allows sufficient access for maintenance. Note also that the preferred alternative has a low impact and limited environmental constraints and so there is no reason to pursue the preferred alternative.

List the positive and negative impacts that the design alternatives will have on the environment.

Refer to Section J 1.3 and to Table 7 and Table 8 for more detail.

| 1.4. | Technology alternatives (e.g., to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts. |
|---|---|

Provide a description of the preferred technology alternative:

The preferred technology applicable to roadways, surfacing and landscaping are as described in the project description.

Provide a description of any other technology alternatives investigated.

No technology alternatives have been considered.

Provide a motivation for the preferred technology alternative.

A public transport network on an existing roadway / road network is the best technology to consider in this regard, given that there is extensive existing infrastructure to work with. Other technologies (or modes of transport) such as rail and air are not appropriate for this network. Given the nature of the proposed development (i.e., essentially including bus lanes, NMT facilities and/or landscaping, with a possible station foundation into a cross section of an existing road), there is limited scope for implementation of a range of technology in terms of options available for a bus to drive on and people and bicycles to move safely on.

Provide a detailed motivation if no alternatives exist.

Various technologies, design principles and infrastructure choices were considered in order to facilitate a development that would incorporate the latest technology in terms of road design and infrastructure. Such technologies and design principles have been included in the development proposal and as such were not considered as separate alternatives. These design principles will also be clearer during the detail design phase.

List the positive and negative impacts that the technology alternatives will have on the environment.

Not Applicable.

| 1.5. | Operational alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts. |
|---|---|

Provide a description of the preferred operational alternative.

The only operational alternative considered is the use of the road for usual vehicle traffic (as it is in the present day) as well as to provide for the MyCiTi public transport and safe NMT and pedestrian accessibility.

Provide a description of any other operational alternatives investigated.

Not Applicable.

Provide a motivation for the preferred operational alternative.

Not Applicable, only one operational alternative is considered.

Provide a detailed motivation if no alternatives exist.

An IRT road network provides for little flexibility in terms of operational aspects as there are very simple and specific requirements (i.e., an efficient public transport facilitation service). No further operational alternatives were therefore considered as the proposed road expansion provides for the buses, NMT and bus stops (where necessary) required to support the IRT system.

List the positive and negative impacts that the operational alternatives will have on the environment.

Not Applicable.

| 1.6. | The option of not implementing the activity (the 'No-Go' Option). |
|---|---|

Provide an explanation as to why the 'No-Go' Option is not preferred.

The no-go alternative refers to the no development option where the relevant section of Govan Mbeki Road would remain as it is and has been in the past and no IRT network would be established in the vicinity.

Note that this alternative is not preferable as the proposed development forms part of a much larger system, planned for in terms of spatial planning, which would be significantly adversely affected should the proposed development not go ahead. There would also be an opportunity cost in terms of provision of accessibility and socio-economic opportunity to the local communities and the City of Cape Town would be able to achieve the desired connectivity via this route from a spatial perspective, as planned and indicated in the MSDF.

| | |
|---|---|
| 1.7. | Provide and explanation as to whether any other alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist. |

No other alternatives were considered.

| | |
|---|---|
| 1.8. | Provide a concluding statement indicating the preferred alternatives, including the preferred location of the activity. |

**Preferred Alternative Description (Alternative 3)**

The focus area of this Environmental Authorisation process comprises of the proposed upgrades to Govan Mbeki Road / M9 from the corner of Heinz/Ottery Road to just beyond Link Road approximately 3.5km to the east (refer to Figure 1 and Appendix A1). This section of road passes the Edith Stephens Nature Reserve (ESNR) to the south and the Lotus Canal to the north, as well as a sensitive biodiversity area to the north just after the Duinefontein Road intersection.

The proposed scope includes the following:

- Up to four dedicated bus lanes;
- Groundworks in the centre of certain points along the route for future construction of a bus station (note that this would only be at certain points throughout the route where they are required in terms of logistics and availability of space);
- General traffic lanes, typically comprising of four lanes (two in either direction);
- A road shoulder;
- A strip for landscaping and service (e.g., streetlights) installation; and
- A sidewalk for pedestrian and cyclist use (i.e., Non-Motorised Transport- NMT- lanes).

The detailed design of the cross-section throughout the route will occur in the future and it is important to note that it may differ slightly from one section of the route to the next (refer to Figure 2). The nature of the cross-section would be determined by constraints on the ground. The cross section applied (i.e., that with a bus station *versus* that without a bus station) would depend on the logistic requirements in terms of where bus stations are needed as well as whether or not there is sufficient space available for the construction of the foundation for a station. Note that, with regard to the bus stations, only the foundation works would be carried out as part of this proposed development. The bus stations themselves would be constructed at a later stage, under a separate tender process. The cross section would include a maximum footprint as presented by road geometry alternative 3.

The proposed also includes an elevated road link at the Govan Mbeki Road/ Duinefontein Road intersection where the maximum footprint thereof is assessed in this Basic Assessment process and would be within the limits of Alternative 3.

Note that the exact design would change during the detail design phase, however the final design would remain within the footprint applied for in this application.

Note that an envelope/development footprint is applied for with variations of the cross-sections and plans depicted in Figure 2 to be designed during the detail design phase. It is believed that considering a development envelope is appropriate for this proposed development (essentially expansion of a road) as the land use (i.e., a road) remains consistent throughout the extent of the footprint.

In terms of the proposed cross-section, the pedestrian/cycle lane/sidewalk component of the proposed upgrades would encroach into the **Lotus Canal** by approximately 3m, but the encroachment thereof would extend further, between 3m and 6m at two points (refer to Figure 3). Note that this would also expand over three existing outtake culverts opposite Edith Stephens Nature Reserve, and the culverts would be left as is. A new retaining/flood protection wall (approx 250mm wide with height ranging up to 2m high depending on existing slope) is proposed at specific low points identified along the Lotus Canal (which would stretch along the majority of the Lotus Canal adjacent to E1, west of the Duinefontein Intersection), along the southern bank thereof. As per the encroachment described above, some segments of the proposed wall would be located within the existing channel profile (generally 3m in, but this would extent to approximately 6m for a short reach as indicated in Figure 3). These retaining walls would be sufficient to prevent overtopping from the Lotus Canal onto Govan Mbeki Road. Note that existing culverts would be retained in their current state. The typical section for the proposed retaining wall includes a reinforced concrete wall with a concrete footing. The concrete wall would end 150 mm below the walkway level, and a concrete balustrade (refer to Figure 4) would be bolted onto this wall. The purpose of the concrete balustrade would be to protect vehicles from leaving the road and crashing into the Lotus River Canal (i.e., to provide a crash barrier), however it is worth noting that the lower portion of the concrete balustrade would consist of a solid wall, with structural joints located 4m c/c. The wall would be watertight (unless vandalism removes the joints between the balustrades). An alternative design may be employed which would comprise a solid concrete balustrade with a suitable waterstop, but this would be resolved at detail design, noting that the typical cross section and function would apply either way. The proposed retained wall would run along the reach between Duinefontein Road and Vygekraal Road (ending around 200m west of Duinefontein Road); but its function would be only to carry out the function of a crash barrier where the Canal does not overtop the southern embankment and inundate Govan Mbeki Road in the existing scenario.

Two existing pedestrian bridges across the canal would also be reconstructed and would each be supported by a single central pier, the footing of which would be construction within the Lotus Canal. They would not, however, be replaced in their exact current footprint, but would be located slightly to the west thereof.

It is proposed to construct a new minor **stormwater** drainage system to serve Govan Mbeki Road as part of the proposed development. This system would either tie into the existing minor stormwater drainage system or have new inlets into the Lotus River Canal constructed.

The stormwater drainage system has been designed as follows:

- The minor stormwater drainage system shall convey at a minimum a 1 in 10-year return period.
- A minimum 375mm diameter pipe shall serve the catchpits, and 450mm diameter pipes shall connect manholes. Due to the relatively small contributing catchments, the hydraulic assessments found that the minor stormwater drainage system would be able to convey greater than the 1 in 10-year return period.
- The road would convey up to- and including- the 1 in 50-year return period.

The system would comprise a series of underground pipelines to convey the stormwater from the road into existing stormwater lines, or to catchpits and then to 375mm diameter outlet pipes, which would daylight into the Lotus Canal. The stormwater drainage systems discharging into the Lotus River Canal are shown in Figure 9 and Figure 10.

There would be no requirements for **new** bulk services as the proposed development is the expansion of an existing road which has existing services in place. Any required relocation of existing service lines while road upgrade construction activities are underway would remain within the existing road and road reserve (i.e., the development footprint). With respect to streetlights, existing lights would be replaced with Light Emitting Diode (LED) lights, which require less energy

**Landscaping** would take place in terms of an approved landscaping plan and the nature of landscaping would be carried out in accordance with the applicable typology.

**Rational behind Preference**

Site alternatives have not been assessed as Govan Mbeki Road already exists as part of a major transport network and the proposed stretch forms part of an extended future MyCiTi Network as per the MSDF (refer to Figure 16). Activity alternatives have not been assessed because the Applicant is mandated to provide transport networks for the City of Cape Town and would not proposed developments beyond this scope. The Applicant wishes to develop to IRT networks throughout the City of Cape Town and, therefore, no activity alternatives were (or could have been) considered. Technology alternatives have not been assessed because there is limited scope for implementation of a range of technology in terms of options available for a bus to drive on and people and bicycles to move safely on. Similarly, operational alternatives have also not been assessed because an IRT road network provides for little flexibility in terms of operational aspects as there are very simple and specific requirements (i.e., an efficient public transport facilitation service).

Three design/ road geometry alternatives have been assessed in order to apply for a maximum design envelope and Alternative 3 is preferred over Alternatives 1 and 2 because it provides a compromise in terms of maximising on design potential, while avoiding any sensitive environmental features. It is also a third iteration of the alternative which has been revised twice to response to comment from a ward councillor and to further void encroaching into wetland/ stormwater depression areas. It is important to be able to provide the largest cross-section possible from a design perspective as this would enable the delivery of the best possible product and service to the community in the form of a useful and valuable network for public transport. The road needs to accommodate normal vehicular traffic as well as the BRT buses such that traffic flow remains smooth and that those buses, ideally, have their own lanes. From an environmental perspective, there are some sensitive areas along the route which should be avoided, with the most notable being the ESNR. There is also one other area which is earmarked as a buffer zone which supports the CBAs and associated biodiversity targets, therefore the road geometry for the preferred alternative avoids these areas and have no other constraints to development along the stretch. Alternative 3 is also the preferred development alternative from a freshwater (Belcher *et al*, 2021) and botanical (Altern, 2021) perspective.

Alternative 1 would enable maximum design but would result in the unacceptable destruction of a portion of the ESNR, which is why it is not preferred. Alternative 2 would largely avoid environmentally sensitive areas, however, would not provide sufficient scope for design and would therefore not deliver an ideal service. Hence, Alternative 3, which is a preferred compromise of the two which also has no unacceptable environmental impact, and which responds to comments made by I&APs.

Other design alternatives were considered for the stormwater management plan and the development over/near the Lotus Canal, but these were scoped out prior to formal assessment as they were not considered appropriate for the site.

The no-go alternative has also been assessed as the *status quo* of the route would continue as is, namely a major road with transformed edges, and, although impacts would also be anticipated to be low (as with the preferred alternative), there would be significant loss (i.e. opportunity cost) of positive impacts for the local community in terms of both infrastructure provision (given the state of certain portions of Govan Mbeki Road and lack of safe NMT and pedestrian facilities, as well as landscaping) as well as potential for socio-economic improvement associated with improvements to accessibility and economic opportunities that this would bring with it. The implementation of the no-go alternative is, therefore, not preferred.

## 2. "No-Go" areas

| Explain what "no-go" area(s) have been identified during identification of the alternatives and provide the co-ordinates of the "no-go" area(s). |
|---|
| The ESNR has been indicated as a no-go area and also noted as such in the EMPr. This is indicated in Appendix O.<br>A map of the environmental sensitivities and no-go areas is also included in Appendix B2. |

## 3. Methodology to determine the significance ratings of the potential environmental impacts and risks associated with the alternatives.

| Describe the methodology to be used in determining and ranking the nature, significance, consequences, extent, duration of the potential environmental impacts and risks associated with the proposed activity or development and alternatives, the degree to which the impact or risk can be reversed and the degree to which the impact and risk may cause irreplaceable loss of resources. |
|---|
| Specialist studies have been conducted which have included Botanical and Freshwater Impact Assessments as well as a heritage NID completion. An additional stormwater study has also informed this report.<br><br>These specialist studies have been conducted by reputable professionals with the aim of identifying potential environmental impacts of the proposed development, as well as measures to mitigate any environmental impacts. The assessment methods are deemed acceptable for the nature and scale of the development, and are detailed in Appendix J.<br><br>Furthermore, the scope of the study has been determined with reference to the requirements of the relevant legislation, namely the NEMA EIA Regulations, as amended in 2017. The main responsibilities of the environmental consultant would include but not be limited to, the following, as stipulated in the EIA Regulations:<br><br>• Pre-application consultation with the authorities in order to highlight any key issues and/or requirements early in the process;<br>• Submission of a Notice of Intent to the DEA&DP in order to make them aware of the proposal and forthcoming application;<br>• Submission of the required Application Form to the DEA&DP, in order to register the proposed project, and obtain the applicable reference number;<br>• Consultation with the relevant authorities and stakeholders, through the Basic Assessment process, to ensure that identification of relevant issues or concerns are undertaken;<br>• Ensure the assessment of and response to the issues that are raised;<br>• Compilation of the required BAR, describing the proposed activity, the affected environment, the potential environmental impacts, all applicable legislation and applicable guidelines, the detail of the public participation process followed, and the findings of the specialist studies and recommendations and/or mitigations measures to be implemented during construction and operation;<br>• Submission of the BAR to the public for comment and to the DEA&DP for a decision.<br><br>One of the fundamental aims of a Basic Assessment process is to ensure that the demands of sustainable development are met on a project level, within the context of the greater area. The most common definition of sustainable development is development that meets the needs of the present while not compromising the needs of future generations.<br><br>The Basic Assessment for the proposed IRT bus lanes and foundations for bus stops is therefore being undertaken with sustainable development as a goal. The assessment has looked at the impacts of the proposals on the environment and assessed the significance of these, and proposes mitigation measures, as required, to reduce anticipated impacts to acceptable levels. This is to ensure that the development makes "equitable and sustainable use of environmental and natural resources for the benefit of present and future generations".<br><br>The overall assessment criteria are based on the requirements of the National Environmental Management, 1998 (Act 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014. Refer to the methodology included in Appendix J.<br><br>The assessment criteria and methods employed by each specialist have been indicated in the various specialist reports contained in Appendix G.<br><br>The methods used have been carried out according to the legal requirements for such a process and are considered sufficient for this purpose. |

## 4. Assessment of each impact and risk identified for each alternative

**Note:** The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. The EAP may decide to include this section as ~~Appendix J~~ to this BAR.

Note that where specialists have assessed the various road geometry alternatives, these are inclusive of the canal works proposed, unless otherwise stated for issues pertaining specifically to the Lotus Canal.

| **Geographical and physical- ALTERING THE SURFACE DRAINAGE REGIME** | | |
|---|---|---|
| **Alternatives** | **ALL ROAD GEOMETRY ALTERNATIVES AND CANAL WORKS:** | **NO-GO ALTERNATIVE** |
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | |
| **Potential impact and risk:** | **ALTERING THE SURFACE DRAINAGE REGIME** | |
| Nature of impact: | Additional hard surfaces in some portions of the route would provide a marginal | Surface Water Flow would not be altered and would remain as is. |

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| | increase in hard areas for stormwater run-off | |
| Extent and duration of impact: | Localised within the route boundary and permanent | Localised within the route boundary and permanent |
| Consequence of impact or risk: | Additional stormwater volumes in local infrastructure | None, *status quo* remains |
| Probability of occurrence: | Definite | Definite |
| Degree to which the impact may cause irreplaceable loss of resources: | Low | Low |
| Degree to which the impact can be reversed: | Medium | Not necessary as there will be no impact. |
| Indirect impacts: | Localised flooding | None |
| Cumulative impact prior to mitigation: | Medium (-) | None |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Medium (-) | None |
| Degree to which the impact can be avoided: | High | Not applicable |
| Degree to which the impact can be managed: | High | Not applicable |
| Degree to which the impact can be mitigated: | High | Not applicable |
| Proposed mitigation: | • All major earthworks to be carried out in the dry season when the water table is at its lowest;<br>• The stormwater management plan is to be approved by the City Stormwater Branch prior to construction. | Not applicable |
| Residual impacts: | Minor additional stormwater volumes accommodated within the upgraded stormwater management system | |
| Cumulative impact post mitigation: | Neutral | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Neutral | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** While surface drainage is an important aspect to take into consideration as part of the final design of the development, the related impacts (assuming engineering solutions are incorporated) will not be significant and will not have any effect on the surrounding areas. This is addressed in the stormwater study (refer to Appendix G(d)). | | |

| **Alternatives:** | **ROAD GEOMETRY ALTERNATIVE 1** | **ROAD GEOMETRY ALTERNATIVE 2** | **ROAD GEOMETRY ALTERNATIVE 3** | **NO-GO/NO DEVELOPMENT ALTERNATIVE** |
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| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | | | |
| **Potential impact and risk:** | **Botanical impacts** | | | |
| Nature of impact: | Loss of replaced Cape Flats Sand Fynbos (Former CBA2 Zone) Degraded and Transformed- Approximately 2553.23 $m^2$ | Loss of replaced Cape Flats Sand Fynbos (Former CBA2 Zone) Degraded and Transformed- Approximately 200 $m^2$ | Loss of replaced Cape Flats Sand Fynbos (Former CBA2 Zone) Degraded and Transformed- Approximately 200 $m^2$ | No loss of replaced Cape Flats Sand Fynbos (Former CBA2 Zone) Degraded and Transformed |
| Extent and duration of impact: | Low (localised within the site boundary), long-term | Low (localised within the site boundary), long-term | Low (localised within the site boundary), long-term | No impact |
| Consequence of impact or risk: | Fewer indigenous plant species and associated biodiversity | | | None |
| Probability of occurrence: | Low (possible) | Low (possible) | Low (possible) | None |
| Degree to which the impact may cause irreplaceable loss of resources: | Low- resource may be partly destroyed | Low- resource may be partly destroyed | Low- resource may be partly destroyed | None |
| Degree to which the impact can be reversed: | Irreversible | Irreversible | Irreversible | Completely Reversible |

