

PUBLIC OPEN HOUSE MEETING



PROPOSED UPGRADE OF MAIN ROAD 191 (R45), BETWEEN PAARL AND FRANSCHHOEK.



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1 SITE DESCRIPTION

The existing Main Road 191 (MR191) starts at the intersection with Old Paarl Road (MR189) and continues past Simondium in a south easterly direction through Franschhoek towards Villiersdorp. This proposal involves the upgrading of the MR191 between km 0,0 at the intersection with Old Paarl Road and continues past Simondium in a south easterly direction up to km 9,57 near the intersection with Helshoogte Road (MR 172).

The study area is located within the Cape Winelands District Municipality (CWDM) of the Western Cape Province. The section of the MR191 earmarked for up-grading is located within the Drakenstein Local Municipality and Stellenbosch Local Municipality.

The portion of the road under assessment traverses seven streams, all of which are tributaries of the Berg River, with the general topography of the area being described as flat with gentle gradients and horizontal curvature. The existing pavement structure comprises mostly of a natural gravel subbase and natural gravel basecourse with a conventional chip and spray bituminous surfacing. Furthermore, the existing road has two lanes with a surfaced width of 6,8 metres, a cross section of 2 x 3,4 metres lanes and un-surfaced gravel shoulders, for the most part.

Property details:

- Road & Road Reserve (MR191: km 0,0 – km 9,57)
- Portion 48 of the Remainder of Farm 832
- Portion 36 of the Remainder of Farm 832
- Portion 47 of the Remainder of Farm 832
- Portion 50 of the Remainder of Farm 832)
- Portion 54 of the Remainder of Farm 832
- Portion 56 of the Remainder of Farm 832



2 OPEN HOUSE MEETING

The purpose of the meeting is to present the development proposal to the public and to give the public an opportunity to discuss the findings with the specialists involved.

WHAT IS AN OPEN HOUSE MEETING?

- ❖ There will be no formal presentation.
- ❖ Information is presented in poster format.
- ❖ Posters are mounted on the wall for public review.
- ❖ Relevant specialists are available to discuss queries and concerns.
- ❖ Please look at the posters and ask questions for clarity.
- ❖ Fill in your comments on the Comments Sheet provided.
- ❖ Hand in your Comments Sheet to us, or forward it to the contact details on the Sheet.



WHAT ARE THE RESPONSIBILITIES OF INTERESTED AND AFFECTED PARTIES (I&APs)?

- ❖ You should take this opportunity to participate in the public participation process.
- ❖ You should provide the project team with accurate and relevant information.
- ❖ You should engage in the process according to the agreed procedures and timeframes.
- ❖ You are not responsible for making a decision about the development. You can however, influence the outcome of the process and/or decision.
- ❖ You are responsible for raising concerns about the project, but avoid making unrealistic demands or claims.
- ❖ Representatives of organisations or various sectors, while in this capacity, must ensure that they voice the views of their constituents, not their own opinions.

3a LEGISLATION

THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) [NEMA]:

According to the EIA Regulations 2014, as amended, environmental authorisation is required for the following listed activities:

Listing Notice 1 (GN R. 983):

12. The development of—(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; - excluding- (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.

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; but excluding where such infilling, depositing, dredging, excavation, removal or moving – (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) 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.

24. The development of a road –(i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (i) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road – (a) which is identified and included in activity 27 in Listing Notice 2 of 2014; or (b) where the entire road falls within an urban area; or (c) which is 1 kilometre or shorter.

45. The expansion of infrastructure for the bulk transportation of water or storm water where the existing infrastructure- (i) has an internal diameter of 0,36 metres or more; or (ii) has a peak throughput of 120 litres per second or more; and (a) where the facility or infrastructure is expanded by more than 1000 metres in length; or (b) where the throughput capacity of the facility or infrastructure will be increased by 10% or more; excluding where such expansion- (aa) relates to transportation of water or storm water within a road reserve or railway line reserve; or (bb) will occur within an urban area.

48. The expansion of- (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or (ii) dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more; where such expansion occurs – (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding- (aa) the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such expansion activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such expansion occurs within an urban area; or (ee) where such expansion occurs within existing roads, road reserves or railway line reserves.

