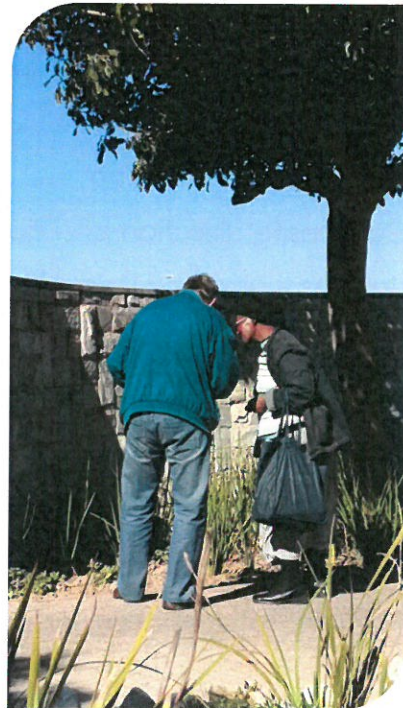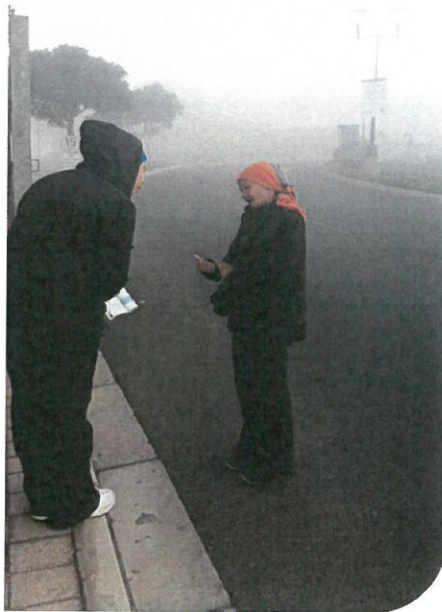**Western Cape Government**
Environmental Affairs & Development Planning

Directorate: Development Facilitation
RSEP/VPUU Programme Office
Reference: 18/6/1/BS1.1

VREDENBURG PEDESTRIAN SURVEY

FINAL REPORT: DECEMBER 2015

FILE
06/04/2016

CONTENTS

1. INTRODUCTION AND BACKGROUND

During site visits to the Vredenburg RSEP focus area, high levels of pedestrian movement were observed through the Wesbank "Gateway" area and along Kooitjieskloof Road. These observations led to a proposal to conduct a pedestrian survey in Vredenburg, which was subsequently conducted on the 6th and 7th of August 2015.

The purpose of the Vredenburg pedestrian survey was to gain an understanding of pedestrian volumes and movement patterns at three points in the town. More specifically, the survey sought to determine the following information:

- The number of pedestrians;
- The origin and destination of pedestrians;
- The average walking distances of pedestrians between their place of origin and destination;
- Pedestrians' perceptions of public transport; and
- Pedestrians' perceptions of safety, satisfaction with the condition of walkways and lighting, and the provision of services and rest places (at the Wesbank station only).

Critical to the RSEP/VPUU Programme is ensuring that planned projects and interventions achieve the RSEP objectives and make a meaningful impact on local communities; hence, the Project Office, in collaboration with the Saldanha Bay Municipality, saw the need to conduct a pedestrian survey in Vredenburg. The pedestrian survey also sought to investigate ways in which planned interventions can benefit pedestrians and, furthermore, to obtain ideas from the local communities and users of the space about how they would like the area to be developed.

While the Wesbank "Gateway" area was of particular interest owing to the imminent upgrades in the area, two other survey sites were selected in order to gain a broader understanding of pedestrian movement patterns at three strategic points. All three of the survey stations selected are located in the "transition area" between Vredenburg's low income residential areas and Vredenburg North, which encompasses the middle income residential areas, the traditional CBD, several government buildings, Vredenburg Primary and Secondary Schools, health facilities and other community facilities.

The pedestrian survey also stems from the fact that pedestrian movement is largely misunderstood, undervalued and underestimated by the public and by transport specialists, particularly in relatively small-to-medium-sized towns, such as Vredenburg. Thus, by conducting a pedestrian survey, the RSEP/VPUU team sought to influence decision-making in the planning of transport and space – not only in Vredenburg but also in other small-to-medium-sized towns in the Western Cape.

2. METHODOLOGY

2.1 Planning and preparations for the survey

In preparation for the survey, the RSEP/VPUU Project Office developed count forms for each survey station. Two count forms were developed for each station: one to count pedestrians moving from residential areas towards activity nodes; and a second to count pedestrians moving from activity nodes to residential areas. The count form required pedestrians to be counted according to age group and gender per 30 minute time slot.

The RSEP/VPUU Project Office also developed a standard questionnaire to be utilised during the interviews with pedestrians. The questionnaire was developed in order to allow both qualitative and quantitative data to be collected through the interviews. The Saldanha Bay Municipality's RSEP Project Manager, Mr Marius Meiring, was consulted about the content of the questionnaire and was invited to provide inputs. In addition, the RSEP/VPUU Project Office, with Dawie Kruger as the lead on this project, discussed the questionnaire with the rest of the DEADP survey team who were also encouraged to provide inputs on the content. The necessary adjustments were made thereafter.

The questionnaire required the following information from pedestrians:

- A. General Information: Gender, Age Group, Language Preference
- B. Origin: From where are you walking?
- C. Destination: Where are you walking to?
- D. Purpose: What is the purpose of your trip?
- E. How long have you been walking for?
- F. Perception of public transport: Why are you not using public transport / taxis?
- G. Perception survey:
    1. Safety (crime and violence):

        How safe do you feel walking here in the morning?

        How safe do you feel walking here in the evening?

        What do you think the chance is of a crime incident happening while walking here?

    2. Safety (uneven surfaces; possibility of injuries):

        What do you think the chance is of getting an injury while walking in this area?

    3. Satisfaction with conditions:

        Are you satisfied with the condition of roads and/or pathways in this area?

        Are you satisfied with the lighting provided in this area?

    4. Ambience/appearance:

        How would you describe the feeling and appearance of this area?

    5. Rest places:

How do you rate the provision of rest places in this area?

6. Toilet facilities:

    How do you rate the provision of toilets in this area?

For each of the questions, a number of options were provided in order for the interviewers to be able to tick the relevant box with the intention being to save time.

Prior to commencing the survey, a brief training session was conducted in order to provide a background of what led to the pedestrian survey and to outline the purpose of the survey. The survey team was briefed about the contents of the questionnaire, and roles and responsibilities were assigned to the survey team for the survey period.

2.2   Conducting the survey

The survey was conducted over two days starting at 13h00 on Thursday, 6 August until 18h30. The survey continued on Friday, 7 August at 06h00 and concluded at 13h00. Thus, the survey covered a period of 12 ½ hours from 06h00 to 18h30.

The survey team was made up of nine provincial officials from the WCG DEADP, five municipal officials from the Saldanha Bay Municipality and four top-achieving students from the local West Coast College in Vredenburg. The names of the survey team are contained in Table 1 below.

WCG DEADP	SALDANHA BAY MUNICIPALITY	WEST COAST COLLEGE
1. Francois Wüst	1. Marius Meiring	1. Momelezi Dungelo
2. Dawie Kruger	2. Charles Barends	2. Ludidi Zinzisa
3. Samantha Dyer	3. David Joubert	3. Yolanda Mqikela
4. Wadzanai Madangombe	4. Wilene Smit	4. Siphokuhle Fesi
5. Dylan Johnstone	5. Ethne Julius	
6. Michelle Botha		
7. Nathaneal Jacobs		
8. Chantel Hauptfleisch		
9. Roy Gardener		

Table 1: The Vredenburg Pedestrian Survey Team

The survey was conducted at the following three stations:

● **Wesbank Area:** This was both a survey and count station. The team stationed here was comprised of nine people and was led by Marius Meiring, SBM's RSEP Project Manager. During the survey, two people conducted the pedestrian count while six to eight people conducted interviews. The team was comprised of six people fluent in English and Afrikaans and two people fluent in English and isiXhosa. The interviews at the Wesbank

station included Part G of the questionnaire – the perception survey. Conducting the perception survey at the Wesbank station prior to upgrades in the area means that a follow-up survey conducted after implementation of interventions will enable the impact of these interventions to be measured.

- **Weskus Mall**: This was both a survey and count station. The team stationed here was comprised of five people, led by Dawie Kruger, with one person conducting the pedestrian count and four people conducting interviews. The team had three people fluent in English and Afrikaans and one in English and isiXhosa. The interviews at the Mall station only covered Parts A-F of the questionnaire. The five research team members strategically located themselves at the Mall's pedestrian gate in order to capture the flow of pedestrians walking in and out of the Mall.

- **Vink Street**: This was a count station only where at least two people were present at any given time counting the number of passing pedestrians. This team was led by Francois Wüst who also moved around to support the other two survey stations where necessary.

At all three survey stations, the count was conducted by counting all pedestrians that walked past the survey station and the numbers were recorded on the count form per 30 minute time slot according to age group and gender.

For the interviews, a sample size of 20% was the target; thus, during peak hours, the aim was to interview one in every five pedestrians walking past the station.

2.3   Compiling and analysing the results

Following completion of the survey, the RSEP/VPUU Project Office compiled the results per survey station. The data was sorted and filtered using *Microsoft Excel* and the results were then presented graphically and interpreted.

3. RESULTS

3.1 Count and Sample Size

i. Wesbank Survey Station

DIRECTION OF MOVEMENT	A. WESBANK STATION		
	Residential towards activity nodes	Activity nodes towards residential	TOTAL
COUNT	1907	2091	3998

Table 2: Wesbank Station Count

DATE INTERVIEW CONDUCTED	06-Aug	07-Aug	TOTAL
NO OF COMPLETED QUESTIONNAIRES	187	174	361
SAMPLE SIZE (%)	9.81	8.32	9.03

Table 3: Wesbank Station Sample Size

Tables 2 and 3 illustrate the count and sample size at the Wesbank survey station. The total number of pedestrians counted that walked past the Wesbank survey station is 3 998 during the survey period. There were more people counted walking from activity nodes towards residential areas (2091) compared to those walking from residential areas towards activity nodes (1907), although this is only a slight difference. A total of 361 questionnaires were completed at the Wesbank station over the two days, which results in a sample size of 9%, a sample size below the initially targeted sample size of 20%.

ii. Mall Survey Station

DIRECTION OF MOVEMENT	B. MALL STATION		
	Residential towards activity nodes	Activity nodes towards residential	TOTAL
COUNT	663	576	1239

Table 4: Mall Station Count

DATE INTERVIEW CONDUCTED	06-Aug	07-Aug	TOTAL
NO OF COMPLETED QUESTIONNAIRES	231	101	332
SAMPLE SIZE (%)	34.84	17.53	26.80

Table 5: Mall Station Sample Size

Tables 4 and 5 above demonstrate the count and sample size at the Mall survey station. The total number of pedestrians counted that walked past the survey station is 1 239 over the

survey period. There were more people counted walking from residential areas towards the Mall (663) compared to those walking from the Mall towards residential areas (576); however, this difference is not significant. A total of 332 questionnaires were completed at the Mall survey station, which results in a sample size of 26.8% thus higher than the target of 20%.

iii. Vink Street Count Station

DIRECTION OF MOVEMENT	C. VINK STREET		
	Residential towards activity nodes	Activity nodes towards residential	TOTAL
COUNT	300	268	558

Table 6: Vink Street Count

Table 6 above shows the count at the Vink Street station. A total of 558 pedestrians walked past the station during the survey period with more pedestrians (300) walking from residential areas towards activity nodes compared to 268 pedestrians walking from activity nodes towards residential areas, although once again this difference was not notable.

iv. Composite Count and Sample Size

DIRECTION OF MOVEMENT	D. COMPOSITE (ALL THREE STATIONS)		
	Residential towards activity nodes	Activity nodes towards residential	TOTAL
COUNT	2870	2925	5795

Table 7: Composite Count

DATE INTERVIEW CONDUCTED	06-Aug	07-Aug	TOTAL
NO OF COMPLETED QUESTIONNAIRES	418	275	693
SAMPLE SIZE (%)	14.56	9.40	11.96

Table 8: Composite Sample Size

Table 7 above provides a composite pedestrian count at all three stations. The total number of pedestrians counted that walked past the three stations is 5 795 during the survey period. More people were counted walking from activity nodes towards residential areas (2925) compared to those walking from residential areas towards activity nodes (2870); however, this difference is very small.

The Wesbank station recorded the highest pedestrian activity followed by the Mall station and then Vink Street, with 3 998, 1 239 and 558 pedestrians counted at each station, respectively.

