



# Valuation Report

## Pietermaritzburg Airport EIA – Valuation Study



**Undertaken For:** Institute of Natural Resources  
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**Date:** 15<sup>th</sup> December 2016



15<sup>th</sup> December 2016

Institute of Natural Resources  
P O Box 100396  
Pietermaritzburg  
3201

**Attention: Mr. Dave Cox**

Dear Sir,

## **Pietermaritzburg Airport EIA – Valuation Study**

Your instruction to undertake a property valuation study on the impacts of the proposed upgrade of the Pietermaritzburg Airport refers.

We have undertaken research with a view to establishing the effect of the proposed airport upgrades on the Market Value of the affected areas and surrounding properties, and enclose our report for your attention.

We thank you for this assignment and trust that we have acted in accordance with your instructions, but would be happy to discuss any queries that you might have.

Yours faithfully,

.....  
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### Glossary

ATNS	Air Traffic Navigation Services
dB(A)	A unit of sound level – a weighted sound pressure level with the use of the A metering characteristic and weighting specified in ANSI Specifications for Sound Level Meter
EIA	Environmental Impact Assessment
GIS	Geographic Information System
INR	Institute of Natural Resources
LAeq	The equivalent continuous sound level normally measured on a A-weighted decibel scale
LAm <sub>ax</sub>	The maximum sound pressure level of a noise event, normally measured on a A-weighted decibel scale
NDI	Noise Depreciation Index. Indicates the percentage decrease in house prices or rentals for each 1 dB(A) increase in the noise level.
SEIA	Scoping and Environmental Impact Assessment

# Valuation Report

## Pietermaritzburg Airport EIA – Valuation Study

### Background

The Institute of Natural Resources (INR) has been appointed by the Msunduzi Municipality to manage the Scoping and Environmental Impact Assessment (SEIA) for the proposed expansion of the Pietermaritzburg Airport.

Mills Fitchet (Africa) Pty Ltd was appointed by the INR to conduct a property valuation study to inform the SEIA. According to the brief from the INR:

*“The Msunduzi Municipality (MM) is proposing an expansion of the Pietermaritzburg Airport. The project involves the development of vacant land on the airport site, and the upgrade of aviation infrastructure to meet the increasing growth in passenger and cargo volumes, and air traffic movements. The proposed commercial and industrial developments, and the infrastructure upgrades will be in terms of Phase 1 of the Airport Master Plan which is projected to last until 2025.*

*The proposed expansion triggers the need for an application for the environmental authorisation supported by a Scoping and Environmental Impact Assessment (SEIA) process. The SEIA is a process designed to facilitate and improve decision making on development projects. INR has completed the Scoping phase, resulting in the identification of the key issues to be investigated by experts in the next phase. These specialist studies are commissioned to provide the information necessary to respond to the key issues associated with the proposed project.”*

One of the key issues that were identified was the concern about the increased noise levels on property values.

### Purpose of Study

The environmental scoping process identified two key property valuation related issues that needed to be investigated and answered to inform a decision regarding the sustainability of the proposed expansion:

1. How are property values in the local and regional context impacted as a result of noise levels (nuisance factor) along flight paths?
2. How will the proposed expansion impact property values in the area and along the flights paths?

The purpose of this report is therefore to quantify the impact on property values in the *newly impacted* areas surrounding the airport, and those affected by noise levels along the *extended* flight path.

## Study Area

The study area includes the existing Pietermaritzburg (Oribi) Airport and affected surrounds, with particular reference to the flight paths and areas where the noise levels are considered to be a nuisance factor that could impact on property values. The study area has been defined by (ATNS) in the *Environmental Noise Impact: Baseline Assessment for the SEIA for the Proposed Expansion of the Pietermaritzburg Airport* compiled by IMA Trader 20 cc for the Institute of Natural Resources (1), and comprises two zones:

- Airport Surrounds zone
- Extended Flight Path zone

These zones were confirmed by Air Traffic Navigation Services (ATNS), and are as a result of investigations that found that there are no flight path alternatives for commercial aircraft for the Pietermaritzburg Airport, and therefore the impacts are restricted to the existing areas (*ATM Planning – Air Traffic Navigation Services*) (2).

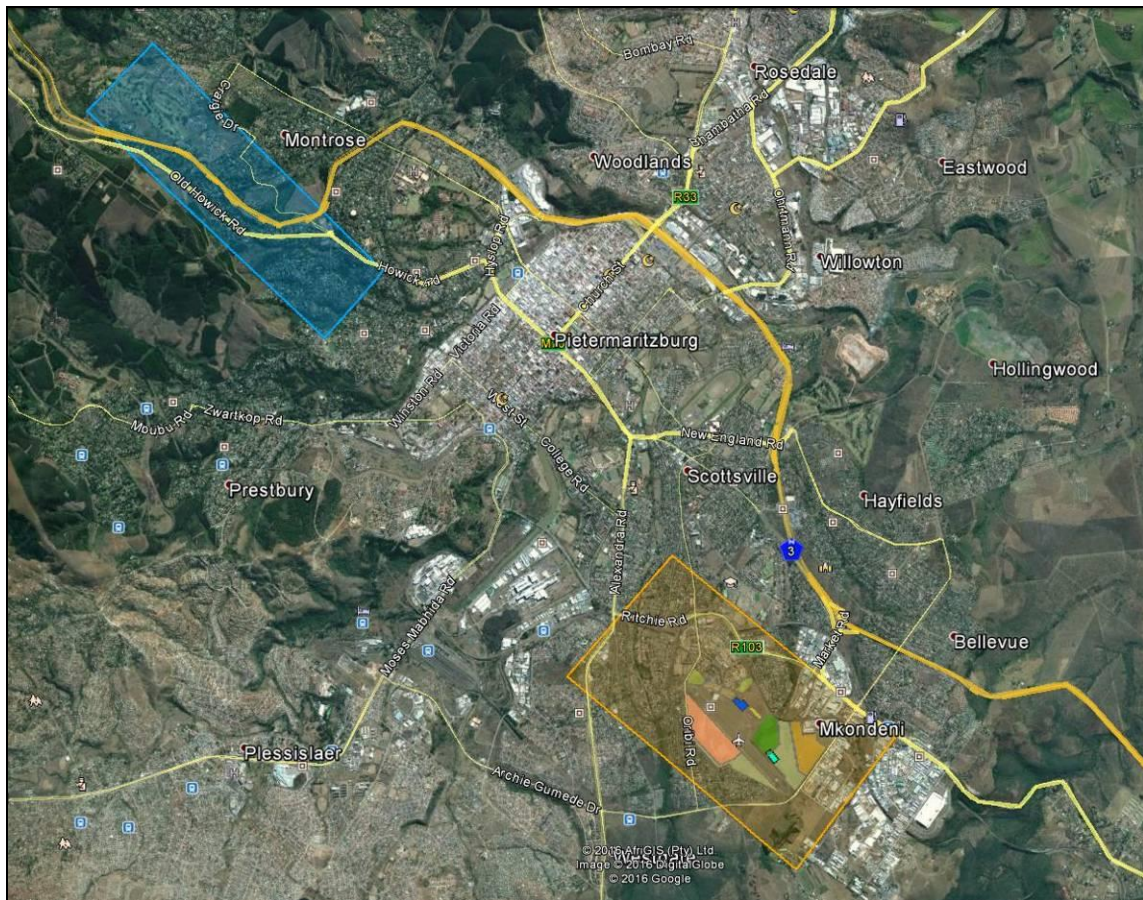
We have used these study areas to define ‘In the Zone’ areas, and created a mask around these areas to define ‘Out the Zone’ areas, in order to identify properties in the affected areas and those outside of the affected areas. This allows one to compare prices of recently sold properties (past 3 years) to determine the difference in property values between the impacted areas and the non-impacted areas.

The diagram below provides a spatial overview of the proposed land uses for the airport expansion project.



**Figure: Proposed airport expansion layout**

A map of the study area and affected zones is included below. The Airport Surrounds Zone is shaded in yellow, and the Extended Flight Path Zone is shaded in blue.



## Date of Valuation

1<sup>st</sup> October 2016.

## Methodology

The methodology applied to quantify the impact on property values in the surrounding areas and those affected by noise levels along the flight paths, included the following processes:

- Background research and literature review
- Interviews with estate agents and property professionals
- Property value analysis

## Background Research and Literature Review

A literature review was conducted to obtain further information on the impact of aircraft noise on property values, and to glean insights into the issues that other researchers have found in other areas, both locally and internationally.

## **Input from Estate Agents and Property Professionals**

In addition to our property transfer research, we also canvassed a number of estate agents and property practitioners who are actively involved in the affected suburbs and surrounds, in order to gauge the impact of aircraft noise on property values based on their experience, local knowledge, and dealings with buyers and sellers.

They were also asked to give their opinions on the positive effects, mitigation measures, and other related issues.

They were all provided with the same structured questionnaire and their responses were recorded on the questionnaires. The results were collated, summarized and analyzed for each of the affected zones (Airport Surrounds zone and Extended Flight Path zone).

A copy of the questionnaire is included in Appendix A.

## **Property Value Analysis**

The following methodology was adopted to identify and analyze the affected properties:

1. Identify the properties in the surrounding affected areas, and the flight paths using GIS (Geographic Information System), namely Arc Map, including aerial photography and cadastral overlays.
2. Research current property values in the currently affected surrounding areas and flight path areas (prior to expansion), and compare to similar properties in un-affected areas.
3. Use deeds office data on the latest property transfers in the study areas to determine the latest property values.
4. Draw a comparison between similar properties in similar/homogenous neighborhoods in the affected and un-affected areas, based on current market values.
5. Quantify the effect on property values in terms of the differential in property values in monetary terms in the affected and un-affected areas, and expressed as a percentage.
6. Apply this percentage to similar properties in the areas that will be similarly affected by the proposed airport expansion project, to determine the expected impact on property values.
7. Differentiate between property types, for example Residential, Commercial, Industrial etc, and consider the unique affects on them where applicable.

## **Data Sources, Interviews and Questionnaire**

1. All the background information, EIA information and related studies were provided by the INR.
2. A high level literature search was conducted and information was obtained from the internet.
3. Property sales data and registered prices were obtained from Lightstone deed searches.
4. We consulted 11 estate agents/property brokers using a standard questionnaire to provide the same background information and to pose the same questions to each one.

## **Valuation Approach**

The basis of our assessment and analysis of the property values is the Comparable Sales or Market Data Method. This method is based on recent sales of properties in the study areas and the purchase prices as reflected in the deeds office records which provide a record of the price at which the properties exchanged hands. In most cases these sales are in terms of the definition of Market Value as described below, however, there are always exceptions where a sale does not meet all the criteria, and we have identified the outliers and excluded them from the sample to get a better picture of the typical market related values in each study area or suburb.

The International Valuations Standards Committee defined Market Value as:

*“The estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm’s length transaction after proper marketing wherein the parties have each acted knowledgeably, prudently, and with out compulsion.”*

## **Information Provided**

Information that was requested from the INR in terms of Mills Fitchet’s original proposal:

1. Spatial demarcation of the affected surrounding areas and flight paths, as well as the proposed new surrounding areas and flight paths, i.e. the extent of the affected areas before and after the proposed airport expansion.
2. Information on the anticipated noise levels and the areas that would be subject to noise levels that are considered a nuisance and that would impact on property values, based on factors such as flight path, frequency of flights, and height of aircraft above ground level, among other.