3b LEGISLATION

56. The widening of a road by more than 6 meters, or the lengthening of a road by more than 1 kilometer- (i) where the existing reserve is wider than 13,5 meters; or (ii) where no reserve exists, where the existing road is wider than 8 meters; excluding where widening or lengthening occur inside urban areas.

THE NATIONAL RESOURCES HERITAGE ACT, 1999 (ACT NO. 25 OF 1999) [NHRA]:

This Act governs all heritage resources in South Africa and is administered by the South African Heritage Resources Agency (SAHRA) and Heritage Western Cape (HWC) (in the Western Cape). In terms of Section 38 of the NHRA, the heritage process will form part of the EIA and the heritage resources authorities will therefore be key stakeholders in the process, but will not be decision makers for this application. HWC and SAHRA have commented on the previous application and have indicated that the application is supported and no heritage resources will be impacted on.

NATIONAL WATER ACT (ACT 36 OF 1998)[NWA]:

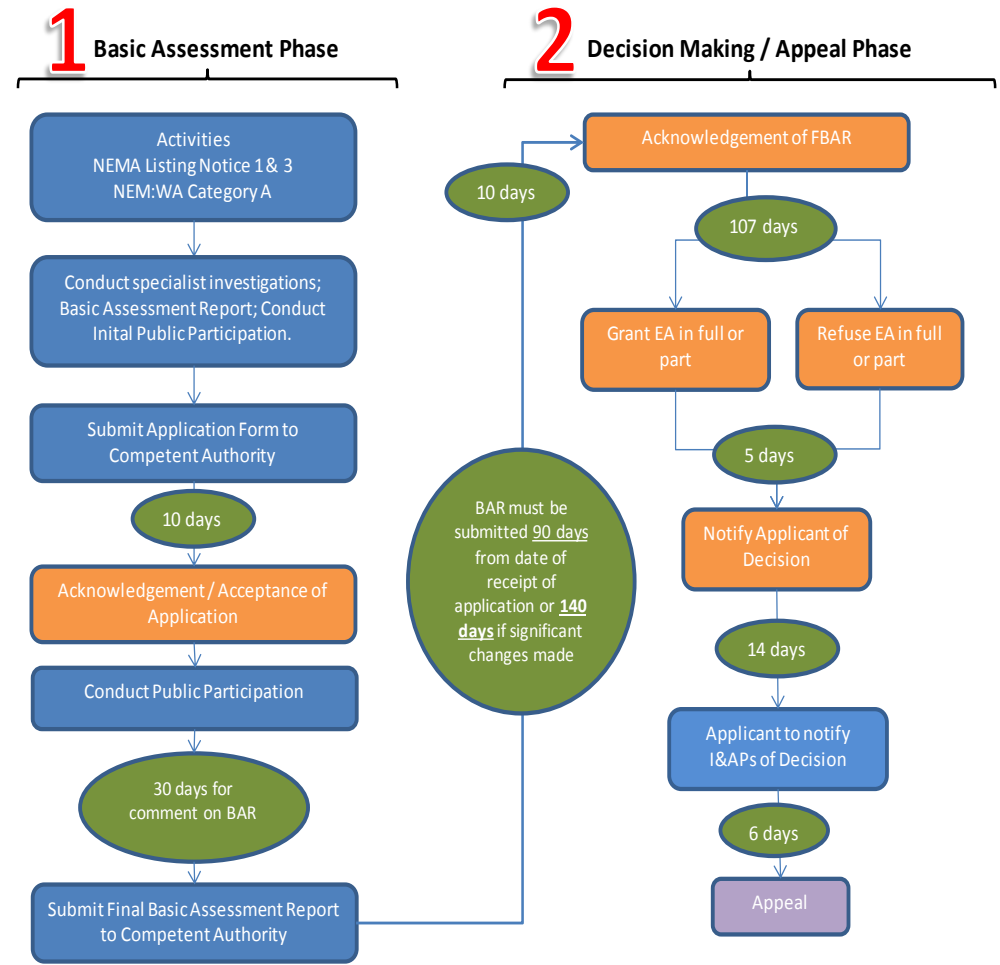
The purpose of the NWA is to provide a framework for the equitable allocation and sustainable management of water resources. The Act aims to regulate the use of water and activities (as defined in Part 4, Section 21 of the NWA), which may impact on water resources through the categorisation of 'listed water uses'. Defined water use activities require the approval of Department of Water and Sanitation (DWS) in the form of a General Authorisation or Water Use Licence authorisation. A General Authorisation has been registered by DW&S for this application.