A total of 693 questionnaires were completed during the survey period, which results in an average sample size of 11.96% (Table 8). The sample size is, therefore, below the initially targeted sample size of 20%. However, with more than 300 questionnaires completed per station, the margin of error is considered to be approximately 6%, which is an acceptable representation of opinions for reaching conclusions.
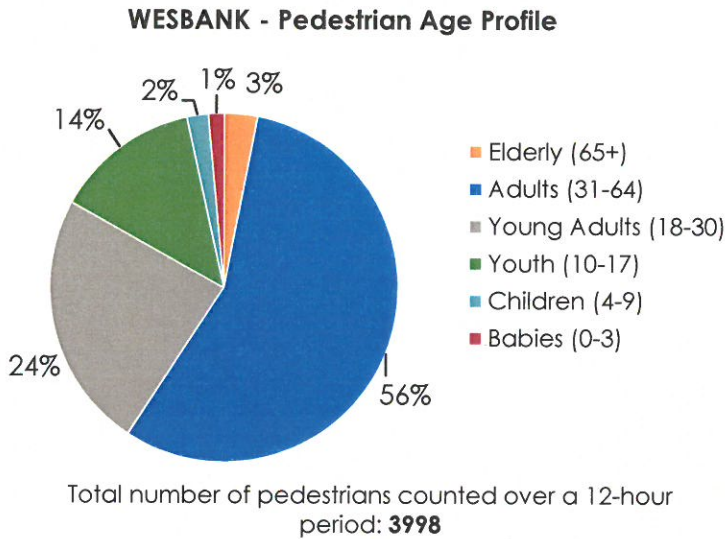
3.2 Pedestrian Profile

i.   Age Profile

WESBANK - Pedestrian Age Profile

Total number of pedestrians counted over a 12-hour period: **3998**

Figure 1: Wesbank Station Pedestrian Age Profile

MALL - Pedestrian Age Profile

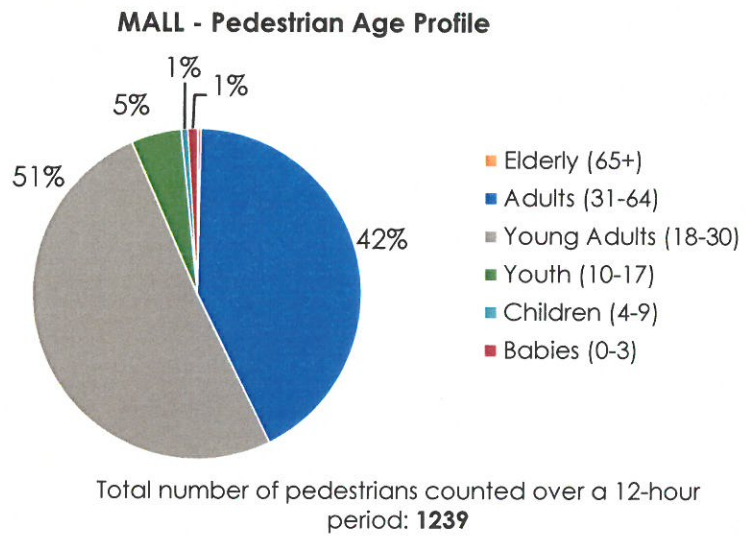Total number of pedestrians counted over a 12-hour period: **1239**

Figure 2: Mall Station Pedestrian Age Profile

VINK STREET - Pedestrian Age Profile

Total number of pedestrians counted over a 12-hour period: **558**
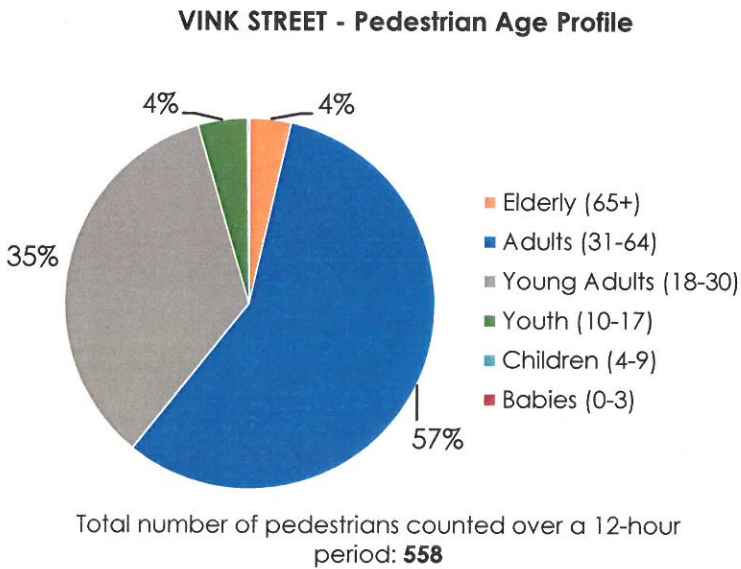
Figure 3: Vink Street Pedestrian Age Profile

ALL SITES (COMPOSITE): Pedestrian Age Profile

Total number of pedestrians counted over a 12-hour period: **5795**
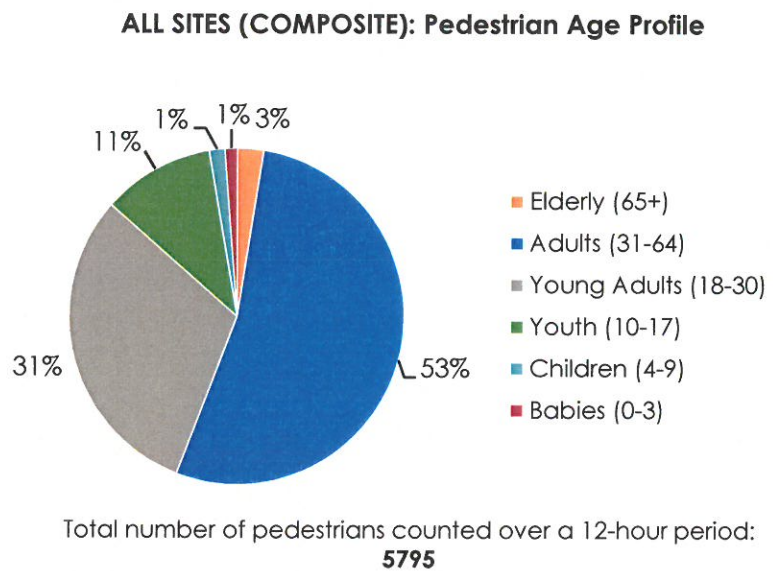
Figure 4: Composite Pedestrian Age Profile

Figures 1 to 3 above illustrate the pedestrian profile according to age group at each survey station followed by the composite results for all three stations in Figure 4. At both the Wesbank and Vink Street stations, the majority of pedestrians were adults (aged 31-64) comprising 56% and 57% of pedestrians, respectively. At the Mall station, 51% of pedestrians counted were classified as young adults (18-30). At all three survey stations, the number of babies (aged 0-3) and children (aged 4-9) counted was very low, with each age group accounting for only 1% of the total number of pedestrians.
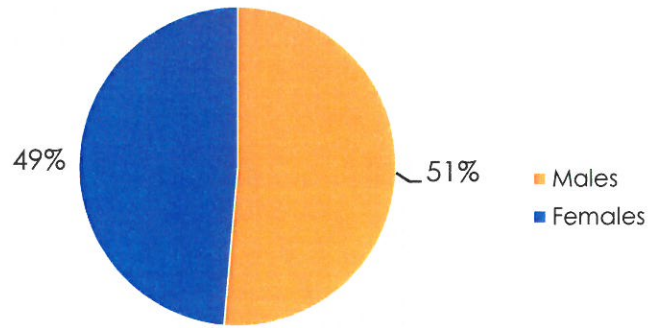
ii.   Gender Profile

WESBANK - Pedestrian Gender Profile

37%

63%

- Males
- Females
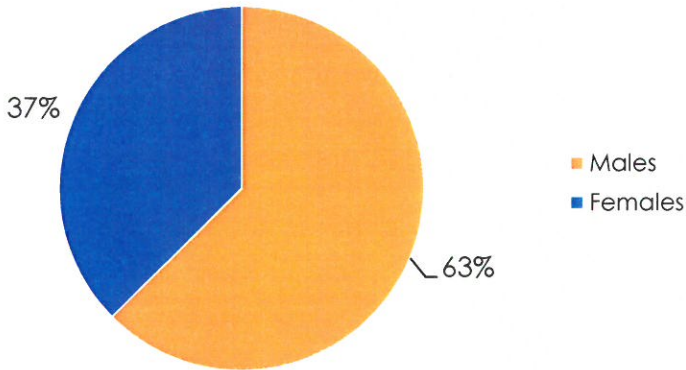
Total number of pedestrians counted over a 12-hour period: **3998**

Figure 5: Wesbank Station Pedestrian Gender Profile

MALL - Pedestrian Gender Profile

49%

51%

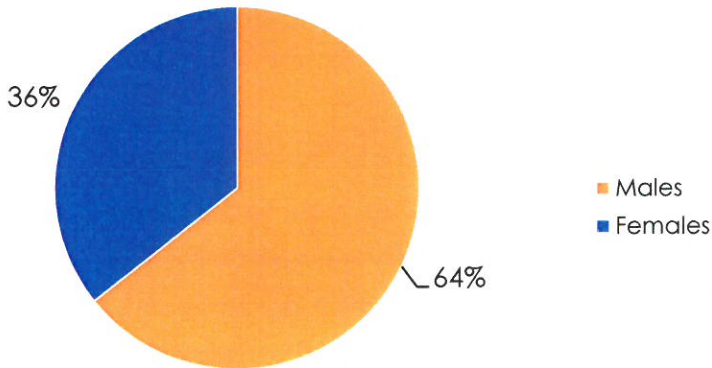- Males
- Females

Total number of pedestrians counted over a 12-hour period: **1239**

Figure 6: Mall Station Pedestrian Gender Profile

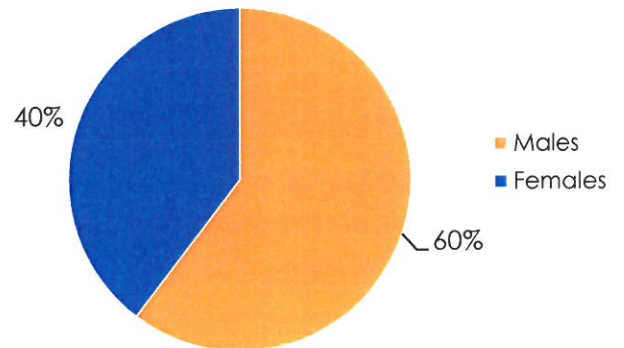### VINK STREET - Pedestrian Gender Profile

36%

64%

- Males
- Females

Total number of pedestrians walking through over a 12-hour period: **558**

Figure 7: Vink Street Station Pedestrian Gender Profile

ALL SITES (COMPOSITE): Pedestrian Gender Profile

40%

60%

- Males
- Females

Total number of pedestrians walking over a 12-hour period: **5795**

Figure 8: Composite Pedestrian Gender Profile

Figures 5 to 8 above illustrate the pedestrian profile according to gender at each survey station followed by the composite results for all three stations in Figure 8. At all three stations, more male pedestrians were counted than females, totalling 3 498 male pedestrians (60%) compared to 2 297 females (40%). The only station where there was an almost 50:50 split was the Mall station where 51% of pedestrians counted were male and 49% were female.

