Appendix W

Traffic and transport

Part 4

MARINUS LINK

SMITHS RD/STRZELECKI HWY


YINNAR-DRIFFIELD ROAD/YINNAR ROAD
YINNAR-DRIFFIELD
ROAD
ROAD
YINNAR


YINNAR-DRIFFIELD ROAD/YINNAR ROAD
YINNAR-DRIFFIELD
ROAD
ROAD
YINNAR

MONASH WAY/BRODRIBB ROAD

MONASH WAY/BRODRIBB ROAD

MONASH WAY/BRODRIBB ROAD

MONASH WAY/BRODRIBB ROAD

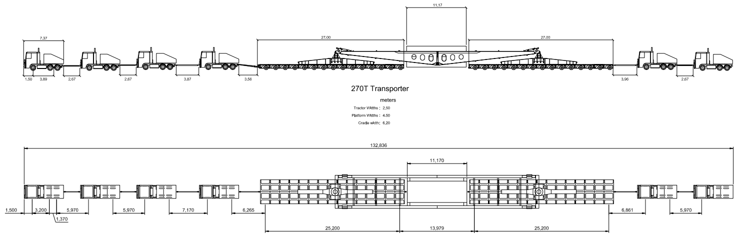

MONASH WAY/BONDS LANE


MONASH WAY/BONDS LANE
270
Transporter
Gantry
270
Transporter
Gantry

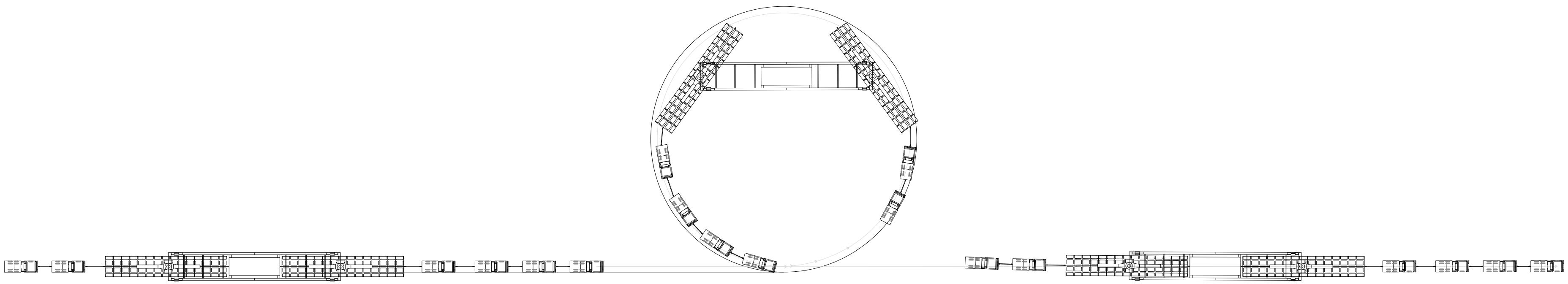

BONDS LANE/TRAMWAY ROAD
270T Transporter
Custom


BONDS LANE/TRAMWAY ROAD

Appendix D Transformer Transport Vehicle Profile



11.17
7.37
27.00
27.00
1.50
3.89
2.67
2.67
3.87
3.56
3.96
2.67
270T Transporter
meters
Tractor Widths : 2.50
Platform Widths : 4.50
Cradle width: 6.20
132,836
11,170
1,500
3,200
1,370
5,970
5,970
7,170
6,265
25,200
13,979
25,200
6,861
5,970



Appendix E Traffic Volumes

Existing Traffic Volumes

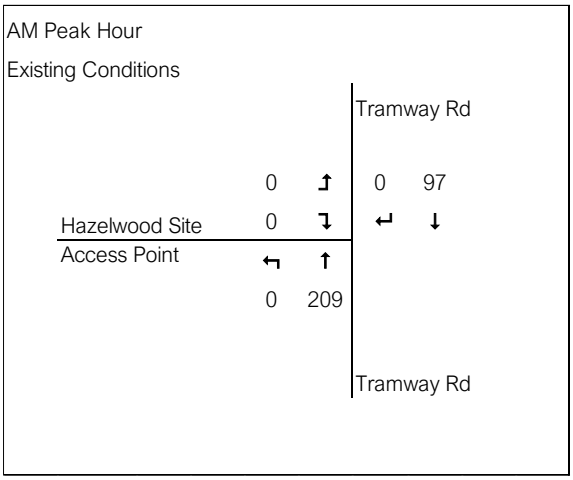


Figure E.1: Survey Results: Tramway Road / Hazelwood Converter Station Site Access Point AM Peak

