

## **Impact on the Farmers on the Northern Route (Sector 3) Alternative A vs. Alternative B**

### *Description of Effect*

There is a need to assess the cost of two possible road alignments, viz. Alternative A and Alternative B. These alternatives have different effects on different farms and some farms are affected by only one of the alternatives.

### *Assessment*

The purpose of this analysis is to compare the financial impacts of two alternative alignments (hereafter called Alternative A & Alternative B) for the proposed Westerly extension of the R300. Both alignments have the same start and end points.

It is important to note that this analysis does not cover the full impact of the proposed extension of the R300 on Kuiperskraal / Welgegund. It only covers the areas affected by Alternatives A and B. The full impact has been quantified in the original report on impact on farmers.

Alternative A (the Westerly alignment) measures 7,962 m and affects 6 farms (Phisantekraal, Loch Lynne, Bon Mella, Vrymansfontein, Sondagsfontein and Kuiperskraal / Welgegund)

Alternative B (the Easterly alignment) measures 7,785 m and affects 4 farms (Phisantekraal, Loch Lynne, Sondagsfontein and Kuiperskraal / Welgegund)

In order to keep this report consistent and comparable with the initial economic impact study done at the end of 2002, the same numbers and values were used as in the 2002 report.

### *Summary of overall impact*

The summary of all financial impacts is given in the two tables below. Three categories of costs are indicated. These are the costs of replacement land, equipment, etc, and the potential loss of income both to farmers and farm workers. Three different values are indicated. A low (min) value and a high (max) value as determined by independent assessment and, in some cases, a high+ (max+) value where individual farmers disagreed with our high values. It is important to note that the land values will have to be confirmed by a qualified property valuator should the issue of compensation eventually arise.

For Alternative A, the value of all replacement costs ranges from between R10m and R15m as determined by independent opinion. Lost income is valued at between R10m and R20m. The overall financial impacts range between a minimum of R21m and a maximum of R35m.

One of the key issues with regard to Alternative A is its impact on Vrymansfontein and its associated impact on Bon Mella. Vrymansfontein is a diary farm that could be

severely impacted by Alternative A because of the impact of road noise on dairy production. It is possible that the road noise will result in a considerable reduction in milk production and the possible closure of the dairy. This will cause both a loss in income and the loss of 30 jobs. It will be shown below that two experts who were consulted informally on the issued were divided in their opinions about the likely long term impact of the Alignment on the dairy production. Associated with the impact on Vrymansfontein is the impact on Bon Mella. At the moment Vrymansfontein is the prime supplier of milk to Bon Mella which, in turn uses this milk for a variety of retail products. If milk stops at Vrymansfontein then milk will have to be transported from further a field, with Darling being the most obvious source. This will result in additional transport costs to Bon Mella.

Hence the estimates of the costs of Alternative A given above are based on the premise that dairy production will cease on Vrymansfontein (with the associated costs) and that Bon Mella will have to truck milk in from Darling. Should this not happen and Vrymansfontein continues producing milk and supplying milk to Bon Mella then the overall cost of Alternative A will fall from between R21m and R35m to between R11m and R15m. In addition to this if the Vrymansfontein dairy does not close then there will also not be the associated loss of 30 jobs.

**Summary of all Economic Impacts for Alternative A**

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	8,839,100	12,908,000	13,066,850
Cost of replacing existing anchors	35,928	35,928	35,928
Cost of replacing buildings	850,000	850,000	850,000
Cost of replacing boreholes	82,000	82,000	82,000
Cost of fixing irrigation	183,000	183,000	183,000
Cost of fixing internal fences	110,919	110,919	110,919
Cost of contours	98,635	98,635	98,635
Loss of value of residential property due to noise	450,000	720,000	720,000
	<b>10,649,582</b>	<b>14,988,482</b>	<b>15,147,332</b>
<b>PV Lost Income</b>			
Additional km's travelled	211,180	211,180	211,180
Transport cost of milk	1,387,000	4,161,000	4,161,000
Lost Income if Dairy Closes	1,263,000	6,431,000	6,431,000
Lost jobs	7,200,000	9,000,000	9,000,000
	<b>10,061,180</b>	<b>19,803,180</b>	<b>19,803,180</b>
<b>Total Impact</b>	<b>20,710,762</b>	<b>34,791,662</b>	<b>34,950,512</b>

For Alternative B, the value of all replacement costs ranges from between R9m and R14m as determined by independent opinion. Lost income is valued at less than R100k. The overall financial impacts range between R9m and R14m.

One of the potential impacts of Alternative B that could not be adequately evaluated is the potential for the alternative to result in the liquidation of Loch Lyne. It has been asserted by both the owner of Loch Lyne and Distell (the company that underwrote the loans for Loch Lyne) that the encroachment of the road onto Loch Lyne will result in liquidation and financial loss for both Distell and the current owner of Loch Lyne. This might also result in a loss of employment for the current manager at Loch Lyne and, possibly, the other workers on Loch Lyne. These effects have not been factored into the analysis. The reason this has not been factored in is because the current owner of Loch Lyne and Distell will be fairly compensated for any land that might be appropriated because of Alternative B should the proposed project go ahead and Alternative B be chosen.