3.3   Pedestrian Distribution

i.   Wesbank Survey Station

WESBANK: Distribution & direction of pedestrian movement from 06h00 to 18h30
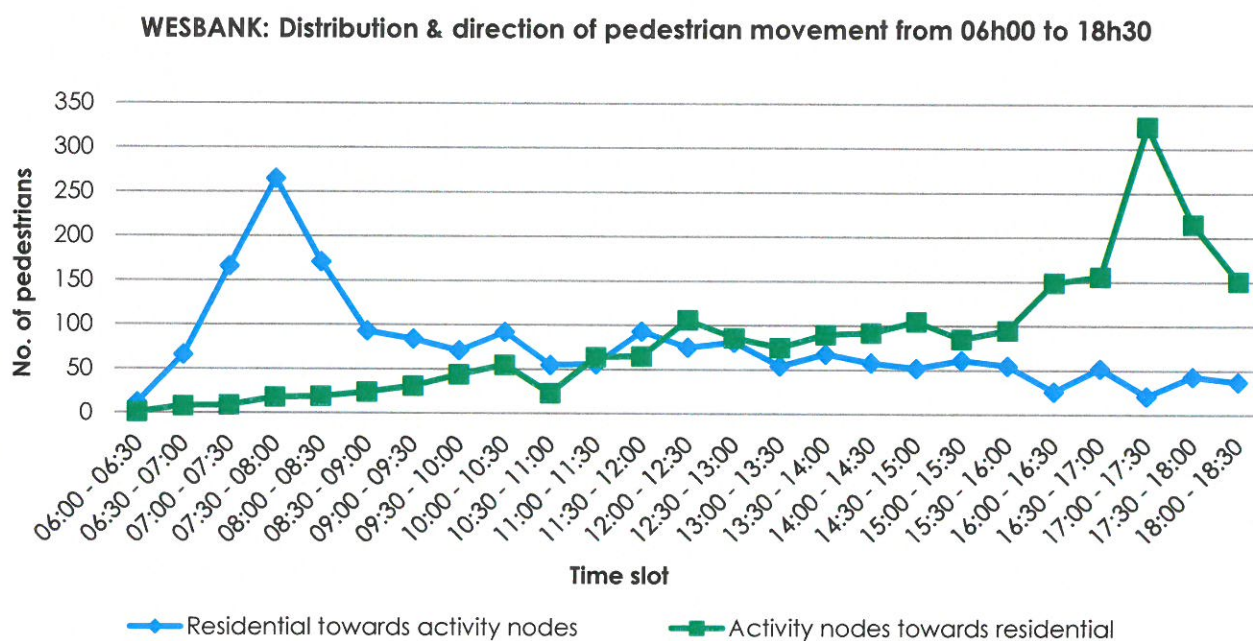

Figure 9: Wesbank Station: Distribution & direction of pedestrian movement from 06h00 to 18h30.

Figure 9 above illustrates the distribution and direction of pedestrian movement between 06h00 and 18h30 at the Wesbank survey station. The line graph shows that there was a much higher level of pedestrian movement from residential areas towards activity nodes during the 07h00 to 08h00 period with the peak time being 07h30 to 8h00 during which approximately 265 pedestrians were counted. From 08h30 onwards, pedestrian movement from residential areas to activity nodes dropped to below 100 pedestrians counted per 30 minutes. From 16h00 to 18h30, less than 50 pedestrians were counted walking from residential areas towards activity nodes per 30 minutes.

Pedestrian movement from activity nodes towards residential areas was very low early in the day but progressively increased throughout the day with a sharp increase from 16h30. The peak time was 17h00 to 17h30 during which 325 pedestrians were counted walking from activity nodes to residential areas.

ii.   Mall Survey Station

MALL: Distribution & direction of pedestrian movement from 06h00 to 18h30
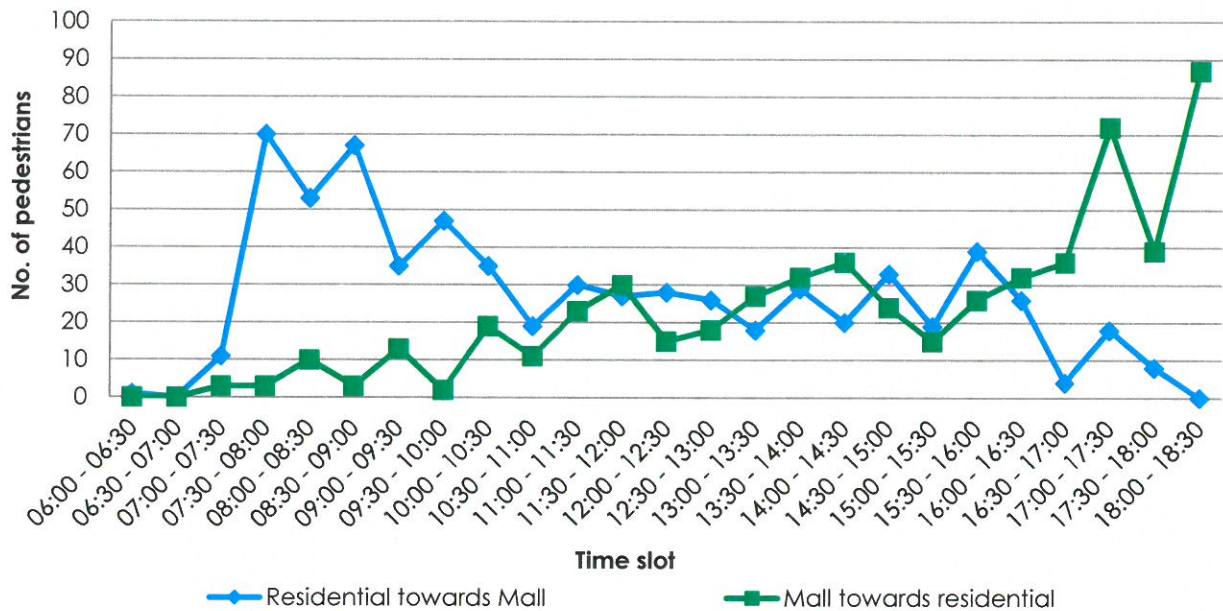

Figure 10: Mall Station: Distribution & direction of pedestrian movement from 06h00 to 18h30

Figure 10 above illustrates the distribution and direction of pedestrian movement between 06h00 and 18h30 at the Mall survey station. The line graph shows that there was a higher level of pedestrian movement from residential areas towards the Mall during the 07h30 to 10h00 period. The peak time was 07h30 to 09h00 during which approximately 210 pedestrians were recorded walking from the residential areas towards the Mall during the 90 minute period. From 10h00 onwards, pedestrian movement from residential areas to the Mall dropped significantly to below 30 pedestrians counted per 30 minutes. There was a slight increase again from 14h30 to 15h00 and 15h30 to 16h00; however, this quickly tapered off with no pedestrians being recorded between 18h00 and 18h30.

The number of pedestrians moving from the Mall towards residential areas was very low early in the day but progressively increased with a sharp increase from 16h30. The peak times were 17h00 to 17h30 and 18h00 to18h30 during which 72 and 87 pedestrians were recorded leaving the Mall, respectively.

iii.   Vink Street Count Station

VINK STREET: Distribution & direction of pedestrian movement from 06h00 to 18h30
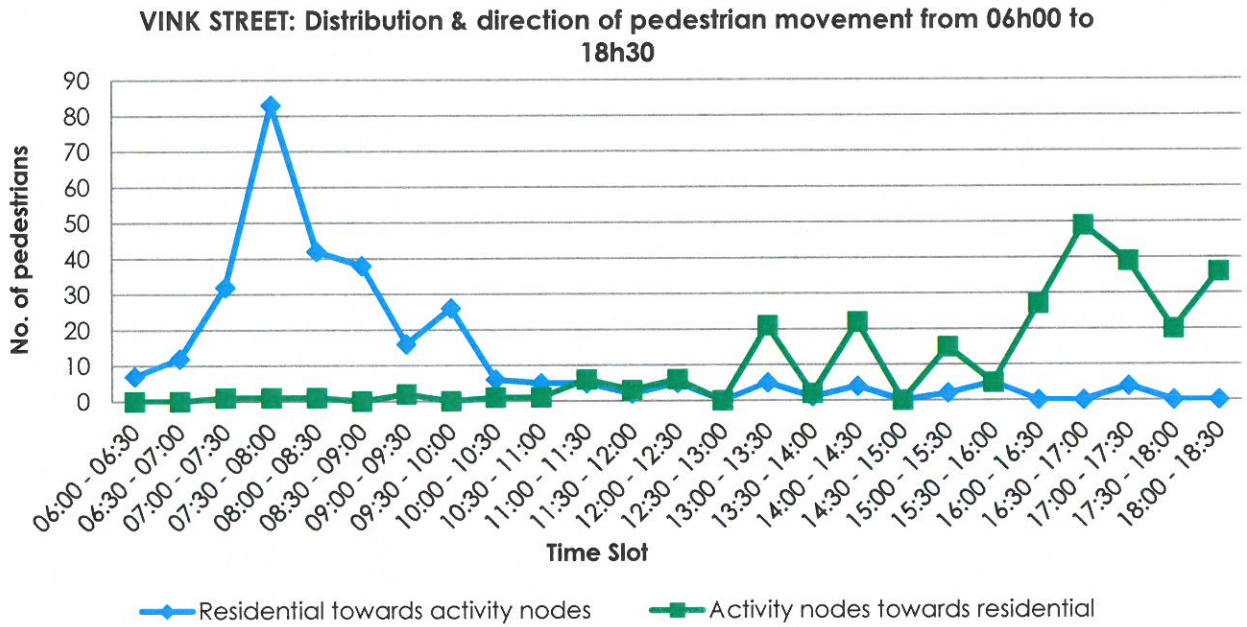

Figure 11: Vink Street: Distribution & direction of pedestrian movement from 06h00 to 18h30

Figure 11 above illustrates the distribution and direction of pedestrian movement between 06h00 and 18h30 at the Vink Street station. The line graph shows that there was a higher level of pedestrian movement from residential areas towards activity nodes between the 07h00 and 08h30 period with the peak time being 07h30 to 08h00 during which approximately 83 pedestrians were recorded walking in that direction. From 10h00 onwards, pedestrian movement from residential areas to activity nodes dropped significantly to less than 10 pedestrians recorded during a 30 minute period.

There were one or two pedestrians observed walking from activity nodes towards residential areas between 06h00 and 11h00 with notable increases observed from 13h00 to 13h30 and 14h00 to 14h30 during which approximately 20 pedestrians were counted walking past the Vink Street station during each 30 minute time period. There was a sharp increase in the number of pedestrians walking from activity nodes towards residential areas from 16h00, and a peak was reached between 16h30 and 17h00 during which approximately 50 pedestrians were recorded.

iv. Composite direction and distribution of pedestrian movement

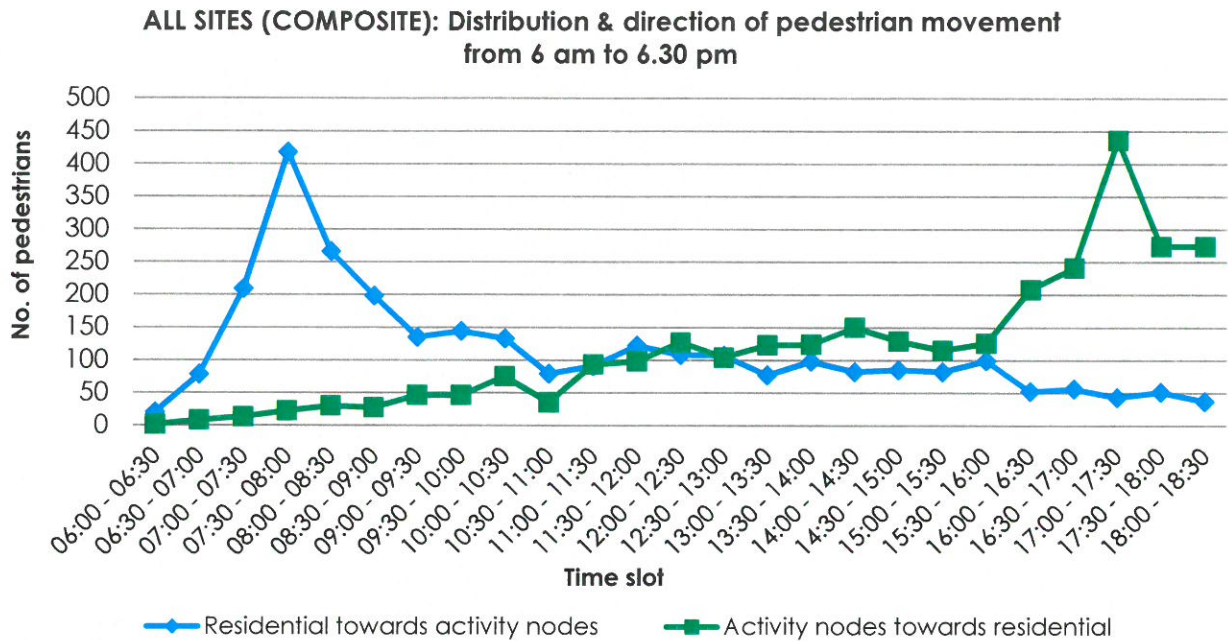**ALL SITES (COMPOSITE): Distribution & direction of pedestrian movement from 6 am to 6.30 pm**

Figure 12: Composite distribution & direction of pedestrian movement from 06h00 to 18h30

Figure 12 above illustrates a composite representation of the distribution and direction of pedestrian movement at all three survey stations between 06h00 and 18h30. The line graph shows that there was a higher level of pedestrian movement from residential areas towards activity nodes between 07h00 to 09h00 with the peak time being 07h30 to 08h00 during which approximately 418 pedestrians were recorded. From 09h00 onwards, pedestrian movement from residential areas to activity nodes dropped, with less than 150 pedestrians counted during each 30 minute time slot. From 16h00, approximately 50 pedestrians were counted per 30 minute slot.