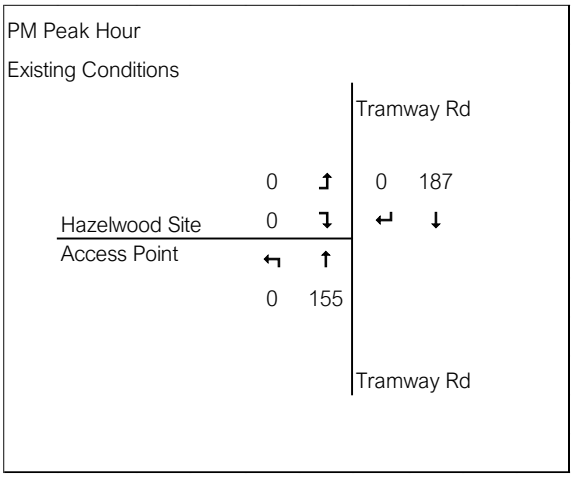


Figure E.2: Survey Results: Tramway Road / Hazelwood Converter Station Site Access Point PM Peak

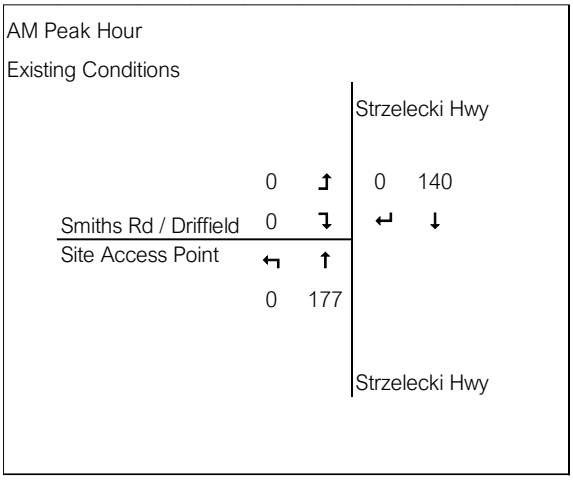


Figure E.3: Survey Results: Strzelecki Highway / Smiths Road (Driffield Site Access Point) AM Peak

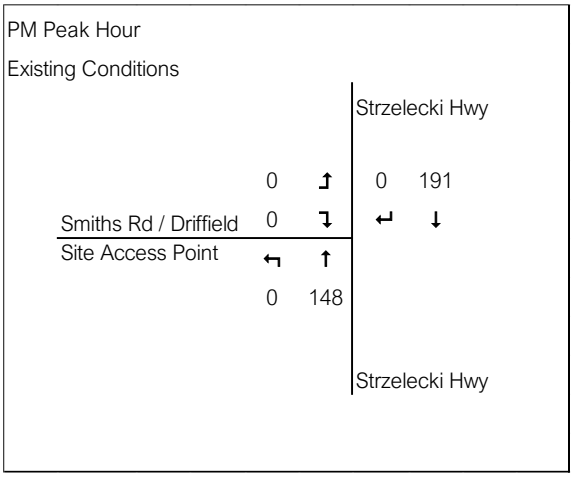


Figure E.4: Survey Results: Strzelecki Highway / Smiths Road (Driffield Site Access Point)PM Peak

Growth Traffic Volumes

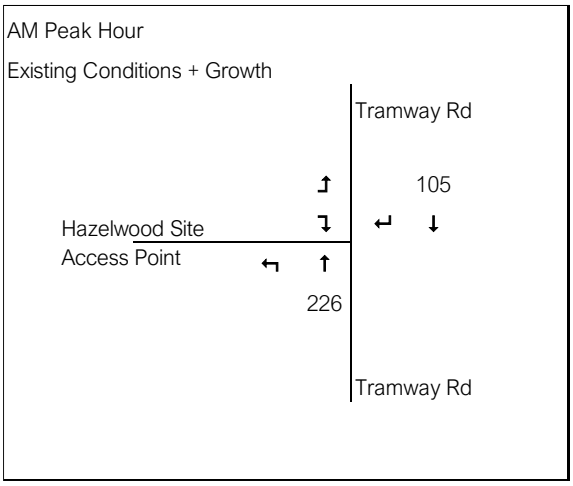


Figure E.5: Growth Traffic Volumes: Tramway Road / Hazelwood Converter Station Site Access Point AM Peak

