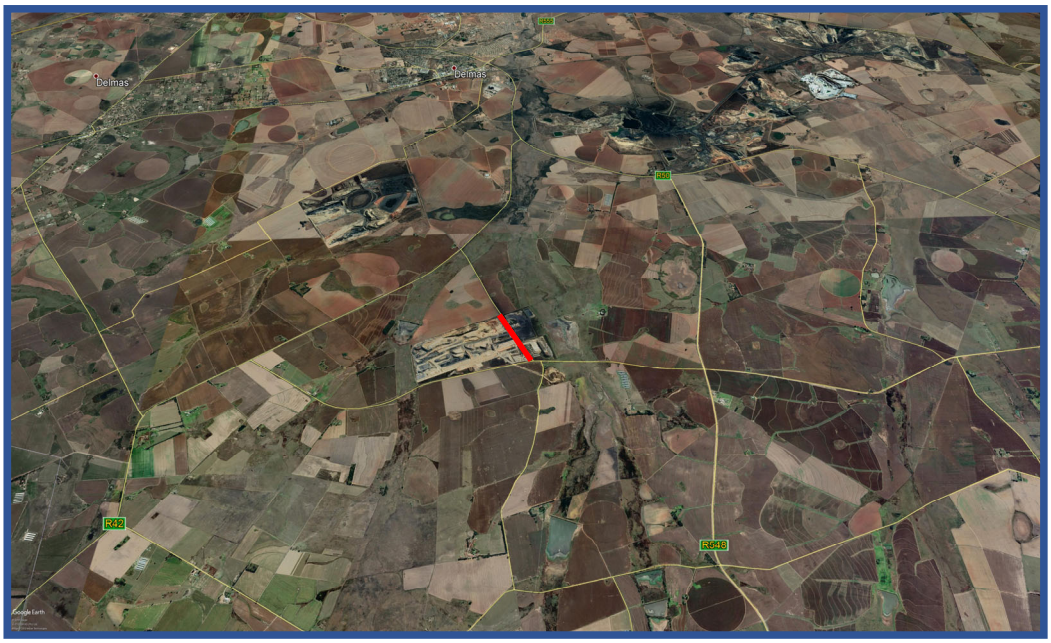

PROPOSED PERMANENT ROAD CLOSURE OF ROAD D1223_010 FOR MANUNGU COLLIERY, DELMAS, MPUMALANGA

TRAFFIC IMPACT ASSESSMENT REPORT

AUGUST 2019

EDL CONSULTING ENGINEERS

Issue/revision	Revision 0	Revision 1	Revision 2	Revision 3
Remarks	Issued for Approval			
Date	August 2019			
Prepared by	J.M. van Rooyen			
Checked by	E.D. Kotze Pr Tech Eng			
Signature				
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1 Introduction

EDL Consulting Engineers have been appointed by Manungu Colliery to conduct a Traffic Impact Assessment for the proposed permanent road closure of a portion of road D1223_010 at Manungu Colliery, Delmas, Mpumalanga.

The purpose of this traffic impact report is to investigate the expected peak hour traffic to be redistributed by the proposed permanent road closure at Manungu Colliery and to quantify, as well as evaluate its impact on the existing road network.

This study also evaluates the need for providing improvements to the existing road network including the key intersections.

As can be seen in the chapters that follow, we have undertaken peak period traffic counts at the key intersections, identified according to the TMH16, and analysed the key intersections for capacity and upgrade identification.

Sidra™ Analysis are performed in the critical peak hours for existing traffic scenarios.

As the diverted traffic would have a very small impact on the existing traffic, future horizon scenarios were not analysed, as it is not a requirement by TMH 16 (less than 50 Peak hour Trips).

Printouts of the Sidra™ analysis results of the key intersections are included in **Annexure A** at the back of the report after the drawings.

2 Site Location

2.1 Site Location

As shown in **Figure 1,** the proposed road closure of a portion of road D1223_010 is located at the Manungu Colliery south of Delmas, Mpumalanga. The intersection of the R42 and Road D1223_010 is situated approx. 3750m southwest of the R50 and R42 intersection and Road D1223_010 is on the southern side of the R42. A portion of road D1223_010 (closure portion) is inside the mining area of Manungu Colliery.

Site Location -Figure 1 (Also attached)

3 Surrounding Road Network and Traffic Flow

3.1 Surrounding Road Network

The following roads and streets are relevant to the study area.

R50 (P36/2): This road functions as a Regional Distributor (class 2). This road is a surfaced single carriageway road with no median and one (1) lane in each direction. This road has a signalised intersection with the R42. Traffic counts indicate that this road carries traffic volumes of between 200vph and 550vph per direction during the Weekday Morning (AM) and Weekday Afternoon (PM) peak hours.

R42 (P101/1): This road functions as a Regional Distributor (class 2). This road is a surfaced single carriageway road with no median and one (1) lane in each direction. This road has a signalised intersection with the R50, and also a two-way 'STOP' condition with road D1223, with the traffic on the R42 having the right of way. Traffic counts indicate that this road carries traffic volumes of between 150vph and 155vph per direction during the Weekday Morning (AM) and Weekday Afternoon (PM) peak hours.