The following information was provided by the INR:

1. Spatial demarcation of the affected surrounding areas and flight paths.
2. Information on the current noise levels on the affected areas as measured over a 15 day period by IMA Trader 20 cc.

Based on the flight paths and affected areas around the airport as demarcated by ATNS, it is our understanding that *the extent of the affected areas before and after the proposed airport expansion* are essentially the same, however, the proposed airport expansion could increase the impacts on these areas due to the potential increase in the frequency of commercial flights, rather than broaden the affected areas, and on the assumption that no alternative flight paths have been identified.

The study therefore focused on these areas and their immediate surrounds.

### **Limitations and Constraints to the Investigation**

1. Nuisance factors are generally subjective and difficult to measure in real terms.
2. No 'before' and 'after' date to benchmark against

### **Literature Review**

We researched a number of reports and papers on the affects of airport noise on property prices to gain a better understanding of the various factors and human responses to airport noise and the affects on property values.

The following observations were extracted from a *Property Valuation Study: Cape Town International Airport Runway Re-Alignment & Associated Infrastructure Project* by Rode Property Consultants dated 9<sup>th</sup> February 2016 (3), and were noted and considered in terms of our own research:

#### **General**

The Noise Depreciation Index (NDI) is a common measurement unit with respect to property values in relation to noise levels and provides the percentage property depreciation per decibel increase.

The available literature suggests that the estimated NDI would be higher in more affluent areas than in less affluent ones.

A study done at Bromma Airport in Stockholm Sweden, found that people are sensitive to noise and that the time of day does matter, and home dwellers are more sensitive to aircraft noise in the mornings than evenings.

## **Impact of noise levels on house prices and rentals**

Noise is considered to be unwanted or unpleasant sound and Nelson (Jan 2004) reports that noise levels in the vicinity of airports range from about 65 dB(A) to 80 dB(A).

Generally no mitigation is considered for noise levels of 55-60 dB(A) at airports worldwide, as it is not considered to be significant. Above 65 dB(A), sound is considered to be a nuisance (no mention is made of the impacts between 60 and 65 dB(A), it is assumed that this is within an “acceptable” noise range).

People react differently to sound and noise considered to be annoying to one person may not be so to someone else.

The noise levels also reflects the average which means that there could be multiple occasions of a few seconds with noise above 65 dB(A) during the day. The maximum level and the night time level are, therefore, of most concern.

## **NDI depending on tenure status of households**

NDI impact on rentals is lower than the NDI on housing prices.

The reason for this could be ascribed to the fact that tenants might be less annoyed by aircraft noise as the property does not belong to them and they are therefore not concerned about the value, and they could also relocate more easily.

## **Effect of time of day and frequency of flights on noise disturbance**

A study by Carlsson et al (2004) found that households are sensitive to noise and that the time of day does matter. “Some residents show a significant willingness to pay for a decrease in number of aircraft movements in the morning and evening throughout the week.” This means that people are more sensitive to aircraft noise in the mornings and evenings. The study, however, also found that “a substantial proportion of the respondents prefer no changes in the current noise level”.

This implies that some residents will be willing to pay more for a home with less noise.

## **House price classes**

Pilot studies done at Los Angeles International Airport (Booz-Allen & Hamilton, Inc., 1994) found that the noise discount was the highest in moderately-priced and expensive neighbourhoods.

In a study conducted by Manchester International Airport (Collins & Evans, May 1994), it was found that ‘detached house values are much more sensitive to aircraft noise than are those of semi-detached or terraced houses’.

In a study done of residents living near manila airport in the Philippines (Phun, Hirata, & Yai, 2015), it was found that ‘noise sensitivity, noise exposure level, and affluence status have positive effects on aircraft noise annoyance, suggesting that more-affluent people are substantially more annoyed by aircraft noise than less-affluent people’.”

The following pertinent information was also noted from the *Environmental Scoping Report for the Proposed Expansion of the Pietermaritzburg Airport – Draft for Comment* (4):

Noise impacts for the proposed airport expansion project have been assessed according to South African National Standards (SANS) 10103:2008 as a guideline with respect to impacts on various districts (at sensitive receptors).

SANS 10328:2008 Methods for environmental noise impact assessments presently inform environmental impact assessments in South Africa. SANS 10103:2008 - Typical Rating Levels ( $L_{Req,T}$ ) for noise are presented in Table 1. These values should be viewed as guidelines of typical noise levels in the various land use zones. For the purpose of this assessment, noise levels will be assessed against the typical rating levels for noise in ‘districts’ (Table 1).

**Table 1: Typical rating levels for noise in districts (adapted from SANS 10103:2008)**

Type of District	Classification	Equivalent Continuous Rating level for Noise ( $L_{Req,T}$ ) (dBA)		
		Outdoors		
		Day – Night ( $L_{R,dn}$ )	Daytime ( $L_{req,d}$ )	Night-time ( $L_{req,n}$ )
a) Rural	A	45	45	35
b) Suburban (with little road traffic)	B	50	50	40
c) Urban	C	55	55	45
d) Urban (with one or more of the following: workshops, business premises and main roads)	D	60	60	50
e) Central Business Districts	E	65	65	55
f) Industrial District	F	70	70	60

Notes from a paper entitled *The Impact of Noise on Residential Real Estate by Randall Bell (2001)*, MAI (5):

### Overview

According to Bell, there are dozens of published studies all of which virtually come to the conclusion that homes under or nearby the flight corridors of national or international airports experience some diminution in property values.

Diminution in value is the difference between the before and after market values of properties that have been damaged or taken. Airport noise is generally categorised as a Class V Item of Disclosure, which is defined as being an externality or neighbourhood condition, and is generally permanent in nature.

## **Measurement of airport noise**

The impact of airport noise and related perceptions are typically delineated by “noise contour lines” that vary from airport to airport, and depend upon size of the airport, prevailing winds, topography, etc.

## **Noise mitigation**

There only three ways that noise can be mitigated:

1. Quite the source;
2. Put more distance between source and receptor;
3. Create a barrier to the noise

Property owners may react more negatively than renters do. While there is generally no impact on the highest and best use of a residential property due to aircraft noise, in extreme situations where the noise cannot be mitigated, the highest and best use has changed from residential to some other use.

## **Impact of noise on market values**

While tremendous economic benefits are associated with large airports, those under or nearby the flight path tend to suffer negative impacts.

The fact that a property is situated near a noise source does not automatically constitute evidence of a loss in market value.

For most people noise is a significant issue, however, there are those that will live under a major flight corridor if the price is discounted sufficiently.

The higher the relative price of a property, the higher the diminution in value.

## **Data Analysis and Findings**

We have obtained data from Lightstone Property deed search services on all the residential property sales and transfers over the past three years (2014, 2015, 2016) in and around the affected areas for both the Airport Surrounds zone and the Extended Flight Path zone.

The results were sorted per zone and then per suburb. The properties have been spatially identified according to their legal descriptions from the Msunduzi registered cadastral GIS data and located as being either In the Zone (1), or Out the Zone (2). The data has been cleaned to sift out anomalies such as municipal properties, parks, roads, or vacant sites, so that comparisons can be drawn between similar property types with similar attributes. We have determined the price range, average selling price, average stand size and the selling price per square metre of stand size for comparison purposes.

We then compared these figures between the properties ‘In the Zone’ and ‘Out the Zone’ to establish whether there is any difference in the prices paid, and hence the Market Values.

The results are included in the **Tables 2 to 9** in Appendix B for each suburb, and compiled into a summary in **Table 10 below**.

**Table 10 – Summary of Property Prices Based on Location per Suburb**

Suburb	Location	Ave Site m <sup>2</sup>	Lowest Price	Highest Price	Average Price	Average/m <sup>2</sup>	Variance in Price	Variance Stnd Size	Remarks
BISLEY	In zone	996	R 700,000	R 920,000	R 864,375	R 996	12.08%	12.41%	Out zone values>In zone
BISLEY	Out zone	1,119	R 700,000	R 1,095,000	R 968,778	R 949			
ORIBI HEIGHTS	In zone	1,090	R 849,000	R 1,350,000	R 1,062,167	R 998	N/A	N/A	Inconclusive-no data for Out zone
ORIBI HEIGHTS	Out zone	0	R 0	R 0	R 0	R 0			
PELHAM SOUTH	In zone	1,039	R 690,000	R 1,120,000	R 859,250	R 841	6.72%	25.61%	Out zone values>In zone
PELHAM SOUTH	Out zone	1,305	R 750,000	R 1,030,000	R 917,000	R 706			
SCOTTSVILLE EXT	In zone	981	R 690,000	R 1,200,000	R 912,500	R 935	N/A	N/A	Inconclusive-no data for Out zone
	Out zone	0	R 0	R 0	R 0	R 0			

**Extended Flight Path Zone**

Suburb	Location	Ave Site m <sup>2</sup>	Lowest Price	Highest Price	Average Price	Average/m <sup>2</sup>	Variance in Price	Variance Stnd Size	Remarks
ATHLONE	In zone	0	R 0	R 0	R 0	R 0	N/A	N/A	Inconclusive-no data for In zone
ATHLONE	Out zone	2,437	R 1,730,000	R 5,800,000	R 2,842,500	R 1,775			
CLARENDON	In zone	0	R 0	R 0	R 0	R 0	N/A	N/A	Inconclusive-no data for In zone
CLARENDON	Out zone	2,129	R 850,000	R 2,195,000	R 1,587,308	R 845			
WEMBLEY	In zone	4,056	R 1,083,000	R 5,650,000	R 2,723,938	R 763	-19.64%	-33.58%	In zone values>Out zone
WEMBLEY	Out zone	2,694	R 1,090,000	R 4,200,000	R 2,189,067	R 1,000			
WORLDS VIEW	In zone	0	R 0	R 0	R 0	R 0	N/A	N/A	Inconclusive-no data for In zone
WORLDS VIEW	Out zone	2,618	R 1,000,000	R 2,025,000	R 1,657,222	R 656			

## **Analysis of Property Sales Data**

Based on the above results, we have made the following observations:

### **Airport Surrounds Zone**

The Airport Surrounds zone comprises all the suburbs that border onto the airport land and include Bisley, Oribi Heights, Oribi Village, Pelham and Scottsville Ext. It also includes the industrial area of Mkondeni.

#### ***Bisley***

Bisley is a traditional lower middle income residential suburb situated immediately west of the Pietermaritzburg Airport.

1. Part of Bisley is in the Airport Surrounds zone, and part is outside the zone.
2. Based on the average property prices, it would appear that properties in the noise impact zone and closer to the airport are around 12% lower than those further removed from the airport.
3. We did, however, also note that the average stand size of the properties in the noise impact zone is smaller, 996m<sup>2</sup> compared to 1,119m<sup>2</sup> (12% variance), which could also to some extent account for the lower prices.

#### ***Oribi Heights***

Oribi Heights (not to be confused with Oribi Village) is situated on the southern end of the airport near the end of the runway and borders onto the airport land.

1. The properties are all in the noise impact zone.
2. Compared to the properties in Bisley, the average price is higher than the Bisley average, irrespective of whether they are in the noise impact zone or out.
3. The averages stand sizes are similar.
4. The higher prices could be attributed to the fact that this is a newer suburb with more modern houses compared to Bisley.