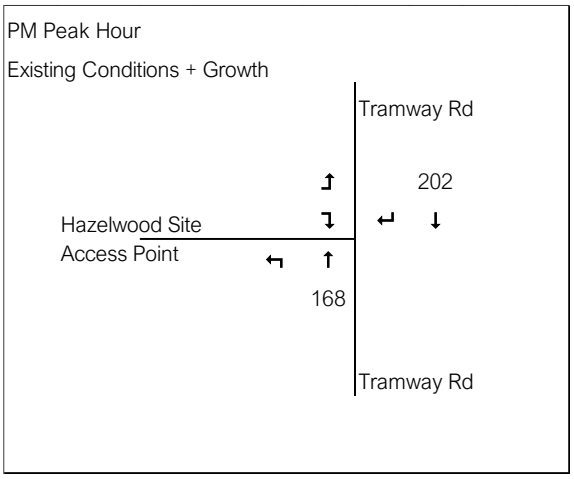


Figure E.6: Growth Traffic Volumes: Tramway Road / Hazelwood Converter Station Site Access Point PM Peak

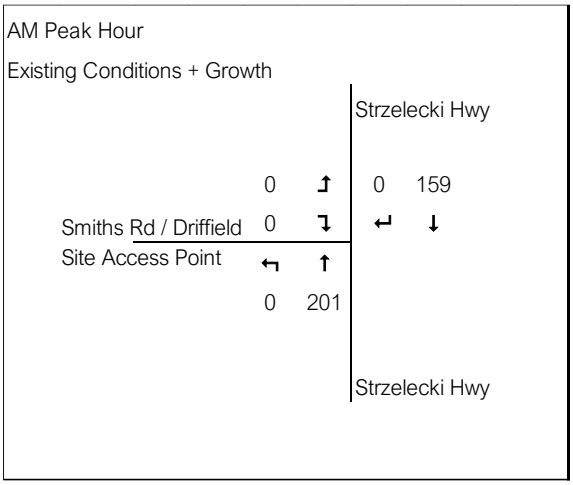


Figure E.7: Growth Traffic Volumes: Strzelecki Highway / Smiths Road (Driffield Site Access Point) AM Peak

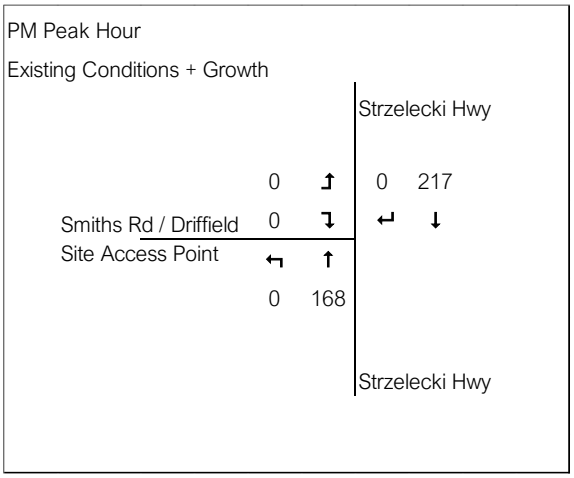


Figure E.8: Growth Traffic Volumes: Strzelecki Highway / Smiths Road (Driffield Site Access Point) PM Peak

Traffic Generation

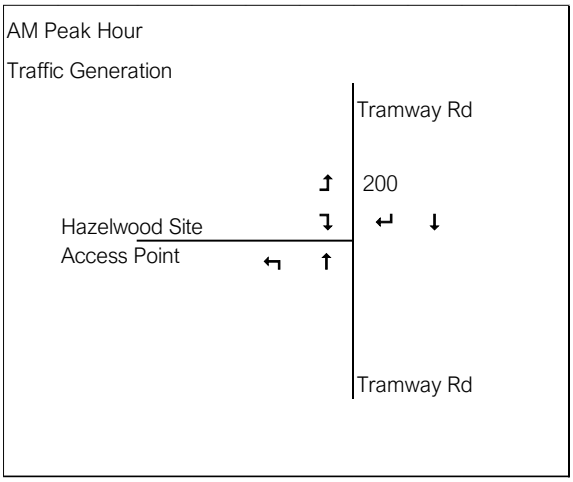


Figure E.9: Traffic Generation: Tramway Road / Hazelwood Converter Station Site Access Point AM Peak