**Summary of all Economic Impacts for Alternative B\***

(\* NB. This excludes the impact of Loch Lynne being liquidated)

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	8,960,000	12,891,000	13,002,000
Cost of replacing existing anchors	47,056	47,056	47,056
Cost of replacing buildings			
Cost of replacing boreholes			
Cost of fixing irrigation	238,475	238,475	238,475
Cost of fixing internal fences	86,804	86,804	86,804
Cost of contours	109,960	109,960	109,960
Loss of value of residential property due to noise			
	<b>9,442,295</b>	<b>13,373,295</b>	<b>13,484,295</b>

**PV Lost Income**

Additional km's travelled  
 Transport cost of milk  
 Lost Income if Dairy Closes  
 Lost jobs

66,610	66,610	66,610
66,610	66,610	66,610

**Total Impact**

9,508,905	13,439,905	13,550,905
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The conclusion that is drawn is that, based on the financial assessments made in this analysis is that Alternative B should be the preferred alternative if Alternative A results in the closure of the dairy on Vrymansfontein. However if Alternative A does not result in the closure of the dairy then the choice between Alternative A and Alternative B is very marginal. In consequence it is recommended that a specialist study be commissioned to determine the likelihood that Alternative A will result in the closure of the dairy on Vrymansfontein and that this should inform the choice between the two alternatives.

**Impact assessment for Alternative A**

The impact assessment of the proposed alignment of the road is given in the table below. In making these assessments it is assumed that full compensation is paid to farmers for all losses as calculated above. If full compensation is paid the losses are social and emotional rather than financial. The impact of mitigation measures could not be established without knowing about possible alternative alignments.

	Impact on farms after full compensation	Impact of 30 job losses
Extent	L	L
Duration	H	H
Intensity	L-	M-
Probability	H	H
Consequence	L	M
Significance	L	M
Confidence	M	M

*Mitigation objectives*

Reduce the impact of the road on farm values and job losses

*Mitigation measures*

The project proponents need to explore alternative alignments that could reduce the impacts on farms and allow the dairy at Vrymansfontein to continue to operate. Specialist opinion needs to be taken about the likely impact of the road on dairy production at Vrymansfontein.

**Impact assessment for Alternative B**

The impact assessment of the proposed alignment of the road is given in the table below. In making these assessments it is assumed that full compensation is paid to farmers for all losses as calculated above. If full compensation is paid the losses are social and emotional rather than financial. The impact of mitigation measures could not be established without knowing about possible alternative alignments. The impact assessment is made for the farms excluding Loch Lynne and for Loch Lynne specifically.

	Impact on farms after full compensation excluding Loch Lynne	Impact on Loch Lynne through potential job losses
Extent	L	L
Duration	H	M-
Intensity	L-	H
Probability	H	H
Consequence	L	M
Significance	L	M
Confidence	M	M

*Mitigation objectives*

Reduce the impact of the road on farm values and job losses.

*Mitigation measures*

There are no obvious mitigation measures

## Impacts on Individual Farms

This section details the impact on individual farms. Typically the cost in land value of each farm is estimated, other replacement costs, loss of income and the cost of under and overpasses.

### Phisantekraal

Phisantekraal is a diversified farm, producing grapes, wheat, meat, roll on lawn, pumpkins, etc. Phisantekraal also borders Durbanville and is suitable for future residential development. This has a significant impact on its value. The owner, Mr. Boetie Louw, prefers Alternative A.

#### *Alternative A (The Westerly Alignment)*

##### Land

Alternative A will run right through the middle of Phisantekraal. Most of Phisantekraal is suitable for planting vines, however it is also very suitable for future residential development. This makes valuing this land is very difficult. Mr. Louw has been given a written offer of R70 000 000 for the 100 hectares bordering Durbanville. However, he believes its true value to be closer to R 1 000 000 per hectare.

For the purpose of this economic impact study it is assumed that the land's value is a linear function of the distance from Durbanville, i.e. the market value at the Durbanville border is assumed to be between R 700 000 and R 1 000 000 per hectare and it decreases to between R 10 000 and R 20 000 per hectare at the Spesbona road. However, it should be noted that in order to ascertain the true value of this land, the services of a property valuer would be required.

#### Summary of Land affected

Type of land	≈Size	≈ Market Value/ha	≈ Market Value	Explanation
Phisantekraal <sup>1</sup>	21.5ha	355k/ha - 510k/ha	7 633k - 10 965k	Road Reserve + 2 x 10m road
Vineyards	6.63ha	65k/ha - 85k/ha	431k - 564k	Road Reserve
Vineyards	1.09ha	65k/ha - 85k/ha	71k - 93k	Severed Portion

<sup>1</sup> Average value over the 2.1km between Durbanville and Spesbona road.

#### Replacing Anchors

Alternative A passes through approximately 900m of vineyard. As a result some of the vineyard row anchors will need to be replaced. The worst-case scenario will entail replacing 1 anchor every 3.4 m of border affected by the new road (i.e. ≈ 265 new anchors)

### Summary of new anchor costs

Description	N	Unit Cost	Total Cost
New anchor poles	265 x	R 35	R 9 275
New wire anchors	265 x	R 21	R 5 565
New Wire	1 x	R 500	R 500
Plant anchors	265 x	R 10	R 2 650
Plant anchor poles	265 x	R 10	R 2 650
Total			R 20 640

### Irrigation

Alternative A will run through the middle of a field currently irrigated by a pivot. The pivot will need to be moved to another field. This will also require a new feeder pipe to be laid.