4 BASIC ASSESSMENT PROCESS

PROCESS TO BE FOLLOWED:

- ✂ Identified I&APs.
- ✂ Appointed specialists to determine the current environmental status of the site and the constraints for development and to determine how significant the impact of the issues raised is likely to be for the different alternatives proposed.
- ✂ All potential I&APs were notified of the Draft BAR, including State Departments and Local Authorities.
- ✂ The project was advertised in the *Paarl Post*, *Eikestad Nuus* and *Die Burger*.
- ✂ Site notices were placed on site informing the general public of the process.
- ✂ A letter drop was undertaken in order to inform occupiers of the site and adjacent land.
- ✂ A copy of the report is available at the Paarl and Pniel Public Library, as well as on the DJEC company website.
- ✂ The Draft BAR and EMPr is available for a 30-day commenting period – **10 August to 11 September 2017**.
- ✂ An Open House Meeting will be held during this commenting period – **29 August 2017**.
- ✂ All comments received will be responded to in the form of a comments and response table to be included in the final BAR.
- ✂ The FINAL BAR and EMPr will then be submitted to DEA&DP, for a decision.
- ✂ You will be informed of **DEA&DP's** decision.



5a ALTERNATIVES



Option 1 (Orange): The intended diversion of MR191 was registered in 1989. 13 years later in 2002 the intended diversion was withdrawn due to the subsequent approval of the expansion of the mining activities on farm 815/1 which compromised the diversion route. Therefore this option was not further investigated.

Option 4 (Pink): This option approximately 500m to the east of the existing MR191 historical bridge was also investigated. It is situated opposite the DRE access and MR189 intersection and crosses over the existing strawberry farm of which approximately a third will be lost due to the road alignment. This alternative also involves the construction of a new two lane MR bridge over the railway line to acceptable geometric standards to accommodate both north and southbound traffic. This option also involves approximately

2 km of new road for which land will have to be expropriated and therefore more affected properties than with the preferred option. A complete new road will have to be constructed at a much higher cost than the upgrading of the existing road. This option involves the realignment of approximately 20% of the road section being upgraded. The last section of this road is also problematic where it will run between the existing brick quarry with very deep excavation on the one side and existing vineyards on the other side. The connection onto the existing MR191 alignment at the end of this option is also problematic where it will be substandard or alternatively expropriation and relocation will be required. Relocation of people living adjacent to the brick quarry will also be required. Therefore this option was not considered further.

5b ALTERNATIVES

Option 5 (Light Blue): This is an option approximately 1500m to the west of the existing MR191 historical bridge. The alignment starts on the existing Divisional Road 1103. A new two lane bridge over the railway line to acceptable geometric standards to accommodate both north and southbound traffic will be needed. The design speed has to be reduced to 60km/h for the first section of the road to minimise the expropriation required which is not preferred due to the class of road to be designed. The realignment of a portion of DR1103 will be required to create a new intersection onto the new MR191 alignment at a straight section with adequate sight distance and where the road level and super elevation is more favourable for an intersection. This intersection will still involve substantial expropriation together with the expropriation for the approximately 1,6km of complete new road. The new road construction over the 1,6km of new road will also be more expensive than the upgrading of the existing MR191. The connection onto the existing MR191 alignment at the end of this option is also problematic where it will be substandard or substantial expropriation and relocation will be required. Therefore this option was not investigated further.

Option 2 (Red): This option included the investigation of two Alternatives along this route. **Alternative 1** involved the proposed construction of a new single lane bridge on the western side of the existing bridge to accommodate the northbound traffic. The existing bridge would remain to accommodate the southbound traffic. However the vertical clearance of 3,8 m on the existing bridge is substandard and would in future require that heavy vehicles be diverted to the northbound carriageway. The existing MR191 route low point on the road below the historical bridge is 119.5m. This current level provides a substandard vertical clearance of 3,80m with higher vehicles often connecting with the arch section of the bridge as could be observed from the damage on the bridge on site. The originally proposed bridge adjacent and to the west of the existing historical bridge would be required to comply to the minimum clearance standard of 5.2m due to the required capital expenditure and the risk involved with substandard clearance. With a minimum bridge soffit level of 124.57m it will result in a maximum road centerline level of 119.37m at the road low point below the bridge. This is 0.13m below the existing road level which is frequently flooded. Alternative 1 was therefore not considered a viable option to pursue.