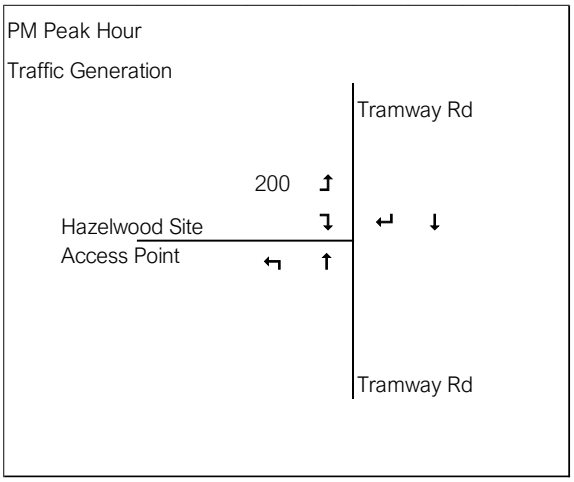


Figure E.10: Traffic Generation: Tramway Road / Hazelwood Converter Station Site Access Point PM Peak

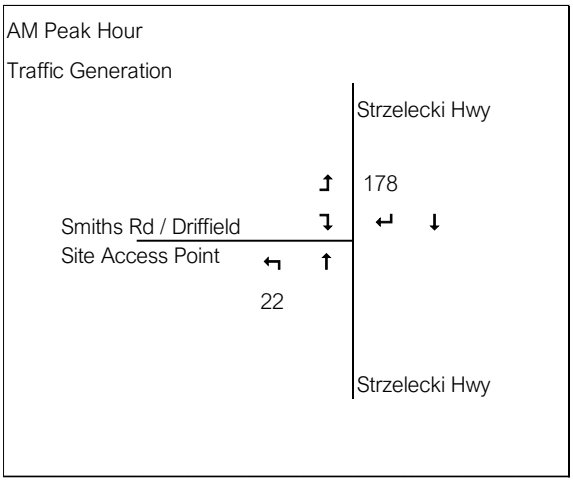


Figure E.11: Traffic Generation: Strzelecki Highway / Smiths Road (Driffield Site Access Point) AM Peak

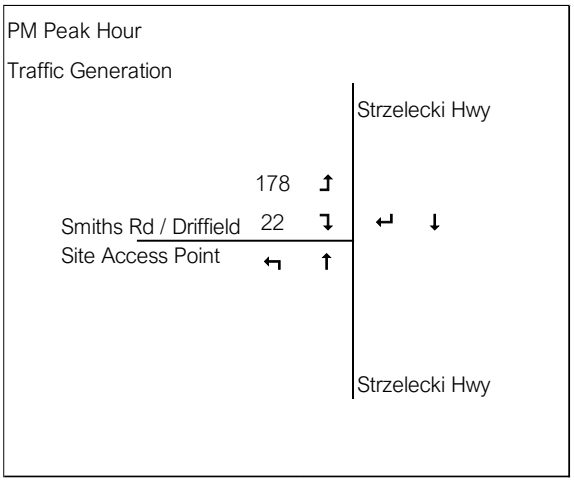


Figure E.12: Traffic Generation: Strzelecki Highway / Smiths Road (Driffield Site Access Point) PM Peak

Post Development Traffic Volumes

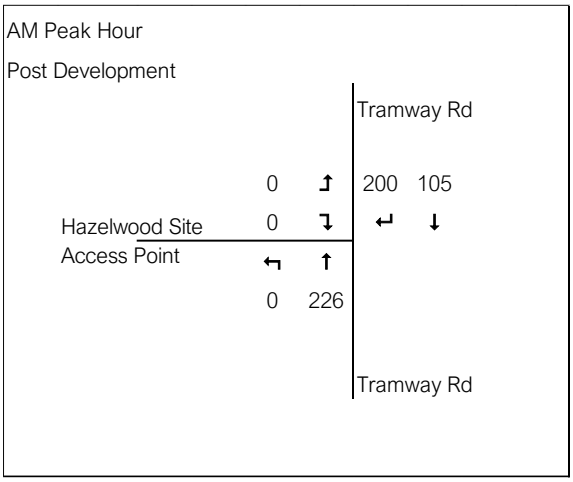


Figure E.13: Post Development: Tramway Road / Hazelwood Converter Station Site Access Point AM Peak

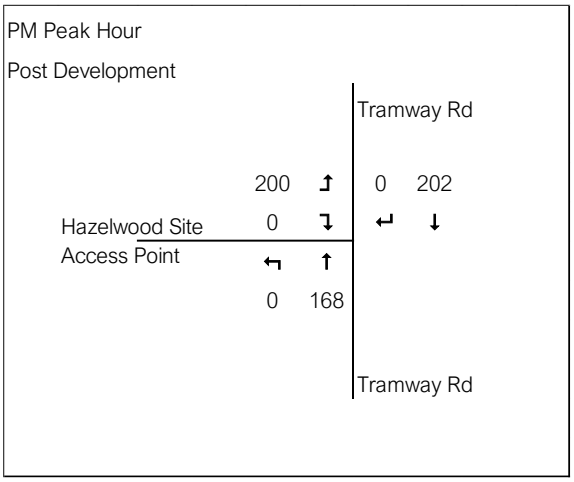


Figure E.14: Post Development: Tramway Road / Hazelwood Converter Station Site Access Point PM Peak