The number of pedestrians moving from activity nodes towards residential areas started off low (<50) early in the day but progressively increased throughout the day. From 11h00 onwards, over 100 pedestrians were counted during each 30 minute time slot with a peak between 17h00 and 17h30 during which a total of approximately 436 pedestrians were recorded walking from activity nodes towards residential areas.

3.4 Distances walked by pedestrians and time spent walking
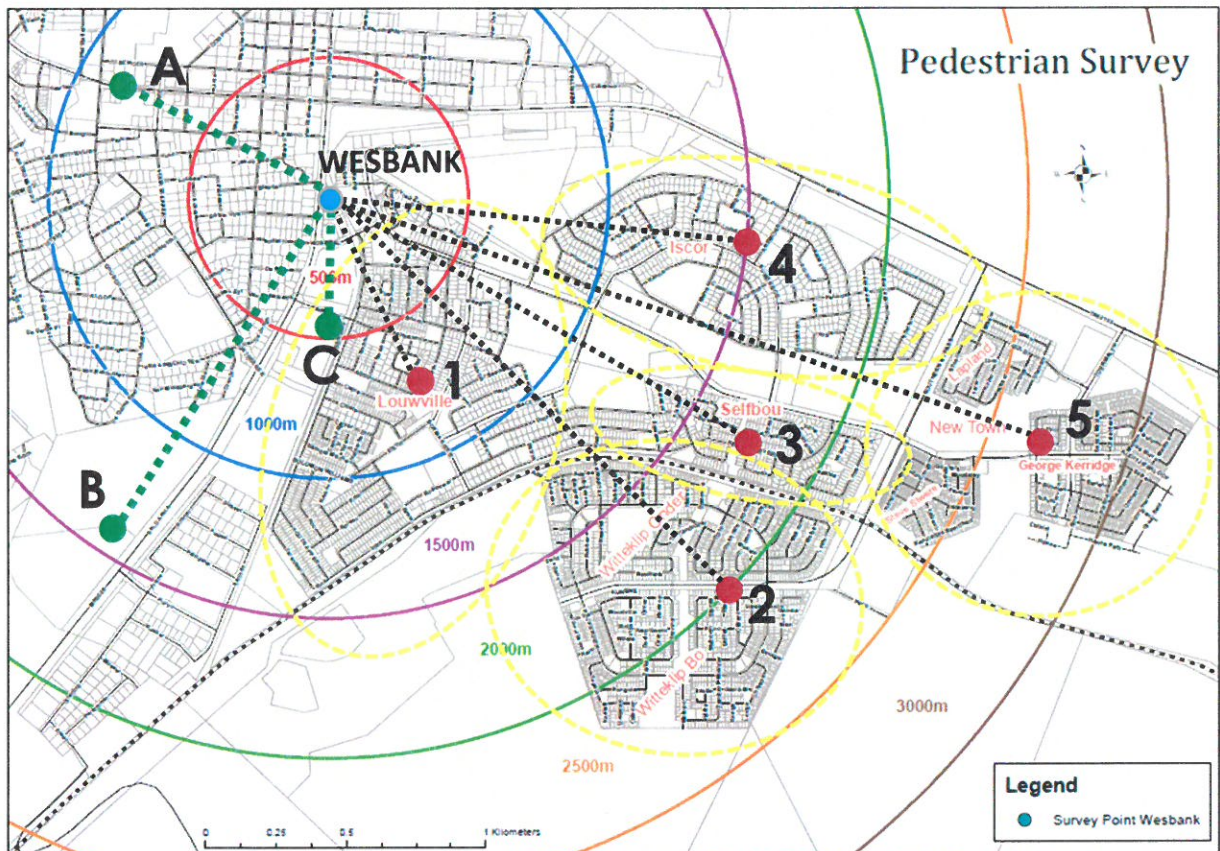
i. Wesbank Survey Station

Figure 13: The main routes walked by pedestrians interviewed at the Wesbank survey station between the three major activity nodes (A, B and C) and the five grouped residential areas of Vredenburg (1-5).

Of the 361 pedestrians interviewed at the Wesbank survey station, it was possible to obtain the estimated distance walked by 345 pedestrians by measuring the average distance between their origin and destination. For most of the pedestrians, this meant the distance between their area of residence and one of the activity nodes in the town, namely:

A. Vredenburg North (including CBD, Schools, Hospital, Government Buildings, Church);

B. Weskus Mall; and

C. West Coast College.

For the purposes of compiling and analysing the Wesbank survey data, the residential areas were grouped into five major areas (seen in Figure 13):

Area 1: Louwville, Wesbank

Area 2: Witteklip Onder, Witteklip Bo (Hopland)

Area 3: Selfbou

Area 4: Iscor

Area 5: Lapland, George Kerridge, Steve Stwete/ Smartie Town, New Town.

It is implicit that all pedestrians interviewed at the Wesbank station had walked via Wesbank between their origin and destination. The figures contained within Table 9 below include pedestrians walking in both directions. The distance between origin and destination was measured as the crow flies as the pedestrians were not asked to describe their routes taken between origin and destination. Based on a calculated average, the actual walking distances are likely to be approximately 900 metres more than the distances measured as the crow flies. The estimated walking times were calculated according to an average walking speed of 5 km/hour.

MAIN WALKING ROUTES	NO. OF PEDESTRIANS	ESTIMATED WALKING DISTANCE AS THE CROW FLIES (in metres)	ESTIMATED WALKING TIME (in minutes)
A: Vredenburg North ↔ **Area 1:** Louwville, Wesbank	92	1001–1500	12–18
A: Vredenburg North ↔ **Area 2:** Witteklip Onder, Witteklip Bo (Hopland)	122	2501–3000	31–36
A: Vredenburg North ↔ **Area 3:** Selfbou	8	2001–2500	25–30
A: Vredenburg North ↔ **Area 4:** Iscor	16	2001–2500	25–30
A: Vredenburg North ↔ **Area 5:** Lapland, George Kerridge, Steve Stwete/ Smartie Town, New Town	104	3001–3500	37–42
B: Mall ↔ **Area 2:** Witteklip Onder, Witteklip Bo (Hopland)	1	3001–3500	37–42
C: College ↔ **Area 5:** Lapland, George Kerridge, Steve Stwete/ Smartie Town, New Town	2	3001–3500	37–42

Table 9: The number of pedestrians interviewed at the Wesbank station walking between the three major activity nodes (A, B and C) and the five grouped residential areas of Vredenburg, irrespective of direction of movement. The table also presents the estimated distance walked by pedestrians between those points in addition to the estimated walking time.

Table 9 shows that most pedestrian activity recorded at the Wesbank station occurred between Vredenburg North (Point A) and Area 2, which includes the residential areas of Witteklip Onder and Witteklip Bo (also referred to as Hopland), as 122 pedestrians reported walking between these points over the 12½-hour survey period. This means that approximately 35% of pedestrians interviewed at the Wesbank station walked a distance of

between 2.5 and 3 km during one trip, which would take an estimated 30 to 36 minutes to walk at a speed of 5km/hour.

The second most popular route was between Vredenburg North (Point A) and Area 5, which includes the residential areas of George Kerridge, Lapland, Steve Stwete and Smartie Town. Of the 345 pedestrians interviewed at Wesbank, 104 pedestrians (30%) walked this route of approximately 3 to 3.5 km, a route that would take approximately 40 minutes to walk.

Another popular route was between Vredenburg North (Point A) and Area 1, which covers Wesbank and Louwville, with approximately 27% of pedestrians interviewed at Wesbank walking this route of between 1 and 1.5 km, which would take between 12 and 18 minutes to walk.

The vast majority (90%) of pedestrians interviewed at the Wesbank station who walked to and from Vredenburg North (Point A) noted that they were specifically visiting the CBD and, in particular, were walking for the purposes of shopping and/or work.

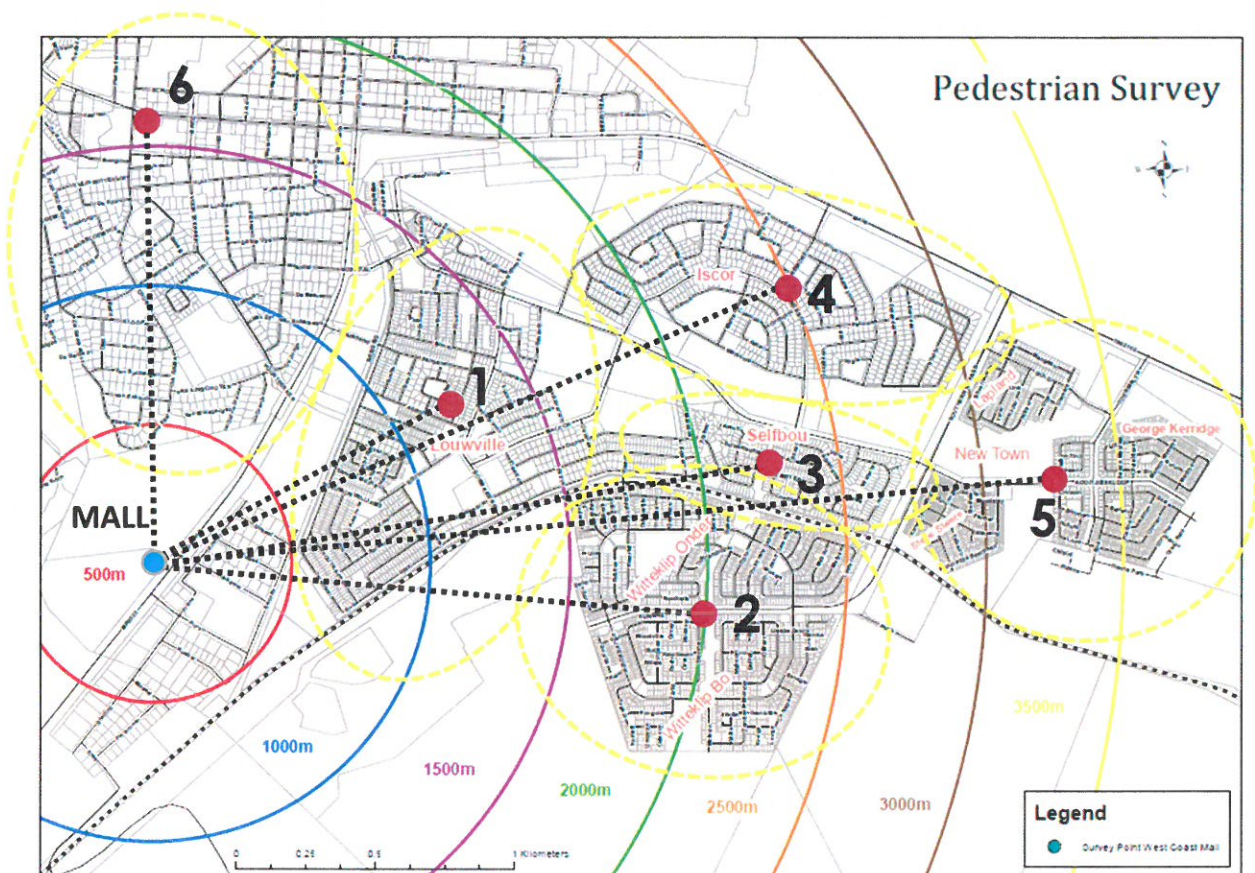## ii.   Mall Survey Station

Figure 14: The main routes walked by pedestrians interviewed at the Mall survey station between the Weskus Mall and the six grouped areas of Vredenburg.

Of the 332 pedestrians interviewed at the Mall survey station, it was possible to obtain the estimated walking distance of 274 pedestrians by measuring the average distance between their origin and destination. For most of the pedestrians, this meant the distance between their area of residence and the Mall or, alternatively, between the Mall and Vredenburg North (including the CBD, schools and hospital).

For the purposes of compiling and analysing the Mall survey data, the town was grouped into six major areas (as seen in Figure 14):

Area 1: Louwville, Wesbank
Area 2: Witteklip Onder, Witteklip Bo (Hopland)
Area 3: Selfbou
Area 4: Iscor
Area 5: Lapland, George Kerridge, Steve Stwete/ Smartie Town, New Town
Area 6: Vredenburg North (CBD, Schools, Hospital, Govt. Buildings, Church)

The figures contained within Table 10 below include pedestrians walking in both directions. Once again, it is important to note that the distance between origin and destination was measured as the crow flies and the actual walking distances are likely to be approximately 900 metres more than the distances measured as the crow flies. The estimated walking times were calculated according to an average walking speed of 5 km/hour.