#### ***Oribi Village***

Oribi Village is an old army base in the Airport Surrounds zone that is now owned by the National Housing Board, and it is understood that it provides rental accommodation to the lower income market. There are therefore no registered sales of individual housing units.

However, based on the literature review comments, this area can be described as an area where “tenants might be less annoyed by aircraft noise as the property does not belong to them and they are therefore not concerned about the value, and they could also relocate more easily.”

### ***Pelham***

Pelham is a predominantly middle income residential area situated to the north of the airport, along one of the main arterial roads through the city, namely Alexander Road.

1. Part of Pelham is in the Airport Surrounds zone, and part is outside the zone.
2. The property sales analysis reveals that the average price of properties sold that lie outside the noise impact zone are around 6.72% higher than those that lie within the noise impact zone.
3. However, the properties from the sample outside the noise impact zone are on average 25.61% larger, which would also account for the price variance.

### ***Scottsville Ext***

Scottsville Extension is a small residential node situated on the north east boundary of the airport, and also borders onto the industrial area of Mkondeni to the east.

1. The sample properties are all located in the noise impact zone.
2. The average residential property selling price of the sample is R912,500, with an average stand size of 981m<sup>2</sup>.
3. The average price and stand size is consistent with the other suburbs in the zone, if not a bit a higher.

### **Extended Flight Path Zone**

The suburbs in this area include Worlds View, Wembley, Athlone and Clarendon which are the established and more affluent “leafy suburbs” of Pietermaritzburg.

### ***Athlone***

Athlone is a residential suburb situated between the N3 national road to the north and Old Howick Road to the south. It borders Wembley to the south.

1. The suburb falls just outside the Extended Flight Path zone.
2. The average house prices are at the top end of the range for the suburbs in and around the Extended Flight Path zone.

### ***Clarendon***

Clarendon is a mostly residential area but also includes commercial strip development along Roberts Road, and the Hilltops Office Park at the top of the hill in Villiers Road.

1. Clarendon falls just outside of the demarcated Extended Flight Path zone, but it has been identified as one of the most impacted areas by IMA Trader who conducted the Noise Impact Assessment.
2. The average price paid for properties in Clarendon is R1,587,308 compared to the average in Athlone at R2,842,500 and Wembley south at R2,189,067 for similar size sites of between around 2,100m<sup>2</sup> and 2,600m<sup>2</sup>. This represents a variance of



between -27.48% and -44.16% between Clarendon and Athlone, and between Clarendon and Wembley south respectively.

3. We suspect that there are other factors which are reflected in the lower average prices for Clarendon. These include location and access from the N3 and other major arterials, the more commercial nature of Clarendon along Roberts Road, and its more elevated position in parts resulting in greater exposure to aircraft noise.

### ***Wembley***

Wembley is one of the more prestigious older residential suburbs of Pietermaritzburg. The northern part of Wembley is nestled in a quiet area between Wyliepark and Clarendon which lies within the Extended Flight Path zone, while the southern part of the suburb toward the CBD lies outside of the Extended Flight Path zone, with some commercial strip development along Taunton Road.

1. The average property prices in the northern part are higher than that of the southern part, even though the northern part is within the noise zone.
2. This can be attributed to the fact the properties in this area are considerably larger on average, 4,056m<sup>2</sup> compared to 2,694m<sup>2</sup>, and are also situated in a more private node with little through traffic, compared the southern part.
3. It would appear that even though the northern part is in the Extended Flight Path zone, it is mostly the more elevated parts toward the crest of the hill that are affected.

### ***World's View***

The Worlds View study area is an elevated residential suburb situated on Old Howick Road (R103) between Hilton and Pietermaritzburg.

1. Worlds View lies outside the demarcated Extended Flight Path zone.
2. The area lies in an elevated position along Old Howick Road and close to the N3.
3. There is no comparative data between properties In the Zone and Out the Zone.
4. The average sale price of R1,657,222 compares to Clarendon at R1,587,308.
5. The average price is much less than Athlone and Wembley which again is probably related to its location overlooking the N3 national road and this part of Worlds View is surrounded by plantations and is a bit isolated.

## Questionnaire Results

We received questionnaires back from 11 different estate agents or property brokers that work in the various suburbs that were identified for this study.

The purpose of the questionnaires was to gain an understanding from property professionals who work (and in some cases live) in the affected areas, and to gauge the impact of aircraft noise on property values based on their experience, local knowledge, and dealings with buyers and sellers.

They were also asked to give their opinions on the positive effects, mitigation measures, and other related issues.

The responses to the questionnaires were considered to assess if there is any correlation between the observations, opinions and experience of the estate agents and property brokers, and the conclusions drawn from the preceding Analysis of Property Sales Data.

The following questions were posed in writing (please see questionnaire in Appendix A).

### Noise Impacts on Property Values

1. Which of the affected neighbourhoods do you work in? (please tick  the appropriate suburbs)
2. Have you noticed a general perception among owners and potential purchasers that the neighbourhoods are subject to air traffic noise?
3. If so, is the air traffic noise generally considered -

Negligible	Mild	Average	High	Severe
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4. In your experience, what is the affect on the normal asking price as a % discount for the following price ranges of Single Residential properties:

Category	Price Range		Est % Disc
Affordable	R250,001	R700,000	
Middle Income	R700,001	R2,000,000	
Upper Income	R2,000,001	plus	
Comments			

5. Please estimate the affect on the normal asking price as a % discount (if applicable) for the following price ranges of Sectional Title Residential properties:

Category	Price Range		Est % Disc
Affordable	R250,000	R700,000	
Middle Income	R700,001	R2,000,000	
Upper Income	R2,000,001	plus	
Comments			

6. Can you provide details of specific sales transactions where aircraft noise has negatively affected the selling price of properties? If so, please fill in the table below:
7. In your opinion, what would the affect be on the value Commercial (offices) and/or Industrial properties?
8. Other Comments / Observations / Mitigation Measures

### **Positive Impacts of Proposed Airport Developments**

9. In your opinion, what are the **positive** impacts of the proposed upgrades to the Pietermaritzburg Airport?
10. In your opinion how can the positive impacts be enhanced?

The responses to the questionnaires are summarised in the tables below.

### **Key to Tables 11 and 10**

<b>Abbreviation</b>	<b>Long Form</b>	<b>Meaning</b>
Com	Commercial	Commercial properties
disc	Discount	Amount by which value discounted
Ind	Industrial	Industrial properties
k	kilo	Denominations of 1,000
M	Million	Denominations of 1,000,000
Res	Residential	Residential properties
SR	Single Residential	Freehold residential properties
ST	Sectional Title	Sectional title residential flats/apartments
VCCE	Victoria Country Club Estate	A private residential estate and office park
World's Vw	World's View	World's View suburb
<b>Noise Rating</b>	<b>Definition (in context of questionnaire)</b>	
Negligible	Of no consequence, noise levels/frequency too low to be of any negative affect	
Mild	Noise levels/frequency noticeable, but of no real concern or irritation	
Average	In line with accepted ambient noise levels/frequency	
High	Very noticeable and intrusive noise levels/frequency	
Severe	Very high noise levels/frequency, negative impact on property values	

**Table 11 – Questionnaire Results: Airport Surrounds**

Ref	Suburbs Covered	Noise Rating	Single Res % disc	Sectional Title % disc	Com / Ind % disc	Comments Observations Mitigation	Positive Impacts	Improve Positive Impacts
1	<ul style="list-style-type: none"> <li>• Bisley</li> <li>• Scottsville</li> <li>• Pelham</li> </ul>	Mild	Noise factor priced in	0%	N/A	Industrial property prices will increase	<ul style="list-style-type: none"> <li>• Increase property demand</li> </ul>	Nil
2	<ul style="list-style-type: none"> <li>• Oribi</li> <li>• Bisley</li> <li>• Grange</li> <li>• Westgate</li> <li>• Scottsville</li> <li>• Mkondeni</li> </ul>	Negligible	0%	0%	0%	Have never experienced any negative comments regarding airport traffic	<ul style="list-style-type: none"> <li>• Job creation</li> <li>• Higher demand for property</li> <li>• Positive for industrial area i.t.o. rentals, sales, commuting</li> </ul>	Nil
3	<ul style="list-style-type: none"> <li>• Oribi</li> <li>• Bisley</li> <li>• Grange</li> <li>• Westgate</li> <li>• Scottsville</li> <li>• Mkondeni</li> <li>• Pelham</li> </ul>	Mild	<ul style="list-style-type: none"> <li>• R700k-R2M: 10%</li> </ul>	<ul style="list-style-type: none"> <li>• R250k–R700k: 5%</li> <li>• R700k–R2M: 10%</li> </ul>	<ul style="list-style-type: none"> <li>• Offices: 2%</li> <li>• Ind: 0%</li> </ul>	Generally Bisley market does not mind noise	<ul style="list-style-type: none"> <li>• Easy access to airport</li> <li>• Prop value will increase</li> <li>• Might attract more businesses closer to airport</li> <li>• More job opportunities will be created</li> </ul>	<ul style="list-style-type: none"> <li>• Sound proofing assistance to local residents</li> <li>• Locals should have first preference for employment</li> </ul>
4	<ul style="list-style-type: none"> <li>• Oribi</li> <li>• Bisley</li> <li>• Scottsville</li> <li>• Mkondeni</li> <li>• Pelham</li> </ul>	Average	N/A	N/A	N/A	Nil	<ul style="list-style-type: none"> <li>• More commuters</li> <li>• More business activities</li> <li>• Better air and emergency services</li> <li>• Better essential buildings</li> <li>• Improved airport appearance</li> </ul>	<ul style="list-style-type: none"> <li>• Structures to have latest technology</li> <li>• “Must be uplifting”</li> </ul>
5	<ul style="list-style-type: none"> <li>• Bisley</li> <li>• Scottsville</li> <li>• Mkondeni</li> </ul>	Mild	0%	0%	0%	Have not noted any negative impacts on prices at the moment	<ul style="list-style-type: none"> <li>• Job creation</li> <li>• Residential demand</li> <li>• Tourism</li> </ul>	<ul style="list-style-type: none"> <li>• Advertise the extension</li> <li>• Build a boutique hotel nearby</li> <li>• More B&amp;B’s within 1km</li> </ul>

**Table 11 (continued) – Questionnaire Results: Airport Surrounds**

Ref	Suburbs Covered	Noise Rating	Single Res % disc	Sectional Title % disc	Com / Ind % disc	Comments Observations Mitigation	• Positive Impacts	• Improve Positive Impacts
6	<ul style="list-style-type: none"> <li>• Oribi</li> <li>• Bisley</li> <li>• Grange</li> <li>• Westgate</li> <li>• Scottsville</li> <li>• Mkondeni</li> <li>• Pelham</li> </ul>	Mild	0%	0%	0%	With the size of aircraft now using Oribi it should not impact residents	<ul style="list-style-type: none"> <li>• More jobs</li> </ul>	<ul style="list-style-type: none"> <li>• Nil</li> </ul>