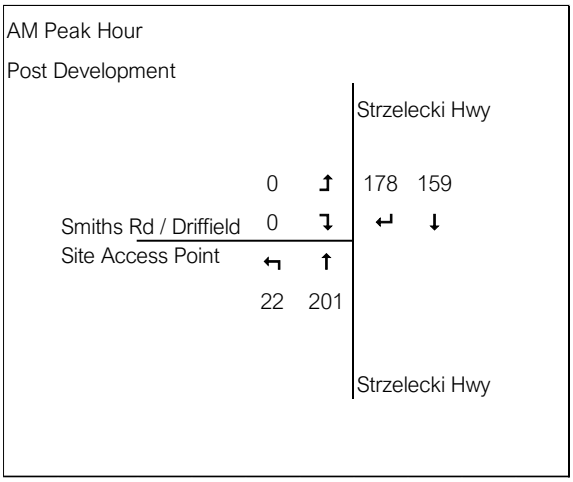


Figure E.15: Post Development: Strzelecki Highway / Smiths Road (Driffield Site Access Point) AM Peak

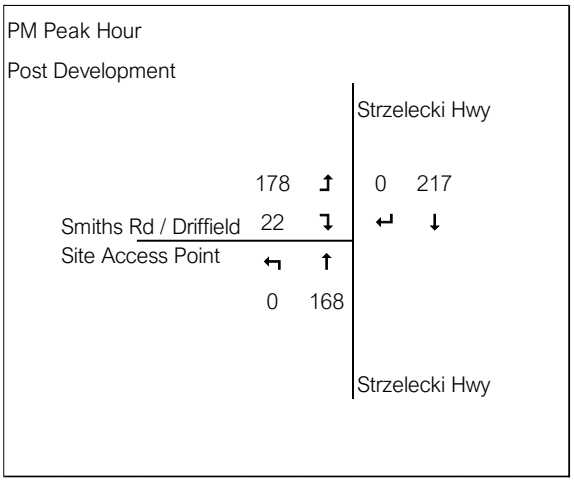


Figure E.16: Post Development: Strzelecki Highway / Smiths Road (Driffield Site Access Point) PM Peak