R548 (P36/2): This road functions as a Rural District Distributor (class 3). This road is a surfaced (under construction at time of visit) single carriageway road with no median and one (1) lane in each direction. This road has a two-way 'STOP' condition with the R50, with traffic on the R50 having the right of way. Traffic counts indicate that this road carries traffic volumes of between 50vph and 75vph per direction during the Weekday Morning (AM) and Weekday Afternoon (PM) peak hours.

Road D1223: This road functions as a Rural District Collector (class 4). This road is a surfaced single carriageway road with no median and one (1) lane in each direction. This road has a two-way 'STOP' intersection with the R42, with the traffic on the R42 having the right of way. Traffic counts indicate that this road carries traffic volumes of less than 10vph per direction during the Weekday Morning (AM) and Weekday Afternoon (PM) peak hours.

3.2 Existing Traffic Flows and Redistributed Traffic

Given the type and extent of the proposed road closure, the study area was defined to include three key intersections as required by COTO TMH, and was checked using SIDRA. Weekday Traffic Counts were therefore carried out during the Weekday morning (AM) and afternoon (PM) commuter peak periods, in July 2019, at the following identified intersections:

Key Intersections:
- R50 & R42
- R50 & R548
- R42 & D1223

The existing Weekday Morning (AM) and Weekday Afternoon (PM) peak hour traffic volumes at the above-mentioned key intersections are summarised in **Figure 2**.

The redistributed traffic on the R50 to the west is 17 vph in the AM Peak hour and 14 vph in the PM Peak hour. To the eastern direction the redistributed traffic is 12 vph in the AM peak hour and 10 vph in the PM Peak hour. Refer to **Figure 3** and **Figure 4** for details.

4 Road Closure Positions and Affected Accesses

4.1 Road Closure Positions

The proposed road closure of road D1223_010 is from the gate at coordinate S 26°13'20", E 28°41'36" to the intersection at coordinate S 26°13'57", E 28°41'56".

4.2 Affected Accesses

Road D1223_010 provides access to the Manungu Colliery (applicants for permanent road closure) and two agricultural fields of approx. 2km in length (between the Colliery and the R42).

Therefore, permanent closure of road D1223_010 after the agricultural fields will have no impact on any existing accesses, except for Manungu Colliery (still accessible). Details are shown in below.

Image 1 (Affected Accesses)

5 Traffic Impact & Capacity Analyses

In order to determine the capacity at the key intersections, capacity analyses were carried out by using SIDRA 7, a well-known traffic engineering software package. The following intersections were analysed:

Key Intersections: R50 & R42

R50 & R548

The following scenarios were analysed at the above-mentioned key intersections namely:

- Existing 2019 Weekday Morning (AM) and Weekday Afternoon (PM) peak hour (as per **Figure 2**);
- Existing 2019 and Redistributed Weekday Morning (AM) and Weekday Afternoon (PM) peak hour (as per **Figure 4**);

The next subsections illustrate the SIDRA results in two tables and briefly discusses the results and key conclusion at the analysed intersections, with the details of Sidra Intersection Capacity Analyses appended in Annexure A.

5.1 R50 & R42 – No upgrades

Also see Annexures A1.1 to A1.2 have reference:

Table 1 – Results of Sidra Analyses (worst approach only) – No upgrades

Intersection		R50 & R42	
Scenario		Existing 2019	Existing 2019 + Redistributed
Level of Service	Weekday AM Peak Hour	B	B
	Weekday PM Peak Hour	B	B
Average Delays	Weekday AM Peak Hour	10.2	10.2
	Weekday PM Peak Hour	12.3	12.3

5.2 R50 & R548 – No Upgrades

Also see Annexures A2.1 to A2.2 have reference:

Table 2 – Results of Sidra Analyses (worst approach only) – With upgrades

Intersection		R50 & R548	
Scenario		Existing 2019	Existing 2019 + Redistributed
Level of Service	Weekday AM Peak Hour	C	C
	Weekday PM Peak Hour	C	C
Average Delays	Weekday AM Peak Hour	15.6	16.3
	Weekday PM Peak Hour	16.1	16.9

6 Road and/or Intersection Improvements

All analysed key intersections have acceptable Levels of Service and Average Delays on all scenarios during the AM and PM peak hour, according to SIDRA Analysis, as shown in **Chapter 5**.

Therefore, based on the additional diverted traffic for the proposed permanent road closure of a portion of road D1223_010 during the critical Weekday Morning (AM) and Weekday Afternoon (PM) peak periods, the capacity analyses in **Chapter 5**, as well as our site observations during the peak hours, the analysed key intersections do not require upgrading to accommodate the expected diverted traffic.