### Summary of costs related to moving the existing pivot

Description	Quantity	Unit Cost	Cost
200mm class 9 pipe	1000 m	@ R 150.00/m	≈ R150 000
Trench for new pipe	1000m	@ ≈ R 8.00/m	≈ R 8 000
Moving existing pivot		@ ≈ R 25 000	≈ R 25 000
Total			≈ R183 000

### Contours

Contours will need to be repaired, in order to prevent soil erosion, ensure efficient draining, etc. Additional contours will have to be made to ensure efficient drainage in the area currently irrigated by the pivot. Contours will also have to be removed from the proposed pivot camp.

### Summary of contour work

Description	N <sub>Contours</sub>	L <sub>Individual</sub>	L <sub>Total</sub>	≈ Cost/m	≈ Total Cost
Repairs	8 X	150m =	1200m	R 7.50	R 9 000
Current Pivot Field			1000m	R 5.00	R 5 000
Runoff			2400m	R 5.00	R 12 000
Prop. Pivot Field			3820m	R 3.00	R 11 460
					R 37 460

### Fences

Internal Fences need to be replaced since camps need to change. The new pivot camp will need be fenced (≈ 2km). Another 3km of fencing will be required for other miscellaneous jobs (i.e. 5km @ ≈R12 000, 00/km).

### Other Issues

#### Access Road

The contractor will either have to build another over – or underpass or build an access road across the wetland just below the dam’s runoff. This wetland would practically is normally bypassed by driving over the dam wall, however Alternative A would prohibit this.

**Summary of the economic impact of Alternative A (The Westerly Alignment) on Phisantekraal**

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	8,134,300	11,621,200	11,621,200
Cost of replacing existing anchors	20,640	20,640	20,640
Cost of fixing irrigation	183,000	183,000	183,000
Cost of fixing internal fences	62,003	62,003	62,003
Cost of contours	37,460	37,460	37,460
<b>Total Impact</b>	<b>8,437,403</b>	<b>11,924,303</b>	<b>11,924,303</b>

*Alternative B (The Easterly Alignment)*

Land

Alternative B also runs through the middle of Phisantekraal. As mentioned earlier valuing the land affected is very difficult and in order to ascertain the true value of this land, the services of a property valuator would be required.

**Summary of Land affected**

Type of land	≈Size	≈ Market Value/ha	≈ Market Value	Explanation
Phisantekraal <sup>1</sup>	21.2ha	355k/ha- 510k/ha	7 526k- 10 812k	Road Reserve + 2 x 10m road
Wheat	3.2ha	5k/ha - 9k/ha	16k - 29k	To small to farm
Vineyards	6.4ha	65k/ha - 85k/ha	416k - 544k	Road Reserve + 2 x 10m road
Vineyards	3.2ha	65k/ha - 85k/ha	208k - 272k	To small to farm

<sup>1</sup> Average value over the 2.1km between Durbanville and Spesbona road.

Replacing Anchors

Alternative B passes through approximately 660m of vineyard. As a result some of the vineyard row anchors will need to be replaced. The worst-case scenario will entail replacing 1 anchor every 3.4 m of border affected by the new road (i.e. ≈ 195 new anchors)

**Summary of new anchor costs**

Description	N	Unit Cost	Total Cost
New anchor poles	195 x	R 35	R 4 825

New wire anchors	195	x	R 21	R 4 095
New Wire	1	x	R 500	R 500
Plant anchors	195	x	R 10	R 1 950
Plant anchor poles	195	x	R 10	R 1 950
Total				R 15 320

## Irrigation

Similar to Alternative A, Alternative B will run through the middle of a field currently irrigated by a pivot. The pivot will need to be moved to another field. This will also require a new feeder pipe to be laid.

### Summary of costs related to moving the existing pivot

Description	Quantity	Unit Cost	Cost
200mm class 9 pipe	1000 m	@ R 150.00/m	≈ R150 000
Trench for new pipe	1000m	@ ≈ R 8.00/m	≈ R 8 000
Moving existing pivot		@ ≈ R 25 000	≈ R 25 000
Total			≈ R183 000

## Contours

Contours will need to be repaired, in order to prevent soil erosion, ensure efficient draining, etc. Additional contours will have to be made to ensure efficient drainage in the area currently irrigated by the pivot. Contours will also have to be removed from the proposed pivot camp.

### Summary of contour work

Description	N <sub>Contours</sub>	L <sub>Individual</sub>	L <sub>Total</sub>	≈ Cost/m	≈ Total Cost
Repairs	11 X	150m =	1650m	R 7.50	R 12 375
Current Pivot Field			1000m	R 5.00	R 5 000
Runoff			2400m	R 5.00	R 12 000
Prop. Pivot Field			3820m	R 3.00	R 11 460
					R 40 835

## Fences

Internal Fences need to be replaced since camps need to change. The new pivot camp will need be fenced (≈ 2km). Another 3km of fencing will be required for other miscellaneous jobs (i.e. 5km @ ≈R12 000, 00/km).

## Other Issues

### Access Road

The contractor will either have to build another over – or underpass or build an access road across the wetland just below the dam's runoff. This wetland would practically is normally bypassed by driving over the dam wall, however Alternative B would prohibit this.