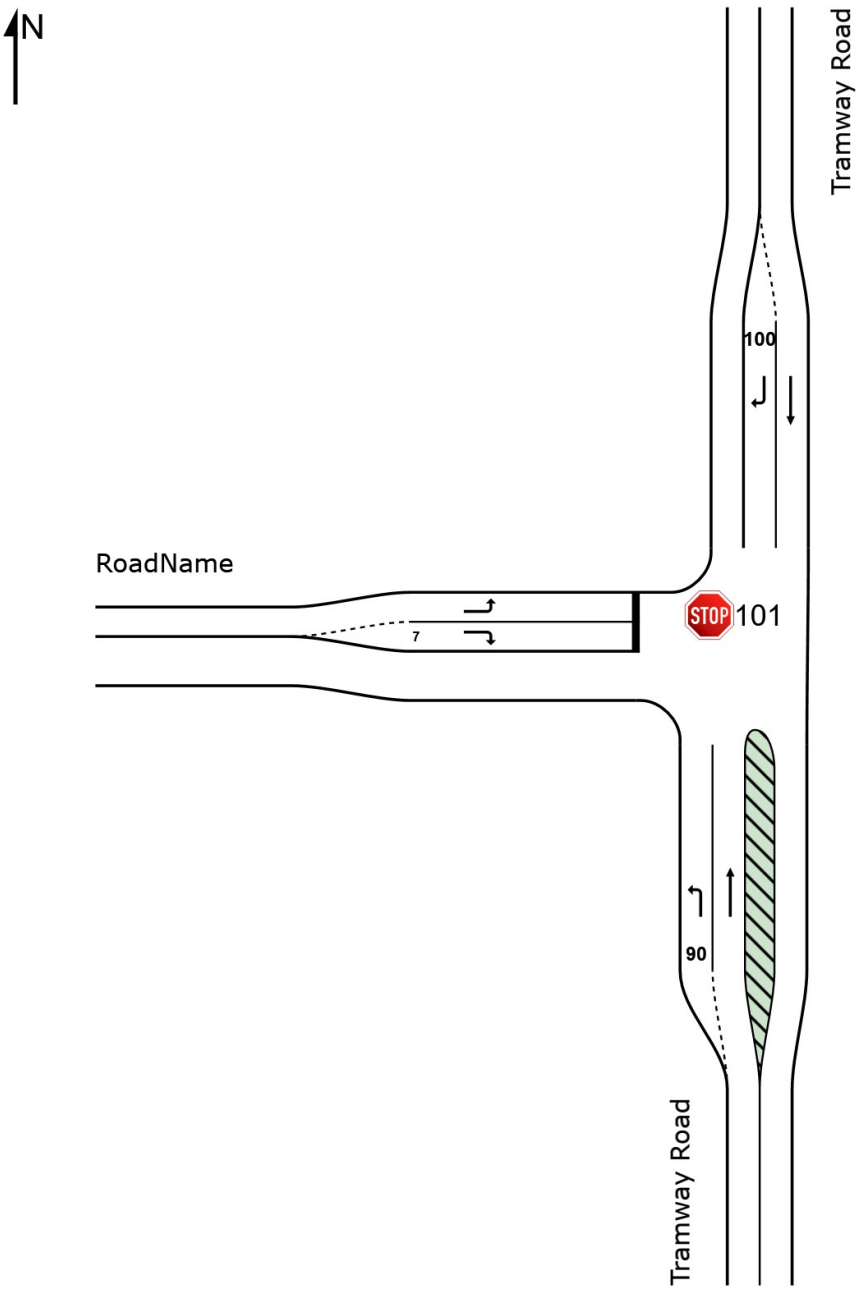
Appendix F SIDRA Results

SITE LAYOUT

Site: 101 [Tramway Road - Post Dev AM (Site Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

