06 July 2007
Project Reference: K54/06
GDACE Reference: 002/06-07/N0210

Attention: Refer to Distribution List

Distribution List / Attendance Register

Name & Surname	***Organisation/Affiliation***	***Tel No.***	***Fax No.***
Mr. Mark Custers	Eco Assessments	(011) 782 3428	(011) 888 9588
Ms. Niqui Viljoen	Eco Assessments	(011) 782 3428	(011) 888 9588
Mr. Jon Busser	Urban Dynamics	(011) 482 4131	(011) 482 9959
Mr. Jerry Potgieter	Civil Concepts	(012) 365 1414	(012) 365 1192
Mr. André de Lange	Landowner – Ptn 59 Doornkloof	072 737 1079	
Ms. Christa Spoelstra	Councillor - Ward 65	(012) 667 3095 082 880 5300	(012) 667 3095
Mr. Ruan de Lange	Landowner – Ptn 59 Doornkloof	(012) 346 6901	(012) 346 6858
Ms. C Rowan	Landowner – 24 Twin Rivers	082 874 9371	
Mr. Casper McDonald	Councillor – Ward 64	082 563 4570	(012) 661 6575
Mr. Ron en Marion Mengell	WESSA	(012) 667 2183	(012) 365 1192
Mr. P Pretorius	Salberg Concrete Products	(011) 316 3410 083 655 7996	(011) 316 3410
Mr. C.J Zwiegelaar	ARC – Irene	(012) 672 9130	(012) 665 1563
C. Maree	Landowner – 7 Twin Rivers	(012) 541 2060	(012) 541 5010
P.H.J van Rensburg	Landowner – 21 Twin Rivers	083 230 1076	086 671 7227
Mr. Herman Joubert	Landowner – Ptn 15 Doornkloof	082 651 5550	(012) 346 5336
Mr. Eras Venter		082 567 5278	(012) 346 6858
Mr Barry Greyer	Landowner – Ptn 37 Doornkloof	072 203 5271	(012) 665 1357
Ms. Cheryl Dehning	Friends of Smuts House & Landowner – Olifantsfontein	083 376 1734	
Mr. Bob Dehning	Smuts Farm Conservancy/GCA/NACSA	082 651 1501	086 510 7814
Mr. D.P Visser	Gauteng Department of Public Transport, Roads and Works	(011) 355 7058	(011) 355 7099
Mr. Francois van	M&T Development	(012) 991 9700	(012) 991 3034

Rensburg			
Mr. Deon van Tonder	Kungwini Councillor – Ward 1	(011) 316 1762	086 503 3839
Ms. Zelda Rowan	Landowner – 24 Twin Rivers	083 383 7697	
Mr. David Larsen	Doornkloof Owners Association	(011) 316 1393	086 689 5220

Dear Sir/Madam

PROPOSED RE-ALIGNMENT OF THE K54 BETWEEN NELLMAPIUS ROAD AND THE PROPOSED K105 - IRENE

The Public Feedback Meeting that was held on the 21st June 2007 at the Irene Country Lodge has reference.

Herewith please find notes of the meeting. You are requested to review the notes and provide comments, where relevant, **on or before 16 July 2007**

NOTES OF THE MEETING

Mr. Custers opened the meeting at 18:15 and thanked the participants for their attendance. The purpose and agenda of the meeting was explained and attendees were requested to sign the attendance register.

Mr. Custers provided a brief introduction and background of the application. He explained that the K54 is to serve as an important link road between the south-eastern and south-western suburbs of Tshwane. He further explained that the Southdowns Development was approved in 2004. Subsequent to this approval it was noted that the proposed existing alignment would bisect the residential component and the proposed private school. The Gauteng Department of Roads and Transport does not allow private schools to gain access from Provincial Roads. It was therefore necessary to submit a new application in terms of the National Environmental Management Act. (Act No. 107 of 1998)

Mr. Custers proceeded to explain that a Public Participation Meeting was held on 23 November 2006 where the detail of the proposed re-alignment was presented to Interested and Affected Parties. These parties were provided with the opportunity to raise issues of concern. The Environmental Scoping Report was made available for public review during February 2007 and was subsequently submitted to the GDACE for scrutiny. The GDACE has indicated, on 08 May 2007, to proceed with the Environmental Impact Assessment Process.