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| Indirect impacts: | Reduced ability to meet conservation targets and loss of endemic biodiversity | | | Comparatively more gradual loss of ability to meet targets and endemic biodiversity due to poor treatment and management. |
| Cumulative impact prior to mitigation: | Low (-) | Low (-) | Low (-) | No impact |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Low (-) | Low (-) | No impact |
| Degree to which the impact can be avoided: | Low | None | None | High |
| Degree to which the impact can be managed: | Low | None | None | High |
| Degree to which the impact can be mitigated: | Un-mitigatable | Unmitigatable | Unmitigatable | No mitigation to be implemented |
| Proposed mitigation: | Unmitigatable | | | Not Applicable |
| Residual impacts: | Contained and controlled Loss of degraded and transformed Cape Flats Sand Fynbos | | | Not Applicable |
| Cumulative impact post mitigation: | Low (-) | Low (-) | Low (-) | Not Applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Low (-) | Low (-) | Not Applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** The impact is considered low due to the 'Replaced – Adventive' and associated 'low sensitivity' of the receiving environment even though Alternative 1 comprises a much larger spatial extent. The impact would thus only reduce the listed spatial extent of the vegetation type but not actually the vegetation type itself due to existing state of the remnant. Where applicable ratings are thus given according to existing state of the vegetation.<br><br>This impact refers to Section A of Cape Flats Sand Fynbos as identified in the botanical impact assessment in Appendix G(c). | | | | |
| Nature of impact: | Loss of replaced Cape Flats Dune Strandveld (Other Natural Vegetation) Degraded and Transformed- Approximately 275.06 $m^2$ | Loss of replaced Cape Flats Dune Strandveld (Other Natural Vegetation) Degraded and Transformed- Approximately 100 $m^2$ | Loss of replaced Cape Flats Dune Strandveld (Other Natural Vegetation) Degraded and Transformed- Approximately 100 $m^2$ | No loss of replaced Cape Flats Dune Strandveld (Other Natural Vegetation) Degraded and Transformed |
| Extent and duration of impact: | Low (localised within the site boundary), long-term | Low (localised within the site boundary), long-term | Low (localised within the site boundary), long-term | No impact |
| Consequence of impact or risk: | Fewer indigenous plant species and associated biodiversity | | | None |
| Probability of occurrence: | Low (possible) | Low (improbable) | Low (improbable) | None |
| Degree to which the impact may cause irreplaceable loss of resources: | Low- resource may be partly destroyed | None- resource will not be lost | None- resource will not be lost | None |
| Degree to which the impact can be reversed: | Irreversible | Irreversible | Irreversible | Completely Reversible |
| Indirect impacts: | Reduced ability to meet conservation targets and loss of endemic biodiversity | | | Comparatively more gradual loss of ability to meet targets and endemic biodiversity due to poor treatment and management. |
| Cumulative impact prior to mitigation: | Low (-) | Low (-) | Low (-) | No impact |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Low (-) | Low (-) | No impact |
| Degree to which the impact can be avoided: | Low | None | None | High |
| Degree to which the impact can be managed: | Low | None | None | High |

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| Degree to which the impact can be mitigated: | Unmitigatable-unless another road geometry alternative is implemented | Unmitigatable | Unmitigatable | No mitigation to be implemented |
| Proposed mitigation: | another road geometry alternative is to be implemented | Not Applicable | Not Applicable | Not Applicable |
| Residual impacts: | Contained and controlled Loss of degraded and transformed Cape Flats Dune Strandveld | | | Not Applicable |
| Cumulative impact post mitigation: | Low (-) | Low (-) | Low (-) | Not Applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Low (-) | Low (-) | Not Applicable |
| NOTE ON SIGNIFICANCE OF IMPACT: Impact is considered to be low due to state associated sensitivity and minimal extent of the receiving environments. This impact refers to Section C of Cape Flats Dune Strandveld as identified in the botanical impact assessment in Appendix G(c). | | | | |
| Nature of impact: | Loss of transitioned Cape Lowlands Freshwater Wetlands (ESNR) Degraded and Transformed-Approximately 4681.21m$^2$ | Loss of transitioned Cape Lowlands Freshwater Wetlands (ESNR) Degraded and Transformed-Approximately 400m$^2$ | Loss of transitioned Cape Lowlands Freshwater Wetlands (ESNR) Degraded and Transformed-Approximately 400m$^2$ | No loss of transitioned Cape Lowlands Freshwater Wetlands (ESNR) Degraded and Transformed |
| Extent and duration of impact: | Medium (adjacent to a section of the site boundary), long-term | Medium (adjacent to a section of the site boundary), long-term | Medium (adjacent to a section of the site boundary), long-term | No impact |
| Consequence of impact or risk: | Fewer indigenous plant species and associated biodiversity | | | None |
| Probability of occurrence: | High (definite) | Medium (probable) | Medium (probable) | None |
| Degree to which the impact may cause irreplaceable loss of resources: | Low- resource may be partly destroyed | Low- resource may be partly destroyed | Low- resource may be partly destroyed | None |
| Degree to which the impact can be reversed: | Irreversible | Irreversible | Irreversible | Completely Reversible |
| Indirect impacts: | Reduced ability to meet conservation targets and loss of endemic biodiversity | | | Comparatively more gradual loss of ability to meet targets and endemic biodiversity due to poor treatment and management. |
| Cumulative impact prior to mitigation: | Medium (-) | Low (-) | Low (-) | No impact |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (-) | Low (-) | Low (-) | No impact |
| Degree to which the impact can be avoided: | Low | None | None | High |
| Degree to which the impact can be managed: | Low | None | None | High |
| Degree to which the impact can be mitigated: | Unmitigatable-unless another road geometry alternative is implemented | Unmitigatable | Unmitigatable | No mitigation to be implemented |
| Proposed mitigation: | Not Applicable | Not Applicable | Not Applicable | Not Applicable |
| Residual impacts: | Contained and controlled Loss of degraded and transformed Cape Lowlands Freshwater Wetlands | | | Not Applicable |
| Cumulative impact post mitigation: | Medium (-) | Low (-) | Low (-) | Not Applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (-) | Low (-) | Low (-) | Not Applicable |

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| **NOTE ON SIGNIFICANCE OF IMPACT:** Due to the condition of the receiving environment which differs for each design alternative the impacts vary in significance. The Alternative 1 design encompasses a much larger and sensitive area with a much larger direct and thereby significant, impact as a result whereas the impact of the Alternatives 2 and 3 designs is much reduced and largely indirect as it does not extend beyond the road reserve or into higher quality vegetation further within the park.<br><br>This impact refers to Section B of botanically sensitive areas (i.e., adjacent to ESNR) as identified in the botanical impact assessment in Appendix G(c). | | | | |
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| **OPERATIONAL PHASE** | | | | |
| **Potential impact and risk:** | **Botanical impacts** | | | |
| Nature of impact: | Impact on associated floral species assessed as a result of wetter conditions related to increased stormwater run-off | | | |
| Extent and duration of impact: | Medium (widespread beyond certain sections of the site boundary, but local), long-term | Low (localised within the site boundary), long-term | Low (localised within the site boundary), long-term | No impact |
| Consequence of impact or risk: | Change in floral composition and associated local biodiversity | | | *Status quo* remains |
| Probability of occurrence: | High (definite) | High (definite) | High (definite) | None |
| Degree to which the impact may cause irreplaceable loss of resources: | Low- resource may be partly destroyed | Low- resource may be partly destroyed | Low- resource may be partly destroyed | None |
| Degree to which the impact can be reversed: | Completely Reversible | Completely Reversible | Completely Reversible | Completely Reversible |
| Indirect impacts: | Minor changes to local habitat for fauna and resultant changes to faunal behaviour | | | Comparatively more gradual changes to biodiversity as a result of little care to existing biodiversity on site |
| Cumulative impact prior to mitigation: | Medium (-) | Medium (-) | Medium (-) | No impact |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (-) | Medium (-) | Medium (-) | No impact |
| Degree to which the impact can be avoided: | High | High | High | Not Applicable |
| Degree to which the impact can be managed: | High | High | High | Not Applicable |
| Degree to which the impact can be mitigated: | Completely mitigatable | Completely mitigatable | Completely mitigatable | No mitigation to be implemented |
| Proposed mitigation: | • No storm water is to be discharged into natural vegetation.<br>• Roadside Kerbs and gutters to channel run-off into storm water system. | | | Not Applicable |
| Residual impacts: | Conditions would not become wetter, and biodiversity would be left to continue on its current trajectory | | | Not Applicable |
| Cumulative impact post mitigation: | Low (-) | Low (-) | Low (-) | Not Applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Low (-) | Low (-) | Not Applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** Impact is considered to be high prior to mitigation in Alternative 1 due to the condition of the ESNR and the sensitivity of this environment. CBA 2 (delisted) and ONA are 'Replaced – Adventive' meaning the significance of the impact would be less but rated together with ESNR the significance is raised. It is less significant in Alternatives 2 and 3 due to the crucially reduced spatial extent and footprint of these two designs. | | | | |
| Nature of impact: | Loss of Cape Lowlands Freshwater Wetlands (ESNR) as a result of the replacement of road reserve vegetation buffer and subsequent edge effect on the wetland park border edge. | | | |
| Extent and duration of impact: | Medium (widespread beyond certain sections of the site boundary, but local), long-term | Medium (widespread beyond certain sections of the site boundary, but local), long-term | Medium (widespread beyond certain sections of the site boundary, but local), long-term | No impact |

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| Consequence of impact or risk: | Change in floral composition and associated local biodiversity | | | *Status quo* remains |
| Probability of occurrence: | High (definite) | Medium (probable) | Medium (probable) | None |
| Degree to which the impact may cause irreplaceable loss of resources: | Low- resource may be partly destroyed | Low- resource may be partly destroyed | Low- resource may be partly destroyed | None |
| Degree to which the impact can be reversed: | Irreversible | Irreversible | Irreversible | Completely Reversible |
| Indirect impacts: | Changes to local habitat for fauna and resultant changes to faunal behaviour within a nature reserve | | | Comparatively more gradual changes to biodiversity as a result of little care to existing biodiversity on site |
| Cumulative impact prior to mitigation: | Medium (-) | Medium (-) | Medium (-) | No impact |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (-) | Medium (-) | Medium (-) | No impact |
| Degree to which the impact can be avoided: | Medium | Medium | Medium | Not Applicable |
| Degree to which the impact can be managed: | Medium | Medium | Medium | Not Applicable |
| Degree to which the impact can be mitigated: | Partly mitigatable | Partly mitigatable | Partly mitigatable | No mitigation to be implemented |
| Proposed mitigation: | • No storm water is to be discharged into natural vegetation.<br>• Roadside Kerbs and gutters to channel run-off into storm water system. | | | Not Applicable |
| Residual impacts: | Controlled and limited edge effects of change in biodiversity and habitat composition within a nature reserve | | | Not Applicable |
| Cumulative impact post mitigation: | Medium (-) | Medium (-) | Medium (-) | Not Applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (-) | Medium (-) | Medium (-) | Not Applicable |

**NOTE ON SIGNIFICANCE OF IMPACT:**

The significance of the removal of the vegetation buffer and creation of a new edge resulting in further vegetation quality and specie loss is high due to the nature of the species found within the ESNR that may be impacted upon being 'red data' listed such as Isoetes capensis. This is more likely and of higher significance in Alternative 1 as the new edge would be created further into the wetland park thereby effecting the better quality vegetation within as opposed to Alternatives 2 and 3 which would put the new edge as the border of the wetland park against largely marginal vegetation specifically on the eastern side of the park entrance. The buffer vegetation within the designated road reserve which would be built over is for the most part *Pennisetum clandestinum* (listed IAP) and occurs from the entrance to the east whereas the 'buffer' to the west is largely compacted soil and weeds therefore the extent of the active buffer is in itself rather limited to the eastern length.

***Addressing I&AP Comments: The impact has been included in order to provide clarity on the fact that the edge effects have been afforded due consideration in the impact assessment. This topic was raised by the City of Cape Town Biodiversity branch.***

The mitigation measures 'water management' should prevent increased eutrophication from nutrient run-off which is seen as a major threat to the listed 'red data' plant species thereby reducing the edge effect somewhat. Even in a reduced state other edge factors such as exposure and potential wind or aeolian damage are still present and therefore the significance of this even with mitigation remain as medium, even if somewhat reduced.

| **Alternatives:** | **ROAD GEOMETRY ALTERNATIVE 1** | **ROAD GEOMETRY ALTERNATIVE 2** | **ROAD GEOMETRY ALTERNATIVE 3** | **NO-GO/NO DEVELOPMENT ALTERNATIVE** |
|---|---|---|---|---|
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | | | |
| **Potential impact and risk:** | **Freshwater impacts- Construction of the proposed integrated rapid transit system along the Govan Mbeki Road** | | | |
| Nature of impact: | Limited disturbance to/loss of freshwater related habitats at the road- Wetlands | | | |
| Extent and duration of impact: | Localised short term impacts | Localised short term impacts | Localised short term impacts | Localised longer term impacts |
| Consequence of impact or risk: | Minor reduction in biodiversity in wetlands at the road edge | | | Sustained minor reduction in biodiversity in wetlands at the road edge |
| Probability of occurrence: | Possible as a result of construction | Possible as a result of | Possible as a result of | Possible as a result of |

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| | activities at road in or adjacent to Lotus Canal and wetland areas | construction activities at road in or adjacent to Lotus Canal and wetland areas | construction activities at road in or adjacent to Lotus Canal and wetland areas | operation activities at road in or adjacent to Lotus Canal and wetland areas |
| Degree to which the impact may cause irreplaceable loss of resources: | Medium | Low | Low | Low |
| Degree to which the impact can be reversed: | Partially to irreversible | Partially reversible | Partially reversible | Reversible |
| Indirect impacts: | Minor change in wetland biodiversity at the road edge | | | Somewhat comparatively more gradual change in wetland biodiversity at the road edge |
| Cumulative impact prior to mitigation: | Medium to Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Medium to Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| Degree to which the impact can be avoided: | High | Low | Low | Low |
| Degree to which the impact can be managed: | High | Low | Low | Low |
| Degree to which the impact can be mitigated: | Very Low | Very Low | Very Low | Low |
| Proposed mitigation: | Revert to Road Geometry Alternative 2 or 3 | • Stormwater infrastructure from the roads can be channelled into the permanently and seasonally inundated wetlands (Wetlands 1, 2, 3 and 5) as this is their primary function.<br>• Work within the Lotus Canal and wetland areas should be limited as far as possible, and the disturbed areas rehabilitated immediately afterwards.<br>• Disturbance and the use of machinery in the larger wetland areas, as well as the dumping of soil and other material into wetlands should preferably be avoided.<br>• Construction within or adjacent to the canal and wetland areas should as far as possibly take place during the drier months of the year.<br>• Where soil is disturbed, alien vegetation should be controlled using appropriate methods such as removal with saws and herbicides.<br>• Once construction is complete, the area should be rehabilitated to resemble that of the surrounding bed and banks and where necessary vegetated preferably with indigenous grasses such as fynkweek Cynodon dactylon and buffalo grass Stenotaphrum secundatum. Invasive kikuyu grass Pennisetum clandestinum should be removed wherever possible.<br>• Any invasive alien plants or waste material should be removed from the canal and wetland areas during and after construction works is complete.<br>• Work should be limited as far as possible to within the road reserve and the disturbed areas rehabilitated immediately afterwards; | | None |

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| | | • Construction in or adjacent to the aquatic features should as far as possible take place during the drier months of the year;<br>• Rubble and debris from existing structures and construction activities should be removed after construction is complete;<br>• Once construction is complete, the disturbed areas should be reshaped and where necessary vegetated (invasive alien vegetation such as kikuyu grass should not be planted in these areas and any regrowth of the invasive grass in the wetland areas should be avoided);<br>• Stormwater mitigation measures should be put in place along the road; and<br>• Any invasive alien plants occurring within the road reserve should be removed during construction according to methods as provided by the Working for Water Programme.<br><br>The following general guiding principles should be followed during the construction phase:<br>• Minimise the spatial extent of disturbance and maximise physical diversity;<br>• Minimise the frequency of, or requirement for, maintenance activities;<br>• Minimise upstream/downstream impacts;<br>• Do not impede the movement of aquatic and riparian biota;<br>• Minimise alterations to flow- and sediment-capacity;<br>• Rehabilitate and re-vegetate after construction;<br>• Clear alien plant species;<br>• Maintain aquatic ecosystem minimum base flow at all times;<br>• Maintenance activities are best done during the dry season;<br>• Whenever possible existing access routes should be used;<br>• All potential pollutants should be kept away from aquatic ecosystems;<br>• Spoil material should be removed to approved dumping sites;<br>• After construction, any areas within the maintenance footprint that have been degraded from their condition prior to construction and as a result of the construction activities must be restored to their former condition;<br>• Channelization or canalization is actively discouraged;<br>• Valuable habitats should be retained; and<br>• Cleared plant material must be removed from aquatic ecosystems. | |
| Residual impacts: | Controlled and limited minor change in wetland biodiversity at the road edge | | | |
| Cumulative impact post mitigation: | Medium to Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| Significance rating of impact after mitigation | Medium to Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |

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| (e.g., Low, Medium, Medium-High, High, or Very-High) | | | | |
| **NOTE ON SIGNIFICANCE OF IMPACT:**<br>Note that Alternative 1 has a slightly higher impact as there would be greater loss of the wetlands in ESNR when compared to Alternative 2 and Alternative 3. Alternative 1 presents a loss of approximately 2000m$^2$ of wetland where Alternatives 2 and 3 present a loss of approximately 750 m$^2$.<br><br>A localized impact of medium to low intensity in the short term that is expected to have a low negative significance in terms of its impact on the aquatic habitat in the study area. This is due to the fact that the aquatic habitat within the study area has already been disturbed as a result of the existing road and its structures and the surrounding agricultural and urban activities.<br><br>Works is also largely within the road reserve where aquatic features are very limited. | | | | |
| Nature of impact: | Impairment of downstream ***water quality impacts*** as a result of runoff from road and the construction activities | | | |
| Extent and duration of impact: | Localised short-term impacts | | | Localised longer-term impacts |
| Consequence of impact or risk: | Localised changes in composition of water biota | | | |
| Probability of occurrence: | Probable | | | Possible as a result of operation activities at road in or adjacent to Lotus Canal and wetland areas |
| Degree to which the impact may cause irreplaceable loss of resources: | Low | | | Low |
| Degree to which the impact can be reversed: | Reversible | | | Reversible |
| Indirect impacts: | Localised changes in composition of water biota, possible increase in invasive, hardier species of flora and fauna | | | |
| Cumulative impact prior to mitigation: | Low (-) | | | Very Low (-) |
| Significance rating of impact prior to mitigation<br>(e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |
| Degree to which the impact can be avoided: | Low | Low | Low | Very low |
| Degree to which the impact can be managed: | Medium | Medium | Medium | Very low |
| Degree to which the impact can be mitigated: | Low | | | Low |
| Proposed mitigation: | • Contaminated runoff from the construction site(s) should be prevented from entering the aquatic features within the immediate area, the laydown area and main construction site(s) for the aquatic features.<br>• If the construction site(s) need to be located near the aquatic features, all materials on the construction site(s) should be properly stored and contained.<br>• Disposal of waste from the site(s) should also be properly managed.<br>• Construction workers should be given ablution facilities at the construction works that are located away from the aquatic features (at least 30m) and regularly serviced.<br>• These measures should be addressed, implemented, and monitored in terms of the Environmental Management Plan for the construction phase.<br>• Increased sedimentation or turbidity at each of the construction works within the aquatic features should be mitigated as far as possible by making use of sandbags, settling ponds or screens to minimise the load of sediment being washed downstream of the works. | | | None |
| Residual impacts: | Reduced impairment on water quality downstream | | | |
| Cumulative impact post mitigation: | Very Low (-) | | | Very Low (-) |
| Significance rating of impact after mitigation<br>(e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |

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| **NOTE ON SIGNIFICANCE OF IMPACT:** All road geometry alternatives have similar impacts.<br><br>A slight risk of localised water quality impact of low intensity is expected to have a low overall significance in terms of its impact on the identified aquatic ecosystems in the area. | | | | |
| Nature of impact: | Modification of flow during construction activities | | | |
| Extent and duration of impact: | Localised short-term impacts | | | Localised longer-term impacts |
| Consequence of impact or risk: | Short-term changes in local freshwater habitat | | | Longer-term changes in local freshwater habitat |
| Probability of occurrence: | Probable | | | Possible as a result of operation activities at road in or adjacent to Lotus Canal and wetland areas |
| Degree to which the impact may cause irreplaceable loss of resources: | Medium | | | Low |
| Degree to which the impact can be reversed: | Partially Reversible | | | Reversible |
| Indirect impacts: | Temporary changes in species composition of freshwater biota or temporary stress to existing biota | | | |
| Cumulative impact prior to mitigation: | Low (-) | | | Very Low (-) |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |
| Degree to which the impact can be avoided: | Low | Low | Low | Low |
| Degree to which the impact can be managed: | Low | Low | Low | Low |
| Degree to which the impact can be mitigated: | Very Low | | | Low |
| Proposed mitigation: | • Activities within the aquatic features during the construction phase should be limited as far as possible in terms of their spatial and temporal extent.<br>• Construction work within or adjacent to the aquatic features should preferably take place before the onset of the rainfall period to ensure minimal impact on flow.<br>• Rubble and debris from existing structures and construction activities should be removed after construction is complete so as not to impede runoff to the aquatic features. | | | None |
| Residual impacts: | Minimal effect on local biota, minor stress to biota which is easy to recover from | | | Continued stress to freshwater biota |
| Cumulative impact post mitigation: | Very Low (-) to negligible | | | Very Low (-) |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |

**NOTE ON SIGNIFICANCE OF IMPACT:**
All road geometry alternatives have similar impacts. The construction activities would be expected to have a very limited impact on the flow runoff to the aquatic features in terms of the extent and duration.

| **Alternatives** | **ROAD GEOMETRY ALTERNATIVE 1** | **ROAD GEOMETRY ALTERNATIVE 2** | **ROAD GEOMETRY ALTERNATIVE 3** | **NO-GO/NO DEVELOPMENT ALTERNATIVE** |
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| Nature of impact: | Limited disturbance/loss of freshwater related habitats at the road- Lotus River Canal | | | |
| Extent and duration of impact: | Localised short-term impacts | | | Localised longer-term impacts |
| Consequence of impact or risk: | Minor reduction in biodiversity in river at the road edge | | | Sustained minor reduction in biodiversity in river at the road edge |
| Probability of occurrence: | Possible as a result of construction activities at road in or adjacent to Lotus Canal and wetland areas | | | Possible as a result of operation activities at road in or adjacent to |

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| | | | | Lotus Canal and wetland areas |
| Degree to which the impact may cause irreplaceable loss of resources: | Medium to low | | | Low |
| Degree to which the impact can be reversed: | Partially reversible to irreversible | | | Reversible |
| Indirect impacts: | Minor change in river biodiversity at the road edge | | | Somewhat comparatively more gradual change in river biodiversity at the road edge |
| Cumulative impact prior to mitigation: | Low (-) | | | Very Low (-) |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | | | Very Low (-) |
| Degree to which the impact can be avoided: | Low | Low | Low | Low |
| Degree to which the impact can be managed: | Low | Low | Low | Low |
| Degree to which the impact can be mitigated: | Very Low | | | Low |
| Proposed mitigation: | • Implement mitigation measures as per the above requirements for the impact on the Lotus River.<br>• The Lotus Canal is also subjected to high loads of solid waste that could be reduced through the covering of the existing channel. It is however recommended that this aspect also be mitigated by constructing additional sediment and solid waste trapping/mitigation measures upstream of the section of the canal to be enclosed.<br>***Note that additional traps specifically would not be installed in the Lotus Canal because there are existing grates which serve this purpose (i.e., trapping solid waste) and these are maintained by the City of Cape Town Stormwater and Catchment Management branch. Furthermore, the design of the works to the Lotus Canal has considered the need for accessibility for maintenance. The proposal also does not intend to enclose the canal nor carry out the installation of sand traps within the canal. The specialist has confirmed that the assessment of the impact remains as indicated (T Belcher pers. comms. 26/08/2021).*** | | | None |
| Residual impacts: | Controlled and limited minor change in river biodiversity at the road edge | | | |
| Cumulative impact post mitigation: | Very Low (-) | | | Very Low (-) |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |
| **NOTE ON SIGNIFICANCE OF IMPACT:**<br>Note that the impact of the canal options was only considered as they relate to the Lotus Canal as that is the only portion of the proposed route where they would be considered. All other relevant environmental aspects and related impacts are assessed as part of the road geometry alternatives. | | | | |
| | | | | |
| **OPERATIONAL PHASE** | | | | |
| **Potential impact and risk:** | **Freshwater impacts- Maintenance of proposed integrated rapid transit system along the Govan Mbeki Road** | | | |
| Alternatives | **ROAD GEOMETRY ALTERNATIVE 1** | **ROAD GEOMETRY ALTERNATIVE 2** | **ROAD GEOMETRY ALTERNATIVE 3** | **NO-GO/NO DEVELOPMENT ALTERNATIVE** |
| Nature of impact: | Modification of flow during operational activities | | | |
| Extent and duration of impact: | Localised short-term impacts | | | Localised longer-term impacts |
| Consequence of impact or risk: | Minor changes in flow speed and volume | | | |
| Probability of occurrence: | Probable | | | Possible as a result of operation activities at road in or adjacent to Lotus Canal and wetland areas |

| | | | | |
|---|---|---|---|---|
| Degree to which the impact may cause irreplaceable loss of resources: | Medium | | | Low |
| Degree to which the impact can be reversed: | Partially Reversible | | | Reversible |
| Indirect impacts: | Possible reduction in ability of biota to establish in the lotus canal, however changes are marginal, and this is unlikely | | | |
| Cumulative impact prior to mitigation: | Low (-) | | | Very Low (-) |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |
| Degree to which the impact can be avoided: | Very Low | Very Low | Very Low | Low |
| Degree to which the impact can be managed: | Very Low | Very Low | Very Low | Low |
| Degree to which the impact can be mitigated: | Very Low | | | Low |
| Proposed mitigation: | In the longer term, the new integrated rapid transit system should address the stormwater runoff from the road into the aquatic features. | | | None |
| Residual impacts: | Very minor change to number and type of biota in the river. | | | |
| Cumulative impact post mitigation: | Very Low (-) to negligible | | | Very Low (-) |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |
| **NOTE ON SIGNIFICANCE OF IMPACT:**<br>All road geometry alternatives have similar impacts. The upgraded Lotus Canal may result in altered flow/hydraulic characteristics, but with implementation of the stormwater management plan, Gibb (2021) has also confirmed that the proposed development will have negligible impact on the flow of water in the Lotus Canal. | | | | |
| Nature of impact: | Limited ***disturbance of freshwater related habitats*** at the road | | | |
| Extent and duration of impact: | Localised longer term | | | Localised longer-term impacts |
| Consequence of impact or risk: | Minor changes to freshwater habitats alongside the road | | | |
| Probability of occurrence: | Possible as a result of operation activities at road in or adjacent to Lotus Canal and wetland areas | | | Possible as a result of operation activities at road in or adjacent to Lotus Canal and wetland areas |
| Degree to which the impact may cause irreplaceable loss of resources: | Low | | | Low |
| Degree to which the impact can be reversed: | Reversible | | | Reversible |
| Indirect impacts: | Minor changes to species composition of biota in freshwater habitats alongside the road | | | |
| Cumulative impact prior to mitigation: | Low (-) | | | Very Low (-) |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | | | Very Low (-) |
| Degree to which the impact can be avoided: | Medium | | | Low |
| Degree to which the impact can be managed: | Medium | | | Medium |
| Degree to which the impact can be mitigated: | Very Low | | | Low |
| Proposed mitigation: | Any signs of erosion along the road, particularly as a result of storm water runoff to the watercourse, should be identified and addressed as soon as possible. | | | None |
| Residual impacts: | Minor changes to species composition of biota in freshwater habitats alongside the road | | | |
| Cumulative impact post mitigation: | Very Low (-) | | | Very Low (-) |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Very Low (-) | | | Very Low (-) |

| NOTE ON SIGNIFICANCE OF IMPACT: |
|---|
| All road geometry alternatives have similar impacts. Over the longer term a negative impact of a very low significance could be expected due to the need to undertake maintenance activities on the road with the associated disturbance of aquatic habitats over the long term and the potential for invasive alien plants to establish within these disturbed areas. Stormwater runoff from the road from the road development also has the potential to impact on the adjacent aquatic features. |

| SOCIO-ECONOMIC | | |
|---|---|---|
| **Alternatives** | **ALL ROAD GEOMETRY ALTERNATIVES AND CANAL WORKS:** | **NO-GO ALTERNATIVE** |
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | |
| **Potential impact and risk:** | **GENERATION OF ECOMONIC STIMULUS** | |
| Nature of impact: | Creation of employment opportunities as a result of development and construction on the route. Additional indirect economic impacts (stimulus) will also be experienced. | No job opportunities would be made available as development would not take place. |
| Extent and duration of impact: | Widespread impact beyond the site boundary and short-term (i.e., 30 months) | Widespread impact beyond the site boundary and long-term |
| Consequence of impact or risk: | Marginal increases in income for local communities. | Loss of opportunity for marginal increases in income for local communities. |
| Probability of occurrence: | Definite | Definite |
| Degree to which the impact may cause irreplaceable loss of resources: | Not applicable | Not applicable |
| Degree to which the impact can be reversed: | Low | Low |
| Indirect impacts: | Buying power of local communities increases for a short period | *Status quo* remains |
| Cumulative impact prior to mitigation: | Medium (+) | Neutral and foregone positive impacts of alternative |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Medium (+) | Neutral and foregone positive impacts of alternative |
| Degree to which the impact can be avoided: | Low | Low |
| Degree to which the impact can be managed: | High | Low |
| Degree to which the impact can be mitigated: | No need to mitigate a positive impact. | Not applicable |
| Proposed mitigation: | Not applicable | Not applicable |
| Residual impacts: | Buying power of local communities increases for a short period | *Status quo* remains |
| Cumulative impact post mitigation: | Medium (+) | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Medium (+) | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** The positive impacts on the job market and the economy that is associated with the design and construction of the development are considered highly significant in the current economic climate, particularly in the less affluent communities in the area. The proposed development option would be associated with a positive impact, while the no-go alternative would result in continuation of the *status quo*, which is zero generation of jobs or economic stimulus. | | |
| | | |
| **OPERATIONAL PHASE** | | |
| **Potential impact and risk:** | **Improved Accessibility** | |
| Nature of impact: | Provision of improved accessibility for previously disadvantaged communities with respect to employment, economic centres and places of education and recreation. | |
| Extent and duration of impact: | Widespread impact beyond the site boundary (in the local communities and the Western Cape) and long-term | Widespread impact beyond the site boundary (in the local communities and the Western Cape) and short-term |
| Consequence of impact or risk: | Increased opportunity for people from previously | *Status quo* remains and loss of increased opportunity for people |

| | | |
|---|---|---|
| | disadvantaged communities to access work opportunities where they are most dense | from previously disadvantaged communities to access work opportunities where they are most dense |
| Probability of occurrence: | Definite | Possible |
| Degree to which the impact may cause irreplaceable loss of resources: | None | None |
| Degree to which the impact can be reversed: | Positive impact, not desirable to be reversed | Low |
| Indirect impacts: | Skills and wealth development opportunities for people from previously disadvantaged communities | *Status quo* remains and loss of skills and wealth development opportunities for people from previously disadvantaged communities |
| Cumulative impact prior to mitigation: | High (+) | Medium (+) |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (+) | Medium (+) |
| Degree to which the impact can be avoided: | Low | Low |
| Degree to which the impact can be managed: | Low | Low |
| Degree to which the impact can be mitigated: | No need to mitigate a positive impact. | No need to mitigate a positive impact.<br>Note that mitigation could include improvements to the public transport network in the area. |
| Proposed mitigation: | Not applicable | Not applicable |
| Residual impacts: | Skills and wealth development opportunities for people from previously disadvantaged communities | *Status quo* remains |
| Cumulative impact post mitigation: | Not applicable | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Not applicable | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** The positive impacts on the community and the economy that is associated with the operation of the proposed development are considered significant in the current economic climate, noting that the proposed development option will be associated with a marginally higher positive impact when compared to the no-go option, given that Govan Mbeki Road does provide connectivity within the City of Cape Town. | | |
| **Potential impact and risk:** | **Public Safety through provision of adequate Non-Motorised Transport facilities** | |
| Nature of impact: | Improvements to safety for all those accessing the area via NMT. | |
| Extent and duration of impact: | Widespread impact beyond the site boundary and long-term | Widespread impact beyond the site boundary and long-term |
| Consequence of impact or risk: | Reduced instances of pedestrian injury | *Status quo* remains and loss of potential reduction in pedestrian injury |
| Probability of occurrence: | Definite | Not applicable |
| Degree to which the impact may cause irreplaceable loss of resources: | None | Reversible with the creation of other opportunities on the site |
| Degree to which the impact can be reversed: | Irreversible | Possible |
| Indirect impacts: | Safer NMT environment and greater use of NMT over vehicles | *Status quo* remains |
| Cumulative impact prior to mitigation: | Medium (+) | None |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (+) | Zero and positive impacts would be foregone. |
| Degree to which the impact can be avoided: | Low | Low |
| Degree to which the impact can be managed: | Low | Low |
| Degree to which the impact can be mitigated: | No need to mitigate a positive impact. | Zero and positive impacts would be foregone. |
| Proposed mitigation: | Not applicable | Not applicable as there would be no impacts to mitigate. |
| Residual impacts: | Safer NMT environment and greater use of NMT over vehicles | *Status quo* remains |
| Cumulative impact post mitigation: | Not applicable | Not applicable |

| | | |
|---|---|---|
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Not applicable | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** Many portions of the route are not safe for pedestrians however the proposed development would ensure appropriate improvements to NMT facilities. | | |

| **VISUAL:** | | |
|---|---|---|
| **Alternatives** | **ALL ROAD GEOMETRY ALTERNATIVES AND CANAL WORKS:** | **NO-GO ALTERNATIVE** |
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | |
| **Potential impact and risk:** | **Visual/ Aesthetic Impacts** | |
| Nature of impact: | Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces) | No impact, *status quo* remains (noting that certain portions of the roadway are not aesthetically pleasing) |
| Extent and duration of impact: | Widespread (on site and immediate surrounds), short-term (approximately 30 months) | Widespread (on site and immediate surrounds), duration not applicable as there will be no impact (i.e., no construction activities) |
| Consequence of impact or risk: | Construction areas look comparatively unsightly for a short period of time | None, *status quo* remains |
| Probability of occurrence: | Definite | No occurrence of construction activities |
| Degree to which the impact may cause irreplaceable loss of resources: | None | None |
| Degree to which the impact can be reversed: | Reversible | Reversible |
| Indirect impacts: | Passers-by view a construction site rather than the present roadside conditions | None |
| Cumulative impact prior to mitigation: | Low (-) | Zero |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Zero |
| Degree to which the impact can be avoided: | Low | Zero |
| Degree to which the impact can be managed: | High | Zero |
| Degree to which the impact can be mitigated: | Medium | Not applicable as there would be no impacts to mitigate. |
| Proposed mitigation: | Implementation of the conditions in the EMPr. | Not applicable |
| Residual impacts: | Controlled unsightly areas during construction | Not applicable |
| Cumulative impact post mitigation: | Low (-) | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** The residual impacts after mitigation was applied are considered adequate for temporary construction related impacts of this nature and are not considered significant. | | |
| | | |
| **OPERATIONAL PHASE** | | |
| **Potential impact and risk:** | **Visual Impacts** | |
| Nature of impact: | Overall improvement to the appearance of the relevant portion of Govan Mbeki | |
| Extent and duration of impact: | Widespread (on site and in local area), long-term | Widespread (on site and in local area), long-term (timeframe assumes no additional development within the proposed development footprint) |
| Consequence of impact or risk: | Improvements to aesthetics in area and quality of user and visitor experience | Loss of improvements to aesthetics in area and quality of user and visitor experience |