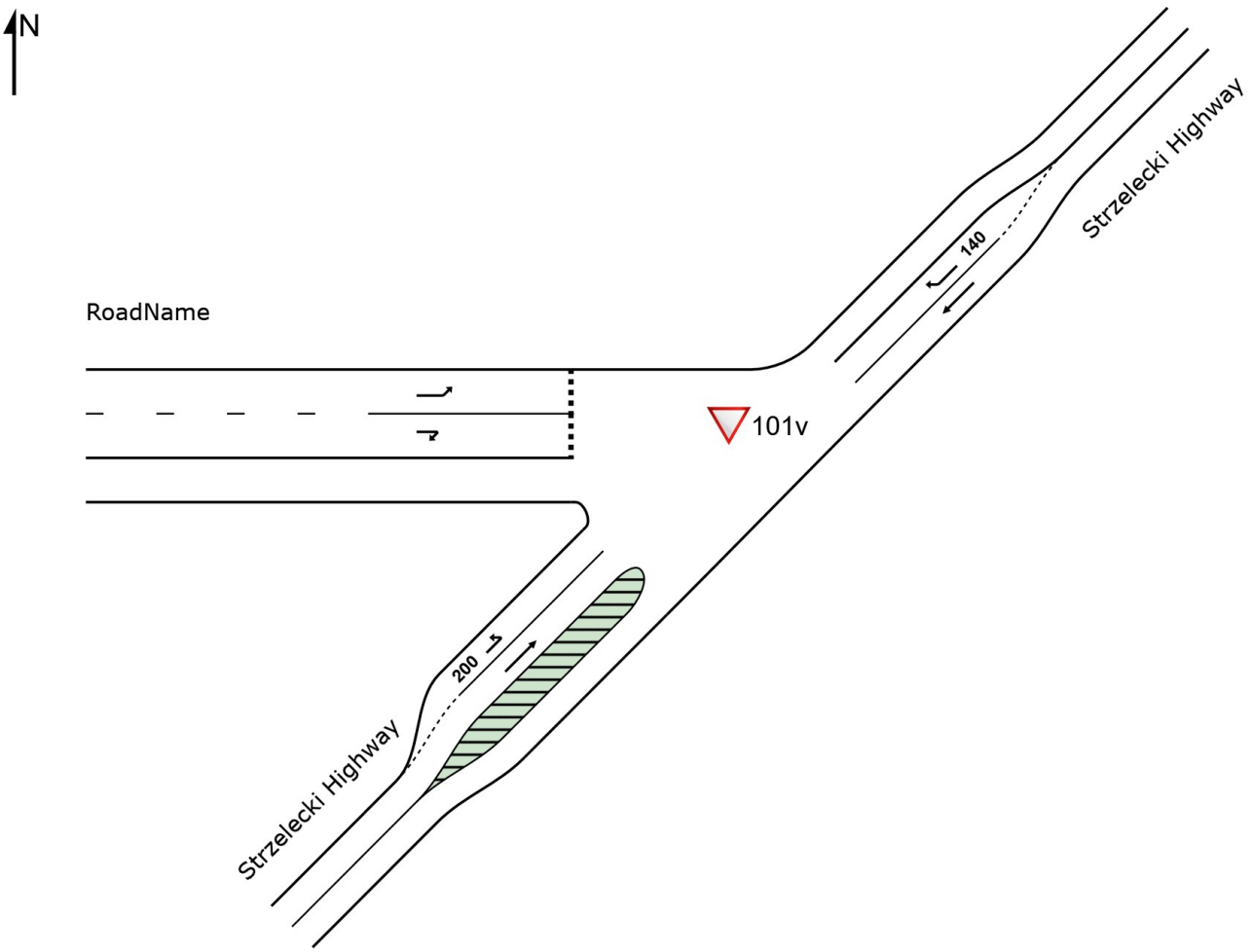


SITE LAYOUT

Site: 101v [Strzlecki Highway - Post Dev AM (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 101 [Tramway Road - Post Dev AM (Site Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Tramway Road													
Lane 1	1	10.0	1734	0.001	100	8.1	LOS A	0.0	0.0	Short	90	0.0	NA
Lane 2	238	10.0	1831	0.130	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Approach	239	10.0		0.130		0.0	NA	0.0	0.0				
North: Tramway Road													
Lane 1	111	10.0	1821	0.061	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	211	10.0	1055	0.200	100	9.3	LOS A	0.9	6.6	Short	100	0.0	NA
Approach	321	10.0		0.200		6.1	NA	0.9	6.6				
West: Converter Station Access													
Lane 1	1	10.0	860	0.001	100	9.1	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	1	10.0	393	0.003	100	14.3	LOS B	0.0	0.1	Short	7	0.0	NA
Approach	2	10.0		0.003		11.7	LOS B	0.0	0.1				
Intersection	562	10.0		0.200		3.6	NA	0.9	6.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)

South: Tramway Road

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	-	1	10.0	1734	0.001	100	0.0	2
Lane 2	-	238	238	10.0	1831	0.130	100	NA	NA
Approach	1	238	239	10.0		0.130			

North: Tramway Road

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	111	-	111	10.0	1821	0.061	100	NA	NA
Lane 2	-	211	211	10.0	1055	0.200	100	0.0	1
Approach	111	211	321	10.0		0.200			

West: Converter Station Access

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	-	1	10.0	860	0.001	100	NA	NA
Lane 2	-	1	1	10.0	393	0.003	100	0.0	1
Approach	1	1	2	10.0		0.003			

	Total	%HV	Deg.Satn (v/c)
Intersection	562	10.0	0.200

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Tramway Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Tramway Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Converter Station Access Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

LANE SUMMARY

Site: 101 [Tramway Road - Post Dev PM (Site Folder: General)]

New Site
Site Category: (None)
Stop (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Tramway Road													
Lane 1	1	10.0	1734	0.001	100	8.1	LOS A	0.0	0.0	Short	90	0.0	NA
Lane 2	177	10.0	1831	0.097	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Approach	178	10.0		0.097		0.1	NA	0.0	0.0				
North: Tramway Road													
Lane 1	213	10.0	1831	0.116	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	1	10.0	1134	0.001	100	8.7	LOS A	0.0	0.0	Short	100	0.0	NA
Approach	214	10.0		0.116		0.1	NA	0.0	0.0				
West: Converter Station Access													
Lane 1	211	10.0	931	0.226	100	9.1	LOS A	0.9	7.1	Full	500	0.0	0.0
Lane 2	1	10.0	520	0.002	100	11.7	LOS B	0.0	0.1	Short	7	0.0	NA
Approach	212	10.0		0.226		9.1	LOS A	0.9	7.1				
Intersection	603	10.0		0.226		3.2	NA	0.9	7.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)

South: Tramway Road

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	-	1	10.0	1734	0.001	100	0.0	2
Lane 2	-	177	177	10.0	1831	0.097	100	NA	NA
Approach	1	177	178	10.0		0.097			

North: Tramway Road

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	213	-	213	10.0	1831	0.116	100	NA	NA
Lane 2	-	1	1	10.0	1134	0.001	100	0.0	1
Approach	213	1	214	10.0		0.116			

West: Converter Station Access

Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	211	-	211	10.0	931	0.226	100	NA	NA
Lane 2	-	1	1	10.0	520	0.002	100	0.0	1
Approach	211	1	212	10.0		0.226			

	Total	%HV	Deg.Satn (v/c)
Intersection	603	10.0	0.226

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Tramway Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Tramway Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Converter Station Access Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