**Summary of the economic impact of Alternative B (The Easterly Alignment) on Phisantekraal**

	<b>Min</b>	<b>Max</b>	<b>Max +</b>
<b>Replacement Costs</b>			
Value of land affected by proposed road	8,166,000	11,656,800	11,656,800
Cost of replacing existing anchors	15,320	15,320	15,320
Cost of fixing irrigation	183,000	183,000	183,000
Cost of fixing internal fences	62,003	62,003	62,003
Cost of contours	40,835	40,835	40,835
<b>Total Impact</b>	<b>8,471,158</b>	<b>11,957,958</b>	<b>11,957,958</b>

## Loch Lynne

Loch Lynne is primarily a grape farm. Alternative A will run along its southern border where the major impact is the loss of its main access road.

The vine project on Loch Lynne is debt financed. This debt is underwritten by Distell (Pty) Ltd. If Alternative B proceeds, it would result in the loss of approximately 7.5 ha of vines. Mr. Hansie Swanepoel, of Distell, has confirmed that should this happen Distell will withdraw their security and, it has been suggested, this will result in Loch Lynne being liquidated.

### *Alternative A (The Westerly Alignment)*

#### Land

Alternative A will run along Loch Lynne's southern border.

#### **Summary of Land affected**

Type of land	≈Size	≈ Market Value/ha	≈ Market Value	Explanation
Vineyards	1.66ha	65k/ha - 85k/ha	108k - 141k	Road Reserve
Wetland	2.45ha	5k/ha - 9k/ha	12k - 22k	Road Reserve
Vineyards	0.69ha	65k/ha - 85k/ha	45k - 54k	Road Reserve

Mr. Nieuwoudt believes that the market price for dry-land vineyards should be approximately R100 000 per hectare.

#### Replacing Anchors

Some of the vineyard row anchors will need to be replaced. The worst-case scenario will entail replacing 1 anchor every 2.8 m of border affected by the new road (i.e. ≈ 168 new anchors)

#### **Summary of new anchor costs**

Description	N	Unit Cost	Total Cost
New anchor poles	168 x	R 35	R 5 880
New wire anchors	168 x	R 21	R 3 528
New Wire	1 x	R 500	R 500
Plant anchors	168 x	R 10	R 1 680
Plant anchor poles	168 x	R 10	R 1 680
Total			R 13 268

#### Buildings and Structures

A new electric gate will need to be installed and the electricity supply and transformer will need to be moved.

(cost ≈ R 20 000)

## Lost Income

### Added cost due to new Access Road

Alternative A will increase the travelling distance to Durbanville by approximately 1.4km, i.e. 2.8km's on a round trip.

### Summary of additional transport costs

Description	No Trips	Distance	Days / Year	Unit Cost *	Annual Cost
Pick-up	4	2.8km	365	R 3.39/km	R 13 860
5 ton lorry	4	2.8km	312	R 5.80/km	R 20 270
5 ton lorry (harvest)	3	2.8km	60	R 5.80/km	R 2 920

\* Rates were calculated using the AA Rate Schedules (see Appendix B).

## Other Issues

### Access Road

The contractor is responsible for replacing the existing access road and gate.

### Summary of the economic impact of Alternative A (The Westerly Alignment) on Loch Lynne

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	165,000	221,800	257,050
Cost of replacing existing anchors	13,268	13,268	13,268
Cost of replacing buildings	20,000	20,000	20,000
	198,268	255,068	290,318
<b>PV Lost Income</b>			
Additional km's travelled	211,180	211,180	211,180
<b>Total Impact</b>	409,448	466,248	501,498

## Alternative B (The Easterly Alignment)

### Land

Alternative B cuts across Loch Lynne along a valley.

#### Summary of Land affected

Type of land	≈Size	≈ Market Value/ha	≈ Market Value	Explanation
Vineyards	7.4ha	65k/ha - 85k/ha	481k - 629k	Road Reserve + 2 x 10m road
Unplanted land	1.9ha	5k/ha - 9k/ha	10k - 17k	Road Reserve + 2 x 10m road

Mr. Nieuwoudt believes that the market price for dry-land vineyards should be approximately R100 000 per hectare.

### Replacing Anchors

Because the Alternative B will run across the borders of several vineyards, a number of the vineyard row anchors would need to be replaced. Approximately 1150m of vineyard borders would be affected. The vines rows are planted 2.8m apart. The worst-case scenario will entail replacing 1 anchor every 2.8 m of border affected by the new road (i.e. ≈ 411 new anchors)

#### Summary of new anchor costs

Description	N	Unit Cost	Total Cost
New anchor poles	411 x	R 35	R 14 385
New wire anchors	411 x	R 21	R 8 631
New Wire	2 x	R 500	R 1 000
Plant anchors	411 x	R 10	R 4 110
Plant anchor poles	411 x	R 10	R 4 110
Total			R 32 236

### Irrigation

Alternative B will run across an irrigated vineyard. The irrigation will need to be fixed and the water supply line would have to be rerouted across the proposed overpass.

#### Summary of costs related to moving the existing pivot

Description	Quantity	Unit Cost	Cost
110mm class 9 pipe	850 m	@ R 53.50/m	≈ R 45 475
Trench for new pipe	750m	@ ≈ R 8.00/m	≈ R 6 000
Fixing existing drip irrigation	1ha	@ ≈ R 4000/ha	≈ R 4 000
Total			≈ R 55 475

### Lost Income

Added travelling cost due to new Access Road

Because Alternative B only allows for 1 overpass, it will increase the travelling distance to the north eastern vineyards by approximately 0.75km, i.e. 1.5km on a round trip.