5c ALTERNATIVES

As a result of the flaws identified in Alternative 1, **Alternative 2** developed and involved the construction of a new two lane bridge to acceptable geometric standards on the western side of the existing bridge to accommodate both north and southbound traffic. The existing bridge would remain to accommodate pedestrian traffic. The bridge for this option was planned to pass under the railway line and over the Van Wyks River. However, the railway line and the Van Wyks River were posing numerous constraints for this alternative including the continued risk of potential flooding along this road. The option of removing the road and culverts below the historical bridge to increase the capacity was investigated together with a new structure below the proposed road alignment. Due to the minimum clearance road level the maximum drainage structure height is limited to 1.0m. This together with the available space limited the new structure to an in situ concrete structure of 4 / 3.0m x 1.0m. The capacity of this structure with inlet control is 24m³/s, which will result in the new road being overtopped and the low point on the road being flooded for the duration of the flood.

WorleyParsons looked at the option of canalizing this section of the Van Wyks River by means of a concrete canal from 100m upstream of the proposed road alignment to downstream of the existing historical bridge up to the low level crossing to the property owned by



Mr & Mrs Adams. This was done to investigate the option of maintaining supercritical flow throughout the canal and thereby increasing the capacity of the structures. The computer programme HEC-RAS (Hydrological Engineering Center's (HEC) River Analysis Systems, developed by the US Army Corps of Engineers) was used to determine water flow and energy levels for this proposed canalized section. It was however found for both the QT and Q2T of 30m³/s and 40m³/s respectively that supercritical flow could not be maintained throughout the canal with hydraulic jumps occurring before the originally proposed structures and through the historical bridge section. The removal of the existing road and culverts and the new drainage structures below the originally proposed MR191 route alignment together with the canalized section did not resolve the potential flooding risk. This option would also involve the lowering of the existing 700mm steel bulk water pipeline crossing the canal and the road alignment which would require additional scour and air valves on the pipeline.

5d ALTERNATIVES

In order for Alternative 2 to comply with drainage requirements, an additional railway culvert with size 3/3m x 0,9m would have to be installed underneath the railway line to the south, plus an additional culvert of the same size underneath the road in order to convey flows to the existing river stream, as well as an additional 4/3m x 1,0m multi-barrel in situ culvert underneath the new road directly north of the new railway underpass. However, the Van Wyks River section downstream of the historical bridge has a very flat slope and a restricted cross section which in combination has a backwater effect which causes the low lying area (Remainder of farm 832/48 and 832/47) to the north east of the river to form a flood plain during high flows. The new MR191 road level low point below the railway line bridge is such that damming of water would be restricted to 1.2m, after which flooding of the road would occur. The backwater effect in the Van Wyks River poses a real threat of exceeding this level and flooding the road. Increasing the width of the culverts below MR191 and the railway line will not have a significant impact on the capacity due to this backwater effect by the river and will incur little benefit at a very large cost. Any increase in the flow downstream of the historical bridge will also increase the flood level in the downstream area, also due to the backwater effect in the river. Therefore, these two alternatives (known as Alternative 1 & 2), cannot be assessed further as they are not viable Alternatives.

Option 3 (Green) (Preferred Option): This is the preferred site alternative and involves the construction of a new two lane bridge over the railway line to acceptable geometric standards on the eastern side of the existing bridge to accommodate both north and southbound traffic. The alignment will connect to the MR189 opposite the existing intersection with the Sandwyk Street (MR214) which crosses over the N1 and provide access to existing farms and the Courtrai suburb of Paarl. A new road over river bridge with 3 spans of of 8,1m, 10,6m and 8,1m respectively will be required to accommodate the design flood in the Van Wyks River. This bridge will completely span the river section with the abutments outside the river channel to limit the influence of the

bridge on the restricted flow in the river. The bridge size was determined by the evaluation of and limiting of any increase in the 1:50 year recurrence interval flood line. This was done to not adversely affect the existing property owners of the low lying area to the north east of the Van Wyks River for this recurrence interval flood.