7 Conclusions & Recommendations

Based on the content of this traffic impact report, the following key conclusions and recommendations are relevant:

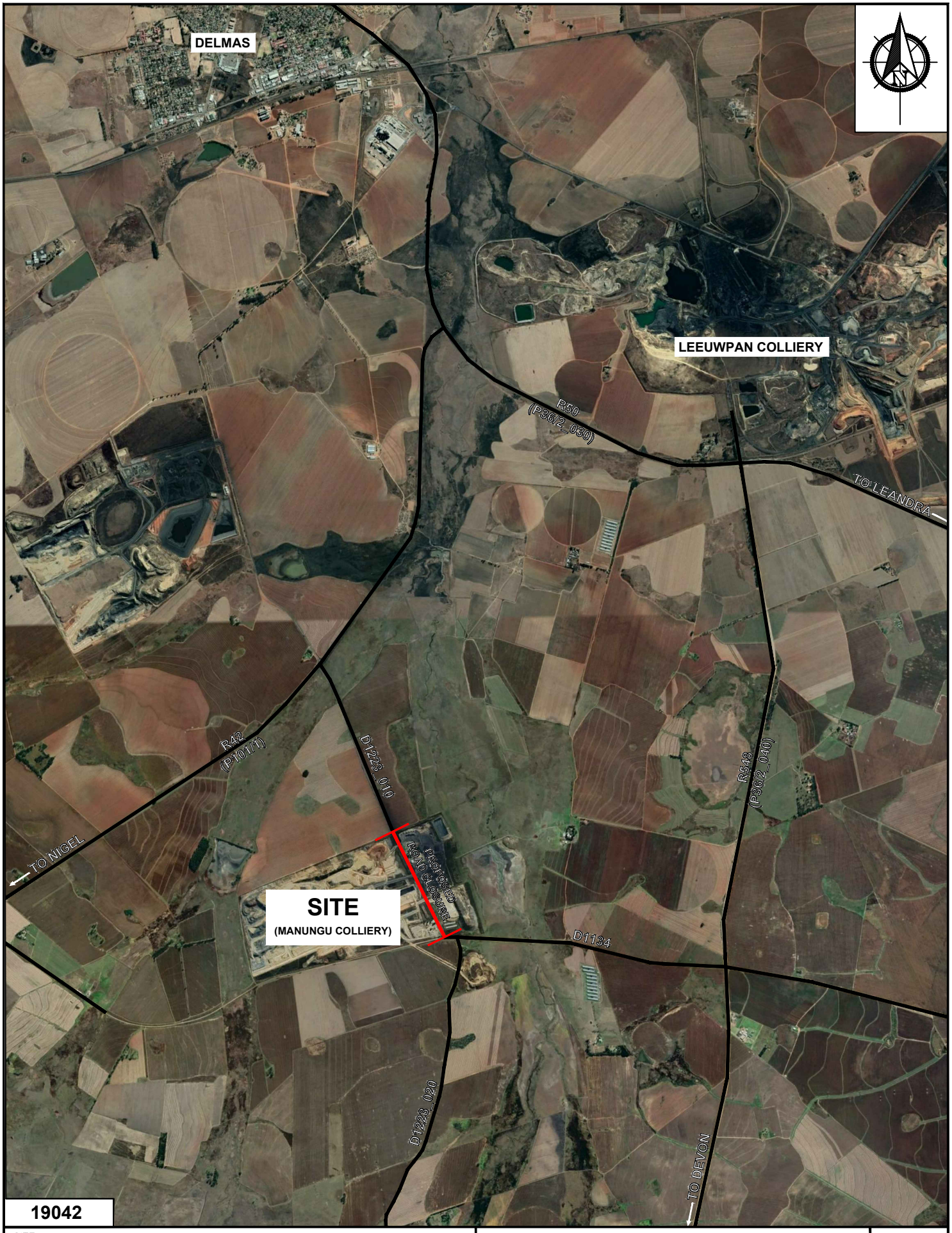
- The proposed permanent road closure is of a portion the road D1223_010 at Manungu Colliery, Delmas, Mpumalanga. Road D1223_010 is situated approx. 3750m southwest of the intersection of the R50 and the R42 and is south of the R42. Refer to **Figure 1** for the locality
- The proposed road closure positions are from the gate at coordinate S 26°13'20", E 28°41'36" to the intersection at coordinate S 26°13'57", E28°41'56".
- The major source of traffic on road D1223_010 is from Manungu Colliery (the applicant) and a few farmers and as such the diverted traffic will be less than 20vph during the peak hours in each direction.
- The affected accesses are limited to Manungu Colliery only, with access still available to the adjacent farmland.
- Sidra Intersection Capacity Analyses were undertaken, were carried out for the weekday peak periods at the key intersections and no upgrades are proposed, at the following two (2) intersections:
    - R50 & R42
    - R50 & R548
- With the added traffic, the analysed intersections have acceptable Levels of Service and Average Delays during the peak hours. The added diverted traffic will have a very small impact on the intersections.

It is therefore recommended that the proposed road closure is supported from a traffic engineering perspective, provided that the permanent road closure of road D1223_010 is implemented as proposed in this report (and **Drawing 19042/RC/01**) and to the relevant standards of the Department of Public Works, Roads and Transport, Mpumalanga.

8 Bibliography

- TMH 17 - South African Trip Data Manual. (2013). South African Committee of Transport Officials.
- SIDRA Intersection 7. (2017). Australia: Department of Planning Transport and Infrastructure.
- TRH 26 - South African Road Classification and Access Management Manual. (2012). 1st ed. South African Committee of Transport Officials.
- TMH 16 - Traffic Impact and Site Traffic Assessment Manual. (2012). 1st ed. South African Committee of Transport Officials.