**Table 12 – Extended Flight Path Area**

Ref	Suburbs Covered	Noise Rating	Single Res % disc	Sectional Title % disc	Com / Ind % disc	Comments Observations Mitigation	Positive Impacts	Improve Positive Impacts
1	<ul style="list-style-type: none"> <li>• VCCE</li> <li>• Ferncliffe</li> <li>• Montrose</li> <li>• Wembley</li> <li>• World's Vw</li> </ul>	Average  High  (Wembley)	Wembley up to 20% discount (higher lying parts)	0%	Positive, will improve vacancies	<ul style="list-style-type: none"> <li>• Planes fly low over Wembley therefore noise high</li> <li>• Purchasers only become aware of noise after living in the area for a time</li> </ul>	<ul style="list-style-type: none"> <li>• Cheaper flights, other commercial aircraft</li> <li>• Do not have to travel to King Shaka</li> <li>• More people living in the Midlands</li> </ul>	<ul style="list-style-type: none"> <li>• Drop off zone made easier</li> <li>• Allow other commercial airlines to fly into Oribi</li> </ul>
2	<ul style="list-style-type: none"> <li>• VCCE</li> </ul> <p>Conducted own survey among VCCE residents:</p> <p>See Comments</p>	Mild	Nil	Nil	0%	Have you found noise of flights detrimental to your enjoyment of living on the estate? 7 Yes, 19 No.  Do you think increased flights will impact value of your home? 11 Yes, 15 No.	<ul style="list-style-type: none"> <li>• A better airport will be good for our economy</li> <li>• The current frequency of flights does not have a negative impact</li> <li>• Also weather dependant, aircraft noise varies</li> <li>• Increased volume of flights means Pmb growing, good for everybody</li> </ul>	Nil

**Table 12 (continued) – Extended Flight Path Area**

Ref	• Suburbs Covered	Noise Rating	• Single Res % disc	• Sectional Title % disc	Com / Ind % disc	Comments Observations • Mitigation	Positive Impacts	• Improve Positive Impacts
3	<ul style="list-style-type: none"> <li>• World's Vw</li> <li>• Hilton</li> <li>• Hilton College Rd</li> <li>• Howick</li> </ul>	Average  (at the moment)	<ul style="list-style-type: none"> <li>• Check Amanzimtoti prices compared to Dbn North</li> <li>• I would think 50% as per Amanzimtoti / Dbn North*</li> </ul> <p><i>*potential extreme</i></p>	<ul style="list-style-type: none"> <li>• 50% as per Amanzimtoti / Dbn North*</li> <li>• Not affected our areas yet, but increased traffic will</li> <li>• Take the N3 as an example</li> </ul> <p><i>*potential extreme</i></p>	No Discount - could increase price/rental due to convenience	I think there will be increased opposition, to exhaust fumes & disease caused from these in the smarter suburbs.	More accessible to all parts of the country (maybe world)	<ul style="list-style-type: none"> <li>• By moving airport to Lion Park area</li> <li>• This is accessible but does not impact as much on residences</li> <li>• Also will allow the Camperdown /Ashburton area to grow (already zoned for this)</li> </ul>
4	<ul style="list-style-type: none"> <li>• VCCE</li> <li>• Ferncliffe</li> <li>• Montrose</li> <li>• World's Vw</li> <li>• Hilton</li> <li>• Howick</li> </ul>	Average	N/A	N/A	Nil	<p>Do not believe increased air traffic will affect property prices in northern or southern suburbs of Pmb.</p> <p>We do not think the suburbs surrounding the airport will be affected either.</p>	Larger airport with flights to Lanseria, PE, East London, George will have a positive affect on the market on Pmb as per Umhlanga and Ballito	Nil
5	<ul style="list-style-type: none"> <li>• Mkondeni</li> </ul>	N/A	N/A	N/A	Ind 0%  There are no offices in the Mkondeni flight area	N/A	<ul style="list-style-type: none"> <li>• Increased economic activity</li> <li>• Increased demand for property and rental of commercial, industrial property</li> <li>• All above will lead to increased municipal rates collections</li> </ul>	<ul style="list-style-type: none"> <li>• By improving the road infrastructure which is already inadequate for Mkondeni traffic</li> <li>• Price any industrial land sales at current market prices so as not to damage/reduce existing property values</li> </ul>

## **Positive and Negative Impacts**

According to the answers to the questionnaires, the following impressions were evident:

### ***Positive Impacts***

On the whole, the respondents are very positive about the proposed airport expansion and upgrades, and the perceived benefits are:

- Better airport facilities.
- More scheduled flights.
- More ancillary facilities and services.
- Increased demand for properties near to the airport.
- Positive affect on residential property values in general.
- Positive affect on commercial and industrial property values and rentals in general.
- Should attract more businesses to the airport area.
- Job creation.
- Will promote tourism.

### ***Negative Impacts***

- No negative impacts were noted from the respondents from the Airport Surrounds zone.
- Concern about noise in Wembley/Clarendon area in particular and negative affect on property values.
- One agent is of the opinion that there could be as much as a 50% reduction in property values in extreme cases such as the old Durban Airport example by comparing the reduction of Amanzimtoti values to Durban North values due to significant aircraft noise. However, current impacts rated as average.
- Another agent indicated a 20% reduction in Single Residential property values in the Wembley area. No comparable sales evidence was provided to support claim.

### **Any Mitigation Measures to Limit Significance of Negative Impacts**

- Assist affected properties with sound proofing measures.
- Give local residents first option for employment opportunities.

### **Recommendations to Enhance Positive Impacts**

- New structures to have modern facilities and “uplifting” architecture.
- Advertise and promote new airport expansion plans more widely.
- Include a boutique hotel.

## **Municipal Property Rates**

The concept of reducing the amount of property rates payable by property owners whose properties are negatively impacted by the airport related activities was raised during the EIA process. In terms of this proposal one should consider the following:

The levying of municipal property rates is governed by the Municipal Property Rates Act No. 6 of 2004 as amended (MPRA). In terms of the MPRA, municipal property rates are levied on the Market Value of a property (section 11.(1)).

Market Value is defined as “the amount the property would have realised if sold on the date of valuation in the open market by a willing seller to a willing buyer (section 46(1)).

The market effectively factors the positive and negative attributes of a property into the purchase price. This applies to the properties in the Airport Surrounds zone and in the Extended Flight Path zone, and one can assume that any impacts from aircraft noise and proximity to the airport are factored into the property prices accordingly.

Further, in terms of section 8, a municipality may levy different rates for different categories of properties, and in terms of section 15, the municipality may exempt or grant a rebate or a reduction in the rates payable in respect of a specific category of owners of properties, or to the owners of a specific category of properties.

The amount of municipal rates payable is therefore dependent on the Market Value of a property, and also on the Category of Property or Category of Owner.

The MPRA does not specifically make any provision for a reduction in municipal property rates for property owners, or categories of properties, that are negatively impacted by airport related activities. However, this is factored into the purchase price of the property, which determines the market value, and thus the amount of municipal property rates payable.

Any further adjustment by means of exemptions, rebates or reductions would have to be determined by the municipality in terms of their rates policy, and with the permission of the Minister of local government where applicable in terms of the MPRA.

## **Impact Assessment**

We have conducted an impact assessment based on the methodology and definitions provided by the INR as follows:

### **Impact Assessment Methodology**

To determine and evaluate the significance of potential impacts on identified resources and receptors, impact assessment and mitigation is applied in accordance with defined assessment criteria. The purpose of this method is to develop and describe measures to be applied in order enhance the potential benefits, and to minimize or avoid any potential harmful effects.



## Definition of Key Terminology

- **Project:** The collection of activities and components for which authorization is being applied for, which includes all associated facilities that are required for the Project to proceed.
- **Project Site:** The operational area/s of the project activities, including private transport corridors (those exclusively dedicated for the project activities during its operation).
- **Project Footprint:** The area within and surround the project site that is anticipated to be physically influenced/affected by the activities of the project in all phases. This includes areas used temporarily (i.e. land and roads used during the construction phase, as well as private and public areas along transport corridors that are disturbed).

## Impact Types and Definitions

Any change to a receptor or resource as a result of a component of the project (or a related project activity) is considered impact. By evaluating baseline data as a platform for assessment, it provides the information required to evaluate and describe the affects that project is likely to have on the socio-economic and biophysical environment. They type/nature of each impact can be categorized as positive, negative, indirect, direct or cumulative, as defined in the 13 to follow.

**Table 13: Impact Nature and Type**

Nature or Type	Definition
Positive	A positive change or improvement on the baseline.
Negative	A negative or adverse change from the baseline, or the introduction of an undesirable new aspect.
Direct impact	Resulting from the direct interaction between the project's activities and the receiving environment.
Indirect impact	Resulting from other activities that are expected to occur as an effect of the project.
Cumulative impact	Impacts which act jointly with others to affect the same components (receptors and/or resources) of the project. This includes impacts from simultaneous and/or planned future impending third party activities).

## Assessing Significance

Impacts need to be determined in terms of their 'significance', which is a defined by the impacts' **magnitude** and its' **likelihood** of occurring. 'Magnitude' is defined by the **extent, duration** and **intensity** of the impact, and sometime referred to as the 'severity' of the impact. To determine the magnitude of an impact, a set of criteria is used as per Table 14 below. Also defined in the table is a scale of 'likelihood' to be used in determining its significance.

**Table 14: Significance Criteria**

<b>Impact Magnitude</b>	
<b>Extent</b>	<ul style="list-style-type: none"> <li>– <b>On-site:</b> Within (limited to) the boundary of the projects’ development site</li> <li>– <b>Local:</b> Affect on area within a 20km radius of the projects’ development site</li> <li>– <b>Regional:</b> Experience at a regional scale (as determined by administrative boundaries, habitat type/ecosystem) or affect regionally important resources/receptors</li> <li>– <b>National:</b> Affect an area and/or resources/receptors that are of national importance or have macro-economic implications.</li> </ul>
<b>Duration</b>	<ul style="list-style-type: none"> <li>– <b>Temporary:</b> Intermittent/occasional or brief duration</li> <li>– <b>Short-term:</b> Only occurring within the construction phase of the project</li> <li>– <b>Long-term:</b> Occurring throughout the life of the project, but ceases upon the projects termination (when it stops operating)</li> <li>– <b>Permanent:</b> Result in permanent change to the receiving environment that continues beyond the life span of the project (after it stops operating)</li> </ul>
<b>Intensity</b>	<p style="text-align: center;"><b>Biophysical Receiving Environment</b> <i>The sensitivity of the biophysical resource/receptor determines the intensity of the impact</i></p> <ul style="list-style-type: none"> <li>– <b>Negligible:</b> Non-measurable impact</li> <li>– <b>Low:</b> Does not affect the natural processes and functions</li> <li>– <b>Medium:</b> Alters the environment but natural processes and functions endure (although in a modified manner)</li> <li>– <b>High:</b> Alters natural processes and functions to the extent that they will cease (either temporarily or permanently)</li> </ul> <p style="text-align: center;"><i>National and/or international standards and limits should be applied, where appropriate, to determine/measure the impact. Quantification of the magnitude of impact and the accompanying rationale should be attempted in the specialist studies.</i></p> <p style="text-align: center;"><b>Socio-Economic Receiving Environment</b> <i>The ability of communities/people affected to adapt their livelihoods to changes brought about by project, determines the intensity of the impact.</i></p> <ul style="list-style-type: none"> <li>– <b>Negligible:</b> No noticeable change to livelihoods</li> <li>– <b>Low:</b> Ability to adapt livelihoods with relative ease and maintain baseline conditions</li> <li>– <b>Medium:</b> Ability to adapt livelihoods with some difficulty and maintain baseline conditions with a degree of support</li> <li>– <b>High:</b> Affect does not enable livelihoods to adapt to changes or maintain baseline conditions</li> </ul>
<b>Likelihood - the likelihood that an impact will occur</b>	
<b>Unlikely</b>	The impact is <b>unlikely</b> to occur.
<b>Likely</b>	The impact is <b>likely to occur under most conditions.</b>
<b>Definite</b>	The impact <b>will</b> occur.