### Summary of additional transport costs

Description	No Trips	Distance	Days / Year	Unit Cost *	Annual Cost
Pick-up	3	1.5km	312	R 3.39/km	R 4 760
5 ton lorry	1	1.5km	312	R 5.80/km	R 2 714
Tractor	3	1.5km	312	R 3.00/km	R 4 212

\* Rates were calculated using the AA Rate Schedules (see Appendix B) and Andrag Machinery (Pty) Ltd.

### Summary of the economic impact of Alternative B (The Easterly Alignment) on Loch Lynne\*

(\* NB. This excludes the impact of Loch Lynne being liquidated)

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	490,500	646,100	757,100
Cost of replacing existing anchors	31,736	31,736	31,736
Cost of fixing irrigation	55,475	55,475	55,475
	<b>577,711</b>	<b>733,311</b>	<b>844,311</b>
<b>PV Lost Income</b>			
Additional km's travelled	66,610	66,610	66,610
<b>Total Impact</b>	<b>644,321</b>	<b>799,921</b>	<b>910,921</b>

## Bon Mella

Bon Mella is primarily a dairy farm with a milk factory on its premises. Alternative A will only slightly intrude on its northern border. Should Vrymansfontein however, cease dairy production it would have a major impact on Bon Mella's dairy factory's profitability. Mr. Coetzee believes this is a distinct possibility if Alternative A was built, because of its proximity to the dairy on Vrymansfontein. Independent experts asked to verify this had different views. This study takes into account the possibility Alternative A would result in the closure of the dairy on Vrymansfontein and would therefore have a significant impact on Bon Mella's dairy factory's profitability. It is recommended that if Alternative A is to be the preferred alternative that expert opinion be called for on whether or not the road noise of the proposed project would undermine dairy production on Vrymansfontein.

Bon Mella and Vrymansfontein are not affected by Alternative B.

### *Alternative A (The Westerly Alignment)*

#### Land

Alternative A will only slightly intrude on its northern border.

#### **Summary of Land affected**

Type of land	≈Size	≈ Market Value/ha	≈ Market Value	Explanation
Suitable-Vines	0.45ha	10k/ha - 20k/ha	5k - 9k	Road Reserve

Mr. Coetzee believes that the market price for land suitable for dry-land vineyards should be approximately R 30 000 per hectare.

#### Buildings and Structures

Alternative A runs across 2 manure dams.

2 x dams @ ≈ R 300 000/dam ≈ R 600 000

#### Loss of income

##### Dairy

The Dairy Factory on Bon Mella was primarily set up in order to process milk from Vrymansfontein (Mr. Jan Coetzee is Mr. Bokkie Naudé's son in law.) They are the exclusive supplier of dairy products to the Fruit & Vegge Group. Currently approximately  $\frac{2}{3}$ 's (10 000l/day) of its daily requirements are sourced directly from Vrymansfontein.

Based on the assumption that if Alternative A is built, Vrymansfontein would seize milk production and the alternative would be to truck in milk from elsewhere. The closest alternative is probably Darling. Should this be the case this would result in an additional cost of approximately R0.20/l –R0.30/l of milk. This is an additional cost of between R730 000 and R1 095 000 per annum.

## Other Issues

### Dust

Excessive dust could seriously affect production and quality at the milk factory, i.e. care would have to be taken during road construction to ensure that little or no dust is generated.

### Summary of the economic impact of Alternative A (The Westerly Alignment) on Bon Mella.

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	4,500	9,000	13,500
Cost of replacing buildings	600,000	600,000	600,000
	604,500	609,000	613,500
<b>PV Lost Income</b>			
Transport cost of milk	1,387,000	4,161,000	4,161,000
<b>Total Impact</b>	1,991,500	4,770,000	4,774,500

## Vrymansfontein

Vrymansfontein could be severely impacted by Alternative A. Mr. Jan Coetzee and Mr. Bokkie Naudé believes that the proximity and the noise generated by Alternative A would severely affect milk production on Vrymansfontein. Independent experts asked to verify this had different views. As mention above this study proceeds on the assumption that Alternative A would result in the closure of the dairy on Vrymansfontein. Vrymansfontein would not be affected by Alternative B.

### Alternative A (The Westerly Alignment)

#### Land

Alternative A would run along the eastern border of Vrymansfontein. The area affected is currently being used for dairy farming but is mostly suitable for dry land vineyards.

#### Summary of Land affected

Type of land	≈Size	≈ Market Value/ha	≈ Market Value	Explanation
Suitable-Vines	9.17ha	10k/ha - 20k/ha	92k - 183k	Road Reserve +2 x 10m road
Vineyards	0.08ha	65k/ha - 85k/ha	5k - 7k	Road Reserve +2 x 10m road
Suitable-Vines	2.74ha	10k/ha - 20k/ha	27k - 55k	Severed Portion

#### Replacing Anchors

Some of the vineyard row anchors will need to be replaced. The worst-case scenario will entail replacing 1 anchor every 2.8 m of border affected by the new road (i.e.  $(50\text{m}/2.8\text{m}/_{\text{anchor}} \approx 20 \text{ new anchors})$ )

#### Summary of new anchor costs

Description	N	Unit Cost	Total Cost
New anchor poles	20 X	R 35	R 700
New wire anchors	20 X	R 21	R 420
New Wire	1 X	R 500	R 500
Plant anchors	20 X	R 10	R 200
Plant anchor poles	20 X	R 10	R 200
Total			R 2 020

#### Buildings and Structures

Alternative A runs across a workers house.