Several specialist studies were conducted during the Scoping and as part of the Environmental Impact Assessment Process and as a result of issues and concerns that were raised by Interested and Affected Parties. The findings of these specialist studies were presented my Ms. Viljoen.

The attendees of the meeting were given an opportunity to ask questions and to engage

in discussions regarding the information that was presented at the meeting.

Mr. Dehning emphasised the Smuts Farm Conservancy's concerns with the alignment of the K54 east of the railway line and its proximity to the habitat for *Ichnestoma stobbiai* (Stobbia's Fruit Chafer) and other Red Data Species in the area. He wanted to know who has been appointed to conduct the EIA Process for the section of the road east of the railway line. Bokamoso Landscape Architects and Environmental Consultants has been appointed for the section of the K54 west of the Rietvlei Dam and Mr. Custers indicated that it is not certain who is involved/responsible for the study area east of the railway line. This information will be disclosed to Interested and Affected Parties when available.

Mr. Dehning then wanted to know why it is necessary to extend the K54 beyond the K105 and whether it would be possible to only let the K54 run up the K105. Mr. Visser pointed out that the purpose and planning for the K54 was done due to the proposed future residential developments in the area and with the purpose of creating an east-west link road south of the N1. Mr. Potgieter stated that the alignment of the road and/or the radius of the road can be changed to accommodate sensitive environmental features.

Mr. Joubert stated, in response to Mr. Dehning's statement, that the initial EIA Investigations have been done in this area and it will not be necessary to re-align the road. He did however point out that the impacts of the other sections of the road (east and west of the section between Nelmapius and the K105) need to be considered in detail. Mr. Custers indicated that Eco Assessments is in consultation with relevant parties to ensure that all issues are addressed.

Ms. Rowan enquired about the distance of the "Alternative 2" alignment from Twin Rivers. Mr. Potgieter indicated that the distance is approximately 100m – 200m but that this will be clarified and communicated to the relevant parties when the relevant information has been obtained.

Mr. Joubert stated that the intersections of the K54 with other roads in the area may have a ripple effect on traffic conditions in the area and all impacts need to be clearly defined.

Mr. van Rensburg stated that the K54 has been specifically disapproved in the Record of Decision (RoD) for the proposed extension of the Olievenhoutbosch Road. He then wanted to know why the K54 is being kept in the planning for the area if there was a possibility that Environmental Authorisation would be not be granted for the re-alignment/construction of the road. Mr. Busser explained that the proposed road network for the area must stay intact when the route determination of other planned roads in the area is considered, e.g. the K105. It provides a technical indication and some guidance for other planning for the area. Mr. Custers indicated that the requirements and conditions of the RoD's for the other road approvals will be considered in the EIA Report.

Mr. van Rensburg asked why the K54 would cross under Main Road and not over it. He also asked whether the road can be constructed on stilts over the river in stead of using a fill. Mr. Potgieter indicated that the decision for the crossing of the K54 under Main Road was on request of Mr. Joubert to limit visual impacts from his property. He further

indicated that the detail design of the river crossing has not been done yet and the utilisation of stilts in stead of a fill crossing can be considered. Mr. Potgieter indicated that a bridge design on stilts would be more costly than the fill alternative.

Mr. Dehning emphasised his concern with noise impacts of the proposed road. The Doornkloof Owners Associated commented on the Noise Impact Assessment that was done by J.H Consulting. These comments are attached to this document and will be incorporated in the EIA Report.