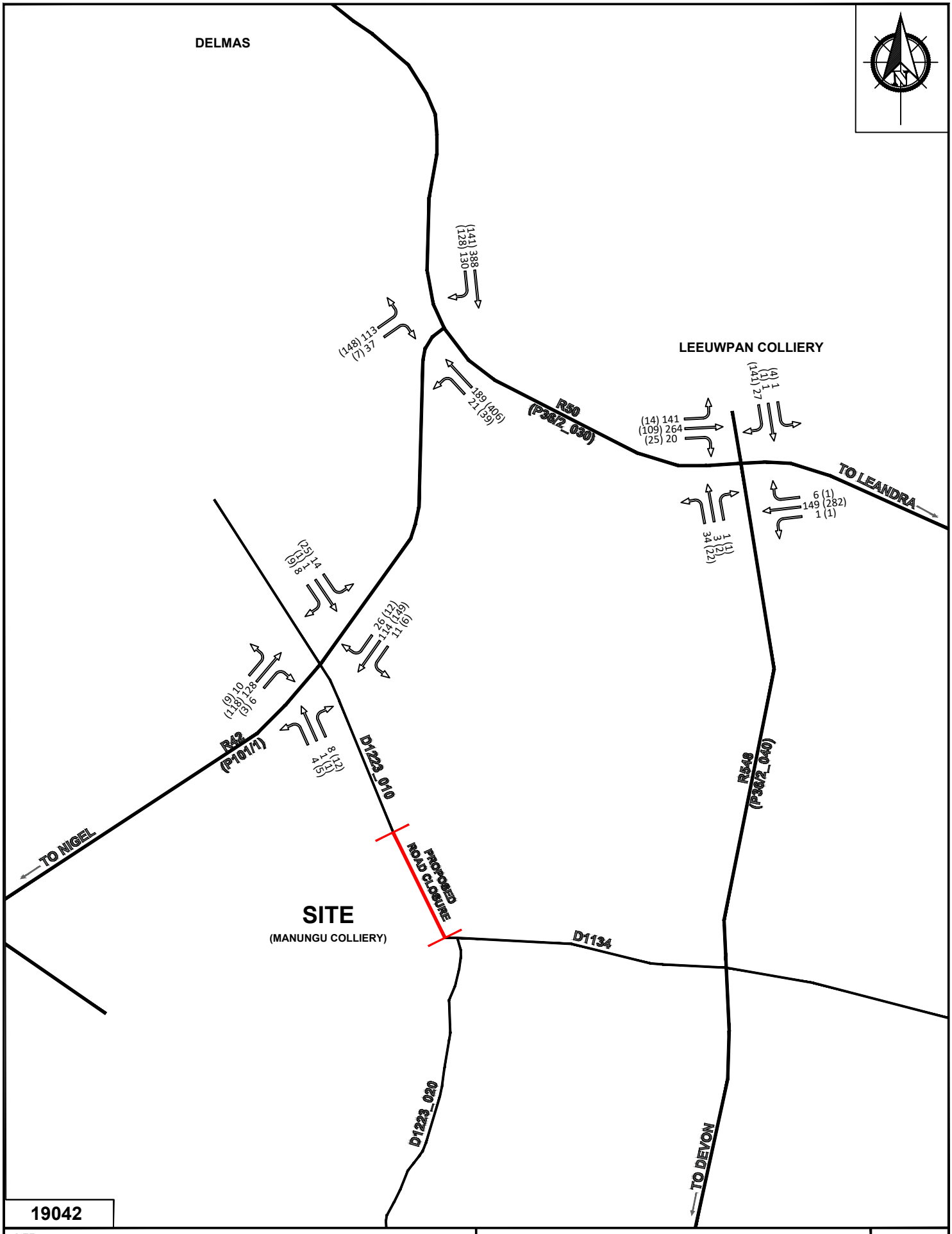
Figures



19042

SITE:	TITLE:	
MANUNGU COLLIERY PROPOSED ROAD CLOSURE	LOCALITY	FIG 1

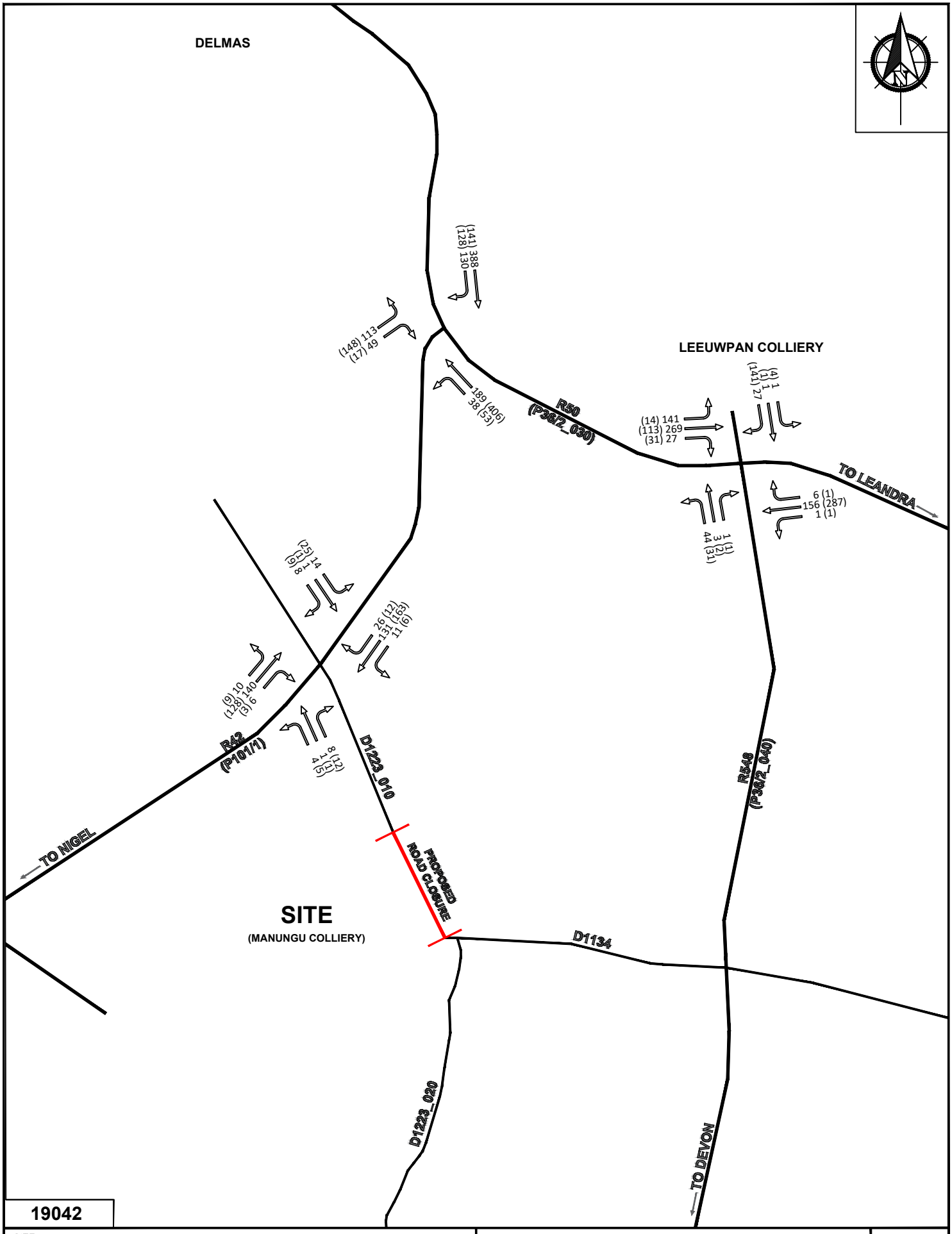
EDL ENGINEERS



19042

SITE:	TITLE:	
MANUNGU COLLIERY PROPOSED ROAD CLOSURE	EXISTING 2019 PEAK HOUR TRAFFIC	FIG 2

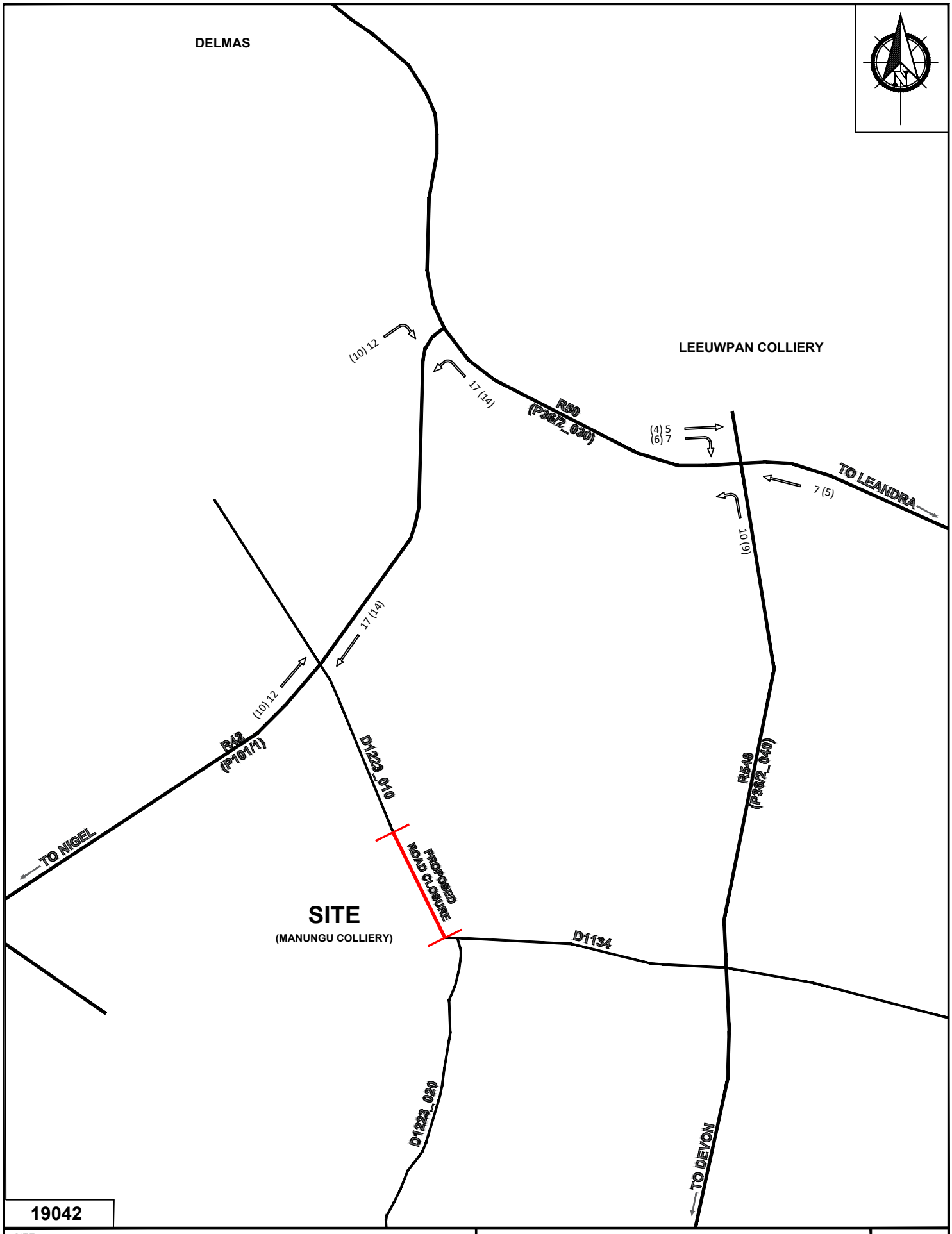
EDL ENGINEERS



19042

SITE:	TITLE:	
MANUNGU COLLIERY PROPOSED ROAD CLOSURE	EXISTING 2019 + REDISTRIBUTED PEAK HOUR TRAFFIC	FIG 4

EDL ENGINEERS



19042

SITE:	TITLE:	
MANUNGU COLLIERY PROPOSED ROAD CLOSURE	REDISTRIBUTED PEAK HOUR TRAFFIC	FIG 3

EDL ENGINEERS

Drawings

Drawing no: 19042/RC/01 (Proposed Road Closure Extent)

SITE: **MANUNGU COLLIERY**	**19042/RC/01** DRAWING NO.		**19042** PROJECT NO.	**20/08/2019** DATE.	**EDL CONSULTING ENGINEERS** 1st Floor, Block D The Village Office Park C/O Glenwood Rd & Oberon Ave, Fearie Glen, 0043 Tel: 087 897 5074/5/6 eben@edlengineers.co.za www.edlengineers.co.za