1 x Workers House @  $\approx (115 \text{ m}^2 \times \text{R } 2\,000/\text{m}^2) \approx \text{R } 230\,000$

## Water

The main borehole will be destroyed by Alternative A, this means that another reliable source of water would need to be found. There are 2 ways to remedy this. One can calculate the lost income due to the volume of water currently being used at the new price or alternatively drill new boreholes.

1 x Borehole @  $\approx$  R 22 000/borehole  $\approx$  R 22 000 (assume holes are 100m deep and a 25% success rate and extra holes cost  $\approx$  R 20 000/100m.)

## Fences

Internal Fences need to be replaced since camps will need to be changed. Approximately 2 km of fences will be required (@  $\approx$ R12 000, 00/km).

## Contours

Contours will need to be repaired, in order to prevent soil erosion, ensure efficient draining, etc.

### Summary of contour work

Description	N <sub>Contours</sub>	L <sub>Individual</sub>	L <sub>Total</sub>	$\approx$ Cost/m	$\approx$ Total Cost
Repairs	4	x 150m =	600m	R 7.50	R 4 500
Runoff			600m	R 5.00	R 3 000

## Noise

Excessive noise due to road can affect a residential property's value by between 25% and 40%. Alternative A would pass within 280m of the 2 residential houses (both are approximately 900m<sup>2</sup>) on Vrymansfontein.

## Loss of income

Alternative A passes within a 170m of the dairy on Vrymansfontein. Mr. Jan Coetzee and Mr. Bokkie Naudé claim that they would not be able to economically operate the dairy so close to a major road.

In order to verify this, Carel Muller and Norman Robertson (both from Elsenburg Research Farm) were asked to comment. They both agreed that it would be very difficult to predict what/if any impact a road this close to the dairy would have on dairy production. However, they disagreed on whether such an impact would have long term effect on dairy production. It was one's opinion that if production were affected, it would only be affected for a short period, whereas it was the other's opinion that it might have a long-term effect.

For the purpose of this study it was assumed that it would be uneconomical to operate the dairy in its current location. This leaves two alternatives, the first being to rebuild the dairy somewhere else on the farm. However, this is not a viable option because there is no other viable site on the farm for a dairy. The second alternative

would be to close the dairy and dispose of the cattle. This would result in a loss of income.

#### Dairy

The dairy produces approximately:

10 000l / day @ net profit R 0.10 / l - R 0.30 / l

#### Beef

A dairy also produces beef, e.g. excess calves, and old stock:

140 – 150 cattle / annum @ R 3 000 / head - R 7 000 / head

#### Manure

Manure is another by-product:

R 100 000 / annum

#### Value of livestock

The livestock is worth approximately value ≈ R 2 000 000.

#### Scrap Value

There is virtually no market for used dairy equipment, scrap value ≈ R100 000.

#### Jobs

The closure of the dairy would result in the loss of several jobs, therefore also a loss of income for the persons affected.

30 jobs @ R 2 000 – R 2 500 / worker / month

### Summary of the economic impact of Alternative A (The Westerly Alignment) on Vrymansfontein

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	124,300	245,000	364,100
Cost of replacing existing anchors	2,020	2,020	2,020
Cost of replacing buildings	230,000	230,000	230,000
Cost of replacing boreholes	82,000	82,000	82,000
Cost of fixing internal fences	24,115	24,115	24,115
Cost of contours	7,500	7,500	7,500
Loss of value of residential property due to noise	450,000	720,000	720,000
	919,935	1,310,635	1,429,735
<b>PV Lost Income</b>			
Lost Income if Dairy Closes	1,263,000	6,431,000	6,431,000
Lost jobs	7,200,000	9,000,000	9,000,000
	8,463,000	15,431,000	15,431,000

**Total Impact**

9,382,935	16,741,635	16,860,735
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## Sondagsfontein

Sondagsfontein is a wheat farm. The owner, Mr. André Louw, prefers Alternative A.

### Alternative A (The Westerly Alignment)

#### Land

Alternative A would cut through a wheat field. This would result in a loss of land including 10m on both sides of the road being lost (i.e. to allow for a tractors and equipment to turn.) Sondagsfontein is very suitable for dry-land vineyards.

#### Summary of Land affected

Type of land	≈Size	≈Market Value/ha	≈ Market Value	Explanation
Suitable-Vines	16.3ha	10k/ha - 20k/ha	163k - 326k	Road Reserve
Suitable-Vines	19.3ha	10k/ha - 20k/ha	193k - 386k	Severed Portion

#### Contours

Contours will need to be repaired, in order to prevent soil erosion, ensure efficient draining, etc. Because some of the camps will have to be combined new contours will also have to be made.

#### Summary of contour work

Description	N <sub>Contours</sub>	L <sub>Individual</sub>	L <sub>Total</sub>	≈ Cost/m	≈ Total Cost
Repairs	14 X	150 m =	2100m	R 7.50	R 15 750
Runoff			1310m	R 5.00	R 6 550

#### Fences

Internal Fences need to be replaced since camps need to change. Approximately 2km of fences will be required (@ ≈R12 000, 00/km).