Mr. van Rensburg asked whether the K54 intersection with the K111 can be moved more north. The proposed intersection will have impacts on existing buildings and developmental costs in the area. Mr. Busser indicated that this provincial access point has been planned and design according to the required 600m spatial spacing of intersections, so it cannot be moved.

Mr. van Rensburg asked that the vertical alignment of the road be investigated. Mr. Potgieter presented a technical drawing which portrayed the vertical clearance and alignment.

Mr. Joubert stated that he is satisfied with the proposed alternatives and changes which have been made subsequent to discussions with himself and Mr. Potgieter.

Mr. Custers thanked all those present for their attendance and the meeting adjourned at 20h00.

Members: C H Custers (BSc. Hons HED. MSc. Ecology | M J Custers (BSc. Hons MSc. Conservation Biology) CK 2000/076445/23

PROPOSED PROVINCIAL ROAD K54
COMMENTS ON NOISE IMPACT ASSESSMENT
By D V Larsen

Please refer to the draft JH Consulting report dated 26/01/2007.

See page 6: For Residential Districts (Urban) the noise limits are 55 dB(A) for day and 45 dB(A) for night.

See page 12: Berms are to be considered.

See page 10: Noise Considerations.

The report assumes: Speed 120 km/hr, 2000 vehicles/hr 7% with HGV - noise level 55.6 dB(A) 1300 metre.
Assume instead : Speed 80 km/hr, 4000 vehicles/hr 7% with HGV - noise level 55.3 dB(A) 1300 metre.
It can be seen that between the above limits there will be little change in the noise level at a distance of 1300 metre. It can be assumed that the night time traffic noise will be 10 dB(A) lower than the daytime figures.

A 5 metre high berm, close to the road, will reduce this distance to about 200 metres.
A 2.5 metre high berm, close to the road, will reduce this distance to about 500 metres.

Without mitigating measures, no residential development can take place for a distance of 1300 metre each side of the proposed road. This distance will have to be increased where traffic flow is interrupted by controlled intersections. *The impact of noise from braking, idling accelerating and slow moving trucks at intersections needs to be evaluated.*

CONCLUSION: Noise attenuation barriers, close to the road, comprising both earth berms and concrete walls, AND road surface options merit careful consideration.

1) Barriers will turn roads into Parkways.
2) Barriers will dramatically reduce the impact of road noise on the community.
3) A 'porous' asphalt road surface could reduce road noise by at least 3 dB(A)
4) Barriers will mitigate against the GTIA Regulation that reads:

Gauteng Transport Infrastructure Act, Act No. 8 of 2001 (9) An owner of land on or along which a provincial road or railway line is situated who discovers that a fence or gate on or along the road or railway line is damaged, must- (a) report the damage to the Department in the prescribed manner and within the prescribed time; (b) in the case where livestock are likely to wander onto the road or railway line, or there is other danger to life or property, effect emergency repairs to the fence or gate pending its proper repair or replacement, regardless of whether that owner is responsible to repair the damage, and failure to do constitutes an offence. (10) In this section "erect" shall include re-erection or the entire replacing of material. (1) Anyone who commits an offence created by this Act shall be liable on conviction to imprisonment for a period not exceeding six months or to a fine, or to both such imprisonment and fine.

References:
WHO Recomendations: See section that reads: At night, sound pressure levels at the outside facades of the living spaces should not exceed 45 dB LAeq and 60 dB LAmax, so that people may sleep with bedroom windows open. These values have been obtained by assuming that the noise reduction from outside to inside with the window partly open is 15 dB.

In dwellings, the critical effects of noise are on sleep, annoyance and speech interference. To avoid sleep disturbance, indoor guideline values for bedrooms are 30 dB LAeq for continuous noise and 45 dB LAmax for single sound events.