| | | |
|---|---|---|
| Probability of occurrence: | Definite | No impact |
| Degree to which the impact may cause irreplaceable loss of resources: | None | None |
| Degree to which the impact can be reversed: | Irreversible | Not applicable |
| Indirect impacts: | The site would become a more desirable place to use | Not applicable |
| Cumulative impact prior to mitigation: | Low (+) | No impact |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Medium (+) | No impact |
| Degree to which the impact can be avoided: | Low | Low |
| Degree to which the impact can be managed: | High | Low |
| Degree to which the impact can be mitigated: | No need for mitigation, given the positive nature of the impact | Not applicable as there would be no impacts to mitigate. |
| Proposed mitigation: | Not applicable | Not applicable |
| Residual impacts: | The site would become a more desirable place to use | Not applicable |
| Cumulative impact post mitigation: | Low (+) | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Medium (+) | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** Note that there are no visual resources along the proposed route. Furthermore, there are certain sections of the route which have no sidewalks. | | |

| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | |
|---|---|---|
| **Potential impacts on CULTURAL-HISTORICAL ASPECTS** | **PROPOSED DEVELOPMENT (ALL ALTERNATIVES)** | **NO-GO/NO DEVELOPMENT ALTERNATIVE** |
| Nature of impact: | Damage to cultural or heritage artefacts or landscapes as a result of construction activities. | |
| **NOTE ON SIGNIFICANCE OF IMPACT:** Given that it has been found that there are no cultural or historical resources on site, there will be no associated impacts during the construction phase. However, in keeping with the "precautionary principal", it has been recommended that should any heritage resources, including evidence of grave, human burials, archaeological material, and paleontological material be discovered during the excavation of activities above, all works must be stopped immediately and HWC must be notified without delay.<br>The only other recommendation with respect to the *Eucalyptus* grove remnant indicated in Figure 32 is to ensure planting of new suitable trees in appropriate road reserve positions suggested by a Landscape Architect. | | |

| **NUISANCE IMPACTS ON SURROUNDING LAND USERS** | | |
|---|---|---|
| **Alternatives** | **ALL ROAD GEOMETRY ALTERNATIVES AND CANAL OPTIONS:** | **NO-GO ALTERNATIVE** |
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | |
| **Potential impact and risk:** | **Noise and Dust Impacts** | |
| Nature of impact: | The land clearing and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing. | None, *status quo* remains |
| Extent and duration of impact: | Widespread (on site and immediate surrounds) and short-term (approximately 30 months | Widespread (on site and immediate surrounds), duration not applicable as there will be no impact (i.e., no construction activities) |
| Consequence of impact or risk: | Localised increased dust on surfaces and possible sinus issues for locals adjacent to the site | None |
| Probability of occurrence: | Possible | No occurrence of construction activities |
| Degree to which the impact may cause irreplaceable loss of resources: | None | None |

| | | |
|---|---|---|
| Degree to which the impact can be reversed: | Irreversible | Reversible |
| Indirect impacts: | Locals adjacent to the site may have to clean surfaces more and may require some minor treatment of sinus issues | None |
| Cumulative impact prior to mitigation: | Low (-) | Zero |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Zero |
| Degree to which the impact can be avoided: | Low | Not applicable |
| Degree to which the impact can be managed: | High | Not applicable |
| Degree to which the impact can be mitigated: | Medium | Not applicable as there would be no impacts to mitigate. |
| Proposed mitigation: | Implementation of the noise and dust control measures contained in the EMPr. | Not applicable |
| Residual impacts: | Minor additional dust in environments adjacent to the site | Not applicable |
| Cumulative impact post mitigation: | Low (-) | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** The implementation of the specifications of the EMPr will serve to reduce dust and noise impacts associated with construction activities. The residual impacts after mitigation was applied are considered adequate for temporary construction related impacts of this nature and are not considered significant. | | |
| | | |
| **OPERATIONAL PHASE** | | |
| **No impacts** | | |

| **USE OF NATURAL RESOURCES:** | | |
|---|---|---|
| **Alternatives** | **ALL ROAD GEOMETRY ALTERNATIVES AND CANAL WORKS:** | **NO-GO ALTERNATIVE** |
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | |
| **Potential impact and risk:** | **Depletion of Natural Resources Impacts** | |
| Nature of impact: | Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc. | No impact |
| Extent and duration of impact: | Widespread beyond site boundary, Short-term | Widespread beyond site boundary, duration not applicable as there will be no impact (i.e., no construction activities) |
| Consequence of impact or risk: | Depletion in natural resources | None |
| Probability of occurrence: | Definite | No occurrence of construction activities |
| Degree to which the impact may cause irreplaceable loss of resources: | Low | None |
| Degree to which the impact can be reversed: | Irreversible | Reversible |
| Indirect impacts: | Fewer natural resources available for development | None |
| Cumulative impact prior to mitigation: | Very low (-) | Zero |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Medium (-) | Zero |
| Degree to which the impact can be avoided: | Low | Not applicable |
| Degree to which the impact can be managed: | High | Not applicable |
| Degree to which the impact can be mitigated: | High | Not applicable as there would be no impacts to mitigate. |
| Proposed mitigation: | Implementation of the specifications contained in the EMPr. | Not applicable |

| | | |
|---|---|---|
| Residual impacts: | Controlled use of natural resources and avoidance of wastage | None |
| Cumulative impact post mitigation: | Very low (-) | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** Subsequent to mitigation, the residual impacts are deemed to be insignificant. | | |
| | | |
| **OPERATIONAL PHASE** | | |
| **No impacts** | | |

| **TRAFFIC** | | |
|---|---|---|
| **Alternatives** | **ALL ROAD GEOMETRY ALTERNATIVES AND CANAL WORKS:** | **NO-GO ALTERNATIVE** |
| **PLANNING, DESIGN AND DEVELOPMENT PHASE** | | |
| **Potential impact and risk:** | **Disruption to local traffic flow** | |
| Nature of impact: | Disturbance to local traffic conditions (both vehicular and pedestrian) as a result of construction vehicles accessing the sites during the construction activities. | No impact |
| Extent and duration of impact: | Widespread (on site and in local area), short-term | Widespread (on site and in local area), short-term |
| Consequence of impact or risk: | Reduced efficiency of traffic flow and increase in delays over that segment of the road | None |
| Probability of occurrence: | Definite | No occurrence of construction activities |
| Degree to which the impact may cause irreplaceable loss of resources: | None | None |
| Degree to which the impact can be reversed: | Irreversible | Reversible |
| Indirect impacts: | Reduced flow and increased irritation for motorists | None |
| Cumulative impact prior to mitigation: | Low (-) | Zero |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Zero |
| Degree to which the impact can be avoided: | Low | Low |
| Degree to which the impact can be managed: | High | Low |
| Degree to which the impact can be mitigated: | Medium | Not applicable as there would be no impacts to mitigate. |
| Proposed mitigation: | Implement the measures included in the EMPr for each site. | Not applicable |
| Residual impacts: | Controlled and limited reduced flow and increased irritation for motorists | Not applicable |
| Cumulative impact post mitigation: | Very Low (-) | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Low (-) | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** Subsequent to mitigation, the residual impacts are deemed to be insignificant. | | |
| | | |
| **OPERATIONAL PHASE** | | |
| **Potential impact and risk:** | **Improvements to Traffic Conditions** | |
| Nature of impact: | Improvements to traffic flow and efficiency in the area with the provision of dedicated bus lanes and allowing other traffic to use the remaining capacity | None |
| Extent and duration of impact: | Widespread (on site and in local area), short-term | Widespread (on site and in local area), short-term |

| | | |
|---|---|---|
| Consequence of impact or risk: | Improved provision of public transport in the area | Opportunity cost |
| Probability of occurrence: | Definite | Definite |
| Degree to which the impact may cause irreplaceable loss of resources: | None | None |
| Degree to which the impact can be reversed: | Low | Low |
| Indirect impacts: | More efficient movement of traffic in the area | None, *status quo* remains |
| Cumulative impact prior to mitigation: | High (+) | No impact and positive impacts foregone |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (+) | No impact and positive impacts foregone |
| Degree to which the impact can be avoided: | Low | Not applicable |
| Degree to which the impact can be managed: | High | Not applicable |
| Degree to which the impact can be mitigated: | High | Not applicable |
| Proposed mitigation: | No mitigation proposed for positive impact | Not applicable |
| Residual impacts: | More efficient movement of traffic in the area | Not applicable |
| Cumulative impact post mitigation: | Not applicable | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Not applicable | Not applicable |

| **REDUCTION IN EMISSION OF GREENHOUSE GASES** | | |
|---|---|---|
| **Alternatives** | **ALL ROAD GEOMETRY ALTERNATIVES AND CANAL WORKS:** | **NO-GO ALTERNATIVE** |
| **OPERATIONAL PHASE** | | |
| **Potential impact and risk:** | **Reduction in greenhouse gas emissions Impacts** | |
| Nature of impact: | Operation of the proposed route (i.e., the use of the route for public transport) would result in an increasing number of people making use of public transport over private transport. This would reduce the per capita emission of greenhouse gases in the surrounding community and beyond. | No impact |
| Extent and duration of impact: | Widespread beyond site boundary (in the greater Cape Town area), Long-term | Widespread (beyond site boundary and in the greater Cape Town area) duration not applicable as there will be no impact (i.e., no operation of the proposed development as the development would not exist) |
| Consequence of impact or risk: | Fewer greenhouse gas emissions, marginal prevention of further degradation in air quality | Opportunity cost |
| Probability of occurrence: | Definite | No occurrence of operational activities |
| Degree to which the impact may cause irreplaceable loss of resources: | Very low | None |
| Degree to which the impact can be reversed: | Irreversible once the My-Citi system has been established | Reversible, assuming development takes place |
| Indirect impacts: | Marginally better future air quality | Opportunity Cost |
| Cumulative impact prior to mitigation: | High (+) | Zero and positive impacts would be foregone. |
| Significance rating of impact prior to mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | High (+) | Zero and positive impacts would be foregone. |
| Degree to which the impact can be avoided: | Medium | None |

| | | |
|---|---|---|
| Degree to which the impact can be managed: | Medium | None |
| Degree to which the impact can be mitigated: | Not desirable to mitigate a positive impact. | Not applicable as there would be no impacts to mitigate. |
| Proposed mitigation: | Not applicable | Not applicable |
| Residual impacts: | Not applicable | Not applicable |
| Cumulative impact post mitigation: | Not applicable | Not applicable |
| Significance rating of impact after mitigation (e.g., Low, Medium, Medium-High, High, or Very-High) | Not applicable | Not applicable |
| **NOTE ON SIGNIFICANCE OF IMPACT:** Note that although fuel would be used and emissions would be generated by the buses, the volume of fuel used, and number of emissions generated would be offset by that being saved as a result of decreased use of private transport. | | |
| | | |
| **CONSTRUCTION PHASE** | | |
| **No impacts** | | |

Additional impacts were considered for the operational phase, but not found to be relevant. These are indicated in Table 6.

**Table 6 Operational Impacts Considered to be Insignificant**

| Potential Impact | Explanatory Notes |
|---|---|
| Geographical and physical aspects: | No impacts on the geographical and physical aspects were identified for the operational phase. This is mostly due to the fact that the site will largely be used for the same function as it is at present and that the impacts were assessed for the planning, design, and construction phase. |
| Cultural-historical aspects | No impacts on cultural-historical aspects were assessed for the operational phase of the proposed development. The cultural-historical impacts were assessed for the planning and design phase. |
| Noise impacts: | No noise impacts for the operational phase of the development were assessed. Given that the site will serve the same function as it does currently it is not anticipated that there will not be a noteworthy increase in the noise generated from the site. Furthermore, high noise levels on Govan Mbeki Road are a constant feature which will not be amplified by the upgrade of the route. |

It is not the intention of the Applicant to decommission the proposed development as it would provide permanent connectivity within the greater IRT system. However, should the facility be decommissioned (i.e., through the removal of the infrastructure) the impacts would be the same as the following construction-related impacts discussed above:

- Freshwater aspects: Limited disturbance to/loss of freshwater related habitats at the road- Wetlands and Lotus River
- Freshwater aspects: Impairment of downstream water quality impacts as a result of runoff from road and the construction activities.
- Freshwater aspects: Modification of flow during construction activities.
- Socio-Economic aspects: Creation of employment opportunities as a result of development and construction on the site. Additional indirect economic impacts (stimulus) will also be experienced.
- Visual aspects: Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces).
- Cultural-historical aspects: Damage to cultural or heritage artefacts or landscapes as a result of construction activities.
- Nuisance impacts on surrounding land users- dust and noise: The land clearing and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing.
- Use of natural resources: Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc.
- Traffic aspects- Disturbance to local traffic conditions (both vehicular and pedestrian) as a result of construction vehicles accessing the sites during the construction activities.

During the" decommissioning" phase, the geographical and physical impact on the surface drainage regime would be removed and a reduction in hardened surfaces would result in stormwater run-off similar to that of the present day.

The loss of various vegetation may be combatted during the "construction" phase should the site be rehabilitated with indigenous species but is it difficult to predict at present.

The following operational impacts would be foregone/no longer applicable and therefore neutralised:

- Botanical aspects: Impact on associated floral species assessed as a result of wetter conditions related to increased stormwater run-off (note that this is assuming the site is not re-developed, however this is uncertain).
- Freshwater aspects: Modification of flow during operational activities.
- Freshwater aspects: Limited disturbance of freshwater related habitats at the road.
- Visual aspects: Overall improvement to the appearance of the relevant portion of Govan Mbeki
- Reduction in emission of greenhouse gases: Operation of the proposed route (i.e., the use of the route for public transport) would result in an increasing number of people making use of public transport over private transport. This

would reduce the per capita emission of greenhouse gases in the surrounding community and beyond (note that this assumes that no other transportation technology would be implemented).

- Socio-economic aspects- improved accessibility: Provision of improved accessibility for previously disadvantaged communities with respect to employment, economic centres and places of education and recreation (note that foregoing this impact assumes that no other means of accessibility would be provided).
- Public safety (NMT): Improvements to safety for all those accessing the area via NMT.
- Traffic: Improvements to traffic flow and efficiency in the area with the provision of dedicated bus lanes and allowing other traffic to use the remaining capacity.

Refer to Table 7 and Table 8 for a summary of all impacts for all alternatives.

## SUMMARY OF IMPACTS

**Table 7 Summary of Planning, Design and Construction Phase Impacts**

| PLANNING, DESIGN AND CONSTRUCTION PHASE IMPACTS: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ALTERNATIVES** | **Road Geometry Alternative 1 & Canal Works** | | **Road Geometry Alternative 2 & Canal Works** | | **Road Geometry Alternative 3 (preferred) & Canal Works** | | **No-go Alternative** | |
| **Impact:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** |
| **ALTERING THE SURFACE DRAINAGE REGIME:** Additional hard surfaces in some portions of the route would provide a marginal increase in hard areas for stormwater run-off | Medium (-) | Neutral | Medium (-) | Neutral | Medium (-) | Neutral | None | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Flats Sand Fynbos (Former CBA2 Zone) Degraded and Transformed | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Lowlands Freshwater Wetlands (ESNR) Degraded and Transformed | High (-) | High (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Flats Dune Strandveld (Other Natural Vegetation) Degraded and Transformed | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **FRESHWATER ASPECTS:** Limited disturbance to/loss of freshwater related habitats at the road- Wetlands | Medium to Low (-) | Medium to Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Impairment of downstream ***water quality impacts*** as a result of runoff from road and the construction activities | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Modification of flow during construction activities | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Limited loss/disturbance of freshwater related habitats at the road- Lotus River Canal | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **SOCIO-ECONOMIC ASPECTS:** Creation of employment opportunities as a result of development and construction on the route. Additional indirect economic impacts (stimulus) will also be experienced. | Medium (+) | Not Applicable | Medium (+) | Not Applicable | Medium (+) | Not Applicable | No impact | Not Applicable |
| **VISUAL ASPECTS:** Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **CULTURAL-HISTORICAL ASPECTS:** Damage to cultural or heritage artefacts or landscapes as a result of construction activities. | No impact | | | | | | | |
| **NUISANCE IMPACTS ON SURROUNDING LAND USERS – DUST AND NOISE:** The land clearing and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing. | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |
| **USE OF NATURAL RESOURCES:** Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc. | Medium (-) | Low (-) | Medium (-) | Low (-) | Medium (-) | Low (-) | No impact | Not Applicable |
| **TRAFFIC:** Disturbance to local traffic conditions (both vehicular and pedestrian) as a result of construction vehicles accessing the sites during the construction activities. | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | Low (-) | No impact | Not Applicable |

**Table 8 Summary of Impacts for Operational Phase**

| OPERATIONAL PHASE IMPACTS: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **ALTERNATIVES** | **Road Geometry Alternative 1 & Canal Works** | | **Road Geometry Alternative 2 & Canal Works** | | **Road Geometry Alternative 3 & Canal Works (preferred)** | | **No-go Alternative** | |
| **Impact:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** | **Significance before mitigation:** | **Significance after mitigation:** |
| **BOTANICAL ASPECTS:** Impact on associated floral species assessed as a result of wetter conditions related to increased stormwater run-off | High (-) | Low (-) *Note mitigation is implementation of another alternative | Medium (-) | Low (-) | Medium (-) | Low (-) | No impact | Not Applicable |
| **BOTANICAL ASPECTS:** Loss of Cape Lowlands Freshwater Wetlands (ESNR) as a result of the replacement of road reserve vegetation buffer and subsequent edge effect on the wetland park border edge. | High (-) | High (-) | Medium (-) | Medium (-) | Medium (-) | Medium (-) | No impact | Not Applicable |
| **FRESHWATER ASPECTS:** Modification of flow during operational activities | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **FRESHWATER ASPECTS:** Limited ***disturbance of freshwater related habitats*** at the road | Low (-) | Very Low (-) | Low (-) | Very Low (-) | Low (-) | Very Low (-) | Very Low (-) | Very Low (-) |
| **VISUAL ASPECTS:** Overall improvement to the appearance of the relevant portion of Govan Mbeki | Medium (+) | Not Applicable | Medium (+) | Not Applicable | Medium (+) | Not Applicable | No impact | Not Applicable |
| **REDUCTION IN EMISSION OF GREENHOUSE GASES:** Operation of the proposed route (i.e., the use of the route for public transport) would result in an increasing number of people making use of public transport over private transport. This would reduce the per capita emission of greenhouse gases in the surrounding community and beyond. | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | No impact | Not Applicable |
| **SOCIO-ECONOMIC ASPECTS: Improved Accessibility:** Provision of improved accessibility for previously disadvantaged communities with respect to employment, economic centres and places of education and recreation. | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | Medium (+) | Not Applicable |
| **PUBLIC SAFETY (Non-Motorised Transport-NMT):** Improvements to safety for all those accessing the area via NMT. | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | No impact | Not Applicable |
| **TRAFFIC:** Improvements to traffic conditions in the area | High (+) | Not Applicable | High (+) | Not Applicable | High (+) | Not Applicable | No impact | Not Applicable |

## SECTION I: FINDINGS, IMPACT MANAGEMENT AND MITIGATION MEASURES

| | |
|---|---|
| 1. | Provide a summary of the findings and impact management measures identified by all Specialist and an indication of how these findings and recommendations have influenced the proposed development. |

There was a total of six specialist studies undertaken for the proposed development of the proposed IRT bus lanes and foundation structures for the bus stops.