The significance rating matrix (Table 15) is adopted after defining the magnitude and likelihood of the impact, as a means of determining the significance of the impact. The significance colour scale is adopted to provide a visual representation of the magnitude of negative and positive ratings (Table 16).

**Table 15: Significance Rating Matrix**

Significance				
Magnitude	Likelihood			
		Unlikely	Likely	Definite
	Negligible	Negligible	Negligible	Minor
	Low	Negligible	Minor	Minor
	Medium	Minor	Moderate	Moderate
High	Moderate	Major	Major	

**Table 16: Significance Colour Scale**

Negative Ratings	Positive Ratings
Negligible	Negligible
Minor	Minor
Moderate	Moderate
Major	Major

**Table 17: Significance Definitions**

Significance Definitions	
<b>Negligible significance</b>	No effect on the receiving environment (resource/receptor/people) imposed by an activity of the project, or where the anticipated effect indistinguishable from the baseline or is considered to be insignificant (negligible or unnoticeable).
<b>Minor significance</b>	Evidence of an effect with a sufficiently small magnitude (with or without mitigation) that is within the accepted standards and/or the receiving environment is of low value/sensitivity.
<b>Moderate significance</b>	An effect that is within the accepted standards and limits. Emphasis must be placed on demonstrating that the significance of the impact has been reduced, as far as reasonably possible. 'Moderate' impacts do not necessarily need to be reduced to 'minor' impacts, but rather be managed efficiently and effectively as 'moderate' impacts.
<b>Major significance</b>	An impact that exceeds accepted limits or standards, or where large magnitude impacts affect components of the receiving environment that are highly valuable/sensitive. The intention of the EIA process is avoid major residual impacts, particularly such impacts which are long-term or cover an extensive area. However, such impacts may not be able to be mitigated even after all reasonable options have been exhausted, in which case such negative factors need to be weighed against positive factors in order to make a decision.

A statement of the **degree of confidence** in the assessment must be qualified once the significant of the impact has been determined. The degree of confidence is expressed as 'low', 'medium', or 'high' as determined based on the associated uncertainties (whether or not there is sufficient information to adequately assess the impact).

### Mitigation Measures and Residual Impacts

The EIA process is required to identify feasible and practical mitigation measures where significant impacts are evident. Mitigation measures are implemented through compliance with the Environmental Management Programme (EMPr). After the initial determination of an impact's significance, the significance is re-determined taking into consideration the effective implementation of the mitigation measure, resulting in a significance rating for the residual impact.

## Identification of Mitigation Measures

Identified feasible and practical mitigation measures need to be incorporated into the project design as a means of avoiding/reducing negative impacts or enhancing positive impacts as a result of the project activities. Such mitigation measures need to be agreed upon with the client as they are likely form the basis of any conditions of approval defined by the competent authority.

## Impact Assessment Results

An impact assessment on the property values has been conducted in accordance with the above methodology and definitions.

**Project:** The project is defined as the Pietermaritzburg Airport Expansion Project.

**Project Site:** The project site comprises the Pietermaritzburg Airport property and specific access roads, as well as the Extended Flight Path zone.

**Project Footprint:** The project footprint comprises the Pietermaritzburg Airport site and surrounds, and the Extended Flight Path area and surrounds.

**Receptors:** The receptors or receiving environments are defined as the suburbs that are subject to airport related noise as identified in this report.

The impact assessment analysis results are tabled below:

**Table 18: Impact Assessment  
Summary of Impact Significance of Aircraft Noise on Property Values in the Bisley Suburb (Airport Surrounds)**

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Market is less sensitive to noise, properties priced accordingly
<b>With mitigation</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline*
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise

**Summary of Impact Significance of Aircraft Noise on Property Values in the Oribi Suburb (Airport Surrounds)**

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Market is less sensitive to noise, properties priced accordingly
<b>With mitigation</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline*
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise

### Summary of Impact Significance of Aircraft Noise on Property Values in the Pelham Suburb (Airport Surrounds)

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Market is less sensitive to noise, properties priced accordingly
<b>With mitigation</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise

### Summary of Impact Significance of Aircraft Noise on Property Values in the Scottsville Extension Suburb (Airport Surrounds)

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Market is less sensitive to noise, properties priced accordingly
<b>With mitigation</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Likely	Minor	High	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise

### Summary of Impact Significance of Aircraft Noise on Property Values in the Athlone Suburb (Extended Flight Path)

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Definite	Negligible	Medium	Not directly under flight path and on opposite slope
<b>With mitigation</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Definite	Negligible	Medium	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise

### Summary of Impact Significance of Aircraft Noise on Property Values in the Clarendon Suburb (Extended Flight Path)

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	High	Likely	High	Definite	Moderate	High	Impact on elevated areas of the suburb
<b>With mitigation</b>	Direct	Negative	Local	Long Term	High	Likely	High	Definite	Moderate	High	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise

### Summary of Impact Significance of Aircraft Noise on Property Values in the Wembley Suburb (Extended Flight Path)

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	High	Likely	High	Definite	Moderate	High	Impact on elevated areas of the suburb
<b>With mitigation</b>	Direct	Negative	Local	Long Term	High	Likely	High	Definite	Moderate	High	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise

### Summary of Impact Significance of Aircraft Noise on Property Values in the World's View Suburb (Extended Flight Path)

	Impact Type	Impact Status	Impact Magnitude			Impact Likelihood	Significance Magnitude	Significance Likelihood	Significance Impact	Degree of Confidence	Comment
			Extent	Duration	Intensity						
<b>Proposed Expansion</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Definite	Negligible	Medium	Not directly under flight path, eastern part more exposed
<b>With mitigation</b>	Direct	Negative	Local	Long Term	Low	Likely	Low	Definite	Negligible	Medium	Appropriate mitigation measures as per the ICAO <i>Balanced Approach to Noise Management</i> guideline
<b>No-Go Option</b>	Direct	Negative	Local	Long Term	Negligible	Unlikely	Negligible	Unlikely	Negligible	High	If project does not go ahead then no change to current property values due to increased aircraft noise



## Conclusions

The purpose of this study is to assess the impact on property values due to the change in noise levels produced by the number of flights anticipated to be added within the phase 1 expansion of the PMB airport, along the current flight paths, on the properties in the Airport Surrounds and the Extended Flight Path zones. According to Airlink (the only current commercial airline operating at the Pietermaritzburg Airport):

- It is anticipated that the airline is likely to add an additional 2 or so scheduled flights to the current operations. However, this is only what is planned and does not account for future additions that are not yet known/anticipated.
- Anticipated additions will be within the current operating hours (likely between 07h00 – 19h00), and most likely be on business days.
- Airlink is likely to introduce the Embraer EJet E170LR and E190AR aircraft to replace the Avro RJ 85 over the next few years, which have a lower noise output than the Avro.

It must be noted that the above anticipations are only what is known and for the existing commercial airline operator. The study therefore has considered what is anticipated based on information available, but cannot account for the unknowns.

Further contextual understanding from communication with ATNS indicated that the flight path cannot change due to topographical, climatic constraints, and safety requirements. Consequently no new areas will be impacted.

Based on the analysis of the above data and market feedback, the following conclusions are made regarding the two key property valuation issues that were identified during the environmental scoping process:

### **1. How are property values in the local and regional context impacted as a result of noise levels (nuisance factor) along flight paths?**

Investigations of the current impact of the noise levels on property values along the flight paths in the local and regional context are concluded as follows:

#### ***Airport Surrounds Zone***

The Pietermaritzburg Airport is situated at around 735m above sea level, and the surrounding suburbs are mostly at a similar elevation. The altitude of the individual suburbs does therefore not affect their exposure to aircraft noise as in the case of the suburbs in the Extended Flight Path zone.

According to some of the estate agents that were interviewed, the market has effectively “priced in” the effects of being near the airport, and this also appears to be evident from the sales data, which indicates a fairly consistent price range of between R859,250 and R1,062,167 for properties in this area, with the properties further from the airport tending toward the upper end of this scale and with average values between 6.72%

and up to 12.08% higher. It was noted that this could also be attributed to larger stands and house sizes in the more outlying suburbs.

The feedback from the estate agents and property brokers was mostly positive, with more anticipated benefits for the local economy and commuters than negative impacts.

This view also relates to the findings of the media review where “the available literature suggests that the estimated NDI (Noise Deprecation Index) would be higher in more affluent areas than in less affluent ones.”

In terms of the results of our investigation and based on the current frequency of flights and aircraft noise levels, there is little or no negative impact on the property prices in the Airport Surrounds zone, and most people are positive about the perceived benefits and spin-offs from the proposed airport expansion project.

*Conclusion:* Receiving environment less sensitive to noise from airport activities, currently nominal negative impacts, market has allowed for impacts of proximity to airport in house prices.

### ***Extended Flight Path Zone***

The Extended Flight Zone area covers the more upmarket northern suburbs of Pietermaritzburg and extends to the southern parts of Hilton.

This area is impacted by noise from aircraft approaching Pietermaritzburg Airport as they make their final approach to land and less frequently when they take off in a northerly direction.

The terrain is undulating and varies from an altitude of around 732.8m (Dorpspruit trig beacon) above sea level to around 1,058.9m (Worlds View trig beacon) above sea level.

The exposure to aircraft noise therefore varies according to the altitude as well as other factors such the ambient noise from the N3 national road and local traffic, etc.

According to the noise impact assessment by IMA Trader 20 cc, Clarendon which is “*directly under the take-off flight path on suburban elevated terrain before aircraft have climbed to a significant attitude*” was therefore identified as an area that is more exposed to aircraft noise.

This area overlaps with Wembley (it would appear that the southern part of Wembley and Clarendon are essentially the same geographic area).

Four active estate agents were canvassed in this area. Two estate agents ranked the noise rating as Mild and Average respectively, one estate agent was of the opinion that property prices have depreciated by as much as 20% in the Wembley area, while another estate agent was concerned that property values could be negatively affected along the flight path over Hilton College Road to World’s View if the noise levels and frequency of flights increased substantially. However, these impacts were not substantiated by the agents.

Our property transfer search indicated lower values for Clarendon, which seems to relate to the findings of IMA Trader 20 cc. The average property price for the Clarendon sample is R1,587,308 compared to that of the Wembley Out Zone of R2,189,067, a difference of around 38%. This could also be attributed in some measure to the fact that the properties in the Wembley sample are larger on average, 2,694m<sup>2</sup> compared to 2,129m<sup>2</sup>, and is also dependant on the size and quality of improvements, and other value forming attributes.

**Note:** Clarendon was not included in the Extended Flight Path zone as demarcated, yet it is the most affected area according the findings of the noise impact assessment.

In general therefore, there are a few areas in the higher lying parts of Clarendon and Wembley where aircraft noise is having a negative impact on property values.

*Conclusions:* Receiving environment more sensitive to noise from aircraft flying overhead, currently fairly significant impacts to property values in higher lying areas, where discounts of around 20% are estimated.

### ***Industrial and Commercial Properties***

In terms of the feedback and the results of our research, the general consensus is that there are currently no negative impacts from aircraft noise on the industrial area of Mkondeni in the Airport Surrounds zone, nor on the commercial office node in VCCE in the Extended Flight Path zone.