6a PROPOSAL

The road is to be upgraded to a Class 1 cross-section and a climbing lane is to be implemented from km 1,0 to km 1,4. Furthermore, the preferred alternative involves the construction of a new two lane road-over-rail bridge to acceptable geometric standards on the eastern side of the existing historic bridge to accommodate both north and south bound traffic.

Traffic Signals

Traffic signals are recommended for the proposed realigned MR 191/MR 189 intersection as well as the upgraded MR 191/MR 205 intersection. The traffic signals will provide for a higher level of and will also provide better pedestrian crossing opportunities than the current scenario. This is especially required at the MR 191/MR 205 intersection where many of the observed pedestrians are primary school children.

Climbing Lane

Speed profiles were done in both directions to determine the position of possible climbing lanes. In accordance with the GD Manual the warrants for climbing lanes are triggered, i.e. a speed reduction for trucks exceeding 25 km/h and the Design Hour Volume of Vehicles exceeding the appropriate value. A climbing lane on the left-hand side was therefore recommended to be constructed from km 1,0 to km 1,4.

Intersection and Access

There are numerous intersections and accesses on this section of MR 191 from km 0,0 to km 9,57.

Bus Stops

Currently there are nine bus stops along the road. A public transport study was conducted to evaluate the use of the existing bus stops and to identify other positions which are frequently being used as public transport stops. 16 positions were identified during the study and will be investigated as official bus stop positions during the detail design stage.

Fencing

It is recommended that new fencing be erected where required to match the existing fencing type.

Bridge Layout

The preferred bridge layout alternative involves the construction of a new two lane road-over-rail bridge, to acceptable geometric standards ± 250 m east of the existing bridge and intersecting with the existing MR189 (R101) and Main Road 214 intersection, to accommodate both north and south bound traffic. The proposed bridge would pass over the existing railway line which would prevent the vertical clearance issues and ensure that the road is high enough and out of danger from potential flooding. This is considered the preferred option from a hydraulic and geometrical point of view. The bridge size was determined by the evaluation of the 1:50 year recurrence interval flood line. This was done to not adversely affect the existing property owner downstream of the historical bridge. In addition a new 2/3,0m x 1,8m in situ concrete culvert is proposed at km 0,316 to drain the low point.



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6b PROPOSAL

Furthermore, no alterations to the existing historical bridge are proposed which will remain to accommodate traffic as a lower order road. While numerous aspects were considered in terms of the viability of the section of the MR 191 that would no longer be required, in terms of this proposal, the following was concluded and would be implemented should this alternative be authorised:

- Access will be allowed from the **'discarded'** section of the MR 191 directly onto the proposed Service Road parallel to MR 189.
- Maintenance will be undertaken on a regular basis with regards to ensuring that the culverts under the historical bridge are cleared of any debris.
- A service road will be constructed along the southern side of the MR 189 in order for all accesses along this strip to feed into the new access point proposed along the MR 189 in order to improve the safety aspects of the road.
- The service road will have access to MR 191 & MR 189

Furthermore, this alternative will involve the expropriation of the portion of land required for the proposed bridge and road realignment. Three landowners will be affected namely: Portion 48 of the Remainder of Farm 832, Portion 36 of the Remainder of Farm 832, Portion 47 of the Remainder of Farm 832 and Portion 50 of the Remainder of Farm 832. It must be understood that the expropriation of land is a separate legal process that follows the standard procedures as set out in the Road Ordinance, 1976 (Ordinance No. 19 of 1976), the

Expropriation Act, 1975 (Act No 63 of 1975) and the Constitution of SA, 1996 (Act No 108 of 1996). In terms of the Constitution the expropriation process must be **"just and equitable"** in every way. The expropriation process involves the appointment of an independent evaluator to determine the value of the land expropriated, as well as to assess whether the expropriation has any negative effect on the remainder of the affected properties.

The landowner will therefore be compensated at 100% of the value of the land required for the road reserve, as well as in respect of any negative impact which the expropriation and associated activities (within the road reserve) will have on the remainder of the property. The owner will further also be compensated in respect of any actual financial losses suffered as a direct result of the expropriation, if such losses can be proven.

This process is separate and independent of the EIA process.