TITLE: **PROPOSED ROAD CLOSURE EXTENT**	**1:40000** SCALE AT A3.	**JMvR** DRAWN.	**E.D. KOTZE** CHECKED.	**0** REVISION.	ENGINEERING DESIGN LAB

Annexure A

Relevant outputs of the SIDRA7 intersection capacity analyses at the key intersections

Annexure A1:

R50 & R42

- A1.1 – Existing 2019 AM Peak Hour Traffic
- A1.2 – Existing 2019 PM Peak Hour Traffic
- A1.3 – Existing 2019 + Redistributed AM Peak Hour Traffic
- A1.4 – Existing 2019 + Redistributed PM Peak Hour Traffic

Annexure A1.1

Sidra Output: R50 & R42

Existing 2019 AM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	Demand Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
SouthEast: R50											
21	L2	22	0.0	0.020	6.9	LOS A	0.1	0.5	0.42	0.63	52.3
22	T1	199	0.0	0.255	6.8	LOS A	2.0	14.2	0.70	0.57	54.0
Approach		221	0.0	0.255	6.8	LOS A	2.0	14.2	0.68	0.58	53.8
NorthWest: R50											
28	T1	408	0.0	0.524	7.7	LOS A	4.8	33.5	0.81	0.69	53.2
29	R2	137	0.0	0.261	13.9	LOS B	1.6	10.9	0.77	0.75	47.6
Approach		545	0.0	0.524	9.3	LOS A	4.8	33.5	0.80	0.70	51.7