The estate agents and property brokers that were canvassed are on the whole very positive about the benefits of the proposed airport expansion project on commercial and industrial properties.

*Conclusions:* Receiving environment not sensitive to aircraft noise. No negative impacts due to current aircraft noise.

### ***General***

## **2. How will the proposed expansion impact property values in the area and along the flights paths?**

We have investigated and considered how the proposed expansion of the airport facilities and the associated increase in flights and noise levels will affect property values in the Airport Surrounds zone and along the Extended Flight Path zone, given that the number of flights will only be increased by around two flights per day with a 60 to 120 second noise duration, which may also be further mitigated by the introducing quieter aircraft.

### ***Airport Surrounds***

Overall, the opinion of those estate agents canvassed in this area is positive, and it would appear that one could expect property values to stay much the same (normal price escalation aside), or increase if the airport expansion plan provides more amenities, and generates more business and work opportunities and in the immediate local area.

However, if aircraft noise levels and the frequency thereof increase to nuisance levels [i.e. above around 65dB(A)], then one could expect to see a negative impact on property values.

There may also be some nodes that are negatively impacted by other factors such as increased traffic, higher ambient noise levels, and other un-desirable affects of urbanisation and densification of the area that may result in reduced property values.

*Conclusions:* If noise levels increase substantially, they will most likely be a negative impact on property values in specific nodes in this zone.

### ***Extended Flight Zone***

In terms of the affects of the airport expansion on the extended flight path area and the greater Midlands region, there is generally optimism about having more flight options, better access to and from the airport, more business opportunities, and generally being more connected with the rest of the world. This in turn could attract more people to reside and work in the area, and would most likely have a positive impact on property values in general for the area.

However, should the frequency of flights increase and with similar or higher aircraft noise outputs, the situation in the Extended Flight Path zone could worsen, and in particular in the higher lying areas of Wembley and Clarendon, with fairly substantial negative impacts on property values.

The increased flights are unlikely to negatively affect property values in the outlying areas as aircraft are normally at a high altitude and as a result the noise levels are marginal.

*Conclusions:* The receiving environment is sensitive to aircraft noise and will most likely respond negatively to increased noise and frequency, with a resultant decrease in property values in those parts directly under the flight paths that are most affected. However, given the nominal increase in the number of flights and expected noise levels, the overall impact is likely to be low.

### **Recommendations**

The findings of this research are essentially based on the status quo and current impacts assessed against predicted changes in the noise levels from noise assessment outcomes.

The property market has effectively priced the affects of living close to the airport and in the extended flight path zone, into the current property prices.

It is recommended that mitigation measures such as the introduction of quieter aircraft be implemented, and maximum permissible heights be maintained over sensitive areas such as Clarendon and Wembley.

\*\*\*\*\*

## References

1. Shrives, L. and Simpson, A. (2016). *Environmental Noise Impact: Baseline Assessment for the SEIA for the Proposed Expansion of the Pietermaritzburg Airport*. Compiled by IMA Trader 20 cc for the Institute of Natural Resources. Pietermaritzburg
2. Personal Communication by INR with Simon Zwane – ATM Planning – Air Traffic Navigation Services, 30 September 2016
3. Rode EG, van der Walt S, Tighy MS, (2016). *Property Valuation Study: Cape Town International Airport Runway Re-Alignment & Associated Infrastructure Project by Rode Property Consultants*. Cape Town. For SRK Consulting (South Africa) (Pty) Ltd.
4. Institute of Natural Resources (2016). *Environmental Scoping Report for the Proposed Expansion of the Pietermaritzburg Airport*. Prepared for the Scoping and Environmental Impact Assessment
5. Bell R, (2001). *The Impact of Airport Noise on Residential Real Estate*: Chicago: Appraisal Institute.

## **Assumptions, Disclaimer and Limiting Conditions**

### **Assumptions**

This valuation report has been compiled on the basis of the following general assumptions:

1. No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to the property is assumed to be good and marketable, unless otherwise stated.
2. The property is valued free and clear of any or all liens or encumbrances, unless otherwise stated.
3. Responsible ownership and competent property management are assumed.
4. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.
5. All engineering information is assumed to be correct. The plans and illustrative material in this report are included only to assist the reader in visualizing the property.
6. It is assumed that there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.
7. It is assumed that there is full compliance with all applicable state and local environmental regulations and laws unless non-compliance is stated, defined and considered in the valuation report.
8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless nonconformity has been stated, defined and considered in the valuation report.
9. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from local or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
10. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property description and that there is no encroachment or trespass unless noted in the report.

### **Disclaimer**

1. We have not inspected woodwork or other parts of the structure which are covered unexposed or inaccessible and we are therefore unable to report that such parts of the property are free of rot, beetle or other defects.

## **Limiting Conditions**

This valuation report has been compiled with the following general limiting conditions:

1. The apportionment, if any, of the total valuation figure in this report between land and improvements, applies only under the stated client instructions and is hypothetical. The separate allocations for land and buildings must not be used in conjunction with any other valuation and are invalid if so used.
2. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed, without proper written qualification and only in its entirety.
3. Neither all nor any part of this report shall be disseminated to the public through advertising, public relations, news, sales or other media, without the prior written consent and approval of the valuer.
4. This valuation is based on the information available at the time of valuation. Should further information be made available or come to light, we reserve the right to reconsider our valuation.

## Questionnaire



20<sup>th</sup> September 2016

### PMB Airport Questionnaire for Estate Agents / Property Practitioners

Interviewer	Interviewee	Organisation	Date	Place

#### Background

The Msunduzi Municipality (MM) is proposing an expansion of the Pietermaritzburg Airport. The expansion involves the development of vacant land on the airport site, and the upgrade of aviation infrastructure to meet the increasing growth in passenger and cargo volumes, and air traffic movements. The Institute of Natural Resources (INR) has been appointed as the consultant to undertake a Scoping and Environmental impact Assessment (SEIA) for the proposed expansion.

Through consultation with Interested and Affected Parties (I&APs) during the Scoping Phase, two areas along the current commercial/scheduled flight path were identified as significantly impacted in terms of air traffic noise (nuisance factor). As part of the EIA, a Noise Impact Assessment is being conducted to determine the extent of the noise impact in those areas, and a Property Valuation Assessment to determine the impact, if any, on property values. It is anticipated that these areas are likely to be further impacted in the future due to the potential increase in the frequency of commercial/scheduled flights landing and departing from the airport. The two affected areas have been identified as:

- i) Airport Surrounds
- ii) Extended Flight Path Area

(Please refer to the map below).

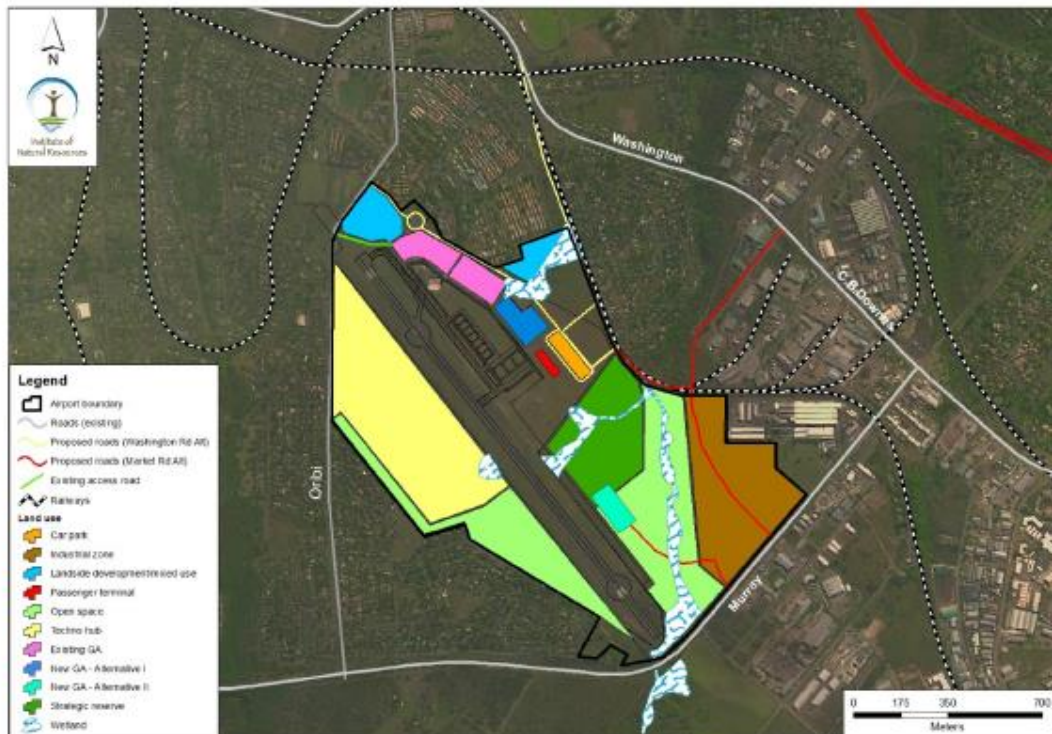




## Airport Upgrades

Phase 1 of the airport expansion plan includes:

- **Airside Infrastructure:** Extension of the taxiway to service an extension of the aircraft apron.
- **General Aviation:** Reconfiguration of existing hangars, and expanded facilities for aircraft maintenance and repair.
- **Terminal Building:** Site allocated for future expansion of the terminal building.
- **Landside infrastructure:** Improved access via a link to Washington and/ or Market Roads, new parking area and drop off zone, an industrial zone, and mixed commercial zones.
- **Technology Hub:** Located between the runway and western boundary of the airport (Oribi Road) that provides for the following zones: special sports, mixed use/commercial, mixed use residential/hotel, aviation hub, education/techno-hub, and light industrial.
- **Open Space/Conservation:** Assigned to sensitive riparian systems and open land.



## Affected Neighborhoods

The affected neighborhoods have been identified as per the table below:

Extended Flight Path		Airport Surrounds	
Suburb	√	Suburb	√
VCCE		Oribi Village	
Ferncliffe		Bisley	
Montrose		The Grange	
Wembley		Westgate	
World's View		Scottsville Ext	
Other		Mkondeni	
Other		Other	

## Questions

### Noise Impacts on Property Values

1. Which of the affected neighborhoods do you work in? (please tick  the appropriate suburb)
2. Have you noticed a general perception among owners and potential purchasers that the neighborhoods are subject to air traffic noise?
3. If so, is the air traffic noise generally considered -

Negligible	Mild	Average	High	Severe
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(please mark with an X)

4. In your experience, what is the affect on the normal asking price as a % discount for the following price ranges of Single Residential properties:

Category	Price Range		Est % Disc
Affordable	R250,001	R700,000	
Middle Income	R700,001	R2,000,000	
Upper Income	R2,000,001	plus	
Comments			

5. Please estimate the affect on the normal asking price as a % discount (if applicable) for the following price ranges of Sectional Title Residential properties:

Category	Price Range		Est % Disc
Affordable	R250,000	R700,000	
Middle Income	R700,001	R2,000,000	
Upper Income	R2,000,001	plus	
Comments			

6. Can you provide details of specific sales transactions where aircraft noise has negatively affected the selling price of properties? If so, please fill in the table below:

	Legal Description	Asking Price	Selling Price	Discount due to Noise Factor
1		R	R	R
2		R	R	R
3		R	R	R
4		R	R	R
5		R	R	R

7. In your opinion, what would the affect be on the value Commercial (offices) and/or Industrial properties?

Category	Est % Disc
Offices	
Industrial	
Other	

8. Other Comments / Observations / Mitigation Measures

	Other Comments / Observations / Mitigation Measures
1	
2	
3	
4	
5	

**Positive Impacts of Proposed Airport Developments**

9. In your opinion, what are the **positive** impacts of the proposed upgrades to the Pietermaritzburg Airport?

Positive Impacts	
1	
2	
3	
4	
5	

10. In your opinion how can the positive impacts be enhanced?

Recommendations to Enhance Positive Impacts	
1	
2	
3	
4	
5	

Thank you for participating in this survey!