LANE SUMMARY

Site: 101v [Strzlecki Highway - Post Dev AM (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
NorthEast: Strzelecki Highway													
Lane 1	167	15.0	1768	0.095	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	187	15.0	1025	0.183	100	4.7	LOS A	0.8	6.2	Short	140	0.0	NA
Approach	355	15.0		0.183		2.5	NA	0.8	6.2				
West: Converter Station Access													
Lane 1	1	15.0	980	0.001	100	5.2	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	1	15.0	422	0.002	100	11.4	LOS B	0.0	0.1	Full	500	0.0	0.0
Approach	2	15.0		0.002		8.3	LOS A	0.0	0.1				
SouthWest: Strzelecki Highway													
Lane 1	23	15.0	1481	0.016	100	9.3	LOS A	0.0	0.0	Short	200	0.0	NA
Lane 2	212	15.0	1777	0.119	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Approach	235	15.0		0.119		0.9	NA	0.0	0.0				
Intersection	592	15.0		0.183		1.9	NA	0.8	6.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)

NorthEast: Strzelecki Highway

Mov. From NE To Exit:	T1 SW	R1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	167	-	167	15.0	1768	0.095	100	NA	NA
Lane 2	-	187	187	15.0	1025	0.183	100	0.0	1
Approach	167	187	355	15.0		0.183			

West: Converter Station Access

Mov. From W To Exit:	L1 NE	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	-	1	15.0	980	0.001	100	NA	NA
Lane 2	-	1	1	15.0	422	0.002	100	NA	NA
Approach	1	1	2	15.0		0.002			

SouthWest: Strzelecki Highway									
Mov. From SW To Exit:	L3 W	T1 NE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	-	23	15.0	1481	0.016	100	0.0	2
Lane 2	-	212	212	15.0	1777	0.119	100	NA	NA
Approach	23	212	235	15.0		0.119			

	Total	%HV	Deg.Satn (v/c)
Intersection	592	15.0	0.183

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: Strzelecki Highway Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Converter Station Access Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Strzelecki Highway Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

LANE SUMMARY

Site: 101v [Strzlecki Highway - Post Dev PM (Site Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
NorthEast: Strzelecki Highway													
Lane 1	228	15.0	1777	0.129	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Lane 2	1	15.0	1097	0.001	100	5.2	LOS A	0.0	0.0	Short	140	0.0	NA
Approach	229	15.0		0.129		0.0	NA	0.0	0.0				
West: Converter Station Access													
Lane 1	187	15.0	1022	0.183	100	6.2	LOS A	0.7	5.8	Full	500	0.0	0.0
Lane 2	23	15.0	550	0.042	100	10.5	LOS B	0.2	1.2	Full	500	0.0	0.0
Approach	211	15.0		0.183		6.6	LOS A	0.7	5.8				
SouthWest: Strzelecki Highway													
Lane 1	1	15.0	1481	0.001	100	6.6	LOS A	0.0	0.0	Short	200	0.0	NA
Lane 2	177	15.0	1777	0.100	100	0.0	LOS A	0.0	0.0	Full	500	0.0	0.0
Approach	178	15.0		0.100		0.0	NA	0.0	0.0				
Intersection	618	15.0		0.183		2.3	NA	0.7	5.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)

NorthEast: Strzelecki Highway

Mov. From NE To Exit:	T1 SW	R1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	228	-	228	15.0	1777	0.129	100	NA	NA
Lane 2	-	1	1	15.0	1097	0.001	100	0.0	1
Approach	228	1	229	15.0		0.129			

West: Converter Station Access

Mov. From W To Exit:	L1 NE	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	187	-	187	15.0	1022	0.183	100	NA	NA
Lane 2	-	23	23	15.0	550	0.042	100	NA	NA
Approach	187	23	211	15.0		0.183			

SouthWest: Strzelecki Highway									
Mov. From SW To Exit:	L3 W	T1 NE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1	-	1	15.0	1481	0.001	100	0.0	2
Lane 2	-	177	177	15.0	1777	0.100	100	NA	NA
Approach	1	177	178	15.0		0.100			
	Total	%HV	Deg.Satn (v/c)						
Intersection	618	15.0		0.183					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: Strzelecki Highway Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Converter Station Access Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Strzelecki Highway Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

DESIGN WITH COMMUNITY IN MIND

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of place and of belonging. That's why at Stantec, we always design with community in mind.

We care about the communities we serve—because they're our communities too. This allows us to assess what's needed and connect our expertise, to appreciate nuances and envision what's never been considered, to bring together diverse perspectives so we can collaborate toward a shared success.

We're designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

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