SouthWest: R42											
30	L2	119	0.0	0.425	17.9	LOS B	2.2	15.5	0.92	0.78	45.4
32	R2	39	0.0	0.425	17.9	LOS B	2.2	15.5	0.92	0.78	45.2
Approach		158	0.0	0.425	17.9	LOS B	2.2	15.5	0.92	0.78	45.4
All Vehicles		924	0.0	0.524	10.2	LOS B	4.8	33.5	0.79	0.69	50.9

Annexure A1.2

Sidra Output: R50 & R42

Existing 2019 PM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: R50											
21	L2	41	0.0	0.037	6.9	LOS A	0.1	0.9	0.42	0.64	52.3
22	T1	427	0.0	0.598	8.9	LOS A	5.4	38.1	0.86	0.74	52.3
Approach		468	0.0	0.598	8.8	LOS A	5.4	38.1	0.82	0.74	52.3
NorthWest: R50											
28	T1	148	0.0	0.208	7.3	LOS A	1.6	10.9	0.72	0.58	53.5
29	R2	135	0.0	0.397	17.9	LOS B	1.9	13.2	0.91	0.77	45.2
Approach		283	0.0	0.397	12.3	LOS B	1.9	13.2	0.81	0.67	49.2
SouthWest: R42											
30	L2	156	0.0	0.377	16.8	LOS B	2.2	15.2	0.88	0.77	46.0
32	R2	7	0.0	0.377	16.8	LOS B	2.2	15.2	0.88	0.77	45.9
Approach		163	0.0	0.377	16.8	LOS B	2.2	15.2	0.88	0.77	46.0
All Vehicles		915	0.0	0.598	11.3	LOS B	5.4	38.1	0.83	0.72	50.1