### Summary of the economic impact of Alternative A (The Westerly Alignment) on Sondagsfontein

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	356,000	712,000	712,000
Cost of fixing internal fences	24,801	24,801	24,801
Cost of contours	22,300	22,300	22,300
<b>Total Impact</b>	<b>403,101</b>	<b>759,101</b>	<b>759,101</b>

## Alternative B (The Easterly Alignment)

### Land

Alternative B would cut through a wheat field. This would result in another 10m on both sides of the road being lost (i.e. to allow for a tractors and equipment to turn.) The remainder of the wheat field left between Adderley Road & Alternative B would be too small to use for commercial wheat farming. Sondagsfontein is very suitable for dry-land vineyards.

### Summary of Land affected

Type of land	≈Size	≈Market Value/ha	≈ Market Value	Explanation
Suitable-Vines	20.9ha	10k/ha - 20k/ha	209k - 418k	Road Reserve
Wheat	7.9ha	5k/ha - 9k/ha	40k - 71k	To small to farm

### Contours

Contours will need to be repaired, in order to prevent soil erosion, ensure efficient draining, etc. Because some of the camps will have to be combined new contours will also have to be made.

### Summary of contour work

Description	N <sub>Contours</sub>	L <sub>Individual</sub>	L <sub>Total</sub>	≈ Cost/m	≈ Total Cost
Repairs	17 X	150 m =	2550m	R 7.50	R 19 125
Runoff			2135m	R 5.00	R 10 675

### Fences

Internal Fences need to be replaced since camps need to change. Approximately 2km of fences will be required (@ ≈R12 000, 00/km).

### Summary of the economic impact of Alternative B (The Easterly Alignment) on Sondagsfontein

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	248,500	489,100	489,100
Cost of fixing internal fences	24,801	24,801	24,801
Cost of contours	29,800	29,800	29,800
<b>Total Impact</b>	<b>303,101</b>	<b>543,701</b>	<b>543,701</b>

## Kuiperskraal / Welgegund

It is important to note that this analysis does not cover the full impact of the proposed extension of the R300 on Kuiperskraal / Welgegund. It only covers the areas affected by Alternative A and Alternative B.

### Alternative A (The Westerly Alignment)

#### Land

Alternative A would cut through a wheat field. This would result in another 10m on both sides of the road being lost (i.e. to allow for a tractors and equipment to turn.)

#### Summary of Land affected

Type of land	≈Size	≈ Market Value/ha	≈Market Value	Explanation
Suitable-Vines	11ha	5k/ha - 9k/ha	55k - 99k	Road Reserve +2x10m road

#### Contours

Contours would need to be repaired, in order to prevent soil erosion, ensure efficient draining etc.

#### Summary of contour work

Description	N Contours	L Individual	L Total	≈ Cost/m	≈ Total Cost
Repairs	23	x 150 m =	3450m	R 7.50	R 25 875
Runoff			1100m	R 5.00	R 5 500

### Summary of the economic impact of Alternative A (The Westerly Alignment) on Kuiperskraal / Welgegund

	Min	Max	Max +
<b>Replacement Costs</b>			
Value of land affected by proposed road	55,000	99,000	99,000
Cost of contours	31,375	31,375	31,375
<b>Total Impact</b>	<b>86,375</b>	<b>130,375</b>	<b>130,375</b>

*Alternative B (The Easterly Alignment)*

Land

Alternative B would cut through a wheat field. This would result in another 10m on both sides of the road being lost (i.e. to allow for a tractors and equipment to turn.)

**Summary of Land affected**

Type of land	≈Size	≈ Market Value/ha	≈Market Value	Explanation
Suitable-Vines	11ha	5k/ha - 9k/ha	55k - 99k	Road Reserve +2x10m road

Contours

Contours will need to be repaired, in order to prevent soil erosion, ensure efficient draining etc.

**Summary of contour work**

Description	N <sub>Contours</sub>	L <sub>Individual</sub>	L <sub>Total</sub>	≈ Cost/m	≈ Total Cost
Repairs	30	x 150 m =	4500m	R 7.50	R 33 750
Runoff			1115m	R 5.00	R 5 575

**Summary of the economic impact of Alternative B (The Easterly Alignment) on Kuiperskraal / Welgegund**

**Replacement Costs**

Value of land affected by proposed road  
Cost of contours

**Total Impact**

	Min	Max	Max +
Value of land affected by proposed road	55,000	99,000	99,000
Cost of contours	39,325	39,325	39,325
<b>Total Impact</b>	<b>94,325</b>	<b>138,325</b>	<b>138,325</b>

## Appendix B

### Estimated total running cost for a pick-up using the AA Rate Schedules:

Purchase Price:	R 200 000 – R 220 000	
Annual Distance travelled:	> 30 000km	
<b>Fixed cost:</b>		R 2.20/km
Engine Capacity:	2500cc – 3000cc	
<b>Estimated average running cost:</b>		R 0.827/km
Adjustment for vehicle type & extraordinary use		12%
<b>Estimated total running cost:</b>		R 3.39/km

### Estimated total running cost for a 5 ton lorry using the AA Rate Schedules:

Purchase Price:	R 351 000 – R 400 000	
Annual Distance travelled:	> 30 000km	
<b>Fixed cost:</b>		R 4.01/km
Engine Capacity:	> 4000cc	
<b>Estimated average running cost:</b>		R 1.173/km
Adjustment for vehicle type & extraordinary use		12%
<b>Estimated total running cost:</b>		R 5.80/km