The specialist studies under the direction of the environmental team include:

- Heritage Screener (and NID) and Heritage Comment (detailed baseline report);
- Botanical Impact Assessment; and
- Freshwater Impact Assessment, and Risk Assessment.

Note that the original signed specialist declarations for these studies will be appended to the final BAR submitted to the DEA&DP for decision-making.

Other technical specialist expertise contributing to this Basic Assessment process:

- Stormwater Management Plan; and
- Landscaping.

**BOTANICAL IMPACT ASSESSMENT:**

Three key areas have been identified in Altern (2021), namely:

1) **Section A**: An area of Cape Flats Sand Fynbos from the intersection with Vanguard/Jakes Gerwel Drive running approximately 450m to the east (refer to Figure 29)- now it holds no listing in terms of biodiversity spatial planning (because it has been heavily disturbed, and is degraded being in an advanced state of transition from native to non-native cover resulting in the almost non-existence of indigenous species, associated vegetation type and eco-system function) and the preferred alternative would encroach approximately 200m$^2$ outside the road reserve in this area.
2) **Section B**: An area of Cape Lowlands Freshwater Wetlands which is part of the ESNR (refer to Figure 29), and the ESNR also comprises Cape Flats Sand Fynbos, Cape Flats Dune Strandveld and is a Protected Area. The preferred alternative does not encroach into ESNR and would be located in the road reserve, in an area which is in a degraded and transformed state with the native vegetation community structure, composition and regenerative capacity lost.
3) **Section C**: An area of Cape Flats Dune Strandveld mapped as "Other Natural Area" from the intersection with Duinefontein Road running approximately 350m to the east (refer to Figure 29). The entire portion of the section which would be developed on as part of the proposed development (for all alternatives) occurs on vegetation that is in a degraded and transformed state with the native vegetation community structure, composition, and regenerative capacity lost.

Some trees were also identified along the route, however none have been found to be of significant age (25+ years) or are protected, as they are listed as least concern (LC) on the Red List of South African Plants. The trees are not considered to be of botanical importance (Altern, 2021).

Altern (2021) notes that the area within the fenced boundaries of the ESNR is of a high sensitivity and must be conserved, however the preferred alternative (as well as Alternative 2) does not encroach into this area. Alternative 1 would encroach into the highly sensitive area, which is part of the reason why it is not preferred.

Overall, the portions of the abovementioned vegetation types within the proposed boundaries of the route have been found to be entirely transformed or degraded with little ecological value (Altern, 2021). Throughout the route the preferred Alternative (as well as Alternative 2) would have no direct footprint outside the road reserve (with the exception of the preferred alternative encroaching into approximately 200m$^2$ of the transformed and delisted CBA) in the abovementioned sensitive sections, however Alternative 1 would encroach beyond the road reserve into these areas, hence part of the reason for not preferring Alternative 1 from a botanical perspective (Altern, 2021).

The potential impacts of the proposed development have been identified in Altern (2021) as follows:

- Direct, permanent loss of Low Sensitivity vegetation at the construction phase. Included in this is loss and degradation of areas identified as replaced Cape Flats Sand Fynbos, transitioned Cape Lowlands Freshwater Wetlands, and replaced Cape Flats Dune Strandveld as well as an area mapped as ONV for the City of Cape Town BioNet.
- Operational phase impacts are likely to include changes to roadside conditions and associated species as a result of increased water run-off.

The primary cumulative impact is considered to be the ongoing loss of an Endangered vegetation types, however given the state of the vegetation within the footprint of the proposed route, the impact is considered low (Altern, 2021).

The No go alternative has been found to likely to have a Low negative botanical impact, with ongoing degradation of the site by activities such as pedestrian traffic, alien invasive plants, mowing activities, etc (Altern, 2021).

The significance of the loss of vegetation as well as resultant effects of wetter ground on flora is considered low negative with mitigation and the significance of the edge effect on the ESNR border edge is considered to be medium negative and they cannot be mitigated (Altern, 2021). Mitigation measures provided by Altern (2021) are included in the EMPr.

It is important to note that no offset has been suggested, particularly for proposed development adjacent to ESNR, due to the fact that the development along this stretch takes place almost entirely with the designated road reserve which is, along with the areas outside of this road reserve, of very poor degraded quality. The only real loss in this area would be of the buffer which is limited and generally comprising exotic grass (Altern, 2021).

***Addressing I&AP Comments: More detail and an appropriate motivation for not considering a biodiversity offset has been included in response to issues raised in this regard by the City of Cape Town Biodiversity Branch.***

If the direct footprint or excessive indirect effect were upon, or through, an area of conservation importance or high quality, rare or endangered vegetation then an offset would be more appropriate however in this instance this is not the case as the only real loss is a limited poor quality buffer within a designated road reserve and an associated indirect impact edge effect for which provision has been made in terms of water and nutrient run-off management (Altern, 2021). An offset of the same vegetation quality that would be lost is hardly worth making provision for and efforts could be much better spent in ensuring adequate protection of the Edith Stephens new edge through the channelling system than finding an offset to 'balance' out the spatial extent loss elsewhere (Altern, 2021).

Refer to Appendix G(c) for the full report.

The findings of Altern (2021) have influenced the proposed development as follows:

- No sensitivities or development constraints found within the limits of the footprint provided by the preferred alternative, other than the ESNR, which lies adjacent to the site.
- Intentional design to avoid any sensitivities adjacent to the road where unacceptable adverse impacts would occur.
- Limit development footprint of preferred alternative to be within highly degraded, transformed areas which would result in low impact in this regard.
- The loss of pavement trees would also be compensated for from an aesthetic perspective by the landscaping component of the proposed development.

**HERITAGE NID:**

A Heritage Screener was conducted, and it was found that the route contains no areas of heritage significance (note that it is abutted by two areas of interest namely the ESNR and the Lutheran Church Complex) and therefore no further assessment would be necessary (O'Donoghue, 2018). Comment was obtained from HWC confirming that no further assessment would be necessary for both the proposed road widening as well as the elevated intersection at the Duinefontein Road/ Govan Mbeki Intersection. Refer to Appendix E(1) for the confirmation from HWC that no further studies would be required.

Therefore, no further response is required by the proposed development in this regard as it already avoids sensitivities.

**HERITAGE COMMENT:**

Following the request of local Councillors to conduct a deeper investigation into the local culture and heritage which would potentially be affected by the proposal, the NID was updated, and a more detailed assessment was undertaken (refer to Appendix E(1) for the full Heritage Comment report).

The updated heritage report found (refer to Appendix E(1) that there are four key sites adjacent to the proposed road expansion which may have heritage significance, but upon closer examination would either not be affected or do not hold cultural significance (O'Donoghue, 2018). The sites identified are indicated in Figure 31, Figure 32, Figure 33, and Figure 34.

Note that the four buildings identified in item number 3 in Figure 31 constitute the traffic school and the building identified in item 4 in Figure 31 is the Fezeka building. Neither of the buildings/ structures identified or the ESNR fall within the scope of the proposed road expansion and would not be affected (O'Donoghue, 2018). There is a possibility that the Eucalyptus trees would be removed, however this would be suitably mitigated through the implementation of planting new suitable trees in appropriate road reserve positions suggested by a Landscape Architect, as per the requirement of O'Donoghue (2018).

Beyond the immediate context of the site, the updated report also identified a list of sites in Gugulethu and Nyanga which hold cultural significance to the local communities. Refer to Figure 35 as well as to the full Heritage Comment in Appendix E(1) for a larger, clearer image. It is important to note that none of the sites identified in Figure 35 would be encroached upon by the proposed road expansion.

Finally, an additional site of importance was highlighted by one of the local Councillors as being important to the community. The property is across the railway line at the Lotus Canal (refer to Figure 36) and initiation ceremonies take place thereon. It was further indicated that the community would like to enclose the area by planting some trees and that the site be used as an initiation school. With respect to the proposed road widening, the proposal would not encroach upon the cadastral boundary of the site. The development and landscaping on that particular erf is not part of this proposal, however it is suggested that the local community engage their relevant Ward Councillor on their needs for the site.

**FRESHWATER IMPACT ASSESSMENT:**

With regard to freshwater features on or near the site, five wetlands and one watercourse were identified (Belcher *et al*, 2021). The watercourse is the Lotus River, and the wetlands are a mixture of seasonally to permanently inundated areas with the ESNR being the only ecologically important wetland in the area (Belcher *et al*, 2021).

The Lotus River comprises largely of an artificial canal system having naturally occurred as a series of wetland areas rather than a channelled aquatic ecosystem (Belcher *et al*, 2021). It is in an extensively to critically modified ecological state and the ecological importance and sensitivity is considered to be low (Belcher *et al*, 2021). An important aspect of the river is the wetland

areas associated with it, most notably the Zeekoevlei. Most of the fish species in the Zeekoevlei are alien with the only indigenous fish being the Cape Galaxias (Belcher *et al*, 2021). A number of frog species are found in the area (e.g., Clicking Stream Frog, Common Platanna, Arum Lily From and, most notably, the endangered Western Leopard Toad (Belcher *et al*, 2021).

The wetland types for each of the five are summarised by Belcher *et al* (2021) as follows:

- Permanently to seasonally inundated reed dominated depression wetlands (i.e., Wetlands 3 and 5);
- Seasonally inundated wetlands that comprise of a mix of grass and sedges with some reeds (Wetland 1 and 2); and
- The ESNR which contains permanently inundated as well as seasonally inundated areas (Wetland 4). The ESNR is also a protected area.

The wetlands within the study area, with the exception of the ESNR wetland areas are thus considered to be seriously and close to critically modified (Belcher *et al*, 2021). The ESNR wetlands (i.e., wetland 4) are considered to be moderately modified, as alien flora and urban encroachment has been relatively reduced through the protection of the area (Belcher *et al*, 2021).

Approximately 750 $m^2$ of the ESNR Wetland occurs within the proposed development envelope, however this area is not within the fenced-off ESNR which is significantly more transformed (Belcher *et al*, 2021). The portions of the remaining wetlands (i.e. wetlands 1, 2, 3, 4 and 5) that occur within the road reserve and the proposed boundaries of the expansion activities are of very low significance, are often subject to disturbance and do not provide any valued goods and service with the exception of the mitigation of stormwater impacts (Belcher *et al*, 2021). If disturbed, these wetland areas and functionality will easily re-establish (Belcher *et al*, 2021).

Belcher *et al* (2021) notes that the following impacts are anticipated:

- Limited disturbance to/loss of freshwater related habitats at the road- Wetlands and Lotus River
- Impairment of downstream water quality impacts as a result of runoff from road and the construction activities.
- Modification of flow during construction activities.
- Modification of flow during operational activities.
- Limited disturbance of freshwater related habitats at the road.

Surrounding urban activity and the existing Govan Mbeki Road have cumulatively contributed to the modification of the instream and riparian aquatic habitat of the Lotus Canal and wetland areas, therefore the cumulative impact of the proposed development would be considered to be of a low to very low significance, with most of the impacts occurring during the construction phase (Belcher *et al*, 2021).

These impacts were all found to very low negative with the implementation of mitigation measures (Belcher *et al*, 2021). A Risk Matrix has also been compiled for the proposed development, which indicates low risk for the preferred alternative (Belcher *et al*, 2021).

With respect to the proposed alternatives, road geometry Alternatives 2 and 3 are preferred as Alternative 1 would encroach upon approximately 2000$m^2$ of the more sensitive areas of the ESNR as opposed to the 750 $m^2$ of encroachment into a more transformed area of the Edith Stephens Nature Reserve associated with Alternatives 2 and 3 (Belcher *et al*, 2021). With respect to the no-go alternative, it is anticipated that the *status quo* would remain which means that the aquatic features would remain significantly modified, with the exception of the ESNR which would be managed for biodiversity conservation and educational purposes (Belcher *et al*, 2021).

Refer to Appendix G(b) for the full report.

**Response**

The presence of the Lotus Canal has informed the design of the proposed roadway in terms of providing for the additional design requirements for a retaining wall and balustrade as described in the project description. The design would not have a significant effect on the water flow of the canal and the wall would stop the existing flooding occurring along Govan Mbeki Road (GIBB, 2021). New pedestrian bridges would also be provided as part of these works in order to provide the communities nearby with continued access to Govan Mbeki Road. The design also considers existing flood conditions of the Lotus Canal. The stormwater management system has also been designed to respond to the current conditions of the Lotus Canal in terms of connecting into the existing minor drainage network where possible and that with the new minor drainage system, the system would be able to convey greater than the 1:10-year period and the road would convey up to- and including the 1:50- year return period (GIBB, 2021). Overall, this would provide an improvement on current flooding conditions.

With regard to wetlands, the preferred alternative (i.e., Alternative 3) has been designed to avoid as much of the wetland within the route as possible, and where it does encroach into the wetland adjacent to the ESNR, is in a heavily degraded area where the impact on the wetland would be low (Belcher *et al*, 2021). Further design considerations for protection of the wetlands are evidence in the stormwater management plan, and slope of the roadway, which would direct run-off from the road away from ESNR.

There are also general management measures which have been included in the environmental specifications in the EMPr to prevent significant and unacceptable adverse impacts of the watercourses associated with the proposed development. The EMPr also strictly requires that the ESNR be a no-go area.

**FRESHWATER IMPACT RISK ASSESSMENT:**

Belcher (April 2021) confirms that Freshwater features occurring within the study area comprise of the middle reaches of the Lotus Canal as well as permanently to seasonally inundated wetland areas. In general, the habitat integrity of the wetlands as well as the Lotus Canal within the study area is in an extensively to critically modified ecological state. Furthermore, the ecological importance and sensitivity of these freshwater features is mostly low (Belcher, April 2021). The development of a rapid transport bus network along the proposed routes is not likely to have any significant ecological impacts from a freshwater

perspective given the current state of these aquatic ecosystems and the existing impacts of the surrounding land use activities on them (Belcher, April 2021). Belcher (April 2021) concludes that the final extent of the proposed road upgrades will not result in any significant loss of aquatic habitat and thus no wetland offset areas are deemed to be required. The proposed works will however be directly adjacent to aquatic habitats and thus pose a risk of altering the characteristic of the wetland/watercourses.

In response to this, the proposed development footprint for the preferred alternative avoids any sensitive wetland areas. **As such, no wetland offsets are recommended.**

**STORMWATER MANAGEMENT PLAN**

Gibb (2019) provides the following findings following the assessment of existing stormwater conditions, as well as consideration of future modelled conditions:

- The existing Lotus River Canal can generally convey the 1 in 50 year return period energy level, with a 300m reach overtopping the southern embankment and causing localised flooding within the northern carriageway of Govan Mbeki Road.
- The proposed design (viz. a concrete abutment along the majority of the reach of the Lotus River Canal to act as both a traffic barrier and a flood protection wall) can convey up to and including the 1 in 50-year return period flood levels, except for a short reach upstream and downstream of the upper pedestrian bridge which is designed for the 1 in 50 year water level and is slightly overtopped by the energy level.
- The proposed minor stormwater drainage system shall be affected by backwater and some localised flooding for both the 1 in 10 year and 1 in 50-year return periods is expected during peak flow conditions. This would have however occurred in the existing drainage scenario as the existing stormwater drainage system pipes discharging into the Lotus River Canal are just above invert level of the channel and not above the 1 in 10 year or 1 in 50-year return period water levels. The flooding is however considered to be more of an inconvenience rather than a fatal flaw.
- Maintenance is a key factor in assuring that the stormwater drainage system functions acceptably.

Gibb (2019) distils the recommendations to the following:

- The proposed limited design (i.e., construction of the concrete abutment wall only, with no additional volumetric increase in the channel section) be accepted and be used as a basis for Stage 4 and Stage 5 of the design and construction process.
- The upgrading of Edith Stevens Pond and the provision of additional volume within the Lotus River Canal be assessed once the Ultimate Design Scenario (i.e., a Closed Median Station) is constructed; as the Closed Median Station shall have a significantly greater impact on the estimated flood levels within the Lotus River Canal.

In terms of new infrastructure, it has been determined by GIBB (2019) that no additional regional infrastructure would be required. Locally, a new minor system of a series of underground pipelines to convey the stormwater from the road into existing stormwater lines, or to catchpits and then to 375mm diameter outlet pipes, which would daylight into the Lotus Canal. The stormwater drainage systems discharging into the Lotus River Canal are shown in Figure 9 and Figure 10.

The Stormwater Management Plan has received in principal approval from the City of Cape Town roads and stormwater branch (refer to Appendix G(d)), and it is recommended that the final plan also be approved by the City of Cape Town Roads and Stormwater Management Branch prior to the commencement of construction activities.

A stormwater management plan has been included in Appendix G(d) and is to be observed in proposed road widening activities.

**Response**

Of importance for this Basic Assessment process is the manner in which stormwater would be directed adjacent to ESNR. Stormwater run-off from the road adjacent to ESNR would be carefully managed in order to prevent surface as well as sub-surface flow from the road entering into the ESNR by directing it away from ESNR into the Lotus Canal. This has been deliberately devised and no construction in the ESNR is recommended in the stormwater management plan (Gibb, 2021). The stormwater measures are included in the design specifications of the EMPr.