Annexure A1.3

Sidra Output: R50 & R42

Existing 2019 + Redistributed AM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	Demand Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
SouthEast: R50											
21	L2	40	0.0	0.036	6.9	LOS A	0.1	0.9	0.42	0.64	52.3
22	T1	199	0.0	0.255	6.8	LOS A	2.0	14.2	0.70	0.57	54.0
Approach		239	0.0	0.255	6.8	LOS A	2.0	14.2	0.66	0.59	53.7
NorthWest: R50											
28	T1	408	0.0	0.524	7.7	LOS A	4.8	33.5	0.81	0.69	53.2
29	R2	137	0.0	0.264	13.9	LOS B	1.6	11.0	0.77	0.75	47.5
Approach		545	0.0	0.524	9.3	LOS A	4.8	33.5	0.80	0.70	51.7
SouthWest: R42											
30	L2	119	0.0	0.459	18.0	LOS B	2.4	16.9	0.92	0.78	45.3
32	R2	52	0.0	0.459	18.0	LOS B	2.4	16.9	0.92	0.78	45.2
Approach		171	0.0	0.459	18.0	LOS B	2.4	16.9	0.92	0.78	45.3
All Vehicles		955	0.0	0.524	10.2	LOS B	4.8	33.5	0.78	0.69	50.9

Annexure A1.4

Sidra Output: R50 & R42

Existing 2019 + Redistributed PM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
SouthEast: R50											
21	L2	56	0.0	0.050	6.9	LOS A	0.2	1.3	0.43	0.65	52.3
22	T1	427	0.0	0.598	8.9	LOS A	5.4	38.1	0.86	0.74	52.3
Approach		483	0.0	0.598	8.7	LOS A	5.4	38.1	0.81	0.73	52.3
NorthWest: R50											
28	T1	148	0.0	0.208	7.3	LOS A	1.6	10.9	0.72	0.58	53.5
29	R2	135	0.0	0.399	17.9	LOS B	1.9	13.2	0.91	0.77	45.2
Approach		283	0.0	0.399	12.3	LOS B	1.9	13.2	0.81	0.67	49.2
SouthWest: R42											
30	L2	156	0.0	0.401	16.9	LOS B	2.3	16.3	0.89	0.78	46.0
32	R2	18	0.0	0.401	16.8	LOS B	2.3	16.3	0.89	0.78	45.8
Approach		174	0.0	0.401	16.9	LOS B	2.3	16.3	0.89	0.78	46.0
All Vehicles		940	0.0	0.598	11.3	LOS B	5.4	38.1	0.83	0.72	50.1

Annexure A2:

R50 & R548

- A2.1 – Existing 2019 AM Peak Hour Traffic
- A2.2 – Existing 2019 PM Peak Hour Traffic
- A1.3 – Existing 2019 + Redistributed AM Peak Hour Traffic
- A1.4 – Existing 2019 + Redistributed PM Peak Hour Traffic

Annexure A2.1

Sidra Output: R50 & R548

Existing 2019 AM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R548											
1	L2	36	0.0	0.045	8.8	LOS A	0.2	1.1	0.29	0.88	51.2
2	T1	3	0.0	0.045	15.5	LOS C	0.2	1.1	0.29	0.88	51.2
3	R2	1	0.0	0.045	13.7	LOS B	0.2	1.1	0.29	0.88	51.0
Approach		40	0.0	0.045	9.4	LOS A	0.2	1.1	0.29	0.88	51.2
East: R50											
4	L2	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.58	53.6
5	T1	157	0.0	0.087	0.1	LOS A	0.1	0.5	0.05	0.02	59.6
6	R2	6	0.0	0.087	7.6	LOS A	0.1	0.5	0.05	0.02	57.7
Approach		164	0.0	0.087	0.5	NA	0.1	0.5	0.05	0.03	59.5
North: RoadName											
7	L2	1	0.0	0.084	8.0	LOS A	0.3	2.1	0.01	1.00	46.7
8	T1	1	0.0	0.084	14.2	LOS B	0.3	2.1	0.01	1.00	46.7
9	R2	28	0.0	0.084	15.9	LOS C	0.3	2.1	0.01	1.00	46.5
Approach		31	0.0	0.084	15.6	LOS C	0.3	2.1	0.01	1.00	46.6
West: R50											
10	L2	148	0.0	0.080	5.5	LOS A	0.0	0.0	0.00	0.58	53.6
11	T1	278	0.0	0.160	0.1	LOS A	0.2	1.3	0.05	0.04	59.4
12	R2	21	0.0	0.160	6.2	LOS A	0.2	1.3	0.05	0.04	57.5
Approach		447	0.0	0.160	2.2	NA	0.2	1.3	0.03	0.22	57.3
All Vehicles		682	0.0	0.160	2.8	NA	0.3	2.1	0.05	0.25	56.8