## Appendix C

### Contact Details:

Farm:	Phisantekraal	
Owner:	Boetie Louw	
Representative:	Boetie Louw	
Phone:	021 976 1727	Home
	083 453 7671	Cell

Farm:	Loch Lynne	
Owner:	Piet Brundyn	
Representative:	Brian Nieuwoudt	
Phone:	021 975 5041	Home
	083 320 1028	Cell

Farm:	Bon Mella	
Owner:	Jan Coetzee	
Representative:	Jan Coetzee	
Phone:	021 975 1508	Home
	083 626 6262	Cell

Farm:	Vrymansfontein	
Owner:	Bokkie Naudé	
Representative:	Bokkie Naudé	
Phone:	021 976 1726	Home
	083 290 7464	Cell

Farm:	Sondagsfontein	
Owner:	André Louw	
Representative:	André Louw	
Phone:	021 976 1806	Home
	N/A	Cell

Farm:	Kuiperskraal / Welgegend	
Owner:	Loubser Boerdery; Eduard Loubser; De Villiers Loubser; Melt Loubser; Johannes Loubser	
Representative:	De Villiers Loubser / Melt Loubser	
Phone:	021 972 1872	Home
	082 7722977	Cell
E-mail:	<a href="mailto:melt@dairycon.co.za">melt@dairycon.co.za</a>	

Company:	AIDA Real Estate	
Representative:	Piet Viljoen; Piet Gelderblom	
Phone:	021 872 2161	Work
	021 873 2251	Home
	083 227 1914	Cell
E-mail:	N/A	
Address:	AIDA Real Estate, 230 Main Road, Paarl	

Market value of agricultural land, price of grapes, net profit on milk, etc.

Company:	PEK Visser
Representative:	Pieter Visser
Phone:	028 4481807      Work 082 558 7082      Cell 082 772 2336      Cell
E-mail:	N/A
Address:	Brakvlei, Hermon

Prices for fixing contours and runoffs.

Company:	Ciaan Water Drilling
Representative:	Ciaan Lochner
Phone:	021 856 1233      Work 082 801 6120      Cell
E-mail:	<a href="mailto:ciaan@mweb.co.za">ciaan@mweb.co.za</a>
Address:	Blue Mist, Sir Lowry's Pass Road, Gordon's Bay

Prices for drilling for water.

Company:	Gey van Pittius, J (Pty) Ltd.
Representative:	Gerhard Prins
Phone:	021 8581204      Work 082 802 1363      Cell
E-mail:	N/A
Address:	Maine Road, Sir Lowry's Pass

Prices for irrigation.

Company:	Kynoch
Representative:	Jannie Bester
Phone:	082 452 7262      Cell
E-mail:	N/A
Address:	Kynoch, Milnerton

Market price for wheat, fixed and variable cost for wheat cultivation, fixed and variable cost for dry land grape cultivation.

Company:	Kynoch
Representative:	Ben Krog
Phone:	082 809 9664      Cell
E-mail:	N/A
Address:	Kynoch, Milnerton

Market price for grapes, fixed and variable cost for dry land & irrigated grape cultivation.

Company:	WPK
Representative:	N/A
Phone:	022 482 8000 Main Office
E-mail:	N/A
Address:	Malmesbury

Prices for wire, droppers etc, needed for replacing fences.

Company:	Andrag
Representative:	Alfred Andrag
Phone:	082 824 1214 Cell
E-mail:	N/A
Address:	Bellville

Prices for moving the pivot at Phisantekraal.

Company:	Willem Willemse, Draadtrek en Skeerdiens
Representative:	Willem Willemse
Phone:	022 486 5113 Home
E-mail:	N/A
Address:	Waboomlaan 51, Malmesbury

Price for labour for replacing fences.

Company:	Western Cape Department of Agriculture, Animal Production, Elsenburg
Representative:	Carel Muller
Phone:	021 808 5228 Office
E-mail:	carelm@wcape.agric.za
Address:	Private Bag X1 Elsenburg 7607

How road noise would affect dairy production.

Company:	ANPI Dairy Laboratory Elsenburg Research Farm
Representative:	Norman Robertson (Director)
Phone:	021 808 5400 Office
E-mail:	N/A
Address:	PO Box 65 Elsenburg 7607

How road noise would affect dairy production.

Company:	Andrag Machinery (Pty) Ltd.
Representative:	H.F. van Zyl
Phone:	021 950 4279      Office
E-mail:	N/A
Address:	La Belle Road Stikland Bellville

Approximate operating costs for John Deere 5510 Tractor

Company:	Distell (Pty) Ltd.
Representative:	Hansie Swanepoel
Phone:	021 809 7000      Office 082 781 9007      Mobile
E-mail:	N/A
Address:	Aan de Wagen Weg Stellenbosch 7600

Economic impact of Alternative A & B on Loch Lynne.

Company:	Distell (Pty) Ltd.
Representative:	Dirk Bosman
Phone:	021 809 7000      Office 082 771 2979      Mobile
E-mail:	N/A
Address:	Aan de Wagen Weg Stellenbosch 7600

Economic impact of Alternative A & B on Loch Lynne.