MAIN WALKING ROUTES	NO. OF PEDESTRIANS	ESTIMATED WALKING DISTANCE AS THE CROW FLIES (in metres)	ESTIMATED WALKING TIME (in minutes)
Mall ↔ Area 1: Louwville, Wesbank	109	1001–1500	12–18
Mall ↔ Area 2: Witteklip Onder, Witteklip Bo (Hopland)	80	1501–2000	19–24
Mall ↔ Area 3: Selfbou	6	2001–2500	25–30
Mall ↔ Area 4: Iscor	7	2001–2500	25–30
Mall ↔ Area 5: Lapland, George Kerridge, Steve Stwete/ Smartie Town, New Town	42	3001–3500	37–42
Mall ↔ Area 6: Vredenburg North	30	1501–2000	19–24

Table 10: The number of pedestrians interviewed at the Mall station walking between the Mall and the six grouped areas of Vredenburg, irrespective of direction of movement. The table also presents the estimated distance walked by pedestrians between those points in addition to the estimated walking time.

As demonstrated in Table 10, most pedestrian activity was experienced between the Mall and the residential areas of Louwville and Wesbank (Area 1). A total of 109 pedestrians

reported walking between these two points over the survey period, which means that approximately 33% of pedestrians interviewed at the Mall Station walked this route of between 1 and 1.5 km during one trip, which would take an estimated 12 to 18 minutes to walk at a speed of 5km/hour.

The second most popular route was between the Mall and Area 2 covering the residential areas of Witteklip Bo and Witteklip Onder (Hopland). Of the 332 pedestrians interviewed at the Mall, 80 pedestrians (24%) walked this route of 1.5 to 2 km, with an estimated walking time of 19 to 24 minutes.

Another popular route was between the Mall and Area 5, which covers the residential areas of George Kerridge, Lapland, Steve Stwete and Smartie Town. Approximately 12.5% of pedestrians walked this route of between 3 and 3.5 km during one trip, which would take approximately 40 minutes to walk.

iii.   Summary and Composite Results

Distance walked (m)	A. WESBANK STATION		B. MALL STATION		C. TOTALS	
	No of pedestrians	% of total	No of pedestrians	% of total	No of pedestrians	% of total
0 - 500	0	0	0	0	0	0
501 - 1000	0	0	0	0	0	0
1001 - 1500	92	26.7	109	39.8	201	32.5
1501 - 2000	0	0	110	40.1	110	17.8
2001 - 2500	24	7	13	4.7	37	6.0
2501 - 3000	122	35.4	0	0	122	19.7
3001 - 3500	107	31	42	15.3	149	24.1
TOTAL	345	100	274	100	619	100

Table 11: The average walking distances (in metres) between their origin and destination of pedestrians interviewed at the Wesbank and Mall survey stations. The last column provides a total of the results from the two survey stations.

Table 11 demonstrates that the majority of pedestrians interviewed (32.5%) walked an average distance of 1 to 1.5 km between their origin and destination. As stated previously, based on a calculated average, the actual walking distances are likely to be approximately 900 metres more than average distances measured as the crow flies. Thus, the actual distance walked by 32.5% of pedestrians is likely closer to 1.9 to 2.4 km.

At the Wesbank station, 35.4% of pedestrians interviewed walked between 2.5 and 3 km while 31% walked 3 to 3.5 km per trip. At the Mall station, 39.8% of pedestrians interviewed walked between 1 and 1.5 km while 40% walked between 1.5 and 2 km per trip.

Notably, none of the pedestrians interviewed at either of the stations walked less than 1 km between their origin and destination while a total of 24.1% walked between 3 and 3.5 km during one trip. Figure 15 below demonstrates the totals column graphically.

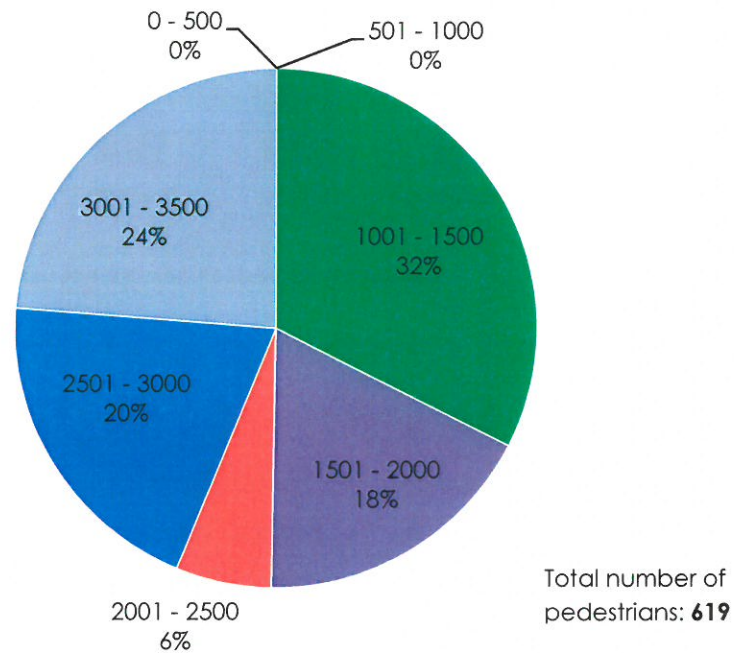**COMPOSITE: Distances walked by pedestrians (in metres)**

Total number of pedestrians: **619**

Figure 15: The average distances walked by pedestrians (in metres) between their origin and destination.

3.5   Perceptions of Public Transport

WESBANK AND MALL (COMPOSITE): Perceptions of Public Transport
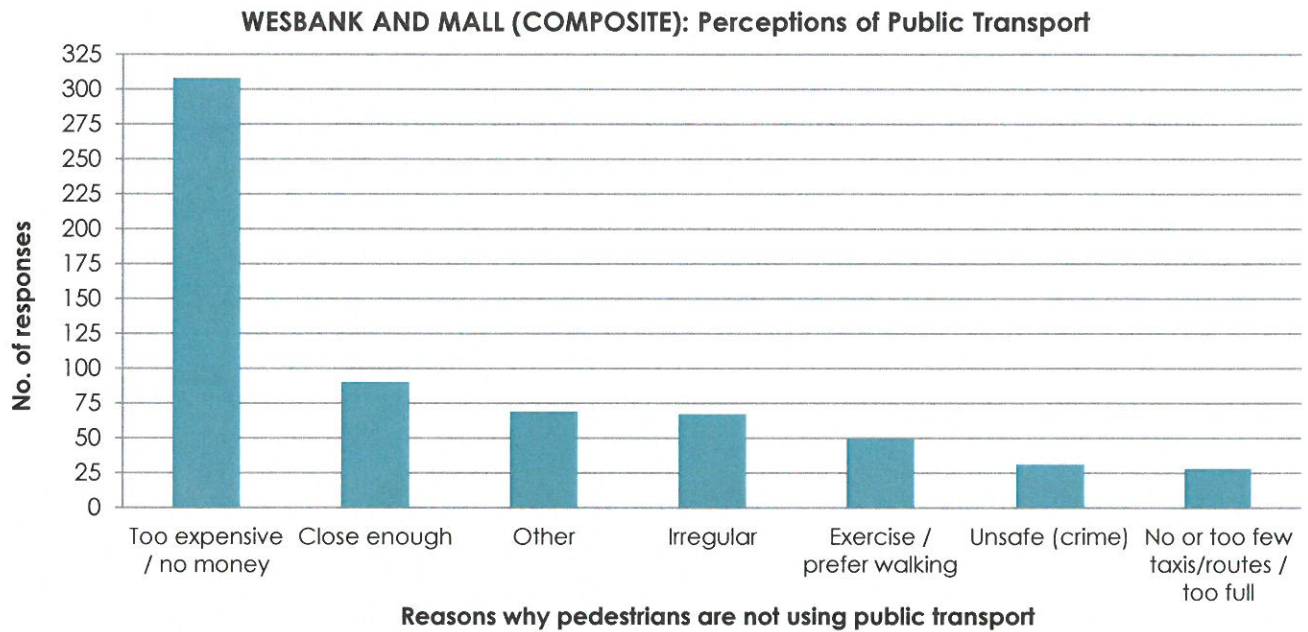
Figure 16: Reasons why pedestrians are not using public transport

Figure 16 above illustrates pedestrians' perceptions of public transport compiled from the Wesbank and Mall survey results. Pedestrians' perceptions were obtained by asking them why they are not using public transport. The results show that the top reason for pedestrians not using public transport is that they consider it *too expensive* or they have *no money*. A total of 308 pedestrians who responded to the questionnaire (44%) provided this as the reason why they do not use public transport. Of the 308 pedestrians who responded that public transport is *too expensive* or that they have *no money*, 51% of those respondents were young adults (18-30), 43% were adults (31-64), 4% were youth (10-17) while only 2% were elderly.

The second highest reason why pedestrians are not using public transport is that they live *close enough* to their destinations to walk. A total of 67 respondents reported that they are not using public transport as it is *irregular* while 50 respondents stated that they *prefer to walk* or walked as a form of *exercise*. *Lack of safety* related to crime was highlighted as another reason why pedestrians are not using public transport. Related to irregularity in public transport, a total of 28 respondents reported that there are no taxis or too few taxis or taxi routes in certain areas, that taxis take too long to fill up and only depart from the taxi rank once they are full, or that taxis are too full.

A total of 69 respondents provided a variety of *other* reasons for not using public transport including the following responses: they have their own car; it is more convenient or less time-

consuming to walk; public transport (taxis) is unsafe owing to drivers speeding; and it is not necessary to use public transport.

3.6 Perception Survey: Wesbank Station

i. Perceptions of safety

WESBANK: How safe do you feel walking here in the morning?

WESBANK: How safe do you feel walking here in the evening?
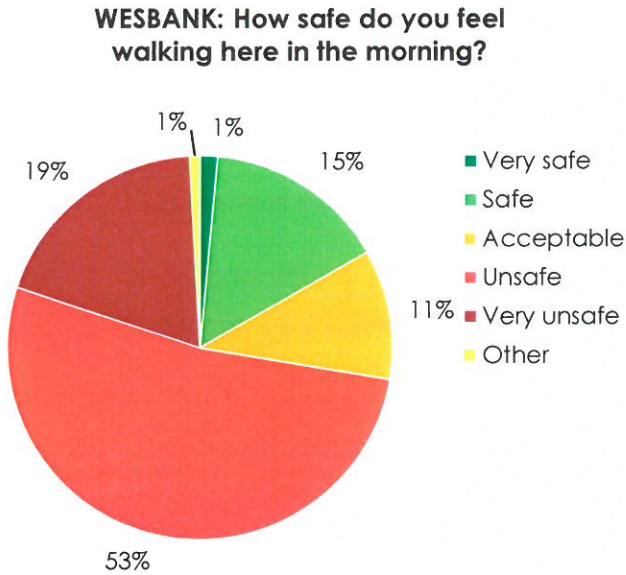

Total no. of people surveyed: **361**

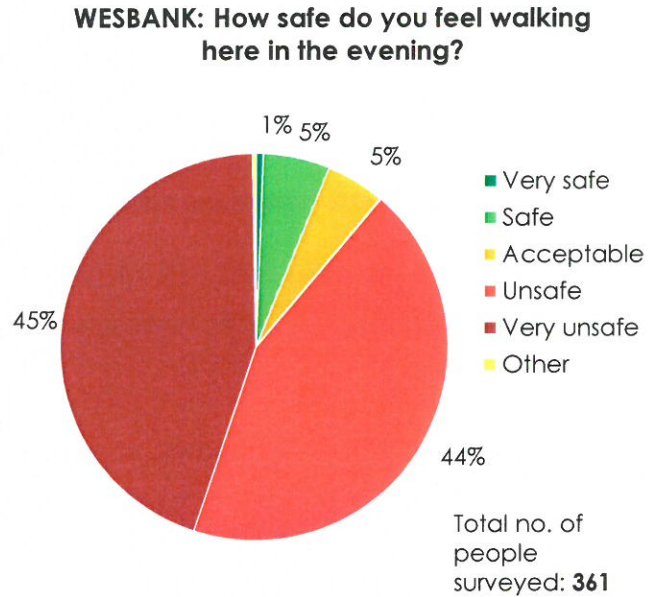**Figure 17: Pedestrians' perceptions of safety (crime and violence) in the morning.**

Figure 18: Pedestrians' perceptions of safety (crime and violence) in the evening.