**Tables 2 to 9**

**Table 2 – Airport Surrounds Zone: Bisley**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	In Zone
222 Oribi road	BISLEY	Pietermaritzburg	1558	43	20150729	20150930	R 700,000	943	R 742	1
186 Oribi Road	BISLEY	Pietermaritzburg	1535	49	20150716	20160519	R 850,000	1,212	R 701	1
470 Alexandra Road	BISLEY	Pietermaritzburg	1633	4	20160402	20160621	R 875,000	989	R 885	1
470 Alexandra Road	BISLEY	Pietermaritzburg	1633	4	20160402	20160621	R 875,000	989	R 885	1
26 Thornview Road	BISLEY	Pietermaritzburg	9760	0	20150907	20160419	R 895,000	772	R 1,159	1
10 Greathead Road	BISLEY	Pietermaritzburg	1535	31	20150618	20150928	R 900,000	1,041	R 865	1
218 Oribi Road	BISLEY	Pietermaritzburg	1558	41	20150223	20150625	R 900,000	943	R 954	1
196 Oribi road	BISLEY	Pietermaritzburg	1535	54	20160203	20160603	R 920,000	1,078	R 853	1
Ave Stand Size								996		
Ave Price							R 864,375			
Ave Rate/m <sup>2</sup>									R 881	
Price Range							R 700,000	to	R 920,000	

**Table 2 (continued) – Airport Surrounds Zone: Bisley**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	Out Zone
65 Bradshaw road	BISLEY	Pietermaritzburg	1984	7	20141205	20150821	R 700,000	1,056	R 663	2
73 Thornhurst Drive	BISLEY	Pietermaritzburg	1471	30	20160203	20160429	R 825,000	1,436	R 575	2
59 Thornhurst Drive	BISLEY	Pietermaritzburg	1471	23	20160212	20160725	R 950,000	1,488	R 638	2
59 Rutherford circle	BISLEY	Pietermaritzburg	1632	19	20160422		R 980,000	1,102	R 889	2
264 Oribi Road	BISLEY	Pietermaritzburg	1632	57	20150814	20151202	R 999,000	1,102	R 907	2
75 Thornhurst Drive	BISLEY	Pietermaritzburg	1471	31	20150908	20160122	R 1,000,000	1,417	R 706	2
20 Subreiana Drive	BISLEY	Pietermaritzburg	9732	0	20160531		R 1,080,000	657	R 1,644	2
36 Subreiana Drive	BISLEY	Pietermaritzburg	9724	0	20160516		R 1,090,000	715	R 1,524	2
17 Rutherford Circle	BISLEY	Pietermaritzburg	1632	62	20150703	20151112	R 1,095,000	1,102	R 994	2
Ave Stand Size								1,119		
Ave Price							R 968,778			
Ave Rate/m <sup>2</sup>									R 949	
Price Range							R 700,000	to	R 1,095,000	

Ave Price Variance

12.08%

Out zone values>In zone

Ave Stand Size Var

12.41%

Out zone extents>In zone

**Table 3 – Airport Surrounds Zone: Oribi**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	In Zone
20 Kilbruck Road	ORIBI HEIGHTS	Pietermaritzburg	1750	7	20150820	20150806	R 849,000	1,104	R 769	1
24 Kilbruck Road	ORIBI HEIGHTS	Pietermaritzburg	1750	5	20160222	20160419	R 869,000	1,104	R 787	1
225 Oribi Road	ORIBI HEIGHTS	Pietermaritzburg	1558	129	20150826	20151126	R 890,000	1,429	R 623	1
10 Long Road	ORIBI HEIGHTS	Pietermaritzburg	1558	75	20150113	20150401	R 899,000	1,110	R 810	1
15 Long Road	ORIBI HEIGHTS	Pietermaritzburg	1558	110	20140908	20141201	R 935,000	1,272	R 735	1
39 Gilbert Road	ORIBI HEIGHTS	Pietermaritzburg	1558	104	20140916	20150821	R 1,000,000	982	R 1,018	1
26 Gilbert Road	ORIBI HEIGHTS	Pietermaritzburg	1558	136	20150318	20150630	R 1,099,000	982	R 1,119	1
229 Oribi Road	ORIBI HEIGHTS	Pietermaritzburg	1558	127	20160220	20160725	R 1,160,000	1,086	R 1,068	1
18 Gilbert Road	ORIBI HEIGHTS	Pietermaritzburg	1558	119	20160701		R 1,195,000	902	R 1,325	1
10 Kilbruck Road	ORIBI HEIGHTS	Pietermaritzburg	1750	11	20151026	20160201	R 1,200,000	1,059	R 1,133	1
30 Gilbert Road	ORIBI HEIGHTS	Pietermaritzburg	1558	138	20151006	20151221	R 1,300,000	982	R 1,324	1
3 Long Road	ORIBI HEIGHTS	Pietermaritzburg	1558	106	20160204		R 1,350,000	1,064	R 1,269	1
Ave Stand Size								1,090		
Ave Price							R 1,062,167			
Ave Rate/m <sup>2</sup>									R 998	
Price Range							R 849,000	to	R 1,350,000	

Ave Price Variance

N/A

Inconclusive-no data for Out zone

Ave Stand Size Var

N/A

Inconclusive-no data for Out zone



**Table 4 – Airport Surrounds Zone: Pelham**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	In Zone
1 Charles Biniface Road	PELHAM SOUTH	Pietermaritzburg	1341	272	20160504	20160728	R 690,000	1,016	R 679	1
14 Sarel Cilliers Road	PELHAM SOUTH	Pietermaritzburg	1341	222	20151021	20160418	R 749,000	929	R 806	1
43 Carey Road	PELHAM SOUTH	Pietermaritzburg	1187	6	20140620	20140915	R 780,000	1,396	R 559	1
6 Crawford Road	PELHAM SOUTH	Pietermaritzburg	1341	48	20150407	20150821	R 810,000	915	R 885	1
18 Sarel Cilliers Road	PELHAM SOUTH	Pietermaritzburg	1341	224	20160205	20160513	R 817,000	929	R 879	1
40 President Swart Road	PELHAM SOUTH	Pietermaritzburg	1341	74	20150420	20150731	R 820,000	929	R 883	1
20 Sarel Cilliers Road	PELHAM SOUTH	Pietermaritzburg	1341	225	20151120	20160223	R 840,000	929	R 904	1
76 Christie Road	PELHAM SOUTH	Pietermaritzburg	1165	3	20150825	20151027	R 890,000	1,264	R 704	1
62 Pesident Swart Road	PELHAM SOUTH	Pietermaritzburg	1341	85	20160201	20160429	R 900,000	990	R 909	1
62 President Swart Road	PELHAM SOUTH	Pietermaritzburg	1341	85	20160201	20160429	R 900,000	990	R 909	1
68 Rudling Road	PELHAM SOUTH	Pietermaritzburg	1341	270	20160715		R 995,000	914	R 1,089	1
33 Carey Road	PELHAM SOUTH	Pietermaritzburg	1187	11	20160701		R 1,120,000	1,264	R 886	1
Ave Stand Size								1,039		
Ave Price							R 859,250			
Ave Rate/m <sup>2</sup>									R 841	
Price Range							R 690,000	to	R 1,120,000	

**Table 4 (continued) – Airport Surrounds Zone: Pelham**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	Out Zone
29 Rudling Road	PELHAM SOUTH	Pietermaritzburg	1368	11	20141014	20150325	R 750,000	1,288	R 582	2
22 Clark Road	PELHAM SOUTH	Pietermaritzburg	389	21	20160305		R 850,000	1,295	R 656	2
32 Clark Road	PELHAM SOUTH	Pietermaritzburg	1143	49	20160104	20160104	R 955,000	1,231	R 776	2
62 Steele Road	PELHAM SOUTH	Pietermaritzburg	1128	25	20160215	20160728	R 1,000,000	1,494	R 669	2
25 Kinnoull Road	PELHAM SOUTH	Pietermaritzburg	1143	10	20160802		R 1,030,000	1,216	R 847	2
Ave Stand Size								1,305		
Ave Price							R 917,000			
Ave Rate/m <sup>2</sup>									R 706	
Price Range							R 750,000	to	R 1,030,000	

Ave Price Variance  
Ave Stand Size Var

6.72%  
25.61%

Out zone values>In zone  
Out zone extents>In zone

**Table 5 – Airport Surrounds Zone: Scottsville Ext**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	In Zone
34 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	196	20141106	20150218	R 690,000	901	R 766	1
91 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	141	20150525	20150909	R 750,000	901	R 832	1
43 Nile Road	SCOTTSVILLE EXT	Pietermaritzburg	1726	39	20150805	20151028	R 800,000	987	R 811	1
25 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	56	20140610	20141218	R 830,000	972	R 854	1
78 Washington Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	66	20150302	20150428	R 840,000	900	R 933	1
64 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	181	20141204	20141204	R 840,000	901	R 932	1
29 Amazon road	SCOTTSVILLE EXT	Pietermaritzburg	1664	85	20150430	20160530	R 850,000	1,249	R 681	1
92 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	167	20160226		R 900,000	900	R 1,000	1
23 Amazon Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	81	20151023	20150106	R 920,000	937	R 982	1
91 Washington Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	33	20151204	20160510	R 920,000	1,055	R 872	1
52 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	187	20140401	20140728	R 920,000	901	R 1,021	1
130 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1726	2	20140701	20140819	R 920,000	1,069	R 861	1
26 Nile Road	SCOTTSVILLE EXT	Pietermaritzburg	1726	28	20160408		R 930,000	947	R 982	1
5 croft Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	31	20150605	20150818	R 950,000	1,154	R 823	1
115 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1726	12	20151030	20160127	R 950,000	901	R 1,054	1
28 Nile Road	SCOTTSVILLE EXT	Pietermaritzburg	1726	27	20140529	20141117	R 950,000	935	R 1,016	1
47 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	95	20150125	20150430	R 975,000	900	R 1,083	1
9 Pilot Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	6	20150622	20150923	R 1,030,000	1,115	R 924	1
35 Globe Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	101	20141001	20150303	R 1,085,000	1,014	R 1,070	1
15 Emily Road	SCOTTSVILLE EXT	Pietermaritzburg	1664	51	20160704		R 1,200,000	990	R 1,212	1
Ave Stand Size								981		
Ave Price							R 912,500			
Ave Rate/m <sup>2</sup>									R 935	
Price Range							R 690,000	to	R 1,200,000	

Ave Price Variance  
Ave Stand Size Var

N/A      Inconclusive-no data for Out zone  
N/A      Inconclusive-no data for Out zone