Note that the issue of stormwater and how it would ensure that ESNR remains separate has been discussed at length with the City of Cape Town Environmental Management branch and representatives from ESNR (refer to Appendix F for the relevant meeting minutes), and although the design has been amended slightly (in response to more detailed stormwater assessment and modelling- an initially proposed sub-surface barrier has been omitted from the proposed design) following these discussions, the intention of prevention of stormwater run-off from entering the ESNR would still be achieved. The revised plan has also been assessed and considered by the freshwater ecologist and botanist in their various assessments and the anticipated impacts remain low (Belcher *et al*, 2021, and Altern, 2021). Furthermore, the proposed design would have cumulative impacts on the river systems of low to very low significance (Belcher *et al*, 2021), and the impact on the Lotus Canal in terms of disturbance to/loss of freshwater habitat would be very low (-) (after mitigation) (Belcher *et al*, 2021) thereby providing a design of very low impact.

**LANDSCAPING**

Landscaping would entail a combination of planting of grasses, trees, groundcovers, and paving (OVP, 2021). In more high traffic areas, there would be a combination of pedestrian crossings (i.e., informal, painted) as well as some resilient urban elements such as concrete seat walls (OVP, 2021). There would also be some larger palms as well as rock and stone fields for space-defining elements (OVP, 2021). At the larger nodes, the aforementioned elements would also be included (OVP, 2021).

Refer to Appendix P for a draft Landscaping Plan.

**Response**
The landscaping strategy is included as part of the proposed development in order to uplift the aesthetics of the area. The inclusion of water-wise, low maintenance plants would provide for a more sustainable project and the SUDS principles of the City of Cape Town would be applied. The EMPr includes the landscaping as part of the design considerations, and measures such as the waterwise and indigenous plants and SUDS alignment are included in the design specifications of the EMPr.

| 2. | List the impact management measures that were identified by all Specialist that will be included in the EMPr |
|---|---|

**Heritage**:
The following recommendation has been included as a planning specification in the EMPr: Although the (Eucalyptus) trees provide contextual and aesthetic value to the local setting, it is recommended that trees can be removed and new suitable trees to the CCT Landscape Architect be planted in appropriate road reserve positions (O'Donoghue, 2018).

Further to the above, O'Donoghue (2018) notes that the application for the IRT road works on the Govan Mbeki Road section under investigation in the heritage report should be approved by DEA&DP as no heritage resources are impacts, except the potential removal of the Eucalyptus trees that can be mitigated with the planting of new trees. Therefore, no further recommendations in this regard exist and so, are not in the EMPr.

**Freshwater:**
Recommendations/ mitigation measures provided in Belcher *et al* (2021) include the following:

- *Planning Phase*:
  - Stormwater infrastructure from the roads can be channelled into the permanently and seasonally inundated wetlands (Wetlands 1, 2, 3 and 5) as this is their primary function.
  - The Lotus Canal is subjected to high loads of solid waste that could be reduced through the proposed covering of the existing channel. It is however recommended that this aspect also be mitigated by constructing additional sediment and solid waste trapping/mitigation measures upstream of the section of the canal to be enclosed at the Govan Mbeki and Duinefontein Road Intersection. ***Note that additional traps specifically would not be installed in the Lotus Canal because there are existing grates which serve this purpose (i.e., trapping solid waste) and these are maintained by the City of Cape Town Stormwater and Catchment Management branch. Furthermore, the design of the works to the Lotus Canal has considered the need for accessibility for maintenance. The proposal also does not intend to enclose the canal nor carry out the installation of sand traps within the canal. The specialist has confirmed that the assessment of the impact remains as indicated (T Belcher pers. comms. 26/08/2021).***
- *Construction Phase*:
  - The wetland areas that are outside of the proposed activities should be demarcated as no-go areas prior to commencement of construction activities.
  - Clearing of invasive alien plants within the disturbed areas and road reserves should take place during and after construction. Any invasive alien plants occurring within the road reserve should be removed during construction according to methods as provided by the Working for Water Programme.
  - No rubble or waste material associated with construction works should be dumped into the wetland depression areas.
  - Contaminated runoff from construction site(s) should be prevented from directly entering the wetlands or the Lotus Canal (i.e., The aquatic features within the immediate area), the laydown area and main construction site(s) for the aquatic features.
  - Where construction sites are located near the wetlands, all materials on the construction sites should be properly stored and contained.
  - Disposal of waste from the sites should also be properly managed.
  - Construction workers should be given ablution facilities at the construction works that are located away from the aquatic features (at least 30m) and regularly serviced.
  - These measures should be addressed, implemented, and monitored in terms of the EMP for the construction phase.
  - Disturbed areas should be revegetated post-construction phase to reduce the risk of erosion – these areas should be monitored and kept free of invasive alien plant growth.
  - Disturbance and the use of machinery in the larger wetland areas, as well as the dumping of soil and other material into wetlands should preferably be avoided.
  - Where soil is disturbed, alien vegetation should be controlled using appropriate methods such as removal with saws and herbicides.
  - Construction work within or adjacent to the aquatic features should preferably take place before the onset of the rainfall period to ensure minimal impact on flow.
  - Work within the Lotus Canal and wetland areas, particularly for the more sensitive wetland areas should be limited as far as possible in terms of their spatial and temporal extent and the disturbed areas rehabilitated immediately afterwards.
  - Construction within or adjacent to the canal and wetland areas should as far as possibly take place during the drier months of the year.
  - Once construction is complete, the area should be rehabilitated to resemble that of the surrounding bed and banks and where necessary vegetated preferably with indigenous grasses such as fynkweek Cynodon dactylon and buffalo grass Stenotaphrum secundatum. Invasive kikuyu grass Pennisetum clandestinum should be removed wherever possible.
  - Any invasive alien plants or waste material should be removed from the canal and wetland areas during and after construction works is complete.

- Work should be limited as far as possible to within the road reserve and the disturbed areas rehabilitated immediately afterwards.
- Construction in or adjacent to the aquatic features should as far as possible take place during the drier months of the year.
- Rubble and debris from existing structures and construction activities should be removed after construction is complete so as not to impede runoff to the aquatic features.
- Once construction is complete, the disturbed areas should be reshaped and where necessary vegetated (invasive alien vegetation such as kikuyu grass should not be planted in these areas and any regrowth of the invasive grass in the wetland areas should be avoided).
- Storm water runoff along the road should be incorporated into the road upgrade designs and adequately mitigated.
- Stormwater mitigation measures should be put in place along the road.
- The following general guiding principles should be followed during the construction phase and any maintenance needed:
  - Minimise the spatial extent of disturbance and maximise physical diversity;
  - Minimise the frequency of, or requirement for, maintenance activities;
  - Minimise upstream/downstream impacts;
  - Do not impede the movement of aquatic and riparian biota;
  - Minimise alterations to flow- and sediment-capacity;
  - Rehabilitate and re-vegetate after construction;
  - Clear alien plant species;
  - Maintain aquatic ecosystem minimum base flow at all times;
  - Maintenance activities are best done during the dry season;
  - Whenever possible existing access routes should be used;
  - All potential pollutants should be kept away from aquatic ecosystems;
  - Spoil material should be removed to approved dumping sites;
  - After construction, any areas within the maintenance footprint that have been degraded from their condition prior to construction and as a result of the construction activities must be restored to their former condition;
  - Channelization or canalization is actively discouraged;
  - Valuable habitats should be retained; and
  - Cleared plant material must be removed from aquatic ecosystems.
- It would be important to rehabilitate any disturbed aquatic habitat adjacent to the road works, particularly within the wetland areas adjacent to Edith Stephens Nature Reserve.
- Increased sedimentation or turbidity at each of the construction works within the aquatic features should be mitigated as far as possible by making use of sandbags, settling ponds or screens to minimise the load of sediment being washed downstream of the works.

- *Operational Phase*:
  - The new integrated rapid transit system should address the stormwater runoff and the associated litter from the road into aquatic features. Any signs of erosion along the road, particularly as a result of storm water runoff to the watercourse, should be identified and addressed as soon as possible.
  - Any signs of erosion along the road, particularly as a result of storm water runoff to the watercourse, should be identified and addressed as soon as possible.

Note that Belcher (April 2021) notes that no wetland offsets are considered necessary, therefore none are recommended and included in the EMPr.

**Botanical**

Mitigation measures/recommendations have been proposed by Altern (2021) as follows:

- *Planning Phase:*
  - Alternative 1 is to be avoided, particularly in Section B (ESNR), which must be avoided.
  - The City Parks Department is to be consulted in terms of section 7.2.1.1. of the CoCT Tree Management Policy regarding the removal of trees along the proposed route, specifically with regard to the procedures to be followed.
  - No stormwater is to be discharged into natural vegetation.
  - Roadside kerbs and gutters are to channel surface run-off into the stormwater system.
- *Construction Phase:*
  - Rectification, namely the rehabilitation of areas disturbed by construction activities through planting of appropriately sourced locally indigenous Strandveld species is recommended as part of the general mitigations of the IRT route. This involves the removal of pushover spoil, levelling out and revegetating the damaged areas.
  - All site camps, laydown areas etc. must be located in already transformed areas. These must be "fit-for-purpose" i.e., not an open space but rather a hard surfaced fenced off area.
  - All construction areas must be clearly demarcated and the area outside of this to be labelled as "Out-of-bounds" so as to prevent encroachment into areas not required for construction.
  - No storm water is to be discharged into natural vegetation. Roadside Kerbs and gutters are to be used to channel this into storm water system. All run-offs from hard constructed surfaces must be directed into the existing storm water run-off system. No storm water is to be discharged into natural vegetation. This includes the ESNR. Because paved roads (and to a lesser degree, unpaved roads) are impervious, they increase runoff and otherwise alter hydrological patterns (NRC, 2005 in Altern, 2021).
  - No locally indigenous flora may be used for landscaping unless from a guaranteed source within the study area i.e., originating from a natural population in the study area. This is to prevent genetic contamination of existing populations. If a species is moved outside of its natural range and into that of a closely-related species,

problems associated with competition and hybridisation (when two varieties or species interbreed to form a hybrid or "mix") could result (Esler, Pierce & De Villiers, 2014, Pg. 151, in Altern, 2021).

- No exotic or commercially available seed mixes may be used for rehabilitation of disturbed areas. The City's Biodiversity Management Branch should be consulted as to suitable plants and their availability. Suitable species which must come from a reputable supplier and grown from a guaranteed source in close proximity (25km) to the disturbed site must be used. These include but are not limited to the readily available species indicated in Table 9.

**Table 9 Recommended Species for Rehabilitation**

| **Groundcover Species** | | | |
|---|---|---|---|
| *Arctotis stoechadifolia* | *Carpobrotus edulis* | *Geranium incanum* | *Helichrysum dasyanthum* |
| *Helichrysum patulum* | *Pelargonium capitatum* | *Pelargonium botulinum* | *Ruschia macowanii* |
| **Shrub Species** | | | |
| *Athanasia dentate* | *Chrysocoma coma-aurea* | *Chrysanthemoides monilefera* | *Cliffortia orbcordata* |
| *Elegia tectorum (Wetland)* | *Eriocephalus africanus* | *Felicia filifolia* | *Ficinia lateralis* |
| *Ficinia nodosa (Wetland)* | *Juncus Kraussi (Wetland)* | *Metalasia muricata* | *Muraltia spinosa* |
| *Plecostachys serpyllifolia* | *Salvia Africana-lutea* | | |

- *Operation Phase:*
  - No storm water is to be discharged into natural vegetation. Roadside Kerbs and gutters are to be used to channel this into storm water system. All run-off from hard constructed surfaces must be directed into the existing storm water run-off system. No storm water is to be discharged into natural vegetation. This includes the Edith Stephens Nature Reserve as per the Proposed Designs 1 & 2*. Because paved roads (and to a lesser degree, unpaved roads) are impervious, they increase runoff and otherwise alter hydrological patterns (NRC, 2005). Drainage of water is an important driver of vegetation structure and composition in Strandveld and thicket ecosystems (Helme, Rebelo, 2016).
  - The Unconstrained alternative design (i.e., Alternative 1) should be 'Avoided' due to the associated Construction phase impacts even though in the hypothetical Operational Phase of this Unconstrained alternative design the particular impact can be somewhat mitigated.

Note that Altern (2021) recommends that **no biodiversity offset is necessary**, and therefore there are no such recommendations in the EMPr.

**Stormwater**

The stormwater management plan predominantly comprises an explanation on modelling data to indicate the limited impact that the proposed design would have on the Lotus Canal, however, the following recommendations/ measures by GIBB (2021) can be found in the report:

- The proposed limited design (i.e., construction of the concrete abutment wall only with no additional volumetric increase in the channel section) be accepted and be used as a basis for Stage 4 and Stage 5 of the design and construction process.
- It is considered unnecessary at this stage to upgrade the Edith Stevens Pond.
- The upgrading of Edith Stevens Pond and the provision of additional volume within the Lotus River Canal be assessed once the Ultimate Design Scenario (i.e., a Closed Median Station) is constructed; as the Closed Median Station shall have a significantly greater impact on the estimated flood levels within the Lotus River Canal. **Note that this does not fall within the scope of the development footprint proposed.**
- All civil infrastructure will be handed over to the City of Cape Town for ownership, management, and maintenance. This includes the stormwater drainage and management infrastructure proposed in this LSWMP.
- As part of GIBB's stakeholder engagement process before and during the compilation of the Stormwater Management Plan, it was confirmed in a meeting on the 18th of October 2017 that TDA's Asset Management will be maintaining all stormwater infrastructure assets apart from canals and watercourses. The latter will resort under the ownership, and thus maintenance responsibility, of the City's Catchment Management Branch.
- For maintenance of the conduit and road drainage network: Structural best management practices must be designed and constructed to facilitate and minimise operational and maintenance requirements. Typically, the User Client will be left with the responsibility of maintaining the infrastructure and would need to devise a maintenance programme to regularly attend to the infrastructure as and when necessary. Besides the regular collection of litter on the sidewalk and roadway and general housekeeping to keep it clear of gross surface pollutants, regular maintenance to the stormwater management systems on an ongoing basis should as a minimum include:
  - Physically inspect the culvert outfall ends during rainfall events to verify that stormwater is being discharged from the system.
  - Regular cleaning of sedimentation from accessible points on the stormwater system, including stormwater catchpits and manholes, specifically prior to the beginning of the wet season.
  - Regular cleaning of gross pollutants such as plastic, paper, etc.

**Landscaping**

The draft landscaping plan would be implemented, and this is included in the EMPr. Altern (2021) also made recommendations regarding landscaping which would be included in the EMPr.

Additional measures regarding planting and water management provided by OVP (2018) include the following:

- Planting and Water Management:

- Stormwater from roadway catchpits and sub-surface drains, located below the kerb lines, is to be directed to tree and shrub planting areas.
- Water-wise planting strategies, permeable hardscaping and sustainable drainage systems address the draught conditions.
- The emphasis on seasonal, low-maintenance planting strategies, permeable surfaces and durable hardscapes contribute to the all-round sustainability of the project.
- The City's Management of Urban Storm-water Impacts Policy requires new developments above a certain size to use SUDS principles to manage storm-water run-off. Any water passing out of a development area must not flow faster or at greater volumes than before development. They also have to include measures to encourage infiltration and to reduce water pollution. These principles would be applied where possible.

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| 3. | List the specialist investigations and the impact management measures that will **not** be implemented and provide an explanation as to why these measures will not be implemented. |

There are no measures relevant to the proposed development recommended by the specialists that have not been included in the EMPr for implementation, or which have not yet been implemented.

There is, however, one measure from Belcher et al (2021) which has not been implemented exactly as stated, but the overall intention and minimisation of the impact concerned would still be achieved. Belcher et al (2021) states that "The Lotus Canal is subjected to high loads of solid waste that could be reduced through the proposed covering of the existing channel. It is however recommended that this aspect also be mitigated by constructing additional sediment and solid waste trapping/mitigation measures upstream of the section of the canal to be enclosed at the Govan Mbeki and Duinefontein Road Intersection". **Note that additional traps specifically would not be installed in the Lotus Canal because there are existing grates which serve this purpose (i.e., trapping solid waste) and these are maintained by the City of Cape Town Stormwater and Catchment Management branch. Furthermore, the design of the works to the Lotus Canal has considered the need for accessibility for maintenance. The proposal also does not intend to enclose the canal nor carry out the installation of sand traps within the canal. The specialist has confirmed that the assessment of the impact remains as indicated (T Belcher pers. comms. 26/08/2021).**

There is one measure that is included in the stormwater management plan which covers a potential future planning scenario which is beyond the scope of this proposed development, and it would concern a wider development footprint over the Lotus Canal, at a point in time where capacity of the proposed system may need to be increased. This measure is not included in the EMPr because it is not relevant, and this proposed development (specifically, the preferred alternative) does not encroach into the ESNR and considers it a no-go area. The recommendation is as follows: "The upgrading of Edith Stevens Pond and the provision of additional volume within the Lotus River Canal be assessed once the Ultimate Design Scenario (i.e., a Closed Median Station) is constructed; as the Closed Median Station shall have a significantly greater impact on the estimated flood levels within the Lotus River Canal." It is, however, addressed in the recommendations by the EAP which states that any future widening, particularly where the Lotus Canal and ESNR are concerned, would need to be considered against the requirements of the applicable law at the time.

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| 4. | Explain how the proposed development will impact the surrounding communities. |

The accessibility and connectivity for the surrounding communities and businesses will be significantly improved upon.
The communities will have safe, efficient, reliable, and affordable access to economic opportunities and the businesses would benefit from improved access for staff and clients.

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| 5. | Explain how the risk of climate change may influence the proposed activity or development and how has the potential impacts of climate change been considered and addressed. |

Given the location of the proposed development and Cape Town's history of drought, it is likely that the most significant impact of climate change would be related to variations in rainfall and water on site and extreme weather events (i.e., drought, flash floods, etc.). The primary manner in which to deal with such events is to address it as part of the stormwater management plan.

The stormwater management plan has also accounted for the water on the road, as well as potential extreme weather events. It has considered the effects of climate change using externally researched and accepted (by CoCT) rainfall data and climate change modelling requirements (i.e., the 2017 Climate Change Model), which indicates the total storage volume required in the system (Gibb, 2021). The volume requirements are addressed in the proposed design (Gibb, 2021). The stormwater management plan also complies with the City of Cape Town Sustainable Urban Drainage Systems (SUDS) policy (which is implicit in the City of Cape Town's in principal approval of the Stormwater Management Plan indicated in Appendix G(d)). The stormwater drainage system proposed could cater for a 1 in 50 flood event (Gibb, 2021).