When asked how safe they feel walking in the Wesbank area, 53% of pedestrians responded that they feel *unsafe* walking in the morning while 19% responded that they feel *very unsafe* (Figure 17). Only 1% reported that they feel *very safe*.

Furthermore, 45% of respondents reported that they feel *very unsafe* when walking in the evening and 44% feel *unsafe*, which equates to approximately 90% of respondents feeling either *unsafe* or *very unsafe* when walking in the evening (Figure 18). Several respondents commented that robberies are a big concern; some commented that they walk in groups; and a few respondents reported that it is too risky to walk at night.

WESBANK: What do you think the chance is of a crime incident happening while walking here?

- **High**
- **Moderate**
- **Low**
- **None at all**
- **Unsure**

12%

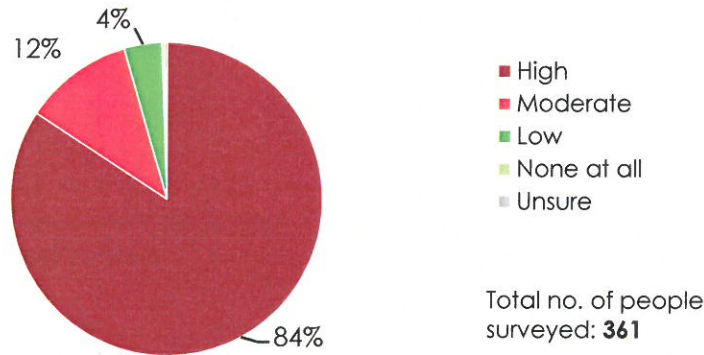4%

84%

Total no. of people surveyed: **361**

Figure 19: Pedestrians' perceptions of the chances of a crime incident happening.

Figure 19 illustrates that 84% of pedestrians think that there is a *high* chance of a crime incident happening while walking in the Wesbank area while only 4% reported that there is a *low* chance.

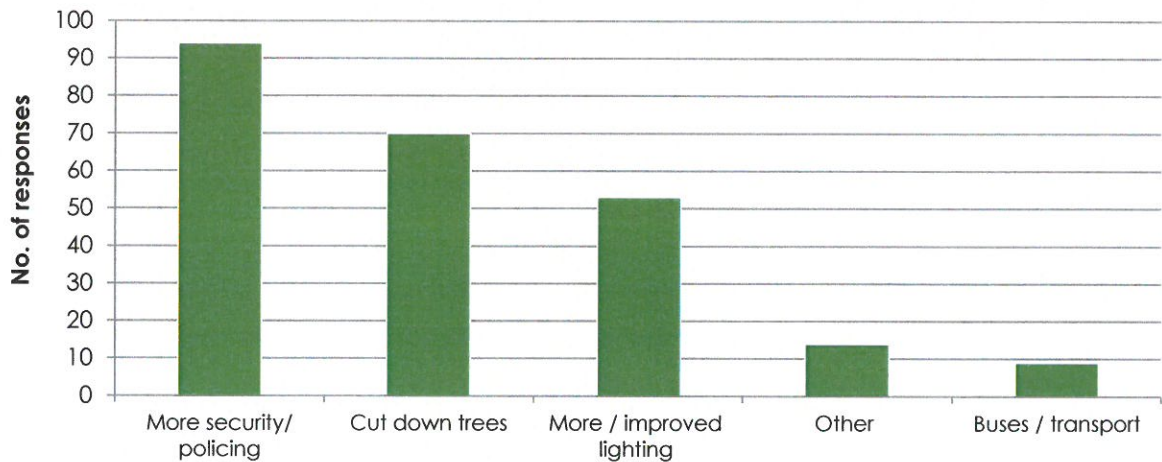## WESBANK: Suggestions to improve perceptions of safety

Figure 20: Pedestrians' suggestions to improve perceptions of safety.

Figure 20 demonstrates that 94 respondents (26% of sample size) suggested that there needs to be more security or improved policing of the area. 70 respondents suggested that the trees should be cut down as they serve as a hotspot for crime as criminals hide in the trees and target individuals walking underneath. 53 respondents called for improved lighting by, for example, installing floodlights or spotlights. Nine people suggested providing a bus service or transport from the low income areas. A number of *other* suggestions were also made including creating jobs, providing a building for security, upgrading the area and providing pathways, amongst others.

ii.   Satisfaction with conditions

WESBANK: What do you think the chance is of getting an injury while walking here?

2%
8%
16%
74%

- High
- Moderate
- Slight
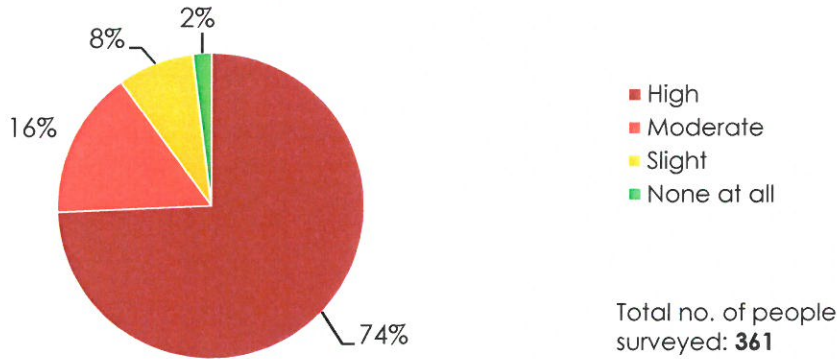- None at all

Total no. of people surveyed: **361**

Figure 21: Pedestrians' perceptions of the chances of getting an injury while walking in Wesbank.

WESBANK: Are you satisfied with the conditions of the roads and/or pathways?

4%
32%
64%

- Yes
- No
- Unsure

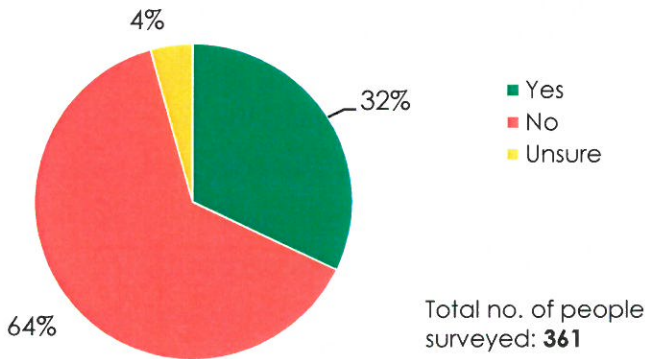Total no. of people surveyed: **361**

Figure 22: Satisfaction levels with roads and/or pathways in the Wesbank area.

WESBANK: Are you satisfied with the lighting provided in this area?

7%
38%
55%

- Yes
- No
- Unsure

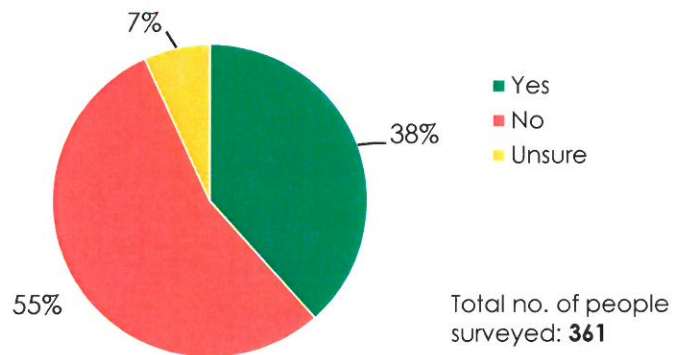Total no. of people surveyed: **361**

Figure 23: Satisfaction levels with lighting in the Wesbank area.

74% of respondents reported that they think there is a *high* chance of getting an injury while walking in the area and only 10% responding that there is a *slight* or *no* chance of getting injured, as illustrated in Figure 21. In accordance with these results, 64% of respondents reported that they are *not satisfied* with the condition of the roads and/or pathways (Figure 22) and 55% reported that they are *not satisfied* with the condition of the lighting (Figure 23).

WESBANK: Suggestions to improve conditions (roads/ pathways/ lighting)
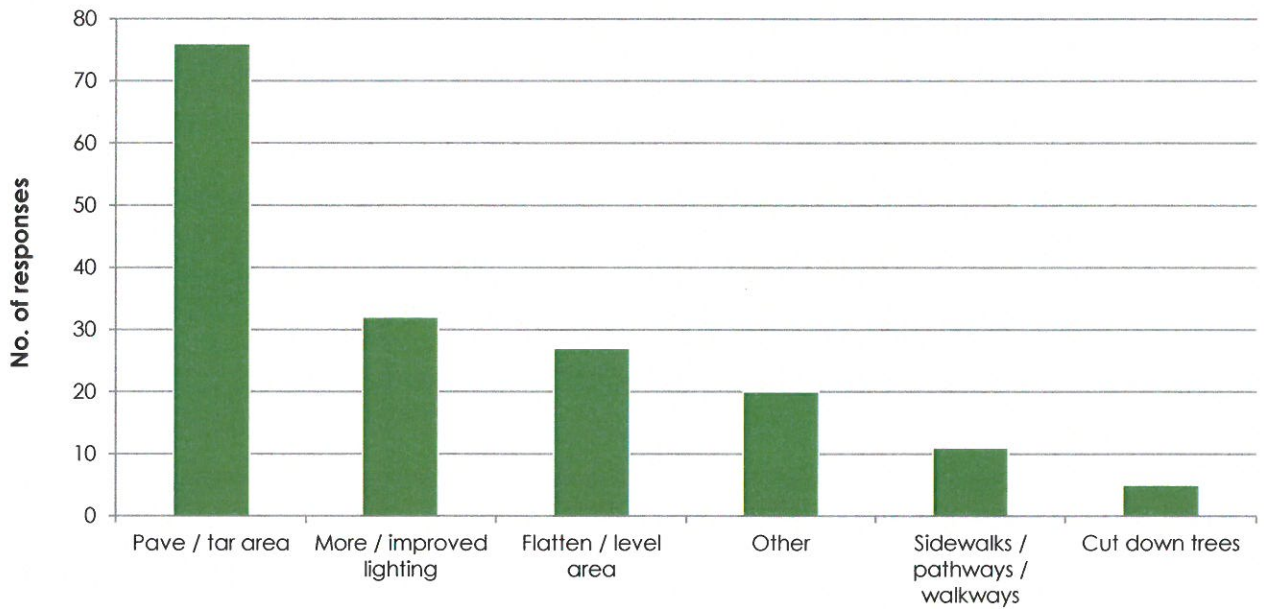

Figure 24: Pedestrian's suggestions to improve the condition of roads/pathways and lighting in the Wesbank area

As illustrated in Figure 24, 76 respondents suggested that paving or tarring the area would help to improve conditions in the Wesbank area. This is owing to the fact that many respondents reported that the area is muddy and slippery when it rains making it dangerous to walk. 32 respondents called for more or improved lighting with many specifically calling for the installation of spotlights or floodlights. 27 respondents also suggested that the area should be levelled or flattened as the surface is currently very uneven. 11 respondents suggested providing sidewalks/pathways/walkways while five people suggested cutting down the trees.

Several other suggestions were made including more policing, providing transport, cleaning the area, and providing more or improved lighting by the trees specifically.

Perceptions of the ambience/appearance

WESBANK: How would you describe the ambience/appearance of this area?

- Very exciting
- Exciting / stimulating / inspiring
- Dull / boring / un-inspired
- Other

1%
24%
10%
65%

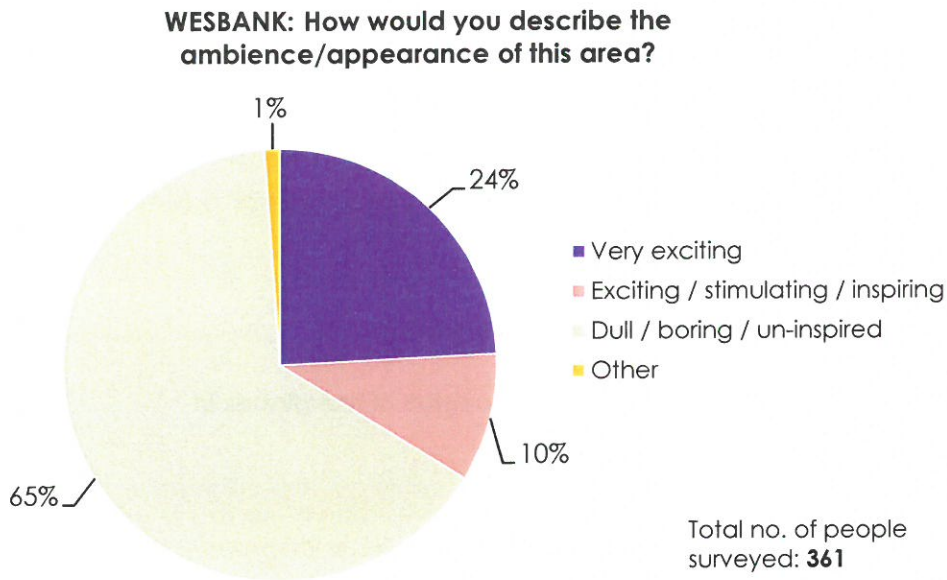Total no. of people surveyed: **361**

Figure 25: Perceptions of the ambience/appearance of the Wesbank area.