WHO Guidelines for Community Noise LFN
Adverse health effects of noise : Sources with low-frequency components. Disturbances may occur even though the sound pressure level during exposure is below 30 dBA. The evidence on low-frequency noise is sufficiently strong to warrant immediate concern. Various industrial sources emit continuous low-frequency noise (compressors, pumps, diesel engines, fans, public works); and large aircraft, heavy-duty vehicles and railway traffic produce intermittent low-frequency noise. Low-frequency noise may also produce vibrations and rattles as secondary effects. Health effects due to low-frequency components in noise are estimated to be more severe than for community noises in general (Berglund et al. 1996). Since A-weighting underestimates the sound pressure level of noise with low-frequency components, a better assessment of health effects would be to use C-weighting. In residential populations heavy noise pollution will most certainly be associated with a combination of health effects. For example, cardiovascular disease, annoyance, speech interference at work and at home, and sleep disturbance. Therefore, it is important that the total adverse health load over 24 hours be considered and that the precautionary principle for sustainable development is applied in the management of health effects (see Chapter 5).
http://www.who.int/docstore/peh/noise/guidelines2.html

4.2.3. Sleep disturbance effects Electrophysiological and behavioral methods have demonstrated that both continuous and intermittent noise indoors lead to sleep disturbance. The more intense the background noise, the more disturbing is its effect on sleep. Measurable effects on sleep start at background noise levels of about 30 dB LAeq. Physiological effects include changes in the pattern of sleep stages, especially a reduction in the proportion of REM sleep. Subjective effects have also been identified, such as difficulty in falling asleep, perceived sleep quality, and adverse after-effects such as headache and tiredness. Sensitive groups mainly include elderly persons, shift workers and persons with physical or mental disorders. Where noise is continuous, the equivalent sound pressure level should not exceed 30 dBA indoors, if negative effects on sleep are to be avoided. When the noise is composed of a large proportion of low-frequency sounds a still lower guideline value is recommended, because low- frequency noise (e.g. from ventilation systems) can disturb rest and sleep even at low sound pressure levels. It should be noted that the adverse effect of noise partly depends on the nature of the source. A special situation is for newborns in incubators, for which the noise can cause sleep disturbance and other health effects. If the noise is not continuous, LAmax or SEL are used to indicate the probability of noise- induced awakenings. Effects have been observed at individual LAmax exposures of 45 dB or

less. Consequently, it is important to limit the number of noise events with a LAmax exceeding 45 dB. Therefore, the guidelines should be based on a combination of values of 30 dB LAeq,8h and 45 dB LAmax. To protect sensitive persons, a still lower guideline value would be preferred when the background level is low. Sleep disturbance from intermittent noise events increases with the maximum noise level. Even if the total equivalent noise level is fairly low, a small number of noise events with a high maximum sound pressure level will affect sleep. Therefore, to avoid sleep disturbance, guidelines for community noise should be expressed in terms of equivalent sound pressure levels, as well as LAmax/SEL and the number of noise events. Measures reducing disturbance during the first part of the night are believed to be the most effective for reducing problems in falling asleep.

4.3.1. Dwellings In dwellings, the critical effects of noise are on sleep, annoyance and speech interference. To avoid sleep disturbance, indoor guideline values for bedrooms are 30 dB LAeq for continuous noise and 45 dB LAmax for single sound events. Lower levels may be annoying, depending on the nature of the noise source. The maximum sound pressure level should be measured with the instrument set at "*Fast*". To protect the majority of people from being seriously annoyed during the daytime, the sound pressure level on balconies, terraces and outdoor living areas should not exceed 55 dB LAeq for a steady, continuous noise. To protect the majority of people from being moderately annoyed during the daytime, the outdoor sound pressure level should not exceed 50 dB LAeq. These values are based on annoyance studies, but most countries in Europe have adopted 40 dB LAeq as the maximum allowable level for new developments (Gottlob 1995). Indeed, the lower value should be considered the maximum allowable sound pressure level for all new developments whenever feasible. At night, sound pressure levels at the outside facades of the living spaces should not exceed 45 dB LAeq and 60 dB LAmax, so that people may sleep with bedroom windows open. These values have been obtained by assuming that the noise reduction from outside to inside with the window partly open is 15 dB.