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| 6. | Explain whether there are any conflicting recommendations between the specialists. If so, explain how these have been addressed and resolved. |

There have been no conflicting specialist recommendations.

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| 7. | Explain how the findings and recommendations of the different specialist studies have been integrated to inform the most appropriate mitigation measures that should be implemented to manage the potential impacts of the proposed activity or development. |

None of the design alternatives under consideration would fall within any areas of heritage sensitivity (O'Donoghue, 2018) and so there are no further constraints to development that must be considered in that regard. There are other areas that have also been identified as culturally significant by local communities and a Ward Councillor, and the proposed development would not encroach into these either.

Specialist assessment in terms of terrestrial and aquatic biodiversity align on the finding that ESNR, located adjacent to the preferred alternative (and alternative 2), is a highly sensitive area and development within that Protected Area must be avoided. Hence the preference for Alternative 3, which would not encroach into the ESNR, but would only be located within the transformed wetland area adjacent to it.

With regard to wetlands, the preferred alternative (i.e., Alternative 3) has been designed to avoid as much of the wetland within the route as possible, and where it does encroach into the wetland adjacent to the ESNR, it would be in a heavily degraded area where the impact on the wetland would be low (Belcher et al, 2021). Further design considerations for protection of the

wetlands are evidence in the stormwater management plan, and slope of the roadway, which would direct run-off from the road away from ESNR.

The presence of the Lotus Canal has informed the design of the proposed roadway in terms of providing for the additional design requirements for a retaining wall and balustrade as described in the project description. The design would not have a significant effect on the water flow of the canal and the wall would stop the existing flooding occurring along Govan Mbeki Road (GIBB, 2021). New pedestrian bridges would also be provided as part of these works in order to provide the communities nearby with continued access to Govan Mbeki Road. The design also considers existing flood conditions of the Lotus Canal. The stormwater management system has also been designed to respond to the current conditions of the Lotus Canal in terms of connecting into the existing minor drainage network where possible and that with the new minor drainage system, the system would be able to convey greater than the 1:10-year period and the road would convey up to- and including the 1:50- year return period (GIBB, 2021). Overall, this would provide an improvement on current flooding conditions.

The preferred alternative is intentionally comparatively narrower near/in areas which are indicated in the City of Cape Town Biodiversity network and the portions of the various vegetation types within the proposed boundaries of the route have been found to be entirely transformed or degraded with little ecological value (Altern, 2021).

The proposed landscaping design would be incorporated into the stormwater management system where needed and would also make use of appropriate plant species as recommended by the botanist. It is also appropriate for the various widths/ cross-sections of the proposed expansion, given that there are various strategies to be applied depending on the typology of the stretch in question.

Management measures for design, planning, construction, and operation phase of the proposed development have also been integrated into the specifications contained in the EMPr, which would also be conditions of Environmental Authorisation (if granted).

| 8. | Explain how the mitigation hierarchy has been applied to arrive at the best practicable environmental option. |
|---|---|

The implementation of the impact mitigation hierarchy which strives to avoid impacts and if unavoidable, minimise and remedy such impacts, whilst maximising positive effects, with the purpose of maintaining the interdependent sustainability requirements for biophysical system integrity and basic human well-being, avoiding inappropriate trade-offs that result in the loss of essential ecosystem functioning is one of the ways through which sustainability can be achieved (DEA,2014).

DEA (2014) explains that an impact mitigation hierarchy approach should be implemented to avoid inappropriate trade-offs that could result in the loss of important ecosystem functions and significant societal impacts. The impact mitigation hierarchy dictates those impacts should firstly be avoided, but if unavoidable, appropriate measures should be taken to minimize, reduce and rectify such impacts, in a manner that will achieve sustainability objectives and targets (DEA, 2014). If impacts cannot be avoided, minimized, reduced (over time), or rectified, consideration can be given to the implementation of offsets, depending on the significance of such impacts (DEA, 2014). DEA (2014) further cautions that offsets are therefore only to be used in exceptional circumstances to compensate for residual impacts caused by development projects, whether these are unavoidable societal impacts, harm to ecosystem functioning or the loss of biodiversity.

The mitigation hierarchy has been applied at various levels through the conceptualisation of the preferred alternative for the proposed development, with the overall goal of the proposal being one which provides a MyCiTi connection along Govan Mbeki Road which does not adversely affect the natural and cultural environment/context to unacceptable levels. The proposed development balances these considerations through reaching a compromise between maximum development footprint avoidance of environmentally sensitive areas. In terms of aquatic and terrestrial resources, the primary one is ESNR and unacceptable negative impacts on ESNR would be avoided through the implementation of the preferred alternative (particularly over Alternative 1), however, most of the management of impacts would be achieved through minimisation/ mitigation of impacts. In certain case, further levels of the mitigation hierarchy are applied and particularly in cases where avoidance is possible for certain areas/aspects and not others, there would be on-site compensation implemented.

Many impacts cannot be completely avoided, given the limited extent of land which is available alongside the existing roadway for development and given that the existing road is to be used as a basis for widening (which is preferable over the construction of a completely new road. The preferred alternative, however, does not have any significant development constraints.

More detail on which aspects of the proposal relate to which levels of the mitigation hierarchy are provided in Table 10.

**Table 10 Aspects of Proposed Development as they relate to the various levels of the mitigation hierarchy[5]**

| Mitigation hierarchy | Aspects of the project |
|---|---|
| Avoid | The highly sensitive ESNR (which is sensitive from both an aquatic and terrestrial biodiversity perspective) would be avoided through the implementation of the preferred alternative (i.e., Alternative 3).<br>Other areas of indigenous vegetation would be avoided through the preferred alternative (i.e., Alternative 3) which has a comparatively narrower footprint in areas where biodiversity spatial planning has indicated sensitivity.<br>Further wetlands have been avoided through iteration of the preferred alternative.<br>Potential issues which could result from the water table in some parts of the stretch of the route as well as surface water |

[5] Table developed based on information derived from DEA (2014)

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| | flow would be avoided through design, particularly for the stormwater system. |
| Minimise / mitigate | Construction work near sensitive areas would be limited to times of the year where these systems are least vulnerable, as far as possible (Belcher et al, 2021).<br>The EMPr contains several mitigation measures to reduce the adverse impacts of the proposed development either to (in the case of visual/ aesthetic, socio-economic and emissions) yield positive impacts or (as is largely the case with freshwater ecology and some botanical aspects) to minimise the adverse impacts to acceptable levels (i.e., low, or very low negative impact). Note that the EMPr contains specifications for the planning/detail design phase, construction phase, and operation phase in order to cover the full development cycle applicable to the proposed development (note, decommissioning is not applicable as it is not the intention of the Applicant to decommission the proposed MyCiTi infrastructure). |
| Restore | There are also rehabilitation requirements where construction activities may have resulted in changes to any particular area.<br>The proposed landscaping includes indigenous plants which would contribute to the vegetation and aesthetics along the route. |
| Offset/ compensate | The proposed landscaping proposes planting to compensate for the Eucalyptus trees identified as a potential heritage resource, noting that O'Donoghue (2018) confirms that the planting is appropriate to compensate for their removal, where necessary.<br>There are aspects linked to compensation incorporated into the EMPr, namely the strict compliance monitoring and auditing specifications for the construction phase.<br>Fines are recommended for transgressions and the audit reports would be submitted to both the DEA&DP and the CoCT for their records.<br>It should, however, be noted that terrestrial biodiversity offsets are not necessary for the preferred alternative (Altern, 2021) and neither are wetland offsets (Belcher et al, 2021) due to the transformed and degraded nature of the environment in these areas and the fact that encroachment into them would be minor. |

The most significant aspect to this process is the protection of the ESNR, which would not be threatened with the implementation of the preferred alternative (i.e., Alternative 3) and the mitigation measures included in the EMPr.

# SECTION J: GENERAL

## 1. Environmental Impact Statement

| 1.1. | Provide a summary of the key findings of the EIA. |
|---|---|

Through Chand's investigation, which entailed inputs from the design team, the specialists and key I&APs (i.e., State Departments), a number of environmental impacts were identified and considered.

Those aspects that influenced the EAP's opinion on this question are primarily related to the following points:

- The various considerations which were applied to the selection of the route in terms of size, spatial planning, and environmental requirements related to biophysical sensitivities (and avoidance thereof) within the preferred alternative for the proposed route;
- The need and desirability of the proposal with regard to the establishment of an efficient and safe public transport system as well as increased connectivity and economic access for previously disadvantaged communities;
- The positive impact on the local community in terms of job creation as well as improvements to public transport and economic access; and
- The improvements to local NMT and the road network.

In addition, the following aims of the proposal as well as the greater network with which it is associated have also been considered:

- Development of vibrant areas by removing barriers to access;
- Improvement of connectivity throughout the Metropolitan areas;
- Increased efficiency of people's movement and as an aid to the movement of commuters and development activities.
- Improved access and transportation routes to encourage future development and intensification of use;
- Decrease in walking distances from residential and places of work to public transport facilities; and

- Reinforced convergence on core routes and access points.

The baseline assessments conducted by the freshwater and botanical specialists found no highly sensitive areas or development constraints for the preferred alternative. Alternative 1 was found to encroach into a highly sensitive area in terms of biodiversity and freshwater resources (i.e., ESNR), therefore this alternative is not favoured by the Applicant or the specialists (Altern, 2021 and Belcher et al, 2021 respectively).

The botanical impacts (for Alternatives 2 and 3) were all found to be low (-) and are associated with loss of low sensitivity transformed and degraded replaced Cape Flats Sand Fynbos, transitioned Cape Lowlands Freshwater Wetlands, and replaced Cape Flats Dune Strandveld as well as an area mapped as ONV for the City of Cape Town BioNet, in addition to anticipated changes to roadside conditions and associated species as a result of increased water run-off. The only exception to this would be the medium (-) impact anticipated at the ESNR due to the edge effect on the ESNR border edge. It has been concluded that no biodiversity offset would be required. The impacts (for Alternatives 2 and 3) of the proposed expansion and the associated footprint thereof on freshwater resources were all found to be very low (-) and are associated with limited disturbance to or loss of freshwater related habitats, modification of flow, and reduction of water quality. In terms of the proposed changes to the Lotus Canal, impacts are anticipated to be very low (-). A Risk Assessment has also concluded that there would be Low risk with the implementation of the preferred alternative. No heritage impacts were identified and HWC has confirmed that no further assessment is necessary (refer to their comment in Appendix E(1)). No adverse impacts on stormwater capacity were identified and the stormwater study and overall management approach has been devised in accordance with the requirements of the biophysical specialists as well as a as the City of Cape Town Roads and Stormwater Branch. The proposed treatment of stormwater run-off relative to ESNR is also aligned with the general requirements of number of City of Cape Town's branches, namely Catchment and Stormwater Management, Biodiversity and Environmental Management (noting that the design has been re-iterated following meetings with these branches). The proposal also presents low resource requirements as no services (e.g., water, electricity, solid waste removal, and effluent management) would be required during the operational phase.

Generally, the construction phase impacts, with mitigation implementation, are anticipated to be Low (-) to Very Low (-) for the preferred alternative and the operational phase impacts, also with mitigation implementation, are anticipated to be the same (for the preferred alternative), with the exception of the Medium (-) impact anticipated for loss of transitioned Cape Lowlands Freshwater Wetlands (ESNR) as a result of the replacement of road reserve vegetation buffer and subsequent edge effect on the wetland park border edge. This particular impact would be Medium (-) for Alternative 2 as well, but High (-) for Alternative 1, and is a key consideration in the selection of the preferred road geometry alternative. Note that the impacts of the development within the Lotus Canal would be Very Low (-) from an environmental perspective.

It is believed that the impacts that have been identified have been adequately addressed through changes in the proposed footprint (e.g., devising alternatives which avoid sensitive areas), or would be mitigated to acceptable levels through the final design and/or the strict implementation of the EMPr. A number of specialists have been involved in order to inform the investigation which provided both independence and transparency in the process as well as appropriate skills and expertise.

The most significant aspect to this process is the protection of the ESNR, which would not be threatened with the implementation of the preferred alternative (i.e., Alternative 3) and the mitigation measures included in the EMPr.

Alternatives have been assessed in the form of the preferred development alternative, two road geometry alternatives and the no-go or no-development alternative. In addition, alternatives within preferred development alternative have also been considered in terms of stormwater discharge point/ routing, as well as the best practicable design for the Lotus Canal and pedestrian bridges. The preferred alternative has been selected as a result of the positive impacts as well as the lack of and/r limited negative impacts and is also the preferred development alternative from an ecological perspective (Altern, 2021 and Belcher et al, 2021). In general, the impact of the proposed development is positive, while the impact of the no-go alternative would largely be zero, neutral or low negative (in the case of botanical impacts specifically). Furthermore, any positive impacts associated with the proposed development would be foregone should the no-go alternative be selected.

The EAP has been encouraged by the fact that the applicant and design team have been receptive to the issues raised by both specialist and I&APs throughout the process and appropriate mitigation has been put in place. In short, the design has been a co-operative and iterative process between all parties concerned.

Overall, all development must, in terms of Section 24 of the Constitution, be ecologically sustainable, and economic and social development must be justifiable. The freshwater impact assessment and botanical impact assessment have considered the sustainability of the ecological aspects adjacent to the route and impacts have been found to be low, with mitigation and so the proposed expansion can occur sustainably from an environmental perspective. The mitigation measures are important and must be implemented. That is why they are included as specifications in the EMPr and are strongly recommended as conditions of authorisation in this Basic Assessment Report.

The economic and social aspects of the project are expected to be medium to high positive and would serve to provide connectivity, opportunity, and economic stimulus to previously disadvantaged communities, which are believed to be justifiable in the context of historic prejudice, intergenerational sustainability, and equity. Financial sustainability would be provided by the City of Cape Town through their various contracts for operations. In addition, the unconstitutional actions of a previous regime would be rectified while ensuring that society as a whole can still benefit from the improved connectivity and access provided by the proposed road widening for generations to come.

In conclusion, it is believed that the preferred alternative represents responsible development and would be an asset to the community and greater City of Cape Town, which is aligned with spatial planning goals, while not compromising the ecological integrity of the nearby sensitivities and having no impact on heritage/cultural areas of value to the communities and in terms of the NHRA. It is therefore believed that the preferred alternative (i.e., Alternative 3)/ the preferred expansion footprint should be authorised (noting that a specific plan should not be authorised as the details thereof may be further amended), subject to the

implementation of the mitigation measures included in this report and the EMPr, and also subject to resolution of any potential issues that may emerge through the current public review period of this report.

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| 1.2. | Provide a map that that superimposes the preferred activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. (Attach map to this BAR as Appendix B2) |
| | Refer to Appendix B2. |
| 1.3. | Provide a summary of the positive and negative impacts and risks that the proposed activity or development and alternatives will have on the environment and community. |

The negative impacts (with mitigation) anticipated as a result of the proposed development would largely occur during the construction phase and include the following:

- Loss of replaced Cape Flats Sand Fynbos (Former CBA2 Zone) Degraded and Transformed.
- Loss of transitioned Cape Lowlands Freshwater Wetlands (ESNR) Degraded and Transformed.
- Loss of replaced Cape Flats Dune Strandveld (Other Natural Vegetation) Degraded and Transformed.
- Limited disturbance to/loss of freshwater related habitats at the road- Wetlands during construction.
- Impairment of downstream water quality impacts as a result of runoff from road and the construction activities
- Modification of flow during construction activities.
- Visual impacts associated with construction activities (machinery, vehicle movement, site camp, signage, lighting and temporary services, wind-blown litter, erosion, and exposed surfaces).
- The land clearing and other construction activities will result in the generation of dust and noise which may be a nuisance to surrounding land users whilst construction is ongoing.
- Construction of the development and the associated use of natural resources, such as water, resources for the generation of energy, construction materials etc.
- Disturbance to local traffic conditions (both vehicular and pedestrian) as a result of construction vehicles accessing the sites during the construction activities.
- Limited disturbance of freshwater related habitats at the road- Lotus River during construction.
- Impact on associated floral species assessed as a result of wetter conditions related to increased stormwater run-off in the long-term.
- Loss of Cape Lowlands Freshwater Wetlands (ESNR) as a result of the replacement of road reserve vegetation buffer and subsequent edge effect on the wetland park border edge in the long-term.
- Modification of flow during operational activities in the long-term.
- Limited disturbance of freshwater related habitats at the road in the long-term.

Overall, the negative impacts are considered to be low or very low, with the exception of the edge effects, which are considered medium.

The positive impacts are either medium or high in significance and would last in the long-term and include the following:

- Creation of employment opportunities as a result of development and construction on the route (i.e., short-term). Additional indirect economic impacts (stimulus) will also be experienced.
- Overall improvement to the appearance of the relevant portion of Govan Mbeki
- Operation of the proposed route (i.e., the use of the route for public transport) would result in an increasing number of people making use of public transport over private transport. This would reduce the per capita emission of greenhouse gases in the surrounding community and beyond.
- Improved Accessibility: Provision of improved accessibility for previously disadvantaged communities with respect to employment, economic centres and places of education and recreation.
- Improvements to safety for all those accessing the area via NMT.
- Improvements to traffic conditions in the area

The long-term significant positive impacts are considered to outweigh the largely short-term and low consequence negative impacts, provided that mitigation measures are implemented.

Refer to Table 7 and Table 8 for more detail.

## 2. Recommendation of the Environmental Assessment Practitioner ("EAP")

| | |
|---|---|
| 2.1. | Provide Impact management outcomes (based on the assessment and where applicable, specialist assessments) for the proposed activity or development for inclusion in the EMPr |

The EMPr has taken into account the impacts identified during this impact assessment process and has included all mitigations measures recommended by the independent specialists as well as those included by the EAP. Mitigation measures (i.e., environmental specifications) have been incorporated into all phases of development barring decommissioning (as this is not the intention of the Applicant), which facilitates integrated environmental management and the appropriate consideration of environmental issues at all levels and stages of the project.

The EMPr would be a legally binding document which would have to be implemented by the Applicant. There is also another layer of reporting contained in the EMPr, whereby an independent auditor would be involved in a regular basis during the construction phase, Auditing during the operational phase is limited, given the nature of the proposed development and (positive) operational impacts identified, however there is still a requirement for a single audit by an independent and suitably qualified professional within six months of operation. The remainder of operational audits would be at the discretion of the DEA&DP and subject to applicable environmental law at the time.