Figure 25 shows that 65% of respondents consider the ambience/appearance of the Wesbank area to be *dull / boring / un-inspiring* while 24% consider it to be *very exciting* and 10% *exciting*. Some of the comments made by the pedestrians are that the area is dirty, there are too many liquor stores in close proximity and that safety is the main problem.
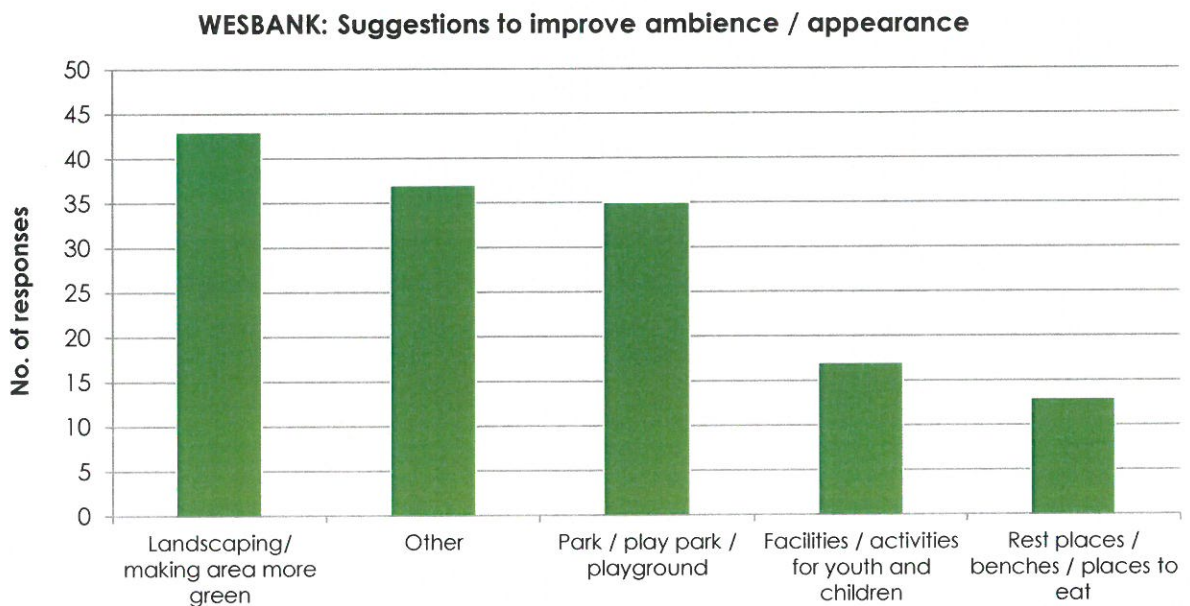
WESBANK: Suggestions to improve ambience / appearance

Figure 26: Pedestrian's suggestions to improve the ambience/appearance of the Wesbank area.

The top suggestion made by pedestrians to improve the ambience/appearance is to landscape the area and make it greener by planting grass and vegetation (Figure 26). 35 respondents also suggested a park, play park or playground be developed in the area. 17 respondents called for facilities or activities for youth and children, and 13 people suggested the provision of rest places, benches and places to eat. In addition, many other suggestions were also made by respondents and these included more or improved lighting, upgrading and beautifying the area, providing more buildings, shops, stalls or a business centre, and cleaning the area.

iv.   Satisfaction with provision of rest places

WESBANK: Are you satisfied with the provision of rest places in this area?

- Excellent
- Adequate / proper
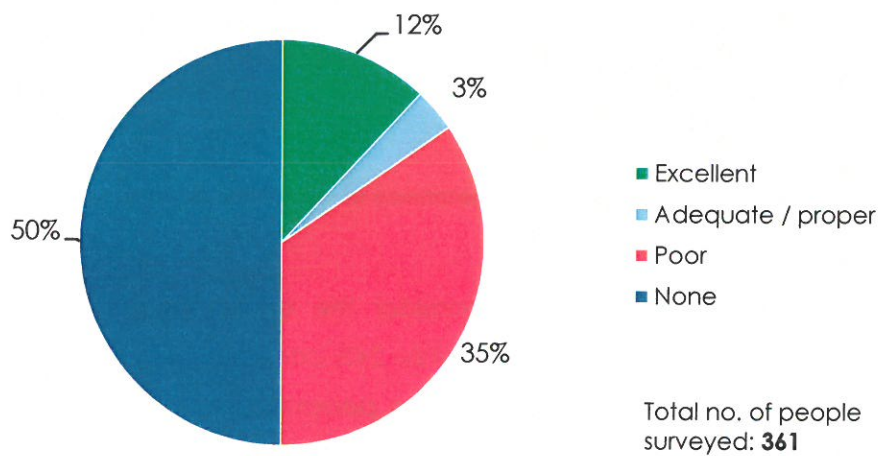- Poor
- None

Total no. of people surveyed: **361**

Figure 27: Satisfaction levels with the provision of rest places.

When questioned about their satisfaction with the provision of rest places in the Wesbank area, 50% of pedestrians responded that there is *no* provision (Figure 27). 35% consider the provision to be *poor*, 12% *excellent* and 3% *adequate*.
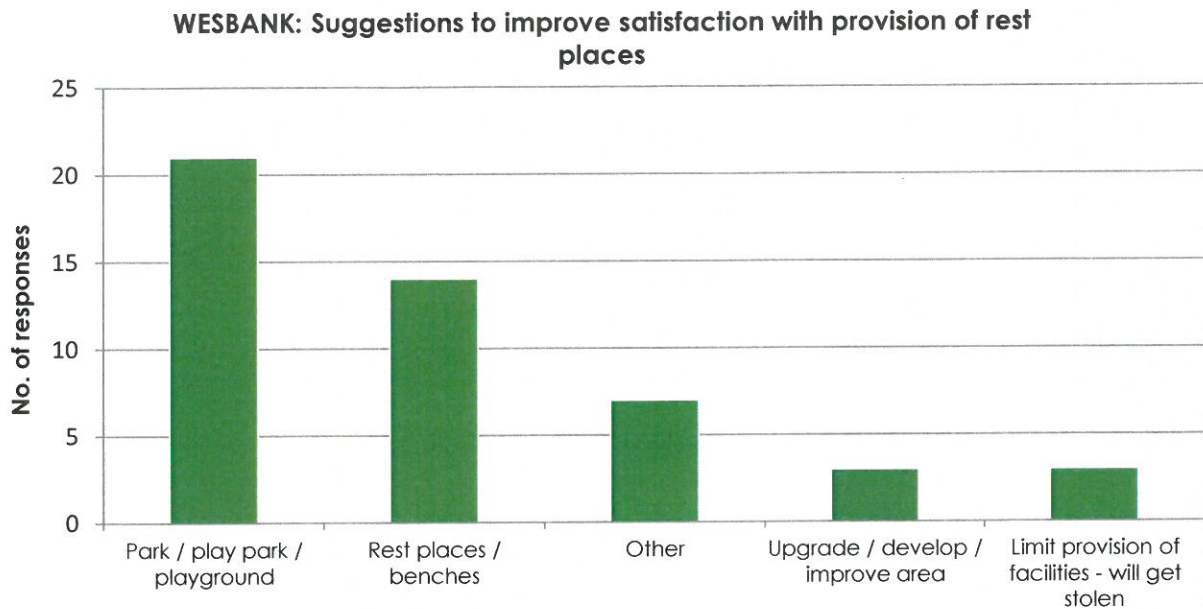
WESBANK: Suggestions to improve satisfaction with provision of rest places

Figure 28: Pedestrian's suggestions to improve the provision of rest places.

Figure 28 illustrates that 21 respondents suggested that a park, play park or playground be developed in the area, which could serve as a rest place. Many respondents who stated that there is currently no provision called for rest places and benches to be provided. Furthermore, a few people warned against providing too many facilities as they will get stolen. Other suggestions include providing shelters, more infrastructure, more security and braai stands.

v.   Satisfaction with provision of toilet facilities

WESBANK: Are you satisfied with the provision of toilet facilities in this area?

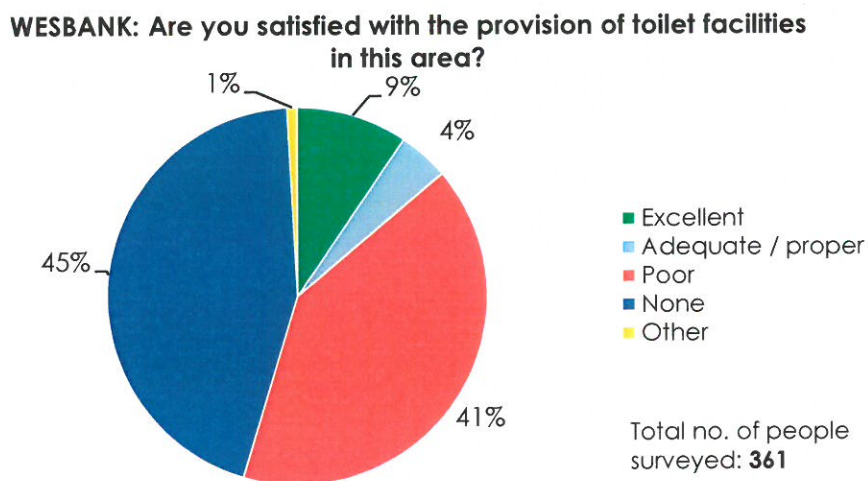Total no. of people surveyed: **361**

Figure 29: Pedestrian's suggestions to improve the provision of toilet facilities.

When questioned about their satisfaction with the provision of toilet facilities in the Wesbank area, 45% of pedestrians responded that there is *no* provision (Figure 29). 41% consider the provision to be *poor*, 9% *excellent* and 4% *adequate*. Some of the comments made

regarding the toilets are that they are too expensive to use, they are only provided in town and they are not clean. A couple of respondents reported that they never use public toilets.

WESBANK: Suggestions to improve satisfaction with provision of toilets

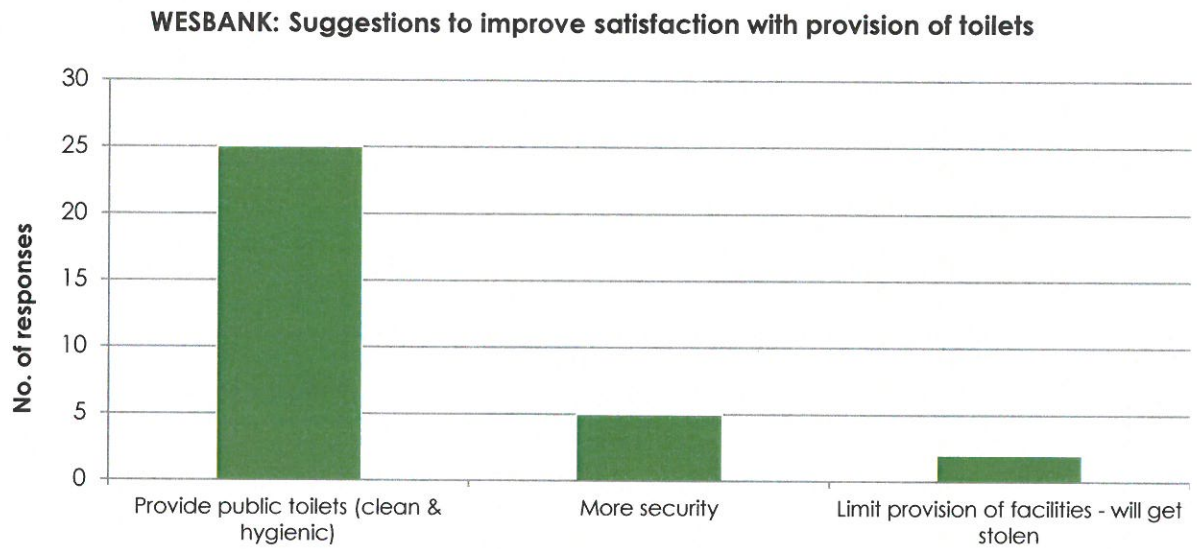**Figure 30: Pedestrian's suggestions to improve the provision of toilet facilities.**

As demonstrated in Figure 30 above, 25 respondents called for the provision of clean and hygienic public toilets, five respondents highlighted the need for more security to ensure that the facilities are safe and not vandalised while two respondents also warned against providing too many facilities as they will get stolen.