**Table 6 – Extended Flight Path Zone: Athlone Area**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	Out Zone
5 Carter Drive	ATHLONE	Pietermaritzburg	1027	78	20160303	20160712	R 1,730,000	1,971	R 878	2
21 Carter Drive	ATHLONE	Pietermaritzburg	1027	71	20151031	20160219	R 1,750,000	2,439	R 718	2
91 Henderson Road	ATHLONE	Pietermaritzburg	1027	107	20151010	20151218	R 1,850,000	3,070	R 603	2
4 Lexden Road	ATHLONE	Pietermaritzburg	935	0	20150306	20150630	R 1,900,000	2,951	R 644	2
8 Athlone Road	ATHLONE	Pietermaritzburg	1475	49	20160606		R 1,900,000	2,049	R 927	2
184 Howick Road	ATHLONE	Pietermaritzburg	592	25	20150929	20151222	R 1,980,000	1,593	R 1,243	2
9 Valley Vista Road	ATHLONE	Pietermaritzburg	1027	5	20140807	20150313	R 2,600,000	2,236	R 1,163	2
75 Hosking Road	ATHLONE	Pietermaritzburg	862	0	20141111	20150422	R 3,000,000	2,539	R 1,182	2
5 Valley Vista Road	ATHLONE	Pietermaritzburg	1027	7	20141111	20150302	R 3,600,000	3,359	R 1,072	2
Athlone	ATHLONE	Pietermaritzburg	1027	100	20150317	20150723	R 4,000,000	409	R 9,780	2
Athlone	ATHLONE	Pietermaritzburg	1027	10	20150317	20150723	R 4,000,000	3,772	R 1,060	2
45 Hosking Road	ATHLONE	Pietermaritzburg	3237	5	20140906	20150129	R 5,800,000	2,858	R 2,029	2
Ave Stand Size								2,437		
Ave Price							R 2,842,500			
Ave Rate/m <sup>2</sup>									R 1,775	
Price Range							R 1,730,000	to	R 5,800,000	

Ave Price Variance

N/A

Inconclusive-no data for In zone

Ave Stand Size Var

N/A

Inconclusive-no data for In zone

**Table 7 – Extended Flight Path Zone: Clarendon Area**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	Out Zone
151A Roberts Road	CLARENDON	Pietermaritzburg	835	123	20160404	20160721	R 850,000	1,000	R 850	2
91 Kitchener Road	CLARENDON	Pietermaritzburg	1237	2	20151217	20160601	R 1,250,000	2,333	R 536	2
2 Davey Close	CLARENDON	Pietermaritzburg	366	43	20150701	20150904	R 1,350,000	2,542	R 531	2
176 Villiers Drive	CLARENDON	Pietermaritzburg	366	51	20160411		R 1,365,000	1,780	R 767	2
19 Kitchener Road	CLARENDON	Pietermaritzburg	396	9	20160413	20160603	R 1,500,000	1,567	R 957	2
21 Voortrekker Road	CLARENDON	Pietermaritzburg	1237	50	20151106	20160229	R 1,500,000	1,068	R 1,404	2
3 Atwell Road	CLARENDON	Pietermaritzburg	1290	3	20150702	20150702	R 1,550,000	1,612	R 962	2
89 Kitchener Road	CLARENDON	Pietermaritzburg	1237	1	20151202	20160316	R 1,600,000	2,175	R 736	2
14 Dan Pienaar Road	CLARENDON	Pietermaritzburg	1237	24	20160410	20160712	R 1,650,000	1,848	R 893	2
2 Dan Pienaar	CLARENDON	Pietermaritzburg	1237	30	20160207	20160615	R 1,875,000	2,157	R 869	2
4 Davey Close	CLARENDON	Pietermaritzburg	366	45	20150203	20150505	R 1,900,000	5,615	R 338	2
7 Atwell Road	CLARENDON	Pietermaritzburg	1450	0	20160211	20160523	R 2,050,000	1,791	R 1,145	2
41 Dan Pienaar Road	CLARENDON	Pietermaritzburg	712	9	20150519	20150828	R 2,195,000	2,195	R 1,000	2
Ave Stand Size								2,129		
Ave Price							R 1,587,308			
Ave Rate/m <sup>2</sup>									R 845	
Price Range							R 850,000	to	R 2,195,000	
Ave Price Variance							N/A	Inconclusive-no data for In zone		
Ave Stand Size Var							N/A	Inconclusive-no data for In zone		

**Table 8 – Extended Flight Path Zone: Wembley Area**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	In Zone
5 Orchard Circle	WEMBLEY	Pietermaritzburg	108	3	20150424	20151014	R 1,083,000	5,791	R 187	1
28 Bellewan Road	WEMBLEY	Pietermaritzburg	314	19	20150908	20151119	R 1,150,000	2,355	R 488	1
16 Bellwan Road	WEMBLEY	Pietermaritzburg	314	34	20160407	20160720	R 1,600,000	6,106	R 262	1
16 Bellewan Road	WEMBLEY	Pietermaritzburg	314	34	20160407	20160720	R 1,600,000	6,106	R 262	1
43 Old Howick Road	WEMBLEY	Pietermaritzburg	986	8	20160606		R 2,250,000	2,396	R 939	1
37A Windermere Road	WEMBLEY	Pietermaritzburg	1916	219	20150211	20150521	R 2,400,000	2,309	R 1,039	1
38 Windermere Road	WEMBLEY	Pietermaritzburg	1916	1	20160526		R 2,600,000	2,081	R 1,249	1
174 Howick Road	WEMBLEY	Pietermaritzburg	592	14	20150618	20151103	R 2,850,000	2,452	R 1,162	1
18 Old Howick Road	WEMBLEY	Pietermaritzburg	697	6	20160115	20160527	R 2,850,000	4,907	R 581	1
32A Armstrong Drive	WEMBLEY	Pietermaritzburg	1916	205	20140919	20150116	R 2,850,000	2,566	R 1,111	1
15 Old Howick Road	WEMBLEY	Pietermaritzburg	941	1	20150908	20160211	R 3,200,000	3,844	R 832	1
15 Old Howick Road	WEMBLEY	Pietermaritzburg	941	1	20150908	20160211	R 3,200,000	3,844	R 832	1
23 Bellewan Road	WEMBLEY	Pietermaritzburg	314	16	20150326	20150722	R 3,300,000	5,570	R 592	1
23 Bellewan Road	WEMBLEY	Pietermaritzburg	314	16	20150326	20150722	R 3,300,000	5,570	R 592	1
36 Tanner Road	WEMBLEY	Pietermaritzburg	1916	23	20150123	20150828	R 3,700,000	3,609	R 1,025	1
45 Oakleigh Avenue	WEMBLEY	Pietermaritzburg	140	1	20151118	20160330	R 5,650,000	5,389	R 1,048	1
Ave Stand Size								4,056		
Ave Price							R 2,723,938			
Ave Rate/m <sup>2</sup>									R 763	
Price Range							R 1,083,000	to	R 5,650,000	

**Table 8 (continued) – Extended Flight Path Zone: Wembley Area**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size	Rate/m <sup>2</sup>	Out Zone
12 Taunton Road	WEMBLEY	Pietermaritzburg	204	5	20160601		R 1,090,000	1,501	R 726	2
12 Oriel Road	WEMBLEY	Pietermaritzburg	1044	3	20160227	20160627	R 1,250,000	1,932	R 647	2
21 Fettes Road	WEMBLEY	Pietermaritzburg	234	4	20160310	20160727	R 1,395,000	1,646	R 848	2
48 Kitchener Road	WEMBLEY	Pietermaritzburg	412	5	20160411		R 1,575,000	2,090	R 754	2
77 Howick Road	WEMBLEY	Pietermaritzburg	1310	0	20141016	20150203	R 1,650,000	1,687	R 978	2
19 Wavell Drive	WEMBLEY	Pietermaritzburg	164	3	20160107	20160531	R 1,670,000	3,707	R 450	2
20 Taunton Road	WEMBLEY	Pietermaritzburg	859	2	20150903	20160219	R 2,095,000	1,958	R 1,070	2
33 Oriel Road Wembly	WEMBLEY	Pietermaritzburg	315	3	20150506	20150828	R 2,100,000	1,878	R 1,118	2
87 Howick Road	WEMBLEY	Pietermaritzburg	541	3	20160129	20160531	R 2,150,000	1,651	R 1,302	2
4 Oriel Road	WEMBLEY	Pietermaritzburg	1044	2	20150930	20160226	R 2,200,000	2,452	R 897	2
71 Howick Road	WEMBLEY	Pietermaritzburg	1311	0	20151120	20160128	R 2,400,000	5,836	R 411	2
20 Oriel Road	WEMBLEY	Pietermaritzburg	1824	51	20150607	20151202	R 2,785,000	3,420	R 814	2
1 Fettes Road	WEMBLEY	Pietermaritzburg	412	9	20151201	20160407	R 3,076,000	1,540	R 1,997	2
1 Covent Gardens	WEMBLEY	Pietermaritzburg	3322	0	20160316		R 3,200,000	7,471	R 428	2
47 Cordwalles Road	WEMBLEY	Pietermaritzburg	207	91	20150402	20150611	R 4,200,000	1,643	R 2,556	2
Ave Stand Size								2,694		
Ave Price							R 2,189,067			
Ave Rate/m <sup>2</sup>									R 1,000	
Price Range							R 1,090,000	to	R 4,200,000	

Ave Price Variance

-19.64%

In zone values>Out zone

Ave Stand Size Var

-33.58%

In zone extents>Out zone

**Table 9 – Extended Flight Path Zone: Worlds View Area**

Street Address	Suburb	Township	Erf	Ptn	Sale Date	Reg Date	Sale Price	Size m <sup>2</sup>	Rate/m <sup>2</sup>	Out Zone
12 Dunstan Place	WORLDS VIEW	Pietermaritzburg	300	31	20151110	20160323	R 1,000,000	2,603	R 384	2
25 Bunny Anderson Road	WORLDS VIEW	Pietermaritzburg	1788	0	20131116	20140305	R 1,265,000	3,201	R 395	2
17 Dunstan Place	WORLDS VIEW	Pietermaritzburg	300	10	20140924	20150316	R 1,590,000	2,016	R 789	2
9 Dunstan Place	WORLDS VIEW	Pietermaritzburg	300	13	20140410	20140714	R 1,595,000	3,089	R 516	2
9 Colenso Road	WORLDS VIEW	Pietermaritzburg	300	20	20150202	20150507	R 1,750,000	2,359	R 742	2
14 Dunstan Place	WORLDS VIEW	Pietermaritzburg	300	4	20151118	20160407	R 1,895,000	3,059	R 619	2
11 Colenso Road	WORLDS VIEW	Pietermaritzburg	300	23	20140830	20150324	R 1,895,000	2,795	R 678	2
8 Bunny Anderson Road	WORLDS VIEW	Pietermaritzburg	1592	25	20150604	20151127	R 1,900,000	1,972	R 963	2
11 Dunstan Place	WORLDS VIEW	Pietermaritzburg	300	8	20160128	20160516	R 2,025,000	2,472	R 819	2
Ave Stand Size								2,618		
Ave Price							R 1,657,222			
Ave Rate/m <sup>2</sup>									R 656	
Price Range							R 1,000,000	to	R 2,025,000	

Ave Price Variance

N/A

Inconclusive-no data for In zone

Ave Stand Size Var

N/A

Inconclusive-no data for In zone