The impact management objective and outcomes are included in the EMPr and summarised in Table 11.

**Table 11 Summary of impact mitigation measures and outcomes as included in the EMPr**

| No. | Impact/ Aspect of the proposed development | Impact Management Objective | Impact Management Outcome |
|---|---|---|---|
| 1 | Detail design measures | To ensure that the final designs are in line with the considerations contemplated in the environmental assessment phase | No deviations from the specifications listed in the EMPr in this regard |
| 2 | Waste Management | To prevent pollution/contamination associated with the generation and temporary storage of general waste, hazardous waste construction rubble and litter generated by the workforce on site. | No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of waste generation and management activities. |
| 3 | Soil and Water Pollution Management | To prevent impacts on the wetland system, to prevent groundwater and freshwater pollution / sedimentation associated with the handling storage and use of hazardous materials or materials that have the potential to cause environmental harm. | No non-conformances, no evidence of sedimentation and no pollution groundwater and/or stormwater or any water courses as a result of the construction activities. |
| 4 | Protection of natural Features, Fauna and Flora | To ensure that no vegetative cover is removed and/or impacted on outside of the approved works area (i.e., the designated route corridor). To protect any protected plant species on the property and prevent impacts on fauna found on the site. To preserve the top layers of soil for use in the final landscaping. Appropriate temporary storage and stockpiling of topsoil to prevent erosion, sedimentation, and dust pollution. To avoid intrusion into the adjacent natural areas and prevent related impacts. | No removal of vegetation and/or other impacts on any vegetative cover in the area outside of the route corridor. No damage or defacing of any natural features situated in or around the site. No negative impacts on the breeding seasons of fauna found in the vicinity of the site (particularly within the ESNR). No harm or destruction of faunal habitats outside the road corridor or the death of any animals on the site or as a result of actions of removing fauna off site. |
| 5 | Protection of any Palaeontological and Archaeological Resources | Protection of archaeological and/or palaeontological resources on, or adjacent to the site. | No non-conformances in terms of the specifications contained in the EMPr and no impacts on such resources. |
| 6 | Noise Management | To avoid and/or minimise impacts on the adjacent residential communities and ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To provide a forum for any Interested and/or Affected Parties to raise their concerns and log complaints for remediation action and prevention of similar incidents. | No disruptions or nuisance to adjacent communities caused by noise from the construction site. Effective complaints handling. No repeat complaints received |
| 7 | Dust Management | No unacceptable levels of dust. To avoid and/or minimise impacts on the adjacent road network and communities and ensure that any such impacts are appropriately dealt with to prevent further impacts in the longer term. To prevent wind and water erosion and/or sedimentation of any natural features. To provide a forum for any Interested and/or Affected Parties to raise their concerns and log complaints for remediation action and prevention of similar incidents. | No disruptions to traffic, no nuisance to adjacent communities caused by dust. Effective complaints handling. No repeat complaints received. |
| 8 | Aesthetics/ Visual | To ensure that visual impacts are avoided as far as possible, and where these cannot be altogether avoided, that it is reduced to acceptable limits. | No unacceptable visual impacts occur as a result of construction activities. |
| 9 | Hazardous Substances Management | To prevent pollution or fire associated with the handling storage and use of materials deemed hazardous to human health or the environment. | No non-conformances and no pollution of soil, groundwater and/or stormwater as a result of the construction activities. No fires as a result of the handling / use of fuel. |

| | | | |
|---|---|---|---|
| **10** | Site Access, Access Routes and Traffic Management | To avoid and/or minimise impacts on the adjacent road network and road users any such impacts are appropriately dealt with to prevent further impacts in the longer term. To avoid construction related impacts associated with the movement of construction vehicles on adjacent residents. | No disruptions to traffic or adjacent residents, no damage to vehicles and related claims and no nuisance to adjacent communities caused by dust. |
| **11** | Labour Relations, Facilities and Site Health and Safety | To ensure the safety of all site personnel as well as the adjacent land users. | No injuries / incidents on site and emergency situations managed effectively. No safety breaches. |
| **12** | Incident Management | To guide the way in which emergencies and/or environmental incidents are handled on site and remediate any damage appropriately. To prevent the starting of fires on site. | No non-conformances and no adverse impacts on the environment as a result of emergency situations and/or environmental incidents. No fires started on the site. |
| **13** | Resource Use (Raw Materials and Resources) | To prevent excessive and unnecessary use of natural resources and wasting of natural resources during the construction phase. | Development of an attitude towards a reduction in natural resources consumption where feasible and possible |
| **14** | Site Clean-up and Rehabilitation | To prevent impacts on the environment as a result of the conclusion of construction activities and any related impacts requiring rehabilitation actions prior to the contractors leaving the site. | No non-conformances with the specifications contained within the EMPr. |

| 2.2. | Provide a description of any aspects that were conditional to the findings of the assessment either by the EAP or specialist that must be included as conditions of the authorisation. |
|---|---|

- The EMPr and associated appendices (Appendix H) must be implemented, and the requirements therein considered and observed as conditions of authorisation;
- Mitigation measures noted from this BAR are included in the EMPr (refer to Appendix H). The EMPr should be incorporated into all tender and contract documentation.
- An ECO must be employed throughout the duration of the construction phase of the activity and the Applicant should also ensure that operational phase recommendations are strictly adhered to.
- The final Site Plan is to be approved by the City of Cape Town prior to commencement of construction;
- The final approved (by City of Cape Town) Site Plan is to be provided to the DEA&DP for their information prior to the commencement of construction;
- The Site Manager of the ESNR and a representative from City of Cape Town Biodiversity should be engaged during the compilation of final Stormwater Management Plan and associated detail design of sections of the route adjacent to ESNR (this is to include discussion on the construction and maintenance of a fence).

***Addressing I&AP Comments: The requirement to engage ESNR and City of Cape Town Biodiversity has been added at their request.***

- The final Stormwater Management Plan (refer to Appendix G(d) for the indicative stormwater management plan) should approved by the City of Cape Town and be implemented throughout operational phase of the development.
- The landscaping plan must be approved by the City of Cape Town prior to commencement of the construction phase.
- The final approved (by City of Cape Town) Landscaping Plan is to be provided to the DEA&DP for their information prior to the commencement of construction;
- As updated plans and documentation are required in terms of the EMPr which can only be completed upon detailed design of the proposed development, the updating of these items should not necessitate an Amendment Application for an amendment to the EMPr for each site. The updates are restricted to the following:
    - Incorporate conditions and specifications imposed by the Department of Environmental Affairs and Development Planning if Environmental Authorisation is granted;
    - Incorporate conditions and specifications imposed by the Department of Water and Sanitation as part of the General Authorisation;
    - Reflect the final approved Road Upgrade Plans (for the route and the Lotus Canal);
    - Reflect the final approved Stormwater Management Plan; and
    - Reflect the final approved Landscaping Plan.
- Any future widening, particularly where the Lotus Canal and ESNR are concerned, would need to be considered against the requirements of the applicable law at the time.

| 2.3. | Provide a reasoned opinion as to whether the proposed activity or development should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be included in the authorisation. |
|---|---|

The decision for the authorisation lies with the Competent Authority and should be taken based on the information provided. This report contains clarity on unresolved issues from the pre-application draft Basic Assessment report as well as incorporated

comments from I&APs on the post-application draft Basic Assessment Report, following public review. The decision should be taken by considering all impacts and the way they weigh up against one another, as well as the I&AP comments and the responses provided thereto. Substantive pre-application and post-application public participation have been undertaken with a variety of stakeholders and all issues raised have been addressed in this final report and in the proposed development where appropriate (for example, the avoidance of stormwater run-off into ESNR, or the siting of the footprint within the road reserve near the Fezeka building, etc.).

Independent specialist assessment has culminated in recommendations to approve the proposed development, in terms of freshwater ecology, botany, as well as from a heritage/ cultural perspective. With the implementation of mitigation measures, any impact in this regard (noting that there are none anticipated from a heritage perspective) can be mitigated to low, or very low negative levels of significance. There are also no new bulk services required for the proposed development and the stormwater management plan already has in principal approval from the City of Cape Town. The proposal would also provide general improvements to the aesthetics of the area and provide accessibility and safe public, NMT and pedestrian movement through the area. There are no significant adverse environmental impacts anticipated and so there is no reason why the preferred alternative of the proposed development should not be granted Environmental Authorisation in that regard.

Should the DEA&DP grant Environmental Authorisation for the proposed development, it is critical that mitigation measures required by specialists and specifications documented in the EMPr are adhered to. The remaining recommended conditions of authorisation are listed in Section J 2.2. above. This report has undergone public review and has been provided to the DEA&DP for final decision-making.

| | |
|---|---|
| 2.4. | Provide a description of any assumptions, uncertainties and gaps in knowledge that relate to the assessment and mitigation measures proposed. |
| | It is uncertain whether the Contractor would implement the EMPr as required, however there are legal mechanisms in place to avoid thisand the EMPr (and EIA Regulations, as amended) includes a requirement for auditing and the Applicant/Holder of the Environmental Authorisation would be required to include the EMPr in all contract documentation.<br><br>The impacts indicated for the "existing rights" alternative have not been contemplated "with mitigation" as, in some cases, there is no legal provision for implementation of specific measures in the form of an EMPr beyond the general laws that apply under existing rights (e.g., Municipal By-Laws and NEMA "duty of care").<br><br>The post-application Draft BAR has undergone public review thus comments thereon is no longer a gap in knowledge.<br><br>It is assumed that all information provided by the project team and other parties are true and correct and that the intention of the Applicant is indeed to contain the proposed development within the proposed footprint. It is also assumed that the proposed development scope would be developed as per the description provide in this report, noting that deviations from this may trigger provisions of the NEMA, NWA or NHRA.<br><br>Note that assumptions related to specialist assessments are indicated in the relevant specialist reports in Appendix G. There are, however, no significant gaps in knowledge in any of those assessments that would reduce confidence in the findings. There are no uncertainties directly pertaining to the proposal. The general political climate and management priorities within the City of Cape Town and other state departments are uncertain, however this is not considered material in terms of the DEA&DP's ability to make a decision on the application. |
| 2.5. | The period for which the EA is required, the date the activity will be concluded and when the post construction monitoring requirements should be finalised. |

Refer to Table 12 for the various suggested approval validity periods.

**Table 12 Suggested EA Approval Periods**

| | | |
|---|---|---|
| i. | the period within which commencement must occur; | 5 years |
| ii. | the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects; | 8 years (this is recommended given that the City of Cape Town procurement and contracting processes take time to resolve and, further, there are temporal limitations on when construction activities can occur nearby the aquatic aspects within and adjacent to the route) |
| iii. | the period for which the portion of the environmental authorisation that deals with operational aspects is granted. | 1 year (this is recommended so that an audit can be done to confirm the development proposal has been developed as planned/intended) |

## 3. Water

| Since the Western Cape is a water scarce area explain what measures will be implemented to avoid the use of potable water during the development and operational phase and what measures will be implemented to reduce your water demand, save water and measures to reuse or recycle water. |
|---|
| The proposed development will not use water during the operational phase, however water saving principles have been included in the EMPr (refer to Appendix H) for the construction phase. Some examples include the following:<br>• Conduct activities in accordance with any water restrictions set by the local Municipality in terms of the applicable By-Law which may be in place at the time.<br>• At the time of writing this document, the City of Cape Town is on the tail-end of a severe drought. With that in mind, Contractors are encouraged to use treated effluent water for construction activities as far as possible. Contractors may apply to the City for the use treated effluent water.<br>o Treated effluent can be supplied in three different ways:<br>o By connecting to the treated effluent pipe network;<br>o By hiring a metered treated effluent standpipe; and<br>o By collecting it directly from the wastewater treatment works.<br>• To apply for supply of treated effluent water, residents should please visit the City's website: www.capetown.gov.za/treated-effluent. This page outlines the application process and contains all relevant guidelines and forms, as well as copies of related by-laws for download.<br>• The City's Water By-laws prohibit the use of drinking water for non-structural work such as dust control.<br>• Where the use of potable water is required, such as for mixing of cement, the Contractor must submit an application for the use of potable water on site prior to starting construction.<br>• As far as possible, limit the use of potable water to activities which require them.<br>• It is suggested that a temporary storage tank for rainwater be set up at the construction camp, which could collect rainwater during the construction phase for use in the works.<br>• Dripping taps/ leaking pipes should be addressed immediately to limit waste of water. |

## 4. Waste

| Explain what measures have been taken to reduce, reuse or recycle waste. |
|---|
| Construction waste will include general waste (such as plastic packaging, strapping, lunch wrappers.), rubble (like broken asphalt, waste concrete) and limited quantities of hazardous waste items (e.g., paint tins, etc.) and waste oil resulting from the servicing or repair of vehicles and plant on site. Construction contractors will remove the waste to registered landfill sites or approved recycling facilities. This would amount to ~8000m$^3$ per month for approximately 30 months (information provided by GIBB in 2019).<br><br>During construction approximately 25800m$^3$ of road pavement material would also be spoiled offsite to a registered landfill or used in other roadworks where the material quality suits (data provide by GIBB in 2019).<br><br>Given that the EMPr requires the use of portable toilets, no wastewater would be discharged into the existing sewer system during construction.<br><br>The construction phase is anticipated to continue over a period of approximately 30 months.<br><br>Measures for the reduction, reuse and recycling of waste would apply only to the construction phase. Some measures have been included in the EMPr (Appendix H) and these include the following:<br>• Make use of locally supplied building materials where possible.<br>• Reclaimed building materials should be used where possible.<br>• In accordance with the integrated waste management approach to be followed through the construction phases of the development, materials used or generated by construction, or the construction areas of other City of Cape Town projects nearby shall be re-used as far as possible.<br>• No materials containing invasive plant seeds, litter or contaminants may be imported. The Supplier shall be informed of the sites of origin of imported gravel, sand, stone, etc. and shall have the authority to reject imported material if deemed necessary.<br>• Durable building materials to increase the lifespan of the developments should be used.<br>• Low VOC paints & building materials should be used.<br>• Adequate storage facilities for raw materials should be provided in order to minimise damage during construction works.<br>• Where possible, suppliers with a green footprint or certification are to be used.<br><br>No specific measures would be implemented during the operational phase as there would be no operational waste produced as a result of the proposed development. |

## 5. Energy Efficiency

| 8.1. | Explain what design measures have been taken to ensure that the development proposal will be energy efficient. |
|---|---|
| The development provides little opportunity for energy-saving as it requires limited electricity - only for the proposed street lighting. Low energy lighting will be implemented, and the lights will be on during the night only.<br><br>Energy efficient building principles will be followed during the construction phase. | |

## SECTION K: DECLARATIONS

### DECLARATION OF THE APPLICANT

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

I, Neil Slinger ID number Not applicable in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;

- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;

- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;

- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;

- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;

- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents, and employees, from any liability arising out of the content of any report, any procedure, or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

**Note:** If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.


Signature of the Applicant: Date:

City of Cape Town

Name of company (if applicable):

**DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")**

I Marielle Penwarden, EAPASA Registration number 2019/1988 as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal, or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to, and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

Signature of the EAP: Date: 26 August 2021

Chand Environmental Consultants cc

Name of company (if applicable):

**DECLARATION OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")**

I Claudette Muller, EAPASA Registration number pending as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, and that:
- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal, or other interest in the activity or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to, and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

23 November 2021

Signature of the EAP: Date:

Chand Environmental Consultants cc

Name of company (if applicable):

**DECLARATION OF THE REVIEW EAP**

NOT APPLICABLE

## DECLARATION OF THE SPECIALIST

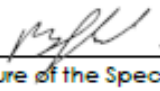
**Note:** Duplicate this section where there is more than one specialist.

**DECLARATION OF THE SPECIALIST**

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

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

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



Signature of the Specialist: Date: 26/08/2021

GIBB (Pty) Ltd

Name of company (if applicable):

**DECLARATION OF THE SPECIALIST**

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

I BRIDGET O'DONOGHUE as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

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

Bodo Mc June 24/06/2021

Signature of the Specialist: Date:

BRIDGET O'DONOGHUE ARCHITECT HERITAGE SPECIALIST ENVIRONMENT.

Name of company (if applicable):

## DECLARATION OF THE SPECIALIST

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

I ...ANTONIA BECKER....., as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

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

Signature of the Specialist: 7 JUNE 2021 Date:

BLUESCIENCE (PTY) LTD
Name of company (if applicable):

**DECLARATION OF THE SPECIALIST**

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

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

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

Signature of the Specialist: 26 August 2021 Date:

MCC Environmental Services (Pty) Ltd

Name of company (if applicable):

**DECLARATION OF THE REVIEW SPECIALIST**

NOT APPLICABLE

## SECTION L: REFERENCES

GIBB July 2018. Contract No.: 59C/2014/15 IRT: Provision of Professional Services in Respect of the Design and Construction of the Phase 2A Trunk & Feeder Infrastructure (East) LOCAL STORMWATER MANAGEMENT PLAN FOR THE SOUTHERN CATCHMENT PLANNING REGION (WORK PACKAGE E1) J35437 First Revision. GIBB (Pty) Ltd, Cape Town

GIBB. 9 April 2021. Contract No.: 59C/2014/15, IRT: Provision of Professional Services in Respect of the Design and Construction of the Phase 2A Trunk & Feeder Infrastructure (East). Local Stormwater Management Plan for the Southern Catchment Planning Region (Work Package E1- Addendum), J35437, Second Revision. GIBB (Pty) Ltd, Cape Town

S, Altern. 5 May 2021. Botanical Assessment of 59C/2014/15- IRT Phase 2A Trunk & Feeder Infrastructure: East- Vibra St – Sonwabile Dr. NCC Environmental Services, Westlake

T Belcher. 15 April 2021. Proposed Integrated Rapid Transit System on the Cape Flats, Phase 2A East- Lansdowne-Wetton Corridor for Trunk E1, E2, E3 and E4 Govan Mbeki Road Between Heinz and Monwood: Freshwater Risk Assessment. BlueScience, Somerset West

T. Belcher, G, Grobler. S, Barrow, July 2021. Freshwater Impact Assessment Report for the Proposed Integrated Rapid Transit System on the Cape Flats: Phase 2A East- Lansdowne-Wetton Corridor for the Section of Govan Mbeki Road Between Heinz and Monwood. BlueScience, Somerset West