Annexure A2.2

Sidra Output: R50 & R548

Existing 2019 PM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R548											
1	L2	23	0.0	0.033	9.6	LOS A	0.1	0.8	0.40	0.87	50.9
2	T1	2	0.0	0.033	12.8	LOS B	0.1	0.8	0.40	0.87	51.0
3	R2	1	0.0	0.033	13.2	LOS B	0.1	0.8	0.40	0.87	50.7
Approach		26	0.0	0.033	10.0	LOS A	0.1	0.8	0.40	0.87	50.9
East: R50											
4	L2	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.58	53.6
5	T1	297	0.0	0.153	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
6	R2	1	0.0	0.153	6.1	LOS A	0.0	0.1	0.00	0.00	58.1
Approach		299	0.0	0.153	0.0	NA	0.0	0.1	0.00	0.00	59.9
North: RoadName											
7	L2	4	0.0	0.357	9.3	LOS A	1.8	12.4	0.56	1.04	47.1
8	T1	1	0.0	0.357	15.0	LOS B	1.8	12.4	0.56	1.04	47.1
9	R2	148	0.0	0.357	16.3	LOS C	1.8	12.4	0.56	1.04	46.9
Approach		154	0.0	0.357	16.1	LOS C	1.8	12.4	0.56	1.04	46.9
West: R50											
10	L2	15	0.0	0.023	5.5	LOS A	0.0	0.0	0.00	0.20	56.7
11	T1	115	0.0	0.069	0.4	LOS A	0.2	1.6	0.16	0.16	58.0
12	R2	26	0.0	0.069	6.8	LOS A	0.2	1.6	0.21	0.15	56.1
Approach		156	0.0	0.069	2.0	NA	0.2	1.6	0.15	0.16	57.5
All Vehicles		635	0.0	0.357	4.8	NA	1.8	12.4	0.19	0.33	55.2

Annexure A2.3

Sidra Output: R50 & R548

Existing 2019 + Redistributed AM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	Demand Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: R548											
1	L2	46	0.0	0.056	8.8	LOS A	0.2	1.4	0.29	0.88	51.2
2	T1	3	0.0	0.056	16.0	LOS C	0.2	1.4	0.29	0.88	51.2
3	R2	1	0.0	0.056	14.2	LOS B	0.2	1.4	0.29	0.88	51.0
Approach		51	0.0	0.056	9.4	LOS A	0.2	1.4	0.29	0.88	51.2
East: R50											
4	L2	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.58	53.6
5	T1	164	0.0	0.091	0.1	LOS A	0.1	0.5	0.05	0.02	59.6
6	R2	6	0.0	0.091	7.6	LOS A	0.1	0.5	0.05	0.02	57.7
Approach		172	0.0	0.091	0.5	NA	0.1	0.5	0.05	0.03	59.5
North: RoadName											
7	L2	1	0.0	0.089	8.0	LOS A	0.3	2.2	0.01	1.00	46.3
8	T1	1	0.0	0.089	14.6	LOS B	0.3	2.2	0.01	1.00	46.3
9	R2	28	0.0	0.089	16.7	LOS C	0.3	2.2	0.01	1.00	46.1
Approach		31	0.0	0.089	16.3	LOS C	0.3	2.2	0.01	1.00	46.1
West: R50											
10	L2	148	0.0	0.080	5.5	LOS A	0.0	0.0	0.00	0.58	53.6
11	T1	283	0.0	0.169	0.1	LOS A	0.2	1.7	0.07	0.06	59.2
12	R2	28	0.0	0.169	6.3	LOS A	0.2	1.7	0.07	0.06	57.4
Approach		460	0.0	0.169	2.2	NA	0.2	1.7	0.05	0.22	57.2
All Vehicles		713	0.0	0.169	2.9	NA	0.3	2.2	0.06	0.26	56.6

Annexure A2.4

Sidra Output: R50 & R548

Existing 2019 + Redistributed PM Peak Hour Traffic

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: R548											
1	L2	33	0.0	0.045	9.6	LOS A	0.2	1.1	0.40	0.88	51.0
2	T1	2	0.0	0.045	13.1	LOS B	0.2	1.1	0.40	0.88	51.0
3	R2	1	0.0	0.045	13.6	LOS B	0.2	1.1	0.40	0.88	50.7
Approach		36	0.0	0.045	9.9	LOS A	0.2	1.1	0.40	0.88	51.0
East: R50											
4	L2	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.58	53.6
5	T1	302	0.0	0.156	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
6	R2	1	0.0	0.156	6.1	LOS A	0.0	0.1	0.00	0.00	58.1
Approach		304	0.0	0.156	0.0	NA	0.0	0.1	0.00	0.00	59.9
North: RoadName											
7	L2	4	0.0	0.373	9.6	LOS A	1.9	13.1	0.58	1.05	46.6
8	T1	1	0.0	0.373	15.5	LOS C	1.9	13.1	0.58	1.05	46.6
9	R2	148	0.0	0.373	17.2	LOS C	1.9	13.1	0.58	1.05	46.4
Approach		154	0.0	0.373	16.9	LOS C	1.9	13.1	0.58	1.05	46.4
West: R50											
10	L2	15	0.0	0.026	5.5	LOS A	0.0	0.0	0.00	0.18	56.8
11	T1	119	0.0	0.075	0.5	LOS A	0.3	1.9	0.17	0.17	57.8
12	R2	33	0.0	0.075	6.9	LOS A	0.3	1.9	0.24	0.17	55.8
Approach		166	0.0	0.075	2.2	NA	0.3	1.9	0.17	0.17	57.3
All Vehicles		660	0.0	0.373	5.0	NA	1.9	13.1	0.20	0.34	55.0