4. DISCUSSION

It is clear from the results that the Wesbank "Gateway" area experiences far greater pedestrian activity than both the Mall and Vink Street areas as 70% of the 5 795 pedestrians counted were recorded at the Wesbank station while only 21.4% and 9.6% were recorded at the Mall and Vink Street stations, respectively. Wesbank is an important gateway between low income residential areas and social and economic opportunities, including shops, schools, government buildings and community facilities, most of which are located in Vredenburg North. These results have implications for influencing decisions about where to provide pedestrian crossings across Saldanha Road as the volume of people crossing at Wesbank is much greater than at the Mall crossing.

A total of 361 survey questionnaires were completed at the Wesbank station while 332 questionnaires were completed at the Mall station. Given that there were far more pedestrians recorded at Wesbank, one would expect that more questionnaires would have been completed at the Wesbank station; however, this was not the case owing to a number of reasons. Firstly, it can be attributed to the longer than expected length of time taken to complete each questionnaire since the interviews at the Wesbank station included the perception survey. Thus, only half of the questionnaire was answered by pedestrians at the Mall survey station while the full questionnaire was answered by pedestrians at the Wesbank station. Furthermore, some of the questions forming part of the perception survey were longer and more complex, which, therefore, required more time with each interviewee to explain the questions and complete the full questionnaire. These are some of the reasons for the much lower sample size at the Wesbank station (9.03%), which is not only below the targeted 20% but is much lower than the Mall station sample size of 26.8%.

With regards to the age profile of pedestrians, the majority of pedestrians counted at the Wesbank and Vink Street survey stations were adults between the ages of 31 and 64, while, at the Mall, the majority of pedestrians counted were young adults (18-30). This could be attributed to the fact that many adults (31-64) walked via Wesbank to go to work in town, drop off children at school or to do routine activities, including shopping or visiting the post office. On the other hand, a significant number of young adults indicated that they worked at the Mall. Another reason for a higher number of young adults going to the Mall is that malls generally tend to attract younger people. The Wesbank survey station recorded the highest number of youth compared to the other survey stations, which can be attributed to youth walking to and from Vredenburg Primary and Secondary Schools via Wesbank. The Mall recorded the second highest number of youth who mostly visited the Mall after school hours.

At all of the survey stations, there were more males walking past the survey station compared to females. This could be attributed to the fact that men may feel safer walking compared to women, particularly when walking alone, in the dark or along quiet routes.

With regards to the distribution and direction of pedestrian movement throughout the day, the trends observed were to be expected. It was anticipated that there would be high pedestrian volumes in the morning from residential areas towards activity nodes as adults travel to their places of work and youth walk to school. And, likewise, it was expected that there would be high pedestrian volumes in the late afternoon and early evening from activity areas to residential areas as people make their way home.

The survey task team found it particularly interesting that, of the reasons why pedestrians were not using public transport, the reason highlighted the most by pedestrians interviewed is that public transport is too expensive. From these results, one can assume that personal financial constraints stand out as a more pressing and immediate issue for pedestrians. Another issue highlighted by pedestrians is lack of access to convenient and reliable public transport as approximately 15% of respondents stated that they do not use public transport as it is irregular, there are no or too few taxi routes in their area or that taxis are too full. Improving access to a reliable and convenient public transport system is a possible point of intervention for Vredenburg in the future.

In addition, a high number of respondents stated that they live close enough to their destinations to walk, they preferred walking or walked as a form of exercise; thus, many people walk by choice and not just as a result of being compelled to walk because they cannot afford to use public transport. It is, therefore, important that provisions are made for pedestrians along prominent pedestrian routes.

The fact that many people are forced to walk as they cannot afford public transport and that many others choose to walk are particularly interesting trends especially when compared against the results from the Wesbank perception survey. The perception survey revealed that the majority of respondents feel unsafe or very unsafe when walking through the Wesbank area both in the morning and in the evening as they think that there is a high chance of a crime incident happening. Therefore, despite feeling unsafe while walking, people still choose to walk or they are compelled to walk as a result of personal financial pressures. Therefore, these trends confirm that safety interventions are very necessary in the Wesbank area.

Furthermore, there are high levels of dissatisfaction amongst pedestrians with the condition of roads and pathways, and the provision of lighting, rest places and toilets in Wesbank, with the majority of respondents stating that there is a high chance of getting an injury while walking in the area. In addition, the majority of respondents consider the ambience and

appearance to be dull, boring or un-inspiring. These results further justify the need to upgrade the area, and interventions should aim to respond to the suggestions made by the users of this space. Overall, the top 10 suggestions are ranked as follows:

1. More security / improved policing
2. More / improved lighting (spotlights, floodlights)
3. Cut down trees
4. Pave / tar area
5. Provide park / play park / playground
6. Landscaping / making the area more green
7. Flatten / level area
8. Provide rest places
9. Provide public toilets (clean and hygienic)
10. Provide facilities or activities for youth and children

It is positive to note that the planned upgrades for the Wesbank Gateway project are responding to many of these suggestions and will, therefore, respond to the immediate needs of pedestrians using this space.

The fact that some of the survey respondents at Wesbank warned against providing too many facilities as they are likely to be stolen or vandalised highlights the need for facility management plans to be in place when implementing interventions in order to ensure sustainable protection, operation and maintenance of facilities.

Pedestrian movement is the primary mode of movement for millions of South Africans as the majority cannot afford a motor car[1]. Although public transport is crucial in facilitating movement, a high number of people in South Africa cannot afford to pay for public transport, as illustrated in Vredenburg. In an area served by public transport, a convenient walking distance is interpreted as a maximum walking time of 5-10 minutes and a maximum walking distance of 400-500 metres[2]. This is in stark contrast with the patterns observed in Vredenburg where none of the pedestrians interviewed walked less than 1 km per trip and 24% of pedestrians walked over 3 km per trip, which could total 6 to 7 km per day. Furthermore, the actual walking distances are likely to be approximately 900 metres more than the distances measured as the crow flies, which would mean that 24% of pedestrians walked closer to 4 km or more during one trip, and a distance of 4 km would take approximately 50 minutes when walking at an average speed of 5 km/hour. Thus, it can be

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[1] CSIR, *Guidelines for Human Settlement Planning and Design*, Volume 1 (The Red Book), 2005, p. 9

[2] CSIR, 2005, p. 9

assumed that 24% of pedestrians would walk 10 to 11 km per day, which equates to approximately two hours of walking per day.

In order to develop settlements that work well for the majority of people, particularly in small-to-medium sized towns that have insufficient thresholds and resources to provide public transport, there is a need to enhance pedestrian movement through design interventions and providing pedestrian amenities along footways, pathways and roadways. The following interventions could apply in Vredenburg:

- Configure footways into multi-directional networks, which enable pedestrians to choose direct or equidistant routes;
- Cut corners and keep routes as direct as possible as pedestrians are likely to opt for travel lines of least resistance;
- On roadways with high traffic flow, provide pedestrian crossings at regular intervals and at points where pedestrian desire lines cross the roadway in order to maintain adequate levels of pedestrians safety;
- Incorporate design initiatives (preferably those that require little to no maintenance), such as planting, landscaping, paving, lighting and rest places along pedestrian routes;
- Ensure accessibility and convenience for different user groups;
- Create diversity and choice through providing a combination of hard and soft surfaces; and
- Bear in mind varying weather conditions (excessive heat, rain and wind)[3].

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[3] CSIR, 2005, p. 9

5. LESSONS LEARNED

Once the results had been analysed, a report containing the preliminary findings was compiled and presented to members of the DEADP task team who assisted with conducting the survey. This session also focused on capturing some of their observations and key lessons learned in order to assist the RSEP/VPUU Project Office to improve future surveys that may be undertaken.

The task team members agreed that the survey questionnaire was too long and recommended that the questionnaire be shortened and made more succinct in the future. This issue was, however, specific to the Wesbank survey station where interviewers had to complete the perception survey as well. The interviewers at the Wesbank station found that interviewees became increasingly impatient, some interviewees did not understand all of the questions, or they became less attentive when answering some of the latter questions. The task team agreed that a shorter questionnaire will allow more people to be interviewed and this will result in a bigger sample size.

Linked to the questionnaire is the fact that time is a critical constraint for pedestrians as most people are in a rush to get to work or home. This was a significant challenge at both the Wesbank and Mall survey stations as people declined to be interviewed because they were in a rush. A potential solution used by interviewers during the Vredenburg survey was to walk with a pedestrian while conducting the interview in order not to delay the interviewee. Another technique used by interviewers to save time was to memorise responses given by a pedestrian during an interview and to record the responses afterwards. This can also be risky if the interviewer does not capture the responses immediately and accurately.

When capturing the questionnaire results electronically, one of the challenges experienced by the data capturers was encountering responses that were clearly not related to the questions contained in the questionnaire. These unrelated responses could be attributed to a number of potential reasons:

- Lack of understanding of the purpose of the survey amongst interviewers;
- Lack of clarity in the phrasing of certain questions;
- Lack of understanding of the questions amongst interviewers and/or interviewees;
- Difficulties with interpreting the questions from English into isiXhosa or Afrikaans.

As a solution, the task team agreed that there is a need to conduct extensive training of interviewers on the purpose of the survey, clearly outlining what is expected from the questionnaire and ensuring that interviewers have a clear understanding of the questionnaire and this, in turn, will result in more accurate information being collected by interviewers. The training should also be done in advance in order to flesh out any issues with the

questionnaire beforehand. Furthermore, to avoid issues with interpretation of the questionnaire, the task team agreed that, in future, the survey questionnaire should be translated into isiXhosa and Afrikaans.

Another lesson learned is that future questionnaires should be formulated in collaboration with the DEADP task team members as this would help towards developing a clearer and more concise survey questionnaire, and would allow the survey team to be more familiar with the questions.

Another issue that should be emphasised when training interviewers is the need for an interviewer to remain objective. Interviewers should be cautioned against asking leading questions and leading interviewee responses in a particular direction. Interviewers should be made aware that asking leading questions or leading interviewee responses impacts on the quality of the data collected as it skews the results.

A suggestion to improve future questionnaires is to rate responses according to a scale; for example, for the question "why are you not using public transport?" the interviewee can rate the different options on a scale (e.g. 1-5 with 1 being a response that respondents rate the least and 5 being a response rated the highest). This rating method will provide a better indication of the most important or highest rated reason for not using public transport.

The data capturing process was very time-consuming as the results from all survey questionnaires were manually captured. The task team agreed that, in future, electronic methods of data collection should be used as this will save time and possibly contribute towards more accurate data collection.

Lastly, the task team members agreed that the same individuals who conducted the Vredenburg survey should, if possible, be involved in future surveys conducted as part of the RSEP as they have experience, knowledge and understanding of conducting a pedestrian survey.

This was the first survey conducted by the RSEP/VPUU Project Office; thus, it served as an important learning exercise. By capturing the lessons learned and applying these when conducting future surveys, it is possible to improve the quality of data collected and ensure that maximum value is captured through such a process.

6. CONCLUSIONS

Through the pedestrian survey, valuable information has been obtained about the movement patterns of pedestrians in Vredenburg as well as pedestrian volumes at three stations in the town; therefore, the survey meets its intended objectives.

It is clear from the results that a large number of pedestrians travel between the low income residential areas of Vredenburg and the town's activity nodes, which are mainly situated in Vredenburg North. Many pedestrians walk very long distances every day between their residences and places of work, and the majority have no option but to walk as they cannot afford to use public transport. This highlights the need to make provisions for pedestrians along key pedestrian routes in order to improve their daily experiences.

The projects planned for Vredenburg as part of the RSEP, in particular the Wesbank Gateway upgrading project and the LED and commercial hubs planned for Witteklip and Ongegund (George Kerridge), will play a significant role in bringing much-needed facilities closer to people and may help reduce the number of pedestrians who are currently compelled to walk such long distances to reach economic and social opportunities.

A follow-up survey subsequent to implementation of projects will assist in measuring the impact of interventions on pedestrian movement patterns and the distances travelled by pedestrians in Vredenburg.

28/10/2015.

FRANCOIS WÜST
PROGRAMME MANAGER

DATE: