

**For: Haven Falls Limited**

Proposed Residential Development,  
Water Rock, Middleton



Traffic and Transportation Assessment

**October 2022**



**MHL & Associates Ltd.**  
**Consulting Engineers**





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## 1 NON TECHNICAL SUMMARY

M.H.L. & Associates Ltd. Consulting Engineers has been engaged by MH Planning on behalf of Haven Falls Limited to prepare a Traffic and Transportation Assessment (TTA) in support of a Strategic Housing Development (SHD) planning application for a new residential development in Water Rock, Co. Cork.

The site is to be situated in the **Water Rock Urban Expansion Area (UEA)** to the north-west of Midleton Town Centre. It is proposed that the Water Rock UEA will ultimately provide 2,500 No. housing units, 10,000 m<sup>2</sup> of offices, 2,000m<sup>2</sup> of retail facilities, 500m<sup>2</sup> of leisure facilities, 2 No. primary schools and 1 No. secondary school constructed over four phases.

**It is envisaged that the applicant's (Haven Falls Limited) proposed development will form part of Phase 1/A of the overall project, one of the four scheduled development phases (1A,1,2 &3).**

It is proposed that the proposed development will be accessed from the new Services Corridor Link Road which will join the Midleton Northern Relief Road (MNRR) to the Water Rock Road.

This report has been prepared in accordance with the TII's 2014 publication "Traffic and Transport Assessment Guidelines" and the "Guidelines for Traffic Impact Assessments" as published by the Institution of Highways & Transportation U.K. in 1994.

In accordance with the TII's "Traffic and Transport Assessment Guidelines", the traffic analysis was undertaken for the following scenarios for both the AM and PM peak hours:

- **Base Year (2022)**
- **Opening Year (2024) without Development**
- **Opening Year (2024) with Haven Falls 330No. unit residential Development**
- **Opening Year +5 (2029) without Development**
- **Opening Year +5 (2029) with entire Phase 1 Developments**

This TTA assessment focused on the following traffic junctions:

- The Midleton Northern Relief Road Roundabout (J1)
- The signalized junction of the Midleton Northern Relief Road and the R626 (J2)
- The signalized junction of the Midleton Northern Relief Road and the Cork Road (Knockgriffin Junction) (J3)



As part of this assessment, peak hour traffic flows were recorded by third party traffic counters for the nearby junctions, with these traffic counts recorded on the 11/01/2022. A further traffic count was carried out on 08/09/2022 as per the request of Cork County Council for more updated traffic flows in the area. The two traffic counts have been factored up to the

modelling year scenarios 2022 through to 2029 and compared with each other with TII expansion factors.

A separate traffic count was conducted on Saturday 10<sup>th</sup> September 2022 to represent the current weekend traffic. A comparison was made for the traffic flows for both September 2022 counts which showed that the weekday traffic had a greater peak flow. As a result, traffic modelling was carried out for the Thursday 8<sup>th</sup> September traffic count.

The proposed 330No. unit development will increase traffic on the adjoining network by 221 No. trips in the morning peak hour and 189 No. trips in the evening peak hour. It is assumed that there will be a modal shift to more sustainable transport modes and that all traffic generated by the development is new to the network. This modal shift is reflective of the pedestrian and cycle facilities associated with the Cork County Council Part 8 infrastructure project for the area.

The development is modelled to increase traffic %RFC at the MNRR roundabout by circa 4% for both morning and evening peaks in the Opening Year of the development, for both traffic counts carried out, showing the increase is negligible from a junction capacity perspective.

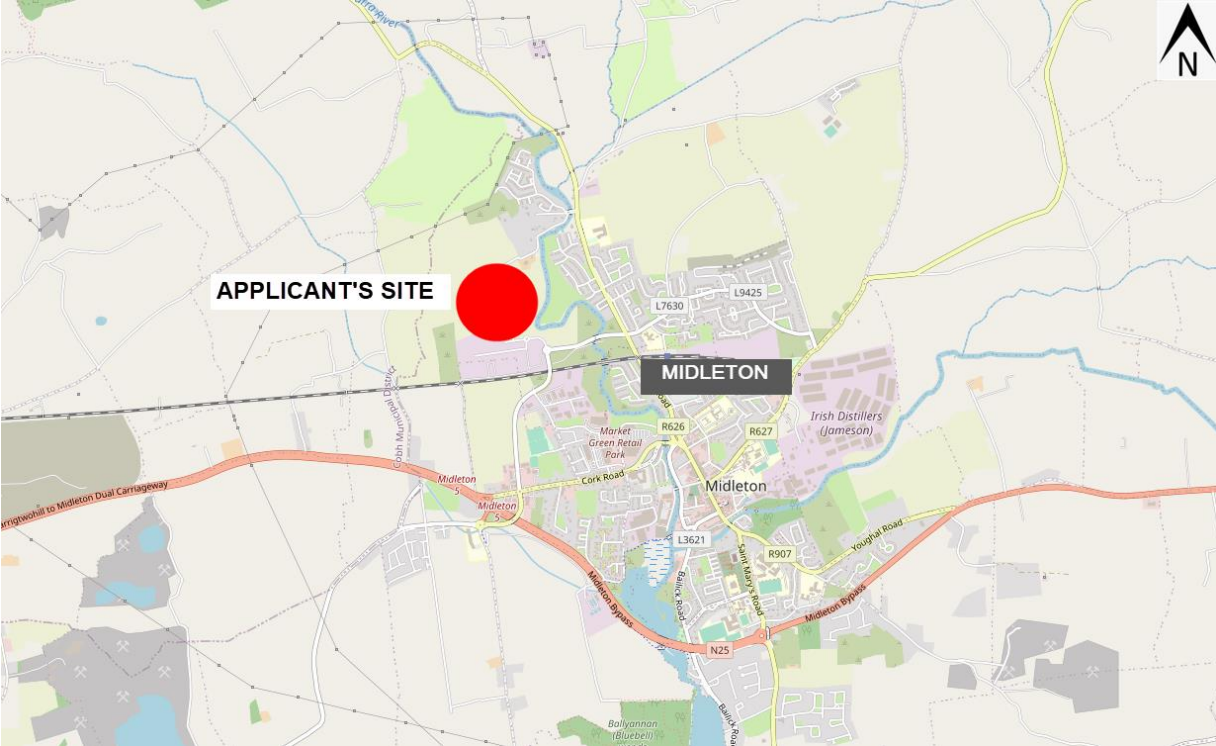
The impact of the development on Junction 2 is insignificant as the %RFC only increases by approximately 3% between the "2024 with development" and the "2024 without development" scenarios for both traffic counts recorded.

At Junction 3, both traffic counts conducted highlight that the maximum %RFC increased by 6% for the Opening Year of the development.

The UEA Phase 1 Development has a more significant impact on the surrounding road network. Both Junction 2 and Junction 3 are operating above the 90% threshold in the 2029 with Phase 1 development scenario. Upgrade works may be required to increase the capacity of the junction to facilitate future developments.

## 2 EXISTING SITE

The site is to be situated off the Midleton Northern Relief Road to the northwest of Midleton town centre. The site will be accessed from the proposed Service Corridor Link Road which forms part of the Water Rock UEA Infrastructure Works.



**Figure 2.1 Applicant's Site Location**



**Figure 2.2 Applicant's Site Location. Analysed Junctions Noted.**



### 3 PROPOSED DEVELOPMENT

The proposed development is to consist of 199 No. houses and 131 No. apartment units. The houses consist of 3 and 4-bedroom units while each of the apartments are 2-bedroom units.



**Figure 3.1 Development Site (Credit: Google)**



**Figure 3.2 Site Layout Map (Credit: Gittens Murray Architects)**

## 4 NETWORK IMPROVEMENT WORKS

The Water Rock Strategic Transport Assessment undertaken by Systra outlines the infrastructure proposals required to support the development of the Water Rock UEA. It is proposed that the development will form part of phase 1A of the Water Rock UEA scheme. Phase 1A is to consist of 535 No. residential units with no other developments proposed. A number of infrastructure improvements are outline in the Local Area Plan to support the proposed development in the Water Rock UEA. A description of the improvement works that are proposed to be implemented during the UEA Phase 1A development is outlined below.

### 4.1 Services Corridor Link Road

The proposed Service Corridor Link connects the Midleton Northern Relief Road to the Water Rock Road. The proposed road will facilitate the construction of 2500 No. houses within the Water Rock UEA as well as improving connectivity for local residents. The new road caters for all road users with 2.25m cycle tracks and 2m footpaths provided along both sides of the road. Vulnerable road users will be segregated from traffic by a 3m planted verge. This will improve both comfort and safety for cyclists and pedestrians.

Provisions have been made along the Services Corridor Link Road to allow for access to the development lands to the north of the road. The proposed development will tie into the Services Corridor Link Road as noted in the architect's development layout proposal.

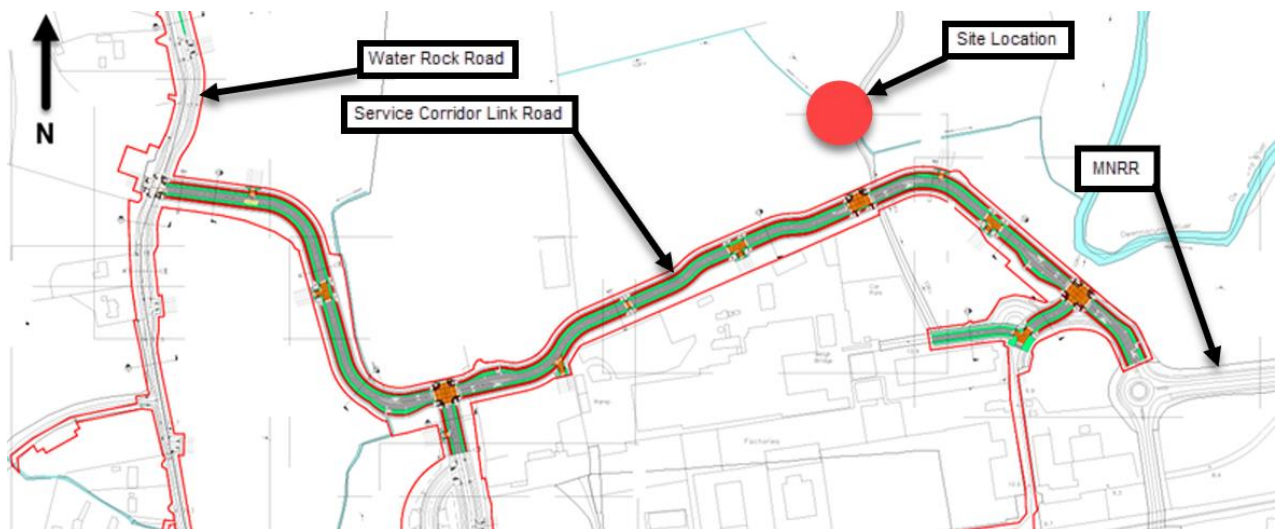
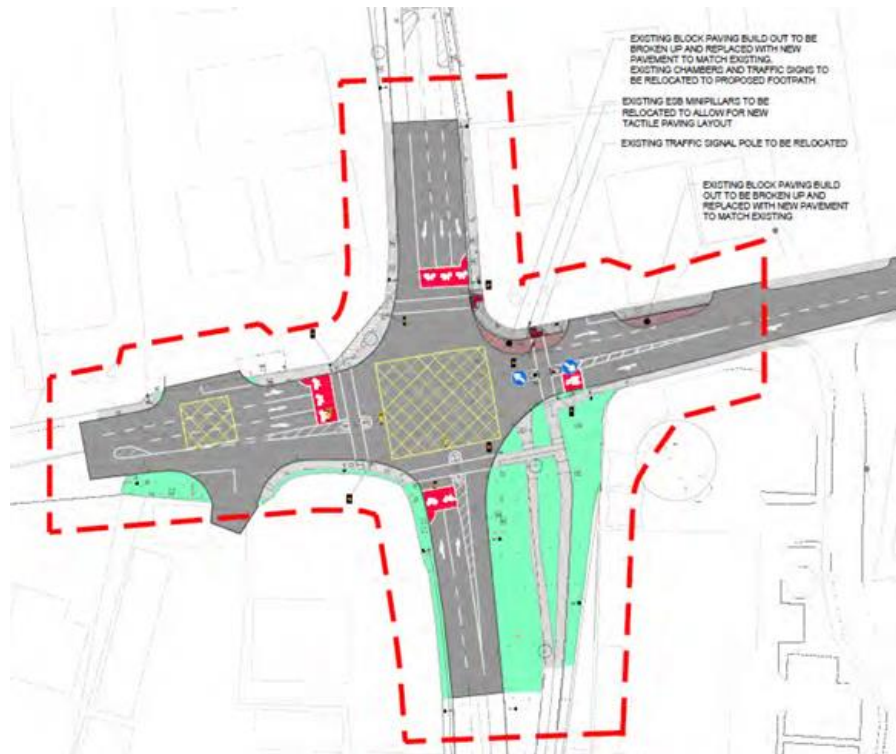


Figure 4.1 Proposed Service Corridor Link Road (Credit: CCC)

### 4.2 Upgrade of Cork Road and Northern Relief Road Junction

It is proposed to upgrade the signalized junction between the Cork Road and Northern Relief Road to include 2 No. straight ahead lanes on the eastbound approach to the junction. This would involve the removal of the right turn flare on the westbound approach to accommodate the additional lane.





**Figure 4.2: Knockgriffin Junction Upgrade (Credit: Systra)**

### 4.3 Traffic Management Measures for Water Rock Road

It is proposed to close Water Rock Road to vehicular traffic at the level crossing to prevent additional traffic from the UEA using the Water Rock Road priority junction. This will result in all traffic that currently uses the Water Rock Road to the north of the level crossing to now travel along the Services Corridor Link Road and the Midleton Northern Relief Road to access the N25.



**Figure 4.3: Water Rock Road Traffic Management Measures**

## 5 TRAFFIC

### 5.1 Traffic Generation -TRICs

Trip generation for the proposed 330 No. units was garnered via the TRICS database. MHL are a licence holder for the TRICS database and employ it for traffic studies. TRICS is a well-established UK and Irish national database which holds in excess of 2,100 site locations and 7,000 survey counts with over 98 separate land use sub-categories. MHL & Associates Ltd. are one of over 300 worldwide licensed TRICS member organisations. The TRICS program was utilised for the land-use sub-category associated with the development proposal. The "Guidelines for Traffic and Transportation Assessments" state that for residential use the busiest hours are between 08:00-09:00 and 17:00-18:00.

### 5.2 Applicant's Site

The proposed development Trip Rates per unit are shown below. The full TRICS output, is included in Appendix of this report and outlines the likely trip rates for a development of this size, generating trips for sport facilities. A synopsis of the peak hour trip generation rates and figures for the overall development is displayed in figure below.

		AM PEAK		PM PEAK	
		Arrivals	Departures	Arrivals	Departures
<b>Housing and Apartments</b>					
330	<i>Peak Trics Trip Rates Per unit</i>	0.120	0.551	0.396	0.177
	<i>Peak Trips for 330 No. Units</i>	40	182	131	58
<b>Total Trips Generated</b>		40	182	131	58
		221		189	

**Figure 5.1 Peak Hour Tric's Traffic Generation for the proposed development**

The TRIC's development figures were deemed an accurate assessment of the expected traffic generation for the new development, as noted in the Appendix, to produce projected traffic trip generation for the site. This conservative approach provides a very robust basis for the traffic assessment and modelling that follows.

### 5.3 Full UEA development

For comparative proposes, the expected traffic generation for the entirety of the UEA phase 1 development of the was also calculated using the Trics database. The proposed trip rates for each of the development types are illustrated below.

		AM PEAK		PM PEAK	
		Arrivals	Departures	Arrivals	Departures
<b>Housing and Apartments</b>					
1054	<i>Peak Trips Trip Rates Per unit</i>	0.120	0.551	0.396	0.177
	<i>Peak Trips for 1054 No. Units</i>	126	581	417	187
<b>Primary School</b>					
592	<i>Peak Trips Trip Rates Per student</i>	0.147	0.072	0.003	0.008
	<i>Peak Trips for 592 No. Students</i>	87	43	2	5
<b>Offices</b>					
10,000	<i>Peak Trips Trip Rates Per 100m<sup>2</sup> GFA</i>	1.120	0.093	0.138	0.983
	<i>Peak Trips for 10,000 m<sup>2</sup> GFA</i>	112	9	14	98
<b>Retail</b>					
2,000	<i>Peak Trips Trip Rates Per 100m<sup>2</sup> GFA</i>	0.437	0.193	1.284	1.526
	<i>Peak Trips for 2,000 m<sup>2</sup> GFA</i>	9	4	26	31
<b>Leisure</b>					
500	<i>Peak Trips Trip Rates Per 100m<sup>2</sup> GFA</i>	0.867	0.542	1.791	1.694
	<i>Peak Trips for 500 m<sup>2</sup> GFA</i>	4	3	9	8
<b>Total Trips Generated</b>		<b>227</b>	<b>630</b>	<b>454</b>	<b>230</b>
		<b>857</b>		<b>684</b>	

Figure 5.2: Peak Hour Trips Traffic Generation for Phase 1 Development

The trip rates used in this traffic analysis are comparable to those used for similar assessments in the area.

It is likely that the trip rates utilised for the school, offices and retail land uses are higher than what will occur once Phase 1 is complete. Much of the trips to these land uses will be generated internally as people working or attending these developments will also live within the UEA. The table below shows a comparison of trip rates for houses utilised by other traffic analyses in the area.

Housing Trip Rates	AM PEAK		PM PEAK	
	Arrivals	Departures	Arrivals	Departures
<i>Trips database</i>	0.120	0.551	0.396	0.177
<i>Water Rock Strategic Transport Assessment</i>	0.210	0.520	0.530	0.310
<i>Dawn Meats Application</i>	0.144	0.401	0.360	0.197

Figure 5.3: Trip Rates Comparison

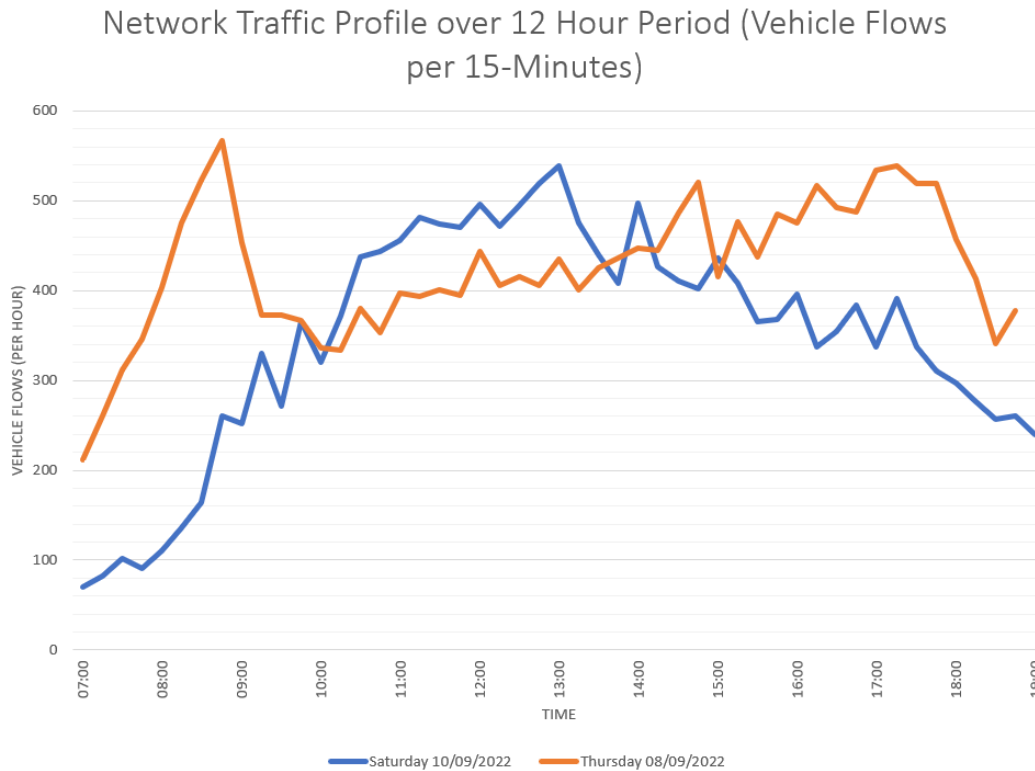
It should be noted that **no "Multi-Use" trip reduction factor has been applied**, through it is likely, for example, that visitors to the retail may also visit the school/office/leisure facilities. Also, **no "Pass-by" reduction has been applied**, though it is likely that a large proportion of school drop-offs or retail trips will be by traffic already accounted for in the residential rates, on their way to work. A pass-by reduction of 30% of trip rates is routinely applied to commercial and education land uses.

#### **5.4 Site Traffic Counts**

Traffic counts conducted on Tuesday 11<sup>th</sup> of January 2022 were initially utilised to establish the actual AM & PM Peak traffic hours for the local road network for the purposes of this assessment. Traffic counts were undertaken between the hours of 07:00 and 10:00 and 16:00 and 19:00 to ensure both the AM and PM peak hours were covered. The morning peak hour was found to be between 08:00 and 09:00 and the evening peak was between 16:30 and 17:30. These existing junction traffic counts were growth factored as described in Chapter 5. Based on the traffic counts and considering the recommendation of the Guidelines for Traffic and Transportation Assessments, the peak hours considered in this TTA are reflective of the demand case for the site.

Upon request from Cork County Council, more recent traffic counts were conducted for the local road network. The latest counts were conducted on Thursday 8<sup>th</sup> September 2022 and Saturday 10<sup>th</sup> September 2022 for 24-hour periods. Similarly to the previous traffic counts, the morning peak hour was found to be between 08:00 and 09:00 and the evening peak was between 16:30 and 17:30 for the Thursday. The traffic count conducted on Saturday 10<sup>th</sup> September show a different peak, however. A peak hourly flow between 12:30 and 13:30 was found for this weekend count. Figure 5.4 highlights the traffic profiles for both traffic surveys conducted in September 2022. The figure shows that the peak flow during the Thursday is higher than that of the Saturday count. Traffic modelling was performed for the Thursday 8<sup>th</sup> September count as a result.

The full traffic count data can be found in Appendix D of this report.



**Figure 5.4: Network Traffic Profile for 12-Hour Period (Thursday 8<sup>th</sup> September 2022 and Saturday 10<sup>th</sup> September 2022)**

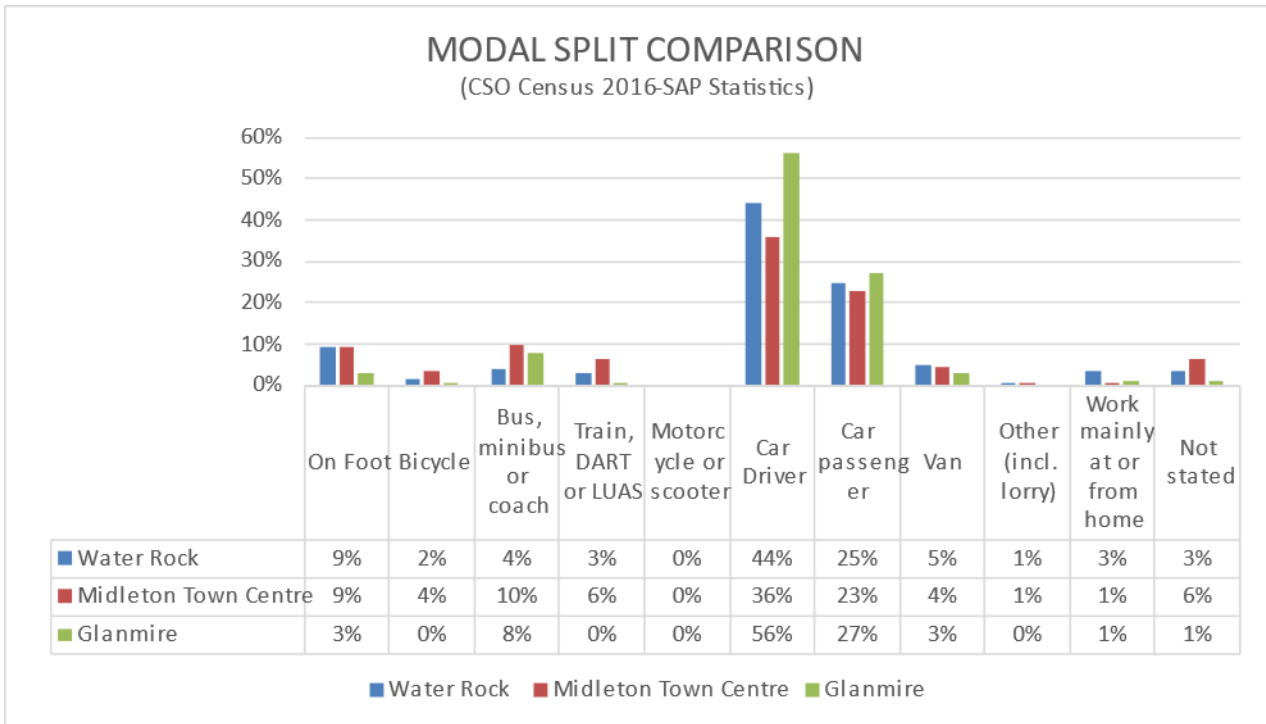
## 5.5 Modal Choice

In predicting the level of traffic that will be generated by the proposed development, the means of transport (modal choice) and quantity of traffic generated (trip attraction) must be considered. It is assumed that primary means of transport will be vehicular, due to the nature of the development. The analysis therefore assumes the car will dominate the developments traffic movements. Public transport improvements would encourage modal shift towards sustainable travel modes for residents travelling to and from the development, as encouraged by local and National Transport Authority Policy. This would reduce the modelled impact of this development on the surrounding road network.

Data from the 2016 census was consulted to establish existing travel patterns in the area surrounding the proposed development. To gain an accurate representation of travel patterns in the local area, data from a number of statistical Small Area Populations (SAPs) in the vicinity of the proposed development site were used. The locations investigated include:

- 1. Water Rock** - existing (currently rural) location. Modal split for this location is likely to be poor for the current situation, given lack of available active travel or public transport infrastructure.
- 2. Midleton Town Centre** - where commuters are likely to make use of public transport and active travel modes (possibly similar to the eventual Water Rock area (when greenways, amenity routes, etc are in place).
- 3. Glyntown, Glanmire** - where original traffic counts were collected, on which the residential trip rate employed in the Systra Water rock UEA Masterplan modelling. This provides an insight into the actual modal split associated with the traffic counts that were used for the Masterplan modelling.





**Figure 5.5: Modal Split Comparison**

The relevant statistical Small Areas can be seen in Figure 5.6 and Figure 5.7 below. Based on this analysis it was found that there was an extremely low uptake in sustainable travel modes in the Glanmire SAP. In comparison the uptake in sustainable travel modes in Middleton was reasonably high. On this basis it is suggested that a much more ambitious modal split is likely for the Water Rock UEA and that the assumed residential trip generation figures are overly high. It is submitted that the Modal Split in the Water Rock UAE will at minimum reach the levels of Middleton Town Centre if not an even greater shift to more sustainable travel modes. The provision of pedestrian and cycle facilities, new bus routes and increased frequency of train proposed as well as track upgrade will all aid in achieving this modal shift. Further details on the availability of sustainable transport modes in the area can be found in the Mobility Management Plan submitted as part of this application.

**Based on the analysis of the CSO data it is deemed that the trip generation figures outlined in Section 5.2 are overly high. To account for this the scenarios will also be modelled with a 30% reduction on the traffic generation figures in Section 5.2 to account for the proposed modal shift targets.**

The national policy document on sustainable transport Smarter Travel: A Sustainable Transport Future, 2009 – 2020 sets out a long-term objective to reduce the percentage of “single occupancy” car based work trips to 45%, therefore a proposed mode share assigned to sustainable travel modes of 55%. This document is specifically referenced in CMATS as having provided the “targets which have informed the preparation of CMATS”. Middleton lies within the CMATS study area. On this basis the Modal Splits outlined for the Water Rock UEA above (29% commuting by Sustainable Travel Modes) are extremely conservative.



**Figure 5.6 Small Statistical Areas in vicinity of site (CSO – Census 2016)**



**Figure 5.7: Small Statistical Area – Glanmire (CSO – Census 2016)**

### 5.6 Trip Distribution

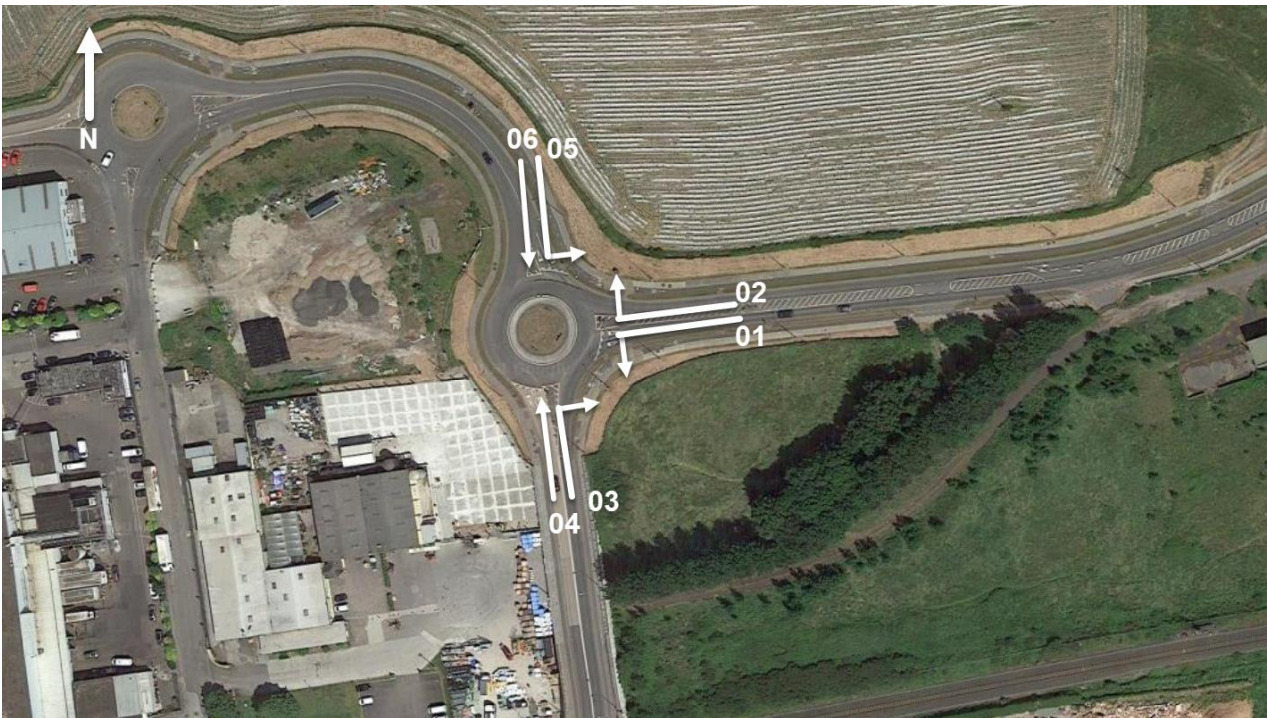
The estimated traffic generated by the development has been assigned to the road network based on an assumed directional split along the proposed Services Corridor Link Road. It is assumed that 80% of traffic will head east from the development and use the MNRR either towards Midelton or the N25. It is assumed the remaining 20% of traffic will travel west along the proposed road and use the Water Rock Road to access the existing local and regional road network.

The current traffic distribution pattern was used to determine the directional split at each of the analysed junctions. This peak hour directional split pattern is assumed to remain constant with the passage of time. The "Guidelines for Traffic and Transportation Assessments" state that for residential use the busiest hours are between 08:00-09:00 and 17:00-18:00.

Having reviewed the existing measured traffic flows along the network, it was determined that the most heavily trafficked peak hours were 08:00-09:00 and 16:30-17:30 for the working week.

### 5.7 Traffic Volumes

Traffic counts taken at each of the assessed junctions were used as the basis of the modelling, producing morning and evening O/D Matrices. The traffic flows through each junction are shown in the following figures. These figures account for the 30% reduction in traffic generation due to the predicted modal shift.



**Figure 5.8: Junction 1 Movements**

AM PEAK HOUR TRAFFIC FLOWS								PM PEAK HOUR TRAFFIC FLOWS																		
								Movement																		
								1	2	3	4	5	6													
								1	2	3	4	5	6													
SITE J1	Measured Flows							516	21	296	63	7	26	Measured Flows							334	3	417	39	11	54
	Development Traffic							0	20	0	12	53	93	Development Traffic							0	47	0	58	26	21
	Phase 1 Traffic							0	115	0	66	184	320	Phase 1 Traffic							0	161	0	202	102	82
	2024 Opening Year								2024 Opening Year																	
	Do Nothing							528	21	303	64	7	27	Do Nothing							342	3	427	40	11	55
	With Development							528	42	303	76	60	119	With Development							342	3	427	40	11	55
	2029 Opening Year +5								2029 Opening Year +5																	
	Do Nothing							559	23	321	68	8	28	Do Nothing							362	3	452	42	12	59
	With Development							559	138	321	134	191	348	With Development							362	3	452	42	12	59

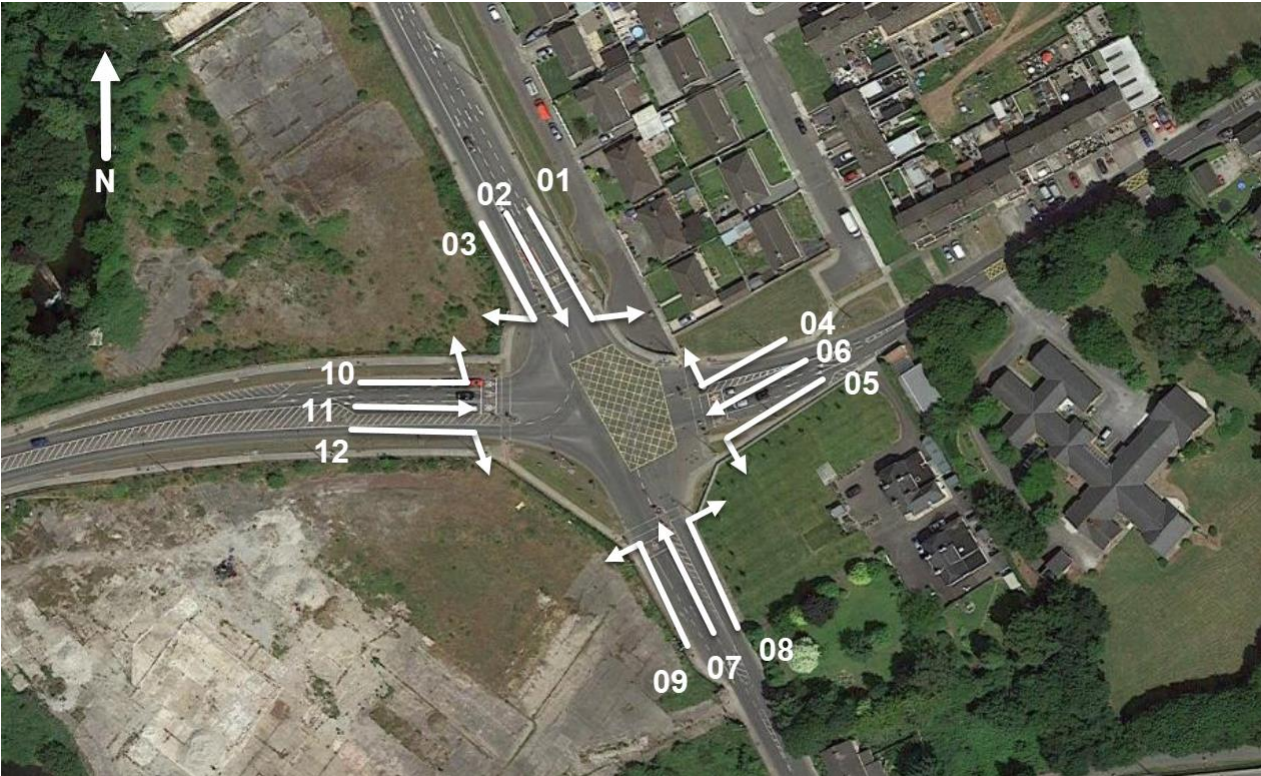
Figure 5.9: Junction 1 Turning Counts (11/01/2022)

AM PEAK HOUR TRAFFIC FLOWS								PM PEAK HOUR TRAFFIC FLOWS																		
								Movement																		
								1	2	3	4	5	6													
								1	2	3	4	5	6													
SITE J1	Measured Flows							595	9	339	66	11	19	Measured Flows							382	7	531	43	23	84
	Development Traffic							0	14	0	8	37	65	Development Traffic							0	31	0	43	19	14
	Phase 1 Traffic							0	81	0	46	128	225	Phase 1 Traffic							0	106	0	148	75	54
	2024 Opening Year								2024 Opening Year																	
	Do Nothing							609	9	347	68	11	19	Do Nothing							391	7	543	44	24	86
	With Development							609	23	347	76	48	84	With Development							391	38	543	87	43	100
	2029 Opening Year +5								2029 Opening Year +5																	
	Do Nothing							645	10	368	72	12	21	Do Nothing							414	8	576	47	25	91
	With Development							645	91	368	118	140	245	With Development							414	38	576	89	44	105

Figure 5.10: Junction 1 Turning Counts with Modal Shift (08/09/2022)

Junction 1, the Middleton Northern Relief Road Roundabout, has experienced an increased traffic flow for both AM and PM peak hours. The latest turning counts from September 2022 saw a percentage increase of approximately 12% and 25% for AM and PM peak hours, respectively.





**Figure 5.11: Junction 2 Movements**

		AM PEAK HOUR TRAFFIC FLOWS												PM PEAK HOUR TRAFFIC FLOWS												
		Movement												Movement												
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
SITE J2	2024	Measured Flows	84	261	256	93	92	255	236	61	26	176	113	14	40	155	148	41	41	141	236	63	48	203	182	48
		Development Traffic	0	0	10	0	0	10	0	0	0	31	20	2	0	0	20	0	0	20	0	0	7	12	11	3
		Phase 1 Traffic	0	0	55	0	0	55	0	0	6	107	69	8	0	0	71	0	0	68	0	0	22	45	42	11
	2029	Opening Year						Opening Year																		
		Do Nothing	86	267	262	95	94	261	241	62	27	180	116	14	41	155	151	42	42	144	241	65	49	214	186	49
		With Development	86	267	272	95	94	271	241	62	27	211	136	17	41	159	172	42	42	164	241	85	56	226	197	52
2029	Opening Year +5						Opening Year +5																			
	Do Nothing	91	283	278	101	100	276	256	66	28	191	123	15	43	168	160	44	44	153	256	90	62	227	197	52	
	With Phase 1	91	283	332	101	100	331	256	66	34	298	191	24	43	168	231	44	44	220	256	90	75	275	240	63	

**Figure 5.12: Junction 2 Turning Counts (11/01/2022)**

		AM PEAK HOUR TRAFFIC FLOWS												PM PEAK HOUR TRAFFIC FLOWS												
		Movement												Movement												
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
SITE J2	2024	Measured Flows	83	296	287	84	92	281	255	65	35	206	116	27	41	167	184	61	71	147	252	125	58	225	288	42
		Development Traffic	0	0	7	0	0	7	0	0	0	22	12	3	0	0	14	0	0	12	0	0	5	8	10	1
		Phase 1 Traffic	0	0	38	0	0	38	0	0	5	76	43	10	0	0	50	0	0	40	0	0	16	30	39	6
	2029	Opening Year						Opening Year																		
		Do Nothing	85	303	294	86	94	288	261	67	36	211	119	28	42	171	188	62	73	150	258	128	59	230	295	43
		With Development	85	303	300	86	94	294	261	67	36	233	131	30	42	171	203	62	73	162	258	128	64	238	305	44
2029	Opening Year +5						Opening Year +5																			
	Do Nothing	90	321	311	91	100	305	276	70	38	223	126	29	44	181	198	66	77	159	273	138	63	244	312	46	
	With Phase 1	90	321	350	91	100	342	276	70	43	299	168	39	44	181	250	66	77	200	273	138	79	274	351	51	

**Figure 5.13: Junction 2 Turning Counts with Modal Shift (08/09/2022)**

The latest traffic counts for Junction 2, the signalized junction of the MNRR and the R626, show an increased number of vehicles at the junction. The percentage increase from January 2022 to September 2022 are similar to that of Junction 1 and are approximately 10% for AM peak flows and 21% for PM peak flows.



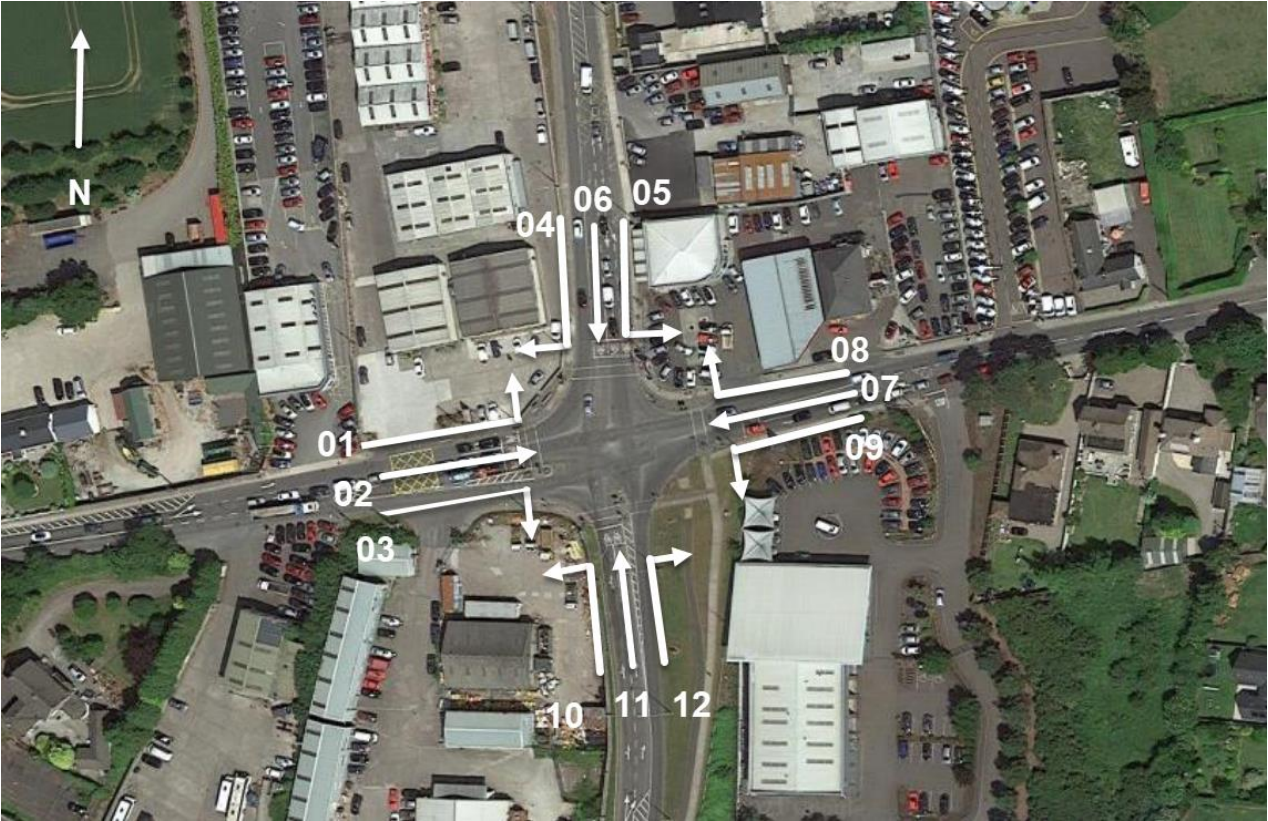


Figure 5.14: Junction 3 Turning Movements

		AM PEAK HOUR TRAFFIC FLOWS												PM PEAK HOUR TRAFFIC FLOWS											
		Movement												Movement											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
SITE J3	Measured Flows	208	308	69	116	19	380	86	12	299	103	197	107	293	418	72	178	42	237	121	19	338	61	128	100
	Development Traffic	6	0	0	21	3	68	0	0	0	0	17	0	39	0	0	8	2	11	0	3	0	0	17	0
	Phase 1 Traffic	33	0	0	72	12	236	0	0	0	0	31	0	134	0	0	32	8	42	0	17	0	0	59	0
	2024	Opening Year												Opening Year											
	Do Nothing	213	315	71	119	19	389	88	12	306	105	202	109	300	428	74	182	43	243	124	19	338	62	131	102
	With Development	219	315	71	140	23	457	88	13	306	105	219	109	339	428	74	190	45	253	124	22	338	62	148	102
	2029	Opening Year +5												Opening Year +5											
	Do Nothing	225	334	75	126	21	412	93	13	324	112	214	116	318	453	78	193	46	257	131	21	358	66	138	108
	With Phase 1	258	334	75	198	32	648	93	13	324	112	245	116	452	453	78	225	53	298	131	38	358	66	197	108

Figure 5.15: Junction 3 Turning Counts (11/01/2022)

		AM PEAK HOUR TRAFFIC FLOWS												PM PEAK HOUR TRAFFIC FLOWS											
		Movement												Movement											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
SITE J3	Measured Flows	197	293	90	137	33	388	59	20	312	115	217	108	304	425	73	178	36	278	148	11	304	57	140	103
	Development Traffic	4	0	0	16	4	45	0	0	0	0	13	0	28	0	0	5	1	8	0	1	0	0	13	0
	Phase 1 Traffic	21	0	0	55	13	156	0	0	0	0	23	0	99	0	0	19	4	31	0	13	0	0	45	0
	2024	Opening Year												Opening Year											
	Do Nothing	202	300	92	140	34	397	60	20	319	118	222	108	311	435	75	180	37	282	149	11	311	58	143	105
	With Development	205	300	92	156	38	442	60	21	319	118	235	108	340	435	75	185	38	290	149	12	311	58	156	105
	2029	Opening Year +5												Opening Year +5											
	Do Nothing	214	318	98	149	36	421	64	22	338	125	235	115	330	461	78	191	39	298	158	12	330	62	152	112
	With Phase 1	234	318	98	204	49	577	64	22	338	125	258	115	428	461	78	210	43	330	158	25	330	62	197	112

Figure 5.16: Junction 3 Turning Counts with Modal Shift (08/09/2022)

Junction 3, the signalized junction of the MNRR and the Cork Road, is the junction which saw the lowest increase in traffic volumes from the January to September counts. There is only an increase of approximately 3% in traffic flows for both the AM and PM peak hours.

## 6 TRAFFIC ASSESSMENT

The base year is taken as 2022 as this was the year the traffic counts were undertaken. It is anticipated that the first year of operation, subject to a positive outcome from the planning process would be 2024. In accordance with the Guidelines for Traffic and Transportation Assessments as published by the TII, a traffic analysis is required to be undertaken for the Opening Year, Opening Year plus five years and Opening Year plus fifteen years.

An analysis has not been undertaken for the Opening Year +15 scenario as it is difficult to predict the level of development in the UEA and road network upgrades that will be completed by this point.

The TII publication “Project Appraisal Guidelines for National Routes Unit 5.3 – Travel Demand Projections” was used to calculate growth factors for the road network traffic. Figure 6.1 below shows the calculated growth factors:

			Cars/LGV	HGV	Combined
Count %			90%	10%	
<b>2022</b>	<b>to</b>	<b>2024</b>	1.021	1.048	<b>1.023</b>
<b>2022</b>	<b>to</b>	<b>2029</b>	1.074	1.178	<b>1.084</b>

NRA Project Appraisal Guidelines- 5.5 forecasting  
Appendix 3 - Guidance on traffic modelling

**Figure 6.1 Future Projected Growth Rates**

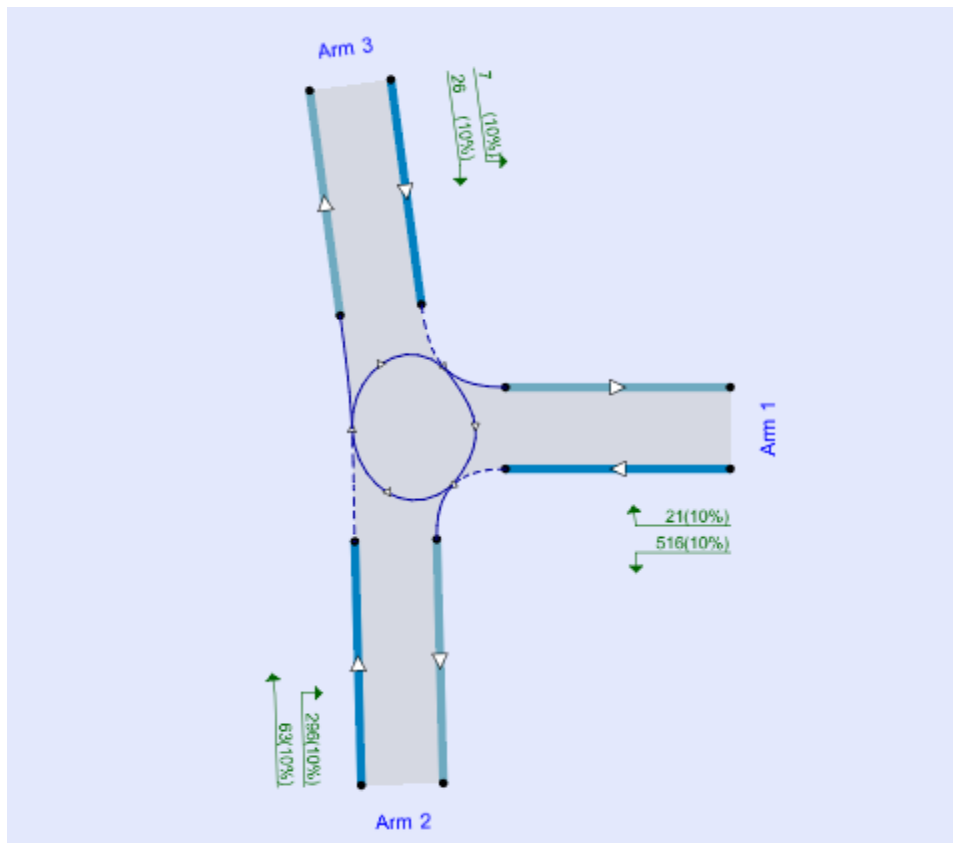
The effects of traffic growth on the existing network plus the additional traffic generated by the proposed development, have been compiled to build junction diagrams of the 3No. junctions.

## 7 TRAFFIC MODELLING

### 7.1 Junctions 9 Analysis

In order to assess the capacity of the proposed development and the adjoining network, traffic models of the roundabout along the MNRR were produced using the Arcady traffic modelling software and models of the 2No. signalised junctions were produced using Linsig Traffic Analysis software.

The output movements from the models are based on the assigned junction arms. The arms are designated 1 to 3 for the roundabout, as shown below.



**Figure 7.1: Junction 1 - MNRR Roundabout**  
(Arm 1 – MNRR E, Arm 2 – MNRR S, Arm 3 – Proposed Services Corridor Link Road.)

The output result sheets from the traffic modelling software consist of tables of demand flow, capacities, queues, and delays for each 15-minute time segment of the peak hour analysis.

The Arcady output table contains information on maximum queue length, delay, and Ratio of Flow to Capacity (RFC). The RFC provides the basis for judging the acceptability of junction design and the capacity of existing junctions. Generally, an RFC of 0.85 or less is considered acceptable during the peak period. An RFC of this value indicates that at peak times the junction is at 85% of its operational capacity and therefore has a practical reserve capacity at a junction required to cater for periods of unusually high traffic flow, such as bank holiday weekends, etc. The degree of saturation of a junction is a measure of the capacity of the junction. A junction with an RFC of 0.85 would be considered to be operating at a degree of saturation of 100%.

The following summary junction performance tables for J1 describes the RFC and Queue values for both morning and evening peaks for all design scenarios.

Junction J1		Without Development		With Development	
		DOS %	Queue (pcu)	DOS %	Queue (pcu)
2022	AM	33	0.5	N/A	N/A
	PM	26	0.4	N/A	N/A
2024	AM	33	0.5	36	0.6
	PM	26	0.4	30	0.5
2029	AM	35	0.6	48	1
	PM	28	0.4	42	0.8

**Table 7.1: Junction 1 Summary Table (11/01/2022)**

Junction J1		Without Development		With Development		With 30% Modal Shift	
		DOS %	Queue (pcu)	DOS %	Queue (pcu)	DOS %	Queue (pcu)
2022	AM	37	0.6	N/A	N/A	N/A	N/A
	PM	33	0.5	N/A	N/A	N/A	N/A
2024	AM	37	0.7	40	0.7	39	0.7
	PM	33	0.5	37	0.7	36	0.6
2029	AM	40	0.7	53	1.2	49	1
	PM	35	0.6	50	1.1	46	0.9

**Table 7.2: Junction 1 Summary Table (08/09/2022)**

### Junction 1 – MNRR Roundabout

Based on the traffic counts undertaken in January 2022 a maximum RFC of 48% occurs in the AM peak for the 2029 with Phase 1 scenario. This occurs on Arm 1. The maximum RFC in the PM peak for the with development scenario is 42%. There is a maximum increase of 14% in RFC at the junction as a result of the Phase 1 development. All arms of the junction are operating well below capacity up to and including the 2029 with Phase 1 scenario.

Due to the latest traffic count conducted in September 2022, the maximum RFC for the AM peak for 2029 with Phase 1 scenario has increased to 53% and still occurs on Arm 1. The maximum RFC for the PM peak for the 2029 Phase 1 scenario has also increased to 50%. All arms of the roundabout remain operating far below capacity, with no significant delays, up to and including the 2029 with Phase 1 scenario.

As the junction was already operating within capacity, the inclusion of a 30% modal shift towards sustainable transport only marginally impacts the roundabout. The maximum RFC for AM and PM peaks for the 2029 Phase 1 scenario are both reduced by 4%.

## 7.2 Linsig Analysis

Linsig analysis software was used to assess the capacity of signalised junctions J2 and J3.

LINSIG is a computer software program dealing with capacities, mean max queue lengths (pcu) and delays at uncontrolled and signalised junctions. The output results sheets from LINSIG consist of tables of demand flow, capacities, queues and delays for the morning and evening peak hour analysis, for each arm of the junction. These tables contain start and finish times for each arm, traffic demand, %Degree of Saturated Flow (DOS), start queue length and queuing delay.

The DOS provides the basis for judging the acceptability of junction design and the capacity of existing junctions. In general, a DOS of 85% is deemed acceptable for uncontrolled junctions and a DOS of 90% is acceptable for signalised junctions.

A DOS of this value would indicate that at peak times the junction is at 85% of its operational capacity and therefore has a practical reserve capacity of 15%. This reserve capacity of 15% is considered by traffic engineers to be the level of reserve capacity at a junction required to cater for periods of unusually high traffic flows, such as bank holiday weekends, public entertainment, and sporting events etc.

Table 7.3 and Table 7.5 below show the various traffic models for junction J2 for the previous traffic count and the traffic count conducted in September 2022. (See Appendices for the full LINSIG output data output).

### Junction 2: Signalised junction of the Middleton Northern Relief Road and the R626

Junction J2		Without Development		With Development	
		DOS %	Queue (pcu)	DOS %	Queue (pcu)
2022	AM	71.2	7.3	N/A	N/A
	PM	61	4.2	N/A	N/A
2024	AM	72.9	7.5	74.7	7.8
	PM	62.2	4.4	65.5	6.1
2029	AM	77.2	8.3	91.2	12.2
	PM	65.9	4.7	76.1	7

**Table 7.3: Junction 2 Summary Table (11/01/2022)**

Junction J2		Without Development		With Development		With 30% Modal Shift	
		DOS %	Queue (pcu)	DOS %	Queue (pcu)	DOS %	Queue (pcu)
2022	AM	80	9.1	N/A	N/A	N/A	N/A
	PM	71.6	7.9	N/A	N/A	N/A	N/A
2024	AM	81.9	9.5	83.3	8.1	82.4	9.4
	PM	73.3	8.3	76.8	8.9	75.8	8.7
2029	AM	86.8	11.1	101.3	18.6	96.9	14
	PM	77.6	9.2	89.3	10.1	82.4	8.1

**Table 7.4: Junction 2 Summary Table (08/09/2022)**



Table 7.3 shows that for the 2029 with Phase 1 development scenario the junction will be operating above the 90% acceptable DOS threshold for signalised junctions. The critical arm of the junction is traffic travelling south along the R626 and turning right on to the MNRR. At this arm of the junction an average queue of 12No. PCUs will be experienced in the 2029 AM with Phase 1 development scenario. The DOS only increases by approximately 3% between the without development and with development scenarios for the 2024 opening year scenario. The DOS increases by 14% as a result of the proposed Phase 1 development as can be seen in the 2029 AM scenario.

Table 7.4 shows the updated traffic counts for junction J2. Similar to the previous traffic count, the junction operates above the 90% acceptable DOS threshold for signalised junction for 2029 with Phase 1 development in the AM peak. The critical arms of the junction are traffic travelling south along the R626 and turning right onto the MNRR and vehicles travelling east along the MNRR approaching the junction. An average queue of 18No. PCUs will be experienced at these junction arms in the 2029 AM with Phase 1 development scenario. The DOS, again, only increases by circa 3% between the without development and with development for the 2024 opening year scenario. The DOS now increases by roughly 15% due to the proposed Phase 1 development in the 2029 AM scenario.

A 30% modal shift has been included in the traffic modelling for the Junction 2 "With Development" scenarios. This decline in the number of vehicles in the area results in the DOS reducing to 97% in the 2029 AM Phase 1 scenario with an average queue of 14No. PCUs at the critical arm.

### Junction 3: Signalised junction of Midleton Northern Relief Road and the Cork Road

Two separate models have been developed for Junction 3. The first model reflects the junction in its current state and was used to model the 2022 AM and PM scenarios. The second model was developed to reflect the proposed upgrades to the junction outlined in Section 4.2 of this report. The model was used for all future scenarios as the upgrades are proposed prior to the completion of any developments in the Water Rock UEA.

Junction J3		Without Development		With Development	
		DOS %	Queue (pcu)	DOS %	Queue (pcu)
2022	AM	78.8	10.7	N/A	N/A
	PM	78.5	11.9	N/A	N/A
2024	AM	81	11	87	12.5
	PM	79.5	12.6	78.3	12.4
2029	AM	84.1	12.3	111.3	58.9
	PM	84	13.9	90.7	15.9

**Table 7.5: Junction 3 Summary Table (11/01/2022)**

Junction J3		Without Development		With Development		With 30% Modal Shift	
		DOS %	Queue (pcu)	DOS %	Queue (pcu)	DOS %	Queue (pcu)
2022	AM	78.3	10.7	N/A	N/A	N/A	N/A
	PM	80	8.5	N/A	N/A	N/A	N/A
2024	AM	83.7	11.8	89.3	14.8	85.7	13.2
	PM	81.8	8.9	84	6.9	83.1	6.7
2029	AM	88.8	13.6	114.9	69.4	107.1	43.2
	PM	86.7	10.2	93.6	13.6	92.6	11.8

**Table 7.6: Junction 3 Summary Table (08/09/2022)**

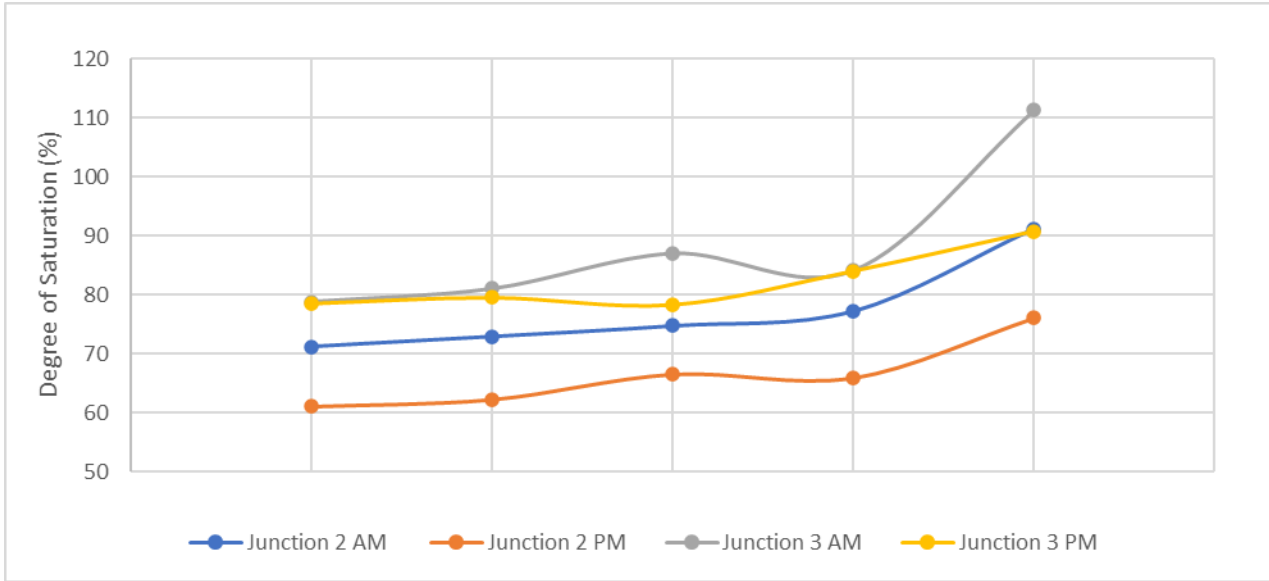
Table 7.5 shows that the junction reaches a maximum degree of saturation of 111.3% in the “2029 AM with Phase 1 development scenario” and thus will be operating above the 90% acceptable DOS threshold for signalised junctions based on the traffic counts conducted in January 2022. The critical arm of the junction in the AM scenario is southbound traffic travelling along the MNRR. At this arm of the junction an average queue length of 59No. PCUs is recorded. The results show that the proposed Phase 1 development will result in a maximum increase of 27% on the degree of saturation at the junction for the 2029 AM scenario. However, the proposed development of 331No. units under this application only results in an increase of 6% on the degree of saturation at the junction for the opening year.

Table 7.6 shows the recent traffic counts for junction J3. Evidently, the junction still exceeds the 90% acceptable DOS threshold for signalised junctions. The junction will operate at a DOS of 114.9% for the AM and 93.6% for the PM for the 2029 with Phase 1 development scenario. The critical arm for the junction remains to be the southbound traffic travelling along the MNRR. The maximum DOS will increase significantly by 26% due to the proposed Phase 1 development in the 2029 AM scenario.

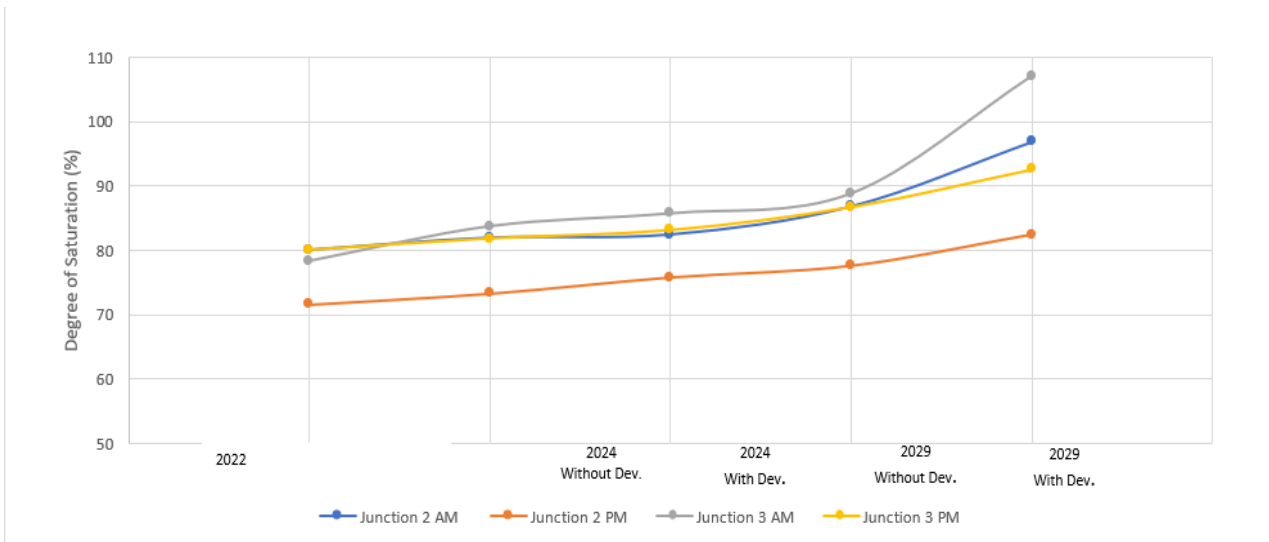
Junction 3 was also modelled for a 30% modal shift towards sustainable transport. Although the junctions RFC is greater than 90% for both AM and PM peaks in the 2029 with Phase 1 scenario there is a significant reduction from the scenario with no modal shift.

The estimated Degree of Saturation (DOS) for the Cork Road approach from the N25 Slip (eastbound) is 64.2% with a Mean Maximum Queue in the PM peak of just 9.4 PCU’s (and 5.9 PCU’s in the AM peak). The modelling therefore points to no impact onto the N25 infrastructure.

The graph below illustrates how the degree of saturation for Junction 2 and Junction 3 increases with time for each scenario.



**Figure 7.2: Degree of Saturation for January 2022 Traffic Counts**



**Figure 7.3: Degree of Saturation for September 2022 Traffic Counts**

### 7.3 Cumulative Impact

The overall impact of this proposed development on the adjoining R626 Regional Road and the assessed junctions is to increase traffic %RFC by a maximum of 3% at Junction 2. The impact of Phase 1 developments will increase %RFC at junction 2 by 14%. At Junction 3 the %RFC is increased by approximately 6% in the Opening Year of the development, assuming all traffic generated by the development is new to the network. The proposed Phase 1 development will increase %RFC at Junction 3 by 27% even following the proposed upgrades to the junction. Junction 3 is operating above the 90% acceptable threshold in the 2029 with development scenario for both the AM and PM peaks.

Following the most recent traffic count in September 2022, Junction 2 and Junction 3 are both operating above the 90% acceptable threshold in the 2029 with development scenario. This occurs for the AM peak at Junction 2 and for both AM and PM peaks at Junction 3.

Additional upgrades may be required at this junction to facilitate the level of development proposed for the Water Rock UEA.

## 7.4 Results Comparison

The results of this Traffic and Transport Assessment confirm the findings of the Water Rock Strategic Transport Assessment undertaken by Systra. For the Phase 1A do-something scenario, which includes the upgrades to the Cork Road and MNRR junction, the volume over capacity ratio was found to be over 95% for Junction 3. This aligns well with the results of this TTA as outlined in section 7.2. At Junction 2, the volume over capacity was found to be between 70% and 85% by Systra. The Linsig analysis found that Junction 2 reaches a maximum degree of saturation of 101%, for the most recent traffic count, which is significantly outside the range calculated in the Water Rock Strategic Transport Assessment.



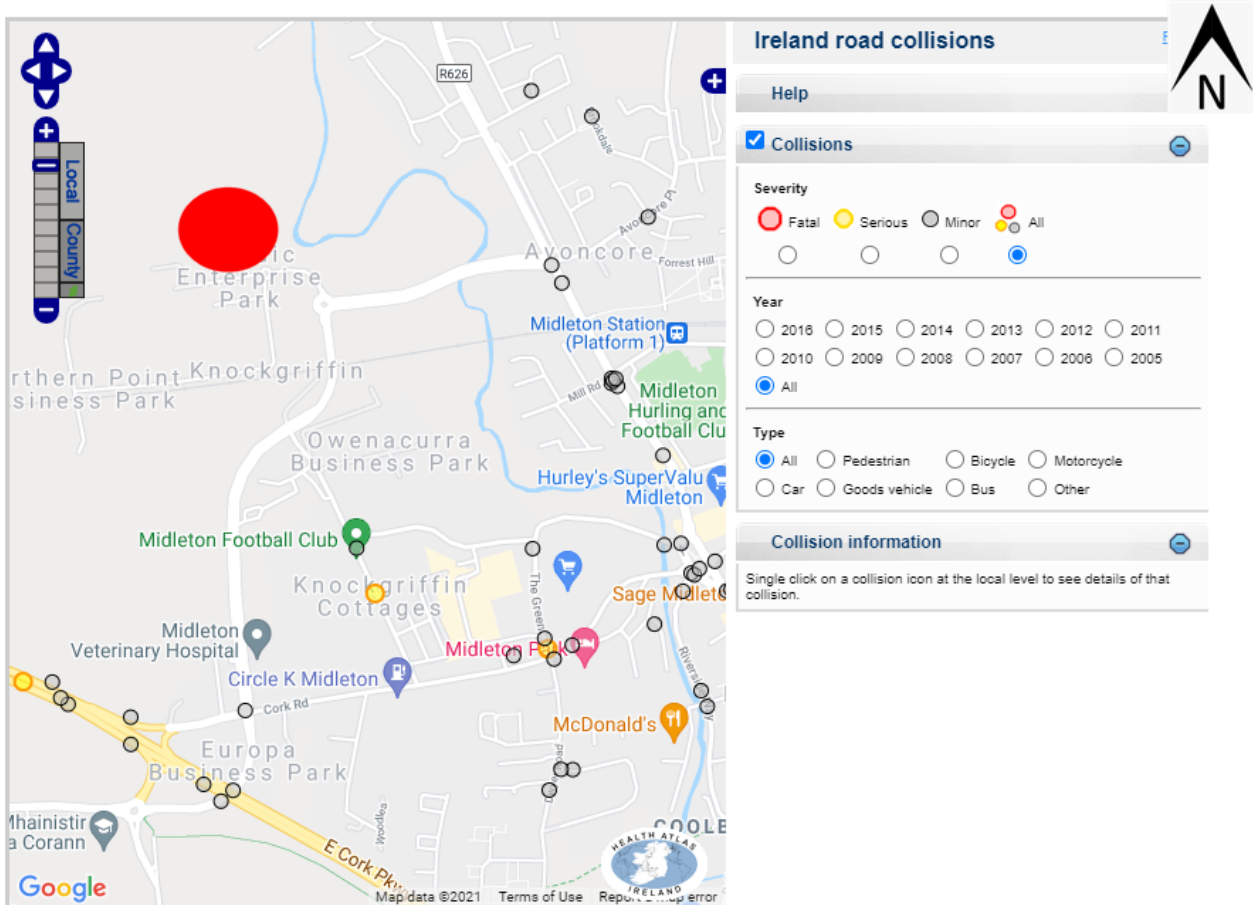
Figure 7.4: Water Rock Strategic Transport Assessment Results (Credit: Systra)



## 8 ROAD SAFETY

The traffic collision statistics for the surrounding road network were assessed for this application.

As can be seen in Figure 8.1 there were no recorded collisions at the MNRR / Business Park Roundabout. Two minor collisions at the junction of the Midleton Northern Relief Road and the R6262 and one minor collision at the Knockgriffin Junction. The vehicle involved in each of the collisions was a car with a pedestrian also involved in one of the accidents.



**Figure 8.1 Road collision between 2005-2016 (RSA)**

Please refer to the Stage 1 Road Safety Report (RSA) submitted as part of this planning submission.

## 9 INTERNAL LAYOUT & PARKING PROVISION

The site is to have a hard tarmac or concrete surface with adequate foundation to withstand the wheel loads involved. The overall drainage of the site should be adequate to cope with storm water. The whole site is to be well lit to ensure the safe execution of manoeuvres, the safety of passengers and the security of vehicles. The lighting should be from a high level to prevent glare during manoeuvres and reduce the potential for vandalism. The layout of the site is to be designed to reduce the need for reversing manoeuvres. Where these are unavoidable, there should be an adequate area to safely execute the reversing or turning manoeuvres necessary.

The proposed parking for the development will be facilitated with new standard parking spaces for private car, disabled parking and set down traffic.

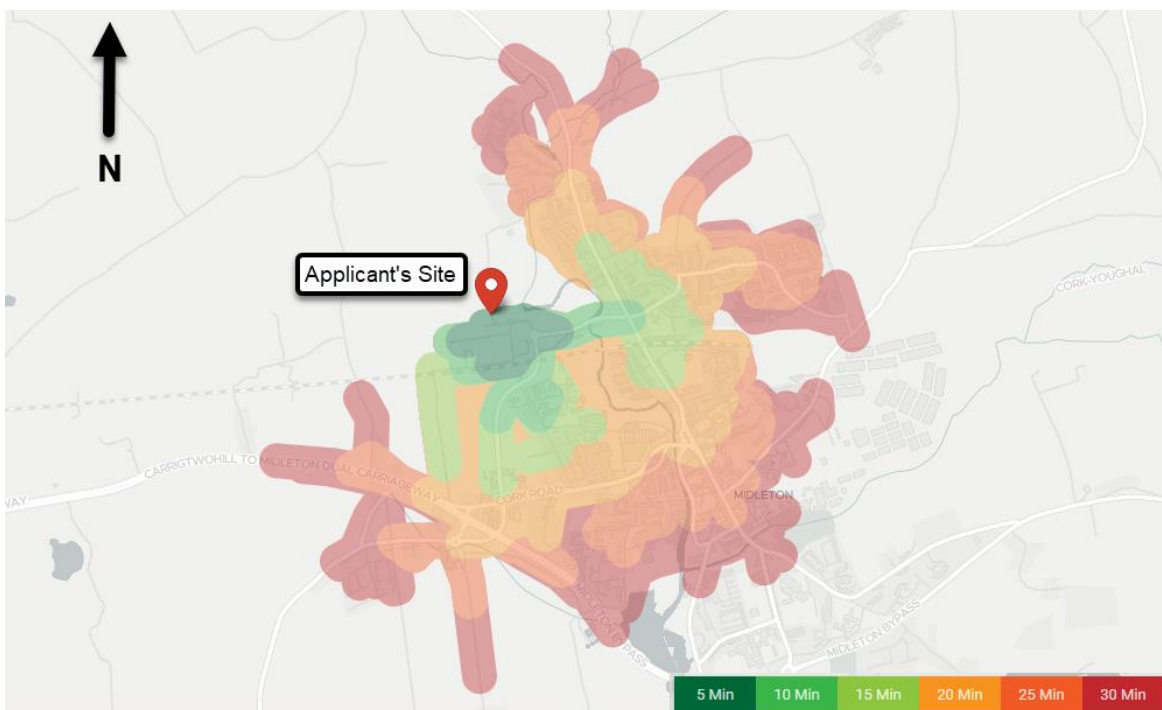
This provision is in line with the requirements set out in the Cork County Development Plan whereby the proposed maximum parking standard for the use case is dependent upon the nature and location of use. The client's intention is to provide ease of parking for visitors whilst ensuring operation and delivery is appropriate for the residential use case. Referencing the expected visitor numbers projected for the site, the proposed internal parking spaces numbers are expected to cater for the expected peak demand.

- All parking spaces are required to be a minimum 2.4m x 4.9m in size.

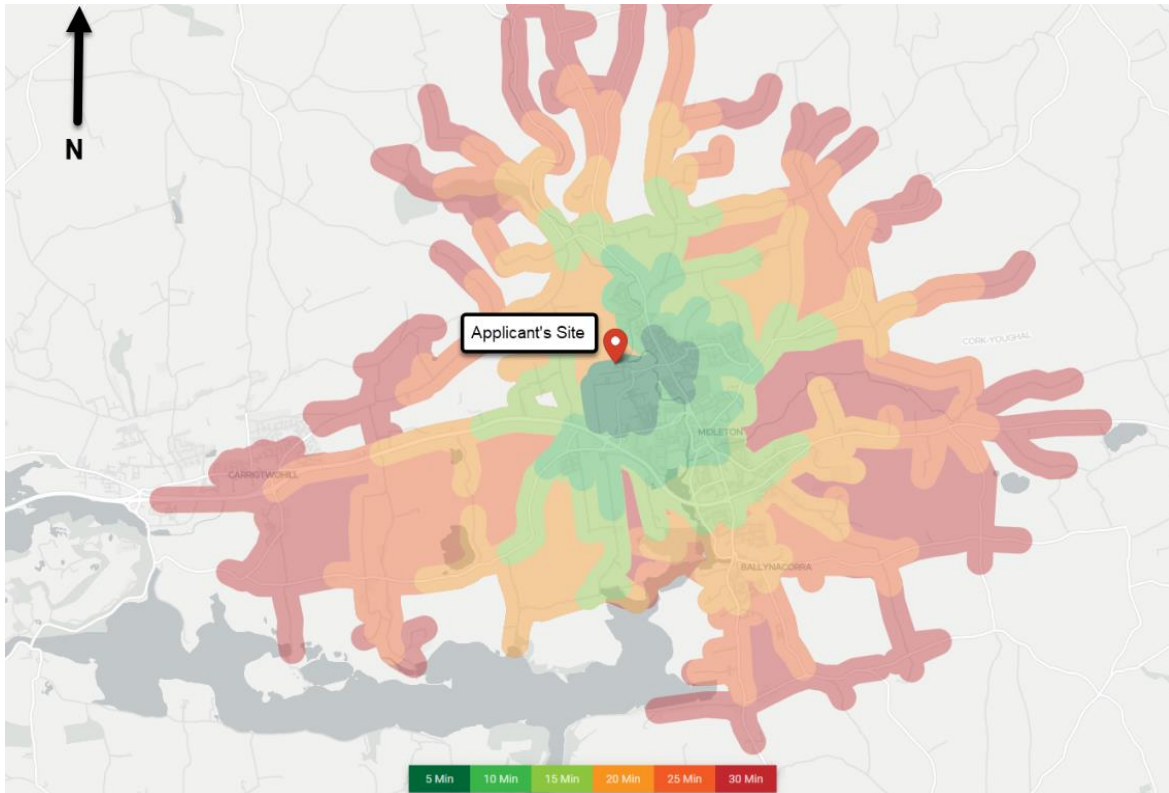
**10 PEDESTRIAN / CYCLIST / DISABILITY**

All internal footpaths should be dished at all entrances and crossings with tapered/dropped kerbs and tactile paving used on approaches in accordance with the design guidelines for use with tactile paving. This is to accommodate wheelchair access and guide the visually impaired users safely through the development. Adequate bicycle parking provision is proposed as per development schedules presented.

Isochrone mapping in Figure 10.1 and Figure 10.2 below shows that Midleton town centre is within a 30-minute walk of the site and both Midleton and Carrigtwohill are within a 30-minute cycle of the proposed development location. Footpaths and cycle tracks are provided in both directions along the Midleton Northern Relief Road and are also proposed along the new Services Corridor Link Road.



**Figure 10.1 Proximity of site to the town centre (5min interval walking times)**



**Figure 10.2 Proximity of site to the town centre (5min cycling cycle time)**

### 10.1 Environmental Impact

The proposed development has been designed in accordance with the principles of DMURS (Design Manual for Urban Roads and Streets) with all internal roads having a gradient of not greater than 5% and good pedestrian connectivity throughout.

The developments proximity to current public transport facilities, via connection to existing footpath network is a positive, located within 1km of Midleton train station

The construction stage of the scheme proposes to re-use / relocate the bulk of the excavation within the site implying that there will be a significant reduction in construction traffic generated to and from the site over and above a site where importation or exportation of earthworks is required. This will minimise the impact the development will have on the existing roads network during this period.

As outlined in of this report, industry standard growth rates have been applied to background traffic for future year assessments (to account for further development within the area). These growth rates make allowance for modal shift targets as set by national policy but do not take account of site-specific measures that may be implemented to mitigate against traffic generation from a particular development.



## 11 SUMMARY CONCLUSION

In accordance with the TII's "Traffic and Transport Assessment Guidelines", the traffic analysis was undertaken for the following scenarios for both the AM and PM peak hours:

- **Base Year (2022)**
- **Opening Year (2024) without Development**
- **Opening Year (2024) with 330-unit residential Development**
- **Opening Year +5 (2029) without Development**
- **Opening Year +5 (2029) with entire Phase 1 Developments**

In summary, the TTA assessment focused on 3no. traffic junctions for this application.

**The Midleton Northern Relief Road.**

**The signalized junction of the Midleton Northern Relief Road.**

**The R626 / signalized junction of the Midleton Northern Relief Road/ Cork Road.**

The traffic modelling analysis, based on the latest traffic counts conducted including a modal shift to sustainable transport, carried out for these design year scenarios shows that:

### **Opening Year \_ 2024**

- All junctions are operating below capacity during the opening year of the development (2024) for both morning and evening peaks respectively.

### **Opening Year +5 \_ 2029**

- Junction 2 reaches a maximum RFC of 96.9% in the 2029 with development scenario morning peak. This is above the 90% threshold for signalised junctions.
- Junction 3 now reaches a maximum RFC of 107.1% in the 2029 with development scenario morning peak. This is above the 90% threshold for signalised junctions.
- The % increase in RFC between "without development" and "with development" scenarios in the AM peak is at a maximum of 18% for Junction 3 during the 2029 AM scenario.
- The % increase in RFC between "without development" and "with development" scenarios is at a maximum of 6% for Junction 3 during the 2029 PM scenario.

Comparing the analysis of the traffic models, the proposed 330No. unit development will have a minor impact of the operation of these junctions from a capacity point-of-view. However, the UEA Phase 1 developments will cumulatively have a significant negative impact on the operation of Junctions 2 and 3. These junctions will be operating above capacity and will require upgrading to facilitate the Water Rock UEA.

## 12 REFERENCES

- TII. Traffic and Transport Assessment Guidelines, PE-PDV-02045
- National Roads Authority (2014) Traffic and Transport Assessment Guidelines
- Institution of Highways & Transportation (1994) Guidelines for Traffic Impact Assessment IHT, London
- National Roads Authority (2000) Road Geometry Handbook NRA, Dublin
- National Roads Authority Design Manual for Roads and Bridges NRA, Dublin
- Design Manual for Urban Roads and Streets
- Transport for Ireland (Oct 2016) Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts
- Transport for Ireland 2017. Geometric Design of Junctions, DN-GEO-03060
- Transport for Ireland 2017. Rural Road Link Design, DN-GEO-03031
- National Disability Authority (NDA) guidelines – Towards Best Practice in Provision of Transport Services
- TII approved junction simulation modelling program, Linsig
- Trip Rate Information Computer System (TRICS)
- Traffic Surveys: Traffinomics Limited
- PCU (passenger carrying units) factors, Transport in The Urban Environment, The Institution of highways and Transportation.
- Google Maps
- Openstreetmaps
- Water Rock Strategic Transport Assessment, Systra

13 APPENDIX A - AERIAL MAPPING

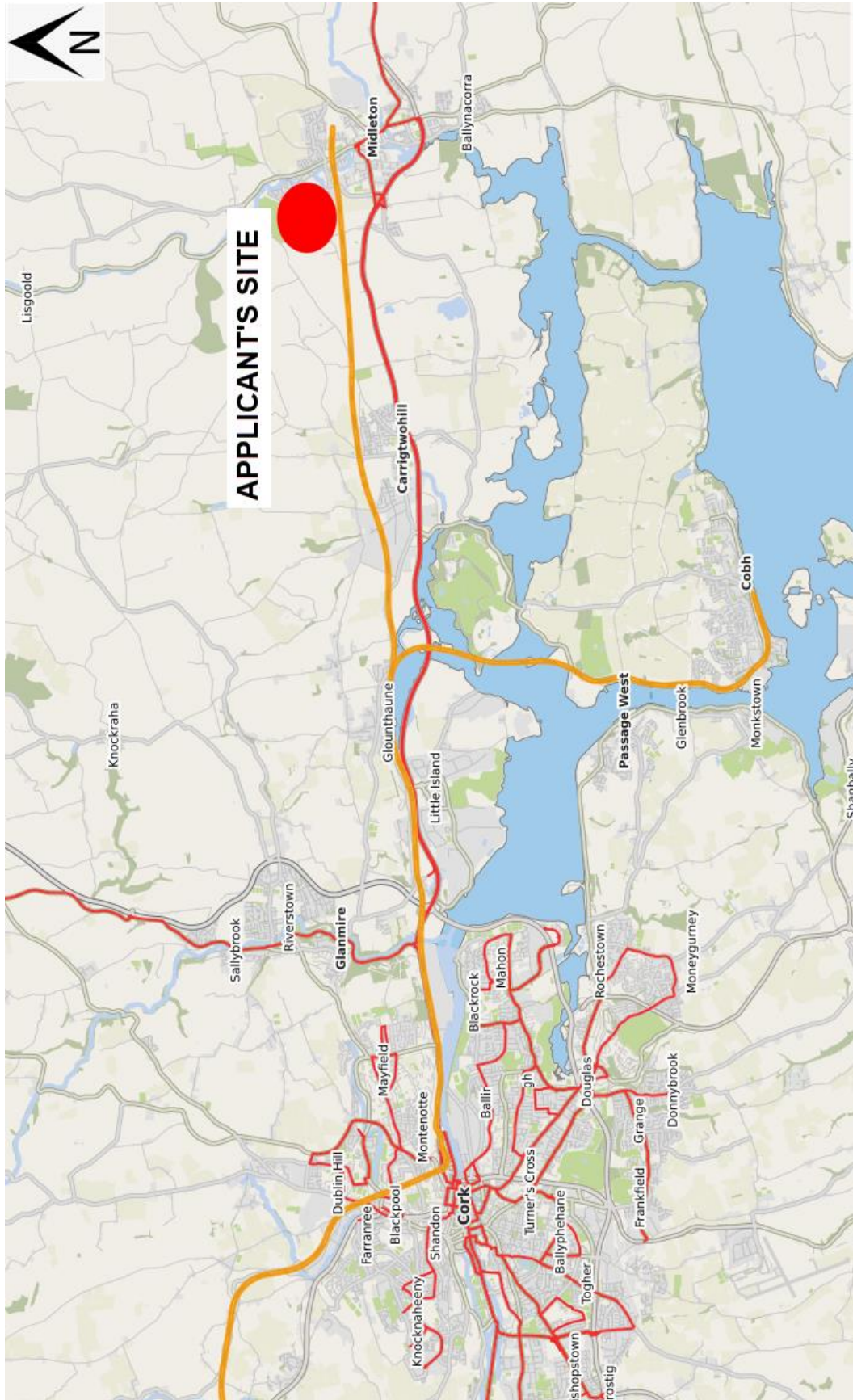


Figure 13.1 Aerial View of Site (outlined in red) and surrounding area



## 14 APPENDIX B - ASSESSED JUNCTIONS

### 14.1 Junction J1



Figure 14.1 Junction 1 (Development Junction) (Credit: Google)



Figure 14.2 Northbound (Credit: Google)





**Figure 14.3 Eastbound (Credit: Google)**

## 14.2 Junction J2



**Figure 14.4 Junction 2 (MNRR/ R626) (Credit: Google)**





**Figure 14.5 Northbound (Credit: Google)**



**Figure 14.6 Eastbound (Credit: Google)**



**Figure 14.7 Southbound (Credit: Google)**



**Figure 14.8 Westbound (Credit: Google)**



### 14.3 Junction J3

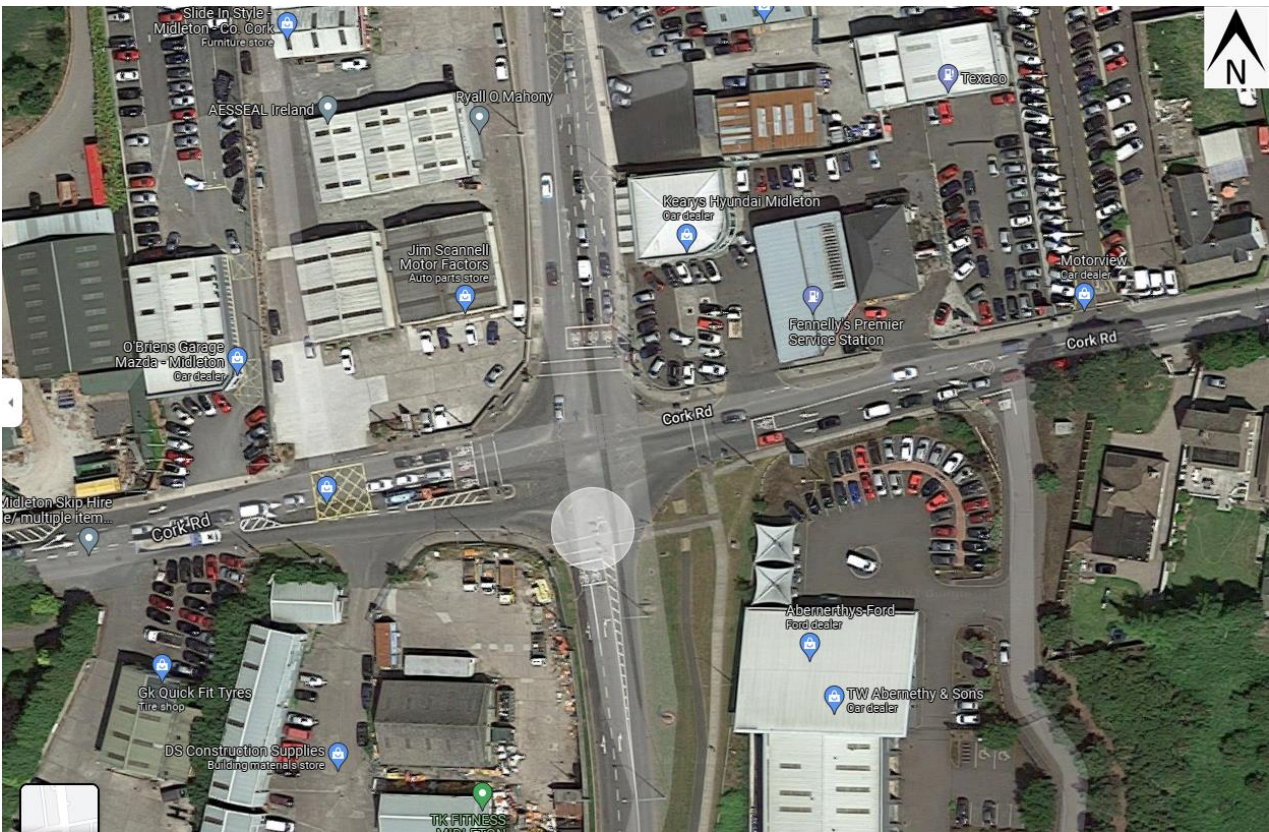


Figure 14.9 Junction 2 (MNRR/ Cork Road) (Credit: Google)



Figure 14.10 Northbound (Credit: Google)





Figure 14.11 Eastbound (Credit: Google)



Figure 14.12 Westbound (Credit: Google)



**Figure 14.13 Southbound (Credit: Google)**





## 16 APPENDIX D - TRAFFIC COUNT DATA



**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 1							TOT	PCU	MOVEMENT 2							TOT	PCU	MOVEMENT 3							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	5	6	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	1	0	1	2	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	1	0	1	2	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	4	5	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	6	1	2	0	9	11	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	2	1	2	0	5	7	0	0	1	0	0	0	1	1	1	1
04:15	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0	7	13	0	0	2	0	0	0	2	2	2	2
04:30	0	0	0	0	0	0	0	0	0	0	0	8	0	4	0	12	16	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	0	4	1	2	0	7	9	0	0	1	0	0	0	1	1	1	1
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	15	2	14	0	31	45	0	0	4	0	0	0	4	4	4	4
05:00	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8	8	0	0	0	0	0	0	0	0	0	0
05:15	0	0	0	0	1	0	1	2	0	0	13	4	2	0	19	21	0	0	0	0	1	0	1	2	2	2	2
05:30	0	0	0	0	0	0	0	0	0	0	10	2	1	0	13	14	0	0	1	0	1	0	2	3	3	3	3
05:45	0	0	0	0	0	0	0	0	0	0	15	0	0	0	15	15	0	0	2	0	0	0	2	2	2	2	2
<b>H/TOT</b>	0	0	0	0	1	0	1	2	0	0	45	7	3	0	55	58	0	0	3	0	2	0	5	7	7	7	7
06:00	0	0	1	0	0	0	1	1	0	0	24	3	2	0	29	31	0	0	0	0	1	1	2	4	4	4	4
06:15	0	0	0	0	0	0	0	0	0	0	25	6	2	0	33	35	0	0	1	1	1	0	3	4	4	4	4
06:30	0	0	3	0	0	0	3	3	0	0	31	5	3	1	40	44	0	0	4	0	0	1	5	6	6	6	6
06:45	0	0	1	0	0	0	1	1	0	0	37	6	5	0	48	53	0	0	2	0	1	0	3	4	4	4	4
<b>H/TOT</b>	0	0	5	0	0	0	5	5	0	0	117	20	12	1	150	163	0	0	7	1	3	2	13	18	18	18	18
07:00	0	0	2	1	0	0	3	3	0	0	51	5	5	1	62	68	0	0	4	2	0	2	8	10	10	10	10
07:15	0	0	2	0	0	0	2	2	0	0	45	10	2	0	57	59	0	0	4	2	1	0	7	8	8	8	8
07:30	0	0	3	1	0	0	4	4	0	0	77	10	3	0	90	93	0	0	8	2	0	0	10	10	10	10	10
07:45	0	0	5	1	0	0	6	6	0	1	76	5	2	0	84	85	0	0	12	3	1	0	16	17	17	17	17
<b>H/TOT</b>	0	0	12	3	0	0	15	15	0	1	249	30	12	1	293	305	0	0	28	9	2	2	41	45	45	45	45

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 1							PCU	MOVEMENT 2							PCU	MOVEMENT 3							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
08:00	0	0	5	4	2	0	11	13	0	0	77	9	5	1	92	98	0	0	18	2	1	0	21	22
08:15	0	0	2	2	1	0	5	6	0	0	62	9	4	2	77	83	0	0	47	1	4	0	52	56
08:30	0	0	0	2	1	0	3	4	0	0	80	8	1	2	91	94	0	0	27	2	2	0	31	33
08:45	0	0	9	1	0	0	10	10	0	0	81	12	7	3	103	113	0	0	20	2	0	2	24	26
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>29</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>300</b>	<b>38</b>	<b>17</b>	<b>8</b>	<b>363</b>	<b>388</b>	<b>0</b>	<b>0</b>	<b>112</b>	<b>7</b>	<b>7</b>	<b>2</b>	<b>128</b>	<b>137</b>
09:00	0	0	7	2	0	0	9	9	0	0	69	16	3	1	89	93	0	0	15	3	1	0	19	20
09:15	0	0	5	1	0	0	6	6	0	0	41	6	7	0	54	61	0	0	10	0	7	0	17	24
09:30	0	1	8	2	1	0	12	12	0	0	32	10	5	0	47	52	0	0	11	1	2	1	15	18
09:45	0	0	9	2	0	0	11	11	0	0	28	4	7	1	40	48	0	0	15	2	2	2	21	25
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>29</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>38</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>170</b>	<b>36</b>	<b>22</b>	<b>2</b>	<b>230</b>	<b>254</b>	<b>0</b>	<b>0</b>	<b>51</b>	<b>6</b>	<b>12</b>	<b>3</b>	<b>72</b>	<b>87</b>
10:00	0	0	9	1	0	0	10	10	0	0	25	7	5	0	37	42	0	0	8	3	2	1	14	17
10:15	0	0	9	4	1	0	14	15	0	0	34	11	7	0	52	59	0	0	7	2	1	0	10	11
10:30	0	0	9	1	0	0	10	10	0	0	39	11	5	0	55	60	0	0	10	2	2	0	14	16
10:45	0	0	12	1	0	0	13	13	0	0	33	12	4	0	49	53	0	0	18	7	1	0	26	27
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>47</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>131</b>	<b>41</b>	<b>21</b>	<b>0</b>	<b>193</b>	<b>214</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>14</b>	<b>6</b>	<b>1</b>	<b>64</b>	<b>71</b>
11:00	0	0	9	3	0	0	12	12	0	0	30	11	3	1	45	49	0	0	20	3	0	0	23	23
11:15	0	0	8	1	0	0	9	9	0	0	30	6	7	1	44	52	0	0	22	2	3	0	27	30
11:30	0	0	8	0	0	0	8	8	1	0	34	9	12	0	56	67	0	0	24	2	2	0	28	30
11:45	0	0	9	2	0	0	11	11	0	0	33	10	4	0	47	51	0	0	24	3	2	0	29	31
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>40</b>	<b>1</b>	<b>0</b>	<b>127</b>	<b>36</b>	<b>26</b>	<b>2</b>	<b>192</b>	<b>219</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>10</b>	<b>7</b>	<b>0</b>	<b>107</b>	<b>114</b>
12:00	0	0	9	1	0	0	10	10	0	0	38	3	11	0	52	63	0	0	24	2	1	0	27	28
12:15	0	0	9	2	0	0	11	11	0	0	29	13	7	0	49	56	0	0	25	3	3	0	31	34
12:30	0	0	5	1	1	0	7	8	0	0	28	11	11	1	51	63	0	0	25	8	1	0	34	35
12:45	0	0	7	1	0	0	8	8	0	0	44	7	4	0	55	59	0	0	19	4	1	0	24	25
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>36</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>139</b>	<b>34</b>	<b>33</b>	<b>1</b>	<b>207</b>	<b>241</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>17</b>	<b>6</b>	<b>0</b>	<b>116</b>	<b>122</b>
13:00	0	0	11	1	0	0	12	12	0	0	41	4	6	0	51	57	0	0	26	5	1	1	33	35
13:15	0	0	3	4	0	0	7	7	0	0	51	6	2	1	60	63	0	0	26	4	2	0	32	34
13:30	0	0	3	1	0	0	4	4	0	0	44	9	5	0	58	63	0	0	23	2	2	2	29	33
13:45	0	0	6	3	0	0	9	9	0	0	41	10	8	0	59	67	0	0	20	4	0	0	24	24
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>177</b>	<b>29</b>	<b>21</b>	<b>1</b>	<b>228</b>	<b>250</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>15</b>	<b>5</b>	<b>3</b>	<b>118</b>	<b>126</b>
14:00	0	0	15	2	0	0	17	17	0	0	44	5	4	0	53	57	0	0	27	1	1	1	30	32
14:15	0	1	4	2	0	0	7	6	0	0	68	6	2	3	79	84	0	0	29	3	3	0	35	38
14:30	0	0	9	0	1	0	10	11	0	0	70	12	9	1	92	102	0	0	33	4	1	0	38	39
14:45	0	1	6	2	0	0	9	8	0	0	40	7	4	0	51	55	0	0	18	2	3	0	23	26
<b>H/TOT</b>	<b>0</b>	<b>2</b>	<b>34</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>43</b>	<b>43</b>	<b>0</b>	<b>0</b>	<b>222</b>	<b>30</b>	<b>19</b>	<b>4</b>	<b>275</b>	<b>298</b>	<b>0</b>	<b>0</b>	<b>107</b>	<b>10</b>	<b>8</b>	<b>1</b>	<b>126</b>	<b>135</b>
15:00	0	0	8	0	0	1	9	10	0	0	54	9	4	0	67	71	0	0	18	2	3	1	24	28
15:15	0	0	8	0	0	0	8	8	0	0	41	10	6	0	57	63	0	0	31	5	1	6	43	50
15:30	0	0	5	0	0	1	6	7	0	1	49	8	1	1	60	61	0	0	35	2	1	0	38	39
15:45	0	0	6	2	0	0	8	8	0	0	41	5	4	0	50	54	0	0	34	2	1	0	37	38
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>31</b>	<b>33</b>	<b>0</b>	<b>1</b>	<b>185</b>	<b>32</b>	<b>15</b>	<b>1</b>	<b>234</b>	<b>249</b>	<b>0</b>	<b>0</b>	<b>118</b>	<b>11</b>	<b>6</b>	<b>7</b>	<b>142</b>	<b>155</b>

**TRAFFINOMICS LIMITED**

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TIME	MOVEMENT 1							TOT	PCU	MOVEMENT 2							TOT	PCU	MOVEMENT 3							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
16:00	0	0	5	2	0	0	7	7	0	0	52	2	7	0	61	68	0	0	27	5	3	1	36	40			
16:15	0	0	9	2	1	0	12	13	0	0	43	10	5	0	58	63	0	0	34	5	0	0	39	39			
16:30	0	0	4	1	0	0	5	5	0	0	45	11	4	0	60	64	0	0	30	4	3	0	37	40			
16:45	0	0	14	1	1	0	16	17	0	0	42	7	4	0	53	57	0	0	35	2	4	1	42	47			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>40</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>182</b>	<b>30</b>	<b>20</b>	<b>0</b>	<b>232</b>	<b>252</b>	<b>0</b>	<b>0</b>	<b>126</b>	<b>16</b>	<b>10</b>	<b>2</b>	<b>154</b>	<b>166</b>			
17:00	0	0	10	0	0	0	10	10	0	0	50	10	2	0	62	64	0	0	45	5	2	0	52	54			
17:15	0	0	3	1	0	0	4	4	0	0	71	10	4	1	86	91	0	0	24	5	2	1	32	35			
17:30	0	0	7	2	0	0	9	9	0	0	52	7	2	0	61	63	0	0	51	4	1	0	56	57			
17:45	0	0	5	0	0	0	5	5	0	0	51	4	1	0	56	57	0	0	35	6	1	0	42	43			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>224</b>	<b>31</b>	<b>9</b>	<b>1</b>	<b>265</b>	<b>275</b>	<b>0</b>	<b>0</b>	<b>155</b>	<b>20</b>	<b>6</b>	<b>1</b>	<b>182</b>	<b>189</b>			
18:00	0	0	6	1	1	0	8	9	0	0	53	5	1	0	59	60	0	0	39	6	0	0	45	45			
18:15	0	0	2	2	0	0	4	4	0	0	49	3	1	0	53	54	0	0	13	3	1	0	17	18			
18:30	0	0	3	1	0	0	4	4	0	0	39	1	0	0	40	40	0	0	21	2	0	0	23	23			
18:45	0	0	8	1	0	0	9	9	1	0	27	0	0	0	28	27	0	0	17	3	1	0	21	22			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>25</b>	<b>26</b>	<b>1</b>	<b>0</b>	<b>168</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>180</b>	<b>181</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>14</b>	<b>2</b>	<b>0</b>	<b>106</b>	<b>108</b>			
19:00	0	0	3	0	0	0	3	3	0	0	26	0	3	0	29	32	0	0	15	0	0	0	15	15			
19:15	0	0	3	0	0	0	3	3	0	0	30	1	3	0	34	37	0	0	9	2	0	0	11	11			
19:30	0	0	7	0	0	0	7	7	0	0	22	0	2	0	24	26	0	0	18	1	0	0	19	19			
19:45	0	0	1	1	0	0	2	2	0	0	21	2	0	0	23	23	0	0	7	0	0	0	7	7			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>99</b>	<b>3</b>	<b>8</b>	<b>0</b>	<b>110</b>	<b>118</b>	<b>0</b>	<b>0</b>	<b>49</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>52</b>			
20:00	0	0	2	0	0	0	2	2	0	0	20	0	0	0	20	20	0	0	8	0	0	0	8	8			
20:15	0	1	3	0	0	0	4	3	0	0	25	0	1	0	26	27	0	0	4	1	0	0	5	5			
20:30	0	0	3	1	0	0	4	4	0	0	20	0	0	0	20	20	0	0	15	0	0	0	15	15			
20:45	0	0	1	1	0	0	2	2	0	0	12	1	1	0	14	15	0	0	8	0	0	0	8	8			
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>77</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>80</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>36</b>			
21:00	0	0	0	1	0	0	1	1	0	0	14	0	1	0	15	16	0	0	2	0	0	0	2	2			
21:15	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6	0	0	2	0	0	0	2	2			
21:30	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6	0	0	4	0	0	0	4	4			
21:45	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	7	0	0	4	0	0	0	4	4			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>34</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>			
22:00	0	0	1	0	0	0	1	1	0	0	6	0	1	0	7	8	0	0	2	0	0	0	2	2			
22:15	0	0	1	0	0	0	1	1	0	0	7	0	0	0	7	7	0	0	1	0	1	0	2	3			
22:30	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	3	0	0	0	3	3			
22:45	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>23</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>8</b>			
23:00	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6	0	0	2	0	0	0	2	2			
23:15	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	0	0	2	0	0	0	2	2			
23:30	0	0	0	0	0	0	0	0	0	0	5	1	0	0	6	6	0	0	0	0	0	0	0	0			
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>			
<b>07:00 - 19:00</b>	<b>0</b>	<b>3</b>	<b>320</b>	<b>68</b>	<b>11</b>	<b>2</b>	<b>404</b>	<b>415</b>	<b>2</b>	<b>2</b>	<b>2274</b>	<b>376</b>	<b>217</b>	<b>21</b>	<b>2892</b>	<b>3127</b>	<b>0</b>	<b>0</b>	<b>1108</b>	<b>149</b>	<b>77</b>	<b>22</b>	<b>1356</b>	<b>1455</b>			
<b>06:00 - 22:00</b>	<b>0</b>	<b>4</b>	<b>348</b>	<b>72</b>	<b>11</b>	<b>2</b>	<b>437</b>	<b>448</b>	<b>2</b>	<b>2</b>	<b>2600</b>	<b>400</b>	<b>240</b>	<b>22</b>	<b>3266</b>	<b>3525</b>	<b>0</b>	<b>0</b>	<b>1211</b>	<b>154</b>	<b>80</b>	<b>24</b>	<b>1469</b>	<b>1573</b>			
<b>00:00 - 00:00</b>	<b>0</b>	<b>4</b>	<b>351</b>	<b>72</b>	<b>12</b>	<b>2</b>	<b>441</b>	<b>453</b>	<b>2</b>	<b>2</b>	<b>2711</b>	<b>413</b>	<b>261</b>	<b>22</b>	<b>3411</b>	<b>3691</b>	<b>0</b>	<b>0</b>	<b>1228</b>	<b>154</b>	<b>84</b>	<b>24</b>	<b>1490</b>	<b>1598</b>			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 4							TOT	PCU	MOVEMENT 5							TOT	PCU	MOVEMENT 6							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
00:00	0	0	4	0	0	0	4	4	0	0	6	0	0	0	6	6	0	0	1	0	0	0	1	1			
00:15	0	0	5	0	0	0	5	5	0	0	5	0	0	0	5	5	0	0	1	0	0	0	1	1			
00:30	0	0	2	1	0	0	3	3	0	0	7	2	0	0	9	9	0	0	0	0	0	0	0	0			
00:45	0	0	5	0	3	0	8	11	0	0	3	1	0	0	4	4	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	0	0	16	1	3	0	20	23	0	0	21	3	0	0	24	24	0	0	3	0	0	0	3	3			
01:00	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
01:15	0	0	3	0	0	0	3	3	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0			
01:30	0	0	4	0	0	0	4	4	0	0	3	1	0	0	4	4	0	0	0	0	0	0	0	0			
01:45	0	0	2	0	0	0	2	2	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	0	0	10	0	0	0	10	10	0	0	10	1	0	0	11	11	0	0	0	0	0	0	0	0			
02:00	0	0	0	0	1	0	1	2	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0			
02:15	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1			
02:30	0	0	3	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
02:45	0	0	2	1	0	0	3	3	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	0	0	6	1	2	0	9	11	0	0	7	0	0	0	7	7	0	0	1	0	0	0	1	1			
03:00	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
03:15	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0			
03:30	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
03:45	0	0	2	1	3	0	6	9	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	0	0	6	1	3	0	10	13	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0			
04:00	0	0	4	1	0	0	5	5	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0			
04:15	0	0	6	0	1	0	7	8	0	0	3	1	2	0	6	8	0	0	0	0	0	0	0	0			
04:30	0	0	2	0	0	0	2	2	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0			
04:45	0	0	1	0	0	0	1	1	0	0	7	0	1	0	8	9	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	0	0	13	1	1	0	15	16	0	0	12	3	3	0	18	21	0	0	0	0	0	0	0	0			
05:00	0	0	4	2	0	0	6	6	0	0	3	1	0	0	4	4	0	0	0	0	0	0	0	0			
05:15	0	0	2	0	2	0	4	6	0	0	7	1	2	0	10	12	0	0	0	0	0	0	0	0			
05:30	0	0	2	0	0	0	2	2	0	0	5	3	2	0	10	12	0	0	0	0	0	0	0	0			
05:45	0	0	8	0	1	0	9	10	0	0	9	1	4	0	14	18	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	0	0	16	2	3	0	21	24	0	0	24	6	8	0	38	46	0	0	1	0	0	0	1	1			
06:00	0	0	8	1	0	0	9	9	0	0	4	4	0	0	8	8	0	0	0	0	1	0	1	2			
06:15	0	0	4	1	0	0	5	5	0	0	10	1	0	0	11	11	0	0	3	0	0	0	3	3			
06:30	0	0	11	2	1	0	14	15	0	0	23	1	1	1	26	28	0	0	3	1	0	0	4	4			
06:45	0	0	18	3	2	0	23	25	0	0	25	5	1	0	31	32	0	0	6	0	2	0	8	10			
<b>H/TOT</b>	0	0	41	7	3	0	51	54	0	0	62	11	2	1	76	79	0	0	12	1	3	0	16	19			
07:00	0	0	11	1	3	0	15	18	0	0	20	3	2	0	25	27	0	0	3	0	4	0	7	11			
07:15	0	0	10	5	2	1	18	21	0	0	32	8	2	2	44	48	0	0	4	1	7	0	12	19			
07:30	0	0	13	8	4	1	26	31	0	0	47	10	2	0	59	61	0	0	7	2	3	0	12	15			
07:45	0	0	16	2	3	0	21	24	0	0	44	15	3	1	63	67	0	0	10	1	5	0	16	21			
<b>H/TOT</b>	0	0	50	16	12	2	80	94	0	0	143	36	9	3	191	203	0	0	24	4	19	0	47	66			



**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 4							PCU	MOVEMENT 5							PCU	MOVEMENT 6							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
08:00	0	0	25	8	2	0	35	37	0	0	46	5	2	0	53	55	0	0	13	1	5	0	19	24
08:15	0	0	42	3	4	0	49	53	0	0	55	5	0	1	61	62	0	0	14	1	2	0	17	19
08:30	0	0	41	5	4	1	51	56	0	0	70	10	4	3	87	94	0	0	20	0	1	0	21	22
08:45	0	0	36	7	4	0	47	51	0	0	71	7	2	0	80	82	0	0	10	1	7	0	18	25
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>144</b>	<b>23</b>	<b>14</b>	<b>1</b>	<b>182</b>	<b>197</b>	<b>0</b>	<b>0</b>	<b>242</b>	<b>27</b>	<b>8</b>	<b>4</b>	<b>281</b>	<b>293</b>	<b>0</b>	<b>0</b>	<b>57</b>	<b>3</b>	<b>15</b>	<b>0</b>	<b>75</b>	<b>90</b>
09:00	0	0	24	2	2	0	28	30	0	0	62	3	1	2	68	71	0	0	2	0	7	0	9	16
09:15	0	0	21	6	7	1	35	43	0	0	65	9	2	0	76	78	0	0	11	0	7	0	18	25
09:30	0	0	25	8	5	2	40	47	0	0	64	5	1	2	72	75	0	0	6	1	7	0	14	21
09:45	0	0	21	5	5	1	32	38	0	0	78	9	3	1	91	95	0	0	5	2	7	1	15	23
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>91</b>	<b>21</b>	<b>19</b>	<b>4</b>	<b>135</b>	<b>158</b>	<b>0</b>	<b>0</b>	<b>269</b>	<b>26</b>	<b>7</b>	<b>5</b>	<b>307</b>	<b>319</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>3</b>	<b>28</b>	<b>1</b>	<b>56</b>	<b>85</b>
10:00	0	0	21	9	6	0	36	42	0	0	64	10	3	2	79	84	0	0	0	4	5	0	9	14
10:15	0	0	22	7	5	0	34	39	0	0	57	7	1	0	65	66	0	0	3	0	3	0	6	9
10:30	0	0	19	6	9	0	34	43	0	0	78	12	3	0	93	96	0	0	4	1	4	0	9	13
10:45	0	0	23	5	7	0	35	42	0	1	56	11	2	1	71	73	0	0	3	1	3	0	7	10
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>85</b>	<b>27</b>	<b>27</b>	<b>0</b>	<b>139</b>	<b>166</b>	<b>0</b>	<b>1</b>	<b>255</b>	<b>40</b>	<b>9</b>	<b>3</b>	<b>308</b>	<b>319</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>6</b>	<b>15</b>	<b>0</b>	<b>31</b>	<b>46</b>
11:00	0	0	29	9	10	0	48	58	0	0	67	12	1	1	81	83	0	0	4	3	3	0	10	13
11:15	0	0	27	5	7	0	39	46	0	0	79	12	1	0	92	93	0	0	8	2	3	0	13	16
11:30	0	0	23	3	8	0	34	42	0	0	75	6	1	1	83	85	0	0	4	1	10	0	15	25
11:45	0	0	16	10	7	0	33	40	0	0	78	6	1	1	86	88	0	0	14	0	5	0	19	24
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>27</b>	<b>32</b>	<b>0</b>	<b>154</b>	<b>186</b>	<b>0</b>	<b>0</b>	<b>299</b>	<b>36</b>	<b>4</b>	<b>3</b>	<b>342</b>	<b>349</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>6</b>	<b>21</b>	<b>0</b>	<b>57</b>	<b>78</b>
12:00	0	0	16	9	8	0	33	41	0	0	61	7	3	2	73	78	0	0	5	1	6	0	12	18
12:15	0	0	32	9	9	0	50	59	0	0	60	12	1	0	73	74	0	0	6	0	2	1	9	12
12:30	0	0	20	11	7	0	38	45	0	0	71	8	5	1	85	91	0	0	5	1	6	0	12	18
12:45	0	0	27	8	3	1	39	43	0	0	72	12	1	0	85	86	0	0	6	4	6	0	16	22
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>37</b>	<b>27</b>	<b>1</b>	<b>160</b>	<b>188</b>	<b>0</b>	<b>0</b>	<b>264</b>	<b>39</b>	<b>10</b>	<b>3</b>	<b>316</b>	<b>329</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>6</b>	<b>20</b>	<b>1</b>	<b>49</b>	<b>70</b>
13:00	0	0	39	5	8	0	52	60	0	0	66	8	3	1	78	82	0	0	8	1	5	0	14	19
13:15	0	0	29	6	3	0	38	41	0	0	68	6	3	0	77	80	0	0	7	0	6	0	13	19
13:30	0	0	37	5	4	0	46	50	0	0	65	6	3	0	74	77	0	0	8	1	4	0	13	17
13:45	0	0	26	6	6	1	39	46	0	0	64	7	0	0	71	71	0	0	7	1	6	0	14	20
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>131</b>	<b>22</b>	<b>21</b>	<b>1</b>	<b>175</b>	<b>197</b>	<b>0</b>	<b>0</b>	<b>263</b>	<b>27</b>	<b>9</b>	<b>1</b>	<b>300</b>	<b>310</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>	<b>21</b>	<b>0</b>	<b>54</b>	<b>75</b>
14:00	0	0	33	9	6	0	48	54	0	0	75	11	1	1	88	90	0	0	9	1	2	0	12	14
14:15	0	0	31	7	4	0	42	46	0	0	78	6	0	1	85	86	0	0	10	0	9	0	19	28
14:30	0	0	35	8	4	0	47	51	0	0	62	5	1	1	69	71	0	0	10	0	5	1	16	22
14:45	0	0	41	4	11	1	57	69	0	0	65	10	3	2	80	85	0	0	15	0	7	0	22	29
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>28</b>	<b>25</b>	<b>1</b>	<b>194</b>	<b>220</b>	<b>0</b>	<b>0</b>	<b>280</b>	<b>32</b>	<b>5</b>	<b>5</b>	<b>322</b>	<b>332</b>	<b>0</b>	<b>0</b>	<b>44</b>	<b>1</b>	<b>23</b>	<b>1</b>	<b>69</b>	<b>93</b>
15:00	0	0	41	7	2	1	51	54	0	0	53	11	1	2	67	70	0	0	6	2	6	0	14	20
15:15	0	0	47	8	3	0	58	61	0	0	83	10	4	0	97	101	0	0	5	0	2	1	8	11
15:30	0	0	40	2	3	2	47	52	0	0	81	5	0	1	87	88	0	0	8	1	3	0	12	15
15:45	0	0	42	6	3	2	53	58	0	1	94	10	2	0	107	108	0	0	15	2	5	0	22	27
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>170</b>	<b>23</b>	<b>11</b>	<b>5</b>	<b>209</b>	<b>225</b>	<b>0</b>	<b>1</b>	<b>311</b>	<b>36</b>	<b>7</b>	<b>3</b>	<b>358</b>	<b>367</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>5</b>	<b>16</b>	<b>1</b>	<b>56</b>	<b>73</b>

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 4							TOT	PCU	MOVEMENT 5							TOT	PCU	MOVEMENT 6							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
16:00	0	0	41	6	6	0	53	59	0	0	60	4	1	3	68	72	0	0	8	1	1	0	10	11			
16:15	0	0	53	9	6	0	68	74	0	0	81	10	0	0	91	91	0	0	11	2	3	0	16	19			
16:30	0	0	57	8	9	0	74	83	0	0	87	13	0	1	101	102	0	0	10	0	4	1	15	20			
16:45	0	0	52	6	5	0	63	68	0	1	83	16	0	0	100	99	0	0	10	1	3	0	14	17			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>203</b>	<b>29</b>	<b>26</b>	<b>0</b>	<b>258</b>	<b>284</b>	<b>0</b>	<b>1</b>	<b>311</b>	<b>43</b>	<b>1</b>	<b>4</b>	<b>360</b>	<b>364</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>4</b>	<b>11</b>	<b>1</b>	<b>55</b>	<b>67</b>			
17:00	0	0	60	9	6	0	75	81	0	0	91	11	0	3	105	108	0	0	9	0	5	0	14	19			
17:15	0	0	64	4	2	0	70	72	0	0	104	8	1	1	114	116	0	0	12	1	2	0	15	17			
17:30	0	0	52	7	4	0	63	67	0	0	92	10	2	0	104	106	0	0	12	2	3	0	17	20			
17:45	0	0	57	5	2	0	64	66	0	0	105	14	0	1	120	121	0	0	12	1	6	0	19	25			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>233</b>	<b>25</b>	<b>14</b>	<b>0</b>	<b>272</b>	<b>286</b>	<b>0</b>	<b>0</b>	<b>392</b>	<b>43</b>	<b>3</b>	<b>5</b>	<b>443</b>	<b>451</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>4</b>	<b>16</b>	<b>0</b>	<b>65</b>	<b>81</b>			
18:00	0	0	52	6	1	0	59	60	0	1	85	4	1	2	93	95	0	0	22	0	2	0	24	26			
18:15	0	0	40	4	3	0	47	50	0	0	97	5	1	1	104	106	0	0	7	1	3	0	11	14			
18:30	0	0	41	2	1	0	44	45	0	0	83	4	0	0	87	87	0	1	12	0	3	0	16	18			
18:45	0	0	48	3	1	1	53	55	1	1	96	11	1	1	111	112	0	0	9	1	2	0	12	14			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>181</b>	<b>15</b>	<b>6</b>	<b>1</b>	<b>203</b>	<b>210</b>	<b>1</b>	<b>2</b>	<b>361</b>	<b>24</b>	<b>3</b>	<b>4</b>	<b>395</b>	<b>400</b>	<b>0</b>	<b>1</b>	<b>50</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>63</b>	<b>72</b>			
19:00	0	0	44	2	2	1	49	52	0	0	76	6	0	2	84	86	0	0	8	0	0	0	8	8			
19:15	0	0	30	2	1	0	33	34	0	0	65	6	2	0	73	75	0	0	8	1	0	0	9	9			
19:30	0	0	26	1	1	0	28	29	0	0	57	4	0	1	62	63	0	0	6	0	0	0	6	6			
19:45	0	0	33	1	0	0	34	34	0	2	56	3	1	1	63	64	0	0	6	1	0	0	7	7			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>133</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>144</b>	<b>149</b>	<b>0</b>	<b>2</b>	<b>254</b>	<b>19</b>	<b>3</b>	<b>4</b>	<b>282</b>	<b>288</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>30</b>			
20:00	0	0	23	2	0	0	25	25	0	1	62	1	0	1	65	65	0	0	4	0	1	0	5	6			
20:15	0	0	20	0	0	0	20	20	0	0	74	1	1	0	76	77	0	0	7	0	1	0	8	9			
20:30	0	0	18	1	1	0	20	21	0	0	48	1	0	0	49	49	0	0	5	0	0	0	5	5			
20:45	0	0	19	0	0	0	19	19	0	0	47	0	0	1	48	49	0	0	6	0	0	0	6	6			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>84</b>	<b>85</b>	<b>0</b>	<b>1</b>	<b>231</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>238</b>	<b>240</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>24</b>	<b>26</b>			
21:00	0	0	19	0	0	0	19	19	0	0	35	1	0	1	37	38	0	0	5	0	0	0	5	5			
21:15	0	0	8	1	1	0	10	11	0	0	22	1	1	0	24	25	0	0	2	0	0	0	2	2			
21:30	0	0	14	0	0	0	14	14	0	0	19	0	0	0	19	19	0	0	5	0	0	0	5	5			
21:45	0	0	13	0	1	0	14	15	0	0	29	0	0	0	29	29	0	0	4	0	0	0	4	4			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>57</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>105</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>109</b>	<b>111</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>16</b>			
22:00	0	0	15	1	1	0	17	18	0	0	25	3	0	1	29	30	0	0	5	0	0	0	5	5			
22:15	0	0	7	0	0	0	7	7	0	0	21	0	0	0	21	21	0	0	4	0	1	0	5	6			
22:30	0	0	6	0	0	0	6	6	0	0	16	1	0	1	18	19	0	0	0	0	0	0	0	0			
22:45	0	0	8	0	0	0	8	8	0	0	14	1	0	0	15	15	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>38</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>76</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>83</b>	<b>85</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>12</b>			
23:00	0	0	5	1	0	0	6	6	0	0	16	0	0	0	16	16	0	0	2	0	0	0	2	2			
23:15	0	0	11	0	0	0	11	11	0	0	11	2	0	1	14	15	0	0	0	0	0	0	0	0			
23:30	0	0	8	1	0	0	9	9	0	0	9	0	0	0	9	9	0	0	0	0	0	0	0	0			
23:45	0	0	3	0	0	0	3	3	0	0	7	0	1	0	8	9	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>47</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>			
<b>07:00 - 19:00</b>	<b>0</b>	<b>0</b>	<b>1618</b>	<b>293</b>	<b>234</b>	<b>16</b>	<b>2161</b>	<b>2411</b>	<b>1</b>	<b>5</b>	<b>3390</b>	<b>409</b>	<b>75</b>	<b>43</b>	<b>3923</b>	<b>4037</b>	<b>0</b>	<b>1</b>	<b>409</b>	<b>47</b>	<b>215</b>	<b>5</b>	<b>677</b>	<b>896</b>			
<b>06:00 - 22:00</b>	<b>0</b>	<b>0</b>	<b>1926</b>	<b>310</b>	<b>244</b>	<b>17</b>	<b>2497</b>	<b>2758</b>	<b>1</b>	<b>8</b>	<b>4042</b>	<b>444</b>	<b>82</b>	<b>51</b>	<b>4628</b>	<b>4755</b>	<b>0</b>	<b>1</b>	<b>487</b>	<b>50</b>	<b>220</b>	<b>5</b>	<b>763</b>	<b>987</b>			
<b>00:00 - 00:00</b>	<b>0</b>	<b>0</b>	<b>2056</b>	<b>319</b>	<b>257</b>	<b>17</b>	<b>2649</b>	<b>2923</b>	<b>1</b>	<b>8</b>	<b>4241</b>	<b>464</b>	<b>94</b>	<b>54</b>	<b>4862</b>	<b>5004</b>	<b>0</b>	<b>1</b>	<b>505</b>	<b>50</b>	<b>221</b>	<b>5</b>	<b>782</b>	<b>1007</b>			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 7							PCU	MOVEMENT 8							PCU	MOVEMENT 9							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	
00:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
03:00	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	0	1	1	
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
03:30	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	0	0	0	0	
03:45	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	3	0	1	4	5	0	0	0	1	0	0	1	1	
04:00	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	
04:15	0	0	0	1	0	0	1	1	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	
04:30	0	0	0	0	1	0	1	2	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	
04:45	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	
<b>H/TOT</b>	0	0	0	1	1	0	2	3	0	0	4	0	0	4	4	0	0	0	0	0	0	0	0	
05:00	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0	0	0	0	1	0	1	2	
05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
05:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	
05:45	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6	0	0	1	0	0	0	1	1	
<b>H/TOT</b>	0	0	1	0	0	0	1	1	0	0	6	2	0	8	8	0	0	4	0	1	0	5	6	
06:00	0	0	1	0	0	0	1	1	0	0	3	0	0	3	3	0	0	0	1	0	0	1	1	
06:15	0	0	0	1	0	0	1	1	0	0	3	1	0	4	4	0	0	3	1	0	0	4	4	
06:30	0	0	2	0	0	0	2	2	0	0	5	2	0	7	7	0	0	3	0	0	0	3	3	
06:45	0	0	1	1	0	0	2	2	0	0	4	0	1	6	8	0	0	2	0	0	0	2	2	
<b>H/TOT</b>	0	0	4	2	0	0	6	6	0	0	15	3	1	20	22	0	0	8	2	0	0	10	10	
07:00	0	0	2	0	0	0	2	2	0	0	5	3	0	8	8	0	0	1	1	0	0	2	2	
07:15	0	0	4	1	0	2	7	9	0	0	7	0	1	9	11	0	0	1	1	0	0	2	2	
07:30	0	0	4	0	0	0	4	4	0	0	9	4	0	13	13	0	0	3	1	0	0	4	4	
07:45	0	0	2	0	1	0	3	4	0	0	11	4	0	15	15	0	0	10	3	1	0	14	15	
<b>H/TOT</b>	0	0	12	1	1	2	16	19	0	0	32	11	1	45	47	0	0	15	6	1	0	22	23	

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

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TIME	MOVEMENT 7							PCU	MOVEMENT 8							PCU	MOVEMENT 9							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
08:00	0	0	12	0	1	0	13	14	1	0	18	1	0	2	22	23	0	0	10	1	0	0	11	11
08:15	0	0	20	1	0	1	22	23	0	0	50	3	0	0	53	53	0	0	21	4	0	1	26	27
08:30	0	0	23	1	0	3	27	30	0	0	48	3	2	6	59	67	0	0	27	2	0	0	29	29
08:45	0	0	44	2	0	1	47	48	0	0	67	5	0	1	73	74	0	0	38	1	0	0	39	39
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>99</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>109</b>	<b>115</b>	<b>1</b>	<b>0</b>	<b>183</b>	<b>12</b>	<b>2</b>	<b>9</b>	<b>207</b>	<b>217</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>105</b>	<b>106</b>
09:00	0	0	22	1	0	2	25	27	0	0	38	3	2	1	44	47	0	0	42	2	1	0	45	46
09:15	0	0	3	0	0	0	3	3	0	0	20	2	0	2	24	26	0	0	17	0	3	0	20	23
09:30	0	0	6	2	1	0	9	10	0	0	21	2	1	0	24	25	0	0	17	3	2	0	22	24
09:45	0	0	7	1	2	0	10	12	0	0	16	4	1	1	22	24	0	0	20	0	0	0	20	20
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>47</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>95</b>	<b>11</b>	<b>4</b>	<b>4</b>	<b>114</b>	<b>122</b>	<b>0</b>	<b>0</b>	<b>96</b>	<b>5</b>	<b>6</b>	<b>0</b>	<b>107</b>	<b>113</b>
10:00	0	0	7	1	0	0	8	8	0	0	11	5	1	0	17	18	0	0	14	4	0	0	18	18
10:15	0	0	4	0	1	0	5	6	0	0	19	1	2	0	22	24	0	0	17	2	0	0	19	19
10:30	0	0	2	2	1	1	6	8	0	0	23	1	0	0	24	24	0	0	14	2	0	0	16	16
10:45	0	0	9	0	0	0	9	9	0	0	23	3	4	0	30	34	0	0	12	5	0	0	17	17
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>28</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>76</b>	<b>10</b>	<b>7</b>	<b>0</b>	<b>93</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>57</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>70</b>
11:00	0	0	4	4	1	0	9	10	0	0	13	4	4	0	21	25	0	0	15	1	1	0	17	18
11:15	0	0	6	1	2	0	9	11	0	0	15	2	5	0	22	27	0	0	15	1	0	0	16	16
11:30	0	0	2	1	2	0	5	7	0	0	15	2	1	0	18	19	0	0	9	3	0	0	12	12
11:45	0	0	6	1	0	0	7	7	0	0	20	1	0	0	21	21	0	0	16	2	0	0	18	18
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>30</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>9</b>	<b>10</b>	<b>0</b>	<b>82</b>	<b>92</b>	<b>0</b>	<b>0</b>	<b>55</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>63</b>	<b>64</b>
12:00	0	0	15	1	1	0	17	18	0	0	42	6	0	1	49	50	0	0	29	3	0	0	32	32
12:15	0	0	3	2	1	0	6	7	0	0	17	4	2	1	24	27	0	0	20	3	2	1	26	29
12:30	0	0	6	1	1	0	8	9	0	0	19	4	2	0	25	27	0	0	16	2	2	0	20	22
12:45	0	0	4	1	0	0	5	5	0	0	20	4	4	0	28	32	0	0	14	0	0	0	14	14
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>36</b>	<b>39</b>	<b>0</b>	<b>0</b>	<b>98</b>	<b>18</b>	<b>8</b>	<b>2</b>	<b>126</b>	<b>136</b>	<b>0</b>	<b>0</b>	<b>79</b>	<b>8</b>	<b>4</b>	<b>1</b>	<b>92</b>	<b>97</b>
13:00	0	2	5	0	1	0	8	8	0	0	23	3	2	0	28	30	0	0	15	3	0	0	18	18
13:15	0	0	3	0	0	0	3	3	1	0	19	2	1	1	24	25	0	0	15	1	0	0	16	16
13:30	0	0	8	0	1	1	10	12	0	0	30	3	3	1	37	41	0	0	23	3	0	1	27	28
13:45	0	0	27	0	0	1	28	29	0	0	36	6	3	1	46	50	0	0	21	0	0	0	21	21
<b>H/TOT</b>	<b>0</b>	<b>2</b>	<b>43</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>49</b>	<b>52</b>	<b>1</b>	<b>0</b>	<b>108</b>	<b>14</b>	<b>9</b>	<b>3</b>	<b>135</b>	<b>146</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>82</b>	<b>83</b>
14:00	0	0	7	0	0	1	8	9	0	0	25	5	5	0	35	40	0	0	24	5	0	0	29	29
14:15	0	0	8	2	0	2	12	14	0	0	20	1	4	1	26	31	0	0	14	0	0	0	14	14
14:30	0	0	7	2	0	1	10	11	0	0	29	3	3	0	35	38	0	1	14	4	1	0	20	20
14:45	0	0	40	2	0	3	45	48	0	0	66	2	0	1	69	70	0	0	36	2	0	1	39	40
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>6</b>	<b>0</b>	<b>7</b>	<b>75</b>	<b>82</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>11</b>	<b>12</b>	<b>2</b>	<b>165</b>	<b>179</b>	<b>0</b>	<b>1</b>	<b>88</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>102</b>	<b>103</b>
15:00	0	0	10	2	0	0	12	12	1	0	28	1	2	0	32	33	0	0	30	1	0	0	31	31
15:15	0	0	9	0	0	1	10	11	0	0	19	5	2	0	26	28	0	0	17	4	0	0	21	21
15:30	0	0	13	2	2	1	18	21	0	0	25	4	1	0	30	31	0	0	23	1	0	1	25	26
15:45	0	0	14	2	2	0	18	20	0	0	29	4	0	0	33	33	0	0	27	2	0	0	29	29
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>58</b>	<b>64</b>	<b>1</b>	<b>0</b>	<b>101</b>	<b>14</b>	<b>5</b>	<b>0</b>	<b>121</b>	<b>125</b>	<b>0</b>	<b>0</b>	<b>97</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>106</b>	<b>107</b>



**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 7								MOVEMENT 8								MOVEMENT 9							
	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	9	3	3	0	15	18	0	0	51	4	0	0	55	55	0	0	23	2	2	1	28	31
16:15	1	0	7	2	0	0	10	9	0	0	41	4	2	0	47	49	1	0	24	6	0	1	32	32
16:30	0	0	5	1	1	4	11	16	1	0	23	2	2	0	28	29	0	0	27	4	1	0	32	33
16:45	0	0	10	4	2	1	17	20	0	0	26	4	1	1	32	34	0	0	18	0	0	0	18	18
<b>H/TOT</b>	<b>1</b>	<b>0</b>	<b>31</b>	<b>10</b>	<b>6</b>	<b>5</b>	<b>53</b>	<b>63</b>	<b>1</b>	<b>0</b>	<b>141</b>	<b>14</b>	<b>5</b>	<b>1</b>	<b>162</b>	<b>167</b>	<b>1</b>	<b>0</b>	<b>92</b>	<b>12</b>	<b>3</b>	<b>2</b>	<b>110</b>	<b>114</b>
17:00	0	1	9	3	0	0	13	12	0	0	23	6	5	2	36	43	0	0	15	1	0	0	16	16
17:15	0	0	10	1	0	0	11	11	0	0	28	4	1	0	33	34	0	0	33	3	0	0	36	36
17:30	0	0	9	1	1	0	11	12	1	0	24	3	2	0	30	31	0	0	30	2	0	0	32	32
17:45	0	1	13	1	1	0	16	16	0	0	22	2	3	0	27	30	0	0	25	2	0	0	27	27
<b>H/TOT</b>	<b>0</b>	<b>2</b>	<b>41</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>51</b>	<b>52</b>	<b>1</b>	<b>0</b>	<b>97</b>	<b>15</b>	<b>11</b>	<b>2</b>	<b>126</b>	<b>138</b>	<b>0</b>	<b>0</b>	<b>103</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>111</b>
18:00	0	0	7	1	0	0	8	8	0	0	9	2	2	0	13	15	0	0	16	4	0	0	20	20
18:15	0	0	9	0	0	0	9	9	0	0	20	1	0	0	21	21	0	0	30	1	0	0	31	31
18:30	0	0	7	2	0	0	9	9	0	0	13	2	0	0	15	15	0	0	18	2	0	1	21	22
18:45	0	0	8	0	0	0	8	8	0	0	14	2	0	0	16	16	0	0	30	1	0	0	31	31
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>65</b>	<b>67</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>103</b>	<b>104</b>
19:00	0	0	8	0	0	0	8	8	0	0	9	2	0	0	11	11	0	0	16	1	0	0	17	17
19:15	0	0	5	0	0	0	5	5	0	0	10	1	1	0	12	13	0	0	24	2	0	0	26	26
19:30	0	0	3	0	0	0	3	3	0	0	4	1	0	0	5	5	0	0	8	1	0	0	9	9
19:45	0	0	3	0	0	0	3	3	1	0	15	0	0	0	16	15	0	0	22	0	0	0	22	22
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>38</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>44</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>74</b>	<b>74</b>
20:00	0	0	2	0	0	1	3	4	0	0	14	1	1	0	16	17	0	0	17	0	1	0	18	19
20:15	0	0	0	0	0	0	0	0	0	0	8	1	0	0	9	9	0	0	20	0	1	0	21	22
20:30	0	0	2	0	0	0	2	2	0	0	11	1	0	0	12	12	0	0	15	1	0	0	16	16
20:45	0	0	3	0	0	0	3	3	0	0	2	1	0	0	3	3	0	0	9	0	0	0	9	9
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>40</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>64</b>	<b>66</b>
21:00	0	0	0	0	0	0	0	0	0	1	1	1	1	0	4	4	0	0	10	0	0	0	10	10
21:15	0	0	1	0	0	0	1	1	0	0	4	0	0	0	4	4	0	0	6	0	0	0	6	6
21:30	0	0	7	0	0	0	7	7	0	0	5	0	0	0	5	5	0	0	6	0	0	0	6	6
21:45	0	0	2	1	0	0	3	3	0	0	4	0	0	0	4	4	0	0	5	0	0	0	5	5
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>17</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>27</b>
22:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
22:15	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	2	0	0	0	2	2
22:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	5	0	0	0	5	5
22:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>13</b>
23:00	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
23:15	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
23:30	0	0	1	0	0	1	2	3	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>
<b>07:00 - 19:00</b>	<b>1</b>	<b>4</b>	<b>471</b>	<b>55</b>	<b>29</b>	<b>26</b>	<b>586</b>	<b>638</b>	<b>5</b>	<b>0</b>	<b>1190</b>	<b>146</b>	<b>76</b>	<b>24</b>	<b>1441</b>	<b>1537</b>	<b>1</b>	<b>1</b>	<b>946</b>	<b>101</b>	<b>16</b>	<b>8</b>	<b>1073</b>	<b>1096</b>
<b>06:00 - 22:00</b>	<b>1</b>	<b>4</b>	<b>511</b>	<b>58</b>	<b>29</b>	<b>27</b>	<b>630</b>	<b>683</b>	<b>6</b>	<b>1</b>	<b>1292</b>	<b>158</b>	<b>80</b>	<b>25</b>	<b>1562</b>	<b>1662</b>	<b>1</b>	<b>1</b>	<b>1112</b>	<b>108</b>	<b>18</b>	<b>8</b>	<b>1248</b>	<b>1273</b>
<b>00:00 - 00:00</b>	<b>1</b>	<b>4</b>	<b>519</b>	<b>59</b>	<b>30</b>	<b>28</b>	<b>641</b>	<b>696</b>	<b>6</b>	<b>1</b>	<b>1314</b>	<b>160</b>	<b>81</b>	<b>25</b>	<b>1587</b>	<b>1688</b>	<b>1</b>	<b>1</b>	<b>1135</b>	<b>109</b>	<b>20</b>	<b>8</b>	<b>1274</b>	<b>1301</b>

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS  
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**SEPTEMBER 2022  
TRA/22/214**

SITE: 01  
LOCATION: Northern Relief Road/Cork Road

DATE: 8th September 2022  
DAY: Thursday

TIME	MOVEMENT 10							PCU	MOVEMENT 11							PCU	MOVEMENT 12							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
00:00	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
00:15	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
00:30	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
00:45	0	0	2	1	0	0	3	3	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>
01:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
02:00	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
02:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
03:00	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
05:00	0	0	6	2	2	0	10	12	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
05:15	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	13	2	4	0	19	23	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
05:45	0	0	8	3	0	0	11	11	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>7</b>	<b>6</b>	<b>0</b>	<b>42</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
06:00	0	0	18	2	0	0	20	20	0	0	1	0	1	0	2	3	0	0	1	0	0	0	1	1
06:15	0	0	24	5	0	0	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	0	45	5	1	0	51	52	0	0	2	2	0	0	4	4	0	0	0	0	0	0	0	0
06:45	0	0	28	6	1	0	35	36	0	0	4	0	0	0	4	4	0	0	1	0	0	0	1	1
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>115</b>	<b>18</b>	<b>2</b>	<b>0</b>	<b>135</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>
07:00	0	0	37	8	3	1	49	53	0	0	10	0	0	0	10	10	0	0	0	0	0	0	0	0
07:15	0	2	51	10	2	1	66	68	0	0	4	3	1	0	8	9	0	0	4	1	0	0	5	5
07:30	0	0	49	10	2	3	64	69	0	0	6	2	0	0	8	8	0	0	0	0	0	0	0	0
07:45	0	0	59	13	1	2	75	78	1	0	9	1	0	0	11	10	0	0	1	2	0	0	3	3
<b>H/TOT</b>	<b>0</b>	<b>2</b>	<b>196</b>	<b>41</b>	<b>8</b>	<b>7</b>	<b>254</b>	<b>268</b>	<b>1</b>	<b>0</b>	<b>29</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>37</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 10							PCU	MOVEMENT 11							PCU	MOVEMENT 12							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
08:00	0	1	75	11	4	0	91	94	0	0	7	0	0	0	7	7	0	0	2	0	0	1	3	4
08:15	0	0	56	10	1	2	69	72	1	0	13	0	1	0	15	15	0	0	6	0	0	0	6	6
08:30	0	0	54	9	2	0	65	67	0	0	17	2	0	2	21	23	0	0	4	0	0	0	4	4
08:45	0	0	68	7	1	1	77	79	0	0	8	0	1	2	11	14	0	0	6	0	0	0	6	6
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>253</b>	<b>37</b>	<b>8</b>	<b>3</b>	<b>302</b>	<b>312</b>	<b>1</b>	<b>0</b>	<b>45</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>54</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>19</b>	<b>20</b>
09:00	0	0	55	10	1	1	67	69	0	0	15	5	0	0	20	20	0	0	4	2	0	0	6	6
09:15	0	0	51	10	0	0	61	61	0	0	13	2	2	0	17	19	0	0	4	0	0	0	4	4
09:30	0	1	44	11	4	1	61	65	0	0	12	6	0	0	18	18	0	0	4	1	0	0	5	5
09:45	0	0	38	10	3	0	51	54	0	0	9	1	1	0	11	12	0	0	5	0	0	0	5	5
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>188</b>	<b>41</b>	<b>8</b>	<b>2</b>	<b>240</b>	<b>249</b>	<b>0</b>	<b>0</b>	<b>49</b>	<b>14</b>	<b>3</b>	<b>0</b>	<b>66</b>	<b>69</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>20</b>
10:00	0	0	45	12	2	1	60	63	0	0	12	2	1	0	15	16	0	0	3	1	0	0	4	4
10:15	0	0	55	8	1	1	65	67	0	0	12	1	0	0	13	13	0	0	4	2	0	0	6	6
10:30	0	0	60	9	1	0	70	71	0	0	13	1	0	0	14	14	0	0	9	0	0	0	9	9
10:45	0	0	35	4	1	2	42	45	0	0	22	3	0	0	25	25	0	0	5	0	0	0	5	5
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>195</b>	<b>33</b>	<b>5</b>	<b>4</b>	<b>237</b>	<b>246</b>	<b>0</b>	<b>0</b>	<b>59</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>67</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>
11:00	0	0	61	6	1	1	69	71	0	0	22	1	1	0	24	25	0	0	8	2	0	0	10	10
11:15	0	0	49	7	2	1	59	62	0	0	24	1	0	0	25	25	0	0	5	0	1	0	6	7
11:30	0	1	69	10	2	0	82	83	0	0	20	1	0	0	21	21	0	0	1	0	0	0	1	1
11:45	0	0	70	4	2	0	76	78	0	0	23	1	0	0	24	24	0	0	2	0	0	0	2	2
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>249</b>	<b>27</b>	<b>7</b>	<b>2</b>	<b>286</b>	<b>294</b>	<b>0</b>	<b>0</b>	<b>89</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>94</b>	<b>95</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>20</b>
12:00	0	0	60	10	1	0	71	72	0	0	25	0	1	0	26	27	0	0	6	1	0	0	7	7
12:15	0	0	58	7	0	1	66	67	0	0	21	3	0	0	24	24	0	0	5	1	0	0	6	6
12:30	0	0	59	6	1	0	66	67	0	0	22	3	0	0	25	25	0	0	4	2	0	0	6	6
12:45	0	0	65	9	1	0	75	76	0	0	30	1	1	0	32	33	0	0	6	0	0	0	6	6
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>242</b>	<b>32</b>	<b>3</b>	<b>1</b>	<b>278</b>	<b>282</b>	<b>0</b>	<b>0</b>	<b>98</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>107</b>	<b>109</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>25</b>
13:00	0	0	64	7	3	1	75	79	0	0	24	2	0	1	27	28	0	0	5	2	0	0	7	7
13:15	0	0	65	8	1	2	76	79	0	0	18	2	3	0	23	26	0	0	6	2	0	0	8	8
13:30	0	0	59	13	1	0	73	74	0	0	20	1	0	0	21	21	1	0	4	1	0	0	6	5
13:45	0	0	65	6	1	0	72	73	0	0	16	3	0	0	19	19	0	0	4	1	1	0	6	7
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>253</b>	<b>34</b>	<b>6</b>	<b>3</b>	<b>296</b>	<b>305</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>8</b>	<b>3</b>	<b>1</b>	<b>90</b>	<b>94</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>27</b>	<b>27</b>
14:00	0	0	59	7	4	0	70	74	0	0	25	3	0	0	28	28	0	0	2	1	0	0	3	3
14:15	0	0	59	9	3	1	72	76	0	0	14	2	1	0	17	18	0	0	4	0	0	0	4	4
14:30	0	0	86	6	1	0	93	94	0	0	23	2	0	0	25	25	0	0	3	0	0	0	3	3
14:45	0	0	53	3	1	1	58	60	0	0	24	2	0	0	26	26	0	0	3	1	0	0	4	4
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>257</b>	<b>25</b>	<b>9</b>	<b>2</b>	<b>293</b>	<b>304</b>	<b>0</b>	<b>0</b>	<b>86</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>96</b>	<b>97</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>
15:00	0	0	54	7	1	1	63	65	0	0	17	0	0	0	17	17	0	0	4	1	0	0	5	5
15:15	0	0	72	4	2	1	79	82	0	0	27	5	0	0	32	32	0	0	8	1	0	0	9	9
15:30	0	0	48	10	2	1	61	64	0	0	25	1	1	0	27	28	0	0	5	0	0	0	5	5
15:45	0	0	58	3	0	0	61	61	0	0	42	2	1	0	45	46	0	0	2	1	0	0	3	3
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>232</b>	<b>24</b>	<b>5</b>	<b>3</b>	<b>264</b>	<b>272</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>121</b>	<b>123</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>22</b>

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 8th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Thursday

TIME	MOVEMENT 10							TOT	PCU	MOVEMENT 11							TOT	PCU	MOVEMENT 12							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
16:00	0	0	66	6	0	3	75	78	0	0	34	1	0	0	35	35	0	0	2	0	0	0	2	2			
16:15	0	0	72	10	1	1	84	86	0	0	29	2	2	1	34	37	0	0	4	1	0	0	5	5			
16:30	0	0	49	8	0	0	57	57	0	0	35	4	1	0	40	41	0	0	3	0	0	0	3	3			
16:45	0	0	58	6	0	1	65	66	0	0	33	7	0	1	41	42	0	0	3	0	0	0	3	3			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>245</b>	<b>30</b>	<b>1</b>	<b>5</b>	<b>281</b>	<b>287</b>	<b>0</b>	<b>0</b>	<b>131</b>	<b>14</b>	<b>3</b>	<b>2</b>	<b>150</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>13</b>			
17:00	0	0	80	5	2	1	88	91	1	0	28	2	1	0	32	32	0	0	3	0	0	0	3	3			
17:15	0	0	86	4	0	0	90	90	0	0	29	0	1	0	30	31	0	0	2	0	0	0	2	2			
17:30	0	0	69	4	2	3	78	83	0	0	36	1	0	0	37	37	0	0	2	0	0	0	2	2			
17:45	0	0	78	5	1	2	86	89	0	0	35	4	0	0	39	39	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>313</b>	<b>18</b>	<b>5</b>	<b>6</b>	<b>342</b>	<b>353</b>	<b>1</b>	<b>0</b>	<b>128</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>138</b>	<b>139</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>			
18:00	0	0	65	10	1	1	77	79	0	0	29	3	1	0	33	34	0	0	4	0	1	0	5	6			
18:15	0	0	74	3	0	0	77	77	0	0	24	1	0	1	26	27	0	0	2	0	0	0	2	2			
18:30	0	0	44	4	0	0	48	48	0	0	27	1	0	0	28	28	0	0	1	1	0	0	2	2			
18:45	0	0	65	4	0	0	69	69	0	0	13	0	0	0	13	13	0	0	2	0	0	0	2	2			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>248</b>	<b>21</b>	<b>1</b>	<b>1</b>	<b>271</b>	<b>273</b>	<b>0</b>	<b>0</b>	<b>93</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>100</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>12</b>			
19:00	0	0	64	3	0	2	69	71	0	0	17	2	0	1	20	21	0	0	0	0	0	0	0	0			
19:15	0	0	46	1	0	0	47	47	0	0	15	1	0	0	16	16	0	0	2	0	0	0	2	2			
19:30	0	0	53	4	0	0	57	57	0	0	17	0	0	0	17	17	0	0	5	0	0	0	5	5			
19:45	0	0	34	4	0	2	40	42	0	0	16	0	0	0	16	16	0	0	3	0	0	0	3	3			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>197</b>	<b>12</b>	<b>0</b>	<b>4</b>	<b>213</b>	<b>217</b>	<b>0</b>	<b>0</b>	<b>65</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>69</b>	<b>70</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>10</b>			
20:00	0	0	55	3	1	0	59	60	0	0	14	0	0	0	14	14	0	0	2	0	0	0	2	2			
20:15	0	0	49	0	1	1	51	53	0	0	11	0	0	0	11	11	0	0	1	0	0	0	1	1			
20:30	0	0	42	2	0	0	44	44	0	0	24	0	0	0	24	24	0	0	1	0	0	0	1	1			
20:45	0	0	42	1	0	0	43	43	0	0	9	0	0	0	9	9	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>188</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>197</b>	<b>200</b>	<b>0</b>	<b>0</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>58</b>	<b>58</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>			
21:00	0	1	29	1	1	1	33	34	0	0	10	1	0	0	11	11	0	0	0	0	0	0	0	0			
21:15	0	0	25	0	0	0	25	25	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0			
21:30	0	0	18	1	0	0	19	19	0	0	9	0	0	0	9	9	0	1	0	0	0	0	1	0			
21:45	0	0	24	0	0	0	24	24	0	0	4	1	1	0	6	7	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>96</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>101</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>29</b>	<b>30</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>			
22:00	0	0	38	3	1	0	42	43	0	0	8	0	0	0	8	8	0	0	0	0	0	0	0	0			
22:15	0	0	21	1	0	1	23	24	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
22:30	0	0	5	0	1	0	6	7	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0			
22:45	0	0	7	1	0	1	9	10	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>5</b>	<b>2</b>	<b>2</b>	<b>80</b>	<b>84</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>			
23:00	0	0	5	0	0	0	5	5	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0			
23:15	0	0	6	0	0	1	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
23:30	0	0	4	0	0	0	4	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
23:45	0	0	5	0	0	0	5	5	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>21</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>			
<b>07:00 - 19:00</b>	<b>0</b>	<b>5</b>	<b>2871</b>	<b>363</b>	<b>66</b>	<b>39</b>	<b>3344</b>	<b>3446</b>	<b>3</b>	<b>0</b>	<b>996</b>	<b>91</b>	<b>22</b>	<b>8</b>	<b>1120</b>	<b>1148</b>	<b>1</b>	<b>0</b>	<b>177</b>	<b>28</b>	<b>3</b>	<b>1</b>	<b>210</b>	<b>213</b>			
<b>06:00 - 22:00</b>	<b>0</b>	<b>6</b>	<b>3467</b>	<b>401</b>	<b>71</b>	<b>45</b>	<b>3990</b>	<b>4102</b>	<b>3</b>	<b>0</b>	<b>1152</b>	<b>98</b>	<b>24</b>	<b>9</b>	<b>1286</b>	<b>1317</b>	<b>1</b>	<b>1</b>	<b>193</b>	<b>28</b>	<b>3</b>	<b>1</b>	<b>227</b>	<b>230</b>			
<b>00:00 - 00:00</b>	<b>0</b>	<b>6</b>	<b>3627</b>	<b>415</b>	<b>79</b>	<b>48</b>	<b>4175</b>	<b>4298</b>	<b>3</b>	<b>0</b>	<b>1176</b>	<b>99</b>	<b>26</b>	<b>9</b>	<b>1313</b>	<b>1346</b>	<b>1</b>	<b>1</b>	<b>195</b>	<b>28</b>	<b>3</b>	<b>1</b>	<b>229</b>	<b>232</b>			



**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS  
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**SEPTEMBER 2022  
TRA/22/214**

SITE: 01  
LOCATION: Northern Relief Road/Cork Road

DATE: 10th September 2022  
DAY: Saturday

TIME	MOVEMENT 1							TOT	PCU	MOVEMENT 2							TOT	PCU	MOVEMENT 3							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
00:00	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1	1	1
00:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	1	1
00:45	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
01:00	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	0	0	2	0	0	0	2	2	2	2
01:30	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
02:00	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
03:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	1	3	1	0	0	5	4	0	0	0	1	0	0	1	1	1	1
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>15</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
04:00	0	0	0	0	0	0	0	0	0	0	0	5	1	5	0	11	16	0	0	1	0	0	0	1	1	1	1
04:15	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	4	5	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	4	5	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	0	4	0	2	0	6	8	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>2</b>	<b>9</b>	<b>0</b>	<b>25</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
05:00	0	0	0	0	0	0	0	0	0	0	0	5	1	2	0	8	10	0	0	0	0	1	0	1	2	2	2
05:15	0	0	0	0	0	0	0	0	0	0	0	8	2	0	0	10	10	0	0	2	0	0	0	2	2	2	2
05:30	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0	0	0	0	4	1	1	0	6	7	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>30</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>4</b>
06:00	0	0	0	0	0	0	0	0	0	0	0	6	3	0	0	9	9	0	0	1	1	0	0	2	2	2	2
06:15	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	0	0	0	0	8	1	2	0	11	13	0	0	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	0	0	0	0	15	2	0	0	17	17	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>46</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
07:00	0	0	1	0	0	0	1	1	0	0	15	0	1	0	16	17	0	0	1	1	0	0	2	2	2	2	2
07:15	0	0	5	0	0	0	5	5	0	0	13	5	0	0	18	18	0	0	0	1	0	0	1	1	1	1	1
07:30	0	0	2	0	0	0	2	2	0	0	15	3	0	0	18	18	0	0	2	0	1	0	3	4	4	4	4
07:45	0	0	2	0	0	0	2	2	0	0	11	2	3	0	16	19	0	0	1	0	0	0	1	1	1	1	1
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>10</b>	<b>4</b>	<b>0</b>	<b>68</b>	<b>72</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 1							TOT	PCU	MOVEMENT 2							TOT	PCU	MOVEMENT 3							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
08:00	0	0	1	2	0	0	3	3	0	0	11	3	1	0	15	16	0	0	2	0	0	0	2	2			
08:15	0	0	1	0	0	0	1	1	0	0	16	3	1	0	20	21	0	0	3	1	0	0	4	4			
08:30	0	0	1	0	0	0	1	1	0	0	27	1	1	0	29	30	0	0	2	0	0	0	2	2			
08:45	0	0	6	0	0	0	6	6	4	0	27	6	2	0	39	38	0	0	7	0	0	0	7	7			
<b>H/TOT</b>	0	0	9	2	0	0	11	11	4	0	81	13	5	0	103	105	0	0	14	1	0	0	15	15			
09:00	0	0	7	1	0	0	8	8	0	0	30	0	1	0	31	32	0	0	6	1	1	0	8	9			
09:15	0	0	10	0	1	0	11	12	0	0	36	2	3	0	41	44	0	0	6	2	0	0	8	8			
09:30	0	0	8	0	0	0	8	8	0	0	34	4	1	0	39	40	0	0	10	1	0	0	11	11			
09:45	0	0	9	3	0	0	12	12	0	1	32	2	3	0	38	40	0	0	19	3	0	0	22	22			
<b>H/TOT</b>	0	0	34	4	1	0	39	40	0	1	132	8	8	0	149	156	0	0	41	7	1	0	49	50			
10:00	0	0	5	0	0	0	5	5	0	0	26	4	3	0	33	36	0	0	17	1	0	0	18	18			
10:15	0	0	10	1	0	0	11	11	0	0	38	1	5	0	44	49	0	0	13	0	2	0	15	17			
10:30	0	0	12	1	1	0	14	15	0	0	44	3	1	0	48	49	0	1	22	1	0	0	24	23			
10:45	0	0	8	1	0	0	9	9	1	0	49	3	3	1	57	60	0	0	31	4	0	0	35	35			
<b>H/TOT</b>	0	0	35	3	1	0	39	40	1	0	157	11	12	1	182	194	0	1	83	6	2	0	92	93			
11:00	0	0	7	1	0	0	8	8	0	0	45	3	1	2	51	54	0	0	30	4	1	0	35	36			
11:15	0	0	10	3	0	0	13	13	0	0	70	6	2	0	78	80	0	0	27	8	1	0	36	37			
11:30	0	0	7	3	0	0	10	10	0	0	43	1	3	0	47	50	0	0	26	6	1	0	33	34			
11:45	0	0	18	0	0	0	18	18	0	0	55	6	1	0	62	63	0	0	30	2	0	0	32	32			
<b>H/TOT</b>	0	0	42	7	0	0	49	49	0	0	213	16	7	2	238	247	0	0	113	20	3	0	136	139			
12:00	0	0	14	2	0	0	16	16	0	0	71	3	3	0	77	80	0	0	35	7	0	0	42	42			
12:15	0	0	12	3	0	0	15	15	1	3	66	3	1	2	76	76	0	0	36	3	0	0	39	39			
12:30	0	0	8	0	1	0	9	10	0	0	57	2	1	0	60	61	0	0	26	1	0	0	27	27			
12:45	0	0	16	4	0	0	20	20	0	0	71	3	2	0	76	78	0	0	39	3	2	0	44	46			
<b>H/TOT</b>	0	0	50	9	1	0	60	61	1	3	265	11	7	2	289	295	0	0	136	14	2	0	152	154			
13:00	0	0	15	1	0	0	16	16	0	0	86	8	2	1	97	100	0	0	49	3	0	0	52	52			
13:15	0	0	5	2	0	0	7	7	0	0	71	5	2	1	79	82	0	0	34	3	1	0	38	39			
13:30	0	0	8	1	0	0	9	9	0	0	67	1	1	0	69	70	0	0	32	2	1	0	35	36			
13:45	0	0	8	0	0	0	8	8	0	1	64	3	2	0	70	71	0	0	23	1	0	0	24	24			
<b>H/TOT</b>	0	0	36	4	0	0	40	40	0	1	288	17	7	2	315	323	0	0	138	9	2	0	149	151			
14:00	0	0	9	1	0	0	10	10	0	0	51	0	1	0	52	53	0	0	29	3	1	0	33	34			
14:15	0	0	7	0	0	0	7	7	0	0	51	6	4	0	61	65	0	0	27	2	0	0	29	29			
14:30	0	0	3	0	0	0	3	3	0	0	37	0	3	0	40	43	0	0	21	1	0	0	22	22			
14:45	0	0	7	1	0	0	8	8	0	0	58	5	0	0	63	63	0	0	29	0	0	0	29	29			
<b>H/TOT</b>	0	0	26	2	0	0	28	28	0	0	197	11	8	0	216	224	0	0	106	6	1	0	113	114			
15:00	0	1	5	1	0	0	7	6	0	0	50	1	0	0	51	51	0	0	22	3	1	0	26	27			
15:15	0	0	7	1	0	0	8	8	0	1	48	0	0	0	49	48	0	0	17	2	0	0	19	19			
15:30	0	0	5	0	0	1	6	7	0	0	25	4	0	0	29	29	0	0	32	2	0	0	34	34			
15:45	0	0	6	1	0	0	7	7	0	0	27	2	1	0	30	31	0	0	13	2	0	0	15	15			
<b>H/TOT</b>	0	1	23	3	0	1	28	28	0	1	150	7	1	0	159	159	0	0	84	9	1	0	94	95			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 1							TOT	PCU	MOVEMENT 2							TOT	PCU	MOVEMENT 3							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
16:00	0	0	3	0	1	0	4	5	0	0	45	2	1	0	48	49	0	0	23	0	0	0	23	23			
16:15	0	0	3	0	0	0	3	3	0	0	38	1	1	0	40	41	0	0	20	2	1	0	23	24			
16:30	0	0	3	1	0	0	4	4	0	0	47	5	0	0	52	52	0	0	19	0	0	0	19	19			
16:45	0	0	5	0	0	0	5	5	1	0	37	4	1	0	43	43	0	0	21	0	0	0	21	21			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>16</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>167</b>	<b>12</b>	<b>3</b>	<b>0</b>	<b>183</b>	<b>185</b>	<b>0</b>	<b>0</b>	<b>83</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>86</b>	<b>87</b>			
17:00	0	0	4	0	0	0	4	4	0	0	31	2	0	0	33	33	0	0	15	0	0	0	15	15			
17:15	0	0	3	1	0	0	4	4	0	0	35	2	1	0	38	39	0	1	13	2	0	0	16	15			
17:30	0	0	4	1	0	0	5	5	0	0	21	4	2	1	28	31	0	0	19	1	0	0	20	20			
17:45	0	0	5	1	0	0	6	6	0	0	24	1	1	0	26	27	0	0	16	0	0	0	16	16			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>9</b>	<b>4</b>	<b>1</b>	<b>125</b>	<b>130</b>	<b>0</b>	<b>1</b>	<b>63</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>66</b>			
18:00	0	0	4	0	0	0	4	4	0	0	21	1	0	0	22	22	0	0	15	0	0	0	15	15			
18:15	0	0	4	0	0	0	4	4	0	1	17	2	0	0	20	19	0	0	10	1	0	0	11	11			
18:30	0	0	0	0	0	0	0	0	0	0	28	0	0	0	28	28	0	1	7	0	0	0	8	7			
18:45	0	0	0	0	0	0	0	0	0	0	29	0	0	0	29	29	0	0	7	0	0	0	7	7			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>95</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>99</b>	<b>98</b>	<b>0</b>	<b>1</b>	<b>39</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>40</b>			
19:00	0	0	1	0	1	0	2	3	0	0	21	1	1	0	23	24	0	0	10	0	0	0	10	10			
19:15	0	0	2	0	0	0	2	2	0	1	23	1	0	0	25	24	0	0	7	1	0	0	8	8			
19:30	0	0	1	0	0	0	1	1	0	0	20	1	0	0	21	21	0	0	6	1	0	0	7	7			
19:45	0	0	2	0	0	0	2	2	0	0	17	1	1	0	19	20	0	0	11	0	1	0	12	13			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>81</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>88</b>	<b>89</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>37</b>	<b>38</b>			
20:00	0	0	3	0	0	0	3	3	0	0	16	0	0	0	16	16	0	0	1	0	0	0	1	1			
20:15	0	0	1	0	0	0	1	1	0	0	7	2	0	0	9	9	0	0	3	0	0	0	3	3			
20:30	0	0	0	1	0	0	1	1	0	0	11	0	0	0	11	11	0	0	6	0	0	0	6	6			
20:45	0	0	1	0	0	0	1	1	0	0	9	0	0	0	9	9	0	0	2	0	0	0	2	2			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>			
21:00	0	0	2	0	0	0	2	2	0	0	11	0	0	0	11	11	0	0	0	0	0	0	0	0			
21:15	0	0	1	0	0	0	1	1	0	0	16	0	1	0	17	18	0	0	5	0	0	0	5	5			
21:30	0	0	1	0	0	0	1	1	0	0	8	0	0	0	8	8	0	0	5	0	1	0	6	7			
21:45	0	0	2	0	0	0	2	2	0	0	10	1	1	0	12	13	0	0	0	0	1	0	1	2			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>48</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>12</b>	<b>14</b>			
22:00	0	0	1	0	0	0	1	1	0	0	12	0	0	0	12	12	0	0	4	0	0	0	4	4			
22:15	0	0	1	0	0	0	1	1	0	0	9	0	0	0	9	9	0	0	3	0	0	0	3	3			
22:30	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	6	0	0	3	0	0	0	3	3			
22:45	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>11</b>			
23:00	0	0	1	0	0	0	1	1	0	0	7	0	0	0	7	7	0	0	2	0	0	0	2	2			
23:15	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	1	0	0	0	1	1			
23:30	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0			
23:45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>			
<b>07:00 - 19:00</b>	<b>0</b>	<b>1</b>	<b>303</b>	<b>38</b>	<b>4</b>	<b>1</b>	<b>347</b>	<b>351</b>	<b>7</b>	<b>7</b>	<b>1910</b>	<b>128</b>	<b>66</b>	<b>8</b>	<b>2126</b>	<b>2190</b>	<b>0</b>	<b>3</b>	<b>904</b>	<b>80</b>	<b>14</b>	<b>0</b>	<b>1001</b>	<b>1013</b>			
<b>06:00 - 22:00</b>	<b>0</b>	<b>1</b>	<b>320</b>	<b>39</b>	<b>5</b>	<b>1</b>	<b>366</b>	<b>371</b>	<b>7</b>	<b>8</b>	<b>2117</b>	<b>141</b>	<b>72</b>	<b>8</b>	<b>2353</b>	<b>2423</b>	<b>0</b>	<b>3</b>	<b>961</b>	<b>83</b>	<b>17</b>	<b>0</b>	<b>1064</b>	<b>1079</b>			
<b>00:00 - 00:00</b>	<b>0</b>	<b>1</b>	<b>323</b>	<b>39</b>	<b>5</b>	<b>1</b>	<b>369</b>	<b>374</b>	<b>7</b>	<b>9</b>	<b>2243</b>	<b>149</b>	<b>87</b>	<b>8</b>	<b>2503</b>	<b>2587</b>	<b>0</b>	<b>3</b>	<b>983</b>	<b>84</b>	<b>18</b>	<b>0</b>	<b>1088</b>	<b>1104</b>			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS  
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**SEPTEMBER 2022  
TRA/22/214**

SITE: 01  
LOCATION: Northern Relief Road/Cork Road

DATE: 10th September 2022  
DAY: Saturday

TIME	MOVEMENT 4							TOT	PCU	MOVEMENT 5							TOT	PCU	MOVEMENT 6							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
00:00	0	0	4	1	0	0	5	5	0	0	7	1	0	1	9	10	0	0	1	0	0	0	1	1			
00:15	0	0	3	0	0	0	3	3	0	0	9	0	0	0	9	9	0	0	1	0	0	0	1	1			
00:30	0	0	5	1	0	0	6	6	0	0	6	1	0	0	7	7	0	0	0	0	0	0	0	0			
00:45	0	0	8	0	2	0	10	12	0	0	7	0	0	0	7	7	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>24</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>32</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>			
01:00	0	0	2	1	0	0	3	3	0	0	6	0	0	0	6	6	0	0	1	0	0	0	1	1			
01:15	0	0	0	1	0	0	1	1	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0			
01:30	0	0	3	1	0	0	4	4	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0			
01:45	0	0	4	0	0	0	4	4	0	0	7	0	0	0	7	7	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>			
02:00	0	0	1	0	0	0	1	1	0	0	5	0	1	0	6	7	0	0	0	0	0	0	0	0			
02:15	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0			
02:30	0	0	1	1	0	0	2	2	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0			
02:45	0	0	1	0	2	0	3	5	0	0	4	0	2	0	6	8	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>18</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>			
03:00	0	0	3	1	0	0	4	4	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0			
03:15	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0			
03:30	0	0	4	1	0	0	5	5	0	0	7	1	0	0	8	8	0	0	0	0	0	0	0	0			
03:45	0	1	9	0	1	0	11	11	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>16</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>20</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>17</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>			
04:00	0	0	2	1	0	0	3	3	0	0	7	1	0	0	8	8	0	0	1	0	0	0	1	1			
04:15	0	0	5	0	1	0	6	7	0	0	4	3	1	0	8	9	0	0	3	0	0	0	3	3			
04:30	0	0	1	0	0	0	1	1	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0			
04:45	0	0	4	0	0	0	4	4	0	0	5	1	0	0	6	6	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>14</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>25</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>			
05:00	0	0	3	1	0	0	4	4	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0			
05:15	0	0	2	0	0	0	2	2	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0			
05:30	0	0	2	0	1	0	3	4	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0			
05:45	0	0	3	0	1	0	4	5	0	0	5	1	0	0	6	6	0	0	1	0	0	0	1	1			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>13</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>			
06:00	0	0	2	1	1	0	4	5	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0			
06:15	0	0	2	1	0	0	3	3	0	0	4	1	0	0	5	5	0	0	2	0	4	0	6	10			
06:30	0	0	3	1	0	0	4	4	0	0	8	0	0	0	8	8	0	0	0	0	0	0	0	0			
06:45	0	0	6	0	1	0	7	8	0	0	15	4	0	0	19	19	0	0	0	1	0	1	2	3			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>18</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>1</b>	<b>8</b>	<b>13</b>			
07:00	0	0	7	0	1	0	8	9	1	0	14	1	0	0	16	15	0	0	0	0	0	0	0	0			
07:15	0	0	8	3	0	0	11	11	0	0	8	2	0	0	10	10	0	0	1	0	4	0	5	9			
07:30	0	0	6	2	0	0	8	8	0	0	16	1	3	0	20	23	0	0	1	0	4	1	6	11			
07:45	0	0	5	1	1	0	7	8	0	0	19	3	0	0	22	22	1	0	0	0	0	1	2	2			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>34</b>	<b>36</b>	<b>1</b>	<b>0</b>	<b>57</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>68</b>	<b>70</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>13</b>	<b>22</b>			



**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 4							TOT	PCU	MOVEMENT 5							TOT	PCU	MOVEMENT 6							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
08:00	0	0	9	1	2	0	12	14	1	0	24	3	1	0	29	29	0	0	1	0	1	0	2	3			
08:15	0	0	9	2	1	0	12	13	0	0	31	3	1	1	36	38	0	0	1	0	0	0	1	1			
08:30	0	0	6	2	1	0	9	10	0	0	40	4	2	0	46	48	0	0	1	0	1	1	3	5			
08:45	0	0	19	1	1	0	21	22	0	0	58	3	2	1	64	67	0	0	1	0	3	0	4	7			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>54</b>	<b>59</b>	<b>1</b>	<b>0</b>	<b>153</b>	<b>13</b>	<b>6</b>	<b>2</b>	<b>175</b>	<b>182</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>10</b>	<b>16</b>			
09:00	0	0	14	2	2	0	18	20	0	0	56	2	0	0	58	58	0	0	1	0	1	0	2	3			
09:15	0	0	20	3	1	0	24	25	0	0	75	4	1	1	81	83	0	0	8	2	1	0	11	12			
09:30	0	0	13	4	2	0	19	21	0	0	64	4	1	0	69	70	0	0	7	0	1	0	8	9			
09:45	0	0	25	4	2	1	32	35	0	0	82	7	1	0	90	91	0	0	4	1	2	0	7	9			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>72</b>	<b>13</b>	<b>7</b>	<b>1</b>	<b>93</b>	<b>101</b>	<b>0</b>	<b>0</b>	<b>277</b>	<b>17</b>	<b>3</b>	<b>1</b>	<b>298</b>	<b>302</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>28</b>	<b>33</b>			
10:00	0	0	16	4	2	0	22	24	0	0	48	4	1	1	54	56	0	0	4	2	2	0	8	10			
10:15	0	0	15	4	3	1	23	27	0	0	77	2	0	0	79	79	0	0	2	1	1	0	4	5			
10:30	0	0	25	6	1	0	32	33	0	0	93	5	0	0	98	98	0	0	5	0	2	0	7	9			
10:45	0	0	32	5	0	0	37	37	0	0	78	7	0	0	85	85	0	0	12	1	0	0	13	13			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>88</b>	<b>19</b>	<b>6</b>	<b>1</b>	<b>114</b>	<b>121</b>	<b>0</b>	<b>0</b>	<b>296</b>	<b>18</b>	<b>1</b>	<b>1</b>	<b>316</b>	<b>318</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>32</b>	<b>37</b>			
11:00	0	0	25	2	0	0	27	27	0	0	83	3	3	1	90	94	0	0	8	1	1	0	10	11			
11:15	0	0	40	3	4	0	47	51	0	0	84	8	1	1	94	96	0	0	3	1	1	0	5	6			
11:30	0	1	33	2	2	0	38	39	0	1	101	6	1	0	109	109	0	0	6	1	2	0	9	11			
11:45	0	0	32	1	1	0	34	35	0	0	95	9	0	1	105	106	0	0	12	0	0	0	12	12			
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>130</b>	<b>8</b>	<b>7</b>	<b>0</b>	<b>146</b>	<b>152</b>	<b>0</b>	<b>1</b>	<b>363</b>	<b>26</b>	<b>5</b>	<b>3</b>	<b>398</b>	<b>405</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>36</b>	<b>40</b>			
12:00	0	0	40	0	0	1	41	42	0	0	90	10	2	1	103	106	0	0	6	0	1	0	7	8			
12:15	0	1	43	2	3	0	49	51	0	0	78	4	0	0	82	82	0	0	7	1	1	0	9	10			
12:30	0	0	40	2	2	0	44	46	1	1	87	4	2	3	98	102	0	0	11	1	1	0	13	14			
12:45	0	0	43	4	4	0	51	55	0	0	99	6	0	0	105	105	0	0	11	0	4	0	15	19			
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>166</b>	<b>8</b>	<b>9</b>	<b>1</b>	<b>185</b>	<b>194</b>	<b>1</b>	<b>1</b>	<b>354</b>	<b>24</b>	<b>4</b>	<b>4</b>	<b>388</b>	<b>395</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>2</b>	<b>7</b>	<b>0</b>	<b>44</b>	<b>51</b>			
13:00	1	0	47	5	1	0	54	54	0	0	96	3	0	1	100	101	0	0	6	2	1	0	9	10			
13:15	0	0	31	1	0	0	32	32	0	0	80	3	0	1	84	85	0	0	7	0	0	0	7	7			
13:30	0	0	31	3	1	0	35	36	1	0	88	9	2	0	100	101	0	0	5	0	1	0	6	7			
13:45	0	0	32	6	3	0	41	44	0	3	65	9	0	0	77	75	0	0	7	0	0	0	7	7			
<b>H/TOT</b>	<b>1</b>	<b>0</b>	<b>141</b>	<b>15</b>	<b>5</b>	<b>0</b>	<b>162</b>	<b>166</b>	<b>1</b>	<b>3</b>	<b>329</b>	<b>24</b>	<b>2</b>	<b>2</b>	<b>361</b>	<b>362</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>29</b>	<b>31</b>			
14:00	0	0	29	7	2	0	38	40	0	0	113	13	1	2	129	132	0	0	10	0	0	0	10	10			
14:15	0	0	34	0	0	1	35	36	0	0	88	5	2	0	95	97	0	0	10	0	0	0	10	10			
14:30	0	0	31	4	0	0	35	35	0	0	88	4	1	1	94	96	0	0	13	0	0	0	13	13			
14:45	0	0	33	2	1	0	36	37	0	0	92	3	1	0	96	97	0	0	5	1	0	0	6	6			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>127</b>	<b>13</b>	<b>3</b>	<b>1</b>	<b>144</b>	<b>148</b>	<b>0</b>	<b>0</b>	<b>381</b>	<b>25</b>	<b>5</b>	<b>3</b>	<b>414</b>	<b>422</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>39</b>			
15:00	0	0	33	1	2	0	36	38	0	0	101	5	0	2	108	110	0	0	8	0	0	0	8	8			
15:15	0	1	43	2	2	0	48	49	0	1	95	4	0	0	100	99	0	0	7	0	0	0	7	7			
15:30	0	0	32	3	0	0	35	35	0	1	77	10	1	2	91	93	0	0	9	0	1	0	10	11			
15:45	0	0	34	5	1	0	40	41	0	2	77	10	0	0	89	88	0	0	13	0	0	0	13	13			
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>142</b>	<b>11</b>	<b>5</b>	<b>0</b>	<b>159</b>	<b>163</b>	<b>0</b>	<b>4</b>	<b>350</b>	<b>29</b>	<b>1</b>	<b>4</b>	<b>388</b>	<b>391</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>38</b>	<b>39</b>			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 4							TOT	PCU	MOVEMENT 5							TOT	PCU	MOVEMENT 6							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
16:00	0	0	29	1	1	1	32	34	0	0	72	7	0	1	80	81	0	0	8	1	0	0	9	9			
16:15	0	0	30	2	2	0	34	36	0	0	66	7	0	0	73	73	0	0	7	1	0	0	8	8			
16:30	0	0	23	1	1	0	25	26	0	0	100	3	0	1	104	105	0	0	11	1	0	0	12	12			
16:45	0	0	38	5	1	0	44	45	0	0	93	6	0	1	100	101	0	0	8	0	0	0	8	8			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>120</b>	<b>9</b>	<b>5</b>	<b>1</b>	<b>135</b>	<b>141</b>	<b>0</b>	<b>0</b>	<b>331</b>	<b>23</b>	<b>0</b>	<b>3</b>	<b>357</b>	<b>360</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>37</b>			
17:00	0	0	50	2	0	0	52	52	0	0	95	3	0	2	100	102	0	0	6	0	0	0	6	6			
17:15	0	0	39	3	1	1	44	46	0	0	99	7	0	1	107	108	0	0	10	0	0	0	10	10			
17:30	0	0	25	2	0	0	27	27	0	0	94	2	0	0	96	96	0	0	7	0	0	0	7	7			
17:45	0	0	24	2	0	0	26	26	0	0	79	2	1	0	82	83	0	1	4	0	1	0	6	6			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>138</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>149</b>	<b>151</b>	<b>0</b>	<b>0</b>	<b>367</b>	<b>14</b>	<b>1</b>	<b>3</b>	<b>385</b>	<b>389</b>	<b>0</b>	<b>1</b>	<b>27</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>29</b>	<b>29</b>			
18:00	0	0	32	0	0	0	32	32	0	4	71	4	0	1	80	79	0	0	6	0	0	0	6	6			
18:15	0	0	39	0	0	0	39	39	0	0	72	3	0	2	77	79	0	0	7	0	0	0	7	7			
18:30	0	0	40	0	1	0	41	42	0	0	70	5	1	2	78	81	0	0	6	1	0	0	7	7			
18:45	0	0	35	1	0	0	36	36	0	0	71	1	0	0	72	72	0	0	8	1	0	0	9	9			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>146</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>148</b>	<b>149</b>	<b>0</b>	<b>4</b>	<b>284</b>	<b>13</b>	<b>1</b>	<b>5</b>	<b>307</b>	<b>311</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>29</b>			
19:00	0	1	24	1	0	0	26	25	0	0	72	0	0	2	74	76	0	0	6	0	0	0	6	6			
19:15	0	0	24	1	0	0	25	25	0	0	72	7	0	0	79	79	0	0	7	1	0	0	8	8			
19:30	0	0	24	3	0	0	27	27	0	0	58	6	0	0	64	64	0	0	7	0	0	0	7	7			
19:45	0	0	19	0	1	0	20	21	0	0	50	1	0	1	52	53	0	0	5	0	0	0	5	5			
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>91</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>98</b>	<b>98</b>	<b>0</b>	<b>0</b>	<b>252</b>	<b>14</b>	<b>0</b>	<b>3</b>	<b>269</b>	<b>272</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>26</b>			
20:00	0	0	17	2	0	0	19	19	0	0	55	3	1	1	60	62	0	0	4	0	0	0	4	4			
20:15	0	0	18	2	0	0	20	20	0	0	46	3	0	0	49	49	0	0	3	0	0	0	3	3			
20:30	0	0	17	0	0	0	17	17	0	0	37	2	1	0	40	41	0	0	3	0	0	1	4	5			
20:45	0	0	19	0	1	0	20	21	0	0	45	3	0	0	48	48	0	0	2	0	0	1	3	4			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>76</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>183</b>	<b>11</b>	<b>2</b>	<b>1</b>	<b>197</b>	<b>200</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>14</b>	<b>16</b>			
21:00	0	0	64	0	0	0	64	64	0	0	79	0	0	0	79	79	0	0	4	0	0	0	4	4			
21:15	0	0	25	2	0	0	27	27	0	0	77	4	0	0	81	81	0	0	6	0	0	0	6	6			
21:30	0	0	16	1	0	0	17	17	0	0	31	2	0	0	33	33	0	0	6	0	0	0	6	6			
21:45	0	0	10	1	0	0	11	11	0	0	29	0	0	1	30	31	0	0	3	1	0	0	4	4			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>115</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>119</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>216</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>223</b>	<b>224</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>20</b>			
22:00	0	0	18	1	0	0	19	19	0	0	29	2	0	0	31	31	0	0	3	0	0	0	3	3			
22:15	0	0	5	0	0	0	5	5	0	0	20	0	0	0	20	20	0	0	2	0	1	0	3	4			
22:30	0	0	9	0	0	0	9	9	0	0	16	1	1	1	19	21	0	0	1	0	1	0	2	3			
22:45	0	0	8	0	0	0	8	8	0	0	13	0	1	0	14	15	0	0	2	0	0	0	2	2			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>78</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>84</b>	<b>87</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>12</b>			
23:00	0	0	11	0	0	0	11	11	0	0	14	0	0	1	15	16	0	0	0	0	0	0	0	0			
23:15	0	0	7	1	0	0	8	8	0	0	20	0	0	1	21	22	0	0	1	0	0	0	1	1			
23:30	0	0	18	0	0	0	18	18	0	0	20	0	1	0	21	22	0	0	3	1	1	0	5	6			
23:45	0	0	4	0	0	0	4	4	0	0	7	0	0	1	8	9	0	0	0	0	0	0	0	0			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>61</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>65</b>	<b>69</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>7</b>			
<b>07:00 - 19:00</b>	<b>1</b>	<b>3</b>	<b>1339</b>	<b>118</b>	<b>56</b>	<b>6</b>	<b>1523</b>	<b>1582</b>	<b>4</b>	<b>13</b>	<b>3542</b>	<b>233</b>	<b>32</b>	<b>31</b>	<b>3855</b>	<b>3907</b>	<b>1</b>	<b>1</b>	<b>301</b>	<b>20</b>	<b>38</b>	<b>3</b>	<b>364</b>	<b>404</b>			
<b>06:00 - 22:00</b>	<b>1</b>	<b>4</b>	<b>1629</b>	<b>134</b>	<b>60</b>	<b>6</b>	<b>1834</b>	<b>1897</b>	<b>4</b>	<b>13</b>	<b>4225</b>	<b>269</b>	<b>34</b>	<b>36</b>	<b>4581</b>	<b>4640</b>	<b>1</b>	<b>1</b>	<b>359</b>	<b>23</b>	<b>42</b>	<b>6</b>	<b>432</b>	<b>479</b>			
<b>00:00 - 00:00</b>	<b>1</b>	<b>5</b>	<b>1780</b>	<b>146</b>	<b>68</b>	<b>6</b>	<b>2006</b>	<b>2076</b>	<b>4</b>	<b>13</b>	<b>4474</b>	<b>282</b>	<b>43</b>	<b>41</b>	<b>4857</b>	<b>4930</b>	<b>1</b>	<b>1</b>	<b>383</b>	<b>24</b>	<b>45</b>	<b>6</b>	<b>460</b>	<b>510</b>			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 7							PCU	MOVEMENT 8							PCU	MOVEMENT 9							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
00:00	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
00:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
00:45	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
<b>H/TOT</b>	0	0	5	0	0	0	5	5	0	0	3	0	0	0	3	3	0	0	3	0	0	0	3	3
01:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	
01:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3	0	0	6	0	0	0	6	6
02:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1
04:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	0	0	0	0	0	0	0	0	5	1	0	0	6	6	0	0	0	0	0	0	0	0
05:00	0	0	1	0	0	0	1	1	0	0	0	2	0	0	2	2	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
<b>H/TOT</b>	0	0	1	0	0	0	1	1	0	0	1	2	0	0	3	3	0	0	0	0	0	0	0	0
06:00	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
06:30	0	0	2	0	0	0	2	2	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0
06:45	0	0	1	0	0	0	1	1	0	0	3	0	1	0	4	5	0	0	3	0	0	0	3	3
<b>H/TOT</b>	0	0	4	0	0	0	4	4	0	0	6	1	1	0	8	9	0	0	3	0	0	0	3	3
07:00	0	0	1	0	0	0	1	1	0	0	3	3	0	0	6	6	0	0	1	0	1	0	2	3
07:15	0	0	1	0	1	0	2	3	1	0	2	0	0	0	3	2	0	0	1	1	0	0	2	2
07:30	0	0	3	0	0	0	3	3	0	0	8	0	0	0	8	8	0	0	1	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	4	0	0	7	1	0	0	8	8
<b>H/TOT</b>	0	0	5	0	1	0	6	7	1	0	15	3	1	0	20	20	0	0	10	2	1	0	13	14

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 7							TOT	PCU	MOVEMENT 8							TOT	PCU	MOVEMENT 9							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
08:00	0	0	2	0	0	0	2	2	0	0	0	1	0	0	1	1	0	0	7	2	0	0	9	9			
08:15	0	0	2	0	0	0	2	2	0	0	5	1	2	0	8	10	0	0	11	1	0	0	12	12			
08:30	0	0	1	1	0	0	2	2	1	0	7	0	0	0	8	7	0	0	12	4	0	0	16	16			
08:45	0	0	4	0	0	0	4	4	0	0	24	1	0	0	25	25	0	0	32	2	1	0	35	36			
<b>H/TOT</b>	0	0	9	1	0	0	10	10	1	0	36	3	2	0	42	43	0	0	62	9	1	0	72	73			
09:00	0	0	7	1	0	0	8	8	2	0	11	3	0	0	16	14	2	0	30	1	1	0	34	33			
09:15	0	0	6	0	0	0	6	6	1	0	19	1	1	0	22	22	0	0	28	1	1	0	30	31			
09:30	0	0	4	2	0	0	6	6	0	0	20	1	1	0	22	23	0	0	21	1	0	0	22	22			
09:45	0	0	6	0	0	0	6	6	0	0	22	2	0	0	24	24	0	0	23	0	0	0	23	23			
<b>H/TOT</b>	0	0	23	3	0	0	26	26	3	0	72	7	2	0	84	84	2	0	102	3	2	0	109	109			
10:00	2	0	5	0	1	0	8	7	0	0	27	2	2	0	31	33	0	0	26	4	0	0	30	30			
10:15	0	0	6	0	0	0	6	6	0	0	23	4	0	0	27	27	0	0	38	5	1	0	44	45			
10:30	0	0	13	1	1	0	15	16	1	0	38	3	0	0	42	41	1	0	34	1	0	1	37	37			
10:45	0	0	8	1	1	1	11	13	0	0	37	0	0	0	37	37	0	0	36	6	0	0	42	42			
<b>H/TOT</b>	2	0	32	2	3	1	40	42	1	0	125	9	2	0	137	138	1	0	134	16	1	1	153	154			
11:00	0	0	9	2	0	0	11	11	0	0	40	2	1	0	43	44	0	0	37	2	0	0	39	39			
11:15	0	0	5	0	0	0	5	5	1	0	30	4	0	0	35	34	0	0	30	1	0	0	31	31			
11:30	0	0	6	3	1	0	10	11	0	0	33	5	1	0	39	40	0	0	26	4	0	0	30	30			
11:45	1	0	4	2	0	0	7	6	0	0	34	2	1	1	38	40	0	1	23	0	1	1	26	27			
<b>H/TOT</b>	1	0	24	7	1	0	33	33	1	0	137	13	3	1	155	158	0	1	116	7	1	1	126	127			
12:00	3	0	8	0	1	0	12	11	0	0	42	4	1	0	47	48	0	0	38	2	0	0	40	40			
12:15	0	0	6	0	0	0	6	6	0	0	33	1	0	0	34	34	0	0	32	2	0	0	34	34			
12:30	0	0	8	0	0	0	8	8	0	0	43	3	2	0	48	50	0	0	25	1	0	0	26	26			
12:45	0	0	8	1	0	0	9	9	1	0	29	2	1	0	33	33	0	0	19	3	0	0	22	22			
<b>H/TOT</b>	3	0	30	1	1	0	35	34	1	0	147	10	4	0	162	165	0	0	114	8	0	0	122	122			
13:00	1	0	12	2	0	0	15	14	0	0	40	3	0	0	43	43	0	0	35	4	0	0	39	39			
13:15	1	0	8	0	0	0	9	8	0	0	28	2	2	0	32	34	0	0	23	3	1	0	27	28			
13:30	0	0	5	0	2	0	7	9	0	0	16	1	1	0	18	19	0	0	21	1	1	0	23	24			
13:45	0	1	6	3	0	0	10	9	0	0	23	5	1	0	29	30	0	0	21	2	0	0	23	23			
<b>H/TOT</b>	2	1	31	5	2	0	41	41	0	0	107	11	4	0	122	126	0	0	100	10	2	0	112	114			
14:00	1	0	8	0	0	0	9	8	0	0	23	1	1	0	25	26	0	0	24	3	0	0	27	27			
14:15	0	0	10	0	1	0	11	12	0	0	22	0	0	1	23	24	0	0	26	1	0	0	27	27			
14:30	0	0	4	0	0	0	4	4	0	0	23	0	0	0	23	23	0	1	22	3	0	0	26	25			
14:45	0	0	4	0	0	0	4	4	0	0	12	0	1	0	13	14	0	0	21	0	0	0	21	21			
<b>H/TOT</b>	1	0	26	0	1	0	28	28	0	0	80	1	2	1	84	87	0	1	93	7	0	0	101	100			
15:00	0	0	9	0	1	0	10	11	0	0	21	3	3	0	27	30	0	0	30	1	0	0	31	31			
15:15	0	0	7	0	0	0	7	7	0	1	11	1	1	0	14	14	0	0	21	0	0	0	21	21			
15:30	0	0	4	0	0	0	4	4	0	0	22	1	1	0	24	25	0	0	26	1	0	0	27	27			
15:45	0	0	12	0	1	0	13	14	0	0	15	1	1	0	17	18	0	0	18	0	0	0	18	18			
<b>H/TOT</b>	0	0	32	0	2	0	34	36	0	1	69	6	6	0	82	87	0	0	95	2	0	0	97	97			



**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 7							TOT	PCU	MOVEMENT 8							TOT	PCU	MOVEMENT 9							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
16:00	0	0	6	0	1	0	7	8	0	0	20	2	0	0	22	22	0	0	19	1	0	1	21	22			
16:15	0	0	2	1	0	0	3	3	0	0	13	2	0	0	15	15	0	0	23	0	0	0	23	23			
16:30	0	0	7	0	0	0	7	7	1	0	11	0	2	0	14	15	0	0	20	2	0	0	22	22			
16:45	0	0	9	1	0	0	10	10	0	0	15	2	0	0	17	17	0	0	15	0	0	0	15	15			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>27</b>	<b>28</b>	<b>1</b>	<b>0</b>	<b>59</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>68</b>	<b>69</b>	<b>0</b>	<b>0</b>	<b>77</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>81</b>	<b>82</b>			
17:00	0	0	3	0	0	0	3	3	0	0	15	1	0	0	16	16	0	0	18	1	0	0	19	19			
17:15	0	0	4	0	0	0	4	4	0	1	13	1	0	0	15	14	0	0	18	1	1	0	20	21			
17:30	0	0	8	0	0	0	8	8	0	0	18	1	0	0	19	19	0	0	23	1	0	0	24	24			
17:45	0	0	7	1	0	0	8	8	0	1	9	2	0	0	12	11	0	0	24	3	0	0	27	27			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>23</b>	<b>0</b>	<b>2</b>	<b>55</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>61</b>	<b>0</b>	<b>0</b>	<b>83</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>90</b>	<b>91</b>			
18:00	0	0	4	0	0	0	4	4	0	0	10	0	0	0	10	10	1	0	17	0	0	1	19	19			
18:15	0	0	7	0	0	0	7	7	0	0	14	2	0	0	16	16	4	0	12	1	0	0	17	14			
18:30	0	0	6	0	0	0	6	6	0	0	18	0	0	0	18	18	0	0	11	0	0	0	11	11			
18:45	0	0	5	0	0	0	5	5	1	0	9	0	0	0	10	9	0	1	20	2	0	0	23	22			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>22</b>	<b>1</b>	<b>0</b>	<b>51</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>53</b>	<b>5</b>	<b>1</b>	<b>60</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>70</b>	<b>66</b>			
19:00	0	0	5	0	0	0	5	5	0	0	6	1	1	0	8	9	0	0	16	0	0	0	16	16			
19:15	0	0	4	0	0	0	4	4	0	0	4	1	0	0	5	5	0	0	17	0	0	0	17	17			
19:30	0	0	3	0	0	0	3	3	0	0	6	1	0	0	7	7	0	0	10	2	1	0	13	14			
19:45	0	0	2	1	0	0	3	3	0	0	4	1	0	0	5	5	0	1	11	2	1	0	15	15			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>25</b>	<b>26</b>	<b>0</b>	<b>1</b>	<b>54</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>61</b>	<b>62</b>			
20:00	0	0	4	0	0	0	4	4	0	0	6	0	0	0	6	6	0	0	12	1	0	0	13	13			
20:15	0	0	1	0	0	0	1	1	0	0	7	0	0	0	7	7	0	0	11	0	0	0	11	11			
20:30	0	0	3	0	0	1	4	5	0	1	6	0	1	0	8	8	0	0	11	1	0	0	12	12			
20:45	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	4	0	0	6	0	0	0	6	6			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>22</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>25</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>42</b>			
21:00	0	0	1	1	0	0	2	2	0	0	4	0	1	0	5	6	0	0	16	0	2	0	18	20			
21:15	0	0	0	0	0	0	0	0	0	0	4	0	1	0	5	6	0	0	7	0	1	0	8	9			
21:30	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	0	0	6	0	0	0	6	6			
21:45	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4	0	0	5	0	0	0	5	5			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>18</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>37</b>	<b>40</b>			
22:00	0	0	1	0	0	0	1	1	0	0	1	0	0	1	2	3	0	0	5	0	0	0	5	5			
22:15	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3			
22:30	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	5	0	0	4	0	0	0	4	4			
22:45	0	0	1	0	0	0	1	1	0	0	2	0	1	0	3	4	0	0	2	0	0	0	2	2			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>10</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>			
23:00	0	0	3	0	0	0	3	3	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0			
23:15	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2			
23:30	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0			
23:45	0	0	1	0	0	0	1	1	0	0	2	0	0	0	2	2	0	0	3	0	0	0	3	3			
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>			
<b>07:00 - 19:00</b>	<b>9</b>	<b>1</b>	<b>280</b>	<b>22</b>	<b>12</b>	<b>1</b>	<b>325</b>	<b>330</b>	<b>10</b>	<b>3</b>	<b>953</b>	<b>76</b>	<b>28</b>	<b>2</b>	<b>1072</b>	<b>1092</b>	<b>8</b>	<b>3</b>	<b>1046</b>	<b>76</b>	<b>9</b>	<b>4</b>	<b>1146</b>	<b>1151</b>			
<b>06:00 - 22:00</b>	<b>9</b>	<b>1</b>	<b>307</b>	<b>24</b>	<b>12</b>	<b>2</b>	<b>355</b>	<b>361</b>	<b>10</b>	<b>4</b>	<b>1017</b>	<b>82</b>	<b>33</b>	<b>2</b>	<b>1148</b>	<b>1173</b>	<b>8</b>	<b>4</b>	<b>1177</b>	<b>82</b>	<b>14</b>	<b>4</b>	<b>1289</b>	<b>1298</b>			
<b>00:00 - 00:00</b>	<b>9</b>	<b>1</b>	<b>325</b>	<b>24</b>	<b>12</b>	<b>2</b>	<b>373</b>	<b>379</b>	<b>10</b>	<b>4</b>	<b>1041</b>	<b>87</b>	<b>37</b>	<b>3</b>	<b>1182</b>	<b>1212</b>	<b>8</b>	<b>4</b>	<b>1204</b>	<b>82</b>	<b>15</b>	<b>4</b>	<b>1317</b>	<b>1327</b>			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS  
MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**SEPTEMBER 2022  
TRA/22/214**

SITE: 01  
LOCATION: Northern Relief Road/Cork Road

DATE: 10th September 2022  
DAY: Saturday

TIME	MOVEMENT 10							PCU	MOVEMENT 11							PCU	MOVEMENT 12							PCU
	PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT		PCL	MCL	CAR	LGV	HGV	BUS	TOT	
00:00	0	0	5	0	1	0	6	7	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
00:15	0	0	8	0	1	0	9	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	6	0	0	0	6	6	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
00:45	0	0	6	1	0	0	7	7	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>28</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
01:00	0	0	8	0	0	0	8	8	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
01:15	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
02:00	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	4	0	0	1	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>11</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
03:00	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
03:30	0	0	1	0	2	0	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
04:00	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	1	1	1	0	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	5	1	1	0	7	8	0	0	2	0	1	0	3	4	0	0	0	0	0	0	0	0
04:45	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>16</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
05:00	0	0	5	0	0	0	5	5	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1
05:15	0	0	2	1	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	5	2	1	0	8	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	0	6	0	1	0	7	8	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>18</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>23</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	
06:00	0	0	4	0	0	0	4	4	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
06:15	0	0	6	2	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	0	14	3	0	0	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	0	0	10	3	0	0	13	13	0	0	2	0	0	0	2	2	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
07:00	0	0	11	1	0	0	12	12	0	0	3	0	0	0	3	3	0	0	1	0	0	0	1	1
07:15	0	0	13	2	1	0	16	17	0	0	2	1	0	0	3	3	0	0	1	0	0	0	1	1
07:30	0	0	16	2	2	0	20	22	0	0	1	1	0	0	2	2	0	0	0	0	0	0	0	0
07:45	0	0	14	3	1	0	18	19	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>66</b>	<b>70</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 10							TOT	PCU	MOVEMENT 11							TOT	PCU	MOVEMENT 12							TOT	PCU
	PCL	MCL	CAR	LGV	HGV	BUS	PCL			MCL	CAR	LGV	HGV	BUS	PCL	MCL			CAR	LGV	HGV	BUS					
08:00	0	0	14	9	0	1	24	25	0	0	6	0	0	0	6	6	0	0	0	0	0	0	0	0	0		
08:15	0	0	25	1	0	0	26	26	0	0	4	1	0	0	5	5	0	0	2	1	0	0	3	3			
08:30	0	0	21	7	2	2	32	36	0	0	4	3	0	0	7	7	0	0	0	0	0	0	0	0			
08:45	0	0	32	6	0	0	38	38	0	0	6	0	1	0	7	8	0	0	2	0	0	0	2	2			
<b>H/TOT</b>	0	0	92	23	2	3	120	125	0	0	20	4	1	0	25	26	0	0	4	1	0	0	5	5			
09:00	0	0	41	6	2	0	49	51	0	0	7	2	1	0	10	11	2	0	4	0	0	0	6	4			
09:15	0	0	54	8	3	1	66	70	0	0	12	0	0	0	12	12	0	0	5	0	0	0	5	5			
09:30	0	0	38	4	1	0	43	44	0	0	13	3	0	0	16	16	0	0	1	1	0	0	2	2			
09:45	0	0	40	8	0	0	48	48	0	0	43	6	1	0	50	51	0	0	5	0	0	0	5	5			
<b>H/TOT</b>	0	0	173	26	6	1	206	213	0	0	75	11	2	0	88	90	2	0	15	1	0	0	18	16			
10:00	0	0	53	4	1	0	58	59	0	0	36	2	0	0	38	38	0	0	4	0	0	0	4	4			
10:15	0	0	62	3	1	0	66	67	0	0	28	1	1	0	30	31	0	0	7	0	0	0	7	7			
10:30	0	0	71	5	1	1	78	80	0	0	31	4	0	0	35	35	0	0	0	0	0	0	0	0			
10:45	0	0	71	6	0	0	77	77	0	0	29	3	0	0	32	32	0	0	3	1	0	0	4	4			
<b>H/TOT</b>	0	0	257	18	3	1	279	283	0	0	124	10	1	0	135	136	0	0	14	1	0	0	15	15			
11:00	0	1	73	6	1	0	81	81	0	0	44	1	0	0	45	45	0	0	6	0	0	0	6	6			
11:15	0	0	79	7	0	0	86	86	0	0	38	3	0	0	41	41	0	0	2	0	0	0	2	2			
11:30	0	0	93	3	1	1	98	100	0	0	31	3	0	0	34	34	0	0	5	0	0	0	5	5			
11:45	0	1	88	5	0	0	94	93	0	0	34	2	0	0	36	36	0	0	3	0	0	0	3	3			
<b>H/TOT</b>	0	2	333	21	2	1	359	361	0	0	147	9	0	0	156	156	0	0	16	0	0	0	16	16			
12:00	0	0	67	5	0	0	72	72	0	0	26	2	0	0	28	28	0	0	3	0	0	0	3	3			
12:15	0	2	79	3	0	0	84	83	0	0	34	2	0	0	36	36	0	0	4	1	0	0	5	5			
12:30	0	0	98	3	3	1	105	109	0	0	35	1	0	0	36	36	0	0	5	1	0	0	6	6			
12:45	0	0	80	7	0	0	87	87	0	0	35	3	1	0	39	40	0	0	5	0	0	0	5	5			
<b>H/TOT</b>	0	2	324	18	3	1	348	351	0	0	130	8	1	0	139	140	0	0	17	2	0	0	19	19			
13:00	0	0	63	4	1	1	69	71	0	0	35	1	0	0	36	36	0	0	3	0	0	0	3	3			
13:15	0	1	95	4	1	2	103	105	0	0	47	1	0	0	48	48	0	0	0	0	0	0	0	0			
13:30	1	0	98	4	0	0	103	102	0	0	23	2	0	0	25	25	0	0	2	0	0	0	2	2			
13:45	0	0	71	9	0	0	80	80	0	0	31	1	0	1	33	34	0	0	2	0	0	0	2	2			
<b>H/TOT</b>	1	1	327	21	2	3	355	359	0	0	136	5	0	1	142	143	0	0	7	0	0	0	7	7			
14:00	0	0	104	7	0	1	112	113	0	0	39	3	0	0	42	42	0	0	2	0	0	0	2	2			
14:15	0	1	76	9	1	0	87	87	0	0	29	2	0	0	31	31	0	0	1	0	0	0	1	1			
14:30	0	2	98	6	0	0	106	105	0	0	37	1	0	0	38	38	0	0	4	0	0	0	4	4			
14:45	0	1	61	11	0	1	74	74	0	0	40	4	0	0	44	44	0	0	5	0	0	0	5	5			
<b>H/TOT</b>	0	4	339	33	1	2	379	380	0	0	145	10	0	0	155	155	0	0	12	0	0	0	12	12			
15:00	0	0	84	4	1	0	89	90	0	1	32	0	0	0	33	32	0	0	1	0	0	0	1	1			
15:15	0	0	86	7	1	0	94	95	0	0	31	1	2	0	34	36	0	0	3	0	0	0	3	3			
15:30	0	0	69	1	1	1	72	74	1	0	21	0	0	0	22	21	0	0	4	0	0	0	4	4			
15:45	0	0	87	2	0	0	89	89	0	0	26	0	1	1	28	30	0	0	4	0	0	0	4	4			
<b>H/TOT</b>	0	0	326	14	3	1	344	348	1	1	110	1	3	1	117	120	0	0	12	0	0	0	12	12			

**TRAFFINOMICS LIMITED**

**MIDDLETON NRR TRAFFIC COUNTS**

**SEPTEMBER 2022**

**MANUAL CLASSIFIED JUNCTION TURNING COUNTS**

**TRA/22/214**

SITE: 01

DATE: 10th September 2022

LOCATION: Northern Relief Road/Cork Road

DAY: Saturday

TIME	MOVEMENT 10								MOVEMENT 11								MOVEMENT 12							
	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU	PCL	MCL	CAR	LGV	HGV	BUS	TOT	PCU
16:00	0	0	89	8	1	0	98	99	0	0	38	2	0	0	40	40	0	0	4	0	0	0	4	4
16:15	0	0	77	6	1	1	85	87	0	1	22	2	0	0	25	24	0	0	0	0	0	0	0	0
16:30	0	0	60	2	1	0	63	64	0	0	24	0	1	0	25	26	0	0	2	0	0	0	2	2
16:45	0	0	79	5	2	1	87	90	0	0	26	0	0	0	26	26	0	0	3	0	0	0	3	3
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>305</b>	<b>21</b>	<b>5</b>	<b>2</b>	<b>333</b>	<b>340</b>	<b>0</b>	<b>1</b>	<b>110</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>116</b>	<b>116</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>9</b>
17:00	1	0	61	1	0	1	64	64	0	0	22	0	0	0	22	22	0	0	1	1	0	0	2	2
17:15	0	1	88	5	0	1	95	95	0	0	28	3	0	0	31	31	0	0	3	0	0	0	3	3
17:30	0	2	70	2	0	1	75	75	0	0	21	1	0	1	23	24	0	0	1	0	0	0	1	1
17:45	0	1	62	3	0	1	67	67	0	0	31	1	0	0	32	32	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>1</b>	<b>4</b>	<b>281</b>	<b>11</b>	<b>0</b>	<b>4</b>	<b>301</b>	<b>302</b>	<b>0</b>	<b>0</b>	<b>102</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>108</b>	<b>109</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>
18:00	0	0	73	1	0	1	75	76	0	0	29	1	0	0	30	30	0	0	0	0	0	0	0	0
18:15	0	0	56	2	0	0	58	58	0	0	17	1	0	0	18	18	0	0	4	0	0	0	4	4
18:30	0	1	42	2	0	0	45	44	0	0	11	0	0	0	11	11	0	0	0	1	0	0	1	1
18:45	0	0	54	4	0	0	58	58	0	0	12	0	0	0	12	12	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>225</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>236</b>	<b>236</b>	<b>0</b>	<b>0</b>	<b>69</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>71</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>5</b>
19:00	0	0	46	0	0	2	48	50	0	0	14	0	0	0	14	14	0	0	0	0	1	0	1	2
19:15	0	0	37	2	0	0	39	39	0	1	15	0	0	0	16	15	0	0	0	0	0	0	0	0
19:30	0	0	56	1	0	0	57	57	0	0	11	0	1	0	12	13	0	0	1	0	0	0	1	1
19:45	0	0	36	3	1	0	40	41	0	0	7	0	0	0	7	7	0	0	2	0	0	0	2	2
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>175</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>184</b>	<b>187</b>	<b>0</b>	<b>1</b>	<b>47</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>49</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>
20:00	0	0	34	2	1	0	37	38	0	0	6	1	0	0	7	7	0	0	0	0	0	0	0	0
20:15	0	0	32	0	0	0	32	32	0	0	5	0	0	0	5	5	0	0	1	0	0	0	1	1
20:30	0	0	29	1	0	0	30	30	0	0	20	1	0	0	21	21	0	0	1	1	0	0	2	2
20:45	0	1	33	1	0	0	35	34	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>1</b>	<b>128</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>134</b>	<b>134</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>37</b>	<b>37</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>
21:00	0	0	54	1	1	1	57	59	0	0	9	0	0	0	9	9	0	0	1	0	0	0	1	1
21:15	0	0	25	0	0	0	25	25	0	0	7	0	0	0	7	7	0	0	0	0	0	0	0	0
21:30	0	0	38	0	0	0	38	38	0	0	6	0	0	1	7	8	0	0	0	0	0	0	0	0
21:45	0	0	17	0	0	0	17	17	0	0	6	0	0	0	6	6	0	1	0	0	0	0	1	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>134</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>137</b>	<b>139</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>29</b>	<b>30</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>
22:00	0	0	35	1	1	0	37	38	0	0	4	0	0	0	4	4	0	0	0	0	0	0	0	0
22:15	0	0	25	1	0	1	27	28	0	0	6	0	0	0	6	6	0	0	1	0	0	0	1	1
22:30	0	0	15	0	0	0	15	15	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0
22:45	0	0	14	1	0	0	15	15	0	0	2	0	0	0	2	2	0	0	1	0	0	0	1	1
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>89</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>94</b>	<b>96</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>
23:00	0	0	6	0	0	1	7	8	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0
23:15	0	0	5	0	0	0	5	5	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
23:30	0	0	7	0	1	0	8	9	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0
23:45	0	0	10	0	0	1	11	12	0	0	3	0	0	0	3	3	0	0	0	0	0	0	0	0
<b>H/TOT</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>31</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>07:00 - 19:00</b>	<b>2</b>	<b>14</b>	<b>3036</b>	<b>223</b>	<b>31</b>	<b>20</b>	<b>3326</b>	<b>3367</b>	<b>1</b>	<b>2</b>	<b>1180</b>	<b>71</b>	<b>9</b>	<b>3</b>	<b>1266</b>	<b>1276</b>	<b>2</b>	<b>0</b>	<b>117</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>126</b>	<b>124</b>
<b>06:00 - 22:00</b>	<b>2</b>	<b>15</b>	<b>3507</b>	<b>242</b>	<b>34</b>	<b>23</b>	<b>3823</b>	<b>3869</b>	<b>1</b>	<b>3</b>	<b>1294</b>	<b>73</b>	<b>10</b>	<b>4</b>	<b>1385</b>	<b>1396</b>	<b>2</b>	<b>1</b>	<b>123</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>135</b>	<b>134</b>
<b>00:00 - 00:00</b>	<b>2</b>	<b>15</b>	<b>3717</b>	<b>251</b>	<b>44</b>	<b>27</b>	<b>4056</b>	<b>4116</b>	<b>1</b>	<b>3</b>	<b>1326</b>	<b>73</b>	<b>11</b>	<b>4</b>	<b>1418</b>	<b>1430</b>	<b>2</b>	<b>1</b>	<b>126</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>139</b>	<b>138</b>



## 17 APPENDIX E - TRICS

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Calculation Reference: AUDIT-761701-211202-1210

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : K - MIXED PRIV HOUS (FLATS AND HOUSES)  
 TOTAL VEHICLES

Selected regions and areas:

13	MUNSTER	
	CR CORK	2 days
	TI TIPPERARY	1 days
14	LEINSTER	
	KK KILKENNY	2 days

*This section displays the number of survey days per TRICS® sub-region in the selected set*

Primary Filtering selection:

*This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.*

Parameter: No of Dwellings  
 Actual Range: 27 to 116 (units: )  
 Range Selected by User: 27 to 140 (units: )

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 23/09/20

*This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.*

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	1 days
Friday	2 days

*This data displays the number of selected surveys by day of the week.*

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

*This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.*

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	3

*This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.*

Selected Location Sub Categories:

Residential Zone	5
------------------	---

*This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.*

Secondary Filtering selection:

Use Class:

C3 5 days

*This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.*

Population within 500m Range:

All Surveys Included

Population within 1 mile:

5,001 to 10,000 3 days  
10,001 to 15,000 2 days

*This data displays the number of selected surveys within stated 1-mile radii of population.*

Population within 5 miles:

5,001 to 25,000 1 days  
25,001 to 50,000 2 days  
100,001 to 125,000 1 days  
125,001 to 250,000 1 days

*This data displays the number of selected surveys within stated 5-mile radii of population.*

Car ownership within 5 miles:

0.6 to 1.0 1 days  
1.1 to 1.5 4 days

*This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.*

Travel Plan:

No 5 days

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

No PTAL Present 5 days

*This data displays the number of selected surveys with PTAL Ratings.*

Covid-19 Restrictions Yes At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions





TRIP RATE for Land Use 03 - RESIDENTIAL/K - MIXED PRIV HOUS (FLATS AND HOUSES)

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	57	0.042	5	57	0.230	5	57	0.272
08:00 - 09:00	5	57	0.120	5	57	0.551	5	57	0.671
09:00 - 10:00	5	57	0.166	5	57	0.205	5	57	0.371
10:00 - 11:00	5	57	0.166	5	57	0.152	5	57	0.318
11:00 - 12:00	5	57	0.134	5	57	0.184	5	57	0.318
12:00 - 13:00	5	57	0.194	5	57	0.177	5	57	0.371
13:00 - 14:00	5	57	0.247	5	57	0.219	5	57	0.466
14:00 - 15:00	5	57	0.194	5	57	0.237	5	57	0.431
15:00 - 16:00	5	57	0.265	5	57	0.163	5	57	0.428
16:00 - 17:00	5	57	0.233	5	57	0.237	5	57	0.470
17:00 - 18:00	5	57	0.396	5	57	0.177	5	57	0.573
18:00 - 19:00	5	57	0.276	5	57	0.177	5	57	0.453
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			2.433			2.709			5.142

*This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.*

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP\*FACT. Trip rates are then rounded to 3 decimal places.*

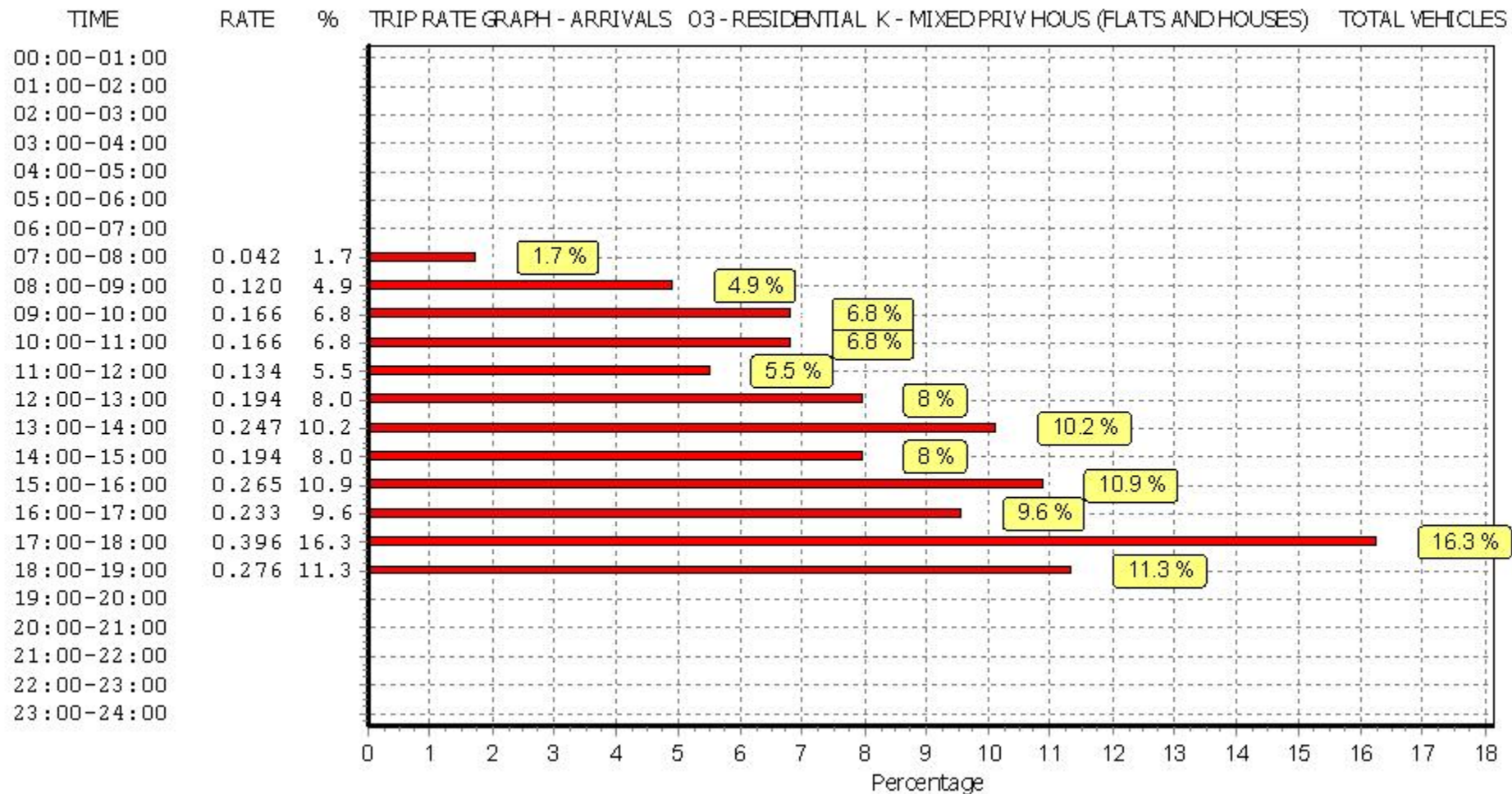
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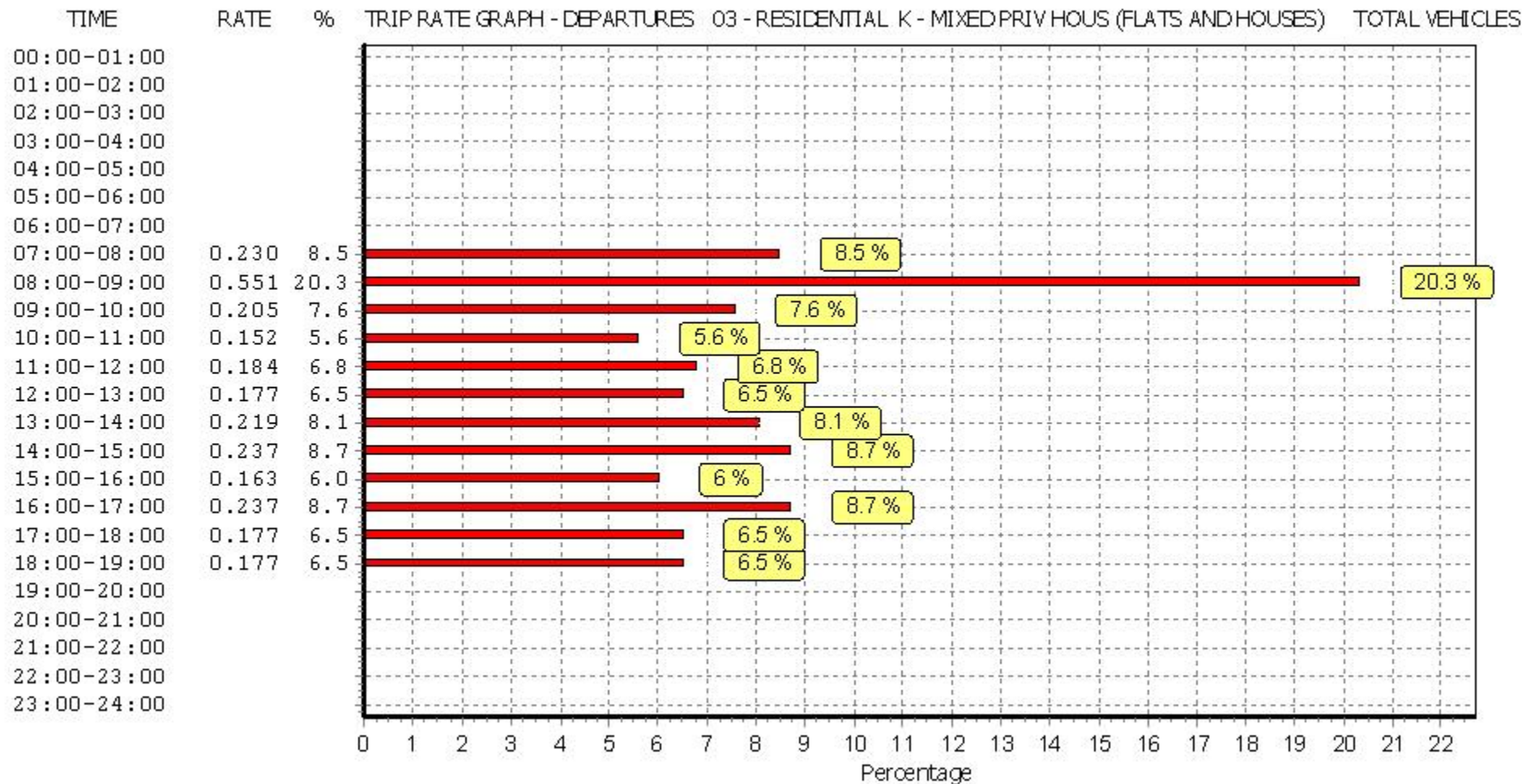
Parameter summary

Trip rate parameter range selected: 27 - 116 (units: )  
 Survey date range: 01/01/13 - 23/09/20  
 Number of weekdays (Monday-Friday): 5  
 Number of Saturdays: 0  
 Number of Sundays: 0  
 Surveys automatically removed from selection: 0  
 Surveys manually removed from selection: 0

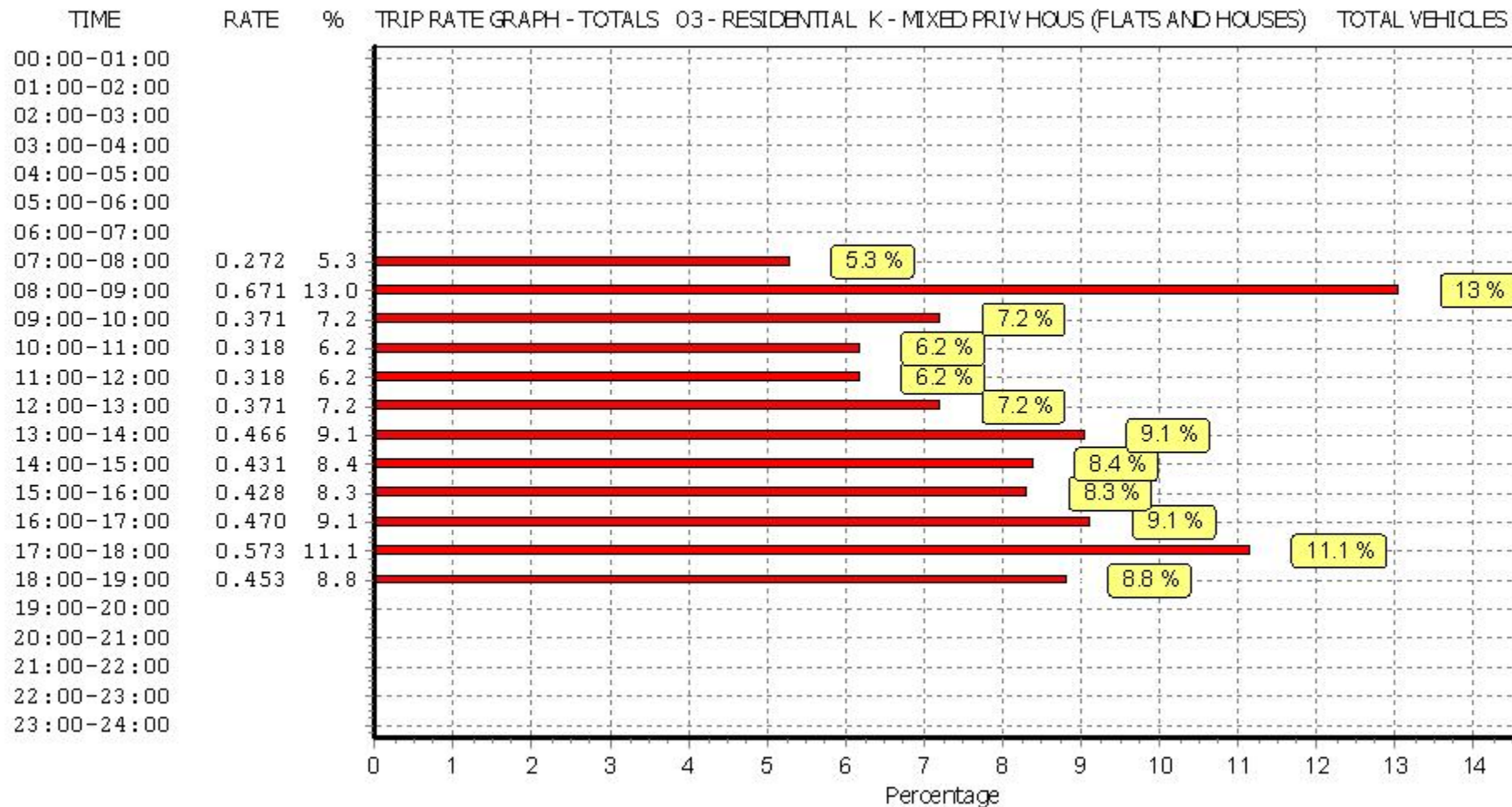
*This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.*



*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.*



*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.*



*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.*

## **18 APPENDIX F - JUNCTION MODELLING RESULTS**

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<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

**Filename:** J1- MNRR Roundabout Rev B (56% Reduction Factor).j9  
**Path:** N:\TIA\21154 Water Rock Middleton - Clancy\01. Planning\05. Word\DOC01 TTA\Traffic Data\05. Traffic Models\J1  
**Report generation date:** 07/10/2022 15:44:06

- »2022, AM
- »2022, PM
- »2024 without devt., AM
- »2024 with devt., AM
- »2029 without devt., AM
- »2029 with Phase 1, AM
- »2024 without devt., PM
- »2024 with devt., PM
- »2029 without devt., PM
- »2029 with Phase 1, PM

**Summary of junction performance**

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
<b>2022</b>										
Arm 1	D1	0.6	3.43	0.37	A	D2	0.3	2.94	0.24	A
Arm 2		0.3	2.65	0.23	A		0.5	3.02	0.33	A
Arm 3		0.0	2.55	0.02	A		0.1	2.97	0.08	A
<b>2024 without devt.</b>										
Arm 1	D3	0.7	3.47	0.37	A	D9	0.4	2.97	0.25	A
Arm 2		0.3	2.67	0.24	A		0.5	3.06	0.33	A
Arm 3		0.0	2.56	0.02	A		0.1	3.00	0.08	A
<b>2024 with devt.</b>										
Arm 1	D4	0.7	3.67	0.39	A	D10	0.4	3.07	0.27	A
Arm 2		0.3	2.71	0.24	A		0.6	3.23	0.36	A
Arm 3		0.1	2.76	0.09	A		0.1	3.09	0.11	A
<b>2029 without devt.</b>										
Arm 1	D5	0.7	3.61	0.40	A	D11	0.4	3.03	0.26	A
Arm 2		0.4	2.72	0.25	A		0.6	3.16	0.35	A
Arm 3		0.0	2.59	0.02	A		0.1	3.07	0.09	A
<b>2029 with Phase 1</b>										
Arm 1	D6	1.0	4.65	0.49	A	D12	0.6	3.44	0.34	A
Arm 2		0.4	2.95	0.28	A		0.9	3.91	0.46	A
Arm 3		0.4	3.47	0.27	A		0.3	3.45	0.19	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

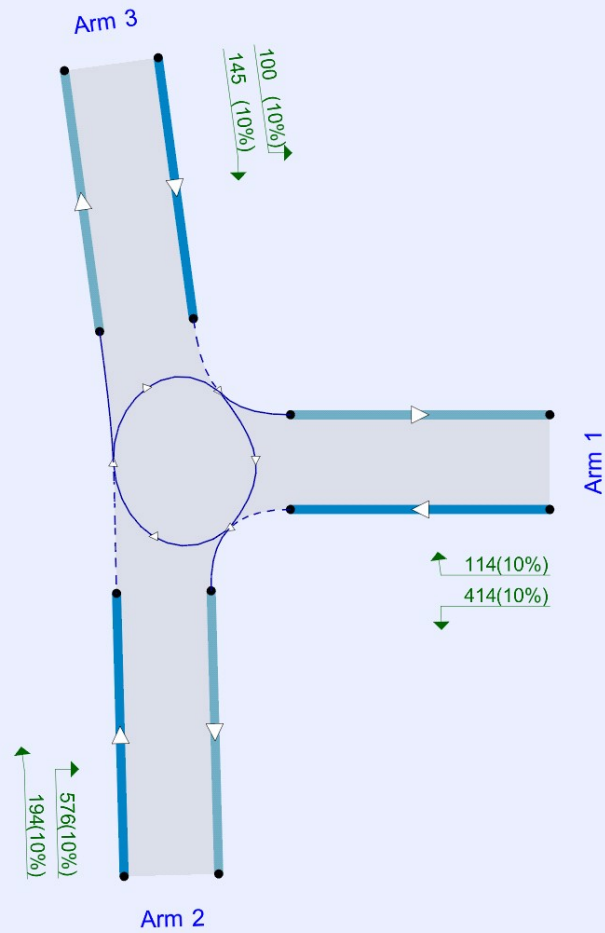
## File summary

### File Description

<b>Title</b>	Water Rock Residential Development
<b>Location</b>	MNRR Roundabout
<b>Site number</b>	
<b>Date</b>	06/12/2021
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	211154TT
<b>Enumerator</b>	COB
<b>Description</b>	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



Flows show original traffic demand (PCU/hr).

The junction diagram reflects the last run of Junctions.

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2022	AM	ONE HOUR	08:00	09:30	15
D2	2022	PM	ONE HOUR	16:30	18:00	15
D3	2024 without devt.	AM	ONE HOUR	08:00	09:30	15
D4	2024 with devt.	AM	ONE HOUR	08:00	09:30	15
D5	2029 without devt.	AM	ONE HOUR	08:00	09:30	15
D6	2029 with Phase 1	AM	ONE HOUR	08:00	09:30	15
D9	2024 without devt.	PM	ONE HOUR	16:30	18:00	15
D10	2024 with devt.	PM	ONE HOUR	16:30	18:00	15
D11	2029 without devt.	PM	ONE HOUR	16:30	18:00	15
D12	2029 with Phase 1	PM	ONE HOUR	16:30	18:00	15

### Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

# 2022, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.10	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	MNRR East	
2	MNRR South	
3	Proposed Service Corridor Link Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.25	9.60	28.0	18.0	36.0	65.0	
2	3.50	9.50	24.0	30.0	36.0	52.0	
3	3.50	9.50	20.0	20.0	36.0	53.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.638	1833
2	0.681	1946
3	0.652	1829

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2022	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	604	100.000
2		✓	405	100.000
3		✓	30	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	595	9
	2	339	0	66
	3	11	19	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	3.43	0.6	A
2	0.23	2.65	0.3	A
3	0.02	2.55	0.0	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	455	14	1824	0.249	453	0.4	2.886	A
2	305	7	1942	0.157	304	0.2	2.417	A
3	23	255	1664	0.014	23	0.0	2.412	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	543	17	1822	0.298	543	0.5	3.094	A
2	364	8	1941	0.188	364	0.3	2.511	A
3	27	305	1631	0.017	27	0.0	2.468	A



**08:30 - 08:45**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	665	21	1820	0.365	664	0.6	3.425	A
2	446	10	1939	0.230	446	0.3	2.650	A
3	33	373	1586	0.021	33	0.0	2.548	A

**08:45 - 09:00**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	665	21	1820	0.365	665	0.6	3.428	A
2	446	10	1939	0.230	446	0.3	2.650	A
3	33	373	1586	0.021	33	0.0	2.549	A

**09:00 - 09:15**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	543	17	1822	0.298	544	0.5	3.097	A
2	364	8	1941	0.188	364	0.3	2.514	A
3	27	305	1631	0.017	27	0.0	2.468	A

**09:15 - 09:30**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	455	14	1824	0.249	455	0.4	2.895	A
2	305	7	1942	0.157	305	0.2	2.421	A
3	23	255	1663	0.014	23	0.0	2.415	A

# 2022, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	2.99	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2022	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	389	100.000
2		✓	574	100.000
3		✓	107	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	382	7
	2	531	0	43
	3	23	84	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.24	2.94	0.3	A
2	0.33	3.02	0.5	A
3	0.08	2.97	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	293	63	1793	0.163	292	0.2	2.637	A
2	432	5	1943	0.222	431	0.3	2.617	A
3	81	399	1570	0.051	80	0.1	2.658	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	350	75	1785	0.196	349	0.3	2.758	A
2	516	6	1942	0.266	516	0.4	2.776	A
3	96	477	1519	0.063	96	0.1	2.783	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	428	92	1774	0.241	428	0.3	2.941	A
2	632	8	1941	0.326	631	0.5	3.022	A
3	118	584	1449	0.081	118	0.1	2.974	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	428	92	1774	0.241	428	0.3	2.941	A
2	632	8	1941	0.326	632	0.5	3.024	A
3	118	585	1448	0.081	118	0.1	2.975	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	350	76	1785	0.196	350	0.3	2.761	A
2	516	6	1942	0.266	517	0.4	2.778	A
3	96	478	1518	0.063	96	0.1	2.784	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	293	63	1793	0.163	293	0.2	2.640	A
2	432	5	1943	0.222	432	0.3	2.622	A
3	81	400	1569	0.051	81	0.1	2.662	A

# 2024 without devt., AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.13	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2024 without devt.	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	618	100.000
2		✓	415	100.000
3		✓	30	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	609	9
	2	347	0	68
	3	11	19	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	3.47	0.7	A
2	0.24	2.67	0.3	A
3	0.02	2.56	0.0	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	14	1824	0.255	464	0.4	2.908	A
2	312	7	1942	0.161	312	0.2	2.428	A
3	23	261	1660	0.014	23	0.0	2.418	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	17	1822	0.305	555	0.5	3.125	A
2	373	8	1941	0.192	373	0.3	2.525	A
3	27	312	1626	0.017	27	0.0	2.475	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	680	21	1820	0.374	680	0.7	3.471	A
2	457	10	1939	0.236	457	0.3	2.670	A
3	33	382	1581	0.021	33	0.0	2.558	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	680	21	1820	0.374	680	0.7	3.474	A
2	457	10	1939	0.236	457	0.3	2.670	A
3	33	382	1580	0.021	33	0.0	2.558	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	17	1822	0.305	556	0.5	3.131	A
2	373	8	1941	0.192	373	0.3	2.526	A
3	27	312	1626	0.017	27	0.0	2.476	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	14	1824	0.255	466	0.4	2.915	A
2	312	7	1942	0.161	313	0.2	2.432	A
3	23	261	1659	0.014	23	0.0	2.419	A



# 2024 with devt., AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.23	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2024 with devt.	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	632	100.000
2		✓	423	100.000
3		✓	132	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	609	23
	2	347	0	76
	3	48	84	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.39	3.67	0.7	A
2	0.24	2.71	0.3	A
3	0.09	2.76	0.1	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	476	63	1793	0.265	474	0.4	2.998	A
2	318	17	1934	0.165	318	0.2	2.448	A
3	99	261	1660	0.060	99	0.1	2.537	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	568	75	1785	0.318	568	0.5	3.253	A
2	380	21	1932	0.197	380	0.3	2.551	A
3	119	312	1626	0.073	119	0.1	2.626	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	696	92	1774	0.392	695	0.7	3.668	A
2	466	25	1929	0.241	465	0.3	2.705	A
3	145	382	1581	0.092	145	0.1	2.758	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	696	92	1774	0.392	696	0.7	3.671	A
2	466	25	1929	0.241	466	0.3	2.705	A
3	145	382	1580	0.092	145	0.1	2.758	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	568	76	1785	0.318	569	0.5	3.257	A
2	380	21	1932	0.197	381	0.3	2.552	A
3	119	312	1626	0.073	119	0.1	2.629	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	476	63	1793	0.265	476	0.4	3.010	A
2	318	17	1934	0.165	319	0.2	2.450	A
3	99	261	1659	0.060	99	0.1	2.538	A

# 2029 without devt., AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.23	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2029 without devt.	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	655	100.000
2		✓	440	100.000
3		✓	33	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	645	10
	2	368	0	72
	3	12	21	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.40	3.61	0.7	A
2	0.25	2.72	0.4	A
3	0.02	2.59	0.0	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	493	16	1823	0.270	491	0.4	2.969	A
2	331	8	1941	0.171	330	0.2	2.457	A
3	25	276	1649	0.015	25	0.0	2.437	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	589	19	1821	0.323	588	0.5	3.212	A
2	396	9	1940	0.204	395	0.3	2.563	A
3	30	331	1614	0.018	30	0.0	2.499	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	721	23	1819	0.397	720	0.7	3.604	A
2	484	11	1939	0.250	484	0.4	2.722	A
3	36	405	1566	0.023	36	0.0	2.589	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	721	23	1819	0.397	721	0.7	3.607	A
2	484	11	1939	0.250	484	0.4	2.722	A
3	36	405	1565	0.023	36	0.0	2.589	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	589	19	1821	0.323	590	0.5	3.219	A
2	396	9	1940	0.204	396	0.3	2.566	A
3	30	331	1614	0.018	30	0.0	2.501	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	493	16	1823	0.270	494	0.4	2.981	A
2	331	8	1941	0.171	331	0.2	2.460	A
3	25	277	1649	0.015	25	0.0	2.440	A

# 2029 with Phase 1, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.85	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2029 with Phase 1	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	736	100.000
2		✓	486	100.000
3		✓	385	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	645	91
	2	368	0	118
	3	140	245	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.49	4.65	1.0	A
2	0.28	2.95	0.4	A
3	0.27	3.47	0.4	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	554	184	1716	0.323	552	0.5	3.396	A
2	366	68	1900	0.193	365	0.3	2.579	A
3	290	276	1649	0.176	289	0.2	2.909	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	662	220	1693	0.391	661	0.7	3.835	A
2	437	82	1891	0.231	437	0.3	2.723	A
3	346	331	1614	0.214	346	0.3	3.122	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	810	269	1661	0.488	809	1.0	4.638	A
2	535	100	1878	0.285	535	0.4	2.948	A
3	424	405	1566	0.271	423	0.4	3.467	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	810	270	1661	0.488	810	1.0	4.653	A
2	535	100	1878	0.285	535	0.4	2.948	A
3	424	405	1565	0.271	424	0.4	3.468	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	662	221	1693	0.391	663	0.7	3.852	A
2	437	82	1890	0.231	437	0.3	2.725	A
3	346	331	1614	0.214	347	0.3	3.128	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	554	185	1715	0.323	555	0.5	3.413	A
2	366	69	1899	0.193	366	0.3	2.584	A
3	290	277	1649	0.176	290	0.2	2.916	A



# 2024 without devt., PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.02	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2024 without devt.	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	398	100.000
2		✓	587	100.000
3		✓	110	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	391	7
	2	543	0	44
	3	24	86	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.25	2.97	0.4	A
2	0.33	3.06	0.5	A
3	0.08	3.00	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	300	65	1792	0.167	299	0.2	2.650	A
2	442	5	1943	0.227	441	0.3	2.634	A
3	83	408	1564	0.053	83	0.1	2.673	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	358	77	1784	0.201	358	0.3	2.776	A
2	528	6	1942	0.272	527	0.4	2.799	A
3	99	488	1511	0.065	99	0.1	2.802	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	438	95	1773	0.247	438	0.4	2.966	A
2	646	8	1941	0.333	646	0.5	3.055	A
3	121	597	1440	0.084	121	0.1	3.001	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	438	95	1773	0.247	438	0.4	2.966	A
2	646	8	1941	0.333	646	0.5	3.058	A
3	121	598	1440	0.084	121	0.1	3.002	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	358	77	1784	0.201	358	0.3	2.779	A
2	528	6	1942	0.272	528	0.4	2.801	A
3	99	489	1511	0.065	99	0.1	2.804	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	300	65	1792	0.167	300	0.2	2.653	A
2	442	5	1943	0.227	442	0.3	2.641	A
3	83	409	1563	0.053	83	0.1	2.677	A

# 2024 with devt., PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.16	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2024 with devt.	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	429	100.000
2		✓	630	100.000
3		✓	143	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	391	38
	2	543	0	87
	3	43	100	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.27	3.07	0.4	A
2	0.36	3.23	0.6	A
3	0.11	3.09	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	323	75	1785	0.181	322	0.2	2.705	A
2	474	29	1927	0.246	473	0.4	2.721	A
3	108	408	1564	0.069	107	0.1	2.718	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	386	90	1776	0.217	385	0.3	2.847	A
2	566	34	1923	0.295	566	0.5	2.918	A
3	129	488	1512	0.085	128	0.1	2.862	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	110	1763	0.268	472	0.4	3.067	A
2	694	42	1918	0.362	693	0.6	3.231	A
3	157	597	1440	0.109	157	0.1	3.086	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	110	1763	0.268	472	0.4	3.067	A
2	694	42	1918	0.362	694	0.6	3.234	A
3	157	598	1440	0.109	157	0.1	3.087	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	386	90	1776	0.217	386	0.3	2.849	A
2	566	34	1923	0.295	567	0.5	2.921	A
3	129	489	1511	0.085	129	0.1	2.866	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	323	75	1785	0.181	323	0.2	2.708	A
2	474	29	1927	0.246	475	0.4	2.729	A
3	108	409	1563	0.069	108	0.1	2.723	A

# 2029 without devt., PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.10	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	2029 without devt.	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	422	100.000
2		✓	623	100.000
3		✓	116	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	414	8
	2	576	0	47
	3	25	91	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.26	3.03	0.4	A
2	0.35	3.16	0.6	A
3	0.09	3.07	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	318	68	1790	0.178	317	0.2	2.687	A
2	469	6	1942	0.242	468	0.3	2.683	A
3	87	432	1548	0.056	87	0.1	2.711	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	379	82	1781	0.213	379	0.3	2.824	A
2	560	7	1941	0.289	560	0.4	2.866	A
3	104	517	1492	0.070	104	0.1	2.852	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	100	1769	0.263	464	0.4	3.034	A
2	686	9	1940	0.354	685	0.6	3.154	A
3	128	634	1416	0.090	128	0.1	3.072	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	100	1769	0.263	465	0.4	3.034	A
2	686	9	1940	0.354	686	0.6	3.156	A
3	128	634	1416	0.090	128	0.1	3.072	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	379	82	1781	0.213	380	0.3	2.826	A
2	560	7	1941	0.289	561	0.4	2.868	A
3	104	518	1492	0.070	104	0.1	2.856	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	318	69	1790	0.178	318	0.2	2.692	A
2	469	6	1942	0.242	469	0.4	2.689	A
3	87	434	1547	0.056	87	0.1	2.713	A



# 2029 with Phase 1, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.68	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	2029 with Phase 1	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	528	100.000
2		✓	770	100.000
3		✓	245	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	414	114
	2	576	0	194
	3	100	145	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.34	3.44	0.6	A
2	0.46	3.91	0.9	A
3	0.19	3.45	0.3	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	398	109	1764	0.225	396	0.3	2.893	A
2	580	86	1888	0.307	578	0.5	3.019	A
3	184	432	1548	0.119	184	0.1	2.901	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	130	1750	0.271	474	0.4	3.103	A
2	692	102	1876	0.369	692	0.6	3.340	A
3	220	517	1492	0.148	220	0.2	3.112	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	581	159	1732	0.336	581	0.6	3.439	A
2	848	125	1861	0.456	847	0.9	3.901	A
3	270	633	1417	0.190	269	0.3	3.451	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	581	160	1731	0.336	581	0.6	3.442	A
2	848	126	1861	0.456	848	0.9	3.909	A
3	270	634	1416	0.190	270	0.3	3.453	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	131	1750	0.271	475	0.4	3.107	A
2	692	103	1876	0.369	693	0.6	3.352	A
3	220	519	1491	0.148	221	0.2	3.118	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	398	109	1764	0.225	398	0.3	2.902	A
2	580	86	1888	0.307	580	0.5	3.029	A
3	184	434	1546	0.119	185	0.1	2.907	A

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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**Filename:** J1- MNRR Roundabout Rev B.j9  
**Path:** N:\TIA\21154 Water Rock Middleton - Clancy\01. Planning\05. Word\DOC01 TTA\Traffic Data\05. Traffic Models\J1  
**Report generation date:** 29/09/2022 12:07:25

- »2022, AM
- »2022, PM
- »2024 without devt., AM
- »2024 with devt., AM
- »2029 without devt., AM
- »2029 with Phase 1, AM
- »2024 without devt., PM
- »2024 with devt., PM
- »2029 without devt., PM
- »2029 with Phase 1, PM

**Summary of junction performance**

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
<b>2022</b>										
Arm 1	D1	0.6	3.43	0.37	A	D2	0.3	2.94	0.24	A
Arm 2		0.3	2.65	0.23	A		0.5	3.02	0.33	A
Arm 3		0.0	2.55	0.02	A		0.1	2.97	0.08	A
<b>2024 without devt.</b>										
Arm 1	D3	0.7	3.47	0.37	A	D9	0.4	2.97	0.25	A
Arm 2		0.3	2.67	0.24	A		0.5	3.06	0.33	A
Arm 3		0.0	2.56	0.02	A		0.1	3.00	0.08	A
<b>2024 with devt.</b>										
Arm 1	D4	0.7	3.76	0.40	A	D10	0.4	3.11	0.28	A
Arm 2		0.4	2.72	0.24	A		0.7	3.31	0.37	A
Arm 3		0.2	2.85	0.12	A		0.1	3.12	0.12	A
<b>2029 without devt.</b>										
Arm 1	D5	0.7	3.61	0.40	A	D11	0.4	3.03	0.26	A
Arm 2		0.4	2.72	0.25	A		0.6	3.16	0.35	A
Arm 3		0.0	2.59	0.02	A		0.1	3.07	0.09	A
<b>2029 with Phase 1</b>										
Arm 1	D6	1.2	5.31	0.53	A	D12	0.6	3.65	0.37	A
Arm 2		0.5	3.05	0.30	A		1.1	4.36	0.50	A
Arm 3		0.7	4.06	0.38	A		0.3	3.65	0.23	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

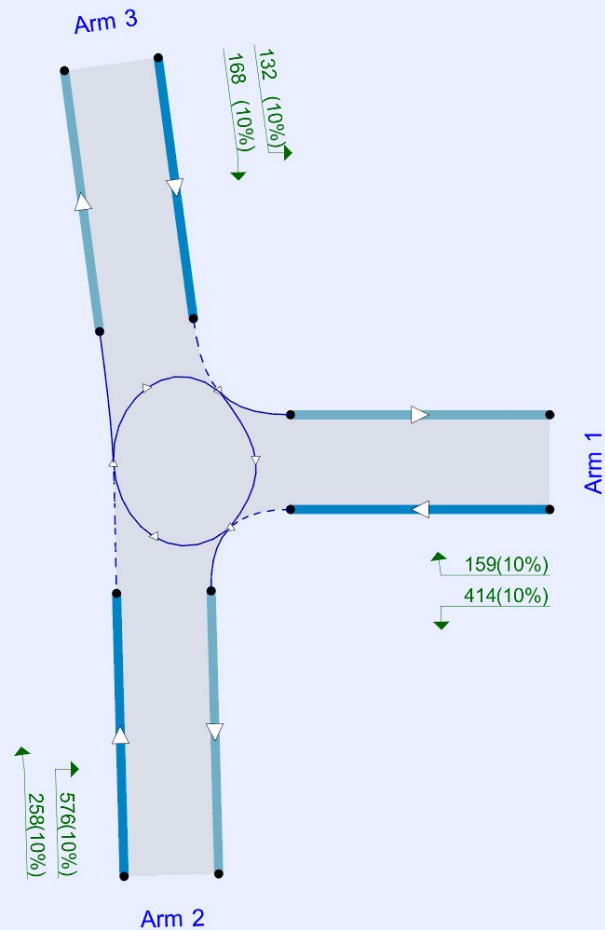
## File summary

### File Description

<b>Title</b>	Water Rock Residential Development
<b>Location</b>	MNRR Roundabout
<b>Site number</b>	
<b>Date</b>	06/12/2021
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	211154TT
<b>Enumerator</b>	COB
<b>Description</b>	

## Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin



Flows show original traffic demand (PCU/hr).

The junction diagram reflects the last run of Junctions.

### Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2022	AM	ONE HOUR	08:00	09:30	15
D2	2022	PM	ONE HOUR	16:30	18:00	15
D3	2024 without devt.	AM	ONE HOUR	08:00	09:30	15
D4	2024 with devt.	AM	ONE HOUR	08:00	09:30	15
D5	2029 without devt.	AM	ONE HOUR	08:00	09:30	15
D6	2029 with Phase 1	AM	ONE HOUR	08:00	09:30	15
D9	2024 without devt.	PM	ONE HOUR	16:30	18:00	15
D10	2024 with devt.	PM	ONE HOUR	16:30	18:00	15
D11	2029 without devt.	PM	ONE HOUR	16:30	18:00	15
D12	2029 with Phase 1	PM	ONE HOUR	16:30	18:00	15

### Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

# 2022, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.10	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	MNRR East	
2	MNRR South	
3	Proposed Service Corridor Link Road	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.25	9.60	28.0	18.0	36.0	65.0	
2	3.50	9.50	24.0	30.0	36.0	52.0	
3	3.50	9.50	20.0	20.0	36.0	53.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.638	1833
2	0.681	1946
3	0.652	1829

The slope and intercept shown above include any corrections and adjustments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2022	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00



### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	604	100.000
2		✓	405	100.000
3		✓	30	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	595	9
	2	339	0	66
	3	11	19	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	3.43	0.6	A
2	0.23	2.65	0.3	A
3	0.02	2.55	0.0	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	455	14	1824	0.249	453	0.4	2.886	A
2	305	7	1942	0.157	304	0.2	2.417	A
3	23	255	1664	0.014	23	0.0	2.412	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	543	17	1822	0.298	543	0.5	3.094	A
2	364	8	1941	0.188	364	0.3	2.511	A
3	27	305	1631	0.017	27	0.0	2.468	A

**08:30 - 08:45**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	665	21	1820	0.365	664	0.6	3.425	A
2	446	10	1939	0.230	446	0.3	2.650	A
3	33	373	1586	0.021	33	0.0	2.548	A

**08:45 - 09:00**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	665	21	1820	0.365	665	0.6	3.428	A
2	446	10	1939	0.230	446	0.3	2.650	A
3	33	373	1586	0.021	33	0.0	2.549	A

**09:00 - 09:15**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	543	17	1822	0.298	544	0.5	3.097	A
2	364	8	1941	0.188	364	0.3	2.514	A
3	27	305	1631	0.017	27	0.0	2.468	A

**09:15 - 09:30**

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	455	14	1824	0.249	455	0.4	2.895	A
2	305	7	1942	0.157	305	0.2	2.421	A
3	23	255	1663	0.014	23	0.0	2.415	A

# 2022, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	2.99	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2022	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	389	100.000
2		✓	574	100.000
3		✓	107	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	382	7
	2	531	0	43
	3	23	84	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.24	2.94	0.3	A
2	0.33	3.02	0.5	A
3	0.08	2.97	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	293	63	1793	0.163	292	0.2	2.637	A
2	432	5	1943	0.222	431	0.3	2.617	A
3	81	399	1570	0.051	80	0.1	2.658	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	350	75	1785	0.196	349	0.3	2.758	A
2	516	6	1942	0.266	516	0.4	2.776	A
3	96	477	1519	0.063	96	0.1	2.783	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	428	92	1774	0.241	428	0.3	2.941	A
2	632	8	1941	0.326	631	0.5	3.022	A
3	118	584	1449	0.081	118	0.1	2.974	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	428	92	1774	0.241	428	0.3	2.941	A
2	632	8	1941	0.326	632	0.5	3.024	A
3	118	585	1448	0.081	118	0.1	2.975	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	350	76	1785	0.196	350	0.3	2.761	A
2	516	6	1942	0.266	517	0.4	2.778	A
3	96	478	1518	0.063	96	0.1	2.784	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	293	63	1793	0.163	293	0.2	2.640	A
2	432	5	1943	0.222	432	0.3	2.622	A
3	81	400	1569	0.051	81	0.1	2.662	A

# 2024 without devt., AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.13	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2024 without devt.	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	618	100.000
2		✓	415	100.000
3		✓	30	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	609	9
	2	347	0	68
	3	11	19	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	3.47	0.7	A
2	0.24	2.67	0.3	A
3	0.02	2.56	0.0	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	14	1824	0.255	464	0.4	2.908	A
2	312	7	1942	0.161	312	0.2	2.428	A
3	23	261	1660	0.014	23	0.0	2.418	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	17	1822	0.305	555	0.5	3.125	A
2	373	8	1941	0.192	373	0.3	2.525	A
3	27	312	1626	0.017	27	0.0	2.475	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	680	21	1820	0.374	680	0.7	3.471	A
2	457	10	1939	0.236	457	0.3	2.670	A
3	33	382	1581	0.021	33	0.0	2.558	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	680	21	1820	0.374	680	0.7	3.474	A
2	457	10	1939	0.236	457	0.3	2.670	A
3	33	382	1580	0.021	33	0.0	2.558	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	556	17	1822	0.305	556	0.5	3.131	A
2	373	8	1941	0.192	373	0.3	2.526	A
3	27	312	1626	0.017	27	0.0	2.476	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	14	1824	0.255	466	0.4	2.915	A
2	312	7	1942	0.161	313	0.2	2.432	A
3	23	261	1659	0.014	23	0.0	2.419	A



# 2024 with devt., AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.28	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2024 with devt.	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	638	100.000
2		✓	426	100.000
3		✓	176	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	609	29
	2	347	0	79
	3	64	112	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.40	3.76	0.7	A
2	0.24	2.72	0.4	A
3	0.12	2.85	0.2	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	480	84	1780	0.270	479	0.4	3.039	A
2	321	22	1931	0.166	320	0.2	2.456	A
3	133	261	1660	0.080	132	0.1	2.592	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	101	1769	0.324	573	0.5	3.309	A
2	383	26	1928	0.199	383	0.3	2.561	A
3	158	312	1626	0.097	158	0.1	2.697	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	702	123	1755	0.400	702	0.7	3.755	A
2	469	32	1924	0.244	469	0.4	2.720	A
3	194	382	1581	0.123	194	0.2	2.854	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	702	123	1755	0.400	702	0.7	3.762	A
2	469	32	1924	0.244	469	0.4	2.720	A
3	194	382	1580	0.123	194	0.2	2.855	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	101	1769	0.324	574	0.5	3.316	A
2	383	26	1928	0.199	383	0.3	2.564	A
3	158	312	1626	0.097	158	0.1	2.700	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	480	84	1779	0.270	481	0.4	3.052	A
2	321	22	1931	0.166	321	0.2	2.460	A
3	133	261	1659	0.080	133	0.1	2.593	A

# 2029 without devt., AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.23	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2029 without devt.	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	655	100.000
2		✓	440	100.000
3		✓	33	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	645	10
	2	368	0	72
	3	12	21	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.40	3.61	0.7	A
2	0.25	2.72	0.4	A
3	0.02	2.59	0.0	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	493	16	1823	0.270	491	0.4	2.969	A
2	331	8	1941	0.171	330	0.2	2.457	A
3	25	276	1649	0.015	25	0.0	2.437	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	589	19	1821	0.323	588	0.5	3.212	A
2	396	9	1940	0.204	395	0.3	2.563	A
3	30	331	1614	0.018	30	0.0	2.499	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	721	23	1819	0.397	720	0.7	3.604	A
2	484	11	1939	0.250	484	0.4	2.722	A
3	36	405	1566	0.023	36	0.0	2.589	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	721	23	1819	0.397	721	0.7	3.607	A
2	484	11	1939	0.250	484	0.4	2.722	A
3	36	405	1565	0.023	36	0.0	2.589	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	589	19	1821	0.323	590	0.5	3.219	A
2	396	9	1940	0.204	396	0.3	2.566	A
3	30	331	1614	0.018	30	0.0	2.501	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	493	16	1823	0.270	494	0.4	2.981	A
2	331	8	1941	0.171	331	0.2	2.460	A
3	25	277	1649	0.015	25	0.0	2.440	A

# 2029 with Phase 1, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	4.31	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2029 with Phase 1	AM	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	770	100.000
2		✓	505	100.000
3		✓	537	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	645	125
	2	368	0	137
	3	195	342	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.53	5.31	1.2	A
2	0.30	3.05	0.5	A
3	0.38	4.06	0.7	A

### Main Results for each time segment

#### 08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	580	257	1670	0.347	577	0.6	3.618	A
2	380	94	1882	0.202	379	0.3	2.633	A
3	404	276	1649	0.245	403	0.4	3.174	A

#### 08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	692	307	1637	0.423	691	0.8	4.183	A
2	454	112	1870	0.243	454	0.4	2.796	A
3	483	331	1614	0.299	482	0.5	3.497	A

#### 08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	848	376	1593	0.532	846	1.2	5.286	A
2	556	137	1853	0.300	556	0.5	3.053	A
3	591	405	1566	0.378	590	0.7	4.057	A

#### 08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	848	377	1593	0.532	848	1.2	5.313	A
2	556	138	1852	0.300	556	0.5	3.053	A
3	591	405	1565	0.378	591	0.7	4.064	A

#### 09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	692	308	1637	0.423	694	0.8	4.207	A
2	454	113	1869	0.243	454	0.4	2.801	A
3	483	331	1614	0.299	484	0.5	3.508	A

#### 09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	580	258	1669	0.347	581	0.6	3.643	A
2	380	94	1882	0.202	380	0.3	2.639	A
3	404	277	1649	0.245	405	0.4	3.183	A

# 2024 without devt., PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.02	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2024 without devt.	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	398	100.000
2		✓	587	100.000
3		✓	110	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	391	7
	2	543	0	44
	3	24	86	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10



## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.25	2.97	0.4	A
2	0.33	3.06	0.5	A
3	0.08	3.00	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	300	65	1792	0.167	299	0.2	2.650	A
2	442	5	1943	0.227	441	0.3	2.634	A
3	83	408	1564	0.053	83	0.1	2.673	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	358	77	1784	0.201	358	0.3	2.776	A
2	528	6	1942	0.272	527	0.4	2.799	A
3	99	488	1511	0.065	99	0.1	2.802	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	438	95	1773	0.247	438	0.4	2.966	A
2	646	8	1941	0.333	646	0.5	3.055	A
3	121	597	1440	0.084	121	0.1	3.001	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	438	95	1773	0.247	438	0.4	2.966	A
2	646	8	1941	0.333	646	0.5	3.058	A
3	121	598	1440	0.084	121	0.1	3.002	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	358	77	1784	0.201	358	0.3	2.779	A
2	528	6	1942	0.272	528	0.4	2.801	A
3	99	489	1511	0.065	99	0.1	2.804	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	300	65	1792	0.167	300	0.2	2.653	A
2	442	5	1943	0.227	442	0.3	2.641	A
3	83	409	1563	0.053	83	0.1	2.677	A

# 2024 with devt., PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.22	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2024 with devt.	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	442	100.000
2		✓	648	100.000
3		✓	157	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	391	51
	2	543	0	105
	3	51	106	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.28	3.11	0.4	A
2	0.37	3.31	0.7	A
3	0.12	3.12	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	333	80	1783	0.187	332	0.3	2.728	A
2	488	38	1920	0.254	486	0.4	2.759	A
3	118	408	1564	0.076	118	0.1	2.738	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	397	95	1773	0.224	397	0.3	2.879	A
2	583	46	1915	0.304	582	0.5	2.971	A
3	141	488	1512	0.093	141	0.1	2.889	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	487	117	1759	0.277	486	0.4	3.111	A
2	713	56	1908	0.374	713	0.7	3.311	A
3	173	597	1440	0.120	173	0.1	3.124	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	487	117	1759	0.277	487	0.4	3.112	A
2	713	56	1908	0.374	713	0.7	3.314	A
3	173	598	1440	0.120	173	0.1	3.124	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	397	95	1772	0.224	398	0.3	2.880	A
2	583	46	1915	0.304	583	0.5	2.976	A
3	141	489	1511	0.093	141	0.1	2.893	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	333	80	1782	0.187	333	0.3	2.732	A
2	488	38	1920	0.254	488	0.4	2.768	A
3	118	409	1563	0.076	118	0.1	2.741	A

# 2029 without devt., PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.10	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	2029 without devt.	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	422	100.000
2		✓	623	100.000
3		✓	116	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	414	8
	2	576	0	47
	3	25	91	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.26	3.03	0.4	A
2	0.35	3.16	0.6	A
3	0.09	3.07	0.1	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	318	68	1790	0.178	317	0.2	2.687	A
2	469	6	1942	0.242	468	0.3	2.683	A
3	87	432	1548	0.056	87	0.1	2.711	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	379	82	1781	0.213	379	0.3	2.824	A
2	560	7	1941	0.289	560	0.4	2.866	A
3	104	517	1492	0.070	104	0.1	2.852	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	100	1769	0.263	464	0.4	3.034	A
2	686	9	1940	0.354	685	0.6	3.154	A
3	128	634	1416	0.090	128	0.1	3.072	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	465	100	1769	0.263	465	0.4	3.034	A
2	686	9	1940	0.354	686	0.6	3.156	A
3	128	634	1416	0.090	128	0.1	3.072	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	379	82	1781	0.213	380	0.3	2.826	A
2	560	7	1941	0.289	561	0.4	2.868	A
3	104	518	1492	0.070	104	0.1	2.856	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	318	69	1790	0.178	318	0.2	2.692	A
2	469	6	1942	0.242	469	0.4	2.689	A
3	87	434	1547	0.056	87	0.1	2.713	A

# 2029 with Phase 1, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	MNRR Roundabout	Standard Roundabout		1, 2, 3	3.99	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	2029 with Phase 1	PM	ONE HOUR	16:30	18:00	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	573	100.000
2		✓	834	100.000
3		✓	300	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		1	2	3
From	1	0	414	159
	2	576	0	258
	3	132	168	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	3.65	0.6	A
2	0.50	4.36	1.1	A
3	0.23	3.65	0.3	A

### Main Results for each time segment

#### 16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	431	126	1753	0.246	430	0.4	2.991	A
2	628	119	1865	0.337	626	0.6	3.190	A
3	226	432	1548	0.146	225	0.2	2.992	A

#### 16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	515	151	1737	0.297	515	0.5	3.240	A
2	750	143	1849	0.406	749	0.7	3.599	A
3	270	517	1492	0.181	269	0.2	3.238	A

#### 17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	631	185	1715	0.368	630	0.6	3.647	A
2	918	175	1827	0.503	917	1.1	4.343	A
3	330	633	1417	0.233	330	0.3	3.643	A

#### 17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	631	185	1715	0.368	631	0.6	3.650	A
2	918	175	1827	0.503	918	1.1	4.357	A
3	330	634	1416	0.233	330	0.3	3.646	A

#### 17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	515	151	1737	0.297	516	0.5	3.246	A
2	750	143	1849	0.406	751	0.8	3.614	A
3	270	519	1491	0.181	270	0.2	3.242	A

#### 17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	431	127	1752	0.246	432	0.4	2.998	A
2	628	120	1865	0.337	629	0.6	3.207	A
3	226	434	1546	0.146	226	0.2	3.001	A

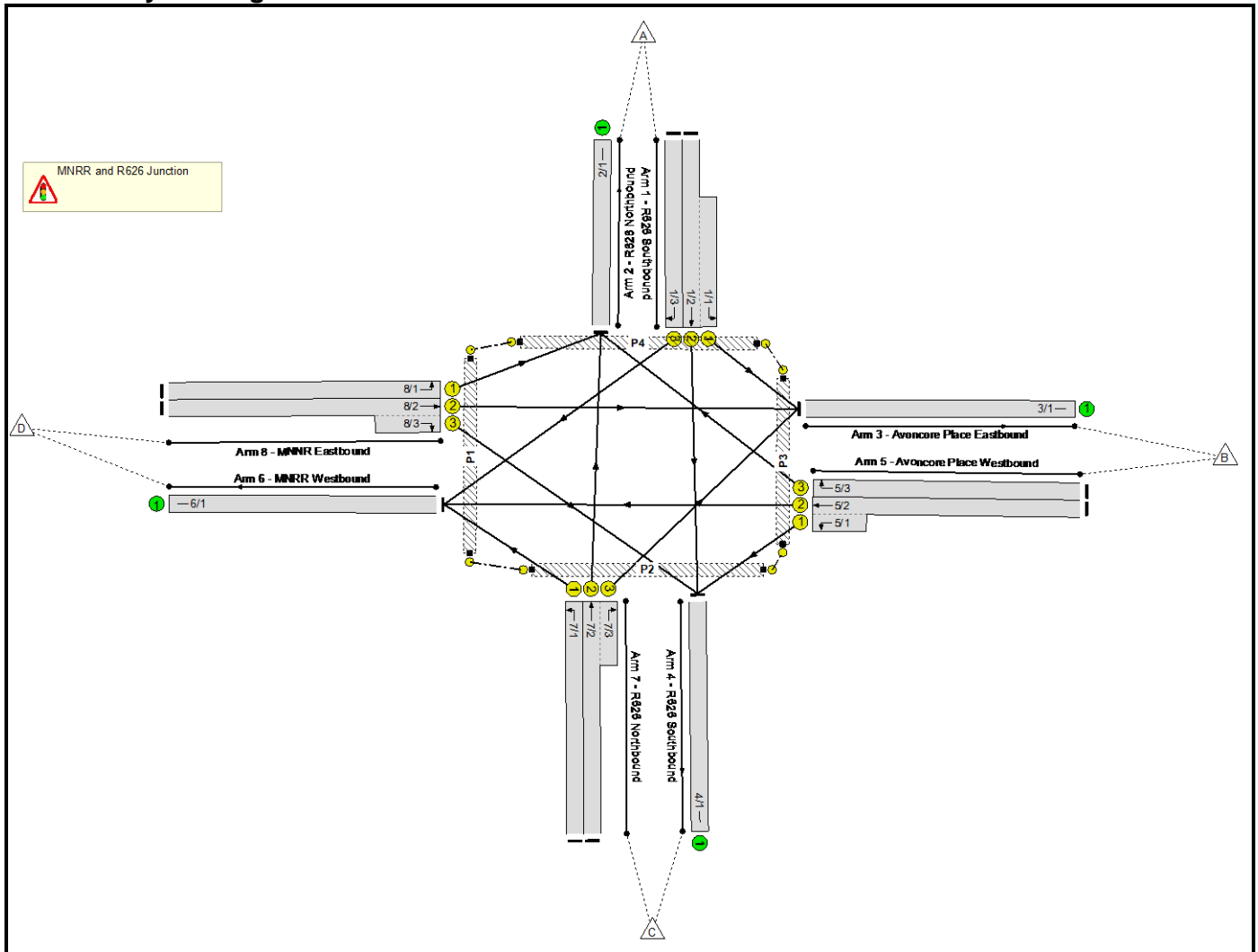


Full Input Data And Results  
**Full Input Data And Results**

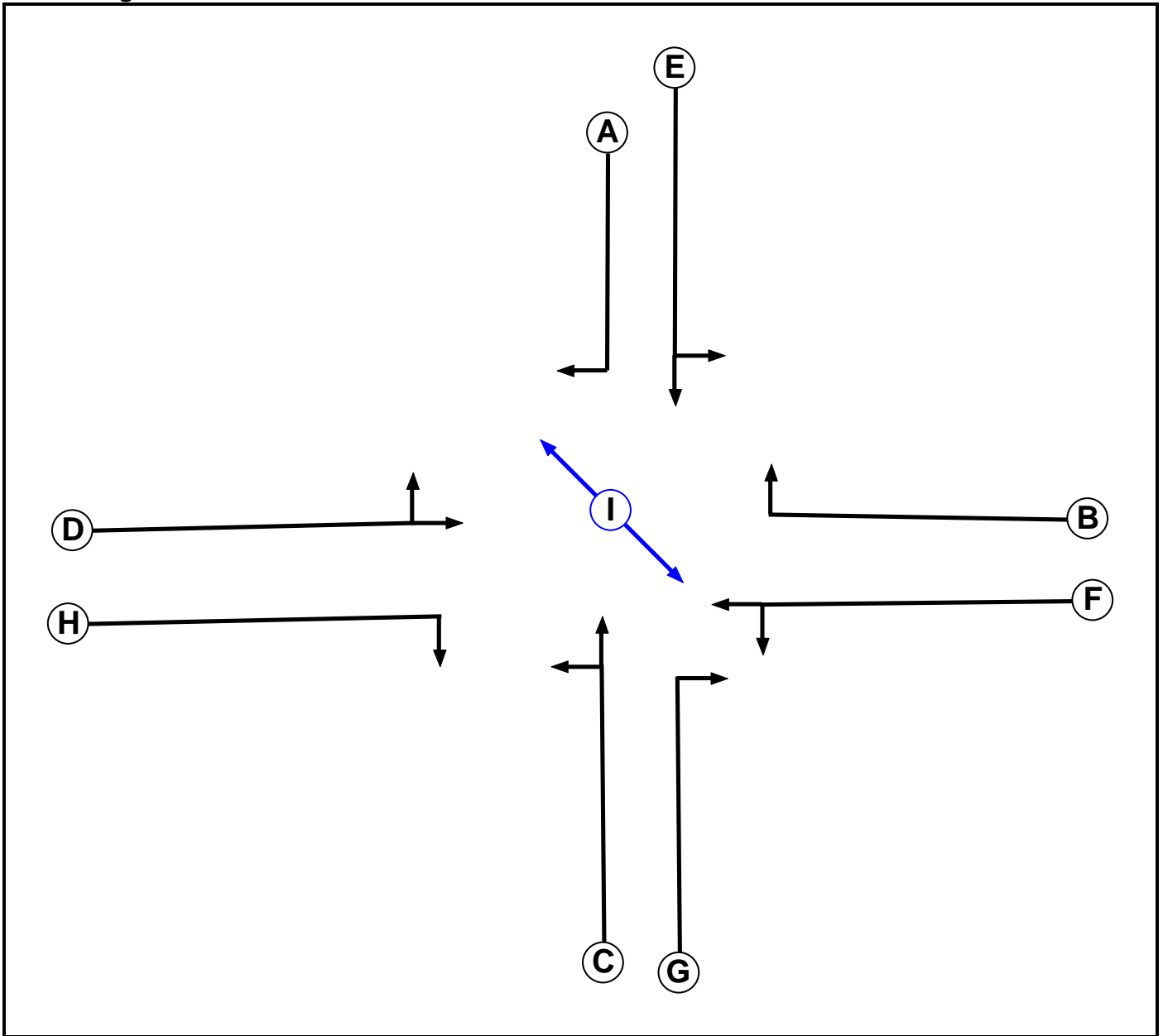
**User and Project Details**

<b>Project:</b>	<b>Proposed Residential Development Water Rock</b>
<b>Title:</b>	
<b>Location:</b>	
<b>Client:</b>	Haven Falls Limited
<b>Site Ref(s):</b>	Junction 2
<b>Model Assumptions:</b>	30% Modal Shift
<b>Additional detail:</b>	
<b>File name:</b>	J2 LinSig Model Rev B with 30% modal shift.lsg3x
<b>Author:</b>	C. O Brien
<b>Company:</b>	MHL Consulting Engineers
<b>Address:</b>	

**Network Layout Diagram**



**Phase Diagram**



**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Traffic		7	7
I	Pedestrian		7	7

Full Input Data And Results

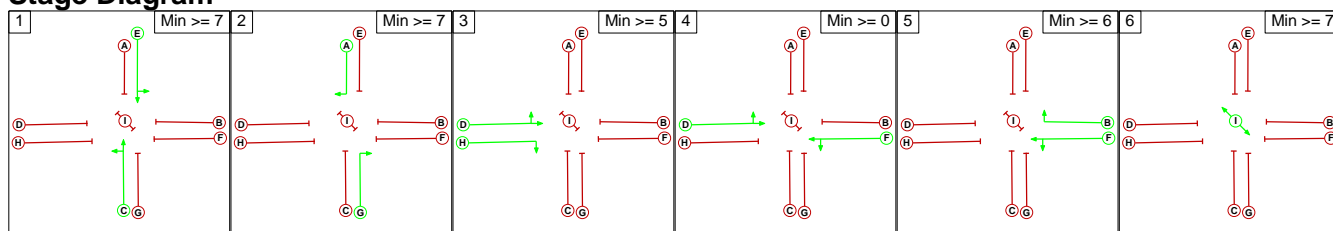
**Phase Intergrens Matrix**

Terminating Phase	Starting Phase									
		A	B	C	D	E	F	G	H	I
	A		6	5	5	-	7	-	5	5
	B	6		5	7	7	-	5	-	5
	C	5	5		6	-	5	-	-	5
	D	5	7	6		5	-	6	-	5
	E	-	7	-	5		7	5	5	5
	F	7	-	5	-	7		5	5	5
	G	-	5	-	6	5	5		5	5
	H	5	-	-	-	5	5	5		5
I	5	5	5	5	5	5	5	5		

**Phases in Stage**

Stage No.	Phases in Stage
1	C E
2	A G
3	D H
4	D F
5	B F
6	I

**Stage Diagram**



**Phase Delays**

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

**Prohibited Stage Change**

From Stage	To Stage					
	1	2	3	4	5	6
1		5	6	7	7	5
2	5		6	7	7	5
3	6	6		5	7	5
4	7	7	5		7	5
5	7	7	7	7		5
6	5	5	5	5	5	

## Full Input Data And Results

Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: MNRR and R626 Junction**

There are no Opposed Lanes in this Junction

Full Input Data And Results

**Lane Input Data**

Junction: MNRR and R626 Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (R626 Southbound)	U	E	2	3	11.3	Geom	-	3.00	0.00	N	Arm 3 Left	20.00
1/2 (R626 Southbound)	U	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (R626 Southbound)	U	A	2	3	19.1	Geom	-	3.25	0.00	Y	Arm 6 Right	23.00
2/1 (R626 Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Avoncore Place Eastbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (R626 Southbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Avoncore Place Westbound)	U	F	2	3	4.7	Geom	-	3.25	0.00	Y	Arm 4 Left	12.00
5/2 (Avoncore Place Westbound)	U	F	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
5/3 (Avoncore Place Westbound)	U	B	2	3	4.7	Geom	-	3.00	0.00	N	Arm 2 Right	22.00
6/1 (MNRR Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (R626 Northbound)	U	C	2	3	5.6	Geom	-	3.25	0.00	Y	Arm 6 Left	20.00
7/2 (R626 Northbound)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf
7/3 (R626 Northbound)	U	G	2	3	5.6	Geom	-	3.00	0.00	Y	Arm 3 Right	20.00
8/1 (MNRR Eastbound )	U	D	2	3	8.7	Geom	-	3.25	0.00	Y	Arm 2 Left	8.00
8/2 (MNRR Eastbound )	U	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Ahead	Inf
8/3 (MNRR Eastbound )	U	H	2	3	5.7	Geom	-	3.25	0.00	Y	Arm 4 Right	25.00

Full Input Data And Results

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 AM'	08:00	09:00	01:00	
2: '2022 PM'	16:30	17:30	01:00	
3: '2024 AM Without Development'	08:00	09:00	01:00	
4: '2024 AM With Development'	08:00	09:00	01:00	
5: '2024 PM Without Development'	16:30	17:30	01:00	
6: '2024 PM With Development'	16:30	17:30	01:00	
7: '2029 AM Without Development'	08:00	09:00	01:00	
8: '2029 AM With Phase 1'	08:00	09:00	01:00	
9: '2029 PM Without Development'	16:30	17:30	01:00	
10: '2029 PM With Phase 1'	16:30	17:30	01:00	

**Scenario 1: '2022 AM'** (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	83	296	287	666
	B	84	0	92	281	457
	C	255	65	0	35	355
	D	206	116	27	0	349
	Tot.	545	264	415	603	1827



Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 1: 2022 AM
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	83
1/2 (with short)	379(In) 296(Out)
1/3	287
2/1	545
3/1	264
4/1	415
5/1 (short)	92
5/2 (with short)	373(In) 281(Out)
5/3	84
6/1	603
7/1	35
7/2 (with short)	320(In) 255(Out)
7/3 (short)	65
8/1	206
8/2 (with short)	143(In) 116(Out)
8/3 (short)	27

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 2: '2022 PM'** (FG2: '2022 PM', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	41	167	184	392
B	61	0	71	147	279	
C	252	125	0	58	435	
D	225	288	42	0	555	
Tot.	538	454	280	389	1661	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 2: 2022 PM
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	41
1/2 (with short)	208(In) 167(Out)
1/3	184
2/1	538
3/1	454
4/1	280
5/1 (short)	71
5/2 (with short)	218(In) 147(Out)
5/3	61
6/1	389
7/1	58
7/2 (with short)	377(In) 252(Out)
7/3 (short)	125
8/1	225
8/2 (with short)	330(In) 288(Out)
8/3 (short)	42

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 3: '2024 AM Without Development'** (FG3: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	85	303	294	682
	B	86	0	94	288	468
	C	261	67	0	36	364
	D	211	119	28	0	358
	Tot.	558	271	425	618	1872

## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 3: 2024 AM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	85
1/2 (with short)	388(In) 303(Out)
1/3	294
2/1	558
3/1	271
4/1	425
5/1 (short)	94
5/2 (with short)	382(In) 288(Out)
5/3	86
6/1	618
7/1	36
7/2 (with short)	328(In) 261(Out)
7/3 (short)	67
8/1	211
8/2 (with short)	147(In) 119(Out)
8/3 (short)	28

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 4: '2024 AM With Development'** (FG4: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	85	303	300	688
B	86	0	94	294	474	
C	261	67	0	36	364	
D	233	131	30	0	394	
Tot.	580	283	427	630	1920	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 4: 2024 AM With Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	85
1/2 (with short)	388(In) 303(Out)
1/3	300
2/1	580
3/1	283
4/1	427
5/1 (short)	94
5/2 (with short)	388(In) 294(Out)
5/3	86
6/1	630
7/1	36
7/2 (with short)	328(In) 261(Out)
7/3 (short)	67
8/1	233
8/2 (with short)	161(In) 131(Out)
8/3 (short)	30



Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 5: '2024 PM Without Development'** (FG5: '2024 PM Without Development', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	171	188	401
	B	62	0	73	150	285
	C	258	128	0	59	445
	D	230	295	43	0	568
	Tot.	550	465	287	397	1699

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 5: 2024 PM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	42
1/2 (with short)	213(In) 171(Out)
1/3	188
2/1	550
3/1	465
4/1	287
5/1 (short)	73
5/2 (with short)	223(In) 150(Out)
5/3	62
6/1	397
7/1	59
7/2 (with short)	386(In) 258(Out)
7/3 (short)	128
8/1	230
8/2 (with short)	338(In) 295(Out)
8/3 (short)	43

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 6: '2024 PM With Development'** (FG6: '2024 PM With Development', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	42	171	203	416
B	62	0	73	162	297	
C	258	128	0	64	450	
D	238	305	44	0	587	
Tot.	558	475	288	429	1750	

## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 6: 2024 PM With Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	42
1/2 (with short)	213(In) 171(Out)
1/3	203
2/1	558
3/1	475
4/1	288
5/1 (short)	73
5/2 (with short)	235(In) 162(Out)
5/3	62
6/1	429
7/1	64
7/2 (with short)	386(In) 258(Out)
7/3 (short)	128
8/1	238
8/2 (with short)	349(In) 305(Out)
8/3 (short)	44

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 7: '2029 AM Without Development'** (FG7: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	90	321	311	722
	B	91	0	100	305	496
	C	276	70	0	38	384
	D	223	126	29	0	378
	Tot.	590	286	450	654	1980

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 7: 2029 AM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	90
1/2 (with short)	411(In) 321(Out)
1/3	311
2/1	590
3/1	286
4/1	450
5/1 (short)	100
5/2 (with short)	405(In) 305(Out)
5/3	91
6/1	654
7/1	38
7/2 (with short)	346(In) 276(Out)
7/3 (short)	70
8/1	223
8/2 (with short)	155(In) 126(Out)
8/3 (short)	29

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 8: '2029 AM With Phase 1'** (FG8: '2029 AM With Phase 1', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	90	321	350	761
B	91	0	100	342	533	
C	276	70	0	43	389	
D	299	168	39	0	506	
Tot.	666	328	460	735	2189	

## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 8: 2029 AM With Phase 1
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	90
1/2 (with short)	411(In) 321(Out)
1/3	350
2/1	666
3/1	328
4/1	460
5/1 (short)	100
5/2 (with short)	442(In) 342(Out)
5/3	91
6/1	735
7/1	43
7/2 (with short)	346(In) 276(Out)
7/3 (short)	70
8/1	299
8/2 (with short)	207(In) 168(Out)
8/3 (short)	39



Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 9: '2029 PM Without Development'** (FG9: '2029 PM Without Development', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	44	181	199	424
	B	66	0	77	159	302
	C	273	136	0	63	472
	D	244	312	46	0	602
	Tot.	583	492	304	421	1800

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 9: 2029 PM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	44
1/2 (with short)	225(In) 181(Out)
1/3	199
2/1	583
3/1	492
4/1	304
5/1 (short)	77
5/2 (with short)	236(In) 159(Out)
5/3	66
6/1	421
7/1	63
7/2 (with short)	409(In) 273(Out)
7/3 (short)	136
8/1	244
8/2 (with short)	358(In) 312(Out)
8/3 (short)	46

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 10: '2029 PM With Phase 1'** (FG10: '2029 PM With Phase 1', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	44	181	250	475
B	66	0	77	200	343	
C	273	136	0	79	488	
D	274	351	51	0	676	
Tot.	613	531	309	529	1982	

Full Input Data And Results

**Traffic Lane Flows**

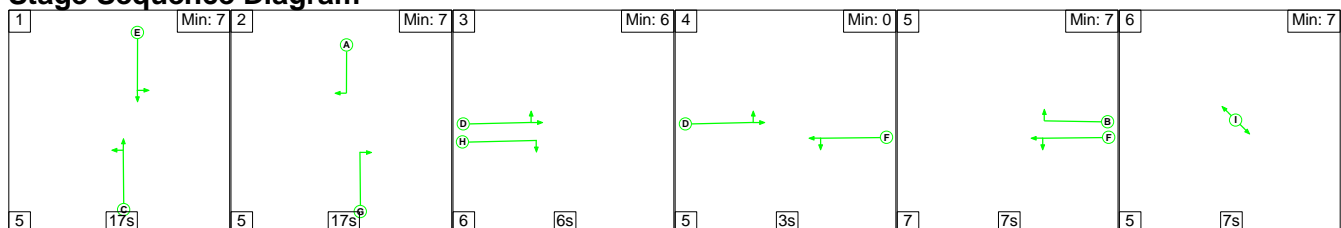
Lane	Scenario 10: 2029 PM With Phase 1
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	44
1/2 (with short)	225(In) 181(Out)
1/3	250
2/1	613
3/1	531
4/1	309
5/1 (short)	77
5/2 (with short)	277(In) 200(Out)
5/3	66
6/1	529
7/1	79
7/2 (with short)	409(In) 273(Out)
7/3 (short)	136
8/1	274
8/2 (with short)	402(In) 351(Out)
8/3 (short)	51

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 1: '2022 AM' (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')**

**Stage Sequence Diagram**

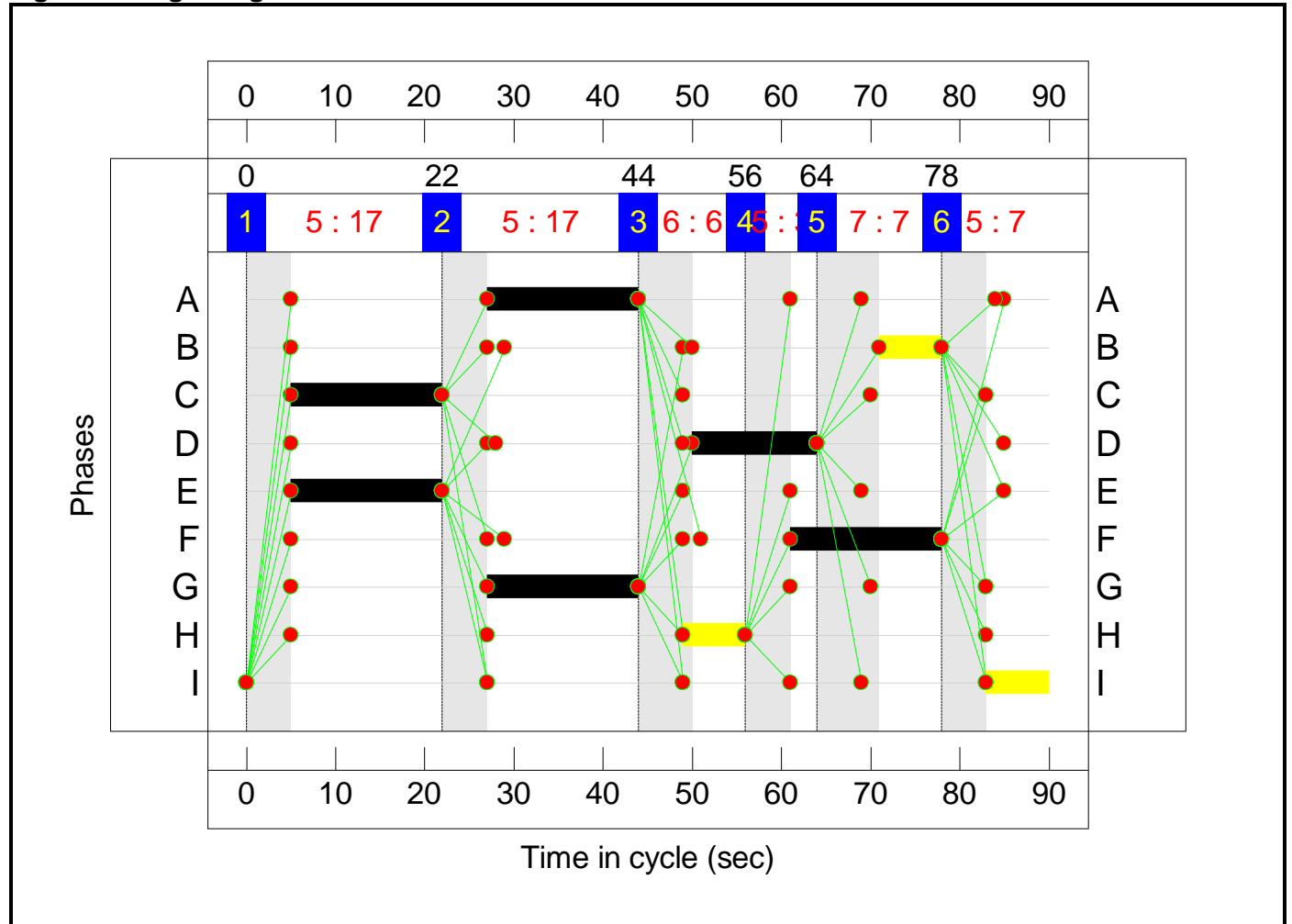


Full Input Data And Results

Stage Timings


Stage	1	2	3	4	5	6
Duration	17	17	6	3	7	7
Change Point	0	22	44	56	64	78

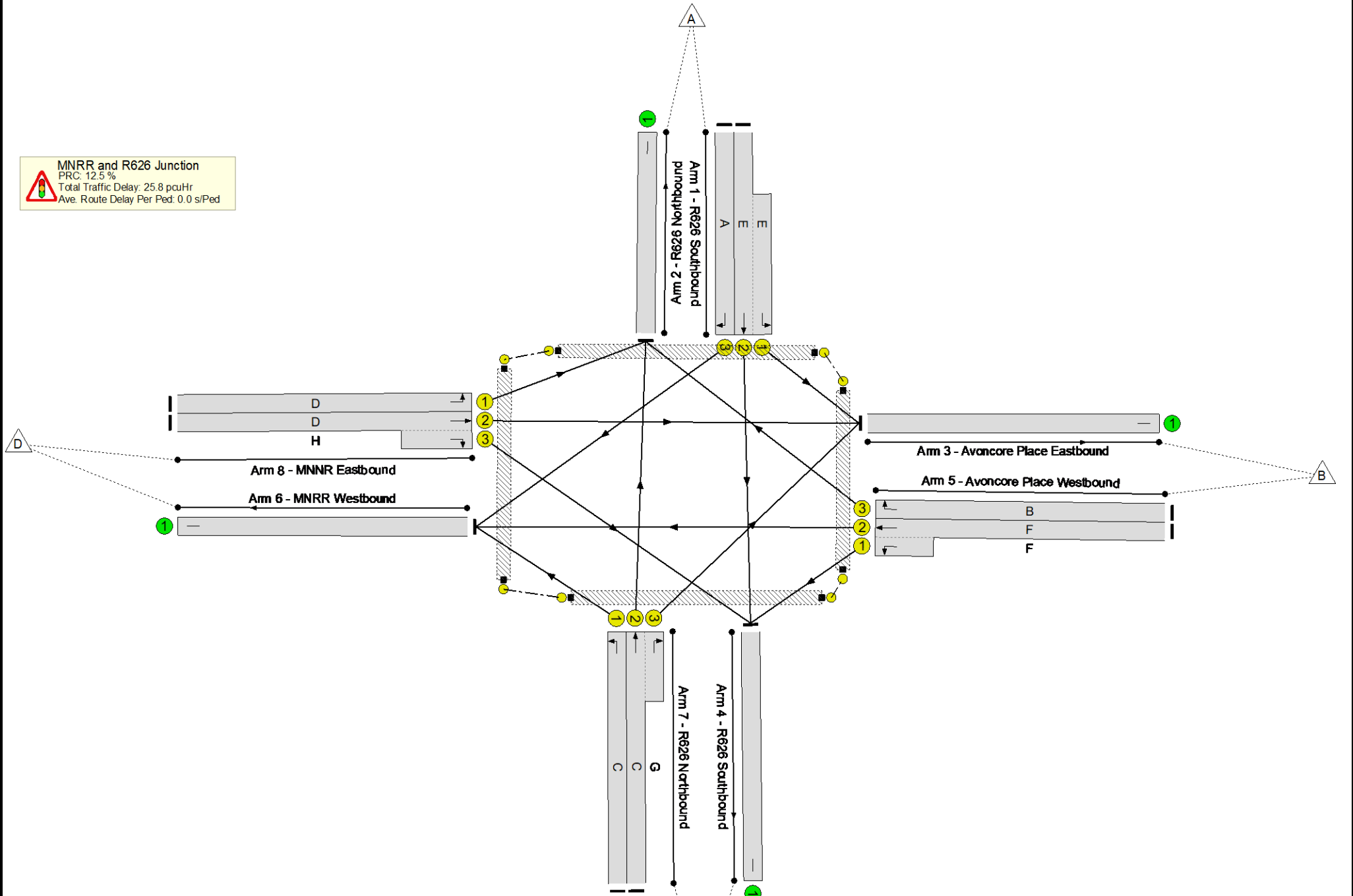
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 12.5%  
 Total Traffic Delay: 25.8 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped





## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	379	1940:1912	388+109	76.3 : 76.3%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	287	1821	364	78.8%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	545	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	264	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	415	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	17	-	373	1940:1724	351+115	80.0 : 80.0%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	84	1924	171	49.1%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	35	1805	361	9.7%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17	-	320	1940:1781	367+93	69.5 : 69.5%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	14	-	206	1634	272	75.6%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	14:7	-	143	1940:1830	320+75	36.2 : 36.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

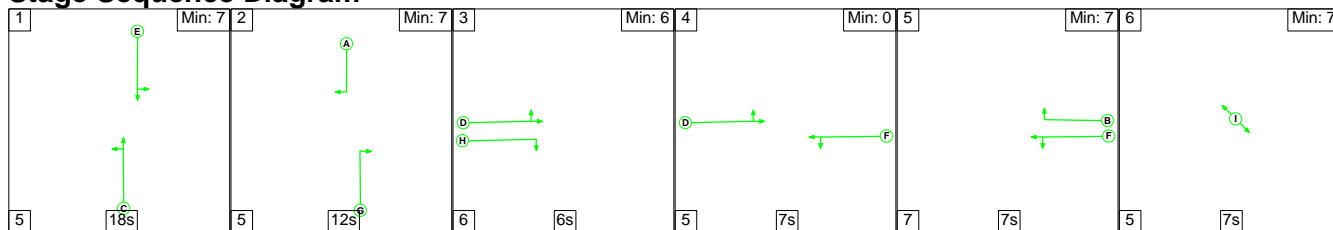
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	17.2	8.7	0.0	25.8	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	17.2	8.7	0.0	25.8	-	-	-	-
1/2+1/1	379	379	-	-	-	3.5	1.6	-	5.1	48.0	6.9	1.6	8.5
1/3	287	287	-	-	-	2.7	1.8	-	4.5	56.5	6.8	1.8	8.6
2/1	545	545	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	415	415	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	373	373	-	-	-	3.4	1.9	-	5.4	51.8	7.2	1.9	9.1
5/3	84	84	-	-	-	0.9	0.5	-	1.4	59.5	2.0	0.5	2.5
6/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	35	35	-	-	-	0.3	0.1	-	0.3	35.0	0.7	0.1	0.8
7/2+7/3	320	320	-	-	-	2.9	1.1	-	4.0	45.1	5.9	1.1	7.0
8/1	206	206	-	-	-	2.0	1.5	-	3.5	61.7	4.9	1.5	6.4
8/2+8/3	143	143	-	-	-	1.4	0.3	-	1.6	41.3	2.5	0.3	2.8
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		12.5	Total Delay for Signalled Lanes (pcuHr):		25.84	Cycle Time (s):		90			
		PRC Over All Lanes (%):		12.5	Total Delay Over All Lanes(pcuHr):		25.84						

Full Input Data And Results

Scenario 2: '2022 PM' (FG2: '2022 PM', Plan 2: 'Network Control Plan 2')

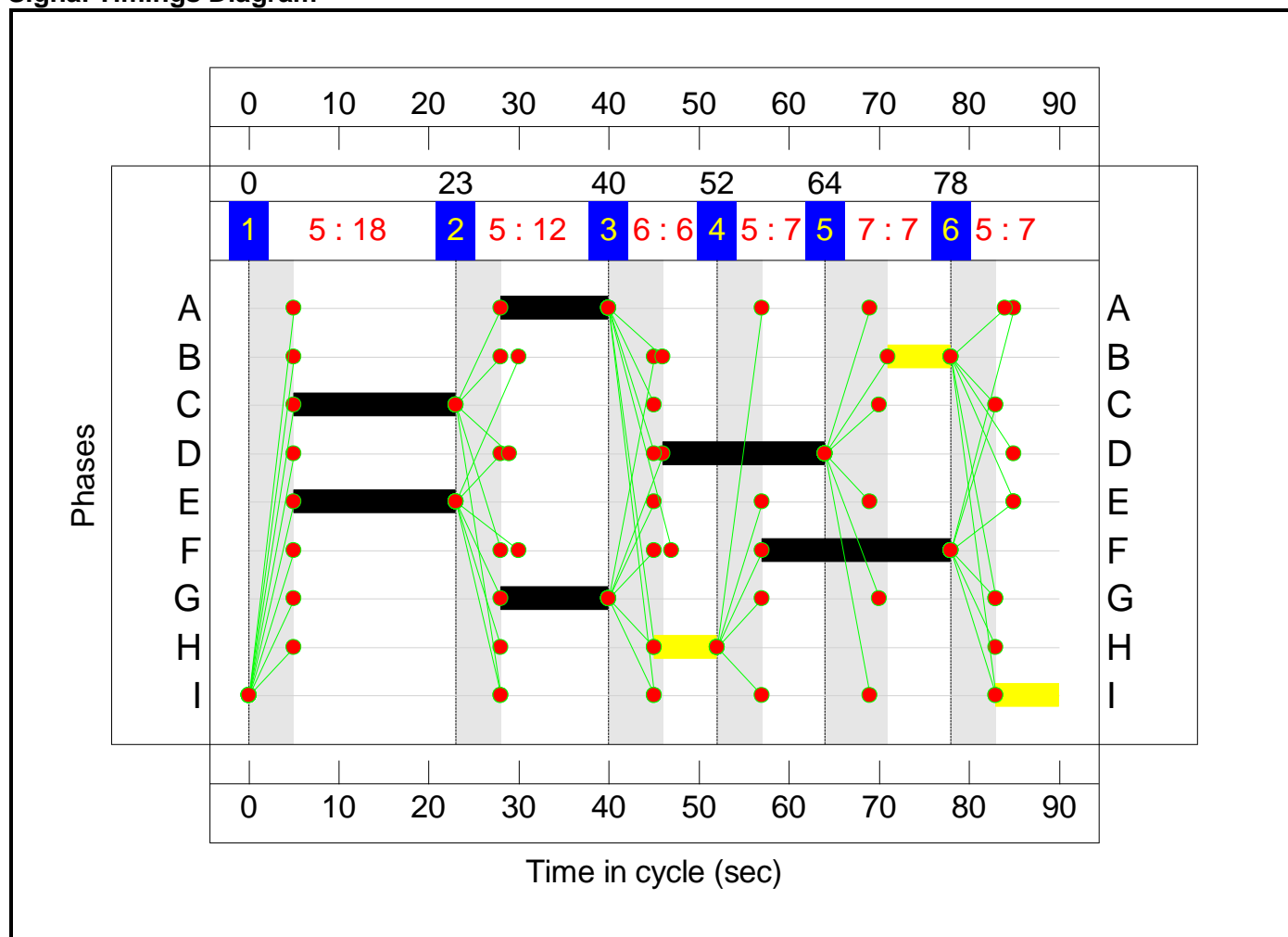
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5	6
Duration	18	12	6	7	7	7
Change Point	0	23	40	52	64	78

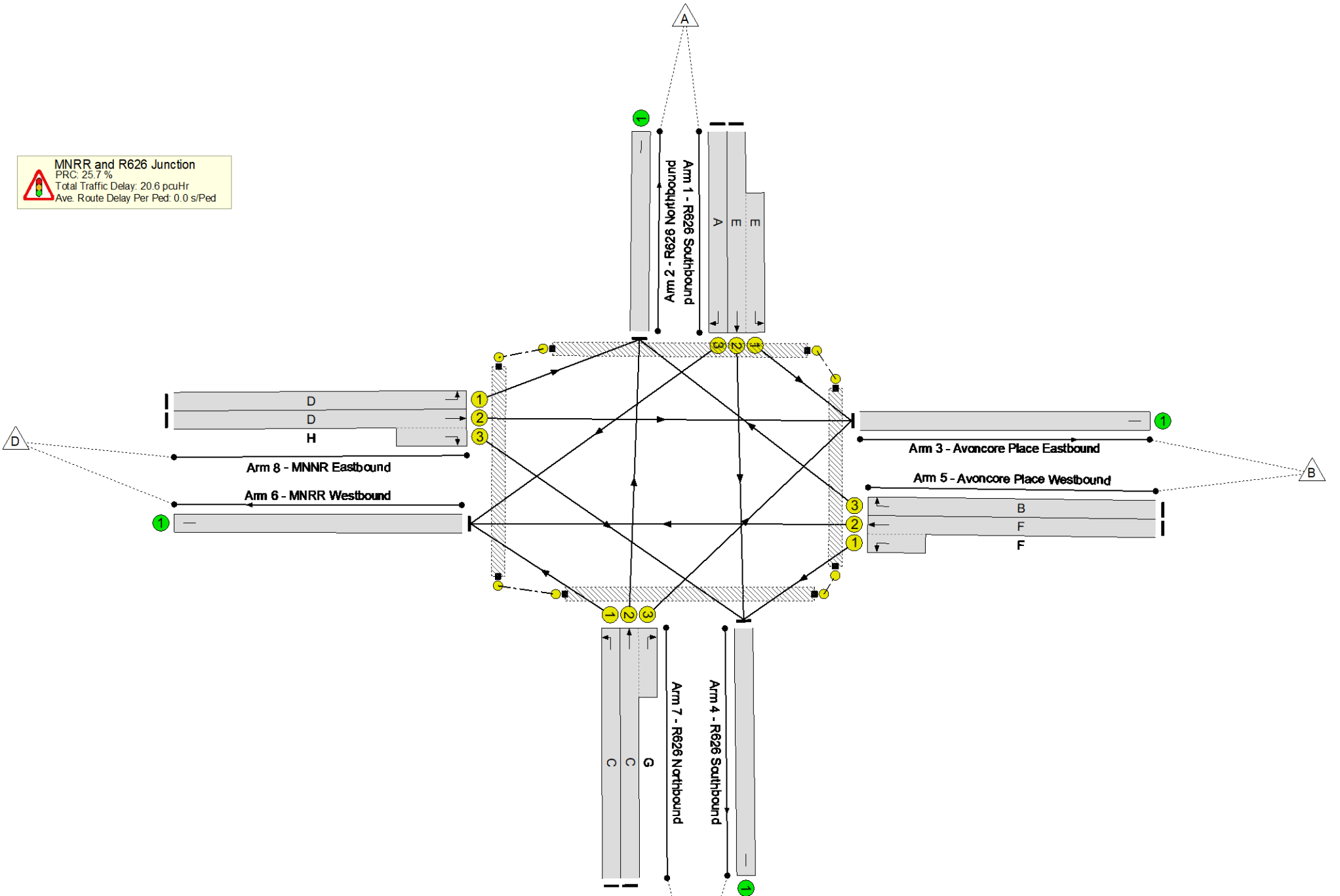
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

 **MNRR and R626 Junction**  
PRC: 25.7 %  
Total Traffic Delay: 20.6 pcuHr  
Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	18	-	208	1940:1912	410+101	40.8 : 40.8%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	12	-	184	1821	263	70.0%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	538	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	454	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	218	1940:1724	389+188	37.8 : 37.8%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	61	1924	171	35.7%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	389	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	18	-	58	1805	381	15.2%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	18:12	-	377	1940:1781	357+177	70.6 : 70.6%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	225	1634	345	65.2%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	330	1940:1830	402+59	71.6 : 71.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%



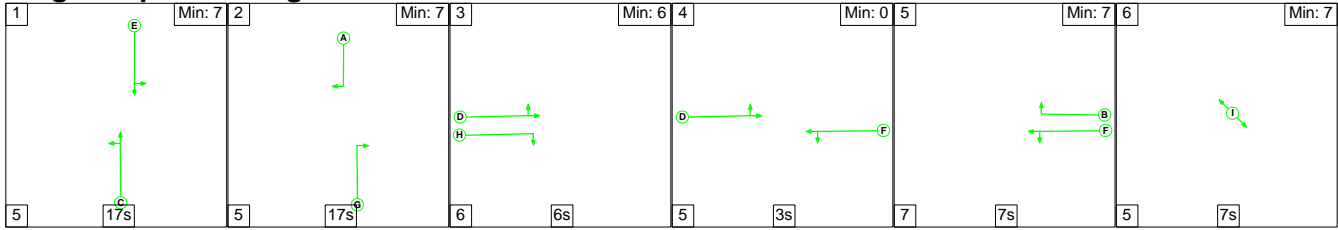
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	15.1	5.5	0.0	20.6	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	15.1	5.5	0.0	20.6	-	-	-	-
1/2+1/1	208	208	-	-	-	1.7	0.3	-	2.1	36.2	3.6	0.3	3.9
1/3	184	184	-	-	-	1.9	1.1	-	3.0	58.8	4.3	1.1	5.5
2/1	538	538	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	454	454	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	218	218	-	-	-	1.7	0.3	-	2.0	32.5	3.0	0.3	3.3
5/3	61	61	-	-	-	0.7	0.3	-	0.9	54.9	1.4	0.3	1.7
6/1	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	58	58	-	-	-	0.5	0.1	-	0.6	34.5	1.2	0.1	1.3
7/2+7/3	377	377	-	-	-	3.5	1.2	-	4.7	44.6	5.7	1.2	6.9
8/1	225	225	-	-	-	2.0	0.9	-	3.0	47.3	5.1	0.9	6.0
8/2+8/3	330	330	-	-	-	3.1	1.2	-	4.4	47.8	6.7	1.2	7.9
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		25.7		Total Delay for Signalled Lanes (pcuHr):		20.55		Cycle Time (s):		90	
		PRC Over All Lanes (%):		25.7		Total Delay Over All Lanes(pcuHr):		20.55					

Full Input Data And Results

**Scenario 3: '2024 AM Without Development'** (FG3: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

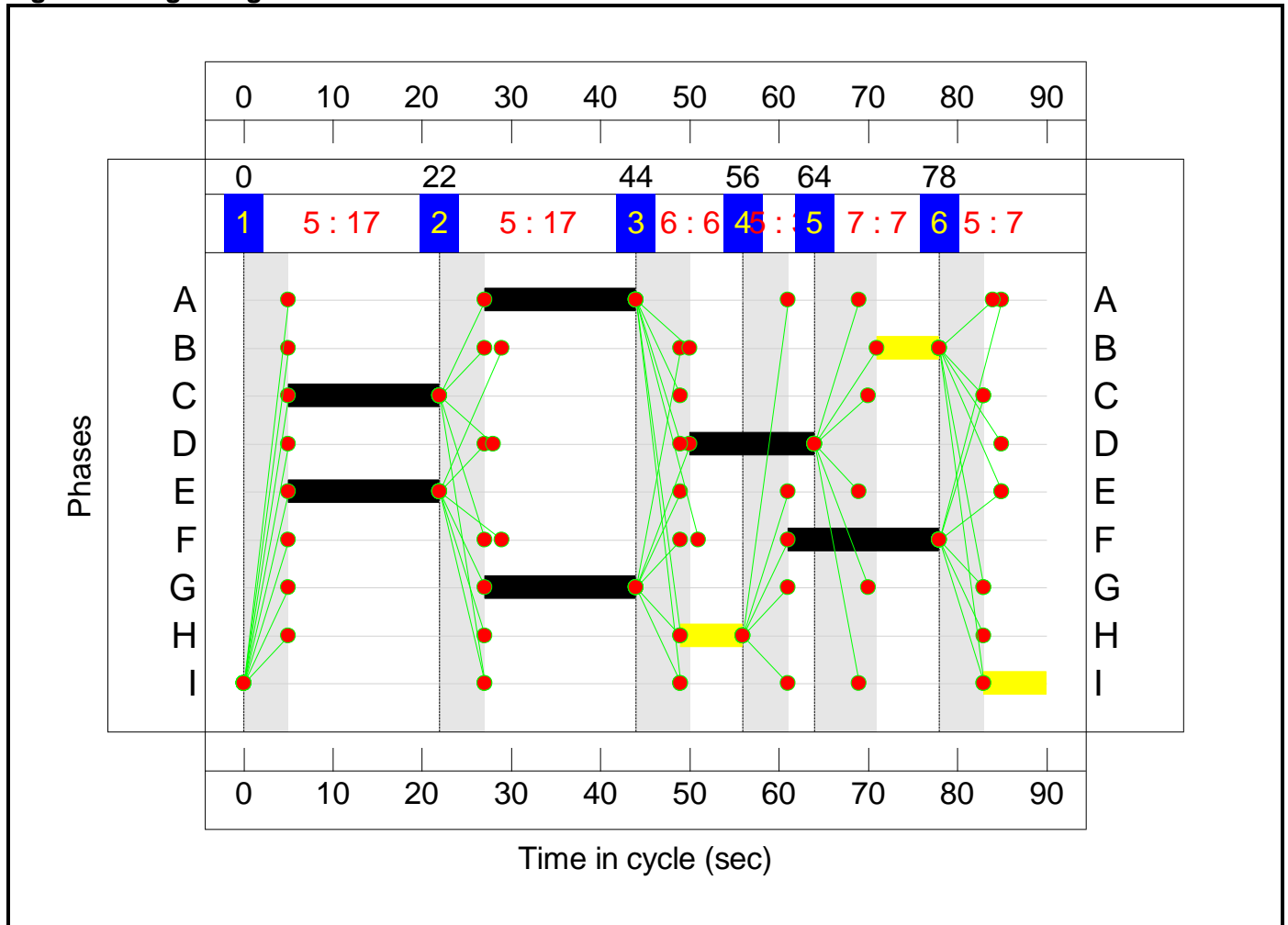
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	17	17	6	3	7	7
Change Point	0	22	44	56	64	78

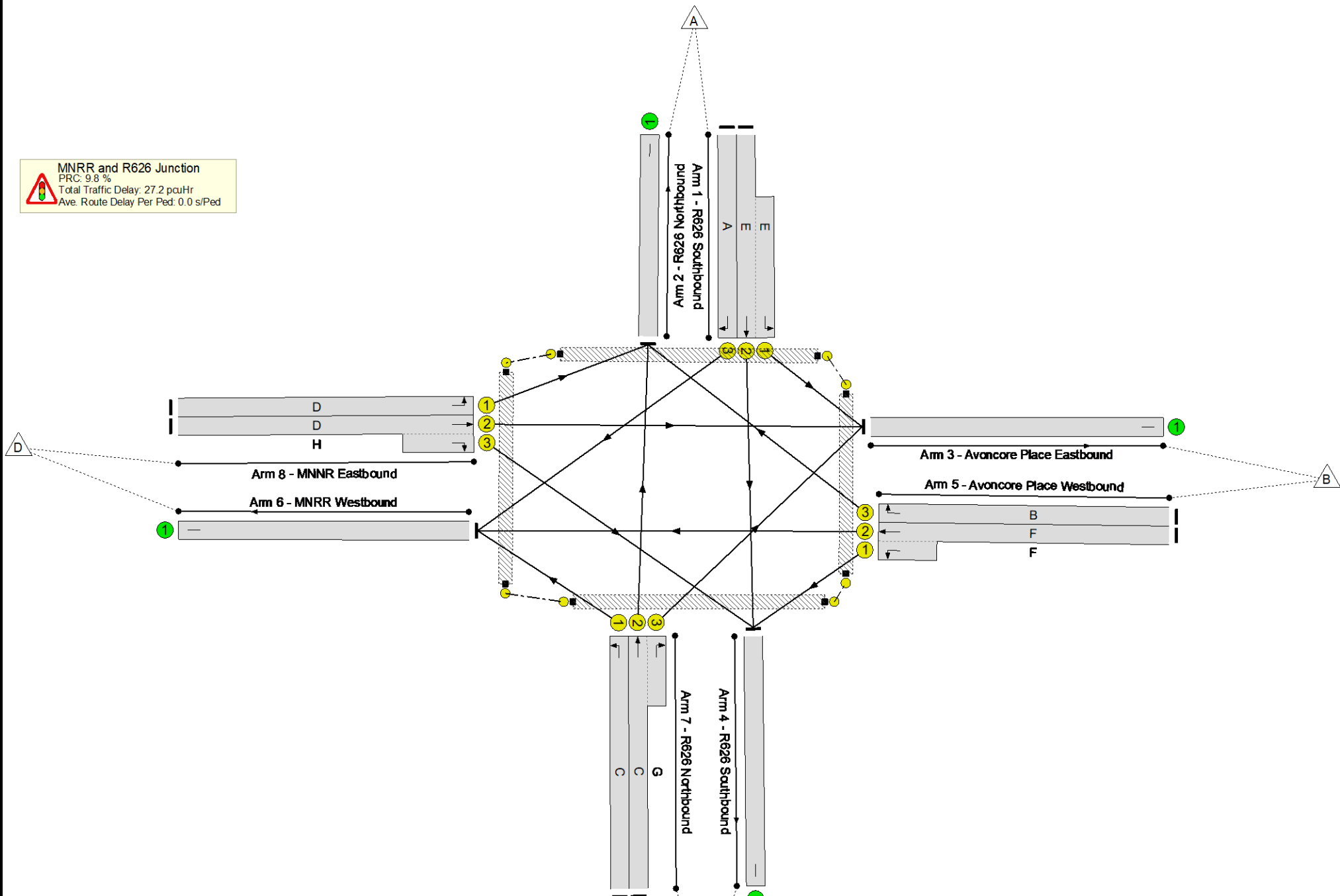
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 9.8 %  
 Total Traffic Delay: 27.2 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	81.9%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	81.9%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	388	1940:1912	388+109	78.1 : 78.1%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	294	1821	364	80.7%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	558	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	271	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	425	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	17	-	382	1940:1724	351+115	81.9 : 81.9%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	86	1924	171	50.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	36	1805	361	10.0%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17	-	328	1940:1781	367+94	71.2 : 71.2%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	14	-	211	1634	272	77.5%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	14:7	-	147	1940:1830	320+75	37.2 : 37.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

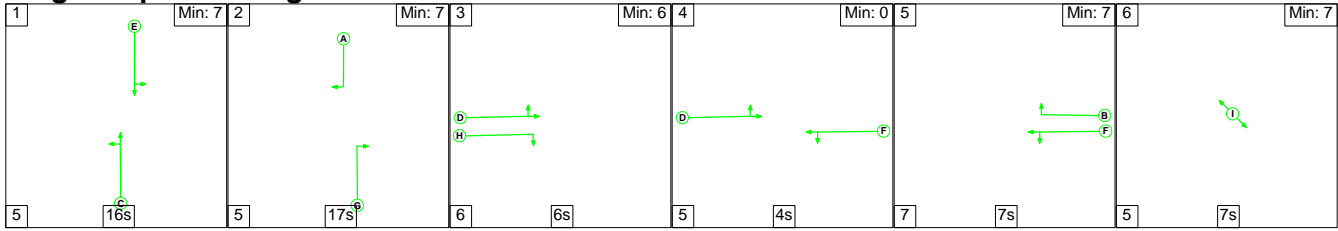
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	17.6	9.6	0.0	27.2	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	17.6	9.6	0.0	27.2	-	-	-	-
1/2+1/1	388	388	-	-	-	3.6	1.7	-	5.3	49.3	7.2	1.7	8.9
1/3	294	294	-	-	-	2.8	2.0	-	4.8	58.6	6.9	2.0	8.9
2/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	271	271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	425	425	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	382	382	-	-	-	3.5	2.2	-	5.7	53.7	7.4	2.2	9.5
5/3	86	86	-	-	-	0.9	0.5	-	1.4	60.0	2.0	0.5	2.5
6/1	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	36	36	-	-	-	0.3	0.1	-	0.3	35.0	0.7	0.1	0.8
7/2+7/3	328	328	-	-	-	3.0	1.2	-	4.2	45.9	6.1	1.2	7.3
8/1	211	211	-	-	-	2.1	1.6	-	3.7	63.8	5.0	1.6	6.7
8/2+8/3	147	147	-	-	-	1.4	0.3	-	1.7	41.4	2.6	0.3	2.9
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		9.8		Total Delay for Signalled Lanes (pcuHr):		27.20		Cycle Time (s):		90	
		PRC Over All Lanes (%):		9.8		Total Delay Over All Lanes(pcuHr):		27.20					

Full Input Data And Results

Scenario 4: '2024 AM With Development' (FG4: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

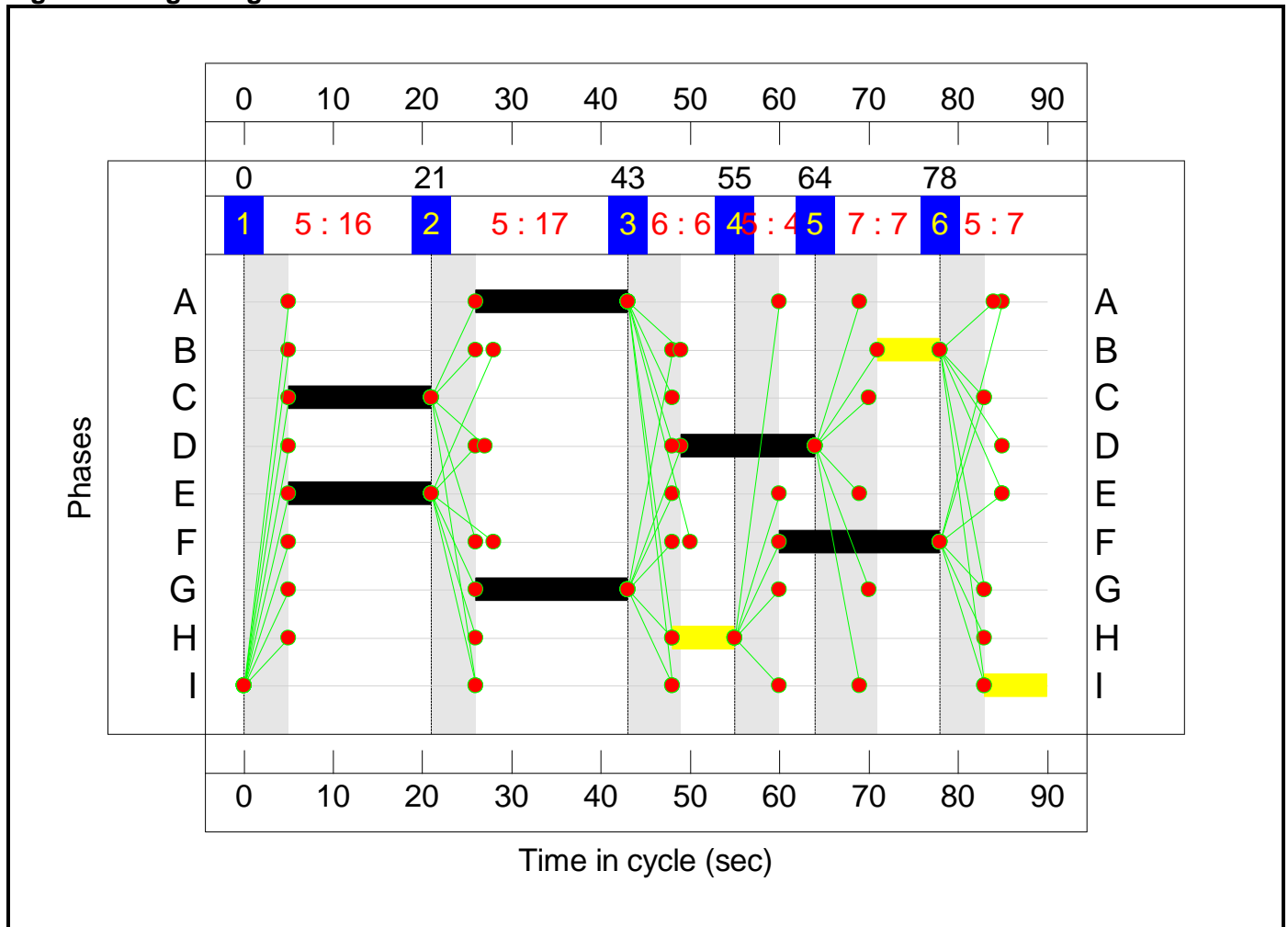
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	16	17	6	4	7	7
Change Point	0	21	43	55	64	78


Signal Timings Diagram

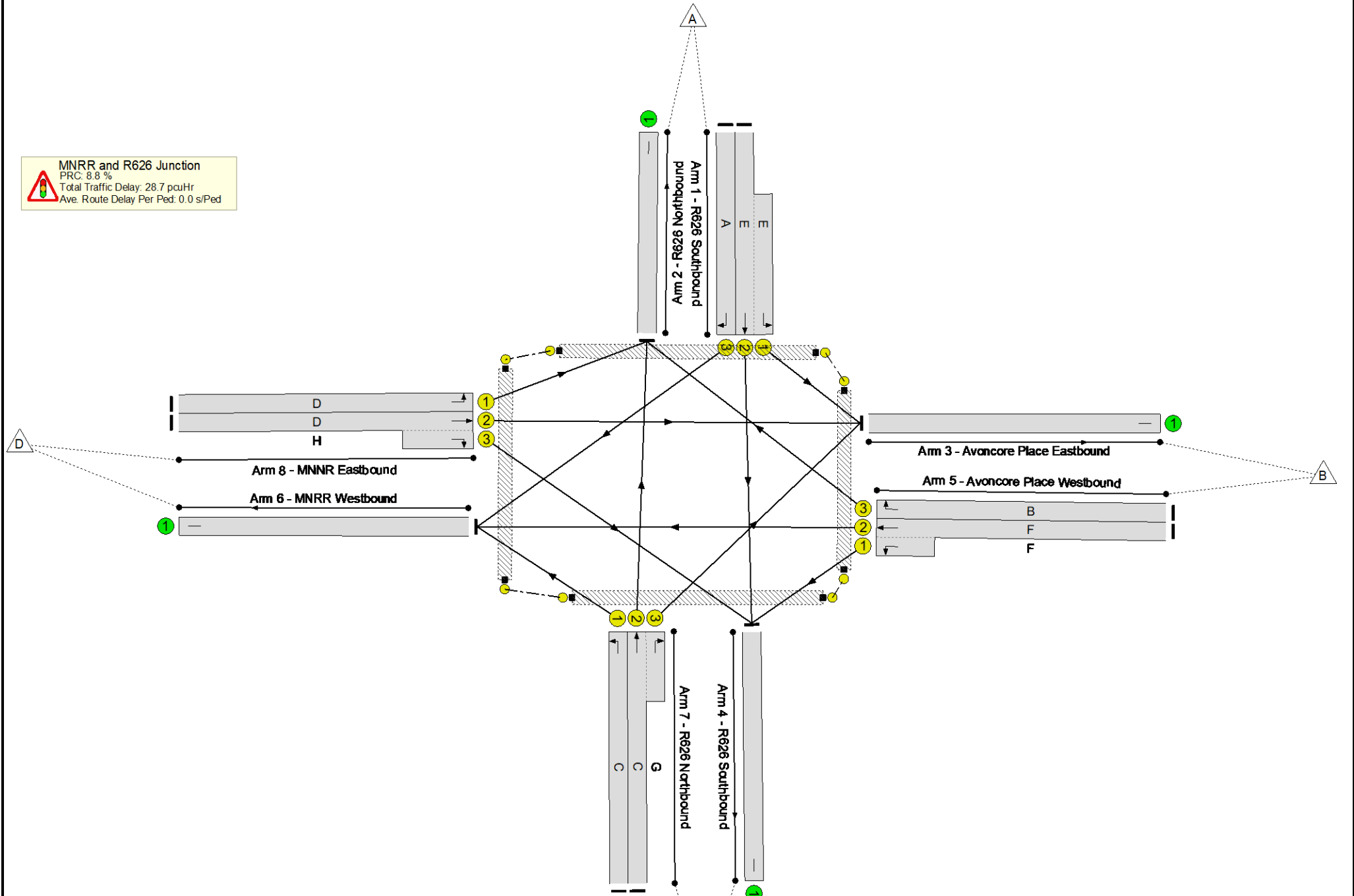




Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 8.8 %  
 Total Traffic Delay: 28.7 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	82.7%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	16	-	388	1940:1912	366+103	82.7 : 82.7%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	300	1821	364	82.4%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	580	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	283	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	427	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	18	-	388	1940:1724	368+118	79.8 : 79.8%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	86	1924	171	50.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	630	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	16	-	36	1805	341	10.6%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	16:17	-	328	1940:1781	350+90	74.6 : 74.6%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	15	-	233	1634	290	80.2%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	15:7	-	161	1940:1830	338+77	38.7 : 38.7%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

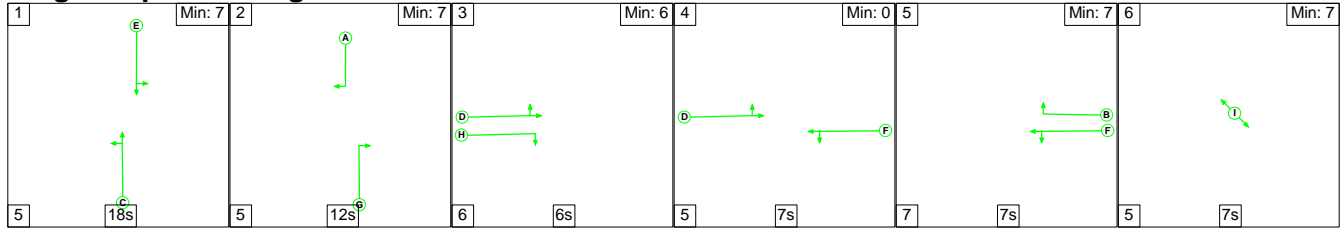
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	18.2	10.6	0.0	28.7	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	18.2	10.6	0.0	28.7	-	-	-	-
1/2+1/1	388	388	-	-	-	3.7	2.3	-	5.9	55.2	7.2	2.3	9.5
1/3	300	300	-	-	-	2.9	2.2	-	5.1	60.7	7.2	2.2	9.4
2/1	580	580	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	283	283	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	427	427	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	388	388	-	-	-	3.5	1.9	-	5.4	50.3	7.6	1.9	9.5
5/3	86	86	-	-	-	0.9	0.5	-	1.4	60.0	2.0	0.5	2.5
6/1	630	630	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	36	36	-	-	-	0.3	0.1	-	0.4	36.2	0.7	0.1	0.8
7/2+7/3	328	328	-	-	-	3.0	1.4	-	4.5	49.1	6.1	1.4	7.6
8/1	233	233	-	-	-	2.3	1.9	-	4.2	64.9	5.6	1.9	7.5
8/2+8/3	161	161	-	-	-	1.5	0.3	-	1.8	40.7	2.9	0.3	3.2
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		8.8	Total Delay for Signalled Lanes (pcuHr):		28.72	Cycle Time (s):		90			
		PRC Over All Lanes (%):		8.8	Total Delay Over All Lanes(pcuHr):		28.72						

Full Input Data And Results

**Scenario 5: '2024 PM Without Development'** (FG5: '2024 PM Without Development', Plan 2: 'Network Control Plan 2')

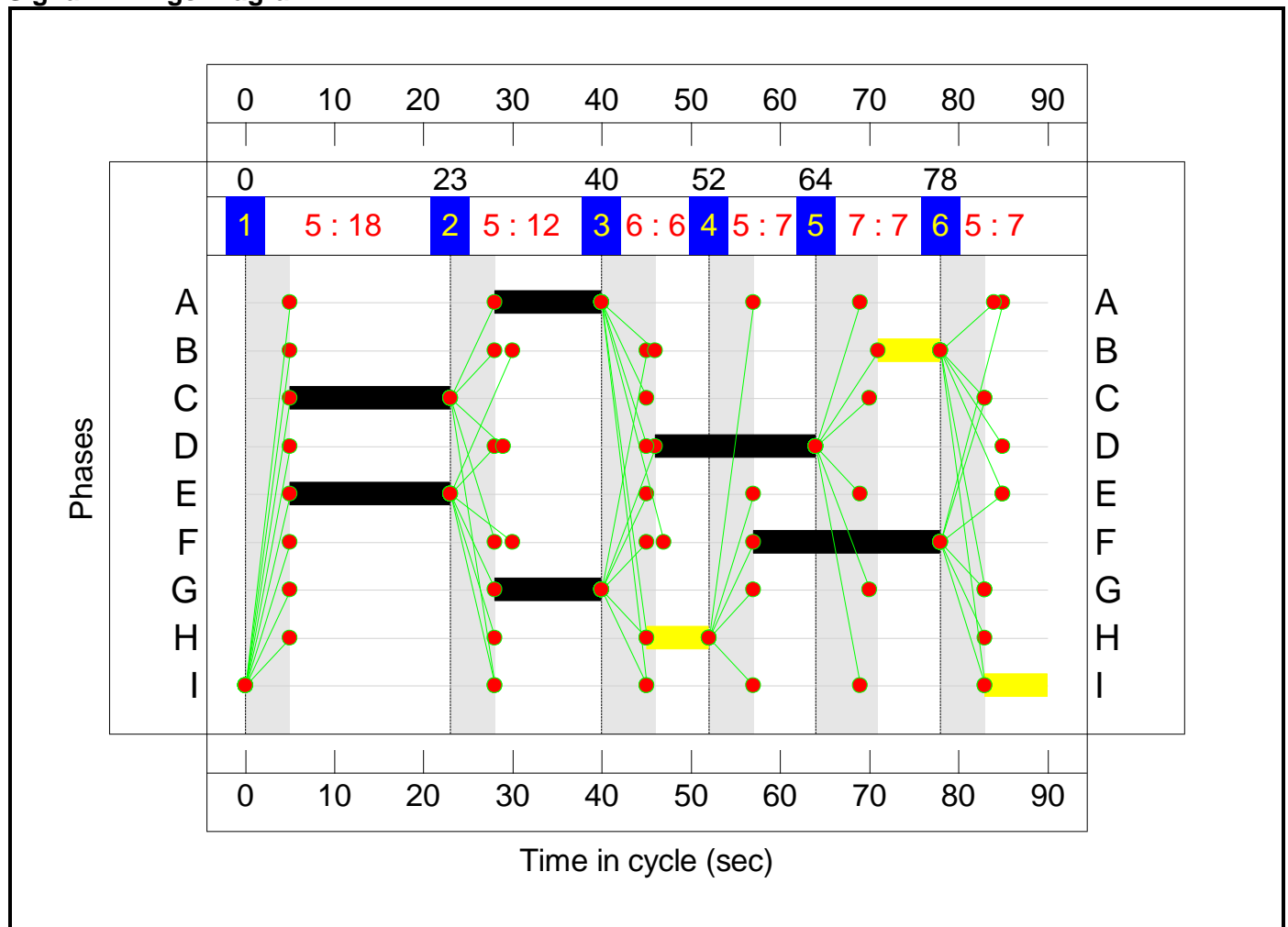
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	18	12	6	7	7	7
Change Point	0	23	40	52	64	78

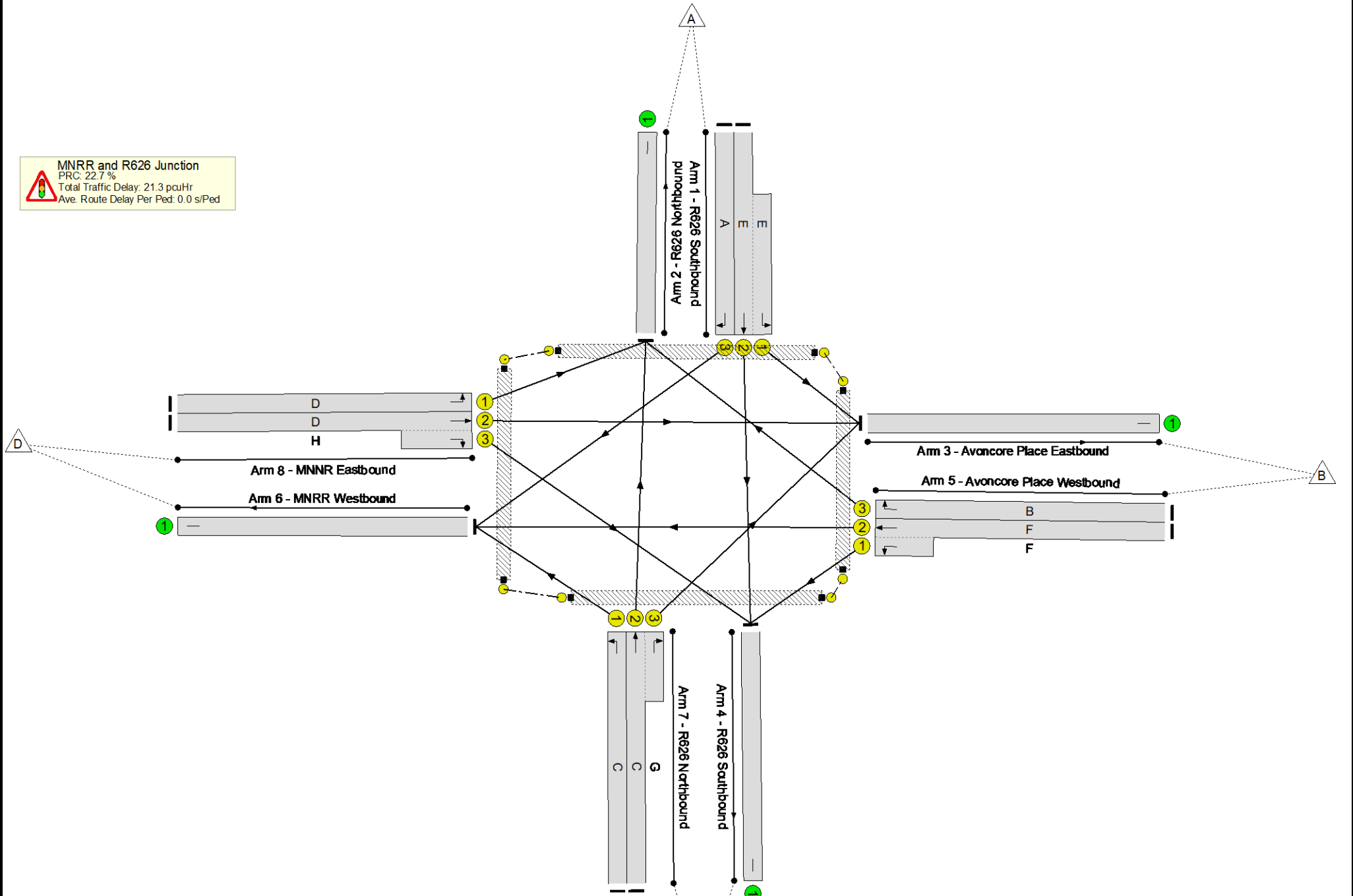
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 22.7 %  
 Total Traffic Delay: 21.3 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped





## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	73.3%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	73.3%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	18	-	213	1940:1912	410+101	41.8 : 41.8%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	12	-	188	1821	263	71.5%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	550	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	465	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	287	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	223	1940:1724	389+189	38.6 : 38.6%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	62	1924	171	36.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	397	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	18	-	59	1805	381	15.5%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	18:12	-	386	1940:1781	357+177	72.3 : 72.3%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	230	1634	345	66.7%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	338	1940:1830	402+59	73.3 : 73.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

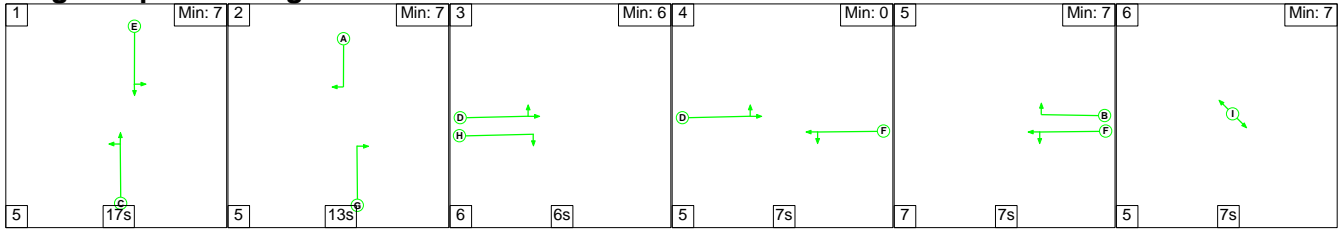
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	15.5	5.9	0.0	21.3	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	15.5	5.9	0.0	21.3	-	-	-	-
1/2+1/1	213	213	-	-	-	1.8	0.4	-	2.2	36.4	3.7	0.4	4.0
1/3	188	188	-	-	-	1.9	1.2	-	3.1	60.0	4.4	1.2	5.7
2/1	550	550	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	465	465	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	287	287	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	223	223	-	-	-	1.7	0.3	-	2.0	32.6	3.0	0.3	3.4
5/3	62	62	-	-	-	0.7	0.3	-	0.9	55.1	1.4	0.3	1.7
6/1	397	397	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	59	59	-	-	-	0.5	0.1	-	0.6	34.6	1.2	0.1	1.3
7/2+7/3	386	386	-	-	-	3.6	1.3	-	4.9	45.3	5.9	1.3	7.2
8/1	230	230	-	-	-	2.1	1.0	-	3.1	48.0	5.2	1.0	6.2
8/2+8/3	338	338	-	-	-	3.3	1.3	-	4.6	49.0	7.0	1.3	8.3
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		22.7	Total Delay for Signalled Lanes (pcuHr):		21.34	Cycle Time (s):		90			
		PRC Over All Lanes (%):		22.7	Total Delay Over All Lanes(pcuHr):		21.34						

Full Input Data And Results

Scenario 6: '2024 PM With Development' (FG6: '2024 PM With Development', Plan 2: 'Network Control Plan 2')

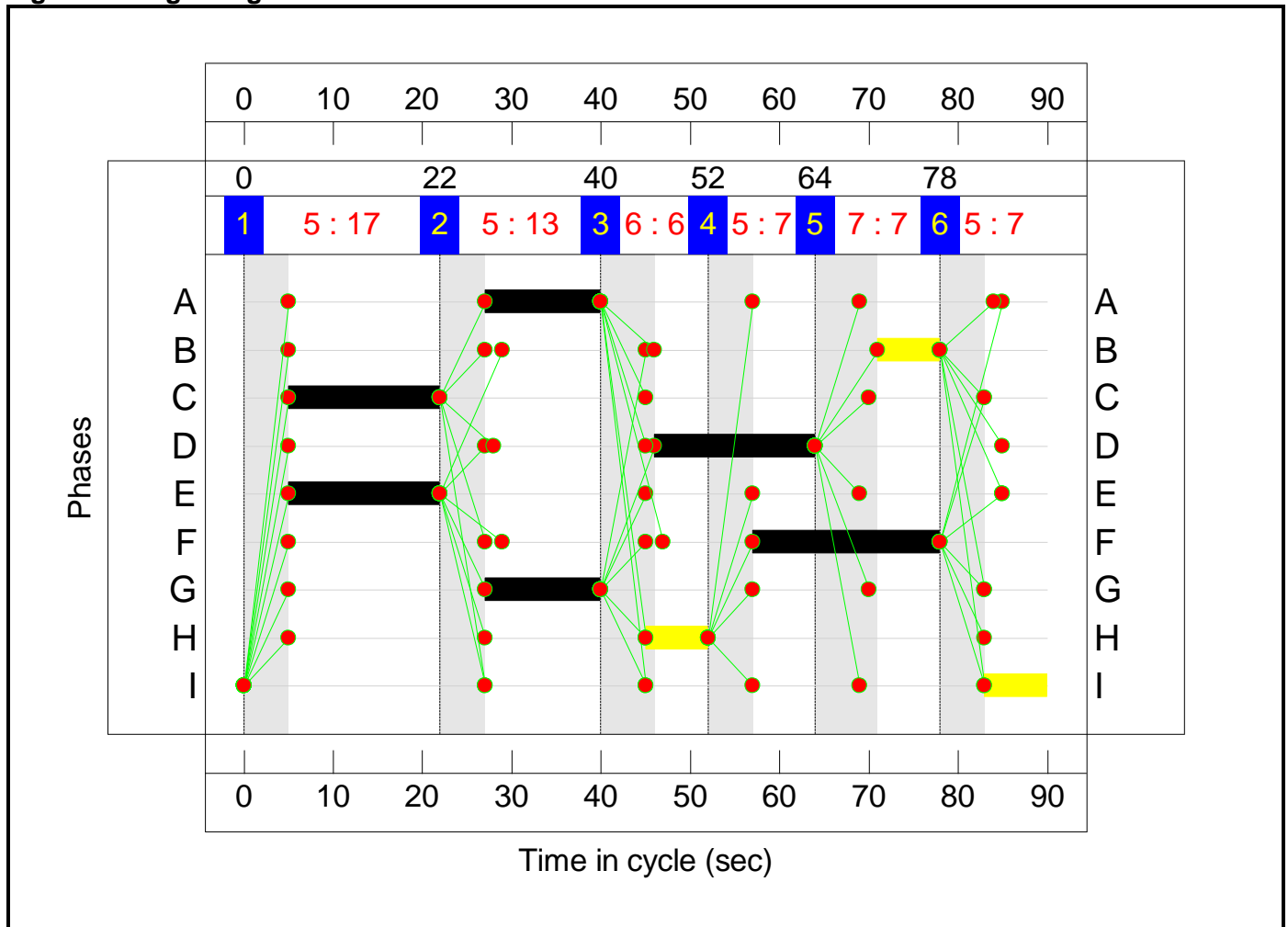
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	17	13	6	7	7	7
Change Point	0	22	40	52	64	78

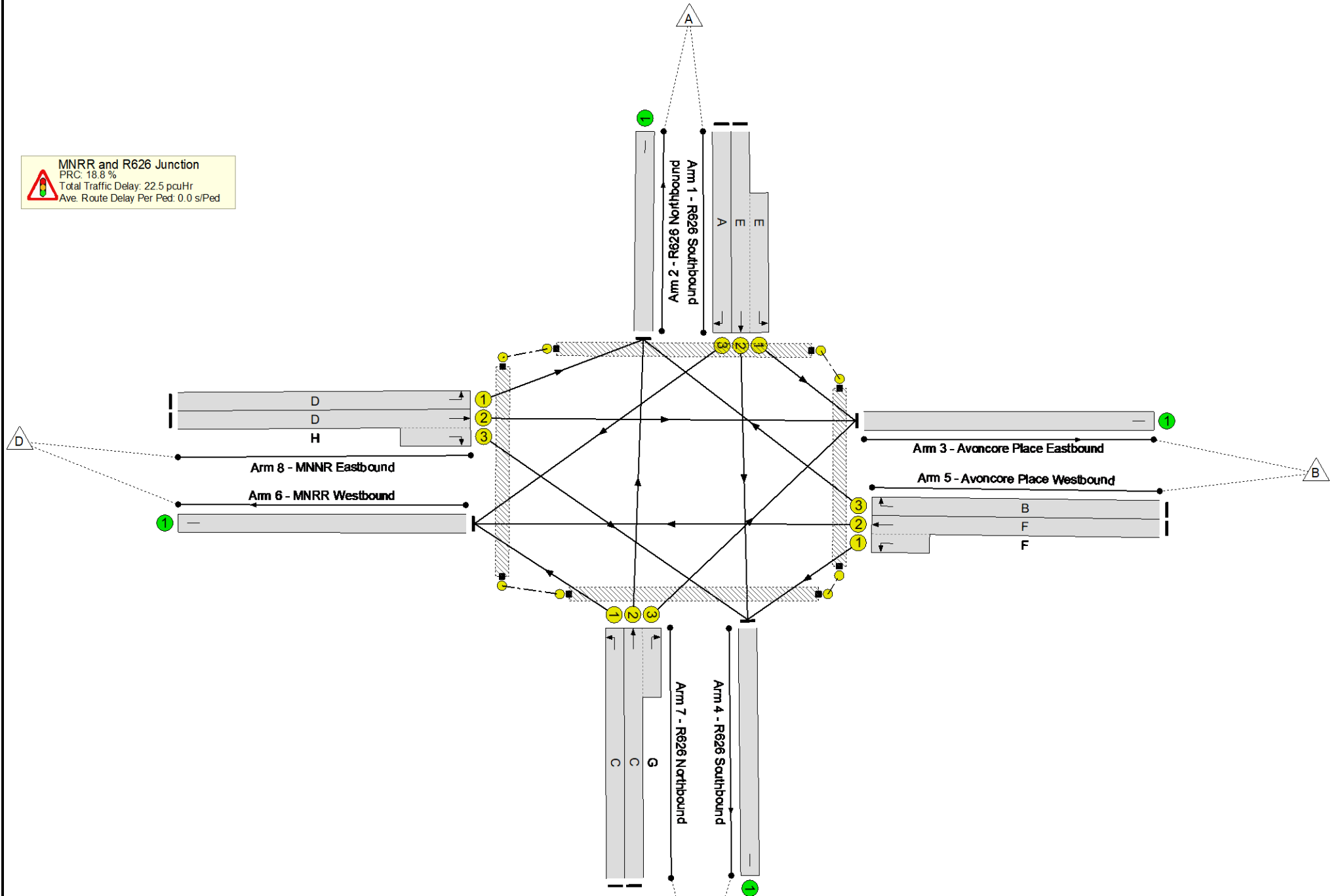
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 18.8 %  
 Total Traffic Delay: 22.5 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	75.8%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	75.8%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	213	1940:1912	388+95	44.1 : 44.1%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	13	-	203	1821	283	71.7%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	558	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	475	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	288	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	235	1940:1724	394+177	41.1 : 41.1%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	62	1924	171	36.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	429	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	64	1805	361	17.7%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17:13	-	386	1940:1781	343+170	75.2 : 75.2%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	238	1634	345	69.0%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	349	1940:1830	402+58	75.8 : 75.8%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%



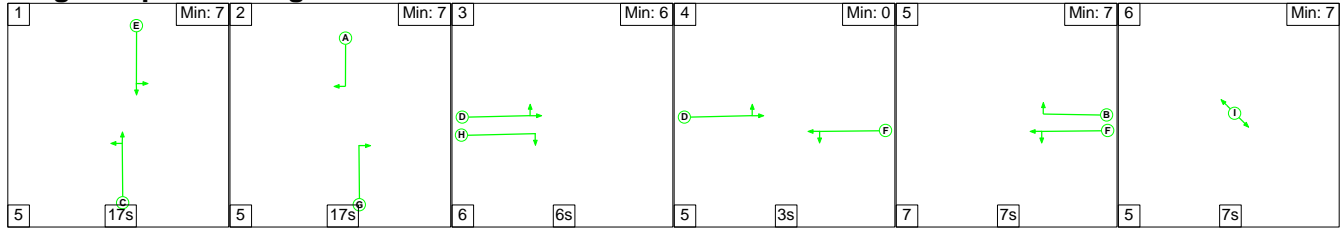
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	16.1	6.5	0.0	22.5	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	16.1	6.5	0.0	22.5	-	-	-	-
1/2+1/1	213	213	-	-	-	1.8	0.4	-	2.2	37.8	3.7	0.4	4.1
1/3	203	203	-	-	-	2.0	1.2	-	3.3	57.9	4.8	1.2	6.0
2/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	475	475	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	288	288	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	235	235	-	-	-	1.8	0.3	-	2.2	33.0	3.3	0.3	3.7
5/3	62	62	-	-	-	0.7	0.3	-	0.9	55.1	1.4	0.3	1.7
6/1	429	429	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	64	64	-	-	-	0.5	0.1	-	0.6	35.9	1.3	0.1	1.4
7/2+7/3	386	386	-	-	-	3.6	1.5	-	5.1	47.5	6.0	1.5	7.5
8/1	238	238	-	-	-	2.2	1.1	-	3.3	49.3	5.5	1.1	6.6
8/2+8/3	349	349	-	-	-	3.4	1.5	-	4.9	50.8	7.2	1.5	8.7
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		18.8	Total Delay for Signalled Lanes (pcuHr):		22.52	Cycle Time (s):		90			
		PRC Over All Lanes (%):		18.8	Total Delay Over All Lanes(pcuHr):		22.52						

Full Input Data And Results

**Scenario 7: '2029 AM Without Development'** (FG7: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

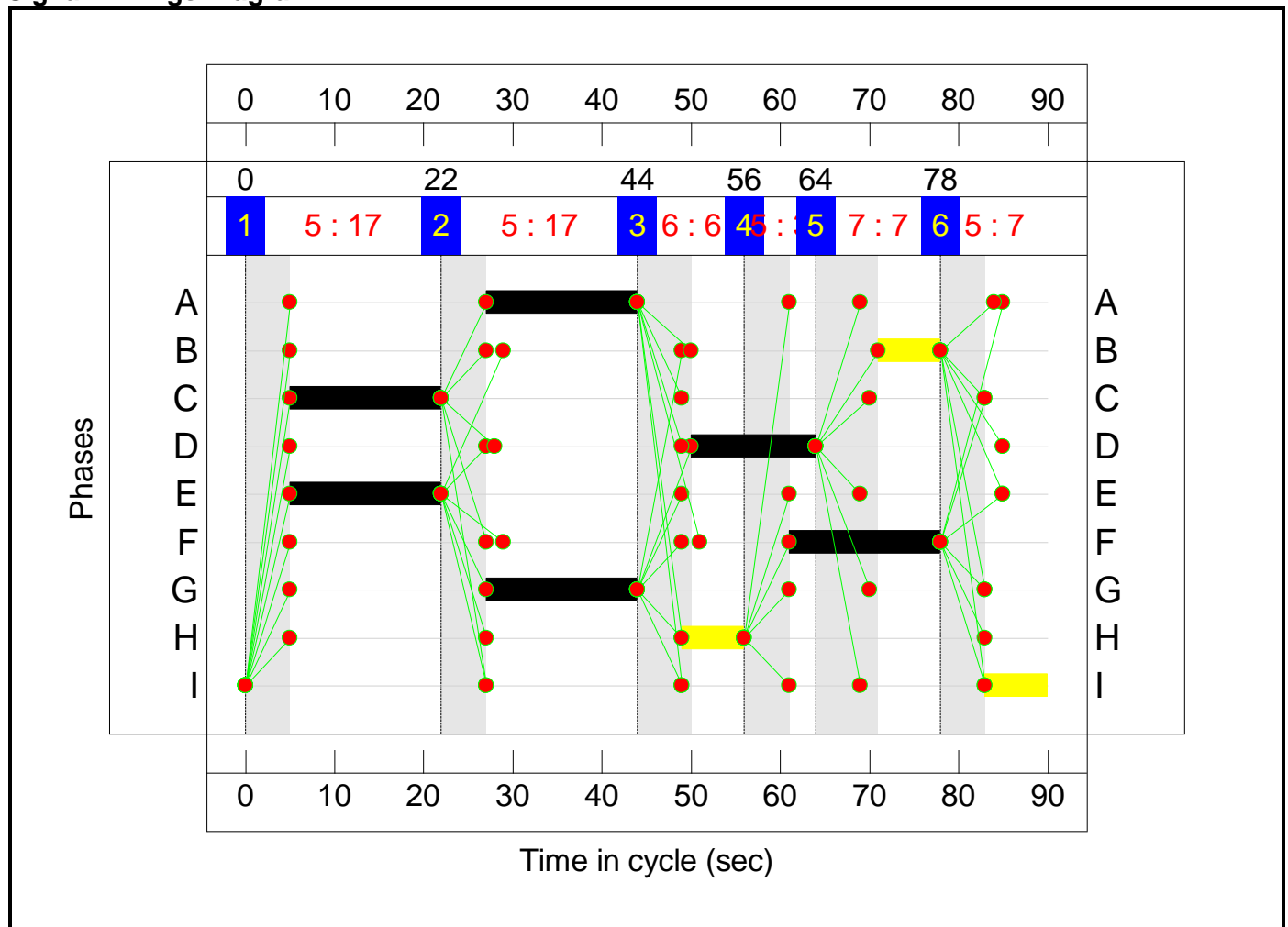
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	17	17	6	3	7	7
Change Point	0	22	44	56	64	78

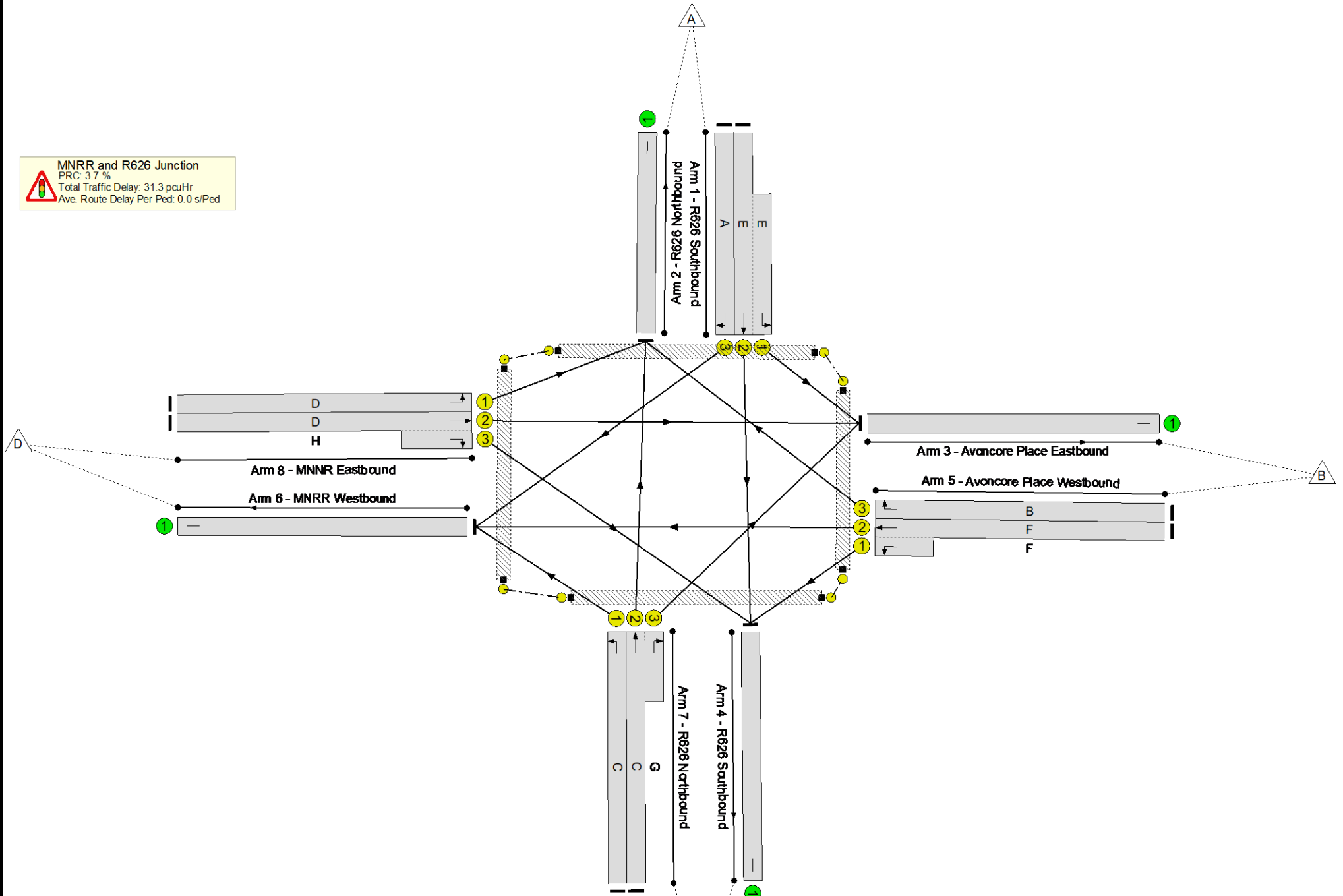
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 3.7 %  
 Total Traffic Delay: 31.3 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	86.8%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	86.8%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	411	1940:1912	388+109	82.7 : 82.7%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	311	1821	364	85.4%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	590	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	286	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	450	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	17	-	405	1940:1724	351+115	86.8 : 86.8%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	91	1924	171	53.2%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	654	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	38	1805	361	10.5%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17	-	346	1940:1781	367+93	75.2 : 75.2%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	14	-	223	1634	272	81.9%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	14:7	-	155	1940:1830	321+74	39.3 : 39.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

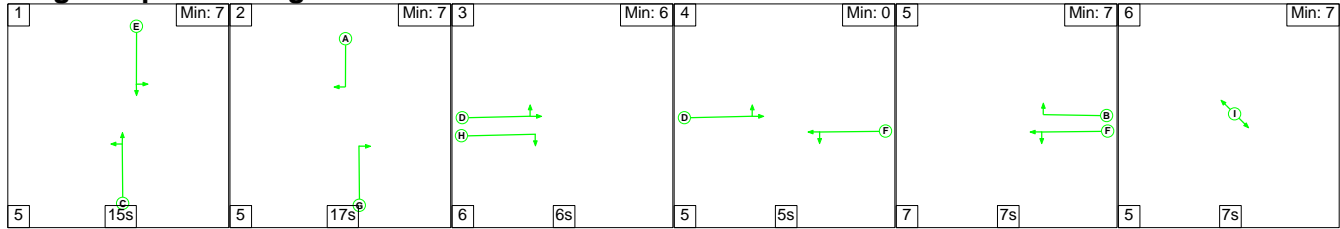
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	18.8	12.4	0.0	31.3	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	18.8	12.4	0.0	31.3	-	-	-	-
1/2+1/1	411	411	-	-	-	3.8	2.3	-	6.1	53.5	7.7	2.3	9.9
1/3	311	311	-	-	-	3.0	2.7	-	5.7	65.5	7.4	2.7	10.1
2/1	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	286	286	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	450	450	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	405	405	-	-	-	3.8	3.0	-	6.8	60.5	8.1	3.0	11.1
5/3	91	91	-	-	-	1.0	0.6	-	1.6	61.4	2.2	0.6	2.7
6/1	654	654	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	38	38	-	-	-	0.3	0.1	-	0.4	35.1	0.8	0.1	0.8
7/2+7/3	346	346	-	-	-	3.2	1.5	-	4.6	48.3	6.6	1.5	8.0
8/1	223	223	-	-	-	2.2	2.1	-	4.3	69.8	5.3	2.1	7.4
8/2+8/3	155	155	-	-	-	1.5	0.3	-	1.8	41.8	2.8	0.3	3.1
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		3.7	Total Delay for Signalled Lanes (pcuHr):		31.26	Cycle Time (s):		90			
		PRC Over All Lanes (%):		3.7	Total Delay Over All Lanes(pcuHr):		31.26						

Full Input Data And Results

Scenario 8: '2029 AM With Phase 1' (FG8: '2029 AM With Phase 1', Plan 1: 'Network Control Plan 1')

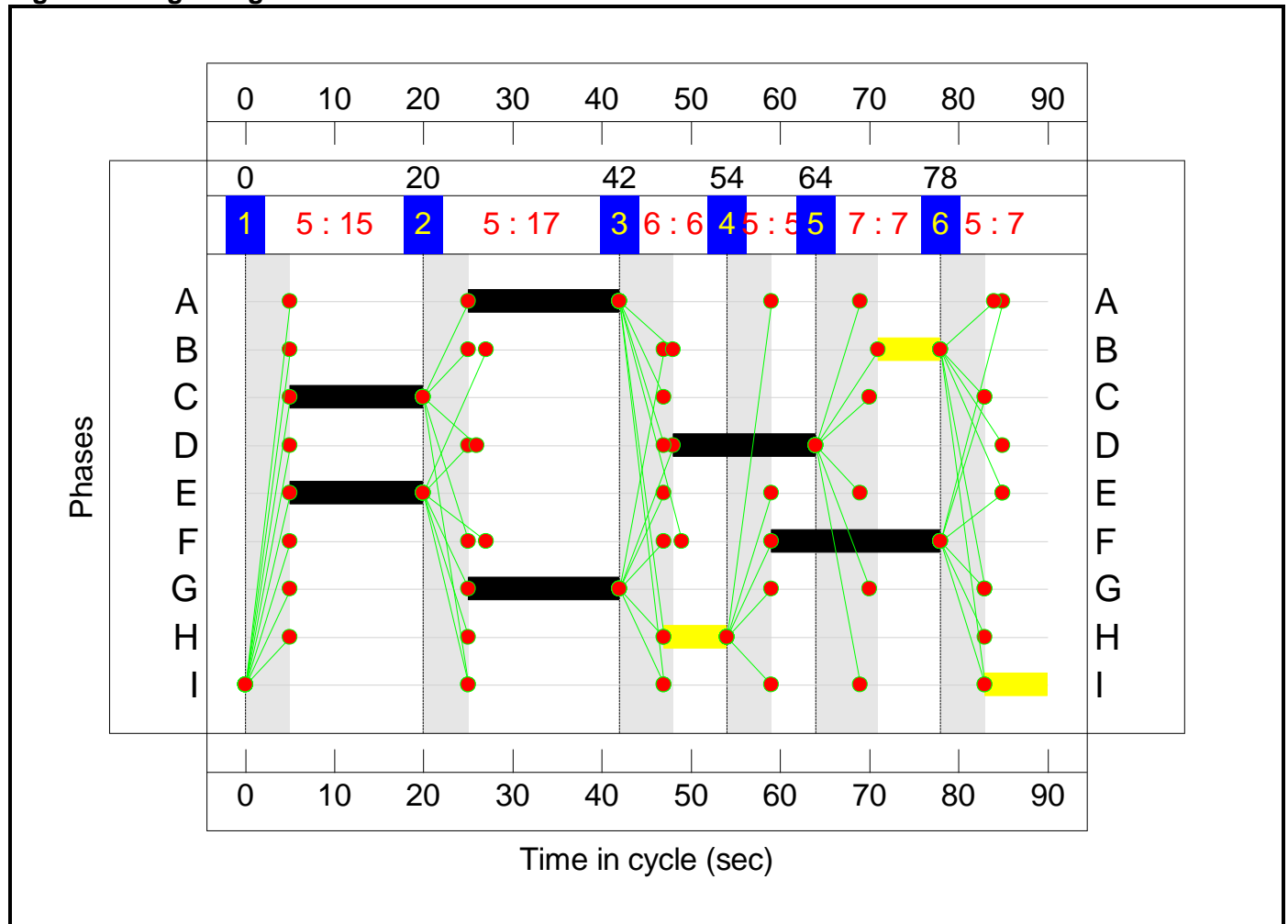
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	15	17	6	5	7	7
Change Point	0	20	42	54	64	78


Signal Timings Diagram

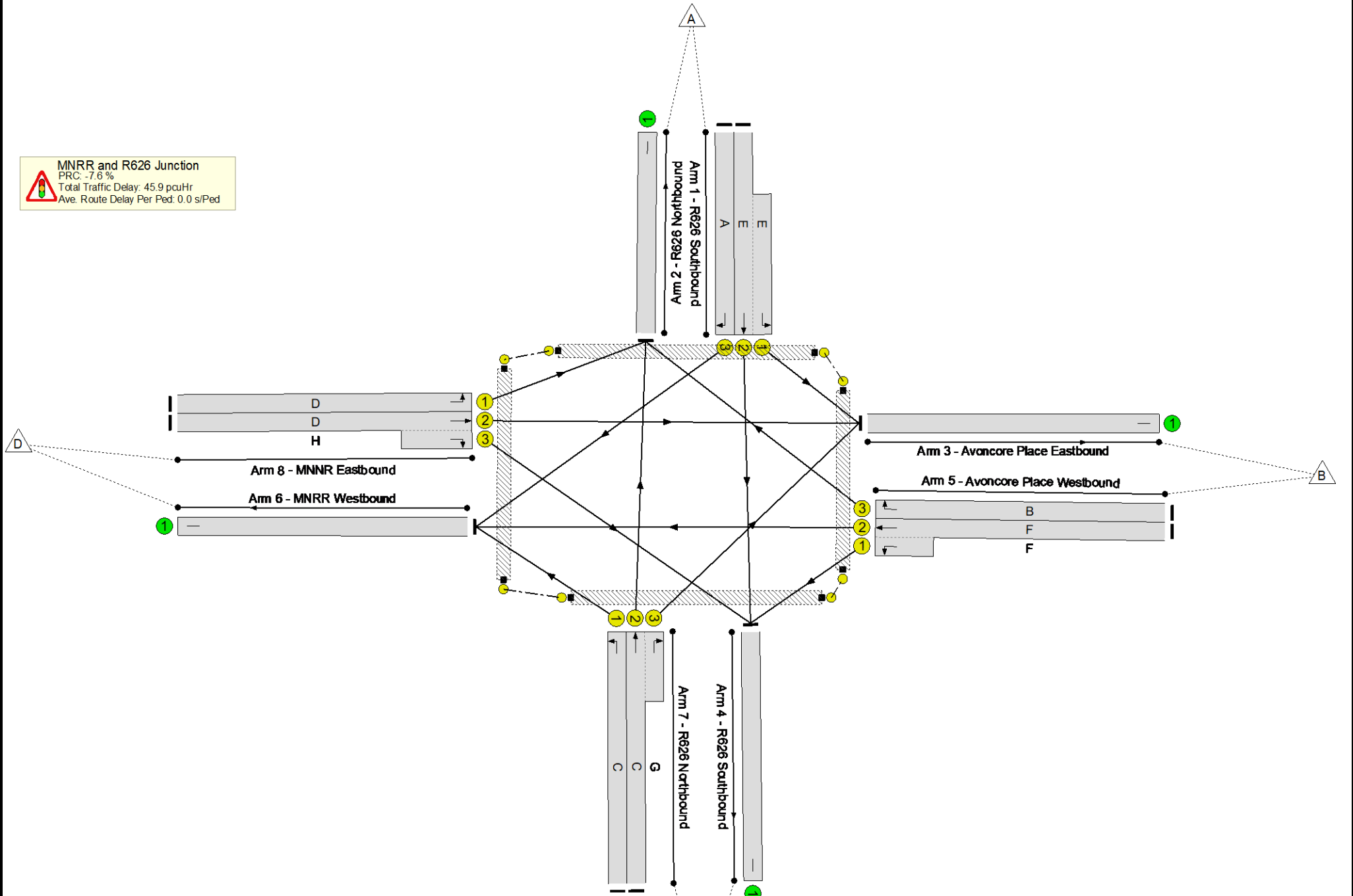




Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: -7.6 %  
 Total Traffic Delay: 45.9 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	96.9%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	96.9%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	15	-	411	1940:1912	345+97	93.1 : 93.1%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	350	1821	364	96.1%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	666	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	328	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	460	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	19	-	442	1940:1724	389+114	88.0 : 88.0%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	91	1924	171	53.2%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	735	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	15	-	43	1805	321	13.4%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	15:17	-	346	1940:1781	333+84	82.9 : 82.9%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	16	-	299	1634	309	96.9%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	16:7	-	207	1940:1830	355+82	47.3 : 47.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

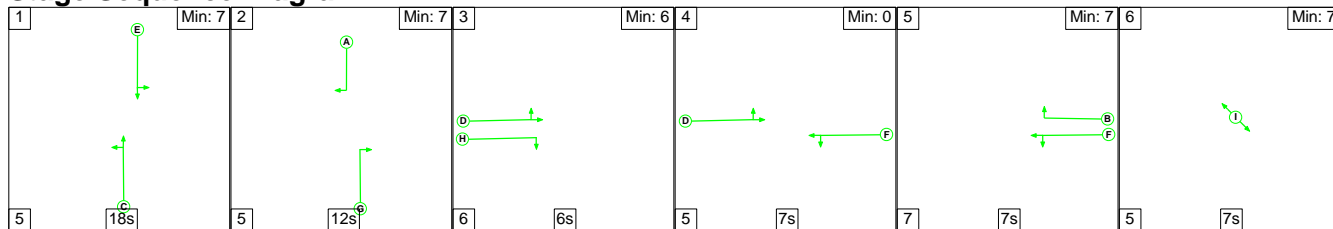
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	21.1	24.7	0.0	45.9	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	21.1	24.7	0.0	45.9	-	-	-	-
1/2+1/1	411	411	-	-	-	4.0	5.1	-	9.1	79.7	7.8	5.1	12.9
1/3	350	350	-	-	-	3.5	6.5	-	9.9	102.1	8.7	6.5	15.1
2/1	666	666	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	328	328	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	460	460	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	442	442	-	-	-	4.0	3.3	-	7.3	59.8	9.2	3.3	12.5
5/3	91	91	-	-	-	1.0	0.6	-	1.6	61.4	2.2	0.6	2.7
6/1	735	735	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	43	43	-	-	-	0.4	0.1	-	0.4	37.7	0.9	0.1	1.0
7/2+7/3	346	346	-	-	-	3.3	2.3	-	5.6	58.0	6.7	2.3	9.0
8/1	299	299	-	-	-	3.0	6.6	-	9.6	115.3	7.4	6.6	14.0
8/2+8/3	207	207	-	-	-	1.9	0.4	-	2.4	41.3	3.7	0.4	4.1
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		-7.6		Total Delay for Signalled Lanes (pcuHr):		45.89		Cycle Time (s):		90	
		PRC Over All Lanes (%):		-7.6		Total Delay Over All Lanes(pcuHr):		45.89					

Full Input Data And Results

**Scenario 9: '2029 PM Without Development'** (FG9: '2029 PM Without Development', Plan 2: 'Network Control Plan 2')

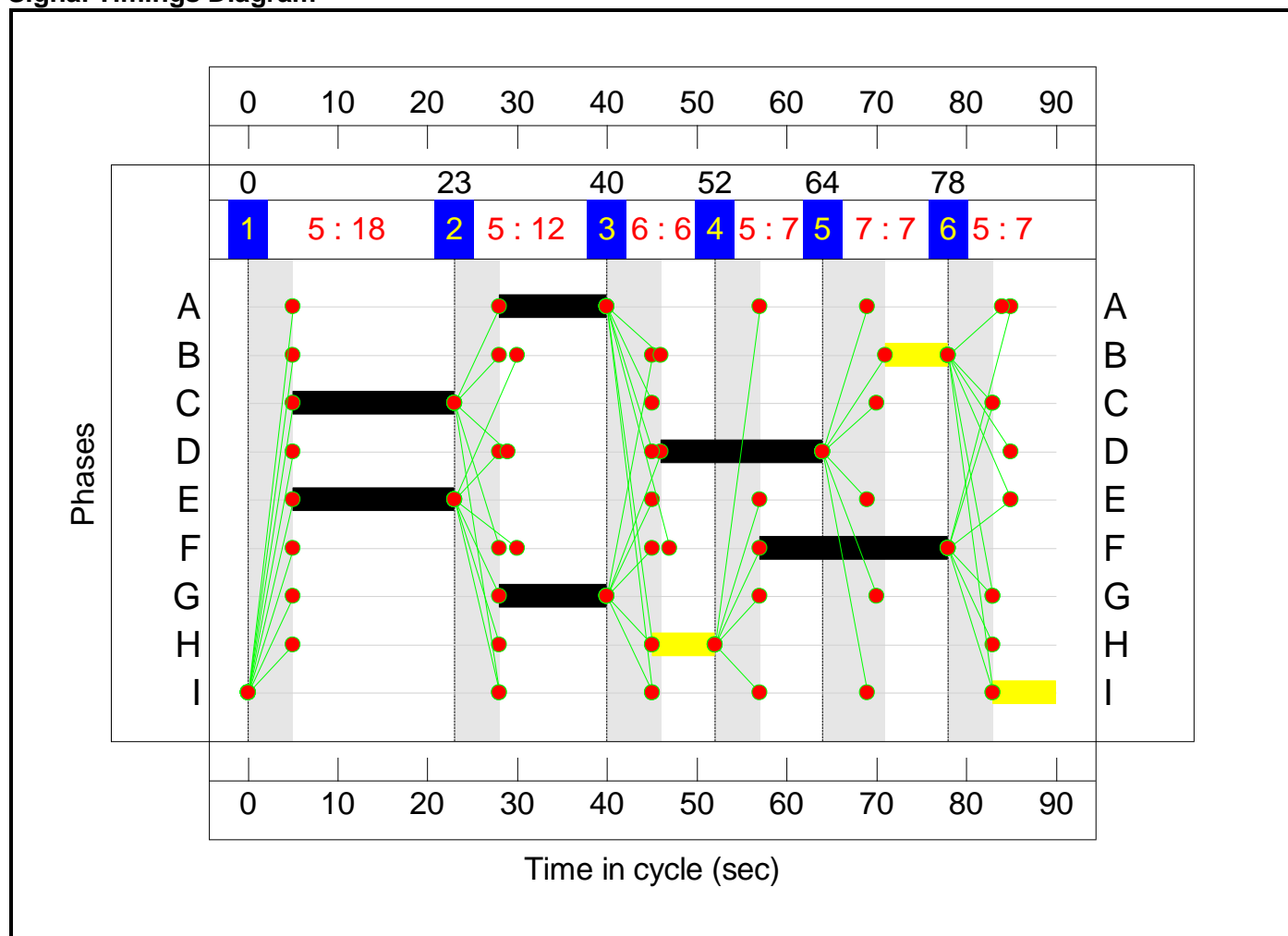
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	18	12	6	7	7	7
Change Point	0	23	40	52	64	78

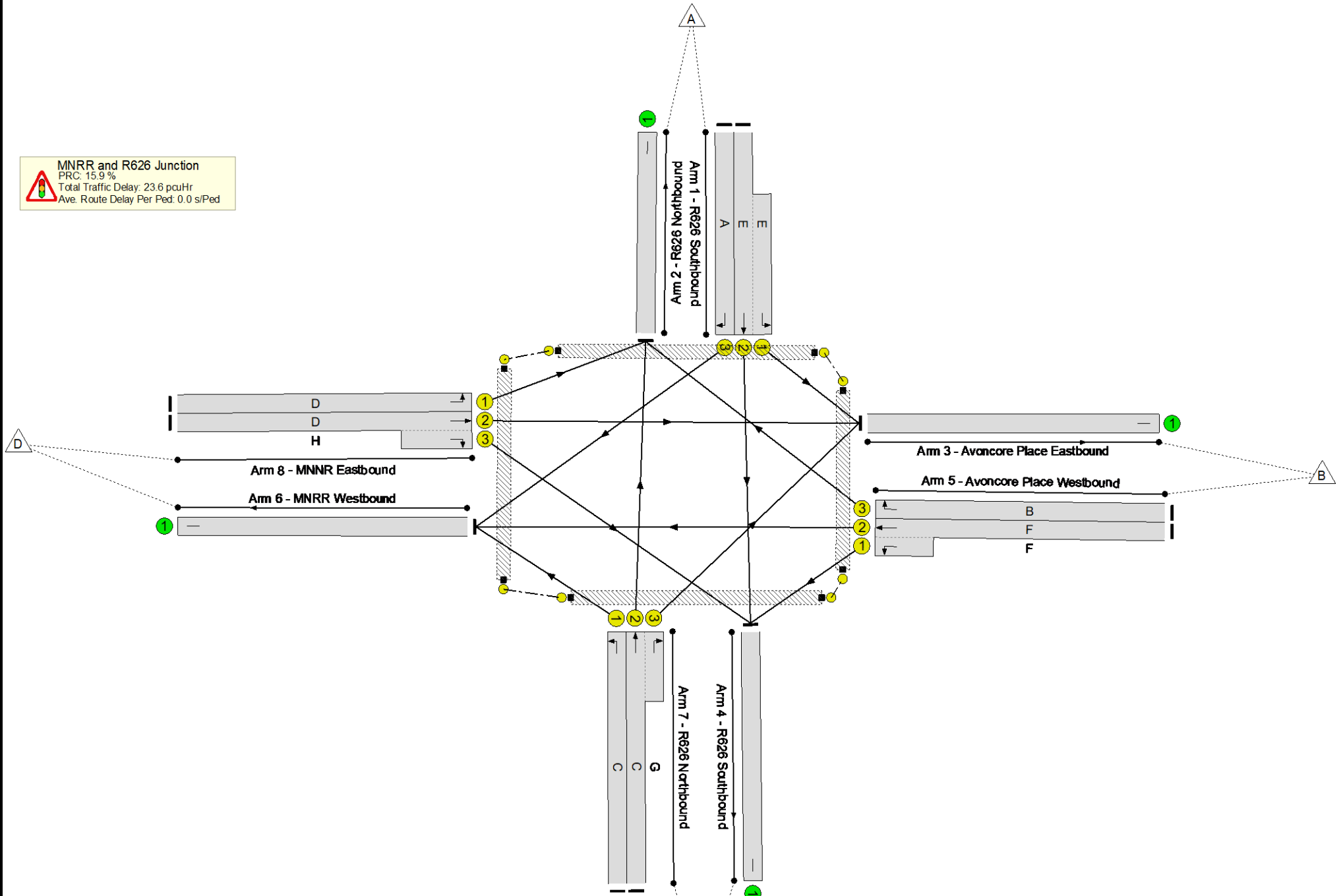
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 15.9%  
 Total Traffic Delay: 23.6 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped





## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.6%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	77.6%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	18	-	225	1940:1912	410+100	44.2 : 44.2%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	12	-	199	1821	263	75.7%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	583	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	492	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	304	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	236	1940:1724	389+188	40.9 : 40.9%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	66	1924	171	38.6%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	18	-	63	1805	381	16.5%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	18:12	-	409	1940:1781	357+178	76.5 : 76.5%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	244	1634	345	70.7%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	358	1940:1830	402+59	77.6 : 77.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

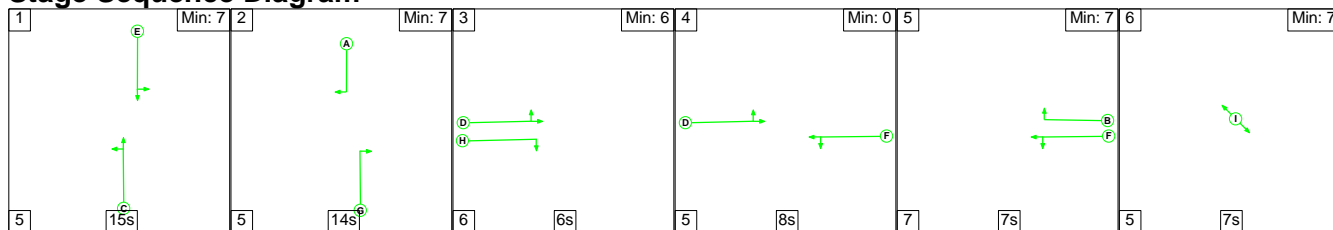
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	16.6	7.1	0.0	23.6	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	16.6	7.1	0.0	23.6	-	-	-	-
1/2+1/1	225	225	-	-	-	1.9	0.4	-	2.3	36.8	3.9	0.4	4.3
1/3	199	199	-	-	-	2.0	1.5	-	3.5	63.9	4.8	1.5	6.2
2/1	583	583	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	492	492	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	304	304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	236	236	-	-	-	1.8	0.3	-	2.2	32.9	3.3	0.3	3.6
5/3	66	66	-	-	-	0.7	0.3	-	1.0	55.7	1.5	0.3	1.9
6/1	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	63	63	-	-	-	0.5	0.1	-	0.6	34.7	1.3	0.1	1.4
7/2+7/3	409	409	-	-	-	3.8	1.6	-	5.4	47.6	6.5	1.6	8.1
8/1	244	244	-	-	-	2.2	1.2	-	3.4	50.4	5.6	1.2	6.8
8/2+8/3	358	358	-	-	-	3.5	1.7	-	5.2	52.3	7.5	1.7	9.2
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		15.9		Total Delay for Signalled Lanes (pcuHr):		23.64		Cycle Time (s):		90	
		PRC Over All Lanes (%):		15.9		Total Delay Over All Lanes(pcuHr):		23.64					

Full Input Data And Results

Scenario 10: '2029 PM With Phase 1' (FG10: '2029 PM With Phase 1', Plan 2: 'Network Control Plan 2')

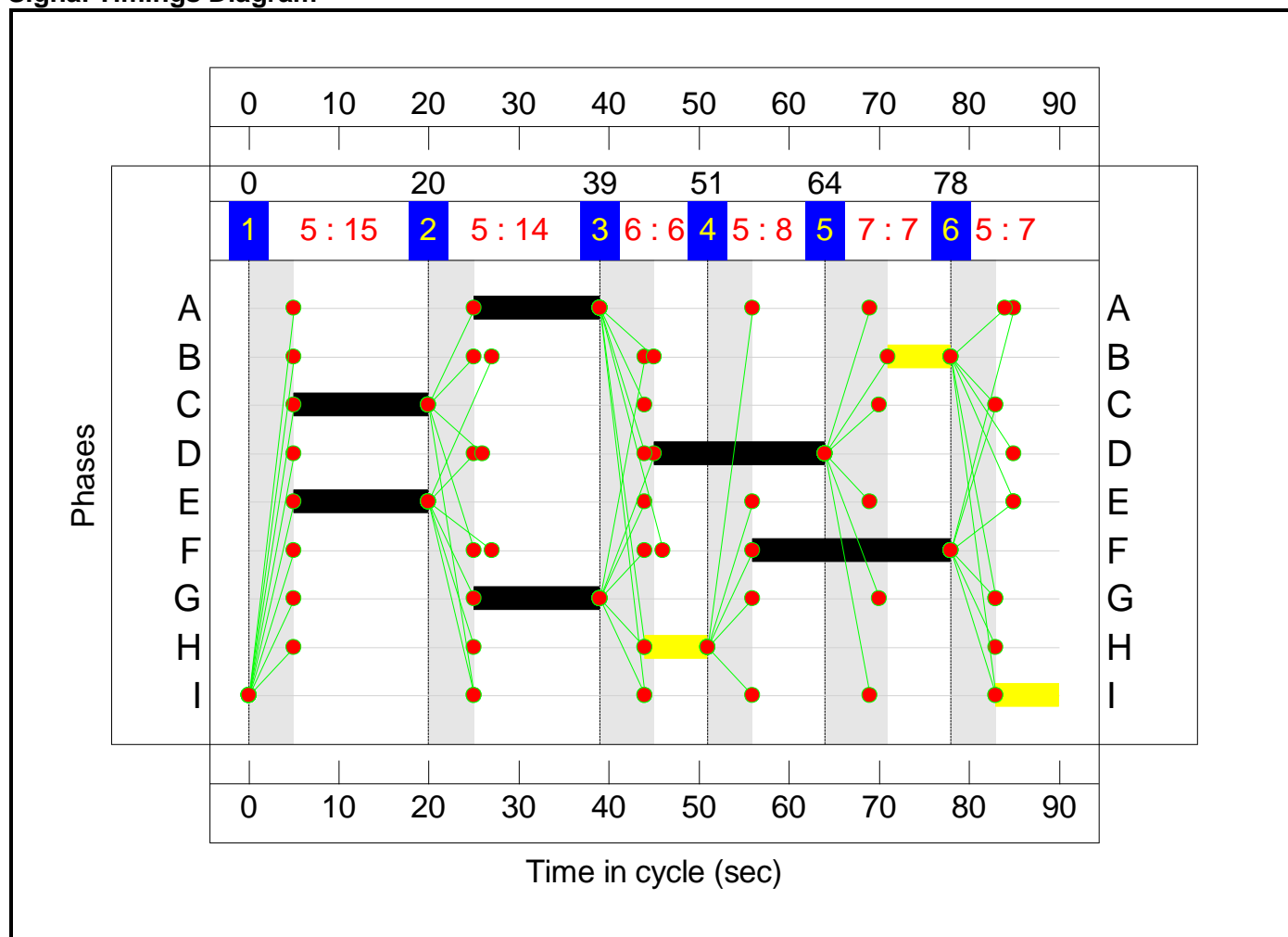
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5	6
Duration	15	14	6	8	7	7
Change Point	0	20	39	51	64	78

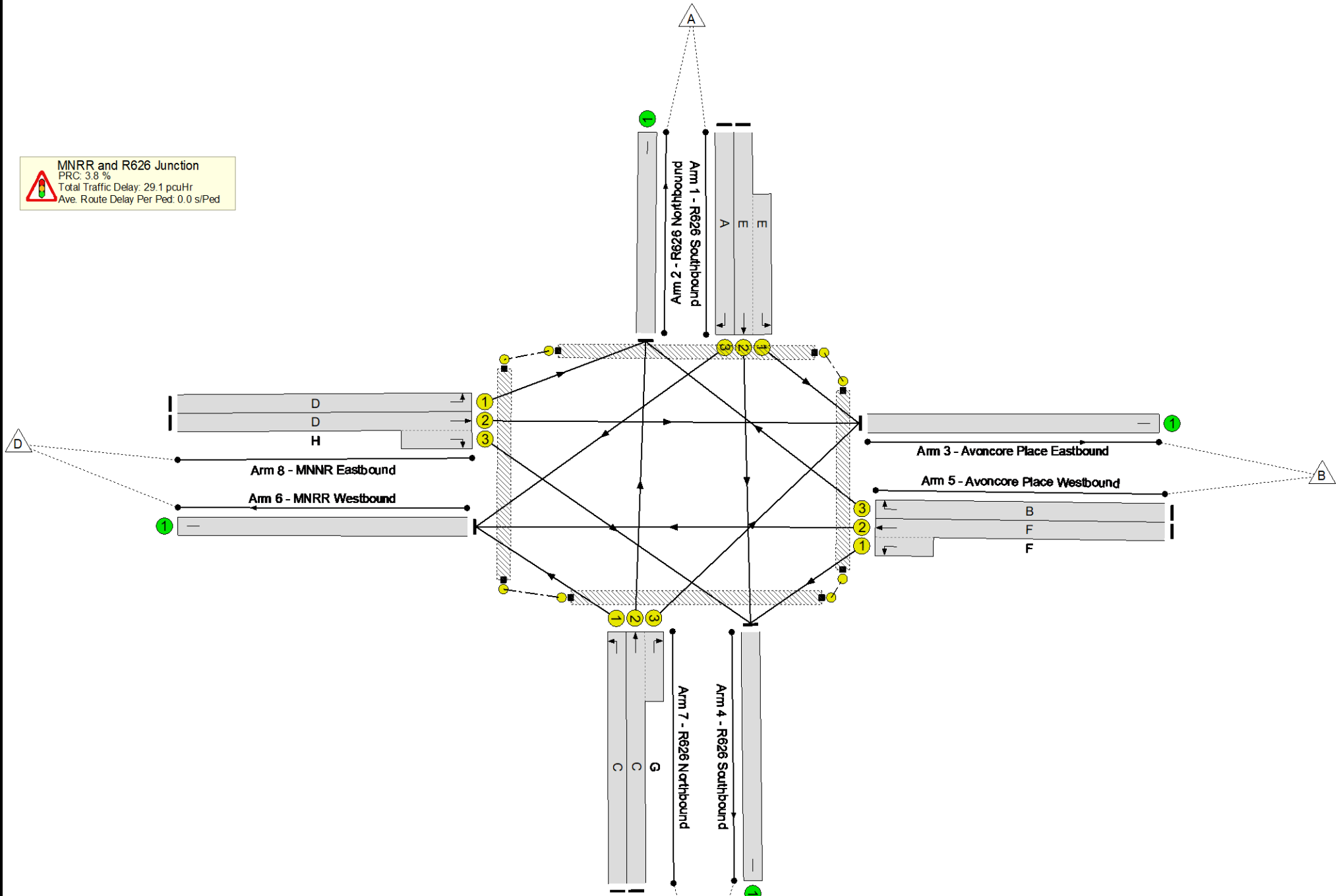
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 3.8 %  
 Total Traffic Delay: 29.1 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	86.7%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	86.7%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	15	-	225	1940:1912	345+84	52.5 : 52.5%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	14	-	250	1821	304	82.4%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	613	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	531	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	309	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	22	-	277	1940:1724	419+161	47.7 : 47.7%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	66	1924	171	38.6%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	529	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	15	-	79	1805	321	24.6%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	15:14	-	409	1940:1781	315+157	86.7 : 86.7%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	19	-	274	1634	363	75.5%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	19:7	-	402	1940:1830	421+61	83.4 : 83.4%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%



Full Input Data And Results

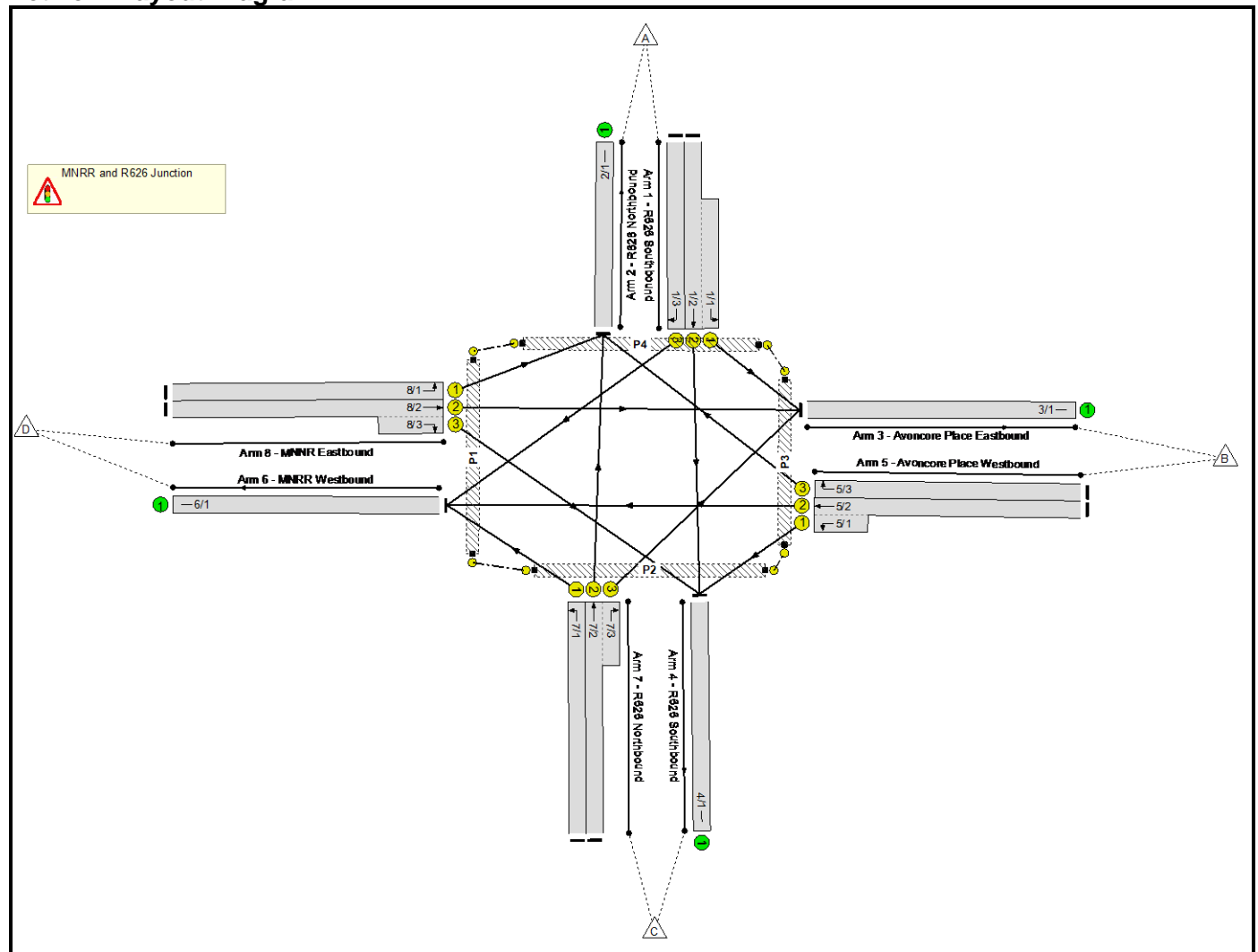
Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	18.6	10.5	0.0	29.1	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	18.6	10.5	0.0	29.1	-	-	-	-
1/2+1/1	225	225	-	-	-	2.1	0.5	-	2.6	41.9	4.1	0.5	4.6
1/3	250	250	-	-	-	2.5	2.2	-	4.7	67.4	6.0	2.2	8.1
2/1	613	613	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	531	531	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	309	309	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	277	277	-	-	-	2.1	0.5	-	2.6	33.3	4.1	0.5	4.6
5/3	66	66	-	-	-	0.7	0.3	-	1.0	55.7	1.5	0.3	1.9
6/1	529	529	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	79	79	-	-	-	0.7	0.2	-	0.9	39.3	1.7	0.2	1.9
7/2+7/3	409	409	-	-	-	4.0	3.0	-	6.9	61.1	7.0	3.0	10.0
8/1	274	274	-	-	-	2.5	1.5	-	4.0	52.3	6.4	1.5	7.9
8/2+8/3	402	402	-	-	-	4.0	2.4	-	6.4	57.3	8.7	2.4	11.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		3.8		Total Delay for Signalled Lanes (pcuHr):		29.05		Cycle Time (s):		90	
		PRC Over All Lanes (%):		3.8		Total Delay Over All Lanes(pcuHr):		29.05					

Full Input Data And Results  
**Full Input Data And Results**

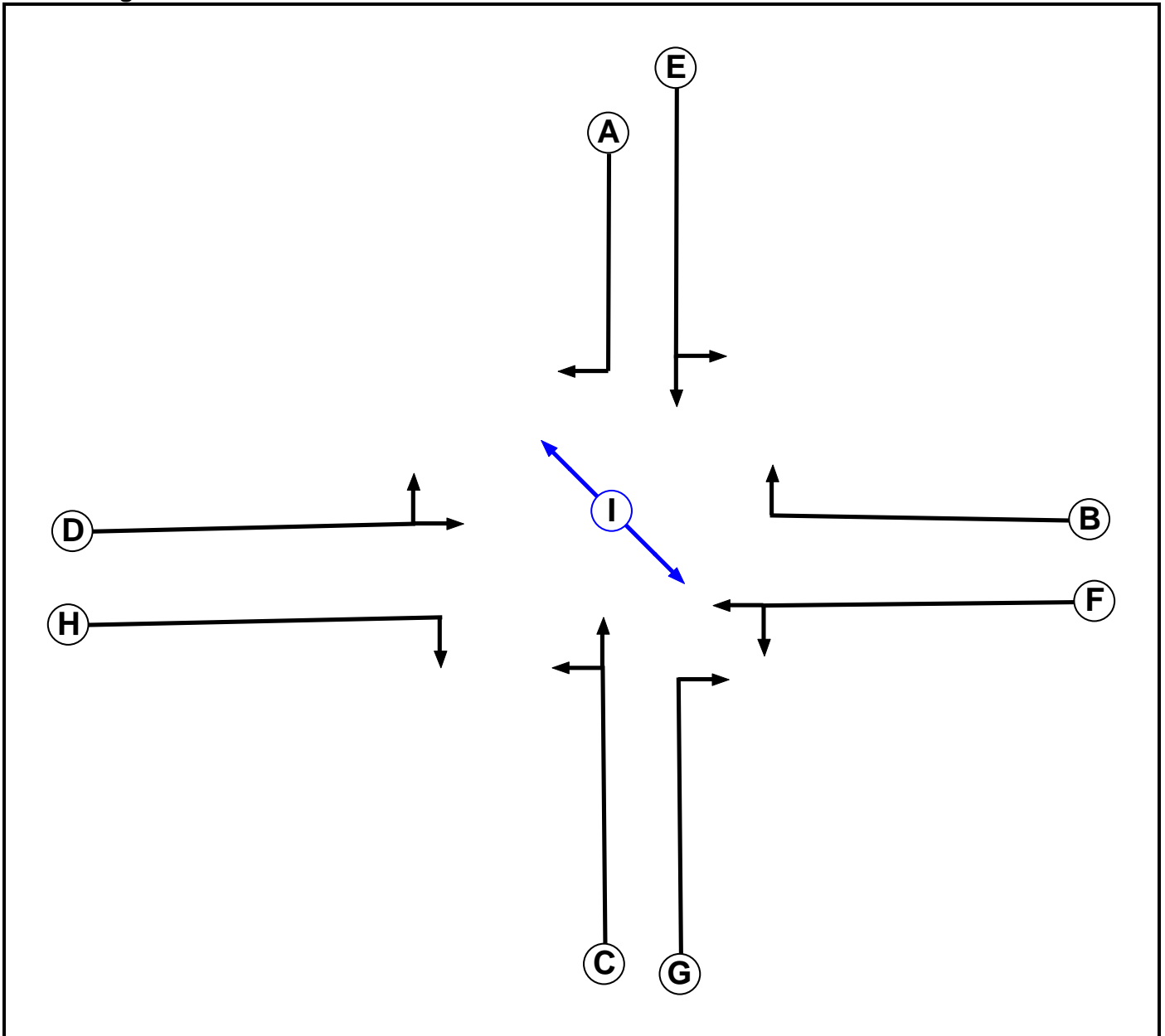
**User and Project Details**

<b>Project:</b>	<b>Proposed Residential Development Water Rock</b>
<b>Title:</b>	
<b>Location:</b>	
<b>Client:</b>	Haven Falls Limited
<b>Site Ref(s):</b>	Junction 2
<b>Additional detail:</b>	
<b>File name:</b>	J2 LinSig Model Rev B.lsg3x
<b>Author:</b>	C. O Brien
<b>Company:</b>	MHL Consulting Engineers
<b>Address:</b>	

**Network Layout Diagram**



**Phase Diagram**



**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Traffic		7	7
I	Pedestrian		7	7

## Full Input Data And Results

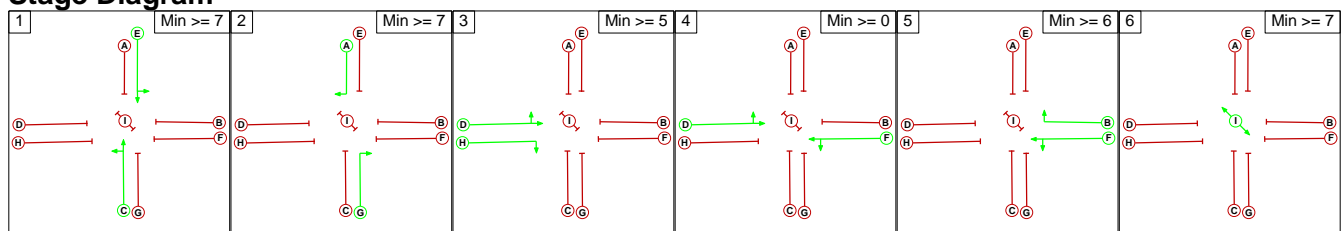
### Phase Intergrens Matrix

Terminating Phase	Starting Phase									
		A	B	C	D	E	F	G	H	I
	A		6	5	5	-	7	-	5	5
	B	6		5	7	7	-	5	-	5
	C	5	5		6	-	5	-	-	5
	D	5	7	6		5	-	6	-	5
	E	-	7	-	5		7	5	5	5
	F	7	-	5	-	7		5	5	5
	G	-	5	-	6	5	5		5	5
	H	5	-	-	-	5	5	5		5
I	5	5	5	5	5	5	5	5		

### Phases in Stage

Stage No.	Phases in Stage
1	C E
2	A G
3	D H
4	D F
5	B F
6	I

### Stage Diagram



### Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

### Prohibited Stage Change

From Stage	To Stage						
		1	2	3	4	5	6
	1		5	6	7	7	5
	2	5		6	7	7	5
	3	6	6		5	7	5
	4	7	7	5		7	5
	5	7	7	7	7		5
6	5	5	5	5	5		

## Full Input Data And Results

Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: MNRR and R626 Junction**

There are no Opposed Lanes in this Junction

Full Input Data And Results

**Lane Input Data**

Junction: MNRR and R626 Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (R626 Southbound)	U	E	2	3	11.3	Geom	-	3.00	0.00	N	Arm 3 Left	20.00
1/2 (R626 Southbound)	U	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (R626 Southbound)	U	A	2	3	19.1	Geom	-	3.25	0.00	Y	Arm 6 Right	23.00
2/1 (R626 Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Avoncore Place Eastbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (R626 Southbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Avoncore Place Westbound)	U	F	2	3	4.7	Geom	-	3.25	0.00	Y	Arm 4 Left	12.00
5/2 (Avoncore Place Westbound)	U	F	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Ahead	Inf
5/3 (Avoncore Place Westbound)	U	B	2	3	4.7	Geom	-	3.00	0.00	N	Arm 2 Right	22.00
6/1 (MNRR Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (R626 Northbound)	U	C	2	3	5.6	Geom	-	3.25	0.00	Y	Arm 6 Left	20.00
7/2 (R626 Northbound)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf
7/3 (R626 Northbound)	U	G	2	3	5.6	Geom	-	3.00	0.00	Y	Arm 3 Right	20.00
8/1 (MNNR Eastbound )	U	D	2	3	8.7	Geom	-	3.25	0.00	Y	Arm 2 Left	8.00
8/2 (MNNR Eastbound )	U	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Ahead	Inf
8/3 (MNNR Eastbound )	U	H	2	3	5.7	Geom	-	3.25	0.00	Y	Arm 4 Right	25.00

Full Input Data And Results

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 AM'	08:00	09:00	01:00	
2: '2022 PM'	16:30	17:30	01:00	
3: '2024 AM Without Development'	08:00	09:00	01:00	
4: '2024 AM With Development'	08:00	09:00	01:00	
5: '2024 PM Without Development'	16:30	17:30	01:00	
6: '2024 PM With Development'	16:30	17:30	01:00	
7: '2029 AM Without Development'	08:00	09:00	01:00	
8: '2029 AM With Phase 1'	08:00	09:00	01:00	
9: '2029 PM Without Development'	16:30	17:30	01:00	
10: '2029 PM With Phase 1'	16:30	17:30	01:00	

**Scenario 1: '2022 AM'** (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	83	296	287	666
	B	84	0	92	281	457
	C	255	65	0	35	355
	D	206	116	27	0	349
	Tot.	545	264	415	603	1827



Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 1: 2022 AM
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	83
1/2 (with short)	379(In) 296(Out)
1/3	287
2/1	545
3/1	264
4/1	415
5/1 (short)	92
5/2 (with short)	373(In) 281(Out)
5/3	84
6/1	603
7/1	35
7/2 (with short)	320(In) 255(Out)
7/3 (short)	65
8/1	206
8/2 (with short)	143(In) 116(Out)
8/3 (short)	27

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 2: '2022 PM'** (FG2: '2022 PM', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	41	167	184	392
B	61	0	71	147	279	
C	252	125	0	58	435	
D	225	288	42	0	555	
Tot.	538	454	280	389	1661	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 2: 2022 PM
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	41
1/2 (with short)	208(In) 167(Out)
1/3	184
2/1	538
3/1	454
4/1	280
5/1 (short)	71
5/2 (with short)	218(In) 147(Out)
5/3	61
6/1	389
7/1	58
7/2 (with short)	377(In) 252(Out)
7/3 (short)	125
8/1	225
8/2 (with short)	330(In) 288(Out)
8/3 (short)	42

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 3: '2024 AM Without Development'** (FG3: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	85	303	294	682
	B	86	0	94	288	468
	C	261	67	0	36	364
	D	211	119	28	0	358
	Tot.	558	271	425	618	1872

## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 3: 2024 AM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	85
1/2 (with short)	388(In) 303(Out)
1/3	294
2/1	558
3/1	271
4/1	425
5/1 (short)	94
5/2 (with short)	382(In) 288(Out)
5/3	86
6/1	618
7/1	36
7/2 (with short)	328(In) 261(Out)
7/3 (short)	67
8/1	211
8/2 (with short)	147(In) 119(Out)
8/3 (short)	28

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 4: '2024 AM With Development'** (FG4: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	85	303	303	691
B	86	0	94	297	477	
C	261	67	0	36	364	
D	242	136	32	0	410	
Tot.	589	288	429	636	1942	

## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 4: 2024 AM With Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	85
1/2 (with short)	388(In) 303(Out)
1/3	303
2/1	589
3/1	288
4/1	429
5/1 (short)	94
5/2 (with short)	391(In) 297(Out)
5/3	86
6/1	636
7/1	36
7/2 (with short)	328(In) 261(Out)
7/3 (short)	67
8/1	242
8/2 (with short)	168(In) 136(Out)
8/3 (short)	32

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 5: '2024 PM Without Development'** (FG5: '2024 PM Without Development', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	171	188	401
	B	62	0	73	150	285
	C	258	128	0	59	445
	D	230	295	43	0	568
	Tot.	550	465	287	397	1699



## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 5: 2024 PM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	42
1/2 (with short)	213(In) 171(Out)
1/3	188
2/1	550
3/1	465
4/1	287
5/1 (short)	73
5/2 (with short)	223(In) 150(Out)
5/3	62
6/1	397
7/1	59
7/2 (with short)	386(In) 258(Out)
7/3 (short)	128
8/1	230
8/2 (with short)	338(In) 295(Out)
8/3 (short)	43

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 6: '2024 PM With Development'** (FG6: '2024 PM With Development', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	42	171	209	422
	B	62	0	73	167	302
	C	258	128	0	66	452
	D	241	309	45	0	595
	Tot.	561	479	289	442	1771

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 6: 2024 PM With Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	42
1/2 (with short)	213(In) 171(Out)
1/3	209
2/1	561
3/1	479
4/1	289
5/1 (short)	73
5/2 (with short)	240(In) 167(Out)
5/3	62
6/1	442
7/1	66
7/2 (with short)	386(In) 258(Out)
7/3 (short)	128
8/1	241
8/2 (with short)	354(In) 309(Out)
8/3 (short)	45

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 7: '2029 AM Without Development'** (FG7: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	90	321	311	722
	B	91	0	100	305	496
	C	276	70	0	38	384
	D	223	126	29	0	378
	Tot.	590	286	450	654	1980

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 7: 2029 AM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	90
1/2 (with short)	411(In) 321(Out)
1/3	311
2/1	590
3/1	286
4/1	450
5/1 (short)	100
5/2 (with short)	405(In) 305(Out)
5/3	91
6/1	654
7/1	38
7/2 (with short)	346(In) 276(Out)
7/3 (short)	70
8/1	223
8/2 (with short)	155(In) 126(Out)
8/3 (short)	29

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 8: '2029 AM With Phase 1'** (FG8: '2029 AM With Phase 1', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	90	321	366	777
B	91	0	100	358	549	
C	276	70	0	45	391	
D	331	187	43	0	561	
Tot.	698	347	464	769	2278	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 8: 2029 AM With Phase 1
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	90
1/2 (with short)	411(In) 321(Out)
1/3	366
2/1	698
3/1	347
4/1	464
5/1 (short)	100
5/2 (with short)	458(In) 358(Out)
5/3	91
6/1	769
7/1	45
7/2 (with short)	346(In) 276(Out)
7/3 (short)	70
8/1	331
8/2 (with short)	230(In) 187(Out)
8/3 (short)	43

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 9: '2029 PM Without Development'** (FG9: '2029 PM Without Development', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	44	181	199	424
	B	66	0	77	159	302
	C	273	136	0	63	472
	D	244	312	46	0	602
	Tot.	583	492	304	421	1800



Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 9: 2029 PM Without Development
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	44
1/2 (with short)	225(In) 181(Out)
1/3	199
2/1	583
3/1	492
4/1	304
5/1 (short)	77
5/2 (with short)	236(In) 159(Out)
5/3	66
6/1	421
7/1	63
7/2 (with short)	409(In) 273(Out)
7/3 (short)	136
8/1	244
8/2 (with short)	358(In) 312(Out)
8/3 (short)	46

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 10: '2029 PM With Phase 1'** (FG10: '2029 PM With Phase 1', Plan 2: 'Network Control Plan 2')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	44	181	271	496
B	66	0	77	217	360	
C	273	136	0	86	495	
D	287	368	54	0	709	
Tot.	626	548	312	574	2060	

Full Input Data And Results

**Traffic Lane Flows**

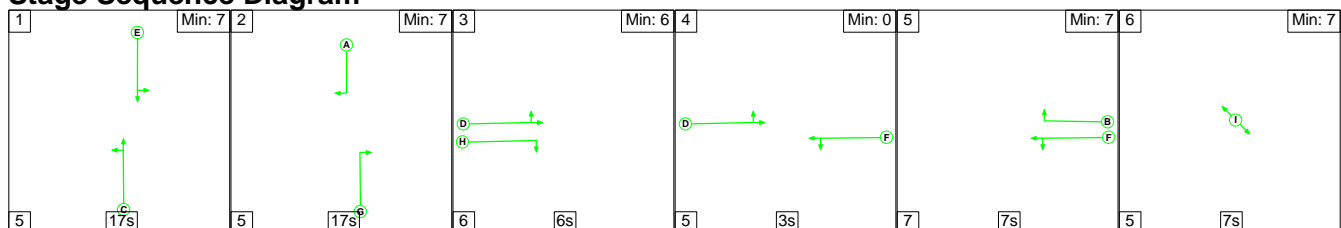
Lane	Scenario 10: 2029 PM With Phase 1
<b>Junction: MNRR and R626 Junction</b>	
1/1 (short)	44
1/2 (with short)	225(In) 181(Out)
1/3	271
2/1	626
3/1	548
4/1	312
5/1 (short)	77
5/2 (with short)	294(In) 217(Out)
5/3	66
6/1	574
7/1	86
7/2 (with short)	409(In) 273(Out)
7/3 (short)	136
8/1	287
8/2 (with short)	422(In) 368(Out)
8/3 (short)	54

**Lane Saturation Flows**

Junction: MNRR and R626 Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (R626 Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (R626 Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (R626 Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (R626 Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Avoncore Place Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (R626 Southbound Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 4 Left	12.00	100.0 %	1724	1724
5/2 (Avoncore Place Westbound)	3.25	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1940	1940
5/3 (Avoncore Place Westbound)	3.00	0.00	N	Arm 2 Right	22.00	100.0 %	1924	1924
6/1 (MNRR Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (R626 Northbound)	3.25	0.00	Y	Arm 6 Left	20.00	100.0 %	1805	1805
7/2 (R626 Northbound)	3.25	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1940	1940
7/3 (R626 Northbound)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (MNNR Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (MNNR Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (MNNR Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 1: '2022 AM' (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')**

**Stage Sequence Diagram**

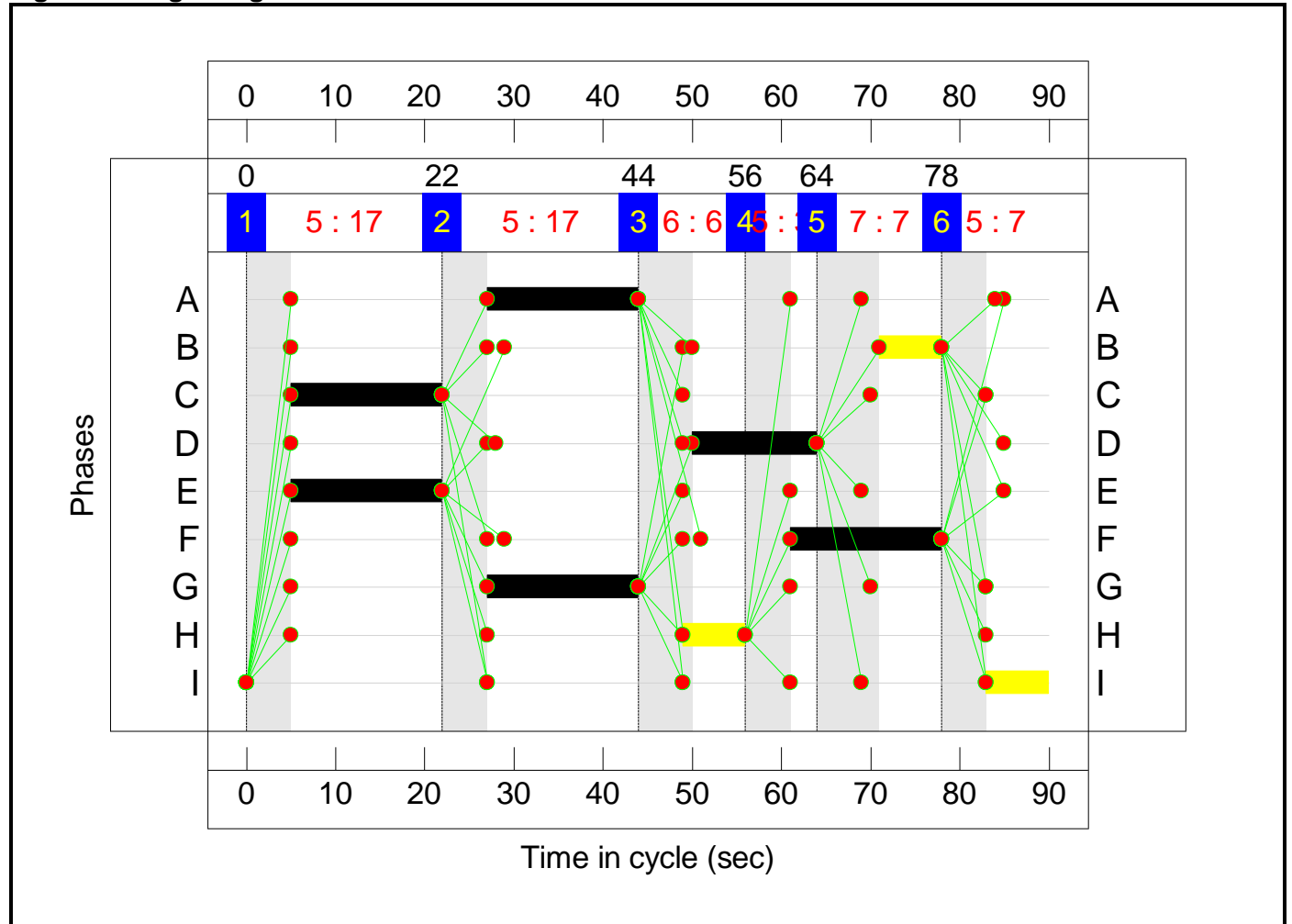


Full Input Data And Results

Stage Timings

Stage	1	2	3	4	5	6
Duration	17	17	6	3	7	7
Change Point	0	22	44	56	64	78

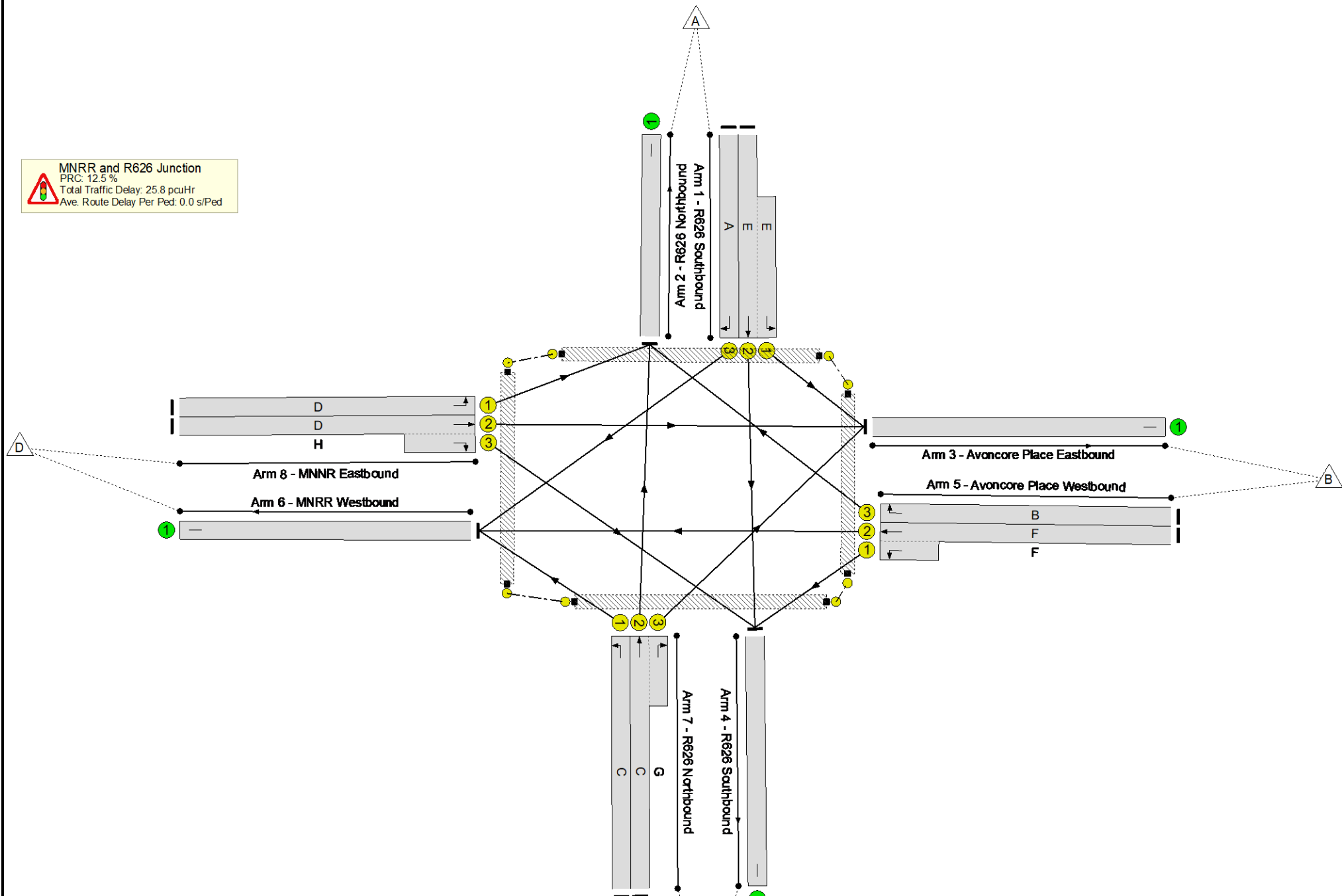
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 12.5%  
 Total Traffic Delay: 25.8 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	379	1940:1912	388+109	76.3 : 76.3%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	287	1821	364	78.8%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	545	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	264	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	415	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	17	-	373	1940:1724	351+115	80.0 : 80.0%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	84	1924	171	49.1%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	603	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	35	1805	361	9.7%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17	-	320	1940:1781	367+93	69.5 : 69.5%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	14	-	206	1634	272	75.6%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	14:7	-	143	1940:1830	320+75	36.2 : 36.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

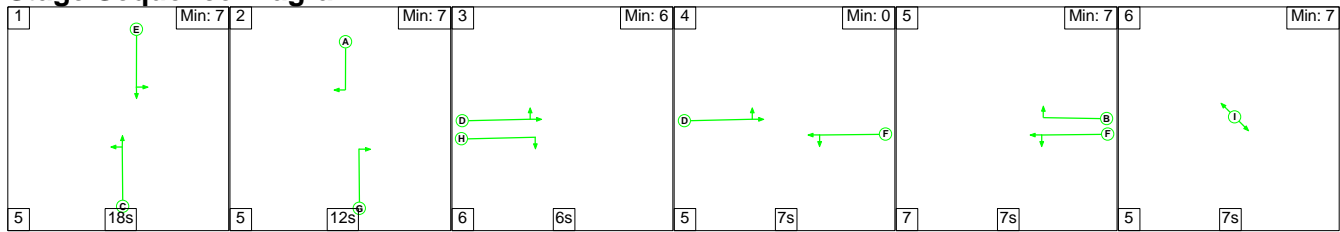
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	17.2	8.7	0.0	25.8	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	17.2	8.7	0.0	25.8	-	-	-	-
1/2+1/1	379	379	-	-	-	3.5	1.6	-	5.1	48.0	6.9	1.6	8.5
1/3	287	287	-	-	-	2.7	1.8	-	4.5	56.5	6.8	1.8	8.6
2/1	545	545	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	264	264	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	415	415	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	373	373	-	-	-	3.4	1.9	-	5.4	51.8	7.2	1.9	9.1
5/3	84	84	-	-	-	0.9	0.5	-	1.4	59.5	2.0	0.5	2.5
6/1	603	603	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	35	35	-	-	-	0.3	0.1	-	0.3	35.0	0.7	0.1	0.8
7/2+7/3	320	320	-	-	-	2.9	1.1	-	4.0	45.1	5.9	1.1	7.0
8/1	206	206	-	-	-	2.0	1.5	-	3.5	61.7	4.9	1.5	6.4
8/2+8/3	143	143	-	-	-	1.4	0.3	-	1.6	41.3	2.5	0.3	2.8
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		12.5	Total Delay for Signalled Lanes (pcuHr):		25.84	Cycle Time (s):		90			
		PRC Over All Lanes (%):		12.5	Total Delay Over All Lanes(pcuHr):		25.84						

Full Input Data And Results

Scenario 2: '2022 PM' (FG2: '2022 PM', Plan 2: 'Network Control Plan 2')

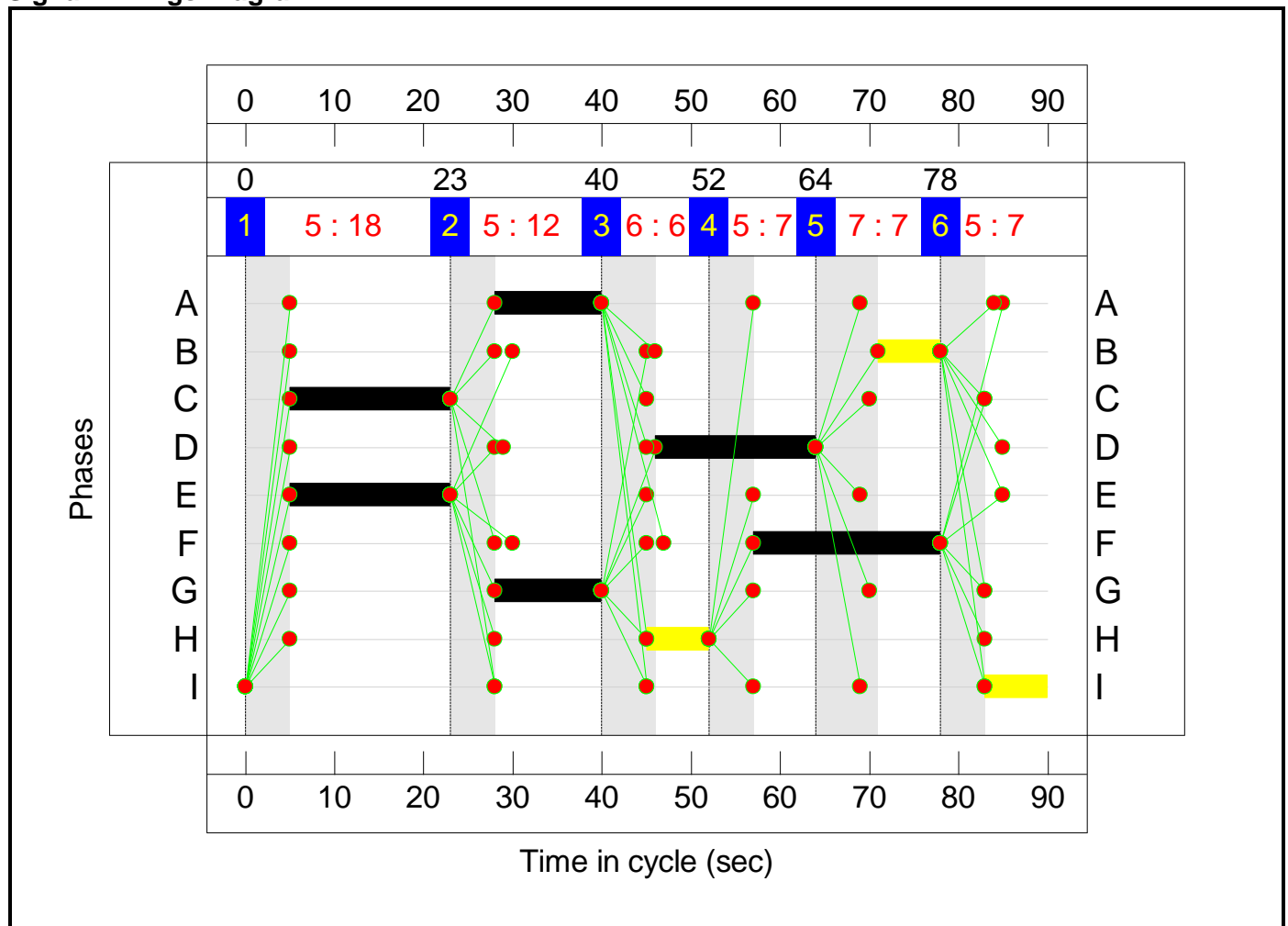
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	18	12	6	7	7	7
Change Point	0	23	40	52	64	78

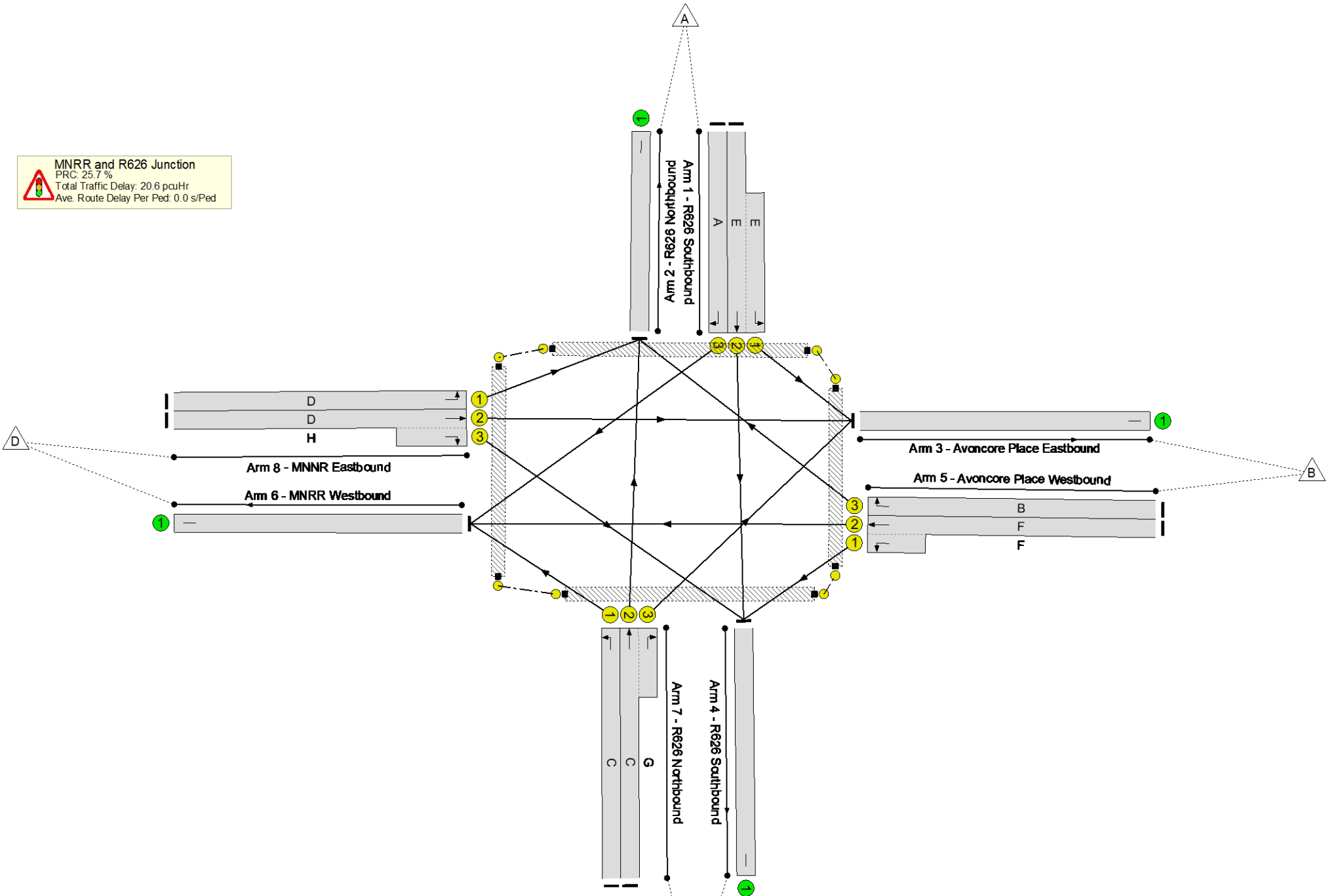
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results

**MNRR and R626 Junction**  
 PRC: 25.7 %  
 Total Traffic Delay: 20.6 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	71.6%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	18	-	208	1940:1912	410+101	40.8 : 40.8%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	12	-	184	1821	263	70.0%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	538	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	454	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	218	1940:1724	389+188	37.8 : 37.8%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	61	1924	171	35.7%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	389	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	18	-	58	1805	381	15.2%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	18:12	-	377	1940:1781	357+177	70.6 : 70.6%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	225	1634	345	65.2%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	330	1940:1830	402+59	71.6 : 71.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

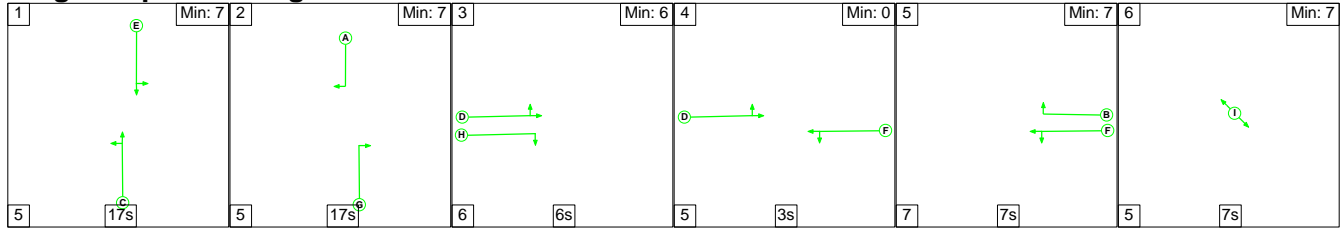
Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	15.1	5.5	0.0	20.6	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	15.1	5.5	0.0	20.6	-	-	-	-
1/2+1/1	208	208	-	-	-	1.7	0.3	-	2.1	36.2	3.6	0.3	3.9
1/3	184	184	-	-	-	1.9	1.1	-	3.0	58.8	4.3	1.1	5.5
2/1	538	538	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	454	454	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	218	218	-	-	-	1.7	0.3	-	2.0	32.5	3.0	0.3	3.3
5/3	61	61	-	-	-	0.7	0.3	-	0.9	54.9	1.4	0.3	1.7
6/1	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	58	58	-	-	-	0.5	0.1	-	0.6	34.5	1.2	0.1	1.3
7/2+7/3	377	377	-	-	-	3.5	1.2	-	4.7	44.6	5.7	1.2	6.9
8/1	225	225	-	-	-	2.0	0.9	-	3.0	47.3	5.1	0.9	6.0
8/2+8/3	330	330	-	-	-	3.1	1.2	-	4.4	47.8	6.7	1.2	7.9
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%): 25.7		PRC Over All Lanes (%): 25.7		Total Delay for Signalled Lanes (pcuHr): 20.55		Total Delay Over All Lanes(pcuHr): 20.55		Cycle Time (s): 90			



Full Input Data And Results

Scenario 3: '2024 AM Without Development' (FG3: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

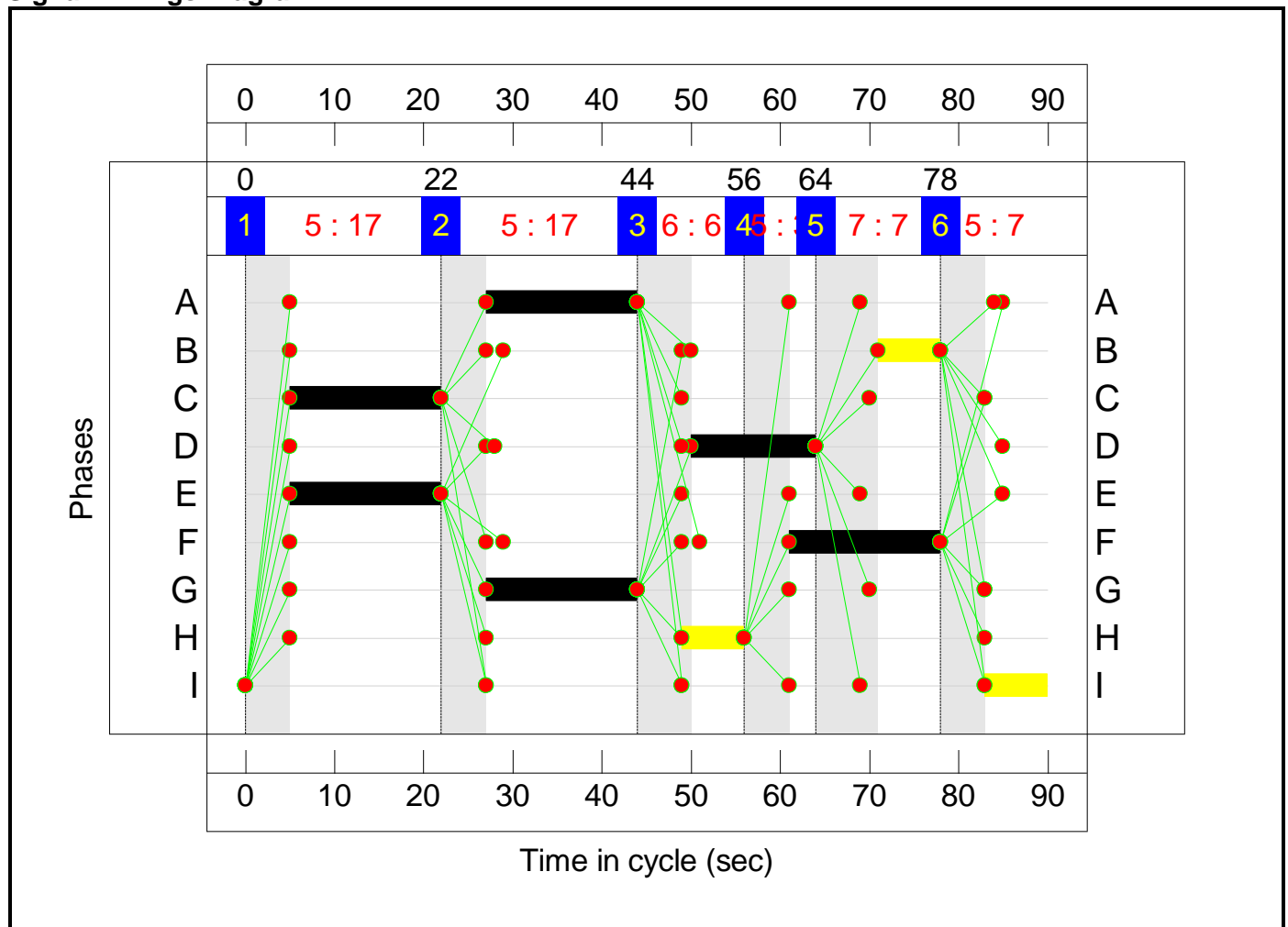
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5	6
Duration	17	17	6	3	7	7
Change Point	0	22	44	56	64	78

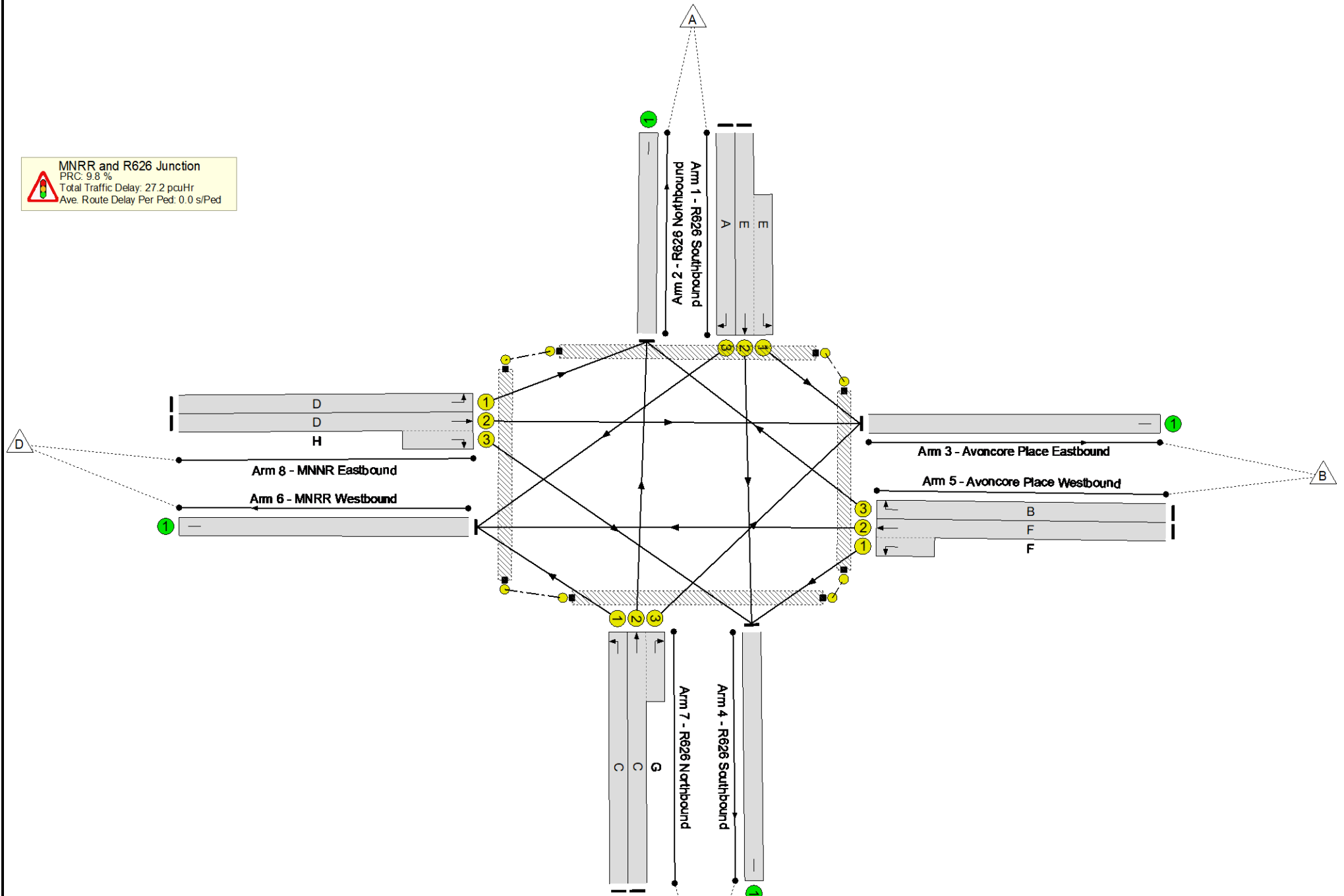
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 9.8 %  
 Total Traffic Delay: 27.2 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	81.9%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	81.9%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	388	1940:1912	388+109	78.1 : 78.1%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	294	1821	364	80.7%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	558	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	271	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	425	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	17	-	382	1940:1724	351+115	81.9 : 81.9%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	86	1924	171	50.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	36	1805	361	10.0%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17	-	328	1940:1781	367+94	71.2 : 71.2%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	14	-	211	1634	272	77.5%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	14:7	-	147	1940:1830	320+75	37.2 : 37.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

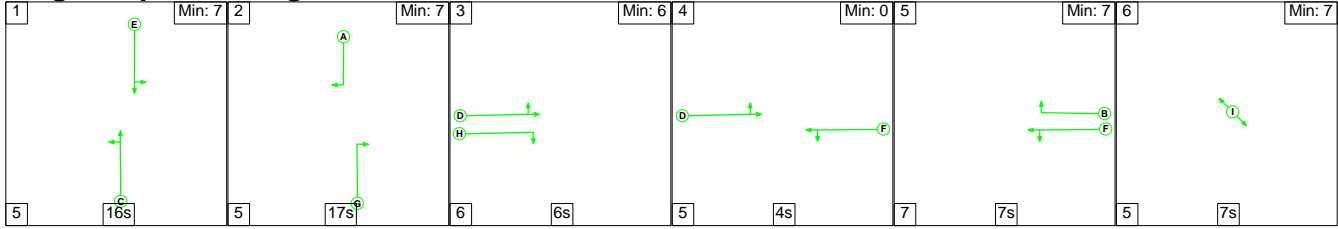
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	17.6	9.6	0.0	27.2	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	17.6	9.6	0.0	27.2	-	-	-	-
1/2+1/1	388	388	-	-	-	3.6	1.7	-	5.3	49.3	7.2	1.7	8.9
1/3	294	294	-	-	-	2.8	2.0	-	4.8	58.6	6.9	2.0	8.9
2/1	558	558	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	271	271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	425	425	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	382	382	-	-	-	3.5	2.2	-	5.7	53.7	7.4	2.2	9.5
5/3	86	86	-	-	-	0.9	0.5	-	1.4	60.0	2.0	0.5	2.5
6/1	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	36	36	-	-	-	0.3	0.1	-	0.3	35.0	0.7	0.1	0.8
7/2+7/3	328	328	-	-	-	3.0	1.2	-	4.2	45.9	6.1	1.2	7.3
8/1	211	211	-	-	-	2.1	1.6	-	3.7	63.8	5.0	1.6	6.7
8/2+8/3	147	147	-	-	-	1.4	0.3	-	1.7	41.4	2.6	0.3	2.9
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		9.8		Total Delay for Signalled Lanes (pcuHr):		27.20		Cycle Time (s):		90	
		PRC Over All Lanes (%):		9.8		Total Delay Over All Lanes(pcuHr):		27.20					

Full Input Data And Results

Scenario 4: '2024 AM With Development' (FG4: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

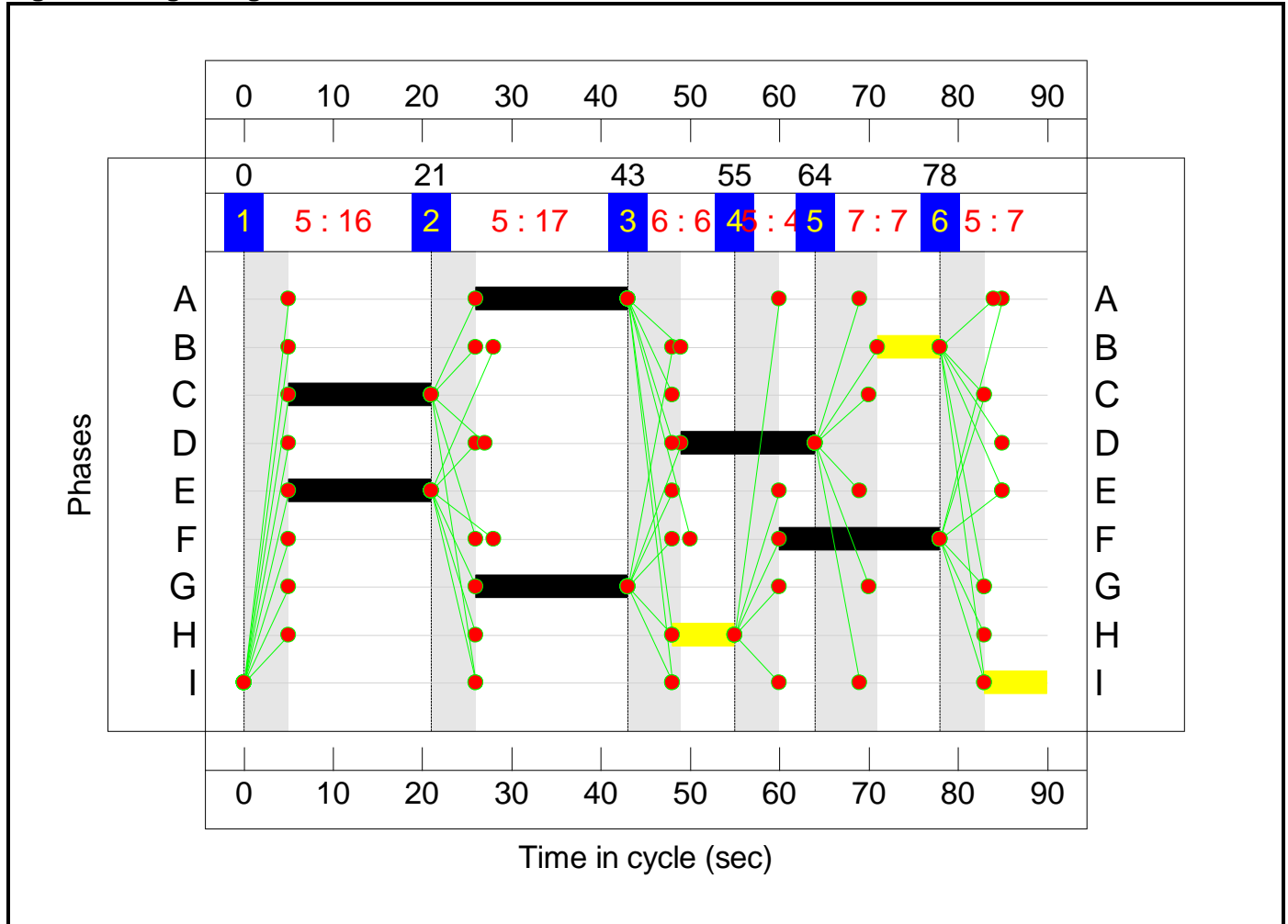
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	16	17	6	4	7	7
Change Point	0	21	43	55	64	78


Signal Timings Diagram

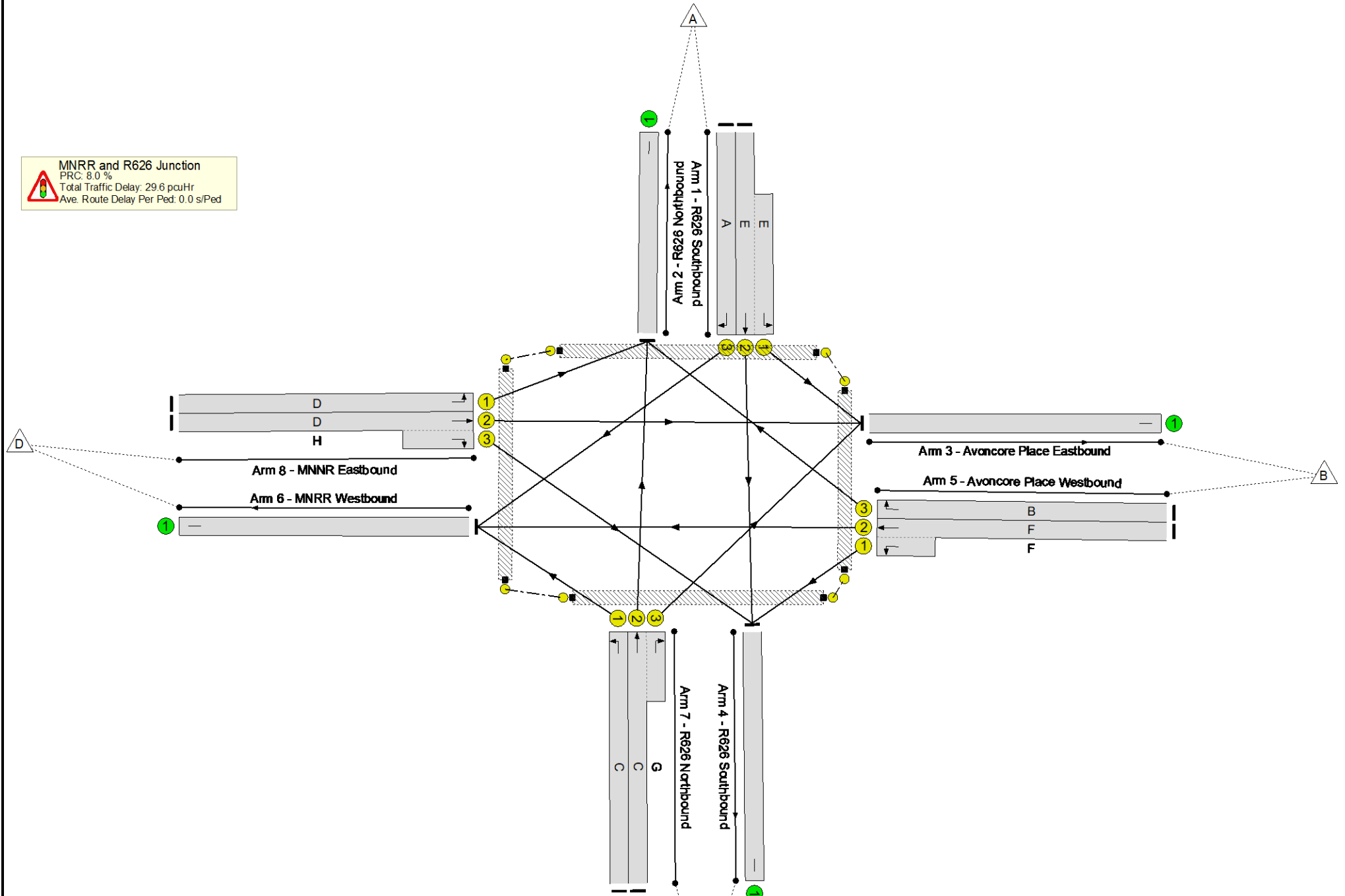


Full Input Data And Results  
**Network Layout Diagram**



# Full Input Data And Results

 **MNRR and R626 Junction**  
PRC: 8.0 %  
Total Traffic Delay: 29.6 pcuHr  
Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	83.3%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	83.3%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	16	-	388	1940:1912	366+103	82.7 : 82.7%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	303	1821	364	83.2%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	589	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	288	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	429	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	18	-	391	1940:1724	369+117	80.6 : 80.6%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	86	1924	171	50.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	636	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	16	-	36	1805	341	10.6%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	16:17	-	328	1940:1781	350+90	74.6 : 74.6%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	15	-	242	1634	290	83.3%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	15:7	-	168	1940:1830	338+79	40.3 : 40.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

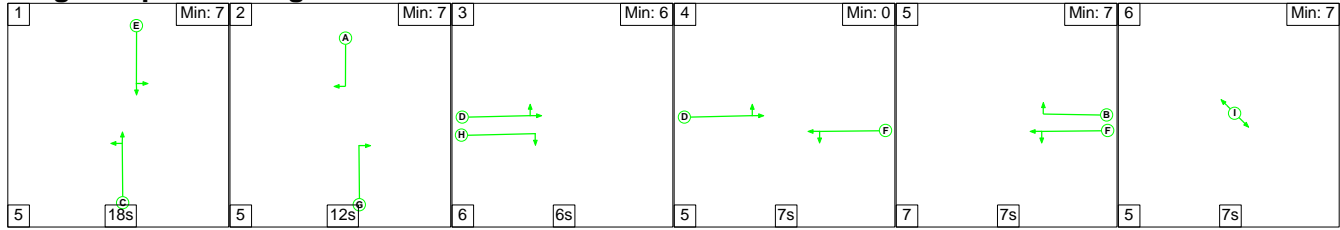
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	18.4	11.2	0.0	29.6	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	18.4	11.2	0.0	29.6	-	-	-	-
1/2+1/1	388	388	-	-	-	3.7	2.3	-	5.9	55.2	7.2	2.3	9.5
1/3	303	303	-	-	-	2.9	2.3	-	5.2	61.9	7.2	2.3	9.5
2/1	589	589	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	288	288	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	429	429	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	391	391	-	-	-	3.5	2.0	-	5.5	51.0	7.6	2.0	9.6
5/3	86	86	-	-	-	0.9	0.5	-	1.4	60.0	2.0	0.5	2.5
6/1	636	636	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	36	36	-	-	-	0.3	0.1	-	0.4	36.2	0.7	0.1	0.8
7/2+7/3	328	328	-	-	-	3.0	1.4	-	4.5	49.1	6.1	1.4	7.6
8/1	242	242	-	-	-	2.4	2.3	-	4.7	69.6	5.8	2.3	8.1
8/2+8/3	168	168	-	-	-	1.6	0.3	-	1.9	41.0	3.0	0.3	3.3
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		8.0		Total Delay for Signalled Lanes (pcuHr):		29.56		Cycle Time (s):		90	
		PRC Over All Lanes (%):		8.0		Total Delay Over All Lanes(pcuHr):		29.56					

Full Input Data And Results

**Scenario 5: '2024 PM Without Development'** (FG5: '2024 PM Without Development', Plan 2: 'Network Control Plan 2')

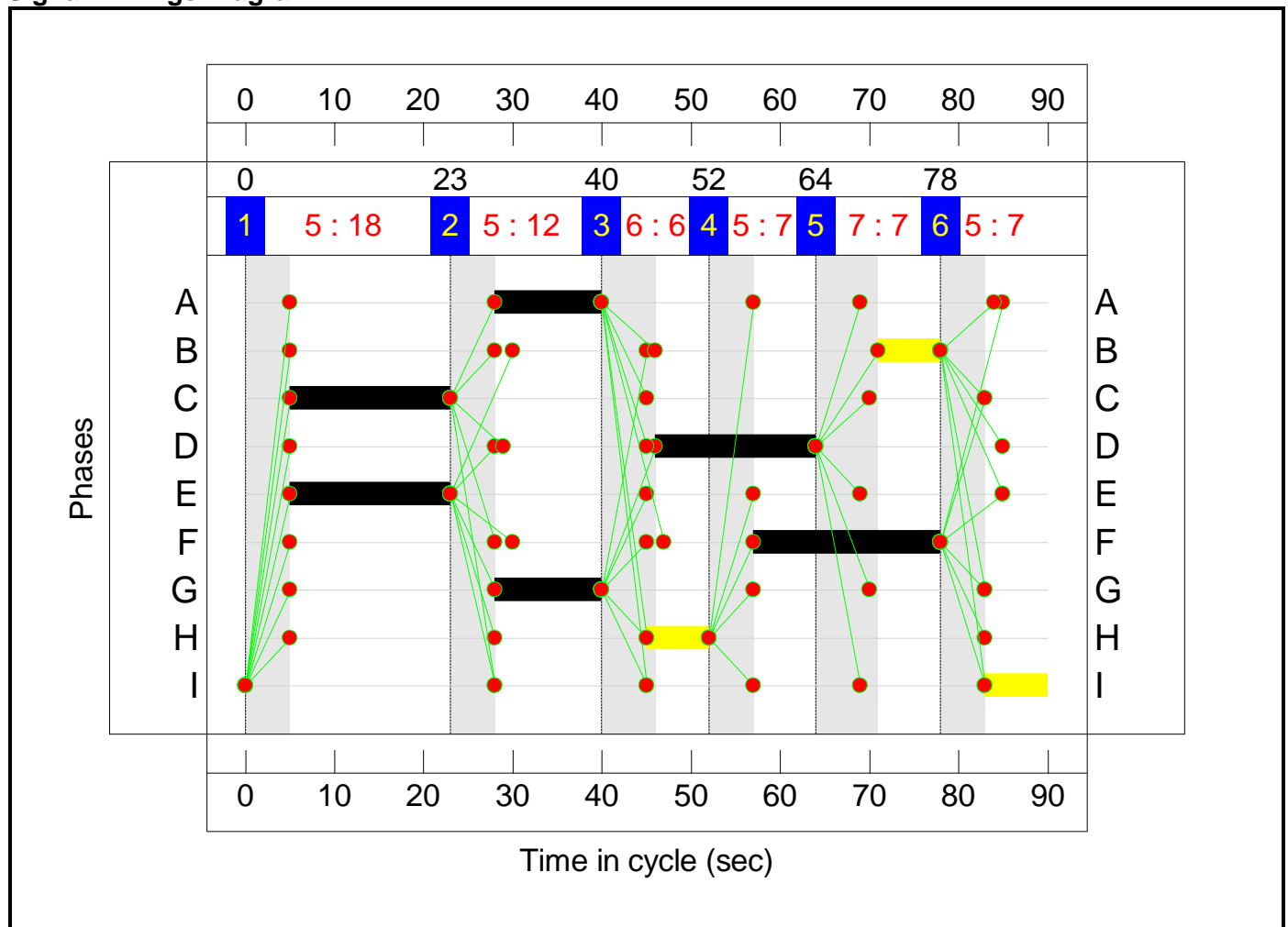
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	18	12	6	7	7	7
Change Point	0	23	40	52	64	78

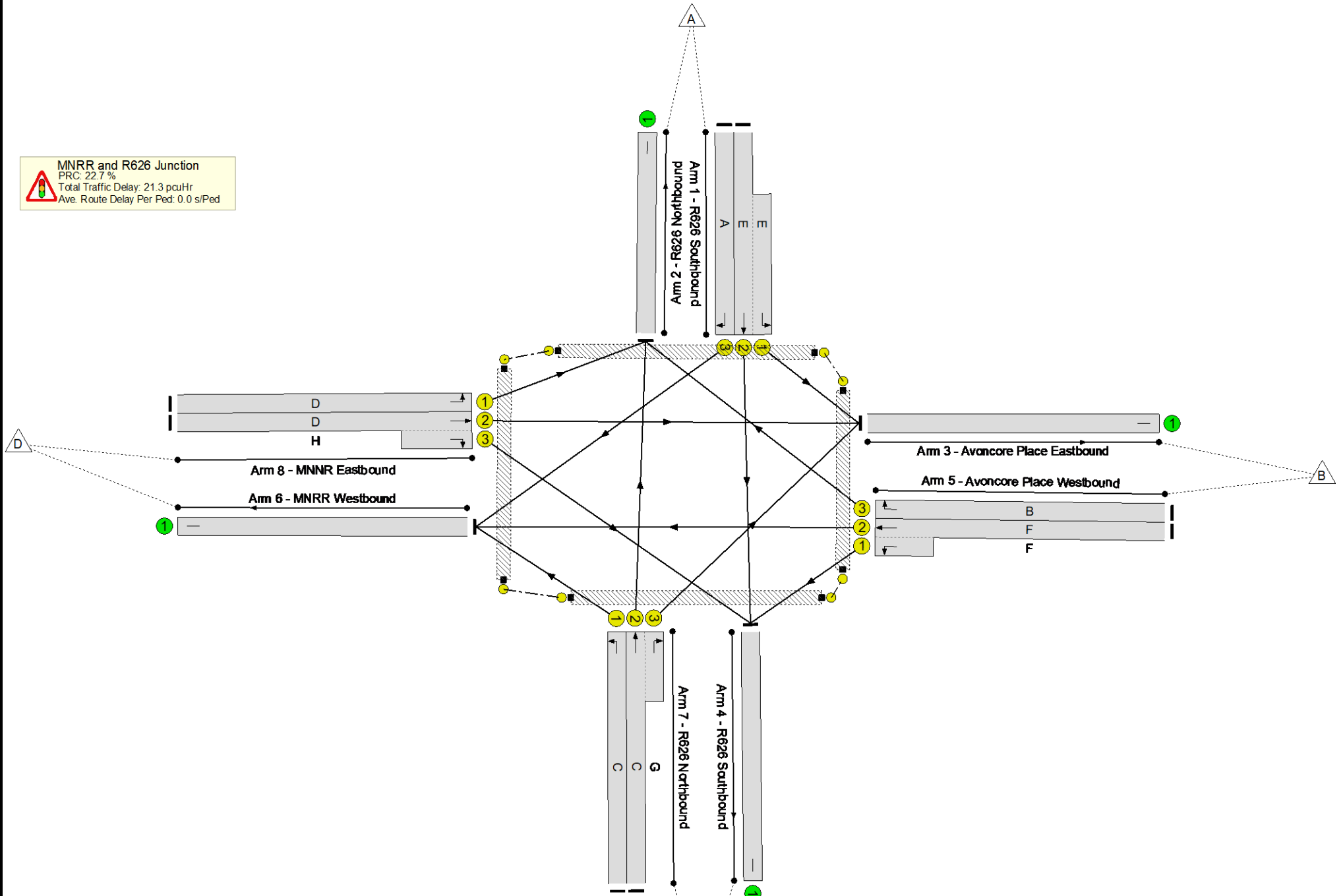
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 22.7 %  
 Total Traffic Delay: 21.3 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	73.3%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	73.3%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	18	-	213	1940:1912	410+101	41.8 : 41.8%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	12	-	188	1821	263	71.5%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	550	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	465	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	287	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	223	1940:1724	389+189	38.6 : 38.6%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	62	1924	171	36.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	397	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	18	-	59	1805	381	15.5%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	18:12	-	386	1940:1781	357+177	72.3 : 72.3%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	230	1634	345	66.7%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	338	1940:1830	402+59	73.3 : 73.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

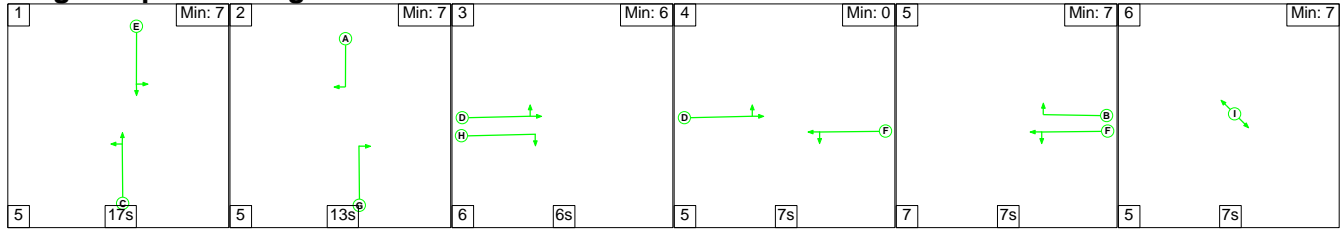
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	15.5	5.9	0.0	21.3	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	15.5	5.9	0.0	21.3	-	-	-	-
1/2+1/1	213	213	-	-	-	1.8	0.4	-	2.2	36.4	3.7	0.4	4.0
1/3	188	188	-	-	-	1.9	1.2	-	3.1	60.0	4.4	1.2	5.7
2/1	550	550	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	465	465	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	287	287	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	223	223	-	-	-	1.7	0.3	-	2.0	32.6	3.0	0.3	3.4
5/3	62	62	-	-	-	0.7	0.3	-	0.9	55.1	1.4	0.3	1.7
6/1	397	397	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	59	59	-	-	-	0.5	0.1	-	0.6	34.6	1.2	0.1	1.3
7/2+7/3	386	386	-	-	-	3.6	1.3	-	4.9	45.3	5.9	1.3	7.2
8/1	230	230	-	-	-	2.1	1.0	-	3.1	48.0	5.2	1.0	6.2
8/2+8/3	338	338	-	-	-	3.3	1.3	-	4.6	49.0	7.0	1.3	8.3
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		22.7	Total Delay for Signalled Lanes (pcuHr):		21.34	Cycle Time (s):		90			
		PRC Over All Lanes (%):		22.7	Total Delay Over All Lanes(pcuHr):		21.34						

Full Input Data And Results

Scenario 6: '2024 PM With Development' (FG6: '2024 PM With Development', Plan 2: 'Network Control Plan 2')

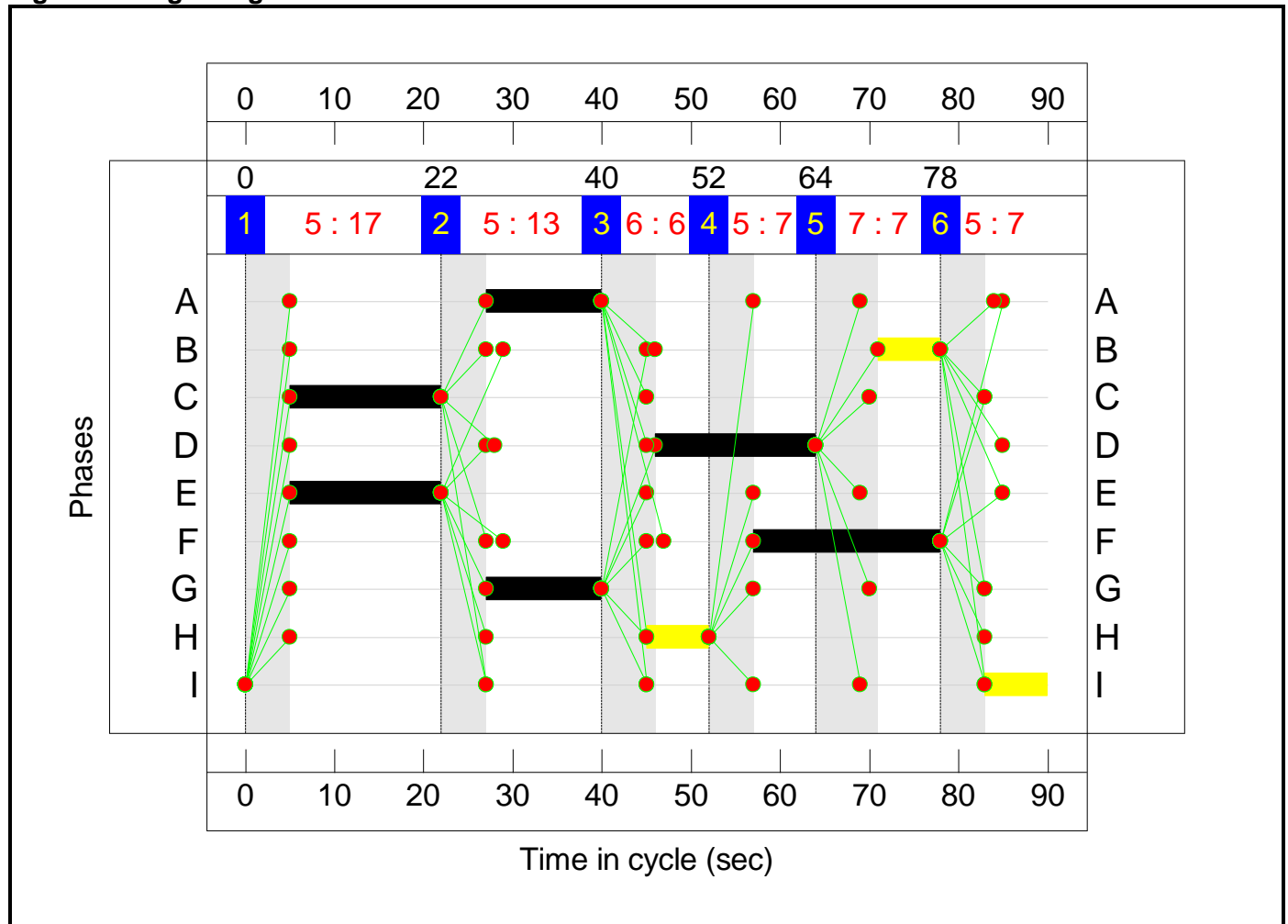
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5	6
Duration	17	13	6	7	7	7
Change Point	0	22	40	52	64	78

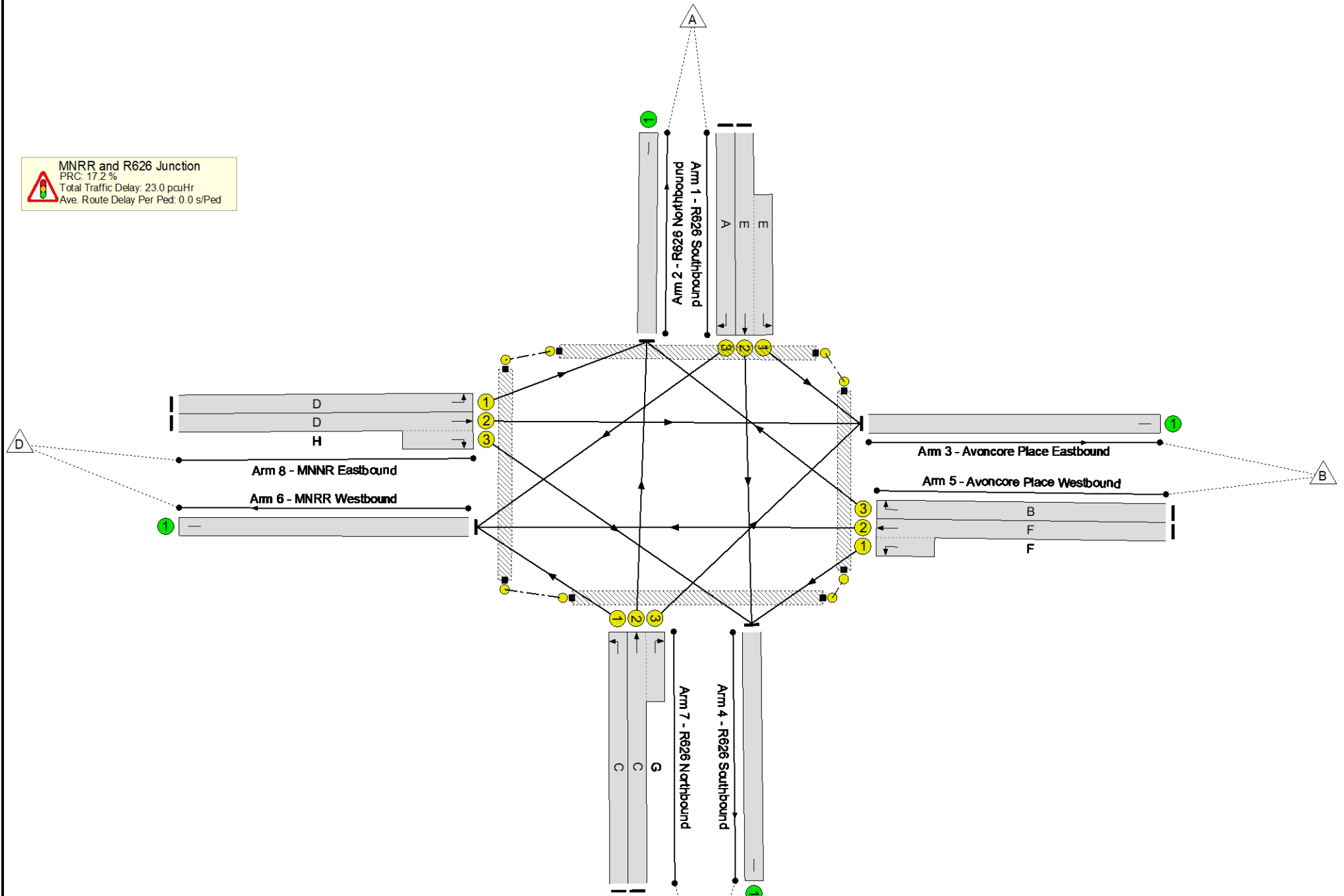
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 17.2%  
 Total Traffic Delay: 23.0 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	76.8%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	76.8%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	213	1940:1912	388+95	44.1 : 44.1%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	13	-	209	1821	283	73.8%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	561	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	289	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	240	1940:1724	396+173	42.2 : 42.2%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	62	1924	171	36.3%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	442	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	66	1805	361	18.3%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17:13	-	386	1940:1781	343+170	75.2 : 75.2%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	241	1634	345	69.9%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	354	1940:1830	402+59	76.8 : 76.8%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

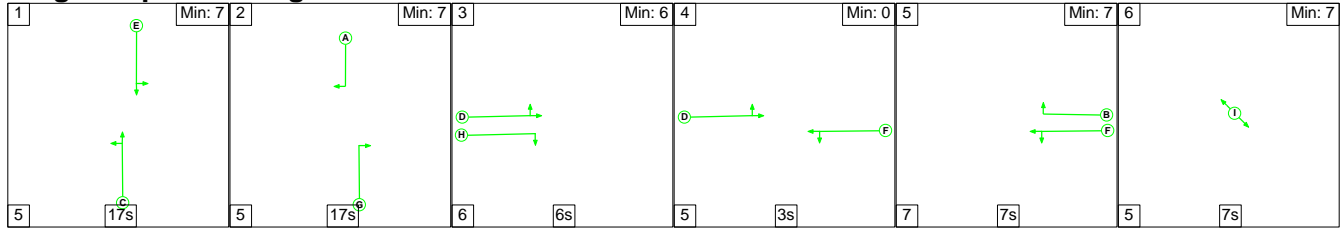
Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	16.3	6.7	0.0	23.0	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	16.3	6.7	0.0	23.0	-	-	-	-
1/2+1/1	213	213	-	-	-	1.8	0.4	-	2.2	37.8	3.7	0.4	4.1
1/3	209	209	-	-	-	2.1	1.4	-	3.5	59.6	4.9	1.4	6.3
2/1	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	479	479	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	240	240	-	-	-	1.8	0.4	-	2.2	33.2	3.4	0.4	3.8
5/3	62	62	-	-	-	0.7	0.3	-	0.9	55.1	1.4	0.3	1.7
6/1	442	442	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	66	66	-	-	-	0.5	0.1	-	0.7	36.0	1.4	0.1	1.5
7/2+7/3	386	386	-	-	-	3.6	1.5	-	5.1	47.5	6.0	1.5	7.5
8/1	241	241	-	-	-	2.2	1.1	-	3.3	49.8	5.6	1.1	6.7
8/2+8/3	354	354	-	-	-	3.5	1.6	-	5.1	51.6	7.3	1.6	8.9
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		17.2	Total Delay for Signalled Lanes (pcuHr):		23.03	Cycle Time (s):		90			
		PRC Over All Lanes (%):		17.2	Total Delay Over All Lanes(pcuHr):		23.03						



Full Input Data And Results

**Scenario 7: '2029 AM Without Development'** (FG7: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

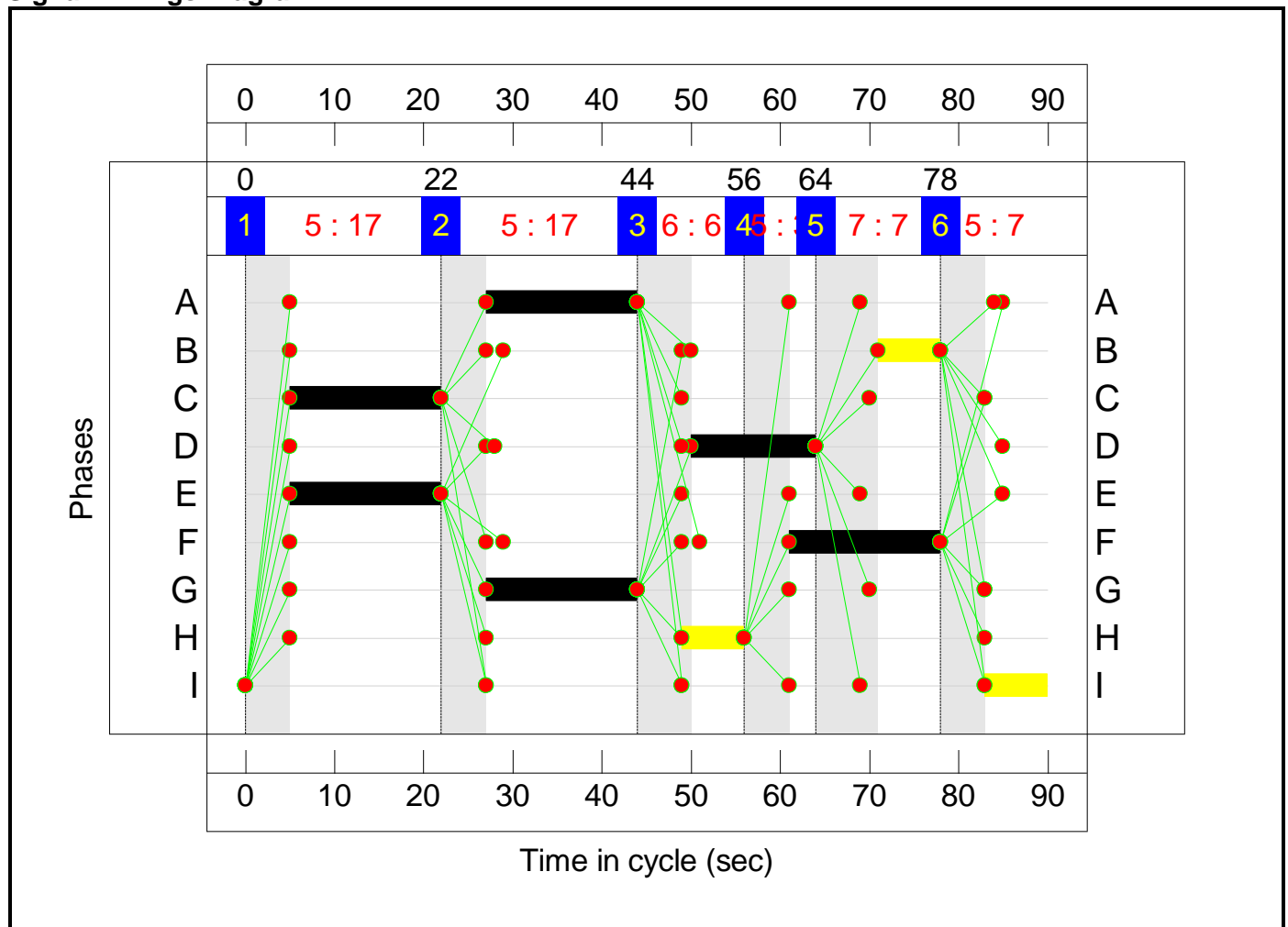
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	17	17	6	3	7	7
Change Point	0	22	44	56	64	78

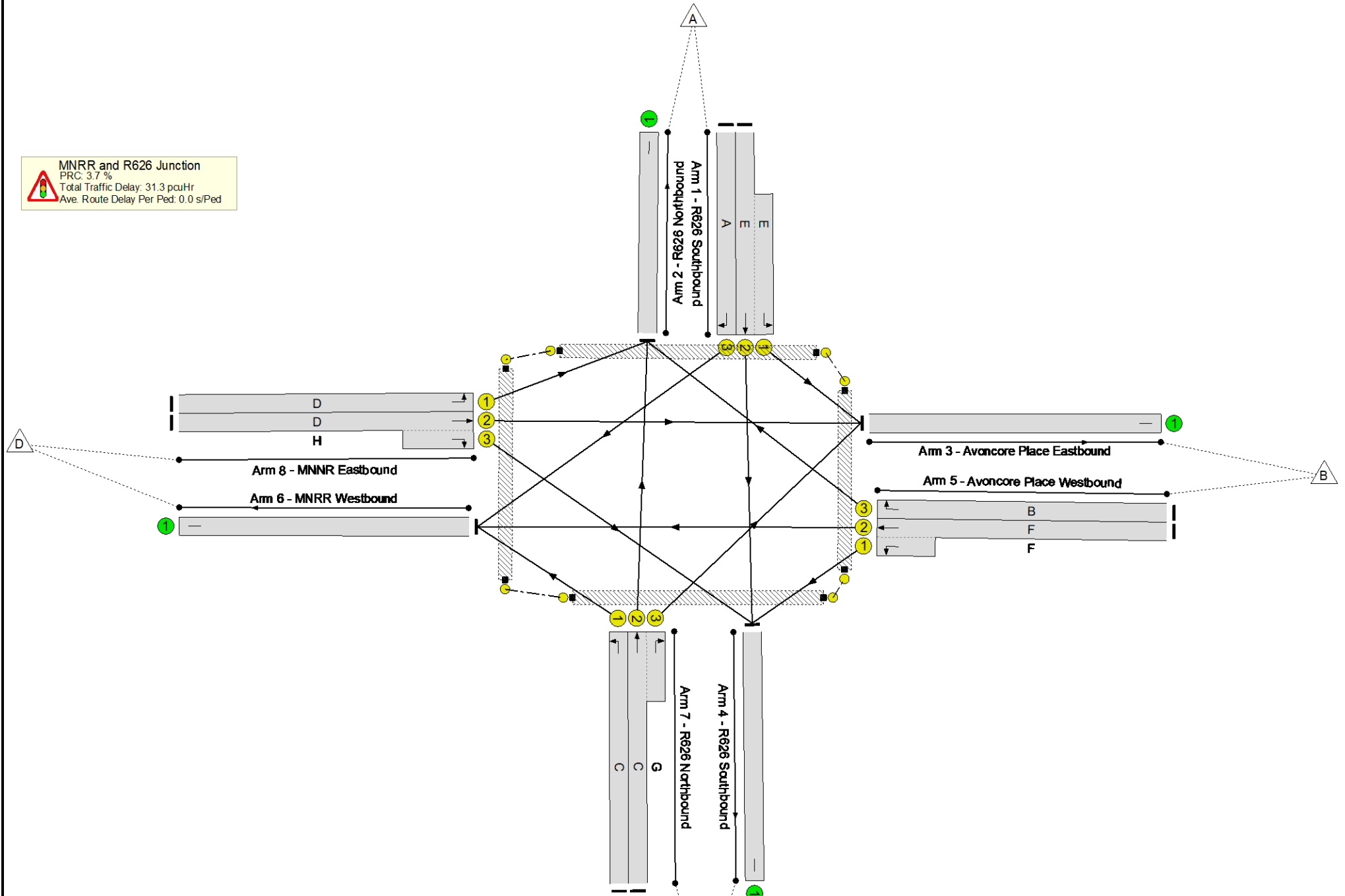
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 3.7 %  
 Total Traffic Delay: 31.3 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	86.8%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	86.8%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	17	-	411	1940:1912	388+109	82.7 : 82.7%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	311	1821	364	85.4%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	590	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	286	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	450	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	17	-	405	1940:1724	351+115	86.8 : 86.8%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	91	1924	171	53.2%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	654	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	17	-	38	1805	361	10.5%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	17	-	346	1940:1781	367+93	75.2 : 75.2%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	14	-	223	1634	272	81.9%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	14:7	-	155	1940:1830	321+74	39.3 : 39.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

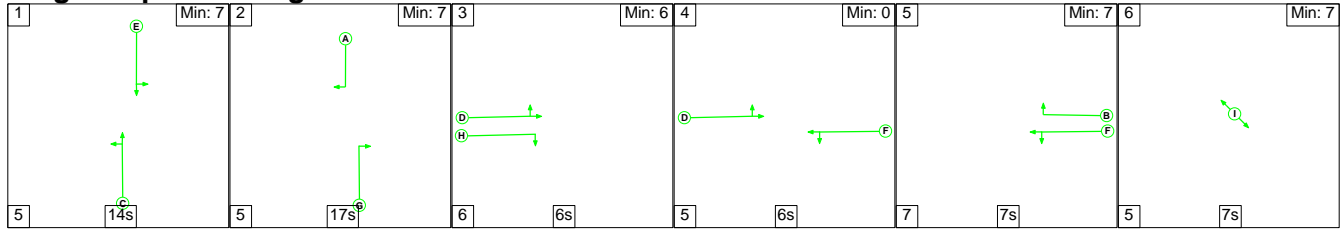
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%				
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%				
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)		
Network	-	-	0	0	0	18.8	12.4	0.0	31.3	-	-	-	-		
MNRR and R626 Junction	-	-	0	0	0	18.8	12.4	0.0	31.3	-	-	-	-		
1/2+1/1	411	411	-	-	-	3.8	2.3	-	6.1	53.5	7.7	2.3	9.9		
1/3	311	311	-	-	-	3.0	2.7	-	5.7	65.5	7.4	2.7	10.1		
2/1	590	590	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0		
3/1	286	286	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0		
4/1	450	450	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0		
5/2+5/1	405	405	-	-	-	3.8	3.0	-	6.8	60.5	8.1	3.0	11.1		
5/3	91	91	-	-	-	1.0	0.6	-	1.6	61.4	2.2	0.6	2.7		
6/1	654	654	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0		
7/1	38	38	-	-	-	0.3	0.1	-	0.4	35.1	0.8	0.1	0.8		
7/2+7/3	346	346	-	-	-	3.2	1.5	-	4.6	48.3	6.6	1.5	8.0		
8/1	223	223	-	-	-	2.2	2.1	-	4.3	69.8	5.3	2.1	7.4		
8/2+8/3	155	155	-	-	-	1.5	0.3	-	1.8	41.8	2.8	0.3	3.1		
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-		
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-		
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-		
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-		
C1		PRC for Signalled Lanes (%): 3.7			Total Delay for Signalled Lanes (pcuHr): 31.26			Cycle Time (s): 90			PRC Over All Lanes (%): 3.7			Total Delay Over All Lanes(pcuHr): 31.26	

Full Input Data And Results

Scenario 8: '2029 AM With Phase 1' (FG8: '2029 AM With Phase 1', Plan 1: 'Network Control Plan 1')

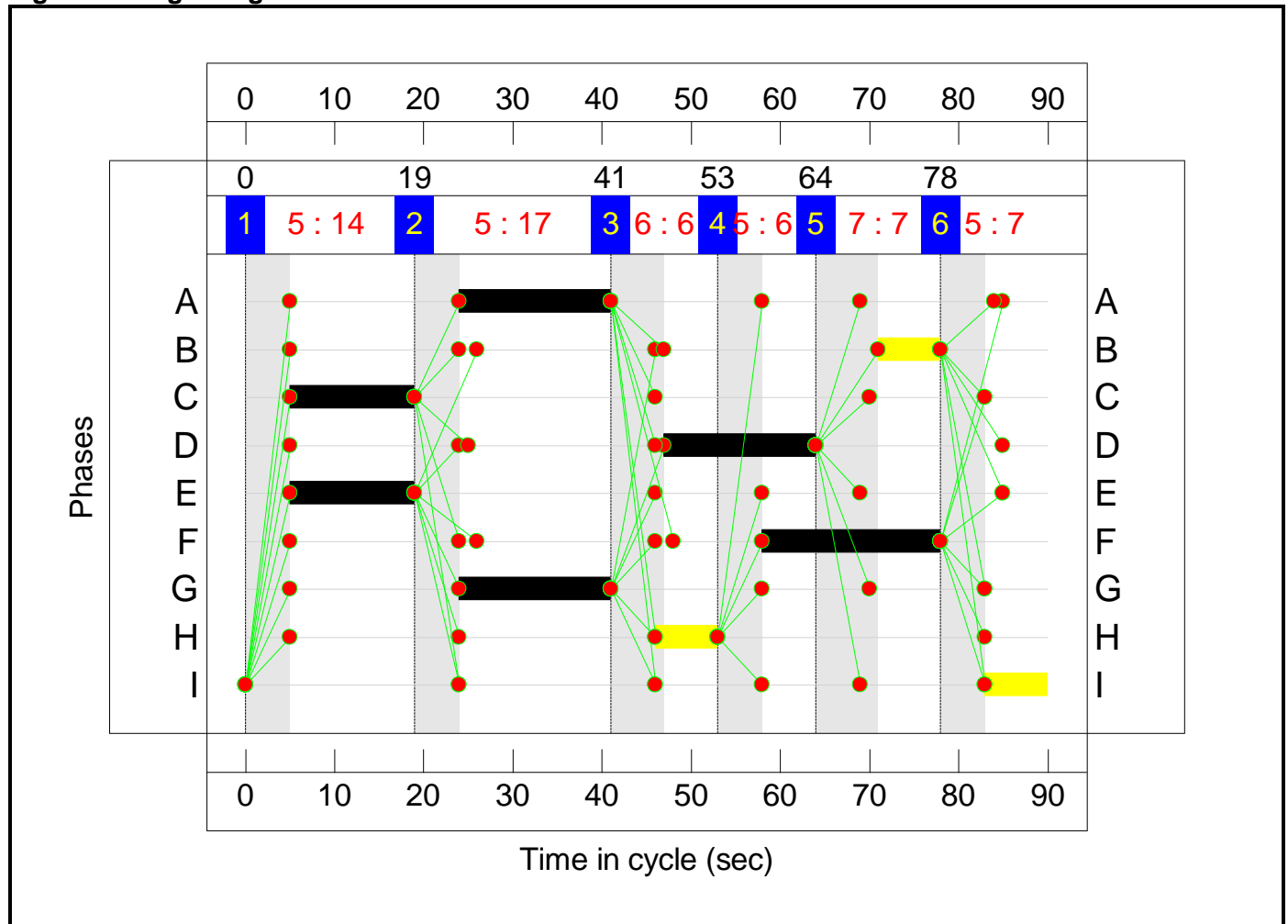
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	14	17	6	6	7	7
Change Point	0	19	41	53	64	78


Signal Timings Diagram

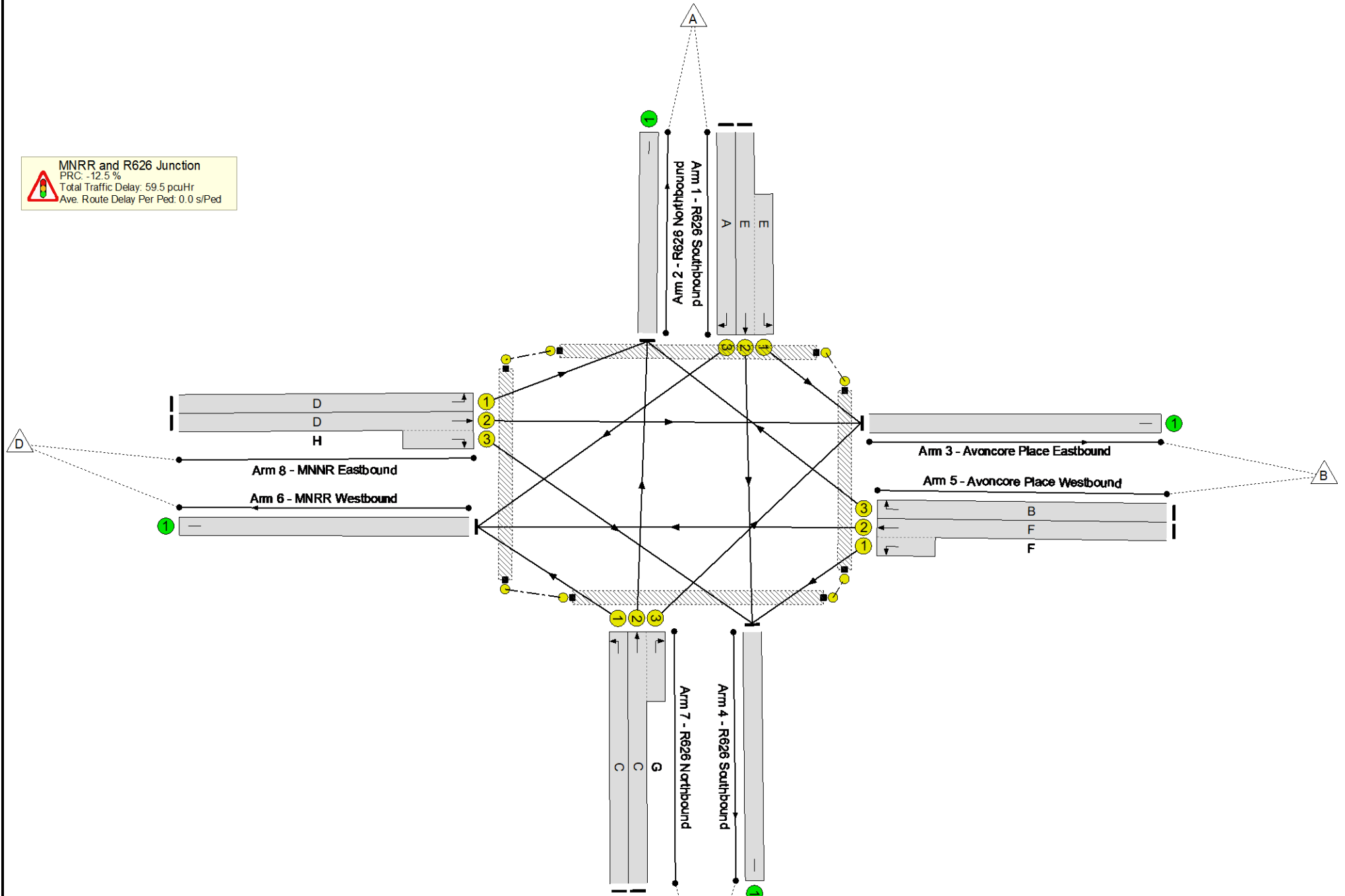


Full Input Data And Results  
**Network Layout Diagram**



Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: -12.5 %  
 Total Traffic Delay: 59.5 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	101.3%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	101.3%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	14	-	411	1940:1912	323+91	99.3 : 99.3%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	17	-	366	1821	364	100.5%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	698	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	347	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	464	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	20	-	458	1940:1724	407+114	87.9 : 87.9%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	91	1924	171	53.2%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	769	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	14	-	45	1805	301	15.0%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	14:17	-	346	1940:1781	316+80	87.3 : 87.3%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	17	-	331	1634	327	101.3%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	17:7	-	230	1940:1830	373+86	50.2 : 50.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

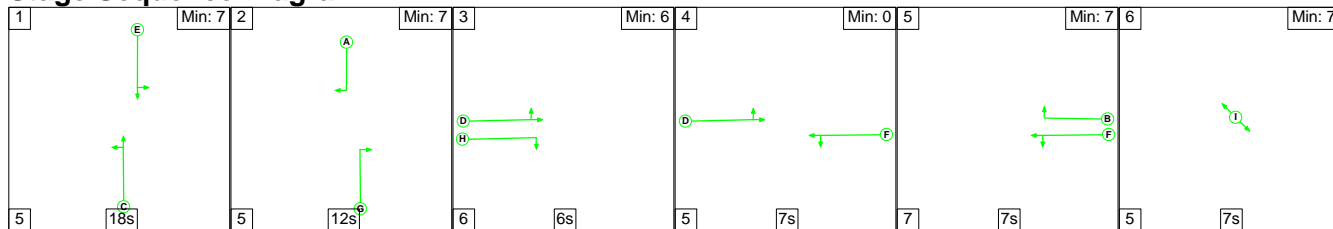
Full Input Data And Results

Ped Link: P2	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	22.3	37.2	0.0	59.5	-	-	-	-
<b>MNRR and R626 Junction</b>	-	-	0	0	0	22.3	37.2	0.0	59.5	-	-	-	-
1/2+1/1	411	411	-	-	-	4.2	9.4	-	13.6	118.9	7.9	9.4	17.4
1/3	366	364	-	-	-	3.7	10.0	-	13.8	135.3	9.2	10.0	19.2
2/1	694	694	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	347	347	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	464	464	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	458	458	-	-	-	4.1	3.3	-	7.4	58.2	9.6	3.3	12.9
5/3	91	91	-	-	-	1.0	0.6	-	1.6	61.4	2.2	0.6	2.7
6/1	767	767	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	45	45	-	-	-	0.4	0.1	-	0.5	39.1	0.9	0.1	1.0
7/2+7/3	346	346	-	-	-	3.4	3.1	-	6.4	67.0	6.9	3.1	10.0
8/1	331	327	-	-	-	3.5	10.2	-	13.7	148.6	8.4	10.2	18.6
8/2+8/3	230	230	-	-	-	2.1	0.5	-	2.6	40.9	4.1	0.5	4.6
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		-12.5		Total Delay for Signalled Lanes (pcuHr):		59.49		Cycle Time (s):		90	
		PRC Over All Lanes (%):		-12.5		Total Delay Over All Lanes(pcuHr):		59.49					

Full Input Data And Results

**Scenario 9: '2029 PM Without Development'** (FG9: '2029 PM Without Development', Plan 2: 'Network Control Plan 2')

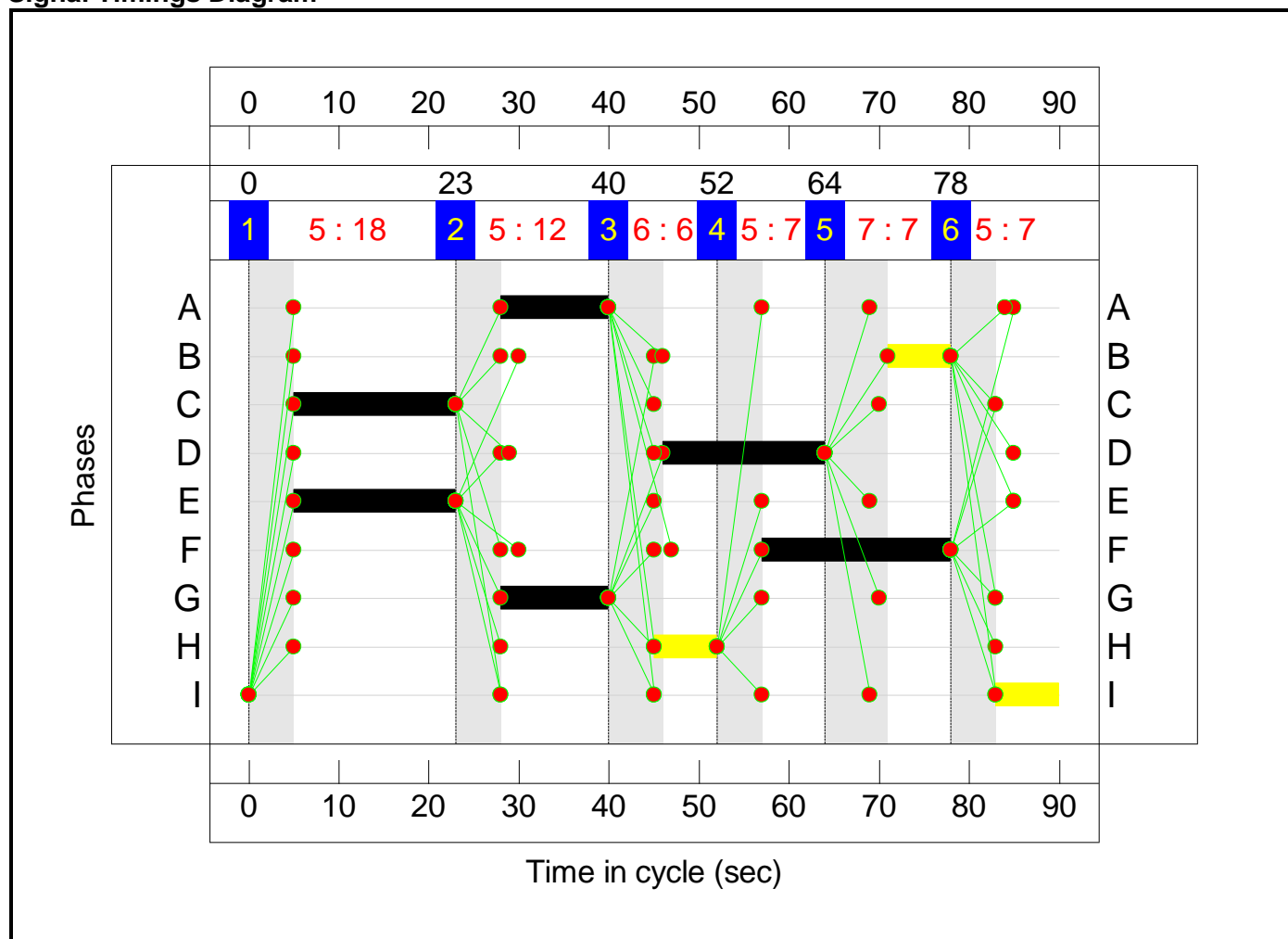
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	18	12	6	7	7	7
Change Point	0	23	40	52	64	78

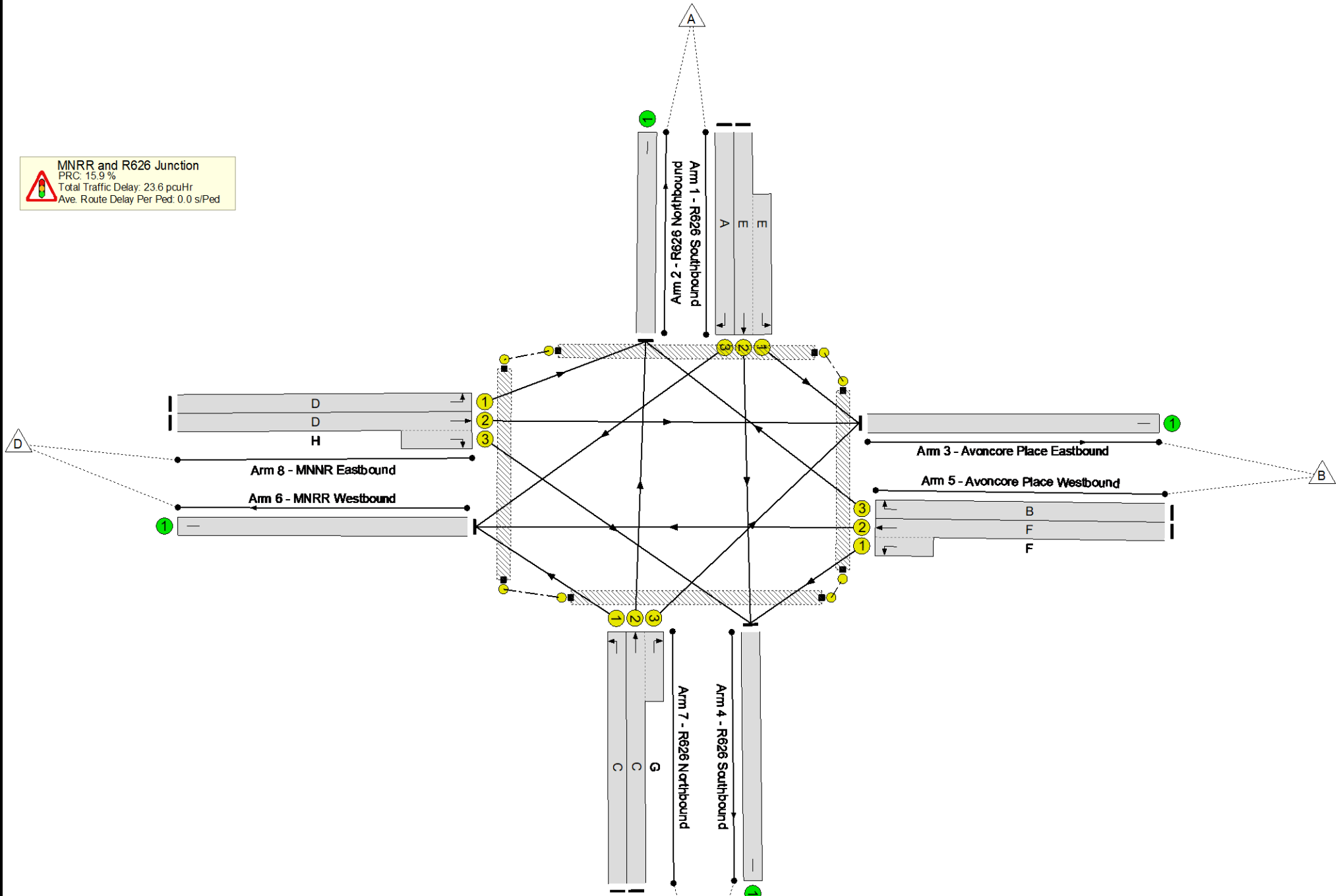
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

Full Input Data And Results


**MNRR and R626 Junction**  
 PRC: 15.9%  
 Total Traffic Delay: 23.6 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	77.6%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	77.6%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	18	-	225	1940:1912	410+100	44.2 : 44.2%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	12	-	199	1821	263	75.7%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	583	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	492	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	304	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	21	-	236	1940:1724	389+188	40.9 : 40.9%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	66	1924	171	38.6%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	421	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	18	-	63	1805	381	16.5%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	18:12	-	409	1940:1781	357+178	76.5 : 76.5%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	18	-	244	1634	345	70.7%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	18:7	-	358	1940:1830	402+59	77.6 : 77.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

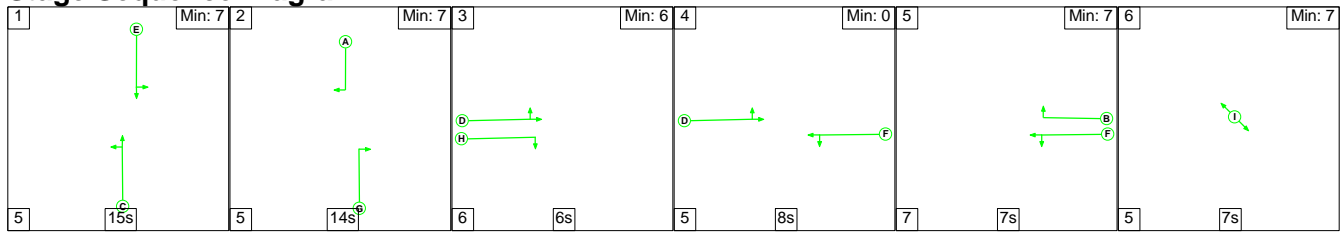
Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	16.6	7.1	0.0	23.6	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	16.6	7.1	0.0	23.6	-	-	-	-
1/2+1/1	225	225	-	-	-	1.9	0.4	-	2.3	36.8	3.9	0.4	4.3
1/3	199	199	-	-	-	2.0	1.5	-	3.5	63.9	4.8	1.5	6.2
2/1	583	583	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	492	492	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	304	304	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	236	236	-	-	-	1.8	0.3	-	2.2	32.9	3.3	0.3	3.6
5/3	66	66	-	-	-	0.7	0.3	-	1.0	55.7	1.5	0.3	1.9
6/1	421	421	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	63	63	-	-	-	0.5	0.1	-	0.6	34.7	1.3	0.1	1.4
7/2+7/3	409	409	-	-	-	3.8	1.6	-	5.4	47.6	6.5	1.6	8.1
8/1	244	244	-	-	-	2.2	1.2	-	3.4	50.4	5.6	1.2	6.8
8/2+8/3	358	358	-	-	-	3.5	1.7	-	5.2	52.3	7.5	1.7	9.2
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%): 15.9		PRC Over All Lanes (%): 15.9		Total Delay for Signalled Lanes (pcuHr): 23.64		Total Delay Over All Lanes(pcuHr): 23.64		Cycle Time (s): 90			

Full Input Data And Results

**Scenario 10: '2029 PM With Phase 1'** (FG10: '2029 PM With Phase 1', Plan 2: 'Network Control Plan 2')

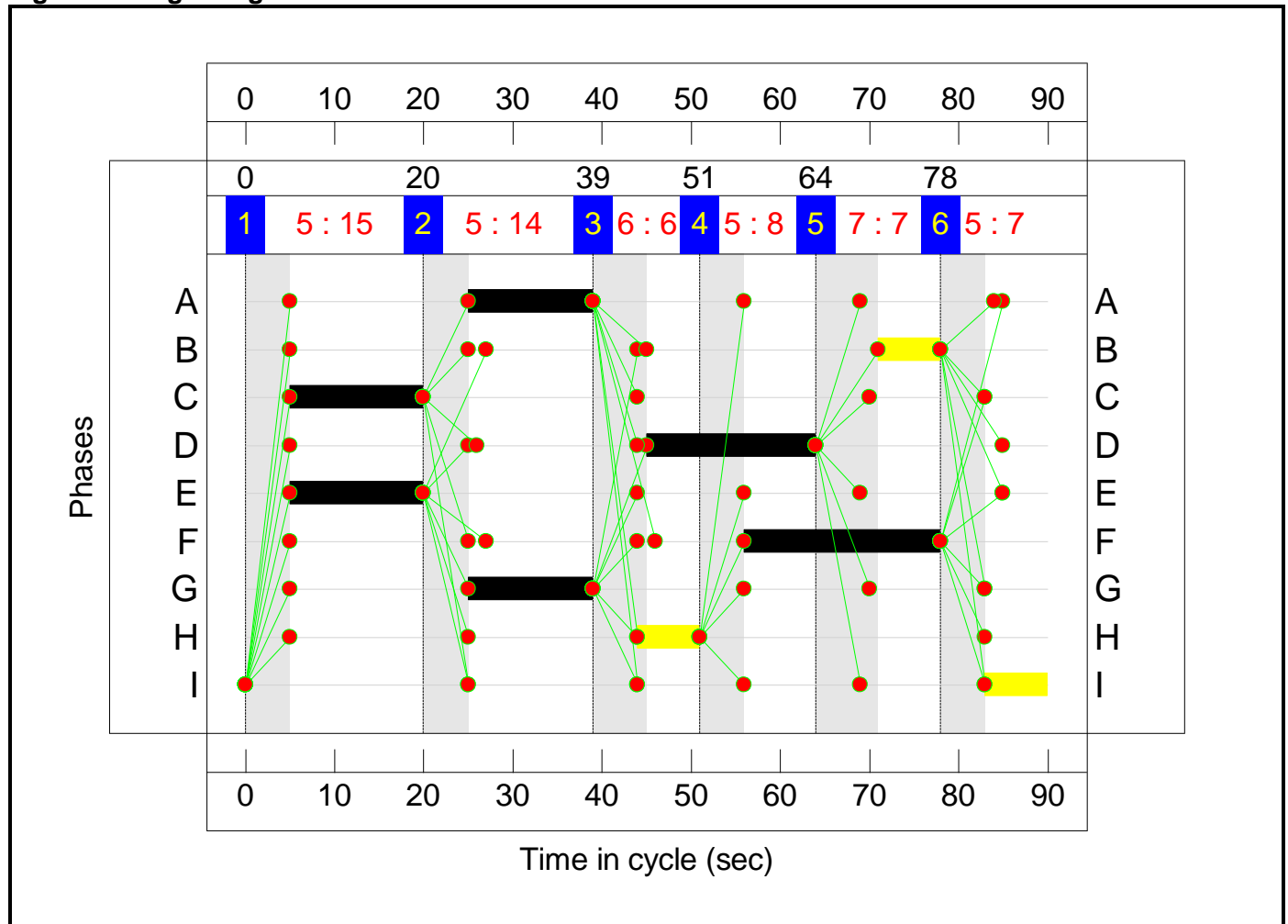
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5	6
Duration	15	14	6	8	7	7
Change Point	0	20	39	51	64	78

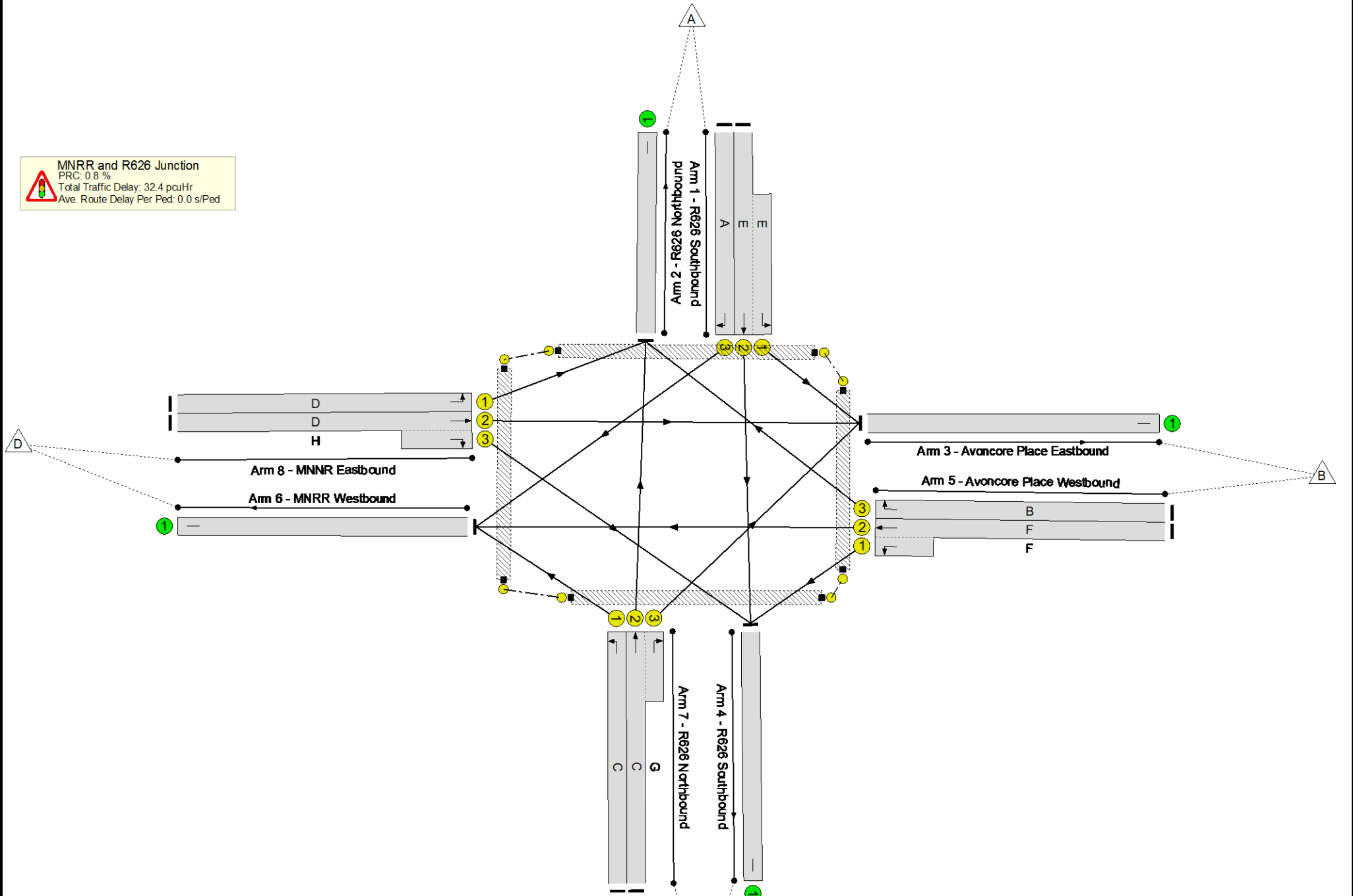
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results

 **MNRR and R626 Junction**  
PRC: 0.8 %  
Total Traffic Delay: 32.4 pcuHr  
Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	89.3%
MNRR and R626 Junction	-	-	N/A	-	-		-	-	-	-	-	-	89.3%
1/2+1/1	R626 Southbound Left Ahead	U	N/A	N/A	E		1	15	-	225	1940:1912	345+84	52.5 : 52.5%
1/3	R626 Southbound Right	U	N/A	N/A	A		1	14	-	271	1821	304	89.3%
2/1	R626 Northbound	U	N/A	N/A	-		-	-	-	626	Inf	Inf	0.0%
3/1	Avoncore Place Eastbound	U	N/A	N/A	-		-	-	-	548	Inf	Inf	0.0%
4/1	R626 Southbound	U	N/A	N/A	-		-	-	-	312	Inf	Inf	0.0%
5/2+5/1	Avoncore Place Westbound Left Ahead	U	N/A	N/A	F		1	22	-	294	1940:1724	425+151	51.1 : 51.1%
5/3	Avoncore Place Westbound Right	U	N/A	N/A	B		1	7	-	66	1924	171	38.6%
6/1	MNRR Westbound	U	N/A	N/A	-		-	-	-	574	Inf	Inf	0.0%
7/1	R626 Northbound Left	U	N/A	N/A	C		1	15	-	86	1805	321	26.8%
7/2+7/3	R626 Northbound Ahead Right	U	N/A	N/A	C G		1	15:14	-	409	1940:1781	315+157	86.7 : 86.7%
8/1	MNRR Eastbound Left	U	N/A	N/A	D		1	19	-	287	1634	363	79.0%
8/2+8/3	MNRR Eastbound Ahead Right	U	N/A	N/A	D H		1	19:7	-	422	1940:1830	421+62	87.5 : 87.5%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P3	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Ped Link: P4	Unnamed Ped Link	-	N/A	-	1	7	-	0	-	0	0.0%		
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	19.5	12.9	0.0	32.4	-	-	-	-
MNRR and R626 Junction	-	-	0	0	0	19.5	12.9	0.0	32.4	-	-	-	-
1/2+1/1	225	225	-	-	-	2.1	0.5	-	2.6	41.9	4.1	0.5	4.6
1/3	271	271	-	-	-	2.8	3.4	-	6.2	82.4	6.6	3.4	10.1
2/1	626	626	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	548	548	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	312	312	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2+5/1	294	294	-	-	-	2.3	0.5	-	2.8	33.9	4.5	0.5	5.0
5/3	66	66	-	-	-	0.7	0.3	-	1.0	55.7	1.5	0.3	1.9
6/1	574	574	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	86	86	-	-	-	0.8	0.2	-	0.9	39.6	1.8	0.2	2.0
7/2+7/3	409	409	-	-	-	4.0	3.0	-	6.9	61.1	7.0	3.0	10.0
8/1	287	287	-	-	-	2.6	1.8	-	4.4	55.6	6.7	1.8	8.5
8/2+8/3	422	422	-	-	-	4.3	3.2	-	7.5	63.8	9.2	3.2	12.4
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		0.8		Total Delay for Signalled Lanes (pcuHr):		32.41		Cycle Time (s):		90	
		PRC Over All Lanes (%):		0.8		Total Delay Over All Lanes(pcuHr):		32.41					

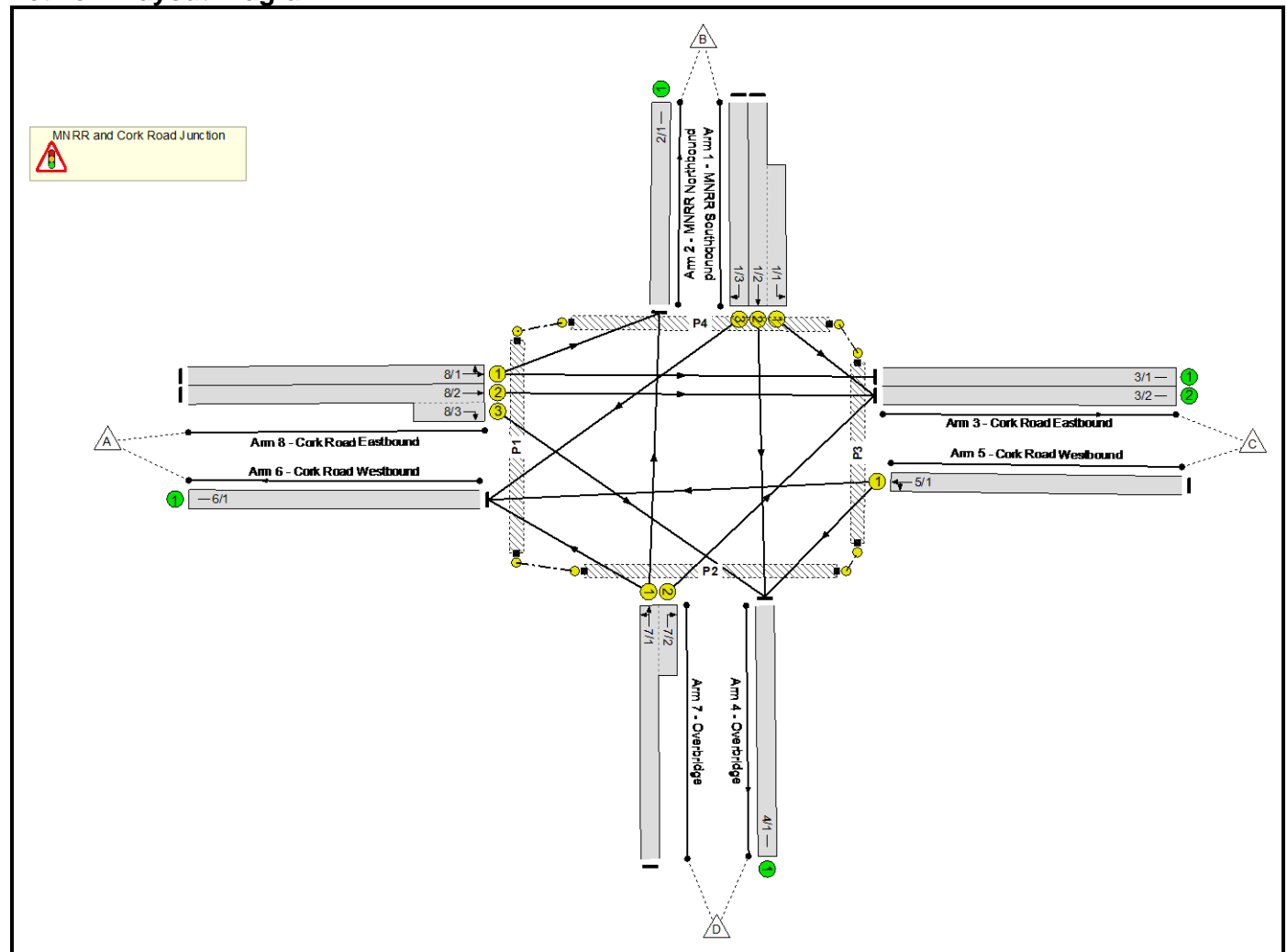


Full Input Data And Results  
**Full Input Data And Results**

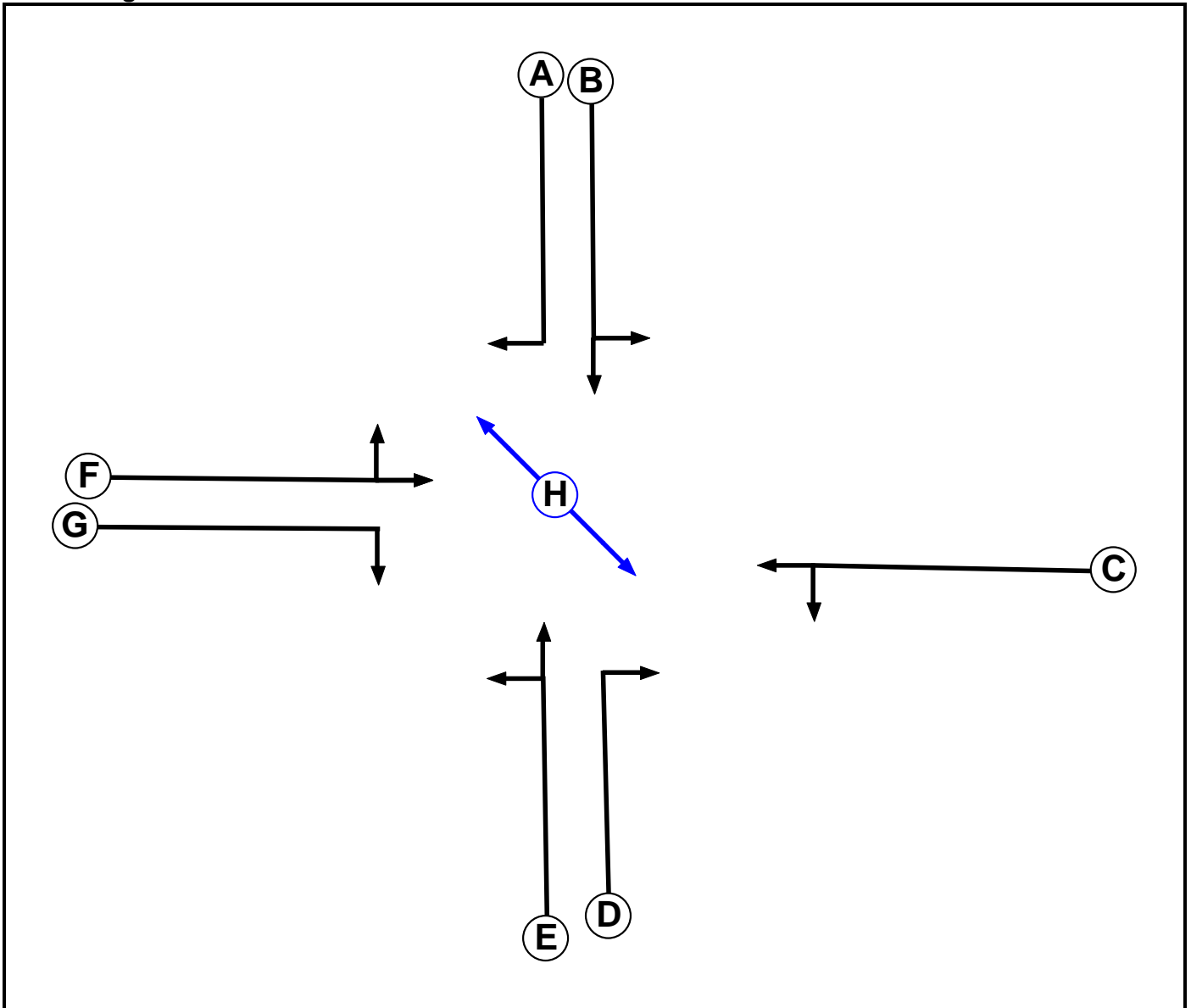
**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>Site Ref(s):</b>	J3 With Upgrades
<b>Model Assumptions:</b>	30% Modal Shift
<b>Additional detail:</b>	
<b>File name:</b>	J3 LinSig Model Junction Upgrades Rev B with 30% Modal Shift.lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	

**Network Layout Diagram**



**Phase Diagram**



**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Pedestrian		7	7

## Full Input Data And Results

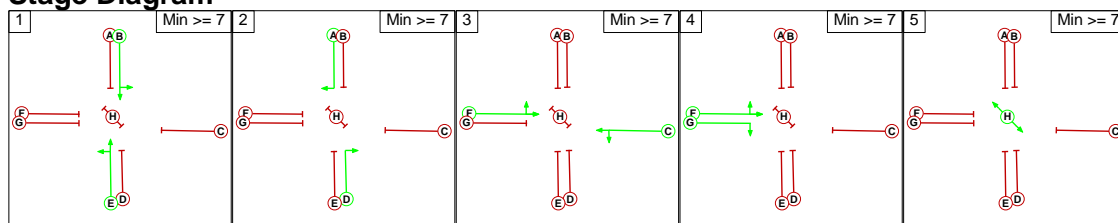
### Phase Intergrens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A	-	5	-	5	5	5	5	5
	B	-	5	5	-	5	5	5	5
	C	5	5	5	5	-	5	5	5
	D	-	5	5	-	5	5	5	5
	E	5	-	5	-	5	5	5	5
	F	5	5	-	5	5	-	5	5
	G	5	5	5	5	5	-	5	5
	H	5	5	5	5	5	5	5	-

### Phases in Stage

Stage No.	Phases in Stage
1	B E
2	A D
3	C F
4	F G
5	H

### Stage Diagram



### Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

### Prohibited Stage Change

		To Stage				
		1	2	3	4	5
From Stage	1	-	5	5	5	5
	2	5	-	5	5	5
	3	5	5	-	5	5
	4	5	5	5	-	5
	5	5	5	5	5	-

Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: MNRR and Cork Road Junction**

There are no Opposed Lanes in this Junction

Full Input Data And Results

**Lane Input Data**

Junction: MNRR and Cork Road Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (MNRR Southbound)	U	B	2	3	11.3	Geom	-	3.00	0.00	N	Arm 3 Left	20.00
1/2 (MNRR Southbound)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (MNRR Southbound)	U	A	2	3	19.1	Geom	-	3.25	0.00	Y	Arm 6 Right	23.00
2/1 (MNRR Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Cork Road Eastbound)	U		2	3	13.0	Inf	-	-	-	-	-	-
3/2 (Cork Road Eastbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (Overbridge)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Cork Road Westbound)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Left	Inf
6/1 (Cork Road Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Overbridge)	U	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf
											Arm 6 Left	Inf
7/2 (Overbridge)	U	D	2	3	5.6	Geom	-	3.00	0.00	Y	Arm 3 Right	20.00
8/1 (Cork Road Eastbound )	U	F	2	3	8.7	Geom	-	3.25	0.00	Y	Arm 2 Left	8.00
											Arm 3 Ahead	Inf
8/2 (Cork Road Eastbound )	U	F	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Ahead	Inf
8/3 (Cork Road Eastbound )	U	G	2	3	5.7	Geom	-	3.25	0.00	Y	Arm 4 Right	25.00

Full Input Data And Results

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2024 AM Without Development'	08:00	09:00	01:00	
2: '2024 AM With Development'	08:00	09:00	01:00	
3: '2024 PM Without Development'	16:30	17:30	01:00	
4: '2024 PM With Development'	16:30	17:30	01:00	
5: '2029 AM Without Development'	08:00	09:00	01:00	
6: '2029 AM With Development'	08:00	09:00	01:00	
7: '2029 PM Without Development'	16:30	17:30	01:00	
8: '2029 PM With Development'	16:30	17:30	01:00	

**Scenario 1: '2024 AM Without Development'** (FG1: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	202	300	92	594
	B	140	0	34	397	571
	C	60	0	0	340	400
	D	118	222	108	0	448
	Tot.	318	424	442	829	2013

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 1: 2024 AM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	34
1/2 (with short)	431(In) 397(Out)
1/3	140
2/1	424
3/1	300
3/2	142
4/1	829
5/1	400
6/1	318
7/1 (with short)	448(In) 340(Out)
7/2 (short)	108
8/1	502
8/2 (with short)	92(In) 0(Out)
8/3 (short)	92

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	85.0 % 15.0 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	65.3 %	1940	1940
				Arm 6 Left	Inf	34.7 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	40.2 %	1804	1804
				Arm 3 Ahead	Inf	59.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	0.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 2: '2024 AM With Development'** (FG2: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	205	300	92	597
	B	156	0	38	442	636
	C	60	0	0	340	400
	D	118	226	108	0	452
	Tot.	334	431	446	874	2085



Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 2: 2024 AM With Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	38
1/2 (with short)	480(In) 442(Out)
1/3	156
2/1	431
3/1	212
3/2	234
4/1	874
5/1	400
6/1	334
7/1 (with short)	452(In) 344(Out)
7/2 (short)	108
8/1	417
8/2 (with short)	180(In) 88(Out)
8/3 (short)	92

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	85.0 % 15.0 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	65.7 %	1940	1940
				Arm 6 Left	Inf	34.3 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	49.2 %	1776	1776
				Arm 3 Ahead	Inf	50.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 3: '2024 PM Without Development'** (FG3: '2024 PM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	311	435	75	821
	B	180	0	37	282	499
	C	149	0	0	322	471
	D	58	143	105	0	306
	Tot.	387	454	577	679	2097

## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 3: 2024 PM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	37
1/2 (with short)	319(In) 282(Out)
1/3	180
2/1	454
3/1	21
3/2	556
4/1	679
5/1	471
6/1	387
7/1 (with short)	306(In) 201(Out)
7/2 (short)	105
8/1	332
8/2 (with short)	489(In) 414(Out)
8/3 (short)	75

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.4 % 31.6 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	71.1 %	1940	1940
				Arm 6 Left	Inf	28.9 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	93.7 %	1650	1650
				Arm 3 Ahead	Inf	6.3 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 4: '2024 PM With Development'** (FG4: '2024 PM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	340	435	75	850
	B	185	0	38	290	513
	C	149	0	0	322	471
	D	58	157	105	0	320
	Tot.	392	497	578	687	2154

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 4: 2024 PM With Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	38
1/2 (with short)	328(In) 290(Out)
1/3	185
2/1	497
3/1	5
3/2	573
4/1	687
5/1	471
6/1	392
7/1 (with short)	320(In) 215(Out)
7/2 (short)	105
8/1	345
8/2 (with short)	505(In) 430(Out)
8/3 (short)	75

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.4 % 31.6 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	73.0 %	1940	1940
				Arm 6 Left	Inf	27.0 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	98.6 %	1637	1637
				Arm 3 Ahead	Inf	1.4 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 5: '2029 AM Without Development'** (FG5: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

Origin	Destination					
	A	B	C	D	Tot.	
A	0	214	318	98	630	
B	149	0	36	421	606	
C	64	0	0	360	424	
D	125	235	115	0	475	
Tot.	338	449	469	879	2135	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 5: 2029 AM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	36
1/2 (with short)	457(In) 421(Out)
1/3	149
2/1	449
3/1	318
3/2	151
4/1	879
5/1	424
6/1	338
7/1 (with short)	475(In) 360(Out)
7/2 (short)	115
8/1	532
8/2 (with short)	98(In) 0(Out)
8/3 (short)	98

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	84.9 % 15.1 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	65.3 %	1940	1940
				Arm 6 Left	Inf	34.7 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	40.2 %	1804	1804
				Arm 3 Ahead	Inf	59.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	0.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 6: '2029 AM With Phase 1'** (FG6: '2029 AM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	235	318	98	651
	B	204	0	49	577	830
	C	64	0	0	360	424
	D	125	259	115	0	499
	Tot.	393	494	482	1035	2404



Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 6: 2029 AM With Phase 1
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	49
1/2 (with short)	626(In) 577(Out)
1/3	204
2/1	494
3/1	45
3/2	437
4/1	1035
5/1	424
6/1	393
7/1 (with short)	499(In) 384(Out)
7/2 (short)	115
8/1	280
8/2 (with short)	371(In) 273(Out)
8/3 (short)	98

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	84.9 % 15.1 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	67.4 %	1940	1940
				Arm 6 Left	Inf	32.6 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	83.9 %	1676	1676
				Arm 3 Ahead	Inf	16.1 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 7: '2029 PM Without Development'** (FG7: '2029 PM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	330	461	79	870
	B	191	0	39	299	529
	C	158	0	0	341	499
	D	62	152	112	0	326
	Tot.	411	482	612	719	2224

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 7: 2029 PM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	39
1/2 (with short)	338(In) 299(Out)
1/3	191
2/1	482
3/1	24
3/2	588
4/1	719
5/1	499
6/1	411
7/1 (with short)	326(In) 214(Out)
7/2 (short)	112
8/1	354
8/2 (with short)	516(In) 437(Out)
8/3 (short)	79

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.3 % 31.7 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	71.0 %	1940	1940
				Arm 6 Left	Inf	29.0 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	93.2 %	1651	1651
				Arm 3 Ahead	Inf	6.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 8: '2029 PM With Phase 1'** (FG8: '2029 PM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	431	461	79	971
	B	210	0	43	330	583
	C	158	0	0	341	499
	D	62	198	112	0	372
	Tot.	430	629	616	750	2425

## Full Input Data And Results

### Traffic Lane Flows

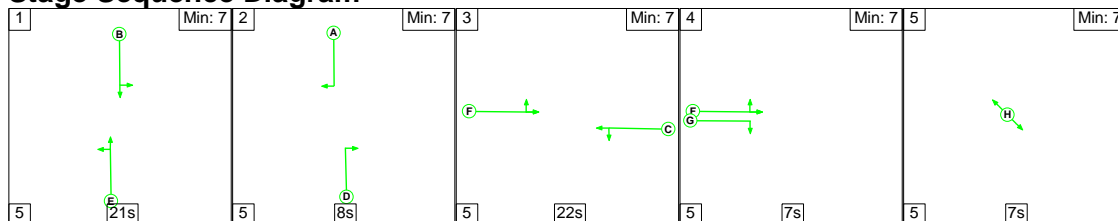
Lane	Scenario 8: 2029 PM With Phase 1
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	43
1/2 (with short)	373(In) 330(Out)
1/3	210
2/1	629
3/1	0
3/2	616
4/1	750
5/1	499
6/1	430
7/1 (with short)	372(In) 260(Out)
7/2 (short)	112
8/1	431
8/2 (with short)	540(In) 461(Out)
8/3 (short)	79

### Lane Saturation Flows

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.3 % 31.7 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	76.2 %	1940	1940
				Arm 6 Left	Inf	23.8 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
				Arm 3 Ahead	Inf	0.0 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

### Scenario 1: '2024 AM Without Development' (FG1: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

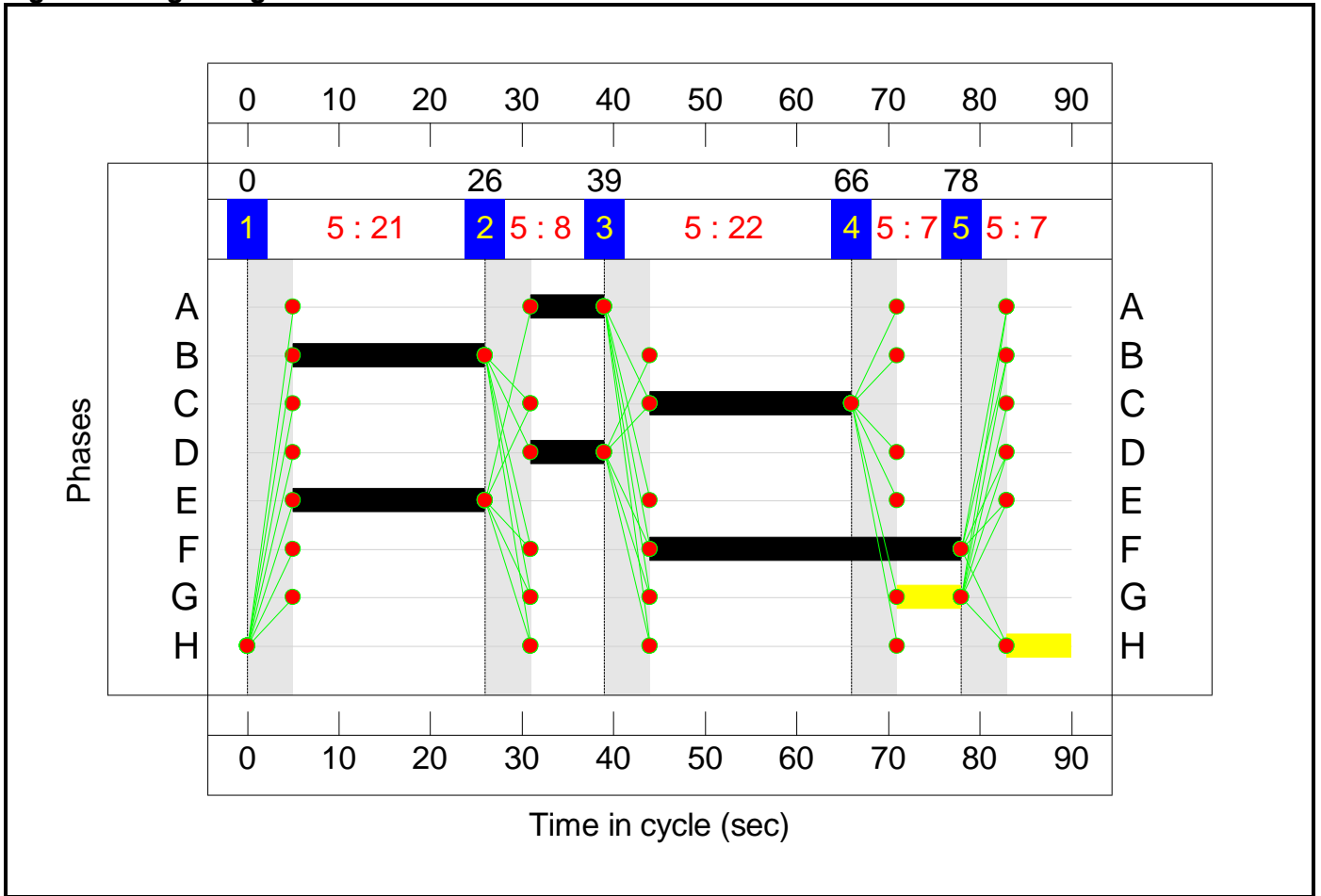
#### Stage Sequence Diagram



#### Stage Timings

Stage	1	2	3	4	5
Duration	21	8	22	7	7
Change Point	0	26	39	66	78

Signal Timings Diagram

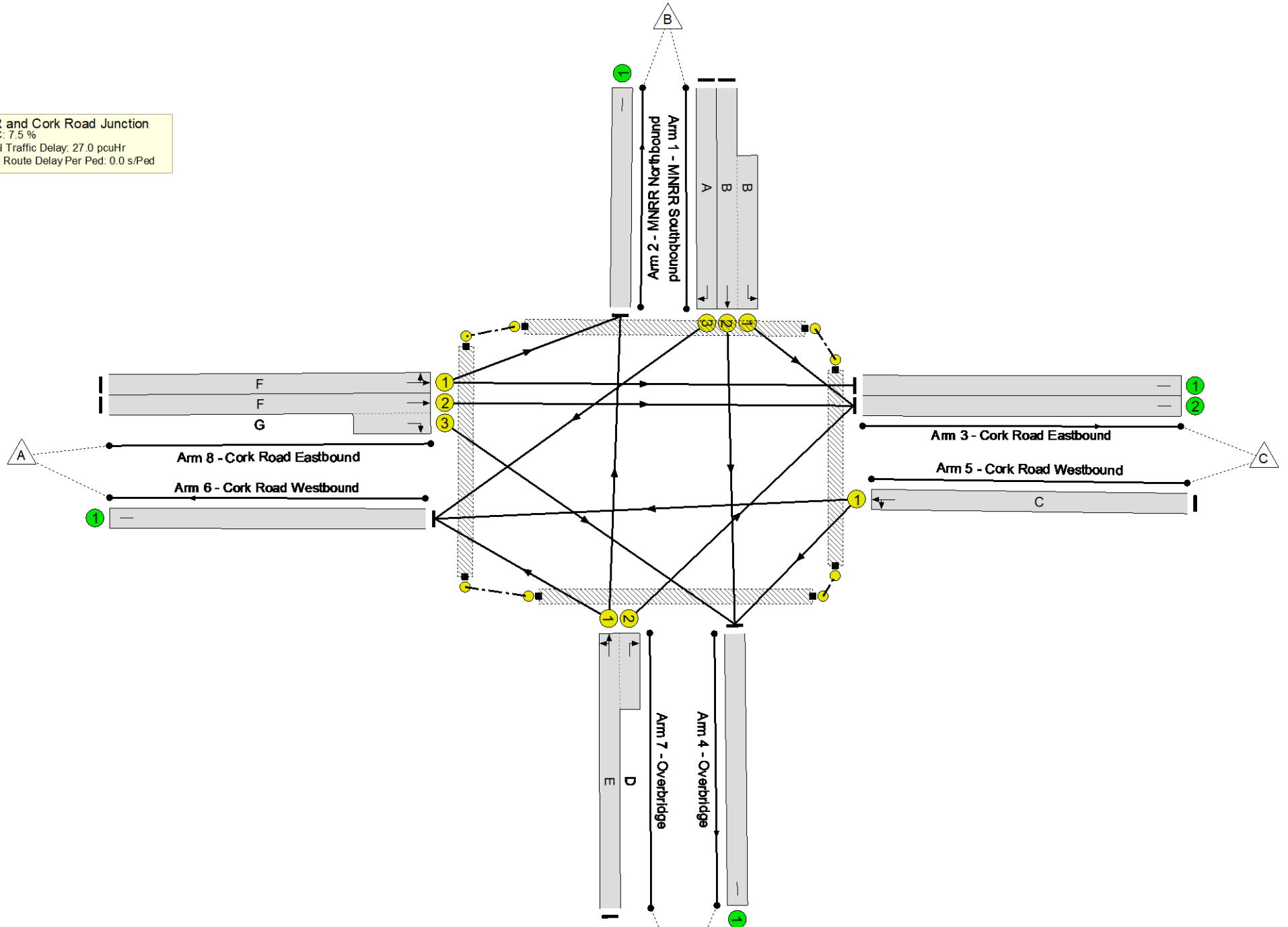


Full Input Data And Results  
**Network Layout Diagram**



# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 7.5 %  
 Total Traffic Delay: 27.0 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>83.7%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>83.7%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	21	-	431	1940:1912	474+41	83.7 : 83.7%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	8	-	140	1821	182	76.9%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	424	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	300	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	142	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	829	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	22	-	400	1940	496	80.7%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	21:8	-	448	1940:1781	424+135	80.2 : 80.2%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	34	-	502	1804	702	71.6%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	34:7	-	92	1940:1830	0+163	0.0 : 56.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

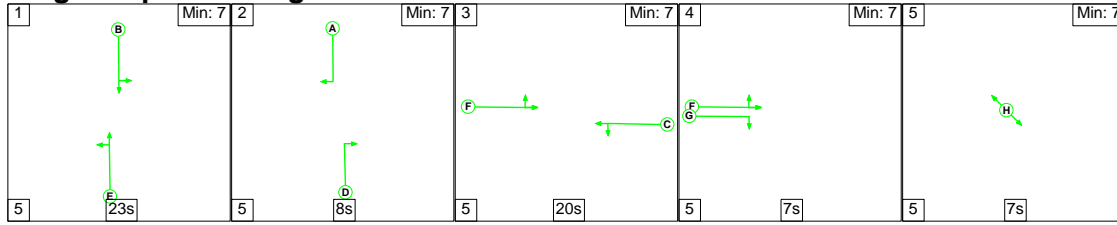
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	17.2	9.8	0.0	27.0	-	-	-	-
MNRR and Cork Road Junction	-	-	0	0	0	17.2	9.8	0.0	27.0	-	-	-	-
1/2+1/1	431	431	-	-	-	3.8	2.4	-	6.2	52.1	9.4	2.4	11.8
1/3	140	140	-	-	-	1.5	1.5	-	3.1	79.3	3.4	1.5	4.9
2/1	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	300	300	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	829	829	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	400	400	-	-	-	3.5	2.0	-	5.5	49.5	9.3	2.0	11.3
6/1	318	318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	448	448	-	-	-	4.1	2.0	-	6.1	48.8	8.6	2.0	10.5
8/1	502	502	-	-	-	3.2	1.2	-	4.5	32.2	10.6	1.2	11.8
8/2+8/3	92	92	-	-	-	1.0	0.6	-	1.6	64.4	2.2	0.6	2.8
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		7.5		Total Delay for Signalled Lanes (pcuHr):		27.02		Cycle Time (s):		90	
		PRC Over All Lanes (%):		7.5		Total Delay Over All Lanes(pcuHr):		27.02					

Full Input Data And Results

Scenario 2: '2024 AM With Development' (FG2: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

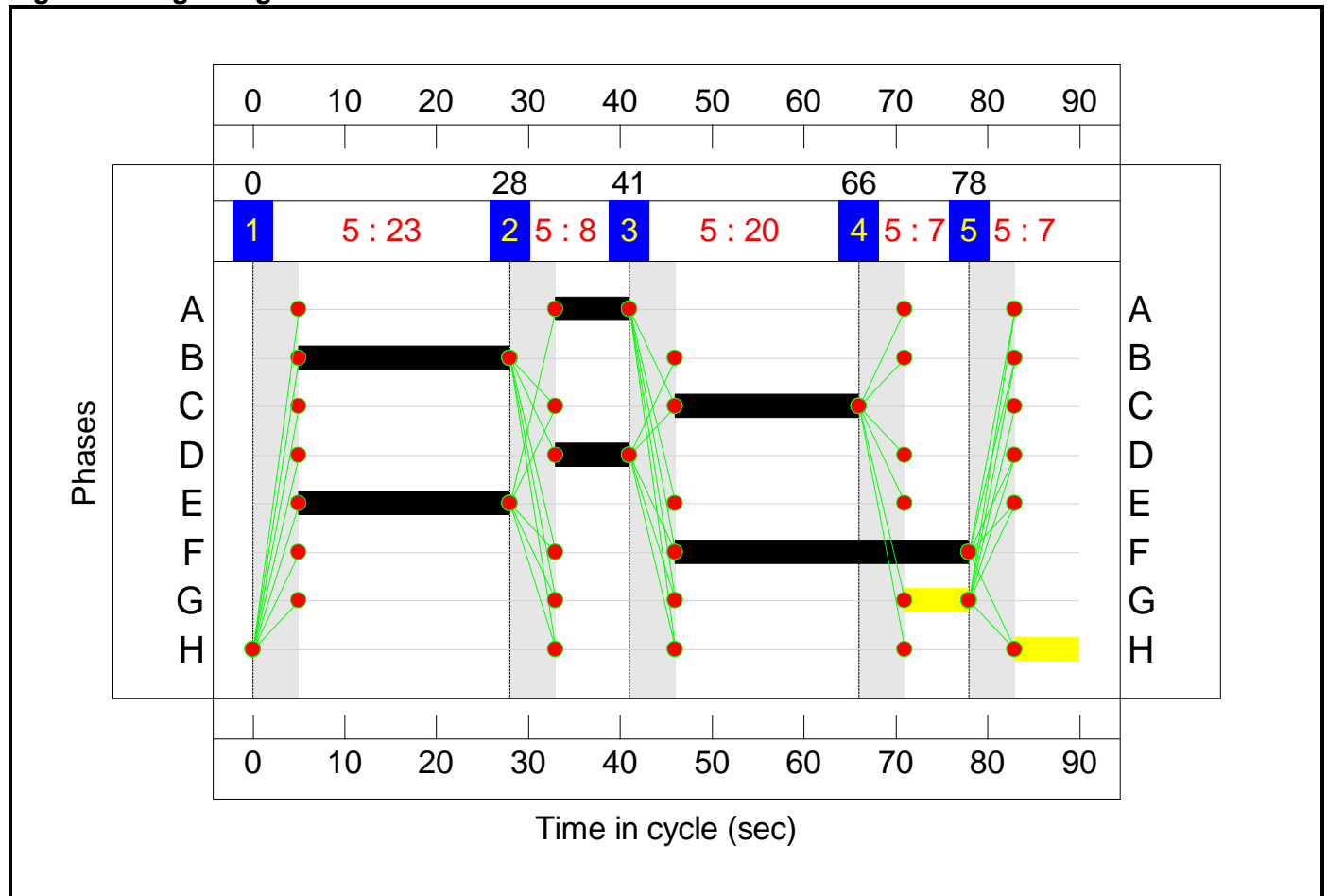
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	23	8	20	7	7
Change Point	0	28	41	66	78

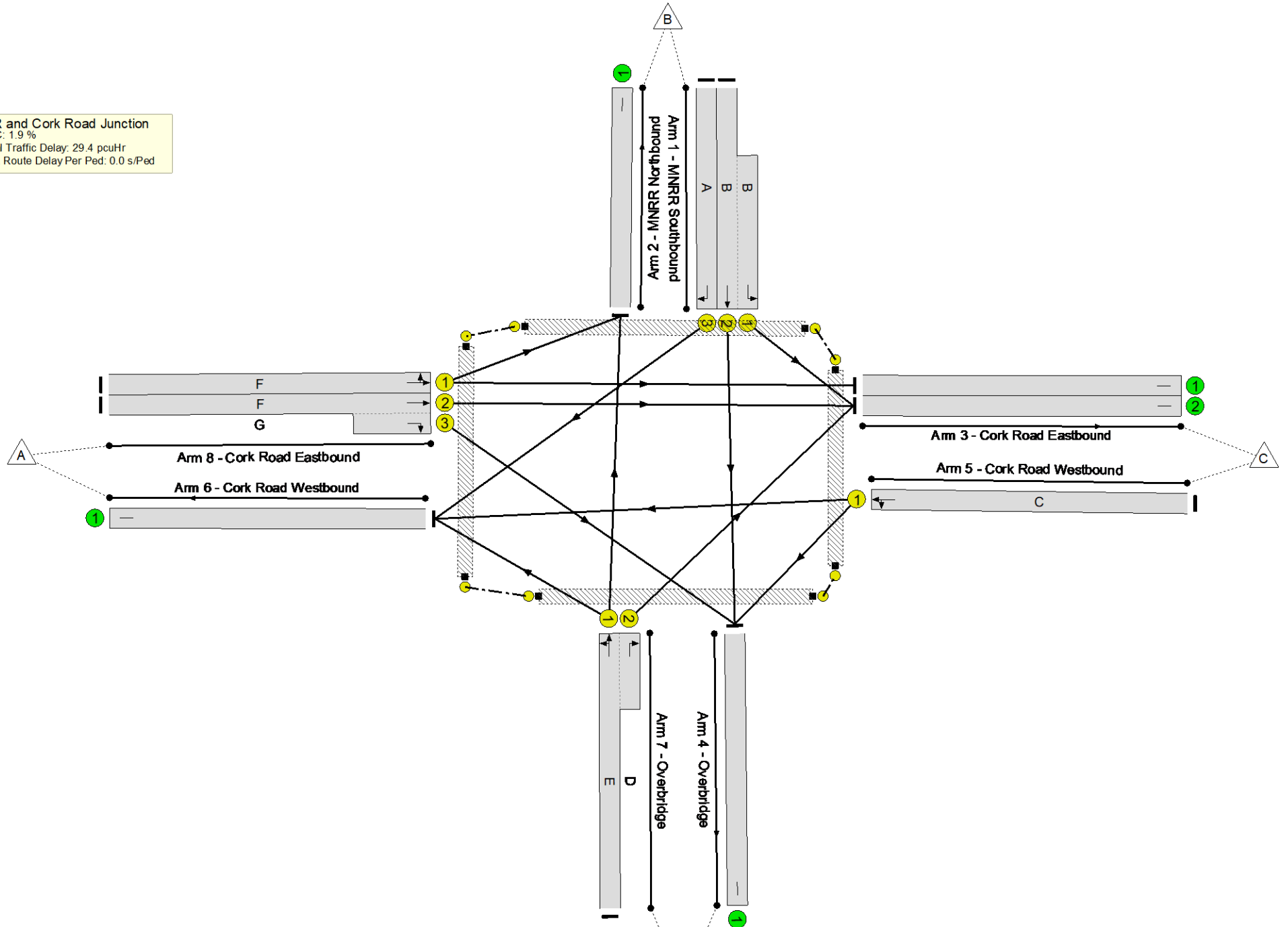
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 1.9 %  
 Total Traffic Delay: 29.4 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>88.4%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>88.4%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	23	-	480	1940:1912	517+44	85.4 : 85.4%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	8	-	156	1821	182	85.7%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	431	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	212	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	234	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	874	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	20	-	400	1940	453	88.4%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	334	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	23:8	-	452	1940:1781	456+143	75.4 : 75.4%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	32	-	417	1776	651	64.0%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	32:7	-	180	1940:1830	156+163	56.6 : 56.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

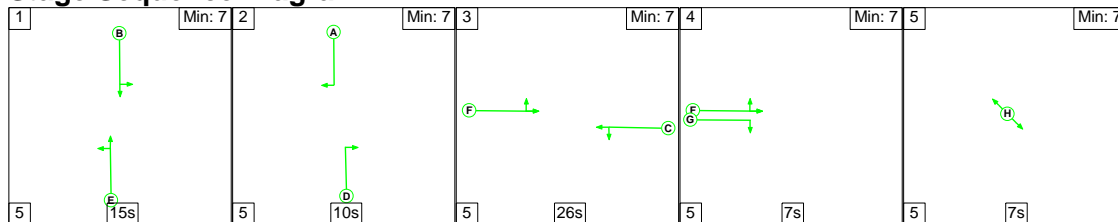
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	17.7	11.7	0.0	29.4	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	17.7	11.7	0.0	29.4	-	-	-	-
1/2+1/1	480	480	-	-	-	4.1	2.7	-	6.9	51.4	10.4	2.7	13.2
1/3	156	156	-	-	-	1.7	2.5	-	4.2	97.7	3.8	2.5	6.3
2/1	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	212	212	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	234	234	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	874	874	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	400	400	-	-	-	3.7	3.4	-	7.1	63.6	9.6	3.4	12.9
6/1	334	334	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	452	452	-	-	-	4.0	1.5	-	5.5	43.6	8.3	1.5	9.8
8/1	417	417	-	-	-	2.7	0.9	-	3.6	31.2	8.6	0.9	9.5
8/2+8/3	180	180	-	-	-	1.5	0.6	-	2.1	42.3	2.2	0.6	2.8
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		1.9		Total Delay for Signalled Lanes (pcuHr):		29.37		Cycle Time (s):		90	
		PRC Over All Lanes (%):		1.9		Total Delay Over All Lanes(pcuHr):		29.37					

Full Input Data And Results

**Scenario 3: '2024 PM Without Development'** (FG3: '2024 PM Without Development', Plan 1: 'Network Control Plan 1')

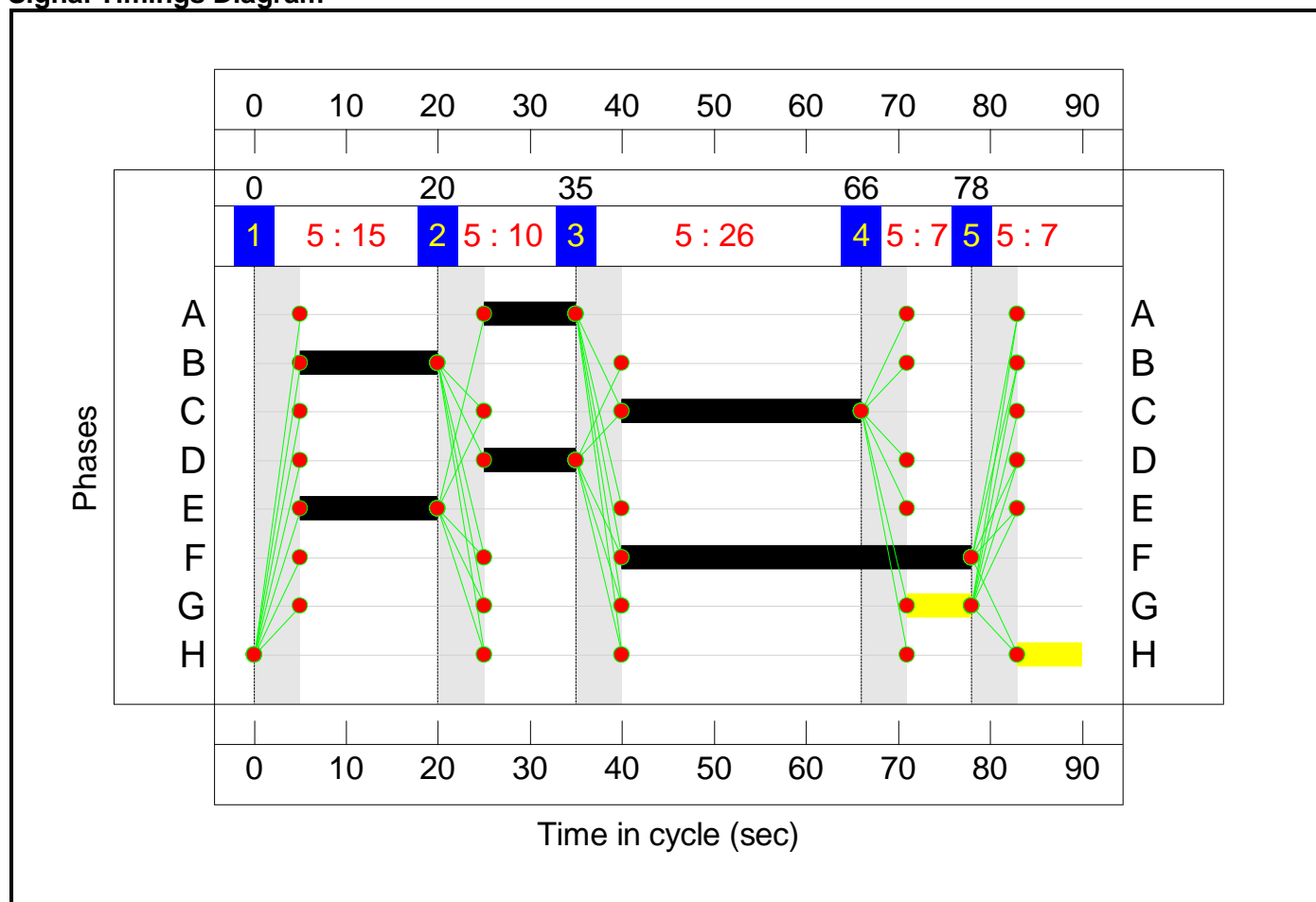
**Stage Sequence Diagram**



**Stage Timings**

Stage	1	2	3	4	5
Duration	15	10	26	7	7
Change Point	0	20	35	66	78

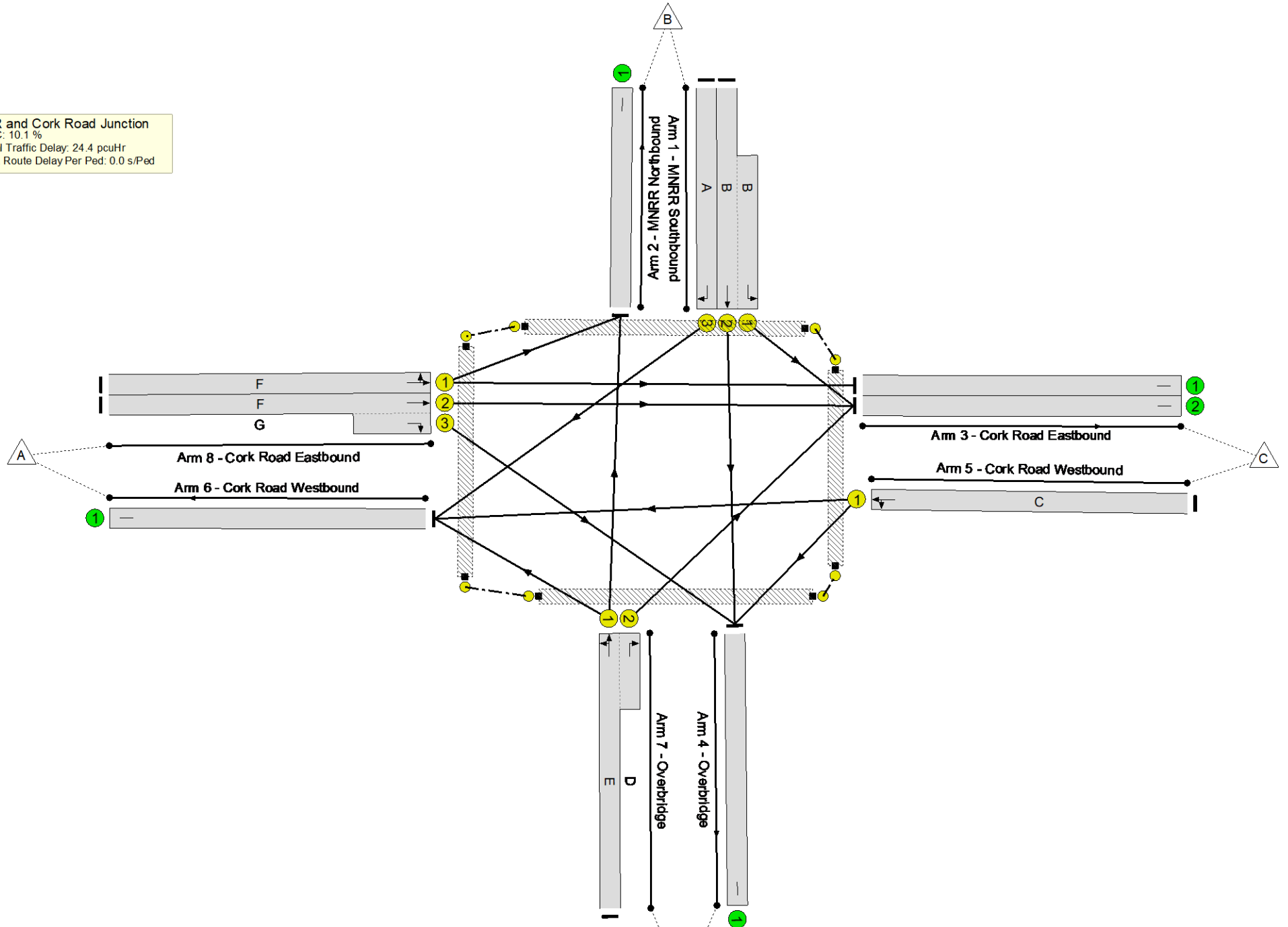
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 10.1 %  
 Total Traffic Delay: 24.4 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>81.8%</b>
<b>MNRR and Cork Road Junction</b>	-	-	N/A	-	-		-	-	-	-	-	-	<b>81.8%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	15	-	319	1940:1912	345+45	81.8 : 81.8%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	10	-	180	1821	223	80.9%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	454	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	21	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	556	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	679	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	26	-	471	1940	582	80.9%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	15:10	-	306	1940:1781	313+164	64.1 : 64.1%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	38	-	332	1650	715	46.4%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	38:7	-	489	1940:1830	759+137	54.6 : 54.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

Full Input Data And Results

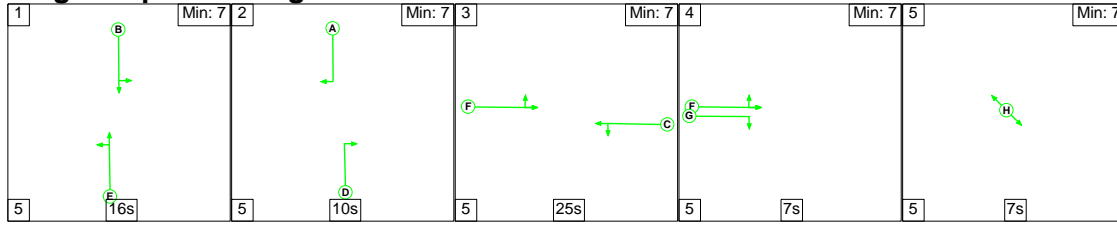
Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	16.4	8.0	0.0	24.4	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	16.4	8.0	0.0	24.4	-	-	-	-
1/2+1/1	319	319	-	-	-	3.1	2.1	-	5.2	59.0	6.7	2.1	8.9
1/3	180	180	-	-	-	1.9	1.9	-	3.9	77.2	4.3	1.9	6.3
2/1	454	454	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	21	21	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	556	556	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	679	679	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	471	471	-	-	-	3.8	2.0	-	5.9	44.8	10.9	2.0	12.9
6/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	306	306	-	-	-	3.0	0.9	-	3.9	45.4	4.6	0.9	5.5
8/1	332	332	-	-	-	1.7	0.4	-	2.1	22.8	5.8	0.4	6.2
8/2+8/3	489	489	-	-	-	2.9	0.6	-	3.5	25.9	7.7	0.6	8.3
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		10.1		Total Delay for Signalled Lanes (pcuHr):		24.42		Cycle Time (s):		90	
		PRC Over All Lanes (%):		10.1		Total Delay Over All Lanes(pcuHr):		24.42					



Full Input Data And Results

Scenario 4: '2024 PM With Development' (FG4: '2024 PM With Development', Plan 1: 'Network Control Plan 1')

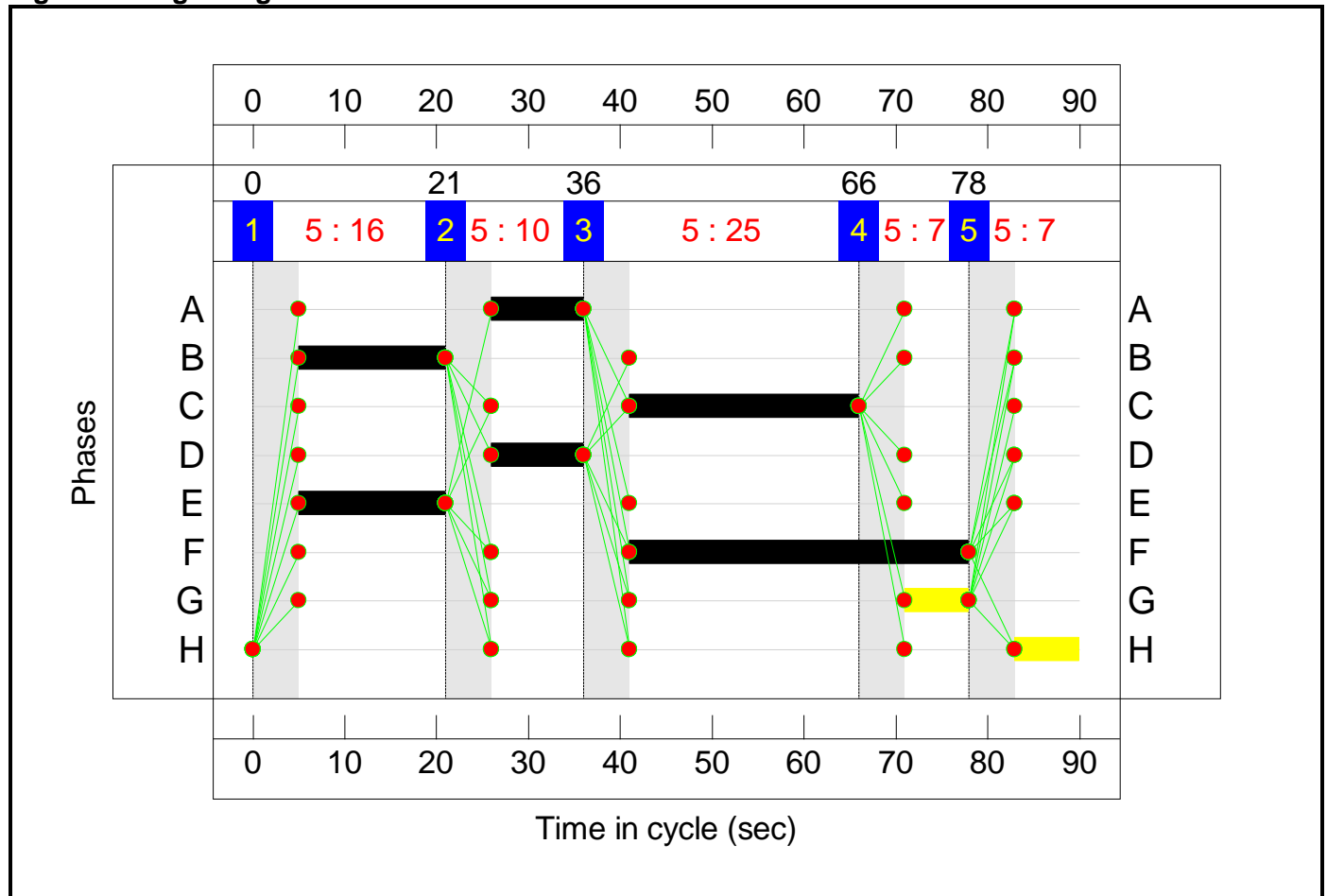
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	16	10	25	7	7
Change Point	0	21	36	66	78

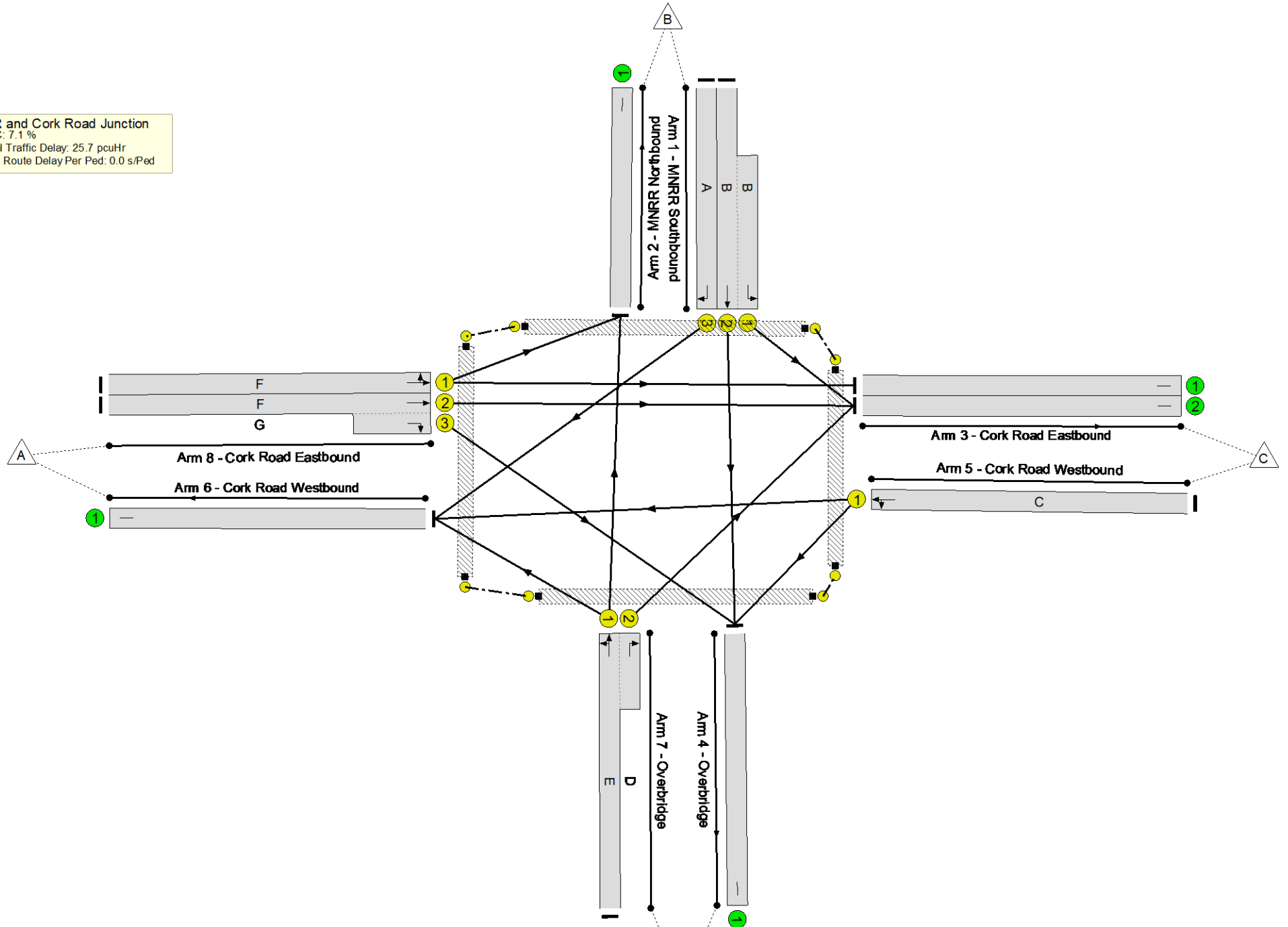
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 7.1 %  
 Total Traffic Delay: 25.7 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>84.0%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>84.0%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	16	-	328	1940:1912	366+48	79.1 : 79.1%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	10	-	185	1821	223	83.1%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	497	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	5	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	573	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	687	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	25	-	471	1940	560	84.0%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	16:10	-	320	1940:1781	330+161	65.2 : 65.2%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	37	-	345	1637	691	49.9%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	37:7	-	505	1940:1830	743+130	57.8 : 57.8%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

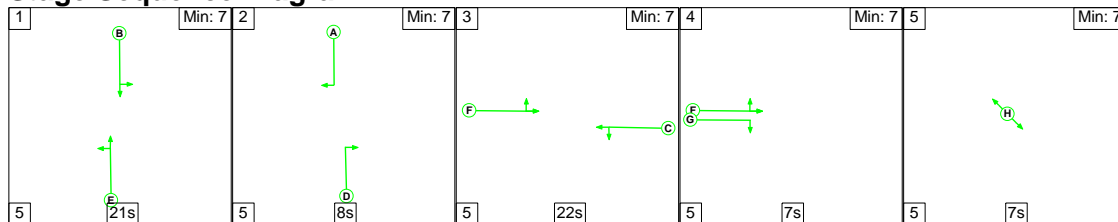
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%	
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
<b>Network</b>	-	-	0	0	0	17.0	8.6	0.0	25.7	-	-	-	-	
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	17.0	8.6	0.0	25.7	-	-	-	-	
1/2+1/1	328	328	-	-	-	3.1	1.8	-	4.9	54.3	6.8	1.8	8.7	
1/3	185	185	-	-	-	2.0	2.2	-	4.2	81.5	4.5	2.2	6.7	
2/1	497	497	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	5	5	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/2	573	573	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	687	687	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	471	471	-	-	-	3.9	2.5	-	6.4	49.1	11.0	2.5	13.5	
6/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
7/1+7/2	320	320	-	-	-	3.1	0.9	-	4.0	44.9	4.9	0.9	5.8	
8/1	345	345	-	-	-	1.8	0.5	-	2.3	24.2	6.2	0.5	6.7	
8/2+8/3	505	505	-	-	-	3.1	0.7	-	3.8	27.1	8.3	0.7	8.9	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-	
C1		PRC for Signalled Lanes (%):			7.1	Total Delay for Signalled Lanes (pcuHr):			25.67	Cycle Time (s):		90		
		PRC Over All Lanes (%):			7.1	Total Delay Over All Lanes(pcuHr):			25.67					

Full Input Data And Results

**Scenario 5: '2029 AM Without Development'** (FG5: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

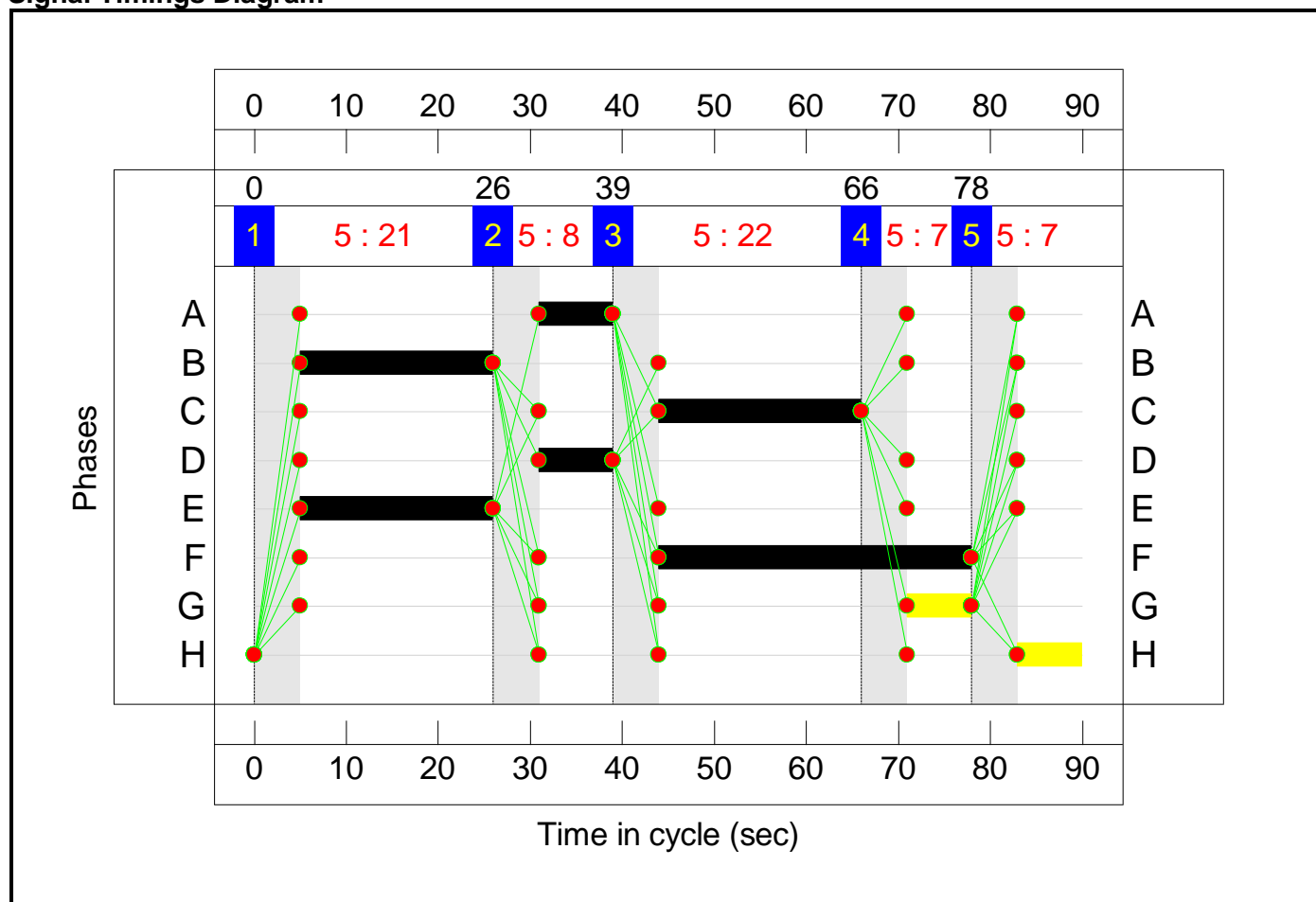
**Stage Sequence Diagram**



**Stage Timings**

Stage	1	2	3	4	5
Duration	21	8	22	7	7
Change Point	0	26	39	66	78


**Signal Timings Diagram**

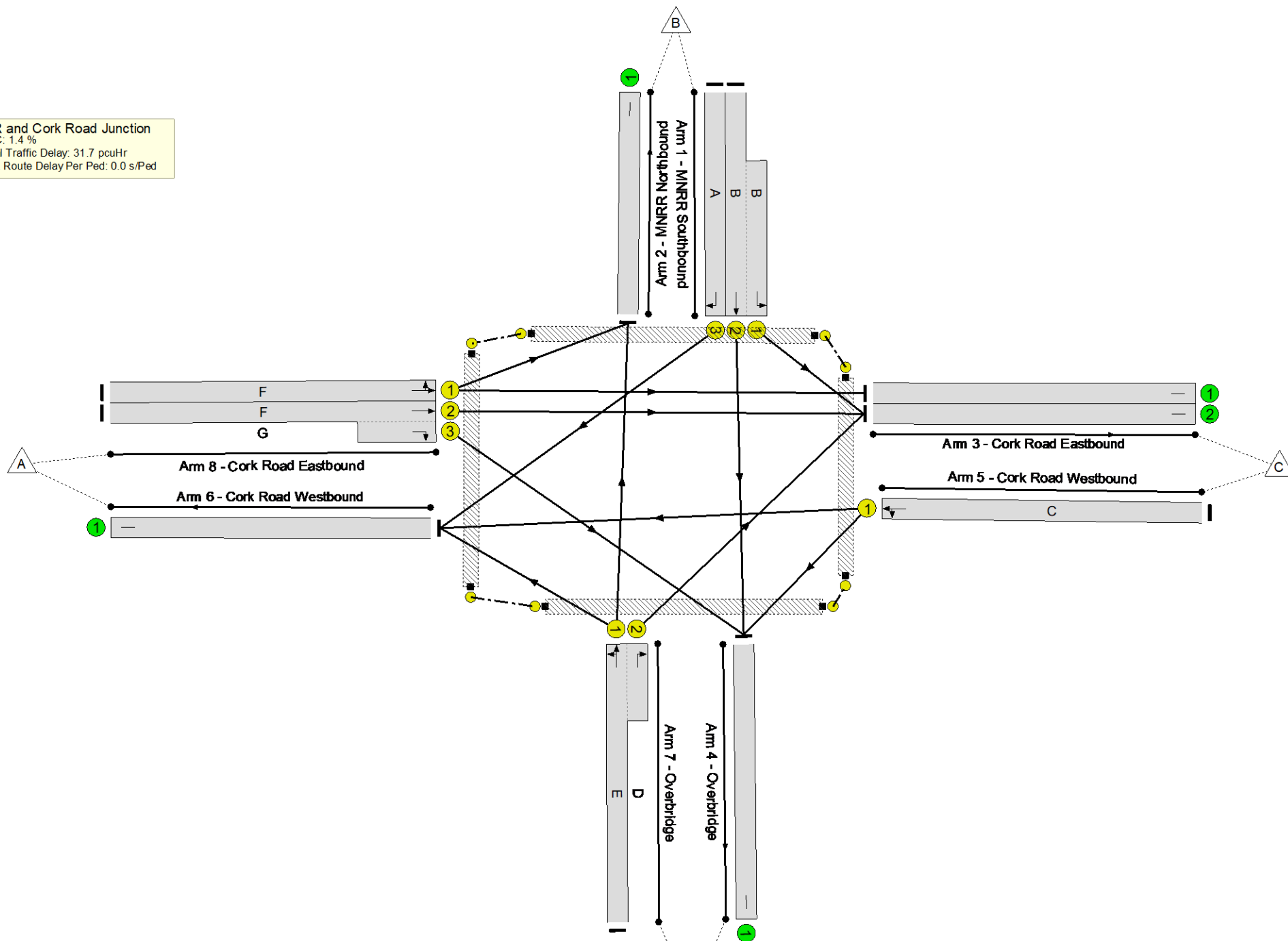


Full Input Data And Results  
**Network Layout Diagram**



# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 1.4 %  
 Total Traffic Delay: 31.7 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>88.8%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>88.8%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	21	-	457	1940:1912	474+41	88.8 : 88.8%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	8	-	149	1821	182	81.8%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	449	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	879	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	22	-	424	1940	496	85.5%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	338	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	21:8	-	475	1940:1781	423+135	85.0 : 85.0%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	34	-	532	1804	702	75.8%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	34:7	-	98	1940:1830	0+163	0.0 : 60.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

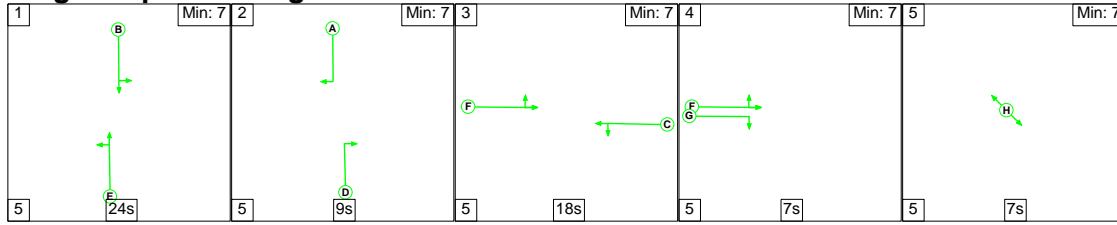
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	18.5	13.2	0.0	31.7	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	18.5	13.2	0.0	31.7	-	-	-	-
1/2+1/1	457	457	-	-	-	4.1	3.5	-	7.6	60.1	10.1	3.5	13.6
1/3	149	149	-	-	-	1.6	2.0	-	3.7	88.2	3.6	2.0	5.6
2/1	449	449	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	318	318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	424	424	-	-	-	3.8	2.7	-	6.5	55.2	10.0	2.7	12.8
6/1	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	475	475	-	-	-	4.4	2.7	-	7.1	53.6	9.3	2.7	12.0
8/1	532	532	-	-	-	3.5	1.5	-	5.1	34.3	11.5	1.5	13.1
8/2+8/3	98	98	-	-	-	1.1	0.7	-	1.8	66.7	2.3	0.7	3.1
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		1.4		Total Delay for Signalled Lanes (pcuHr):		31.73		Cycle Time (s):		90	
		PRC Over All Lanes (%):		1.4		Total Delay Over All Lanes(pcuHr):		31.73					

Full Input Data And Results

Scenario 6: '2029 AM With Phase 1' (FG6: '2029 AM With Development', Plan 1: 'Network Control Plan 1')

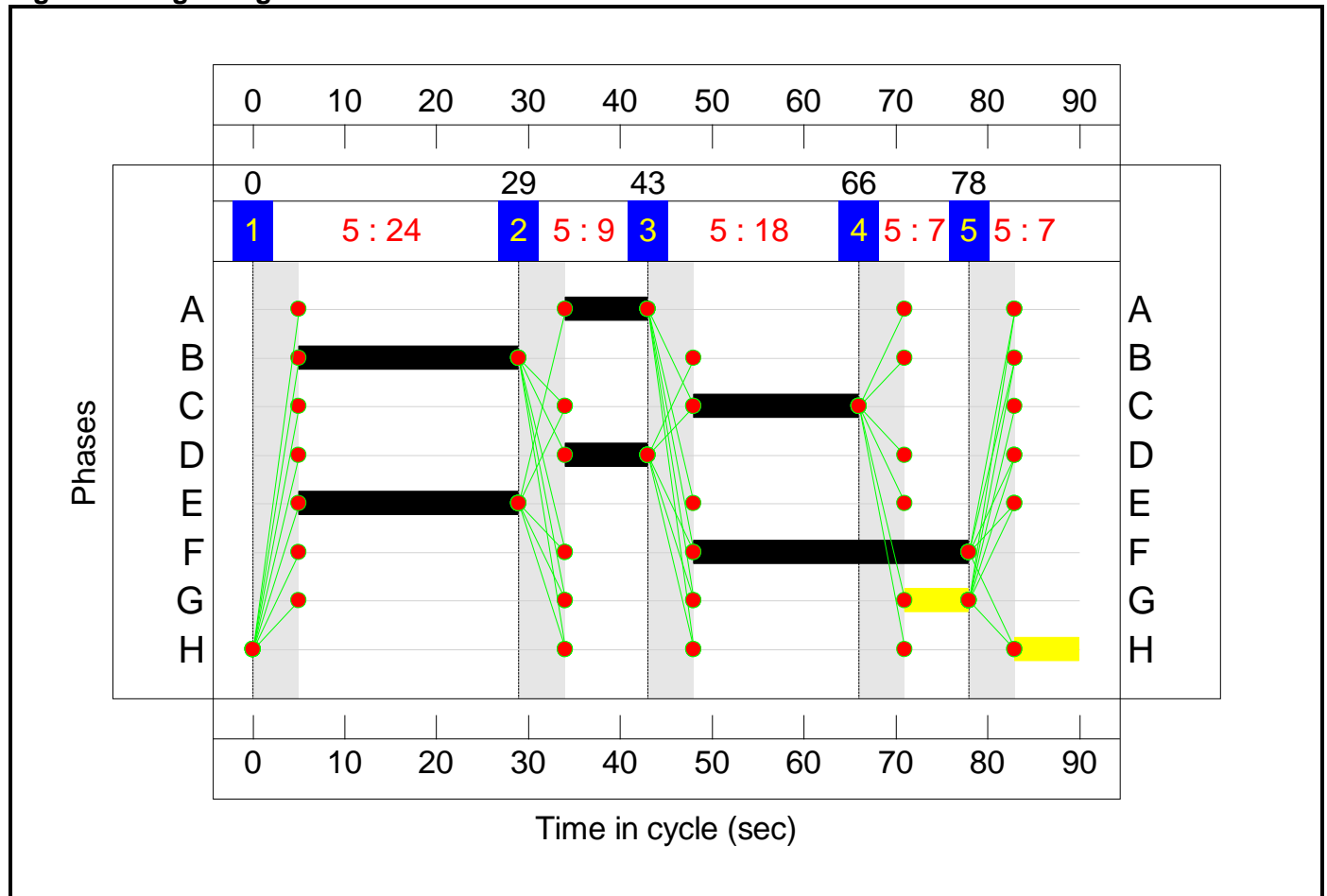
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	24	9	18	7	7
Change Point	0	29	43	66	78

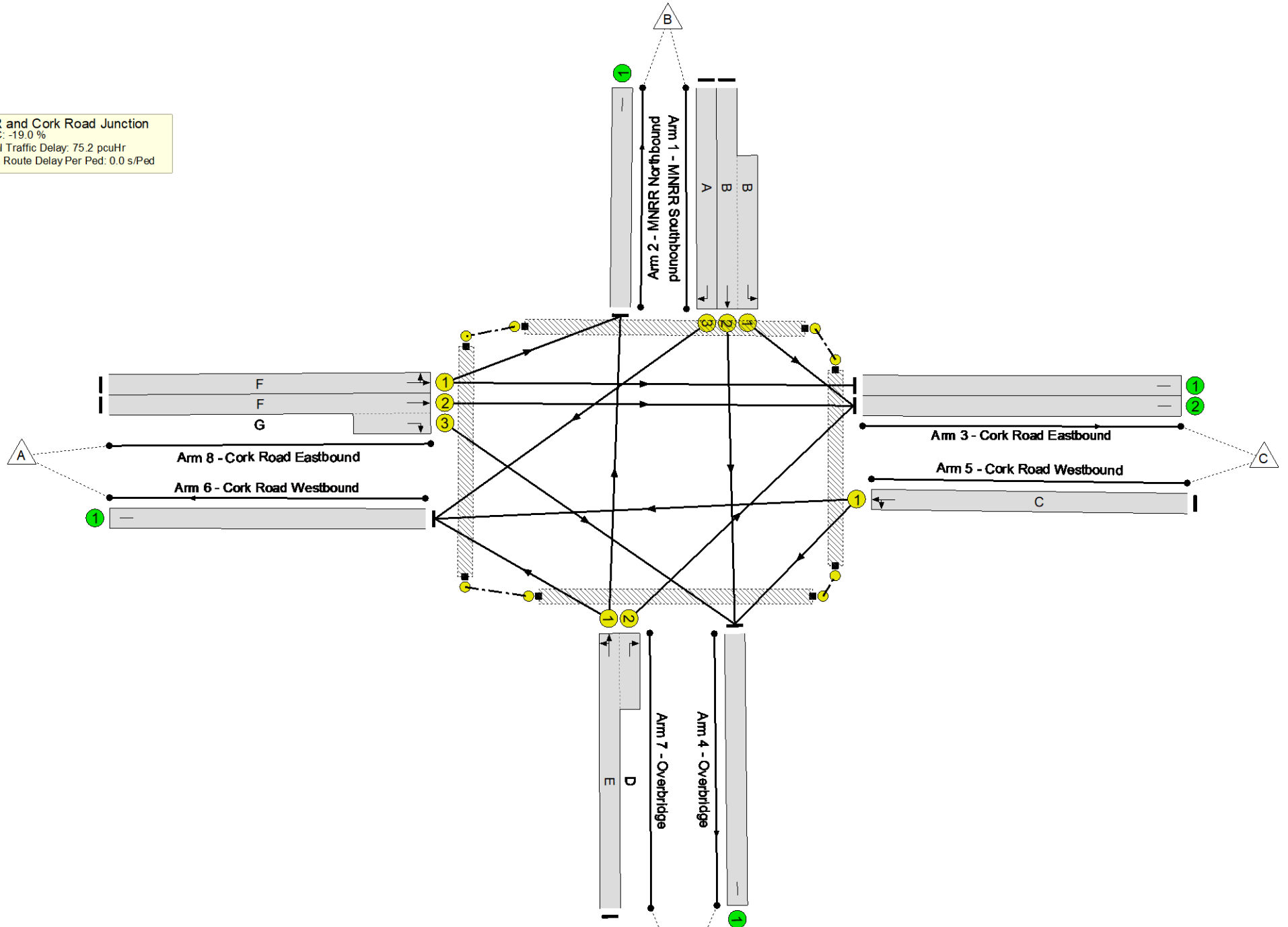
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: -19.0 %  
 Total Traffic Delay: 75.2 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results



Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	107.1%
MNRR and Cork Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	107.1%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	24	-	626	1940:1912	539+46	107.1 : 107.1%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	9	-	204	1821	202	100.8%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	494	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	45	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	437	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	1035	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	18	-	424	1940	410	103.5%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	393	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	24:9	-	499	1940:1781	475+142	80.8 : 80.8%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	30	-	280	1676	577	48.5%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	30:7	-	371	1940:1830	453+163	60.2 : 60.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

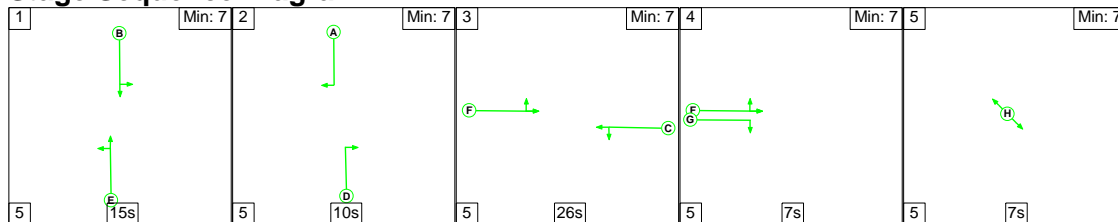
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	23.3	51.9	0.0	75.2	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	23.3	51.9	0.0	75.2	-	-	-	-
1/2+1/1	626	585	-	-	-	7.4	26.6	-	34.0	195.4	16.6	26.6	43.2
1/3	204	202	-	-	-	2.3	7.6	-	9.9	174.7	5.1	7.6	12.7
2/1	494	494	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	45	45	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	434	434	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	985	985	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	424	410	-	-	-	4.7	14.5	-	19.2	162.9	11.0	14.5	25.5
6/1	389	389	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	499	499	-	-	-	4.3	2.0	-	6.4	46.0	9.7	2.0	11.7
8/1	280	280	-	-	-	1.8	0.5	-	2.3	29.3	5.4	0.5	5.9
8/2+8/3	371	371	-	-	-	2.8	0.8	-	3.5	34.3	5.2	0.8	5.9
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		-19.0		Total Delay for Signalled Lanes (pcuHr):		75.25		Cycle Time (s):		90	
		PRC Over All Lanes (%):		-19.0		Total Delay Over All Lanes(pcuHr):		75.25					

Full Input Data And Results

**Scenario 7: '2029 PM Without Development'** (FG7: '2029 PM Without Development', Plan 1: 'Network Control Plan 1')

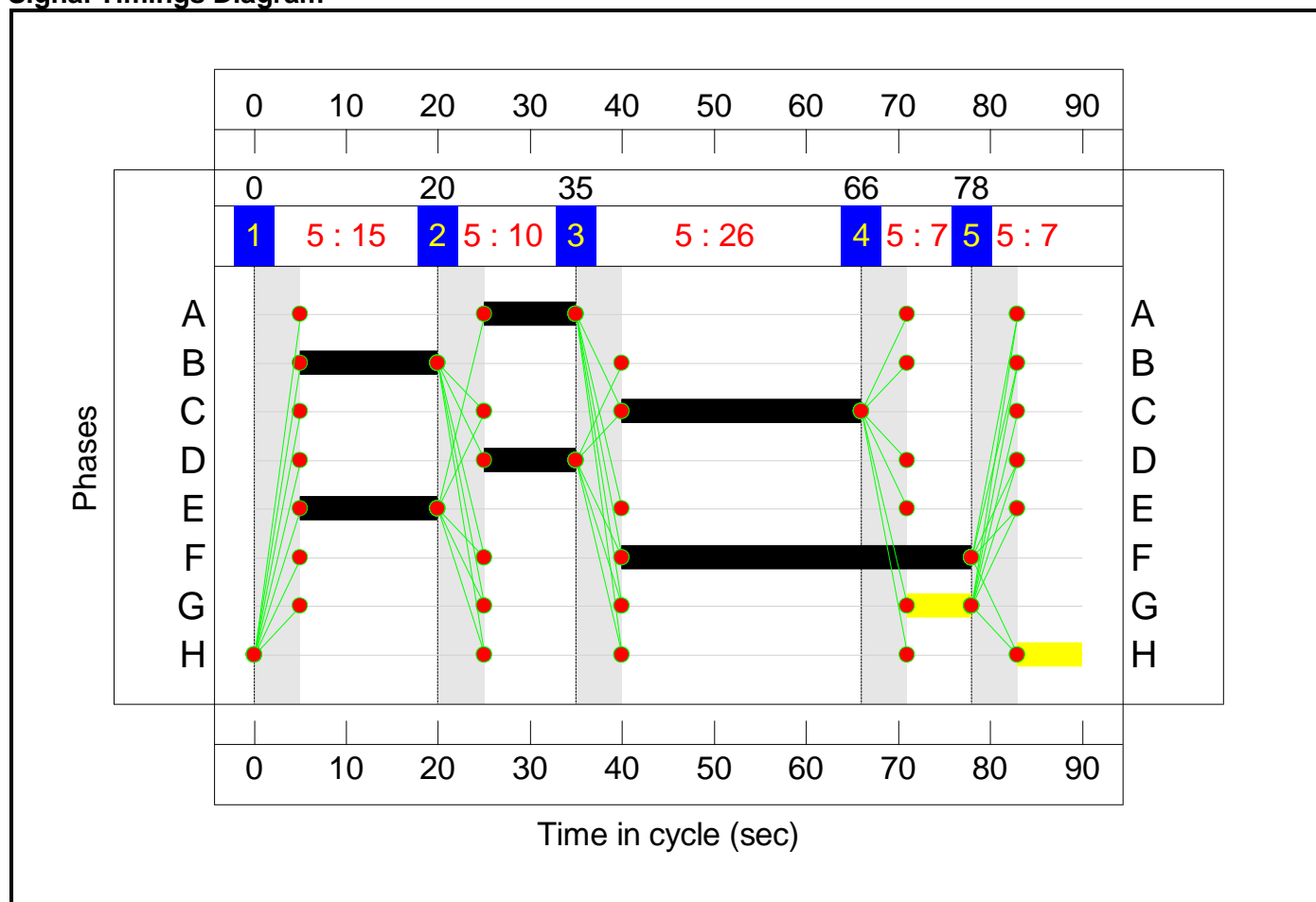
**Stage Sequence Diagram**



**Stage Timings**


Stage	1	2	3	4	5
Duration	15	10	26	7	7
Change Point	0	20	35	66	78

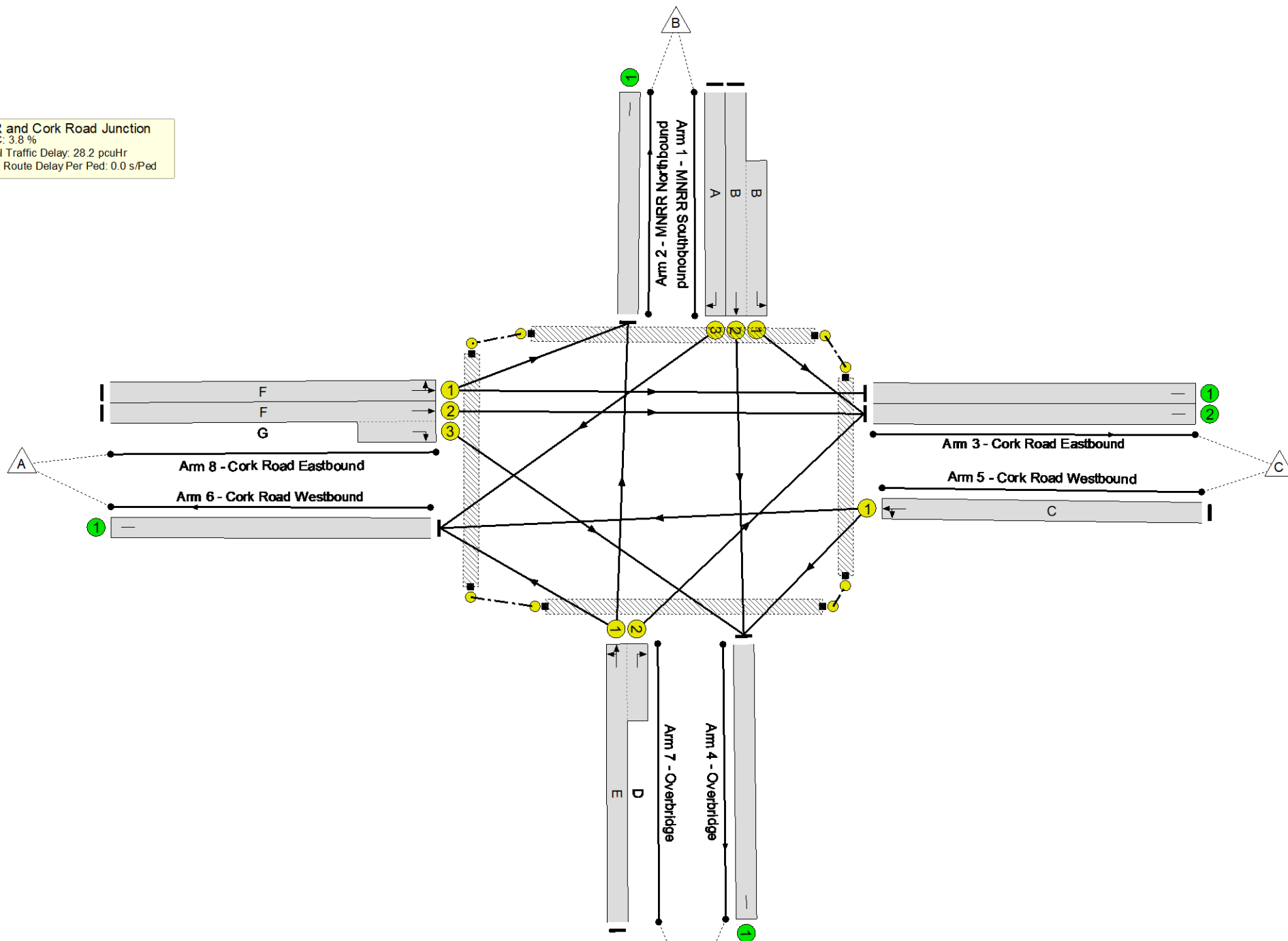
**Signal Timings Diagram**



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 3.8 %  
 Total Traffic Delay: 28.2 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>86.7%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>86.7%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	15	-	338	1940:1912	345+45	86.7 : 86.7%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	10	-	191	1821	223	85.8%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	24	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	588	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	719	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	26	-	499	1940	582	85.7%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	411	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	15:10	-	326	1940:1781	313+164	68.3 : 68.3%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	38	-	354	1651	715	49.5%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	38:7	-	516	1940:1830	759+137	57.6 : 57.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

Full Input Data And Results

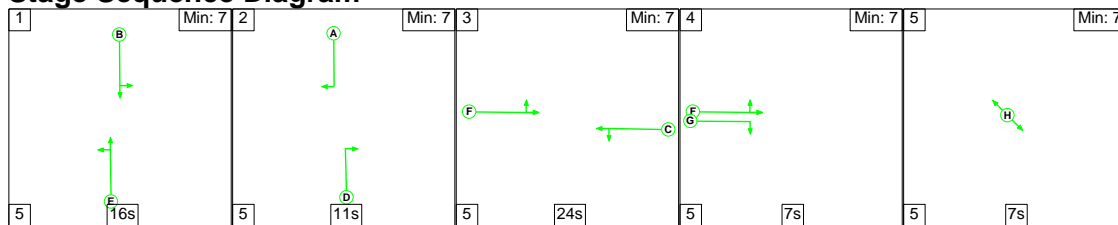
Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	17.6	10.6	0.0	28.2	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	17.6	10.6	0.0	28.2	-	-	-	-
1/2+1/1	338	338	-	-	-	3.3	2.9	-	6.3	66.6	7.2	2.9	10.2
1/3	191	191	-	-	-	2.1	2.6	-	4.7	87.7	4.7	2.6	7.3
2/1	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	24	24	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	588	588	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	719	719	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	499	499	-	-	-	4.1	2.8	-	6.9	50.0	11.6	2.8	14.5
6/1	411	411	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	326	326	-	-	-	3.2	1.1	-	4.2	46.9	4.9	1.1	6.0
8/1	354	354	-	-	-	1.8	0.5	-	2.3	23.4	6.3	0.5	6.8
8/2+8/3	516	516	-	-	-	3.1	0.7	-	3.8	26.5	8.3	0.7	9.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		3.8		Total Delay for Signalled Lanes (pcuHr):		28.18		Cycle Time (s):		90	
		PRC Over All Lanes (%):		3.8		Total Delay Over All Lanes(pcuHr):		28.18					



Full Input Data And Results

Scenario 8: '2029 PM With Phase 1' (FG8: '2029 PM With Development', Plan 1: 'Network Control Plan 1')

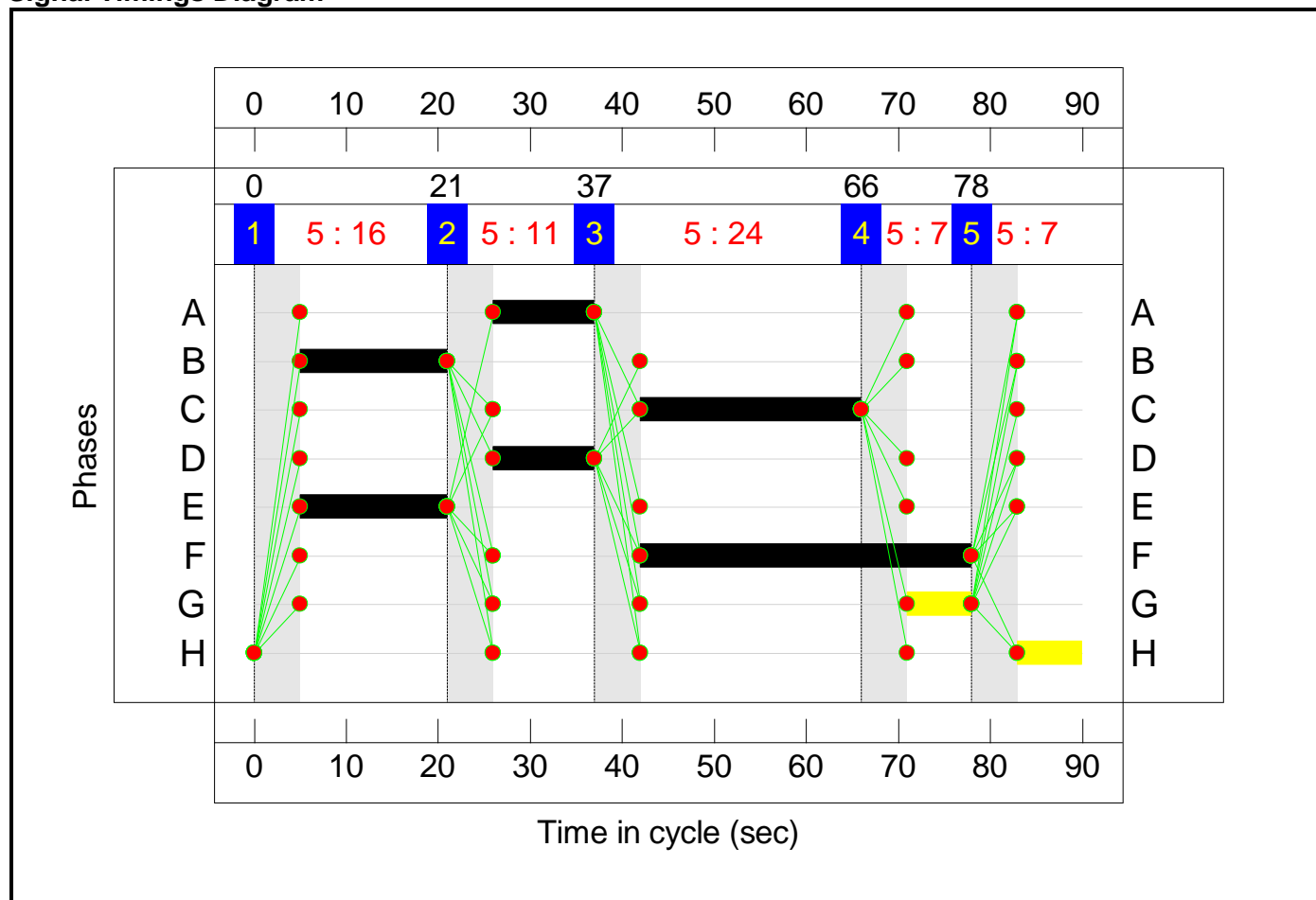
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	16	11	24	7	7
Change Point	0	21	37	66	78

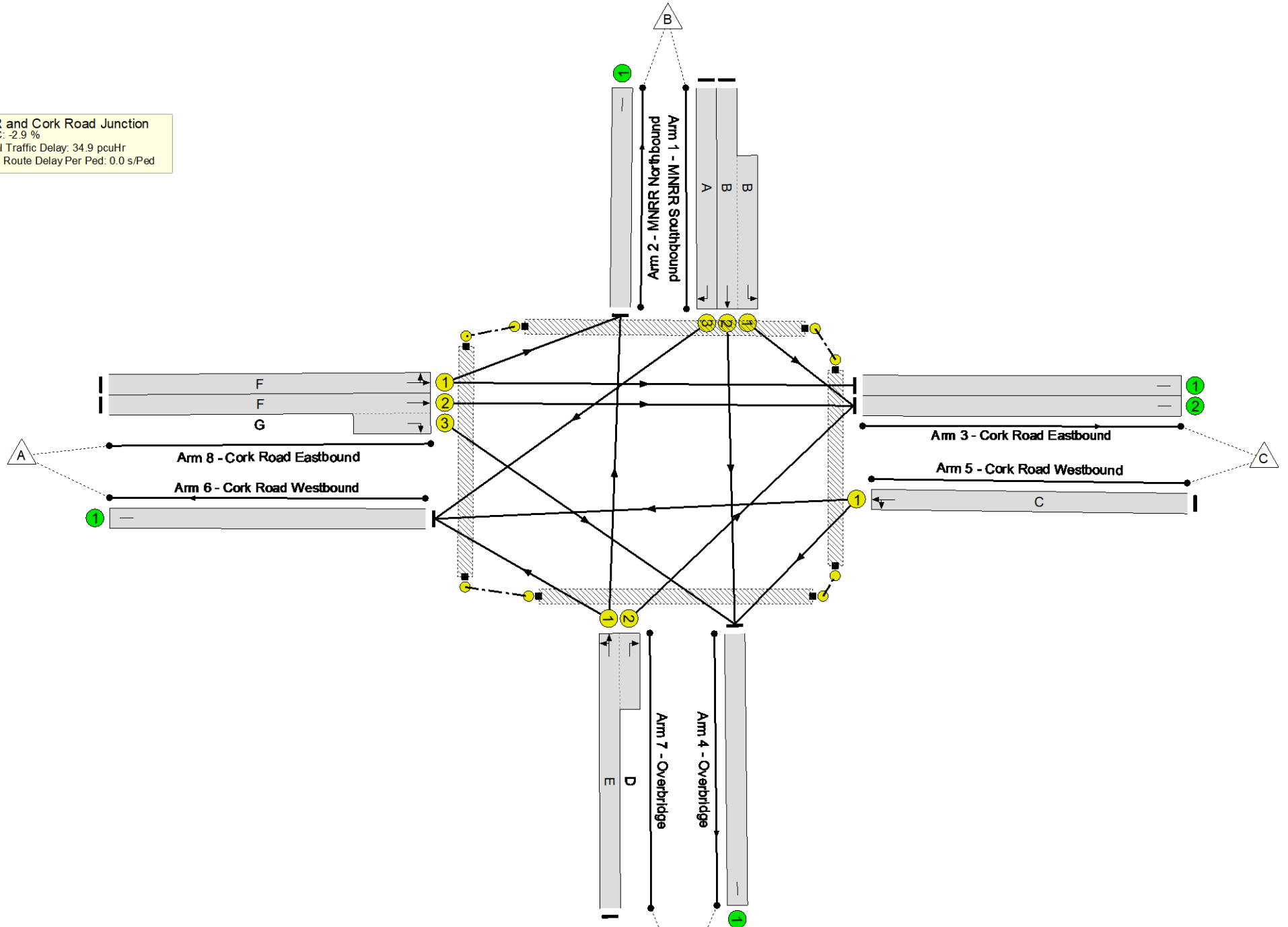
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: -2.9 %  
 Total Traffic Delay: 34.9 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	92.6%
MNRR and Cork Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	92.6%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	16	-	373	1940:1912	366+48	90.1 : 90.1%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	11	-	210	1821	243	86.5%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	629	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	616	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	750	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	24	-	499	1940	539	92.6%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	430	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	16:11	-	372	1940:1781	334+144	77.9 : 77.9%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	36	-	431	1634	672	64.2%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	36:7	-	540	1940:1830	727+125	63.4 : 63.4%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

Full Input Data And Results

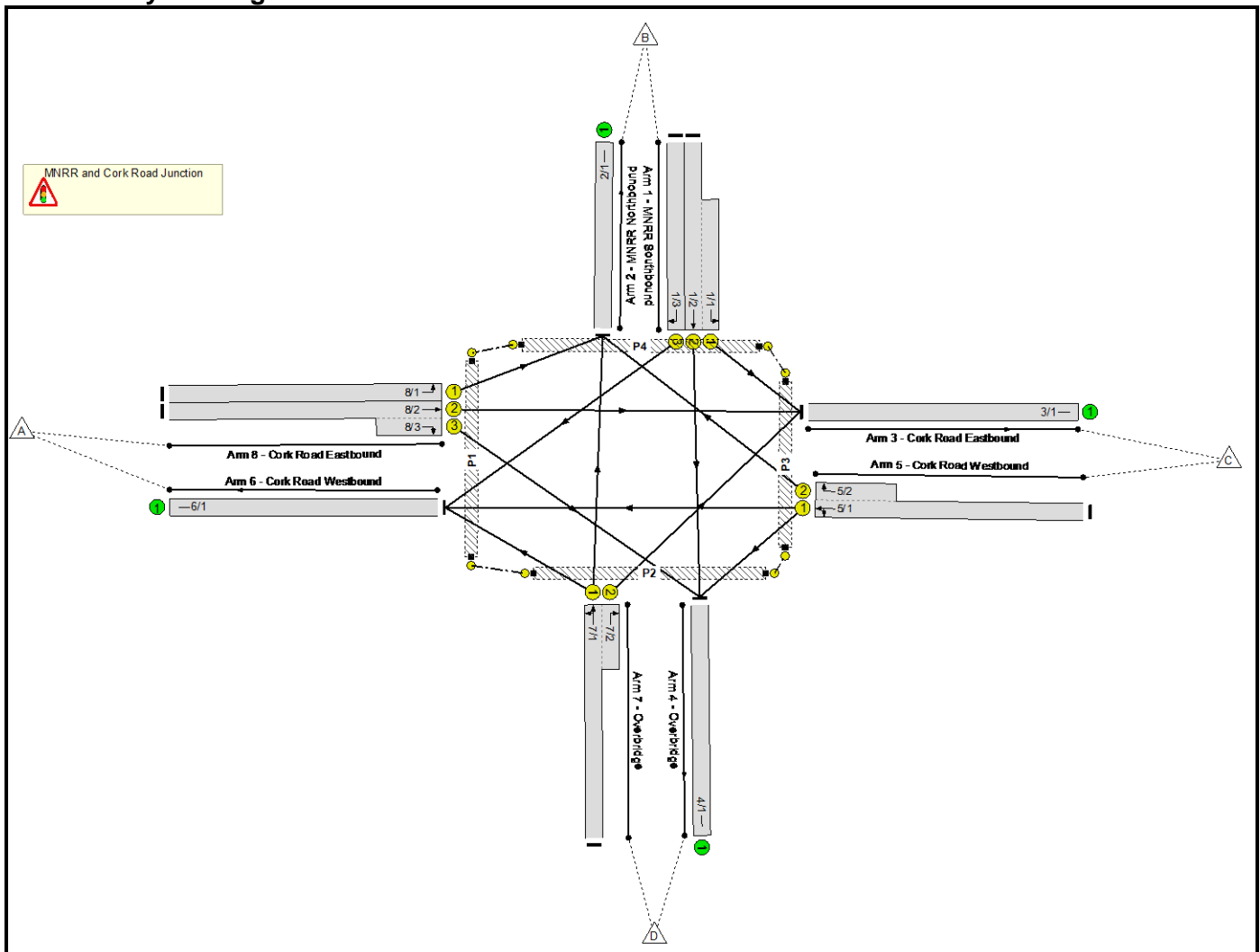
Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	0	0	0	19.9	15.0	0.0	34.9	-	-	-	-
MNRR and Cork Road Junction	-	-	0	0	0	19.9	15.0	0.0	34.9	-	-	-	-
1/2+1/1	373	373	-	-	-	3.6	3.8	-	7.5	71.9	8.0	3.8	11.8
1/3	210	210	-	-	-	2.2	2.7	-	5.0	85.2	5.1	2.7	7.9
2/1	629	629	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	616	616	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	750	750	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	499	499	-	-	-	4.4	5.0	-	9.4	67.7	12.1	5.0	17.1
6/1	430	430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	372	372	-	-	-	3.6	1.7	-	5.3	51.2	6.2	1.7	7.9
8/1	431	431	-	-	-	2.5	0.9	-	3.4	28.6	8.5	0.9	9.4
8/2+8/3	540	540	-	-	-	3.5	0.9	-	4.3	28.9	9.4	0.9	10.2
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		-2.9		Total Delay for Signalled Lanes (pcuHr):		34.87		Cycle Time (s):		90	
		PRC Over All Lanes (%):		-2.9		Total Delay Over All Lanes(pcuHr):		34.87					

Full Input Data And Results  
**Full Input Data And Results**

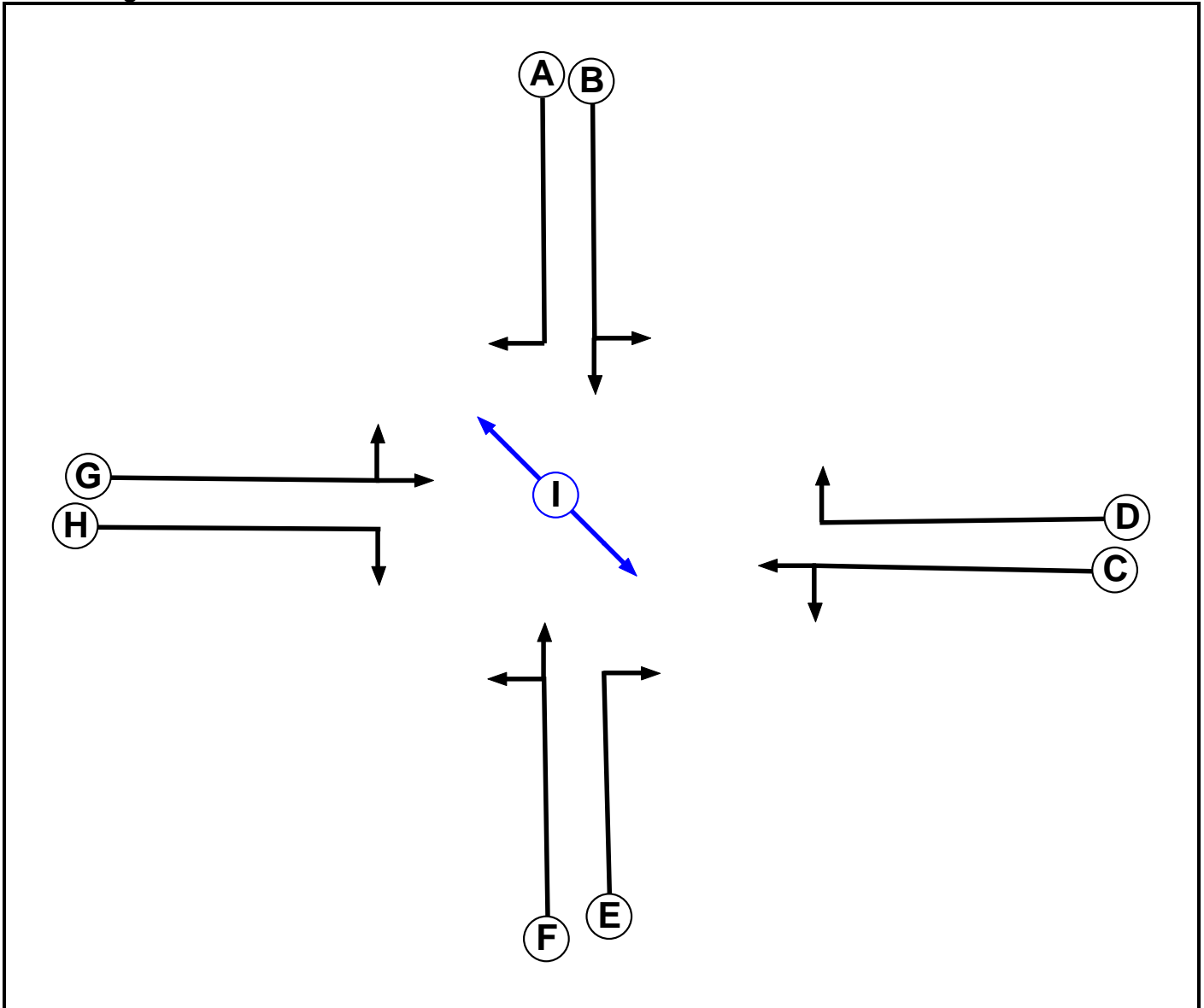
**User and Project Details**

Project:	Proposed Residential Development, Water Rock, Cork
Title:	
Location:	
Client:	Haven Falls Limited
Site Ref(s):	Junction 3
Date Started:	17/01/2022
Date Completed:	26/01/2022
Checked By:	DM
Checked By Date:	25/01/2022
Additional detail:	
File name:	J3 LinSig Model Rev B.lsg3x
Author:	COB
Company:	MHL
Address:	

**Network Layout Diagram**



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Traffic		7	7
I	Pedestrian		7	7



# Full Input Data And Results

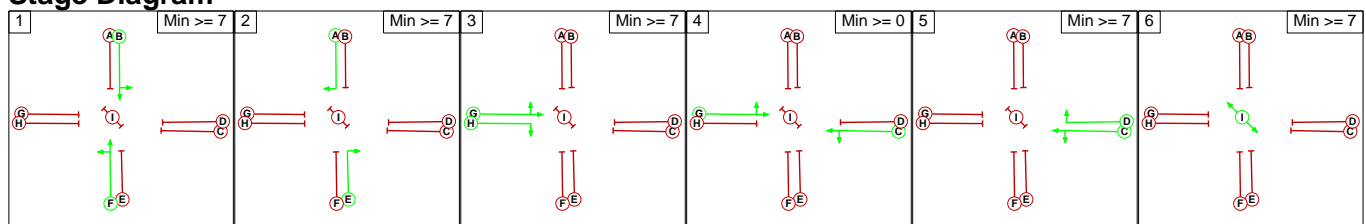
## Phase Intergrens Matrix

Terminating Phase	Starting Phase										
		A	B	C	D	E	F	G	H	I	
	A		-	5	-	-	5	5	5	5	5
	B	-		5	5	5	-	5	5	5	
	C	5	5		-	5	5	-	5	5	
	D	-	5	-		5	5	5	5	5	
	E	-	5	5	5		-	5	5	5	
	F	5	-	5	5	-		5	-	5	
	G	5	5	-	5	5	5		-	5	
	H	5	5	5	5	5	-	-		5	
I	5	5	5	5	5	5	5	5			

## Phases in Stage

Stage No.	Phases in Stage
1	B F
2	A E
3	G H
4	C G
5	C D
6	I

## Stage Diagram



## Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

## Prohibited Stage Change

From Stage	To Stage						
		1	2	3	4	5	6
	1		5	5	5	5	5
	2	5		5	5	5	5
	3	5	5		5	5	5
	4	5	5	5		5	5
	5	5	5	5	5		5
6	5	5	5	5	5		

## Full Input Data And Results

Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: MNRR and Cork Road Junction**

There are no Opposed Lanes in this Junction

Full Input Data And Results

**Lane Input Data**

Junction: MNRR and Cork Road Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (MNRR Southbound)	U	B	2	3	11.3	Geom	-	3.00	0.00	N	Arm 3 Left	20.00
1/2 (MNRR Southbound)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (MNRR Southbound)	U	A	2	3	19.1	Geom	-	3.25	0.00	Y	Arm 6 Right	23.00
2/1 (MNRR Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Cork Road Eastbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (Overbridge)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Cork Road Westbound)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Left	Inf
											Arm 6 Ahead	Inf
5/2 (Cork Road Westbound)	U	D	2	3	7.0	Geom	-	3.25	0.00	Y	Arm 2 Right	40.00
6/1 (Cork Road Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Overbridge)	U	F	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf
											Arm 6 Left	Inf
7/2 (Overbridge)	U	E	2	3	5.6	Geom	-	3.00	0.00	Y	Arm 3 Right	20.00
8/1 (Cork Road Eastbound )	U	G	2	3	8.7	Geom	-	3.25	0.00	Y	Arm 2 Left	8.00
8/2 (Cork Road Eastbound )	U	G	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Ahead	Inf
8/3 (Cork Road Eastbound )	U	H	2	3	5.7	Geom	-	3.25	0.00	Y	Arm 4 Right	25.00

Full Input Data And Results

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 AM'	08:00	09:00	01:00	
2: '2022 PM'	16:30	17:30	01:00	
3: '2023 AM Without Development'	08:00	09:00	01:00	
4: '2023 AM With Development'	08:00	09:00	01:00	
5: '2023 PM Without Development'	16:30	17:30	01:00	
6: '2023 PM With Development'	16:30	17:30	01:00	
7: '2028 AM Without Development'	08:00	09:00	01:00	
8: '2028 AM With Development'	08:00	09:00	01:00	
9: '2028 PM Without Development'	16:30	17:30	01:00	
10: '2028 PM With Development'	16:30	17:30	01:00	
11: '2038 AM Without Development'	08:00	09:00	01:00	
12: '2038 AM With Development'	08:00	09:00	01:00	
13: '2038 PM Without Development'	16:30	17:30	01:00	
14: '2038 PM With Development'	16:30	17:30	01:00	

**Scenario 1: '2022 AM'** (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	197	293	90	580
B	137	0	33	388	558	
C	59	20	0	312	391	
D	115	217	106	0	438	
Tot.	311	434	432	790	1967	

## Full Input Data And Results

### Traffic Lane Flows

Lane	Scenario 1: 2022 AM
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	33
1/2 (with short)	421(In) 388(Out)
1/3	137
2/1	434
3/1	432
4/1	790
5/1 (with short)	391(In) 371(Out)
5/2 (short)	20
6/1	311
7/1 (with short)	438(In) 332(Out)
7/2 (short)	106
8/1	197
8/2 (with short)	383(In) 293(Out)
8/3 (short)	90

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	84.1 % 15.9 %	1940	1940
5/2 (Cork Road Westbound)	3.25	0.00	Y	Arm 2 Right	40.00	100.0 %	1870	1870
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead Arm 6 Left	Inf Inf	65.4 % 34.6 %	1940	1940
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 2: '2022 PM'** (FG2: '2022 PM', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	304	425	73	802
B	176	0	36	276	488	
C	146	11	0	304	461	
D	57	140	103	0	300	
Tot.	379	455	564	653	2051	

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 2: 2022 PM
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	36
1/2 (with short)	312(In) 276(Out)
1/3	176
2/1	455
3/1	564
4/1	653
5/1 (with short)	461(In) 450(Out)
5/2 (short)	11
6/1	379
7/1 (with short)	300(In) 197(Out)
7/2 (short)	103
8/1	304
8/2 (with short)	498(In) 425(Out)
8/3 (short)	73

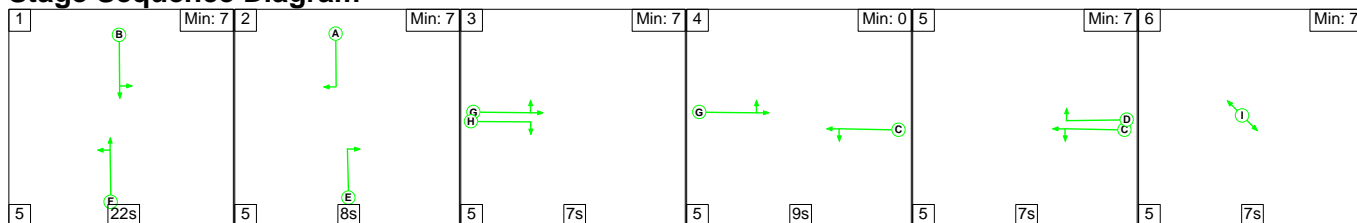


### Lane Saturation Flows

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	67.6 % 32.4 %	1940	1940
5/2 (Cork Road Westbound)	3.25	0.00	Y	Arm 2 Right	40.00	100.0 %	1870	1870
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead Arm 6 Left	Inf Inf	71.1 % 28.9 %	1940	1940
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

### Scenario 1: '2022 AM' (FG1: '2022 AM', Plan 1: 'Network Control Plan 1')

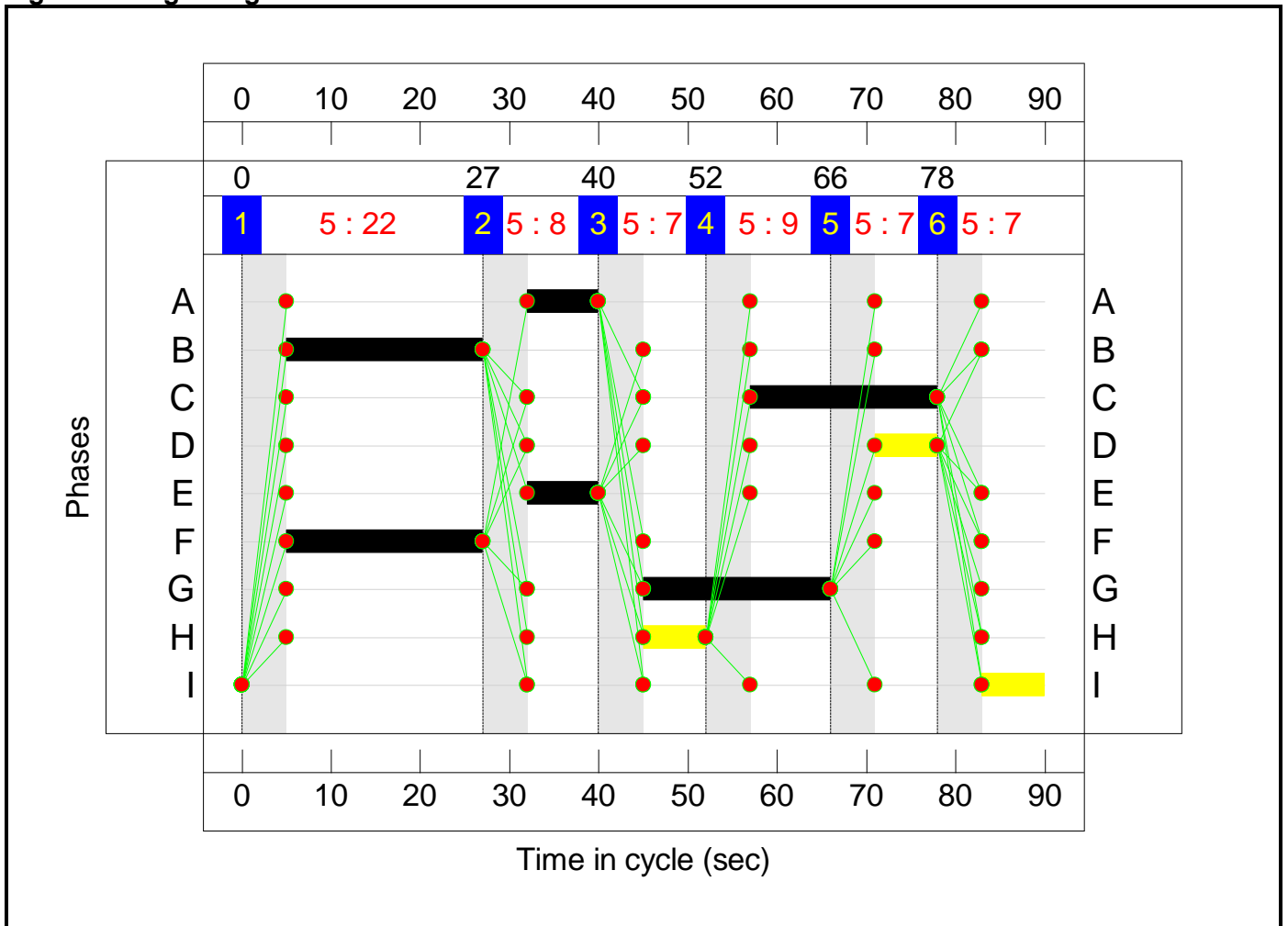
#### Stage Sequence Diagram



#### Stage Timings

Stage	1	2	3	4	5	6
Duration	22	8	7	9	7	7
Change Point	0	27	40	52	66	78

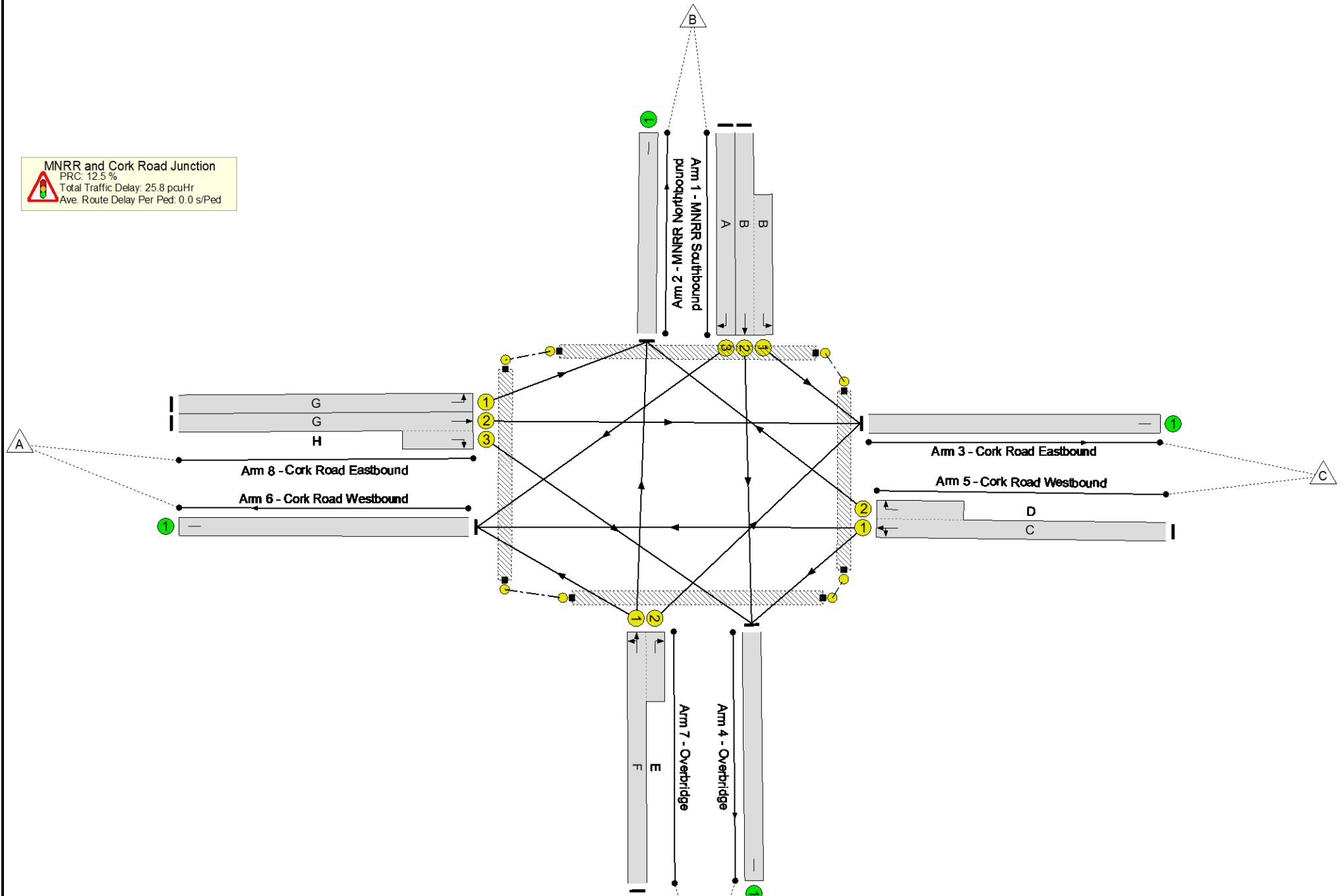
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results

**MNRR and Cork Road Junction**  
PRC: 12.5 %  
Total Traffic Delay: 25.8 pcuHr  
Ave. Route Delay Per Ped: 0.0 s/ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
MNRR and Cork Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	22	-	421	1940:1912	496+42	78.3 : 78.3%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	8	-	137	1821	182	75.2%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	434	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	432	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	790	Inf	Inf	0.0%
5/1+5/2	Cork Road Westbound Right Left Ahead	U	N/A	N/A	C D		1	21:7	-	391	1940:1870	464+25	80.0 : 80.0%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	311	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	F E		1	22:8	-	438	1940:1781	439+140	75.5 : 75.5%
8/1	Cork Road Eastbound Left	U	N/A	N/A	G		1	21	-	197	1634	399	49.3%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	G H		1	21:7	-	383	1940:1830	429+132	68.3 : 68.3%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

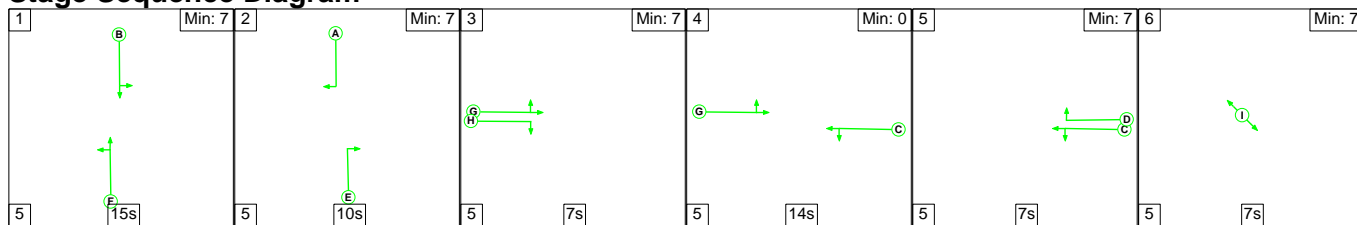
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	17.7	8.2	0.0	25.8	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	17.7	8.2	0.0	25.8	-	-	-	-
1/2+1/1	421	421	-	-	-	3.6	1.7	-	5.3	45.7	8.9	1.7	10.7
1/3	137	137	-	-	-	1.5	1.4	-	2.9	77.0	3.3	1.4	4.7
2/1	434	434	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	432	432	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	790	790	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	391	391	-	-	-	3.5	1.9	-	5.4	49.8	8.7	1.9	10.7
6/1	311	311	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	438	438	-	-	-	3.9	1.5	-	5.4	44.6	8.1	1.5	9.6
8/1	197	197	-	-	-	1.6	0.5	-	2.1	38.1	4.2	0.5	4.7
8/2+8/3	383	383	-	-	-	3.6	1.1	-	4.6	43.5	6.7	1.1	7.7
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1			PRC for Signalled Lanes (%):		12.5	Total Delay for Signalled Lanes (pcuHr):			25.83	Cycle Time (s): 90			
			PRC Over All Lanes (%):		12.5	Total Delay Over All Lanes (pcuHr):			25.83				

Full Input Data And Results

Scenario 2: '2022 PM' (FG2: '2022 PM', Plan 1: 'Network Control Plan 1')

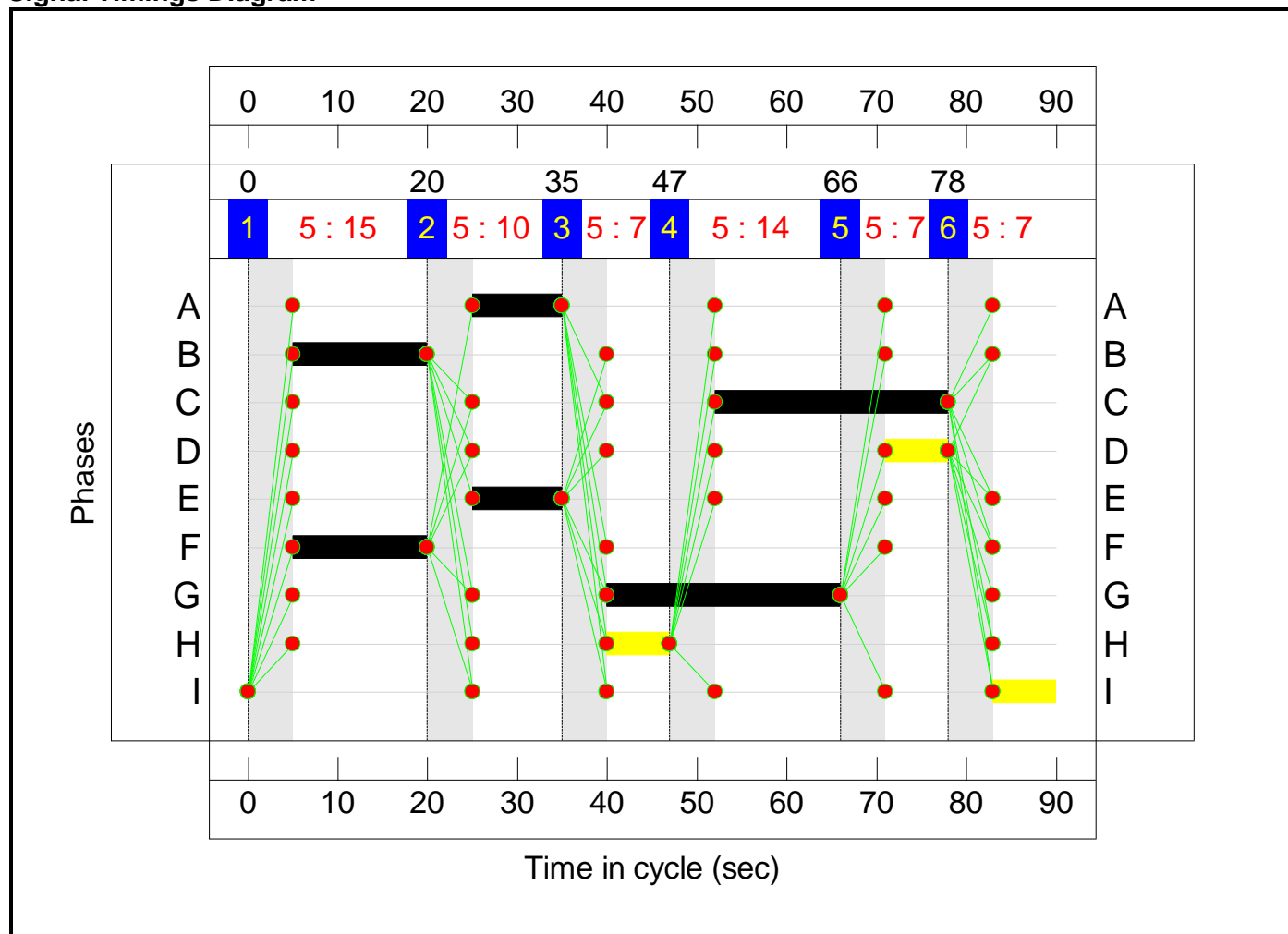
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	15	10	7	14	7	7
Change Point	0	20	35	47	66	78

Signal Timings Diagram

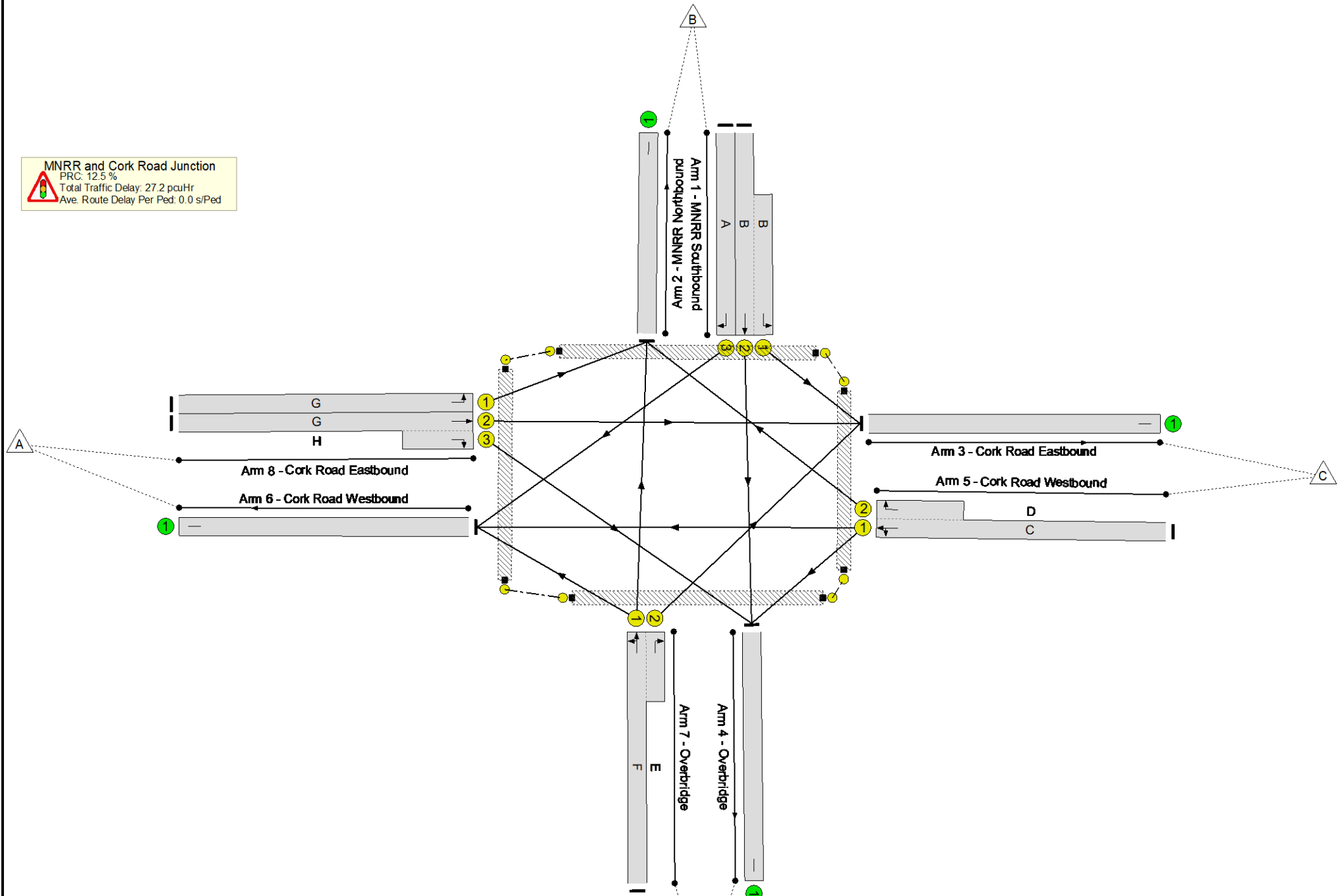




Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results

**MNRR and Cork Road Junction**  
PRC: 12.5 %  
Total Traffic Delay: 27.2 pcuHr  
Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
MNRR and Cork Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	80.0%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	15	-	312	1940:1912	345+45	80.0 : 80.0%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	10	-	176	1821	223	79.1%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	455	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	564	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	653	Inf	Inf	0.0%
5/1+5/2	Cork Road Westbound Right Left Ahead	U	N/A	N/A	C D		1	26:7	-	461	1940:1870	574+14	78.4 : 78.4%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	379	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	F E		1	15:10	-	300	1940:1781	313+164	62.9 : 62.9%
8/1	Cork Road Eastbound Left	U	N/A	N/A	G		1	26	-	304	1634	490	62.0%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	G H		1	26:7	-	498	1940:1830	544+93	78.1 : 78.1%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	0	0.0%

Full Input Data And Results

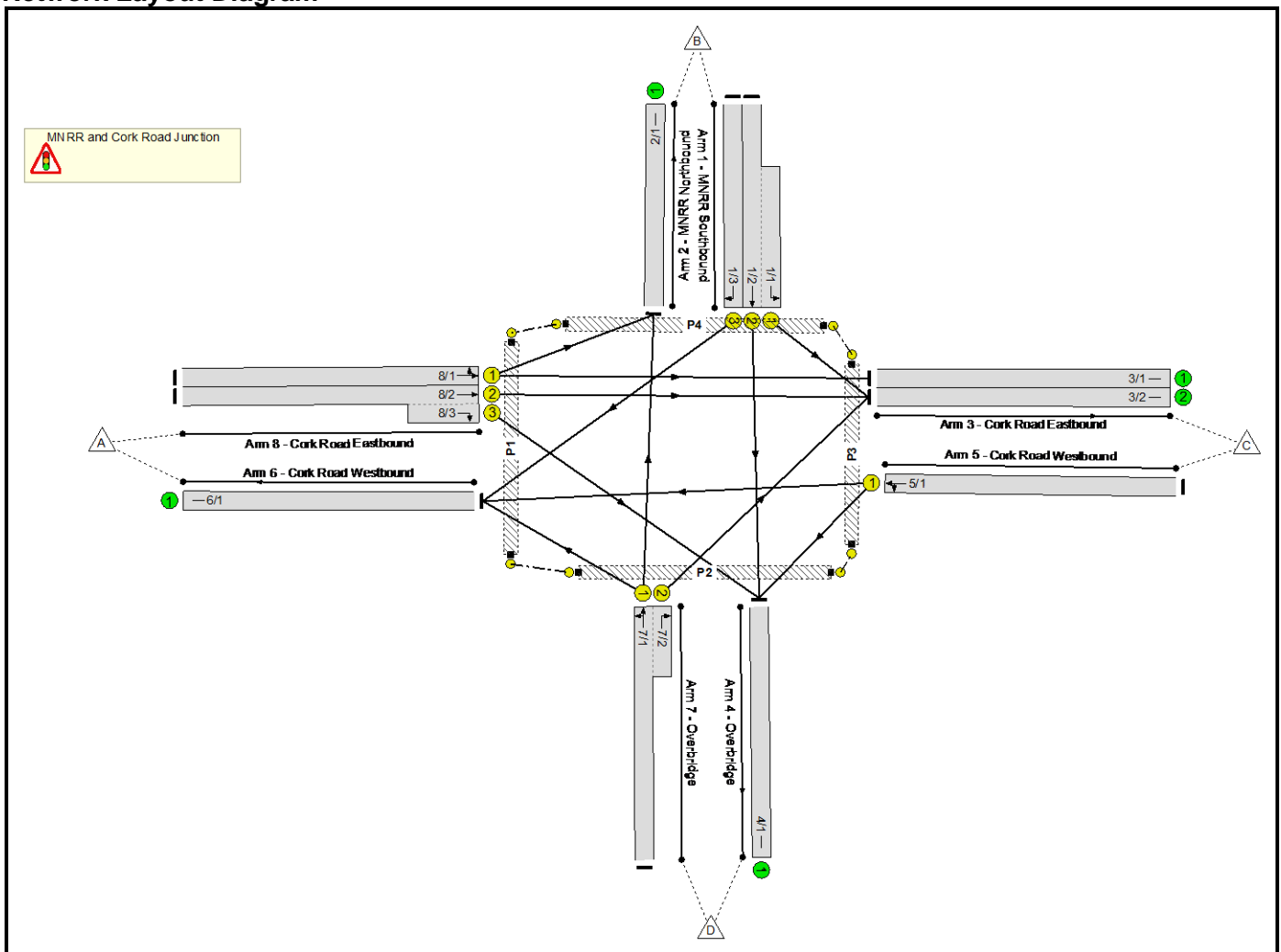
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	18.4	8.8	0.0	27.2	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	18.4	8.8	0.0	27.2	-	-	-	-
1/2+1/1	312	312	-	-	-	3.0	1.9	-	4.9	57.0	6.6	1.9	8.5
1/3	176	176	-	-	-	1.9	1.8	-	3.6	74.3	4.3	1.8	6.0
2/1	455	455	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	564	564	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	653	653	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1+5/2	461	461	-	-	-	3.7	1.8	-	5.5	42.7	10.3	1.8	12.1
6/1	379	379	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	300	300	-	-	-	2.9	0.8	-	3.7	44.9	4.5	0.8	5.3
8/1	304	304	-	-	-	2.3	0.8	-	3.1	36.7	6.5	0.8	7.3
8/2+8/3	498	498	-	-	-	4.6	1.7	-	6.3	45.6	10.2	1.7	12.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1			PRC for Signalled Lanes (%):		12.5	Total Delay for Signalled Lanes (pcuHr):			27.19	Cycle Time (s):		90	
			PRC Over All Lanes (%):		12.5	Total Delay Over All Lanes (pcuHr):			27.19				

Full Input Data And Results  
**Full Input Data And Results**

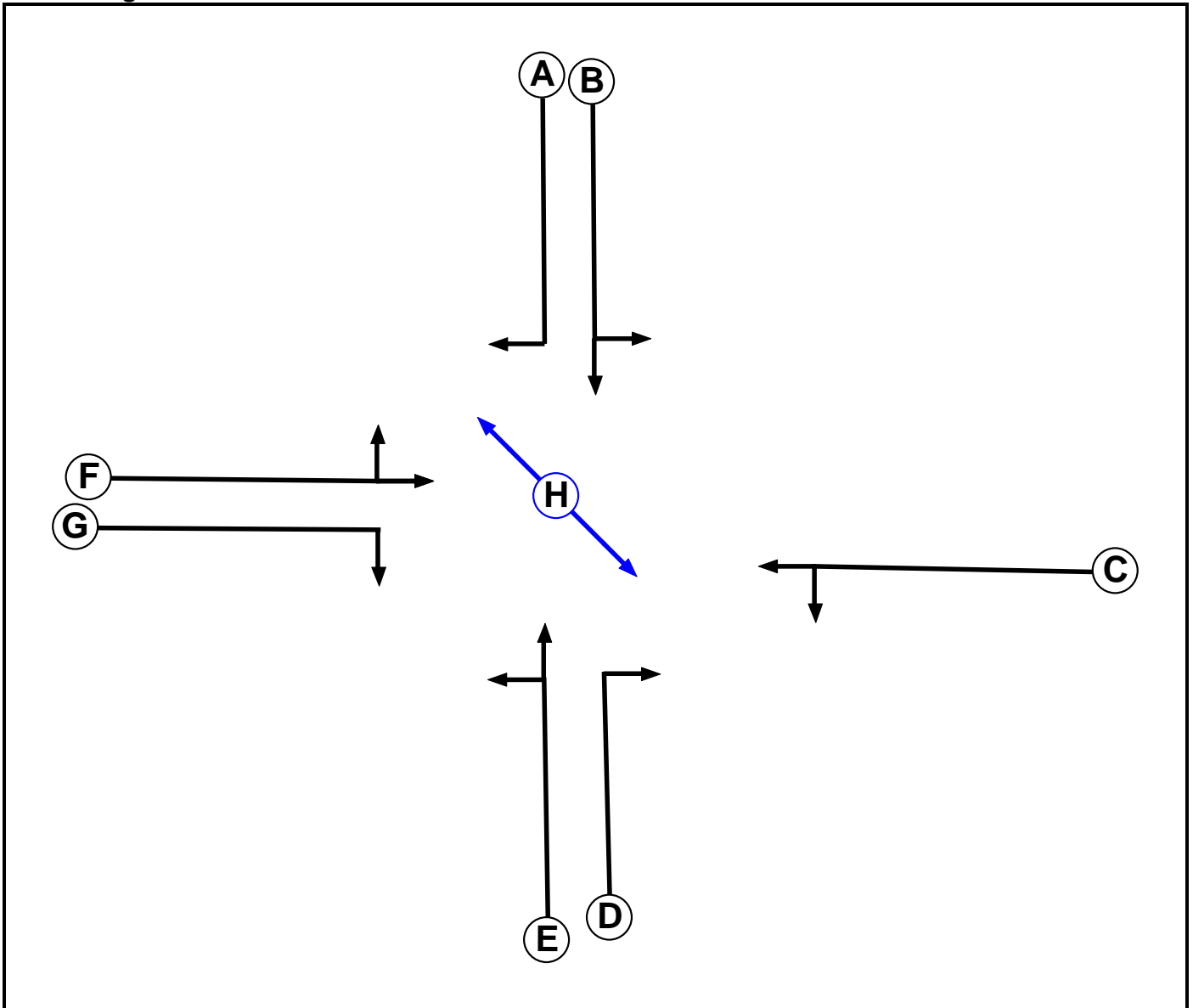
**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>Additional detail:</b>	
<b>File name:</b>	J3 LinSig Model Junction Upgrades Rev B.lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	

**Network Layout Diagram**



**Phase Diagram**



**Phase Input Data**

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Pedestrian		7	7

## Full Input Data And Results

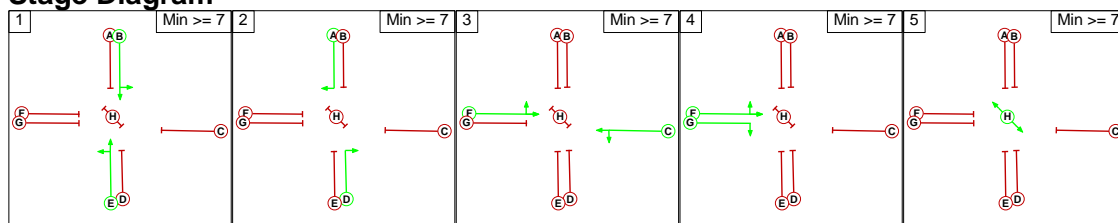
### Phase Intergrens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A	-	5	-	5	5	5	5	5
	B	-	5	5	-	5	5	5	5
	C	5	5	5	5	-	5	5	5
	D	-	5	5	-	5	5	5	5
	E	5	-	5	-	5	5	5	5
	F	5	5	-	5	5	-	5	5
	G	5	5	5	5	5	-	5	5
	H	5	5	5	5	5	5	5	-

### Phases in Stage

Stage No.	Phases in Stage
1	B E
2	A D
3	C F
4	F G
5	H

### Stage Diagram



### Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

### Prohibited Stage Change

		To Stage				
		1	2	3	4	5
From Stage	1	-	5	5	5	5
	2	5	-	5	5	5
	3	5	5	-	5	5
	4	5	5	5	-	5
	5	5	5	5	5	-



Full Input Data And Results

**Give-Way Lane Input Data**

**Junction: MNRR and Cork Road Junction**

There are no Opposed Lanes in this Junction

Full Input Data And Results

**Lane Input Data**

Junction: MNRR and Cork Road Junction												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (MNRR Southbound)	U	B	2	3	11.3	Geom	-	3.00	0.00	N	Arm 3 Left	20.00
1/2 (MNRR Southbound)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
1/3 (MNRR Southbound)	U	A	2	3	19.1	Geom	-	3.25	0.00	Y	Arm 6 Right	23.00
2/1 (MNRR Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Cork Road Eastbound)	U		2	3	13.0	Inf	-	-	-	-	-	-
3/2 (Cork Road Eastbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (Overbridge)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Cork Road Westbound)	U	C	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Left	Inf
6/1 (Cork Road Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Overbridge)	U	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 2 Ahead	Inf
											Arm 6 Left	Inf
7/2 (Overbridge)	U	D	2	3	5.6	Geom	-	3.00	0.00	Y	Arm 3 Right	20.00
8/1 (Cork Road Eastbound )	U	F	2	3	8.7	Geom	-	3.25	0.00	Y	Arm 2 Left	8.00
											Arm 3 Ahead	Inf
8/2 (Cork Road Eastbound )	U	F	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Ahead	Inf
8/3 (Cork Road Eastbound )	U	G	2	3	5.7	Geom	-	3.25	0.00	Y	Arm 4 Right	25.00

Full Input Data And Results

**Traffic Flow Groups**

Flow Group	Start Time	End Time	Duration	Formula
1: '2024 AM Without Development'	08:00	09:00	01:00	
2: '2024 AM With Development'	08:00	09:00	01:00	
3: '2024 PM Without Development'	16:30	17:30	01:00	
4: '2024 PM With Development'	16:30	17:30	01:00	
5: '2029 AM Without Development'	08:00	09:00	01:00	
6: '2029 AM With Development'	08:00	09:00	01:00	
7: '2029 PM Without Development'	16:30	17:30	01:00	
8: '2029 PM With Development'	16:30	17:30	01:00	

**Scenario 1: '2024 AM Without Development'** (FG1: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

		Destination				
		A	B	C	D	Tot.
Origin	A	0	202	300	92	594
	B	140	0	34	397	571
	C	60	0	0	340	400
	D	118	222	108	0	448
	Tot.	318	424	442	829	2013

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 1: 2024 AM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	34
1/2 (with short)	431(In) 397(Out)
1/3	140
2/1	424
3/1	300
3/2	142
4/1	829
5/1	400
6/1	318
7/1 (with short)	448(In) 340(Out)
7/2 (short)	108
8/1	502
8/2 (with short)	92(In) 0(Out)
8/3 (short)	92

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	85.0 % 15.0 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	65.3 %	1940	1940
				Arm 6 Left	Inf	34.7 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	40.2 %	1804	1804
				Arm 3 Ahead	Inf	59.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	0.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 2: '2024 AM With Development'** (FG2: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	207	300	92	599
	B	163	0	39	462	664
	C	60	0	0	340	400
	D	118	228	108	0	454
	Tot.	341	435	447	894	2117

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 2: 2024 AM With Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	39
1/2 (with short)	501(In) 462(Out)
1/3	163
2/1	435
3/1	205
3/2	242
4/1	894
5/1	400
6/1	341
7/1 (with short)	454(In) 346(Out)
7/2 (short)	108
8/1	412
8/2 (with short)	187(In) 95(Out)
8/3 (short)	92

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	85.0 % 15.0 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	65.9 %	1940	1940
				Arm 6 Left	Inf	34.1 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	50.2 %	1773	1773
				Arm 3 Ahead	Inf	49.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 3: '2024 PM Without Development'** (FG3: '2024 PM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	311	435	75	821
	B	180	0	37	282	499
	C	149	0	0	322	471
	D	58	143	105	0	306
	Tot.	387	454	577	679	2097

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 3: 2024 PM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	37
1/2 (with short)	319(In) 282(Out)
1/3	180
2/1	454
3/1	21
3/2	556
4/1	679
5/1	471
6/1	387
7/1 (with short)	306(In) 201(Out)
7/2 (short)	105
8/1	332
8/2 (with short)	489(In) 414(Out)
8/3 (short)	75



Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.4 % 31.6 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	71.1 %	1940	1940
				Arm 6 Left	Inf	28.9 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	93.7 %	1650	1650
				Arm 3 Ahead	Inf	6.3 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 4: '2024 PM With Development'** (FG4: '2024 PM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	353	435	75	863
	B	187	0	38	294	519
	C	149	0	0	322	471
	D	58	162	105	0	325
	Tot.	394	515	578	691	2178

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 4: 2024 PM With Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	38
1/2 (with short)	332(In) 294(Out)
1/3	187
2/1	515
3/1	0
3/2	578
4/1	691
5/1	471
6/1	394
7/1 (with short)	325(In) 220(Out)
7/2 (short)	105
8/1	353
8/2 (with short)	510(In) 435(Out)
8/3 (short)	75

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.4 % 31.6 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	73.6 %	1940	1940
				Arm 6 Left	Inf	26.4 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
				Arm 3 Ahead	Inf	0.0 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 5: '2029 AM Without Development'** (FG5: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	214	318	98	630
	B	149	0	36	421	606
	C	64	0	0	360	424
	D	125	235	115	0	475
	Tot.	338	449	469	879	2135

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 5: 2029 AM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	36
1/2 (with short)	457(In) 421(Out)
1/3	149
2/1	449
3/1	318
3/2	151
4/1	879
5/1	424
6/1	338
7/1 (with short)	475(In) 360(Out)
7/2 (short)	115
8/1	532
8/2 (with short)	98(In) 0(Out)
8/3 (short)	98

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	84.9 % 15.1 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	65.3 %	1940	1940
				Arm 6 Left	Inf	34.7 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	40.2 %	1804	1804
				Arm 3 Ahead	Inf	59.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	0.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 6: '2029 AM With Phase 1'** (FG6: '2029 AM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	245	318	98	661
	B	227	0	55	644	926
	C	64	0	0	360	424
	D	125	270	115	0	510
	Tot.	416	515	488	1102	2521

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 6: 2029 AM With Phase 1
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	55
1/2 (with short)	699(In) 644(Out)
1/3	227
2/1	515
3/1	9
3/2	479
4/1	1102
5/1	424
6/1	416
7/1 (with short)	510(In) 395(Out)
7/2 (short)	115
8/1	254
8/2 (with short)	407(In) 309(Out)
8/3 (short)	98

Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	84.9 % 15.1 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	68.4 %	1940	1940
				Arm 6 Left	Inf	31.6 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	96.5 %	1643	1643
				Arm 3 Ahead	Inf	3.5 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 7: '2029 PM Without Development'** (FG7: '2029 PM Without Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	330	461	79	870
	B	191	0	39	299	529
	C	158	0	0	341	499
	D	62	152	112	0	326
	Tot.	411	482	612	719	2224

Full Input Data And Results

**Traffic Lane Flows**

Lane	Scenario 7: 2029 PM Without Development
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	39
1/2 (with short)	338(In) 299(Out)
1/3	191
2/1	482
3/1	24
3/2	588
4/1	719
5/1	499
6/1	411
7/1 (with short)	326(In) 214(Out)
7/2 (short)	112
8/1	354
8/2 (with short)	516(In) 437(Out)
8/3 (short)	79



Full Input Data And Results

**Lane Saturation Flows**

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.3 % 31.7 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	71.0 %	1940	1940
				Arm 6 Left	Inf	29.0 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	93.2 %	1651	1651
				Arm 3 Ahead	Inf	6.8 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

**Scenario 8: '2029 PM With Phase 1'** (FG8: '2029 PM With Development', Plan 1: 'Network Control Plan 1')

**Traffic Flows, Desired**

**Desired Flow :**

	Destination					
	A	B	C	D	Tot.	
Origin	A	0	474	461	79	1014
	B	219	0	45	343	607
	C	158	0	0	341	499
	D	62	218	112	0	392
	Tot.	439	692	618	763	2512

Full Input Data And Results

**Traffic Lane Flows**

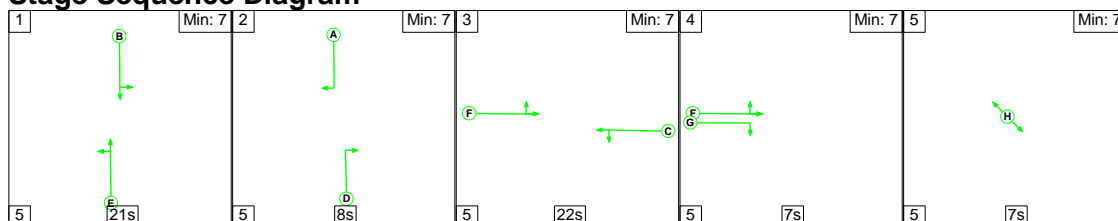
Lane	Scenario 8: 2029 PM With Phase 1
<b>Junction: MNRR and Cork Road Junction</b>	
1/1 (short)	45
1/2 (with short)	388(In) 343(Out)
1/3	219
2/1	692
3/1	0
3/2	618
4/1	763
5/1	499
6/1	439
7/1 (with short)	392(In) 280(Out)
7/2 (short)	112
8/1	474
8/2 (with short)	540(In) 461(Out)
8/3 (short)	79

### Lane Saturation Flows

Junction: MNRR and Cork Road Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (MNRR Southbound)	3.00	0.00	N	Arm 3 Left	20.00	100.0 %	1912	1912
1/2 (MNRR Southbound)	3.25	0.00	Y	Arm 4 Ahead	Inf	100.0 %	1940	1940
1/3 (MNRR Southbound)	3.25	0.00	Y	Arm 6 Right	23.00	100.0 %	1821	1821
2/1 (MNRR Northbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/1 (Cork Road Eastbound Lane 1)	Infinite Saturation Flow						Inf	Inf
3/2 (Cork Road Eastbound Lane 2)	Infinite Saturation Flow						Inf	Inf
4/1 (Overbridge Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Cork Road Westbound)	3.25	0.00	Y	Arm 4 Left Arm 6 Ahead	Inf Inf	68.3 % 31.7 %	1940	1940
6/1 (Cork Road Westbound Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Overbridge)	3.25	0.00	Y	Arm 2 Ahead	Inf	77.9 %	1940	1940
				Arm 6 Left	Inf	22.1 %		
7/2 (Overbridge)	3.00	0.00	Y	Arm 3 Right	20.00	100.0 %	1781	1781
8/1 (Cork Road Eastbound )	3.25	0.00	Y	Arm 2 Left	8.00	100.0 %	1634	1634
				Arm 3 Ahead	Inf	0.0 %		
8/2 (Cork Road Eastbound )	3.25	0.00	Y	Arm 3 Ahead	Inf	100.0 %	1940	1940
8/3 (Cork Road Eastbound )	3.25	0.00	Y	Arm 4 Right	25.00	100.0 %	1830	1830

### Scenario 1: '2024 AM Without Development' (FG1: '2024 AM Without Development', Plan 1: 'Network Control Plan 1')

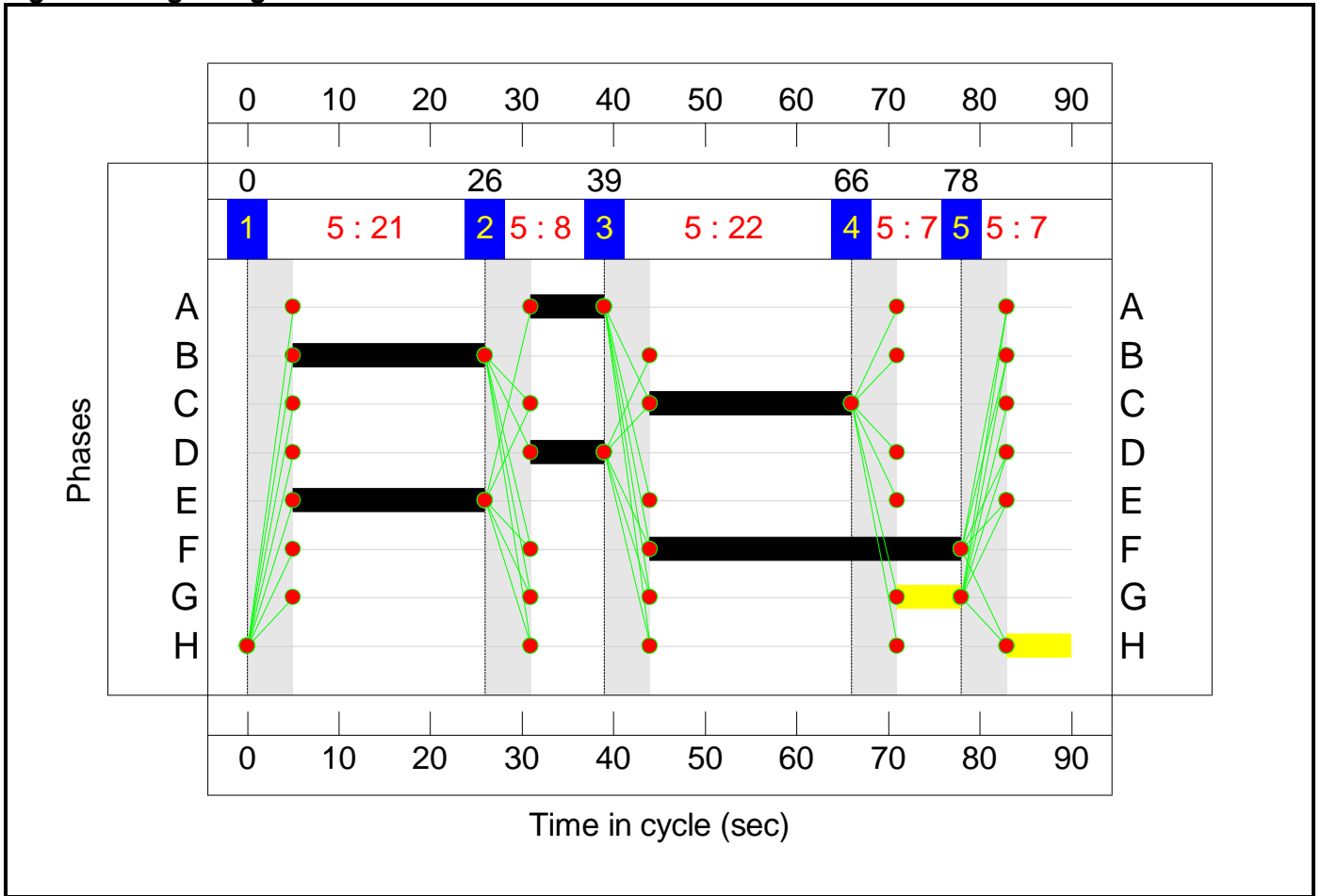
#### Stage Sequence Diagram



#### Stage Timings


Stage	1	2	3	4	5
Duration	21	8	22	7	7
Change Point	0	26	39	66	78

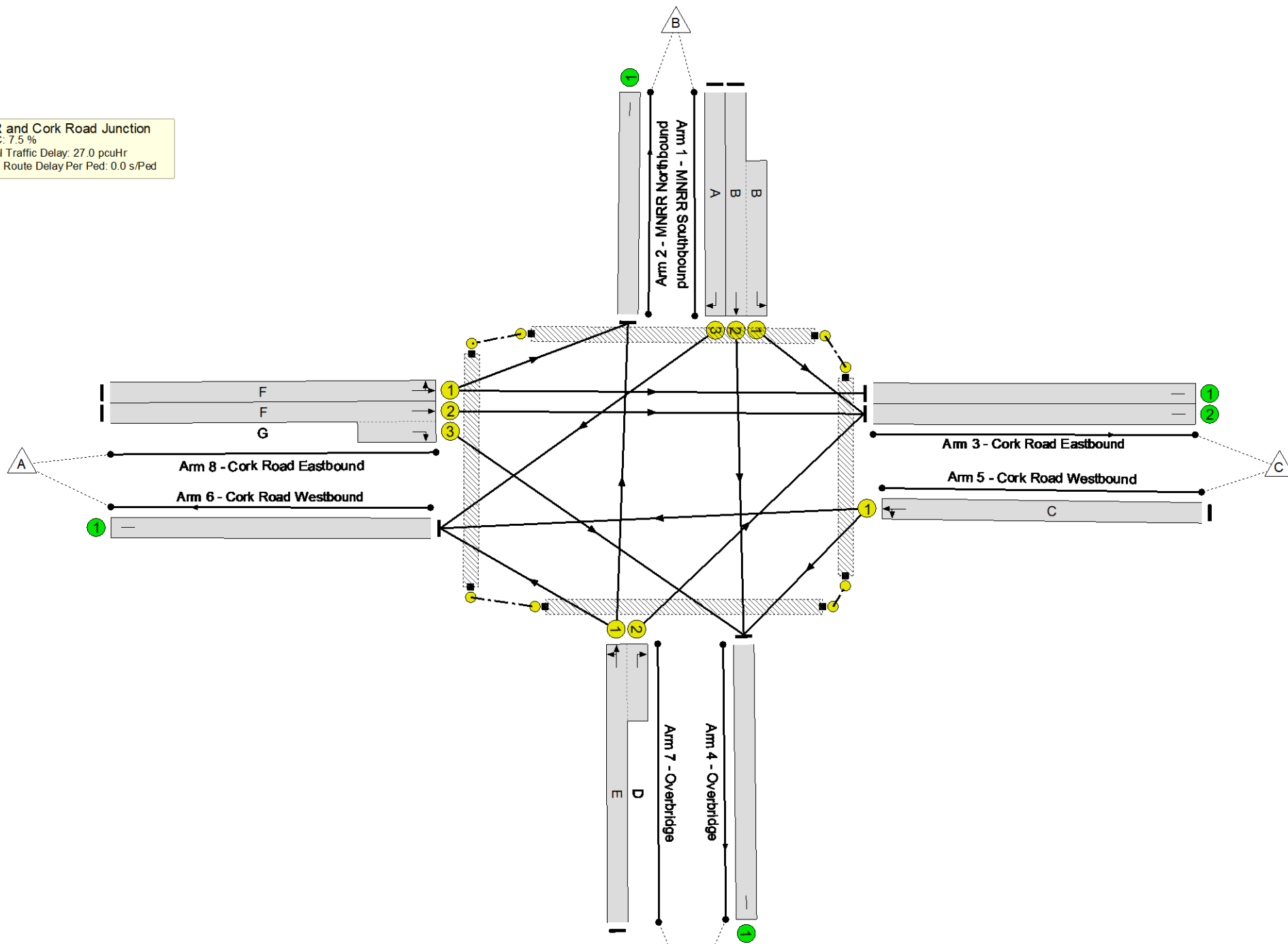
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 7.5 %  
 Total Traffic Delay: 27.0 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	N/A	-	-		-	-	-	-	-	-	83.7%
<b>MNRR and Cork Road Junction</b>	-	-	N/A	-	-		-	-	-	-	-	-	83.7%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	21	-	431	1940:1912	474+41	83.7 : 83.7%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	8	-	140	1821	182	76.9%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	424	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	300	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	142	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	829	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	22	-	400	1940	496	80.7%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	21:8	-	448	1940:1781	424+135	80.2 : 80.2%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	34	-	502	1804	702	71.6%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	34:7	-	92	1940:1830	0+163	0.0 : 56.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%



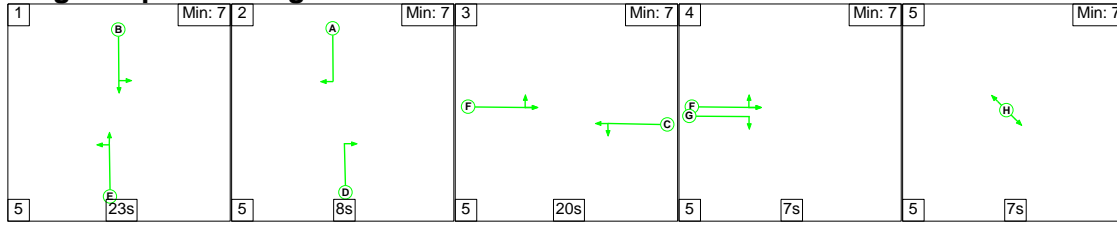
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%	
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
Network	-	-	0	0	0	17.2	9.8	0.0	27.0	-	-	-	-	
MNRR and Cork Road Junction	-	-	0	0	0	17.2	9.8	0.0	27.0	-	-	-	-	
1/2+1/1	431	431	-	-	-	3.8	2.4	-	6.2	52.1	9.4	2.4	11.8	
1/3	140	140	-	-	-	1.5	1.5	-	3.1	79.3	3.4	1.5	4.9	
2/1	424	424	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	300	300	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/2	142	142	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	829	829	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	400	400	-	-	-	3.5	2.0	-	5.5	49.5	9.3	2.0	11.3	
6/1	318	318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
7/1+7/2	448	448	-	-	-	4.1	2.0	-	6.1	48.8	8.6	2.0	10.5	
8/1	502	502	-	-	-	3.2	1.2	-	4.5	32.2	10.6	1.2	11.8	
8/2+8/3	92	92	-	-	-	1.0	0.6	-	1.6	64.4	2.2	0.6	2.8	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-	
C1		PRC for Signalled Lanes (%):			7.5	Total Delay for Signalled Lanes (pcuHr):			27.02	Cycle Time (s):		90		
		PRC Over All Lanes (%):			7.5	Total Delay Over All Lanes(pcuHr):			27.02					

Full Input Data And Results

Scenario 2: '2024 AM With Development' (FG2: '2024 AM With Development', Plan 1: 'Network Control Plan 1')

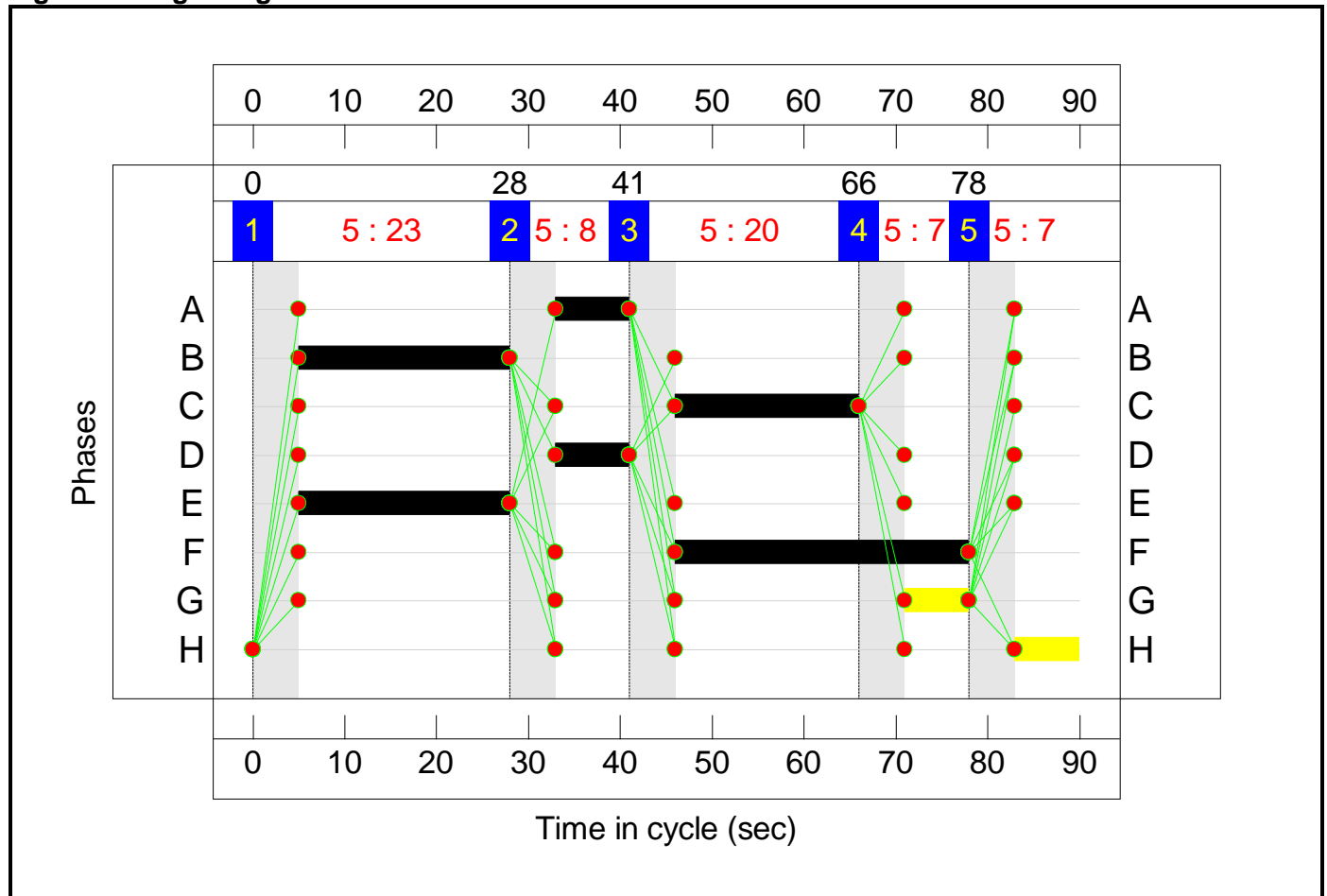
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	23	8	20	7	7
Change Point	0	28	41	66	78

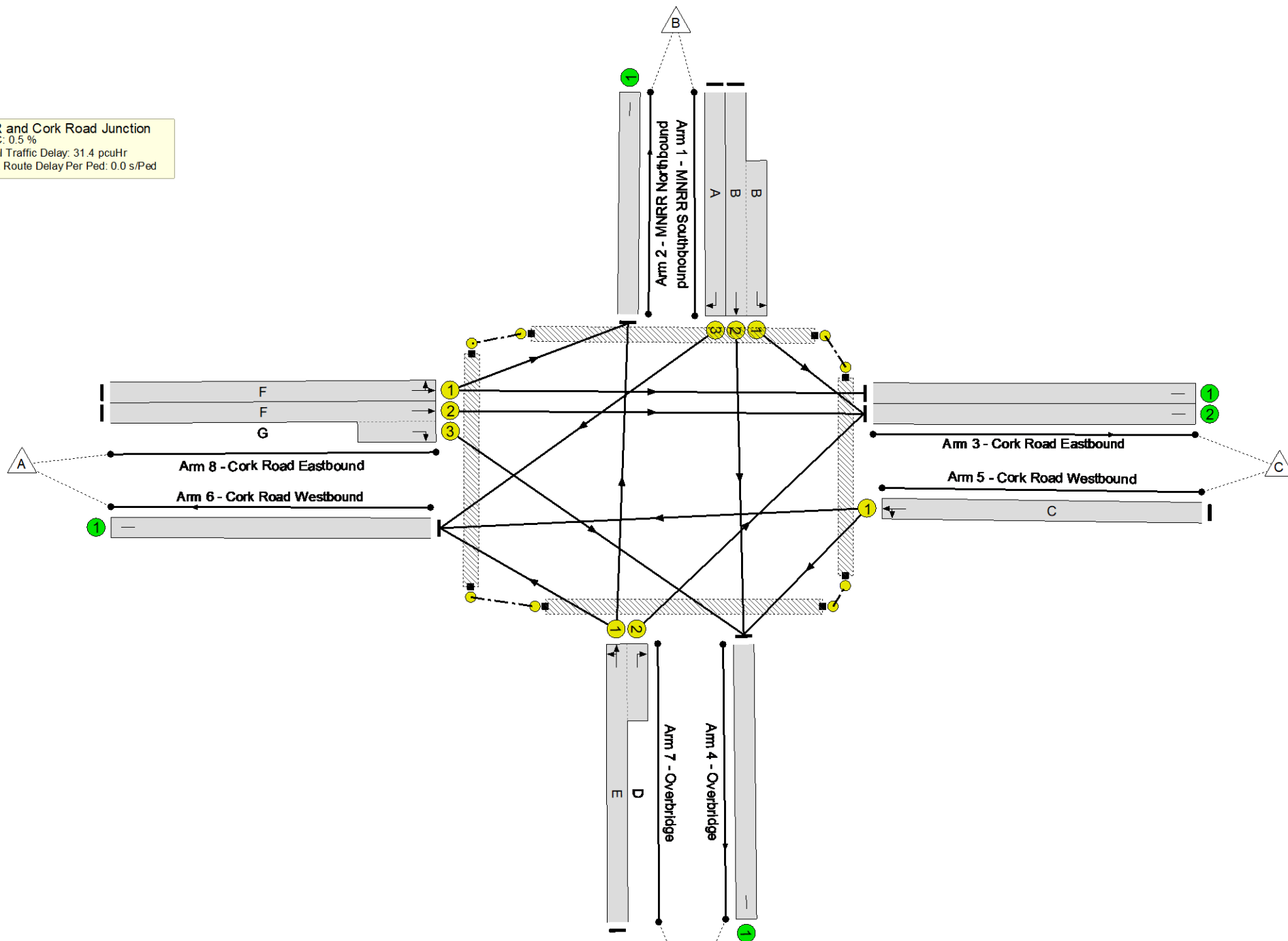
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 0.5 %  
 Total Traffic Delay: 31.4 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>89.5%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>89.5%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	23	-	501	1940:1912	517+44	89.3 : 89.3%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	8	-	163	1821	182	89.5%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	205	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	242	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	894	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	20	-	400	1940	453	88.4%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	341	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	23:8	-	454	1940:1781	457+143	75.7 : 75.7%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	32	-	412	1773	650	63.4%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	32:7	-	187	1940:1830	168+163	56.6 : 56.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

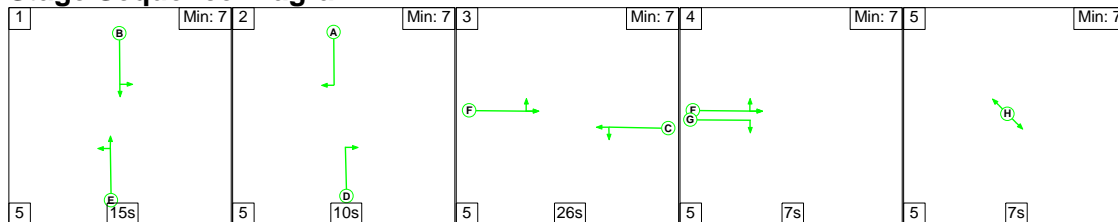
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	18.1	13.3	0.0	31.4	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	18.1	13.3	0.0	31.4	-	-	-	-
1/2+1/1	501	501	-	-	-	4.3	3.7	-	8.1	57.9	11.0	3.7	14.8
1/3	163	163	-	-	-	1.8	3.2	-	5.0	110.6	4.0	3.2	7.2
2/1	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	205	205	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	242	242	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	894	894	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	400	400	-	-	-	3.7	3.4	-	7.1	63.6	9.6	3.4	12.9
6/1	341	341	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	454	454	-	-	-	4.0	1.5	-	5.5	43.8	8.3	1.5	9.9
8/1	412	412	-	-	-	2.7	0.9	-	3.6	31.0	8.5	0.9	9.3
8/2+8/3	187	187	-	-	-	1.5	0.6	-	2.2	41.4	2.2	0.6	2.8
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		0.5		Total Delay for Signalled Lanes (pcuHr):		31.37		Cycle Time (s):		90	
		PRC Over All Lanes (%):		0.5		Total Delay Over All Lanes(pcuHr):		31.37					

Full Input Data And Results

**Scenario 3: '2024 PM Without Development'** (FG3: '2024 PM Without Development', Plan 1: 'Network Control Plan 1')

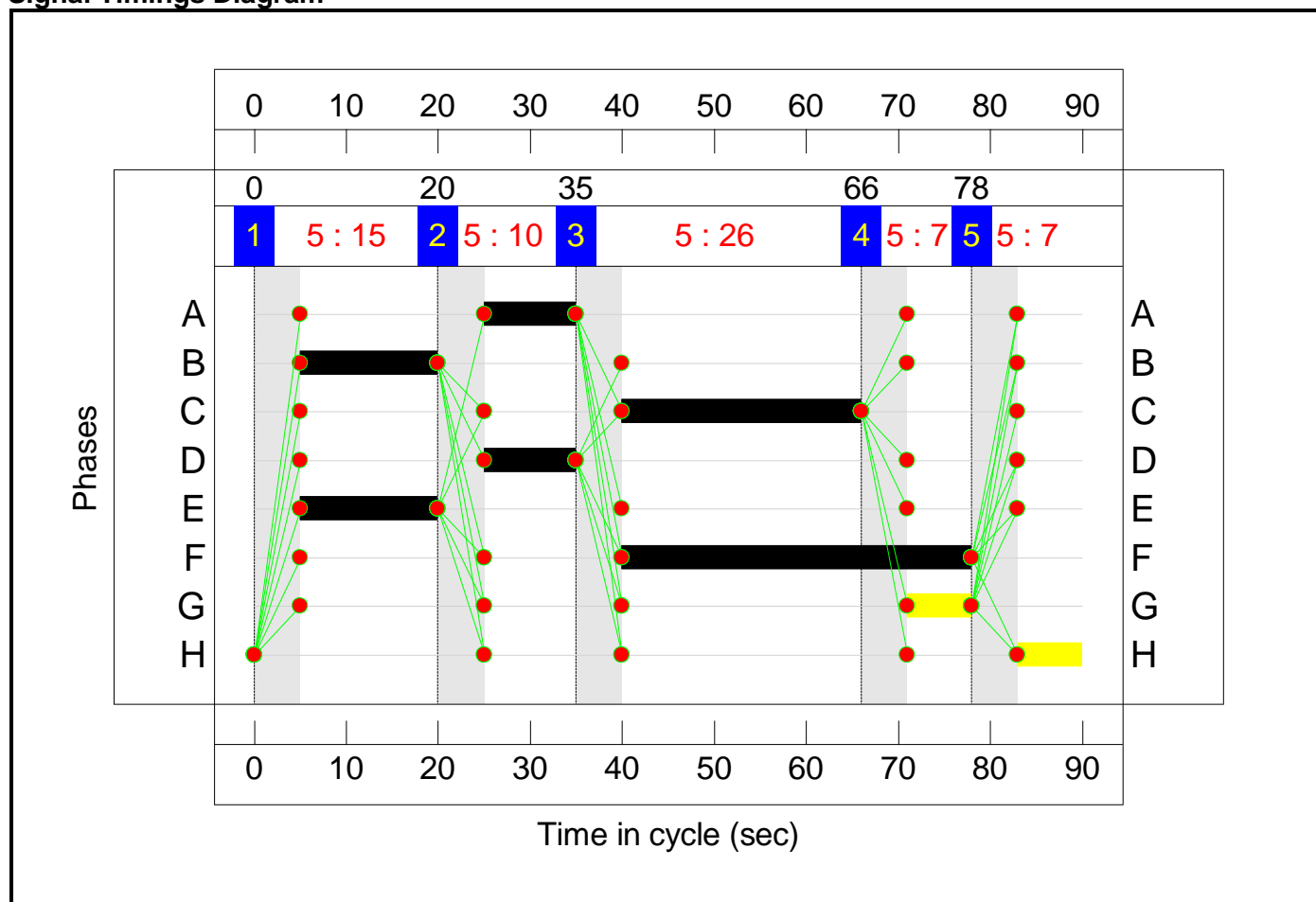
**Stage Sequence Diagram**



**Stage Timings**

Stage	1	2	3	4	5
Duration	15	10	26	7	7
Change Point	0	20	35	66	78

**Signal Timings Diagram**

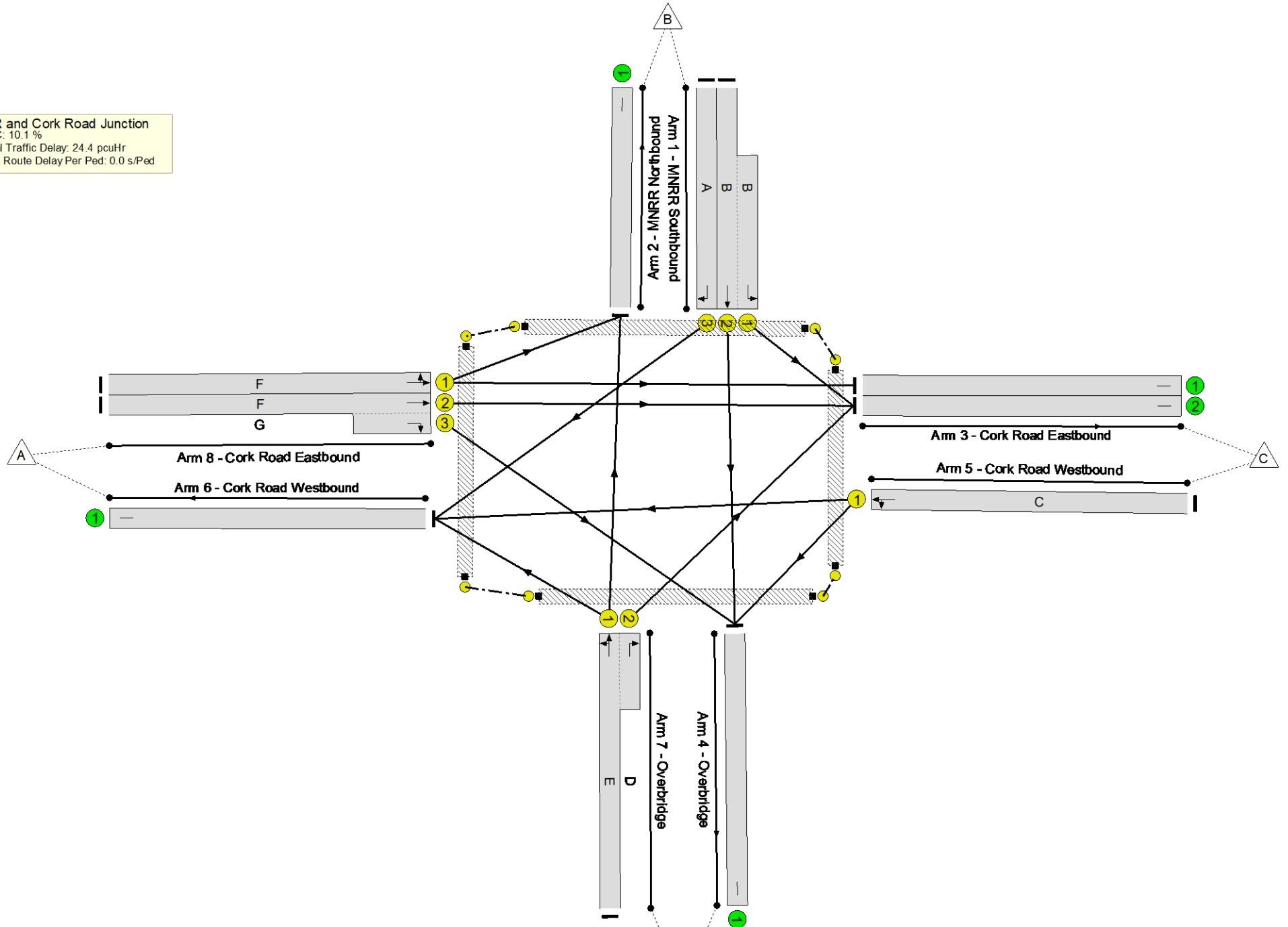




Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 10.1 %  
 Total Traffic Delay: 24.4 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	81.8%
MNRR and Cork Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	81.8%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	15	-	319	1940:1912	345+45	81.8 : 81.8%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	10	-	180	1821	223	80.9%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	454	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	21	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	556	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	679	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	26	-	471	1940	582	80.9%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	15:10	-	306	1940:1781	313+164	64.1 : 64.1%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	38	-	332	1650	715	46.4%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	38:7	-	489	1940:1830	759+137	54.6 : 54.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

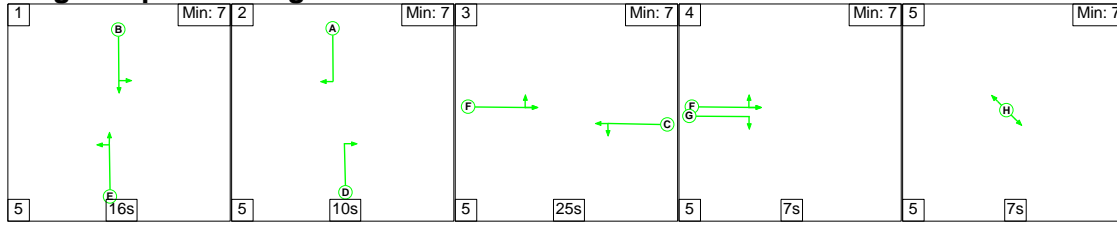
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	16.4	8.0	0.0	24.4	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	16.4	8.0	0.0	24.4	-	-	-	-
1/2+1/1	319	319	-	-	-	3.1	2.1	-	5.2	59.0	6.7	2.1	8.9
1/3	180	180	-	-	-	1.9	1.9	-	3.9	77.2	4.3	1.9	6.3
2/1	454	454	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	21	21	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	556	556	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	679	679	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	471	471	-	-	-	3.8	2.0	-	5.9	44.8	10.9	2.0	12.9
6/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	306	306	-	-	-	3.0	0.9	-	3.9	45.4	4.6	0.9	5.5
8/1	332	332	-	-	-	1.7	0.4	-	2.1	22.8	5.8	0.4	6.2
8/2+8/3	489	489	-	-	-	2.9	0.6	-	3.5	25.9	7.7	0.6	8.3
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		10.1		Total Delay for Signalled Lanes (pcuHr):		24.42		Cycle Time (s):		90	
		PRC Over All Lanes (%):		10.1		Total Delay Over All Lanes(pcuHr):		24.42					

Full Input Data And Results

Scenario 4: '2024 PM With Development' (FG4: '2024 PM With Development', Plan 1: 'Network Control Plan 1')

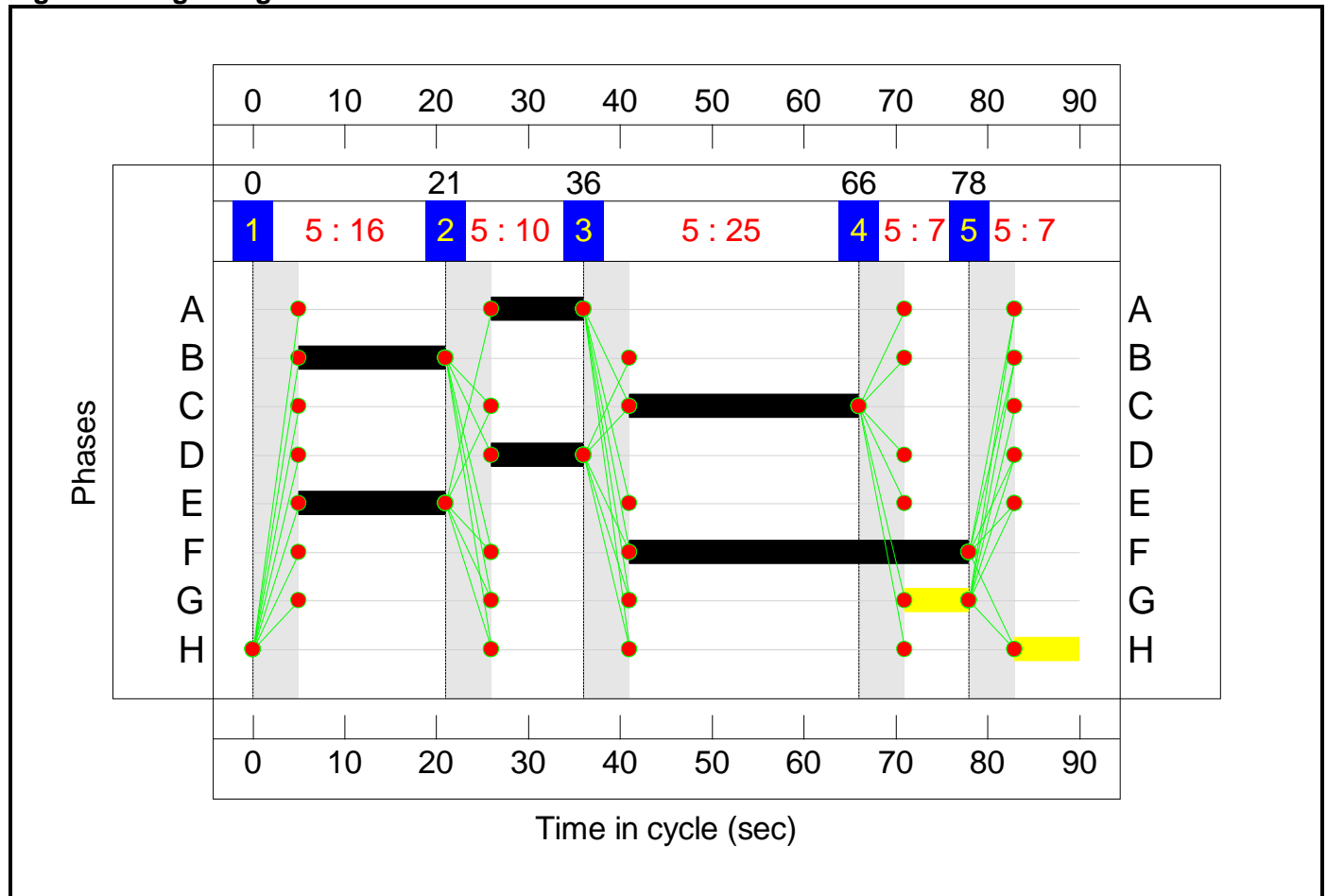
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	16	10	25	7	7
Change Point	0	21	36	66	78

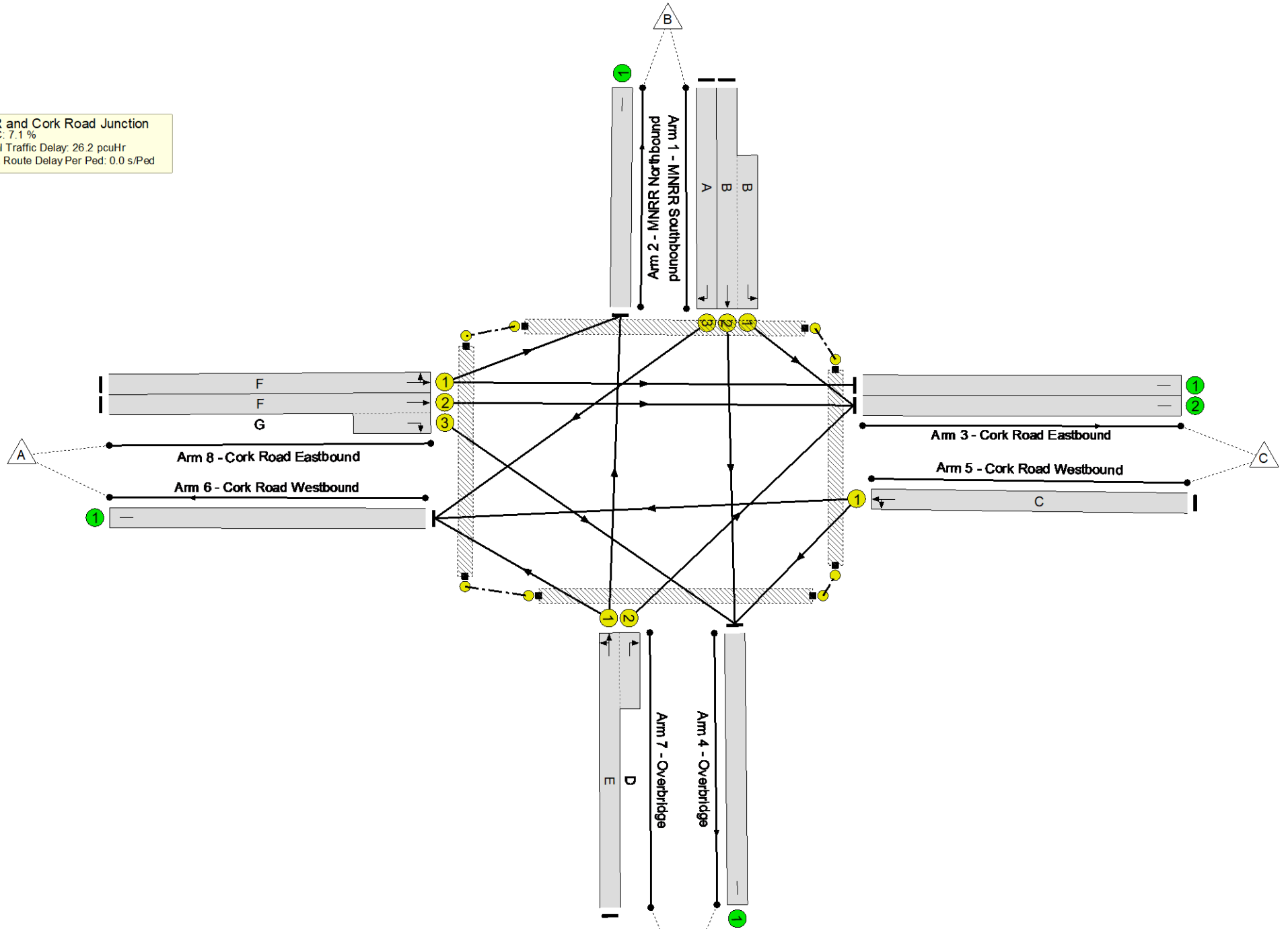
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 7.1 %  
 Total Traffic Delay: 26.2 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped





## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>84.0%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>84.0%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	16	-	332	1940:1912	366+47	80.2 : 80.2%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	10	-	187	1821	223	84.0%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	515	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	578	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	691	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	25	-	471	1940	560	84.0%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	394	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	16:10	-	325	1940:1781	330+158	66.6 : 66.6%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	37	-	353	1634	690	51.2%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	37:7	-	510	1940:1830	744+128	58.4 : 58.4%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

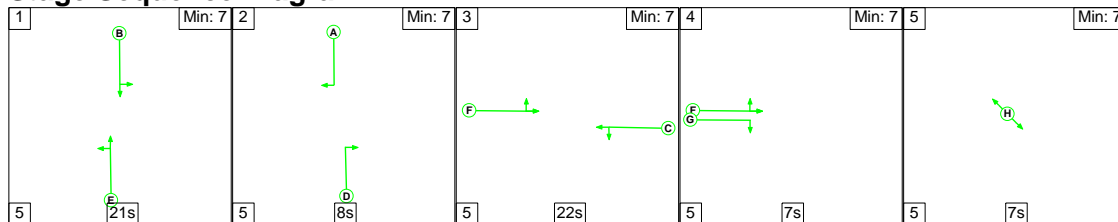
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	17.3	9.0	0.0	26.2	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	17.3	9.0	0.0	26.2	-	-	-	-
1/2+1/1	332	332	-	-	-	3.2	1.9	-	5.1	55.4	7.0	1.9	9.0
1/3	187	187	-	-	-	2.0	2.3	-	4.3	83.4	4.6	2.3	6.9
2/1	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	578	578	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	691	691	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	471	471	-	-	-	3.9	2.5	-	6.4	49.1	11.0	2.5	13.5
6/1	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	325	325	-	-	-	3.1	1.0	-	4.1	45.4	5.0	1.0	6.0
8/1	353	353	-	-	-	1.9	0.5	-	2.4	24.5	6.5	0.5	7.0
8/2+8/3	510	510	-	-	-	3.2	0.7	-	3.9	27.2	8.4	0.7	9.1
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		7.1		Total Delay for Signalled Lanes (pcuHr):		26.22		Cycle Time (s):		90	
		PRC Over All Lanes (%):		7.1		Total Delay Over All Lanes(pcuHr):		26.22					

Full Input Data And Results

Scenario 5: '2029 AM Without Development' (FG5: '2029 AM Without Development', Plan 1: 'Network Control Plan 1')

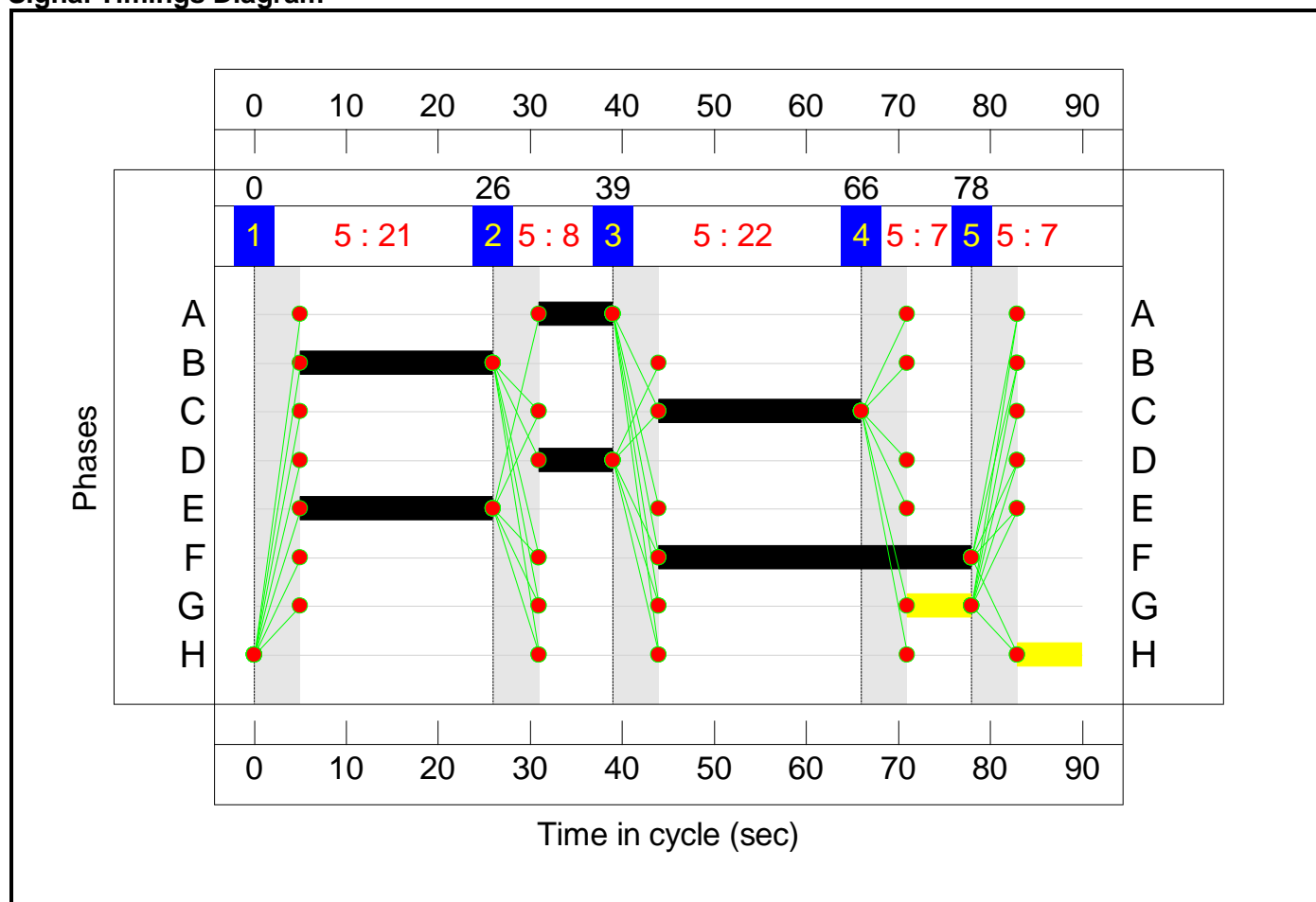
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	21	8	22	7	7
Change Point	0	26	39	66	78

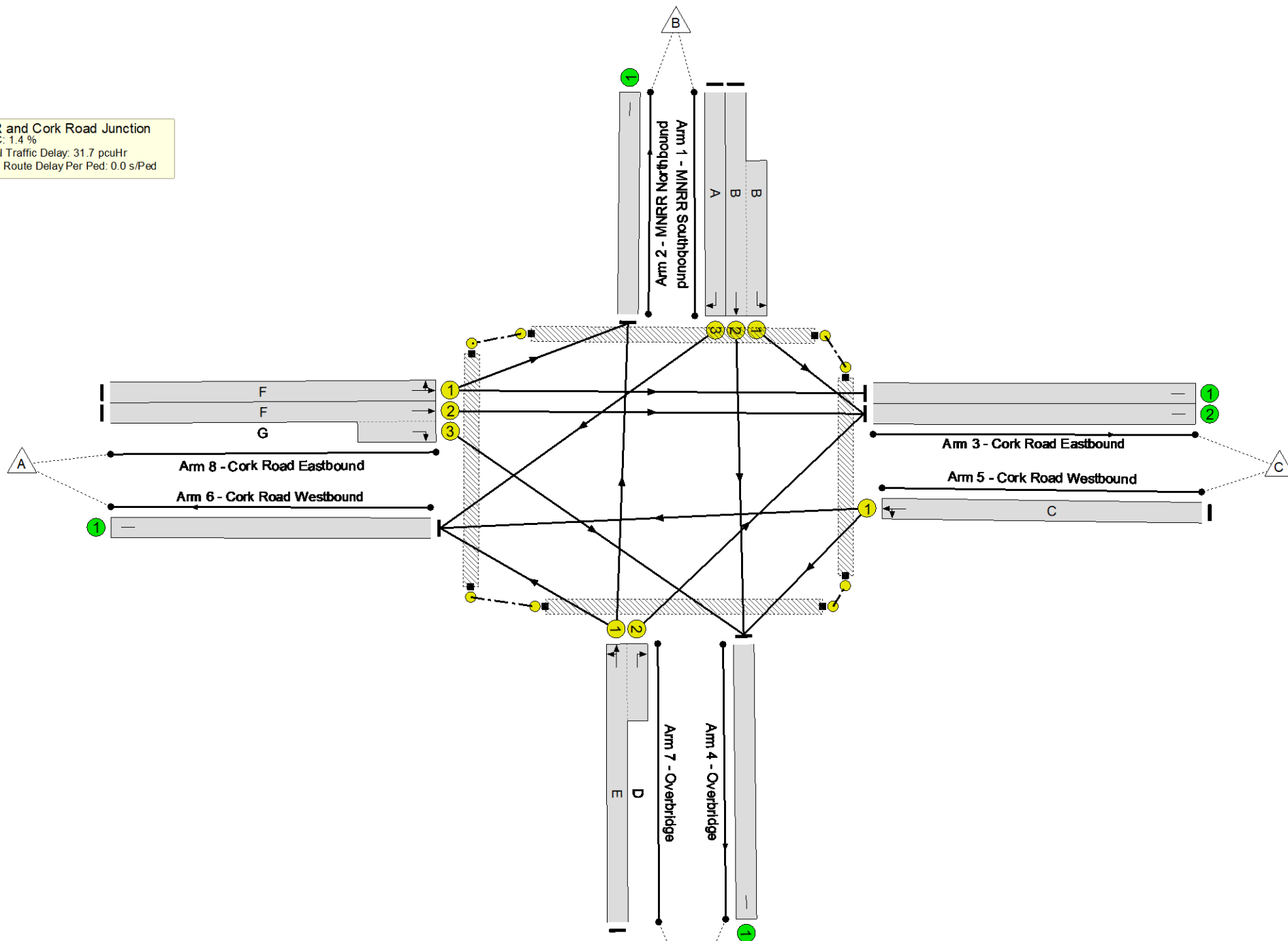
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 1.4 %  
 Total Traffic Delay: 31.7 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>88.8%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>88.8%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	21	-	457	1940:1912	474+41	88.8 : 88.8%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	8	-	149	1821	182	81.8%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	449	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	318	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	151	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	879	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	22	-	424	1940	496	85.5%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	338	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	21:8	-	475	1940:1781	423+135	85.0 : 85.0%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	34	-	532	1804	702	75.8%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	34:7	-	98	1940:1830	0+163	0.0 : 60.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%



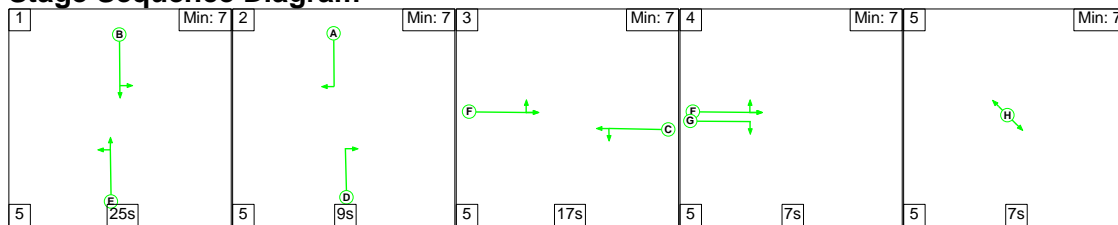
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%	
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
<b>Network</b>	-	-	0	0	0	18.5	13.2	0.0	31.7	-	-	-	-	
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	18.5	13.2	0.0	31.7	-	-	-	-	
1/2+1/1	457	457	-	-	-	4.1	3.5	-	7.6	60.1	10.1	3.5	13.6	
1/3	149	149	-	-	-	1.6	2.0	-	3.7	88.2	3.6	2.0	5.6	
2/1	449	449	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	318	318	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/2	151	151	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	424	424	-	-	-	3.8	2.7	-	6.5	55.2	10.0	2.7	12.8	
6/1	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
7/1+7/2	475	475	-	-	-	4.4	2.7	-	7.1	53.6	9.3	2.7	12.0	
8/1	532	532	-	-	-	3.5	1.5	-	5.1	34.3	11.5	1.5	13.1	
8/2+8/3	98	98	-	-	-	1.1	0.7	-	1.8	66.7	2.3	0.7	3.1	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-	
C1		PRC for Signalled Lanes (%):			1.4	Total Delay for Signalled Lanes (pcuHr):			31.73	Cycle Time (s):		90		
		PRC Over All Lanes (%):			1.4	Total Delay Over All Lanes(pcuHr):			31.73					

Full Input Data And Results

Scenario 6: '2029 AM With Phase 1' (FG6: '2029 AM With Development', Plan 1: 'Network Control Plan 1')

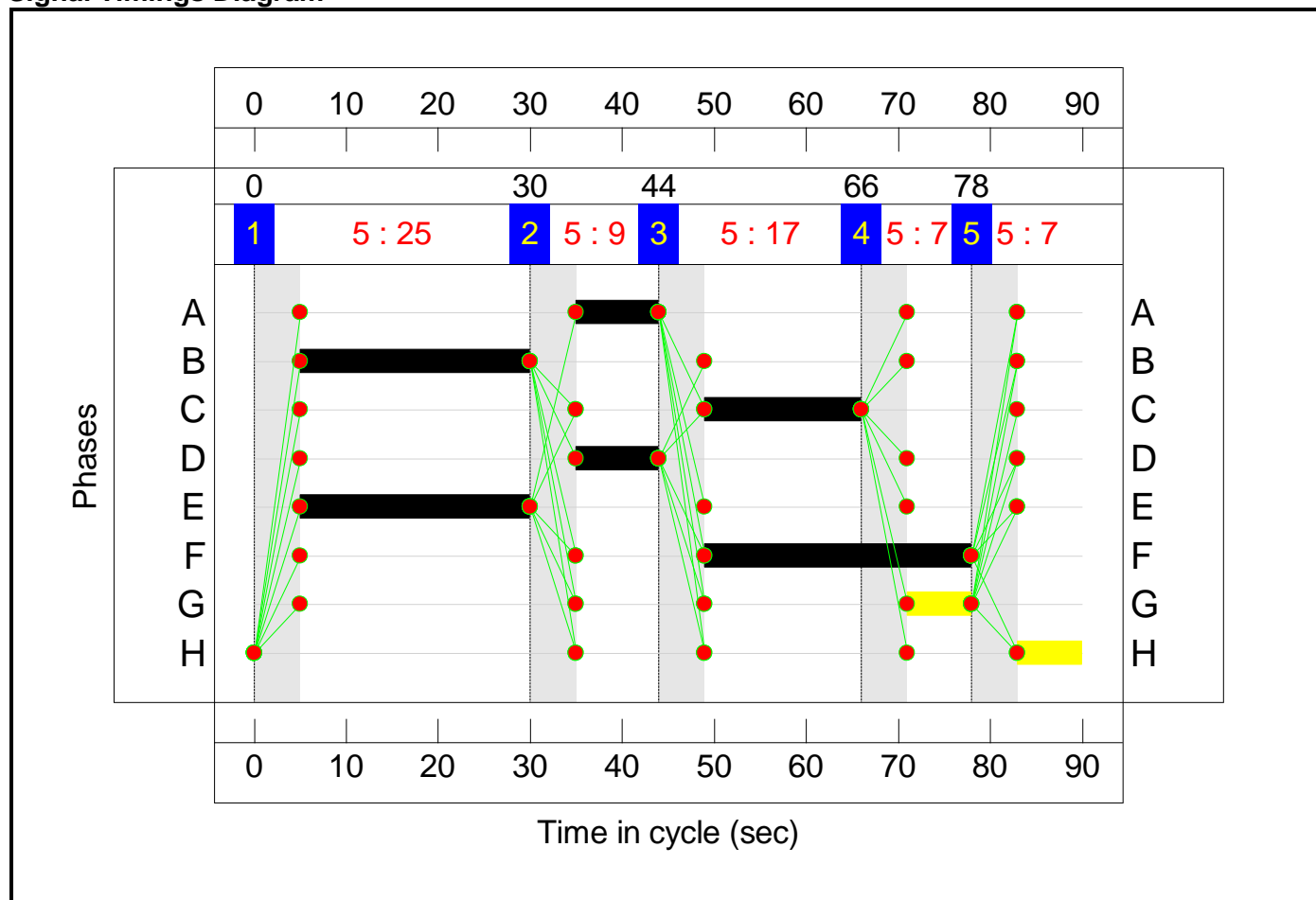
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	25	9	17	7	7
Change Point	0	30	44	66	78

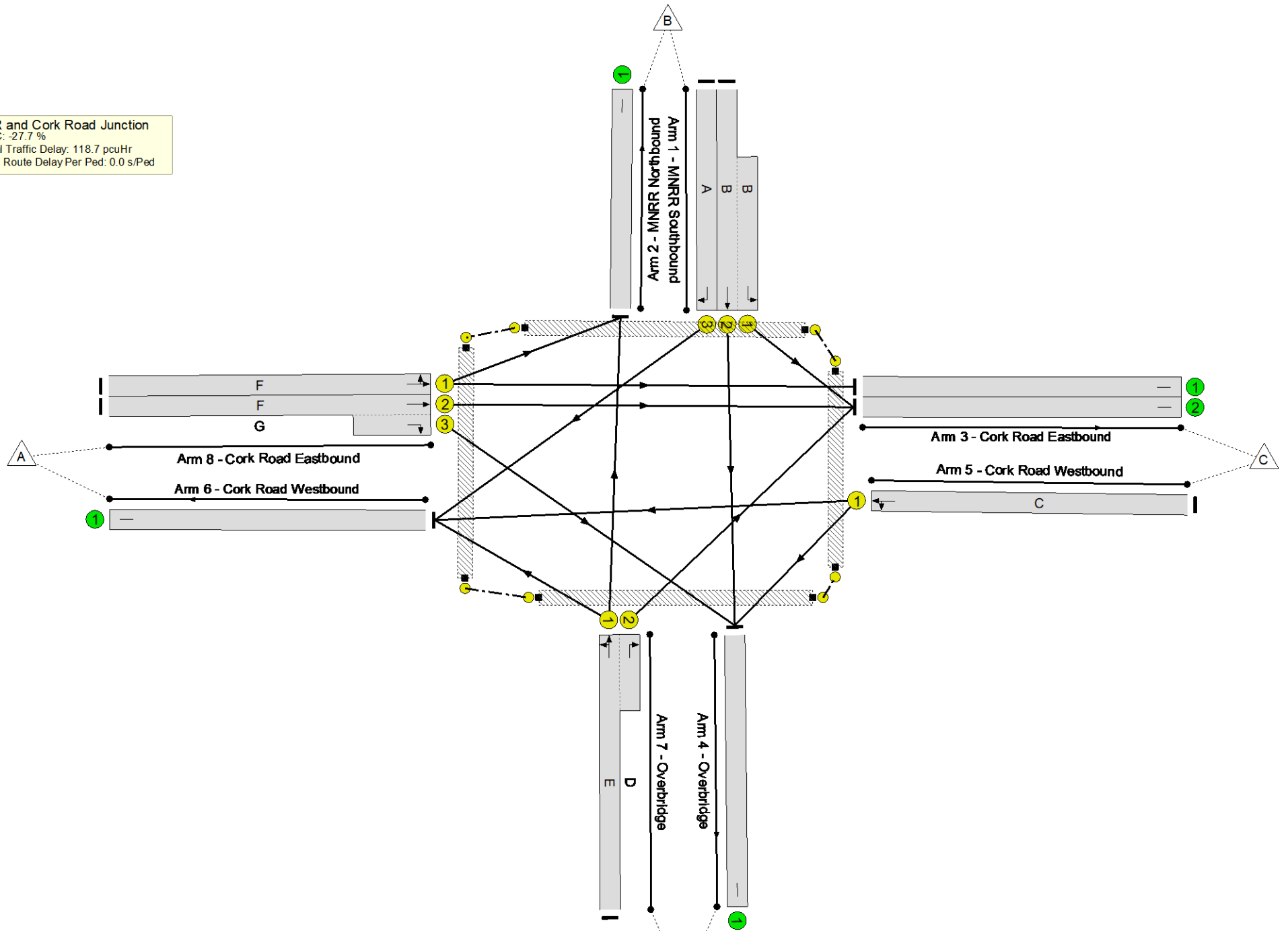
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: -27.7 %  
 Total Traffic Delay: 118.7 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	114.9%
MNRR and Cork Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	114.9%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	25	-	699	1940:1912	560+48	114.9 : 114.9%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	9	-	227	1821	202	112.2%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	515	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	9	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	1102	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	17	-	424	1940	388	109.3%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	416	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	25:9	-	510	1940:1781	494+144	80.0 : 80.0%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	29	-	254	1643	548	46.4%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	29:7	-	407	1940:1830	557+163	55.5 : 60.2%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

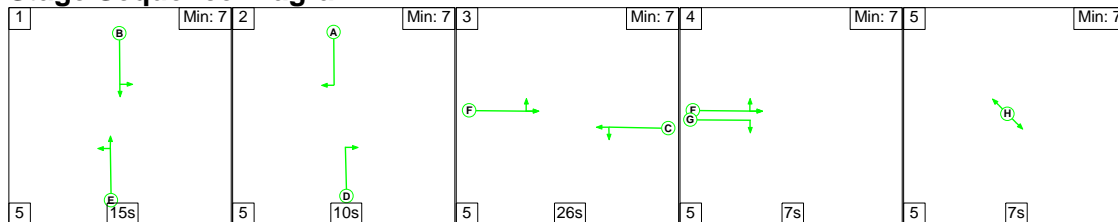
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	28.2	90.5	0.0	118.7	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	28.2	90.5	0.0	118.7	-	-	-	-
1/2+1/1	699	608	-	-	-	10.2	48.9	-	59.1	304.3	20.5	48.9	69.4
1/3	227	202	-	-	-	3.5	15.9	-	19.4	307.2	6.3	15.9	22.2
2/1	515	515	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	9	9	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	472	472	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	988	988	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	424	388	-	-	-	5.4	22.7	-	28.1	238.8	11.5	22.7	34.2
6/1	386	386	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	510	510	-	-	-	4.4	1.9	-	6.3	44.5	9.8	1.9	11.8
8/1	254	254	-	-	-	1.7	0.4	-	2.1	29.8	4.9	0.4	5.4
8/2+8/3	407	407	-	-	-	3.1	0.6	-	3.8	33.3	6.2	0.6	6.8
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		-27.7		Total Delay for Signalled Lanes (pcuHr):		118.75		Cycle Time (s):		90	
		PRC Over All Lanes (%):		-27.7		Total Delay Over All Lanes(pcuHr):		118.75					

Full Input Data And Results

**Scenario 7: '2029 PM Without Development'** (FG7: '2029 PM Without Development', Plan 1: 'Network Control Plan 1')

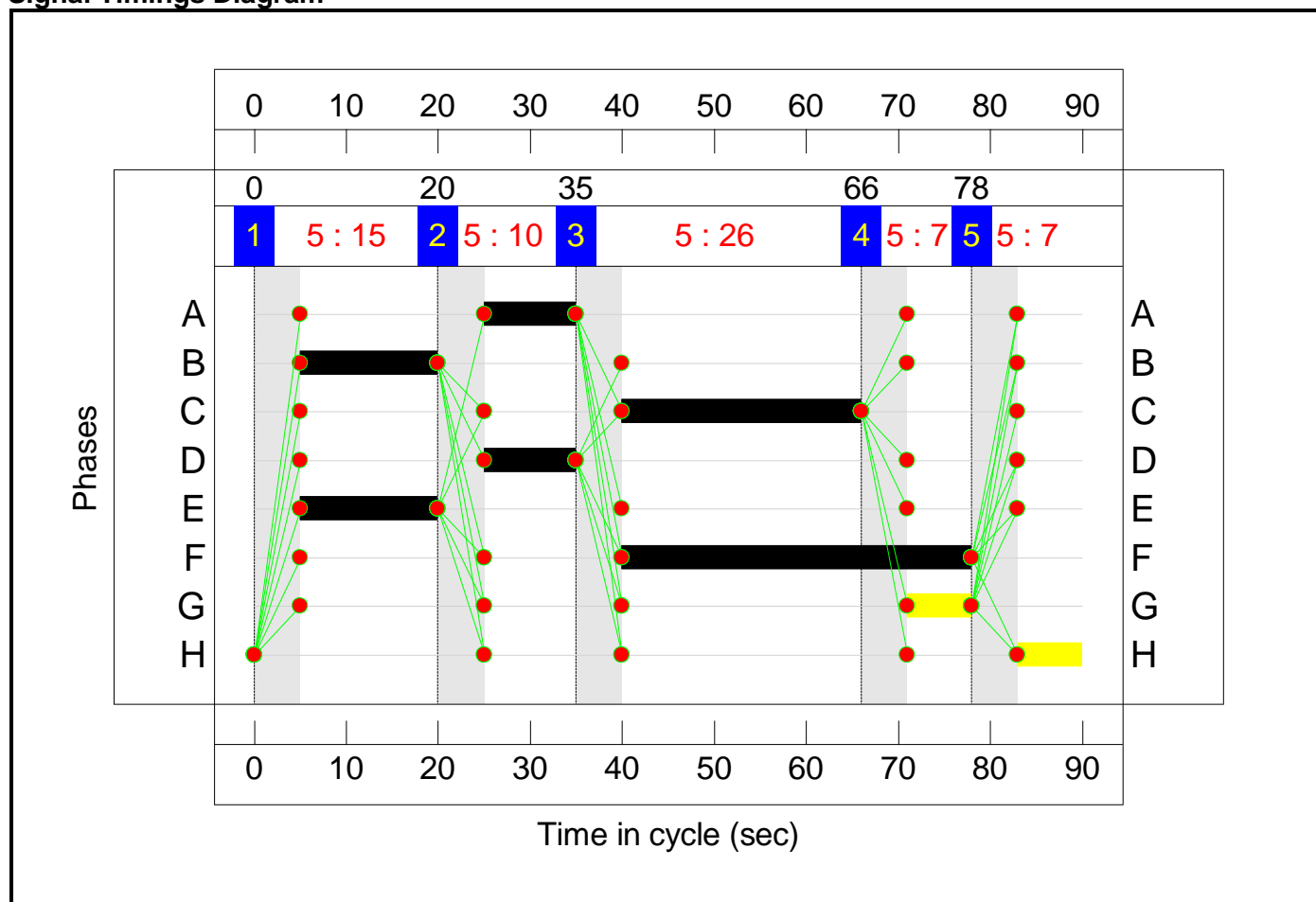
**Stage Sequence Diagram**



**Stage Timings**

Stage	1	2	3	4	5
Duration	15	10	26	7	7
Change Point	0	20	35	66	78


**Signal Timings Diagram**

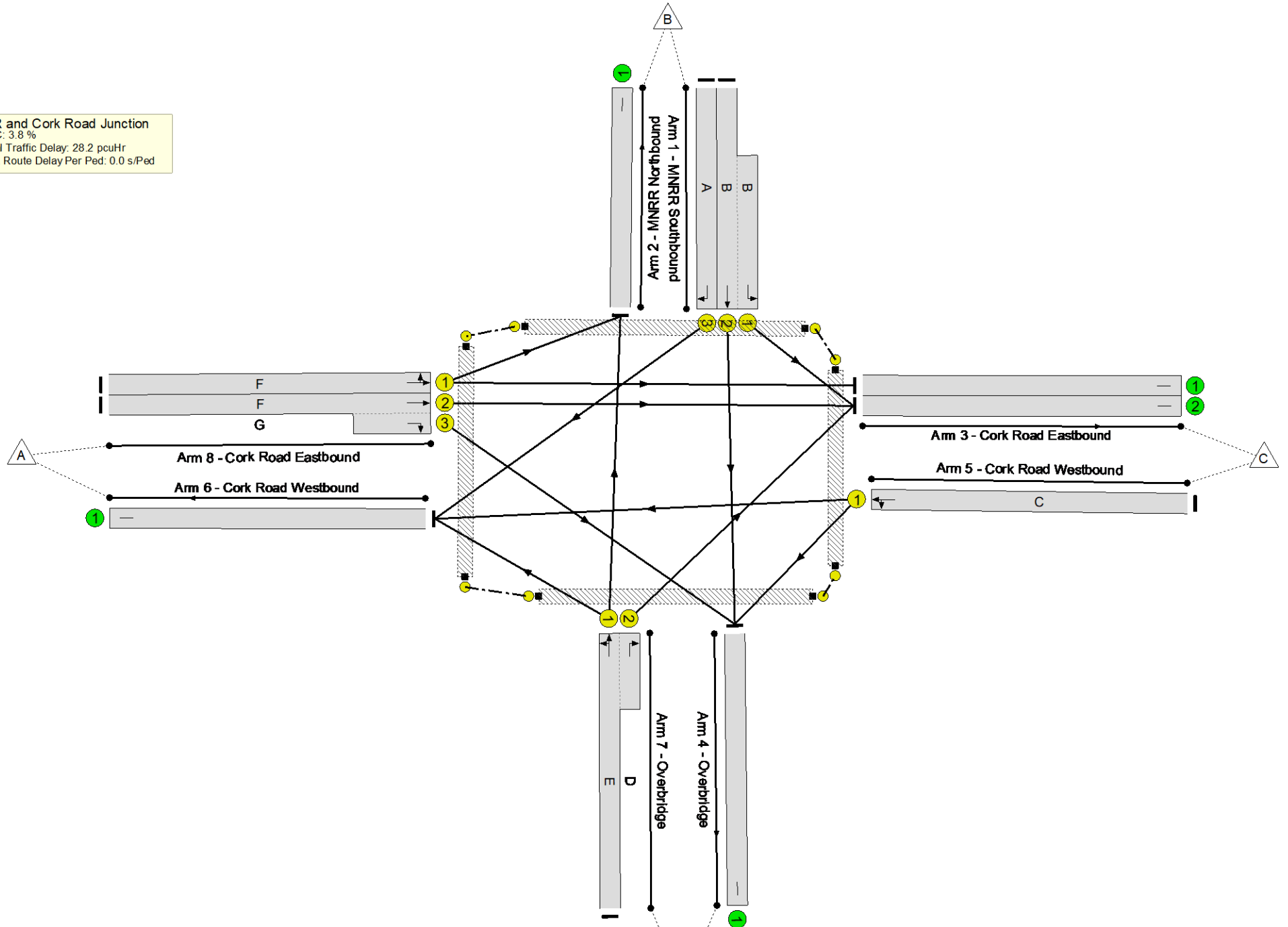




Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 3.8 %  
 Total Traffic Delay: 28.2 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped



## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
<b>Network</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>86.7%</b>
<b>MNRR and Cork Road Junction</b>	-	-	<b>N/A</b>	-	-		-	-	-	-	-	-	<b>86.7%</b>
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	15	-	338	1940:1912	345+45	86.7 : 86.7%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	10	-	191	1821	223	85.8%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	482	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	24	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	588	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	719	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	26	-	499	1940	582	85.7%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	411	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	15:10	-	326	1940:1781	313+164	68.3 : 68.3%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	38	-	354	1651	715	49.5%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	38:7	-	516	1940:1830	759+137	57.6 : 57.6%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

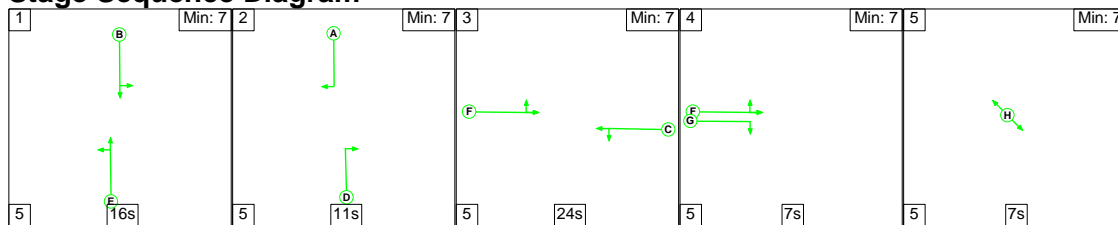
Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%	
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
<b>Network</b>	-	-	0	0	0	17.6	10.6	0.0	28.2	-	-	-	-	
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	17.6	10.6	0.0	28.2	-	-	-	-	
1/2+1/1	338	338	-	-	-	3.3	2.9	-	6.3	66.6	7.2	2.9	10.2	
1/3	191	191	-	-	-	2.1	2.6	-	4.7	87.7	4.7	2.6	7.3	
2/1	482	482	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/1	24	24	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
3/2	588	588	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
4/1	719	719	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	499	499	-	-	-	4.1	2.8	-	6.9	50.0	11.6	2.8	14.5	
6/1	411	411	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
7/1+7/2	326	326	-	-	-	3.2	1.1	-	4.2	46.9	4.9	1.1	6.0	
8/1	354	354	-	-	-	1.8	0.5	-	2.3	23.4	6.3	0.5	6.8	
8/2+8/3	516	516	-	-	-	3.1	0.7	-	3.8	26.5	8.3	0.7	9.0	
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-	
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-	
C1		PRC for Signalled Lanes (%):			3.8	Total Delay for Signalled Lanes (pcuHr):			28.18	Cycle Time (s):		90		
		PRC Over All Lanes (%):			3.8	Total Delay Over All Lanes(pcuHr):			28.18					

Full Input Data And Results

Scenario 8: '2029 PM With Phase 1' (FG8: '2029 PM With Development', Plan 1: 'Network Control Plan 1')

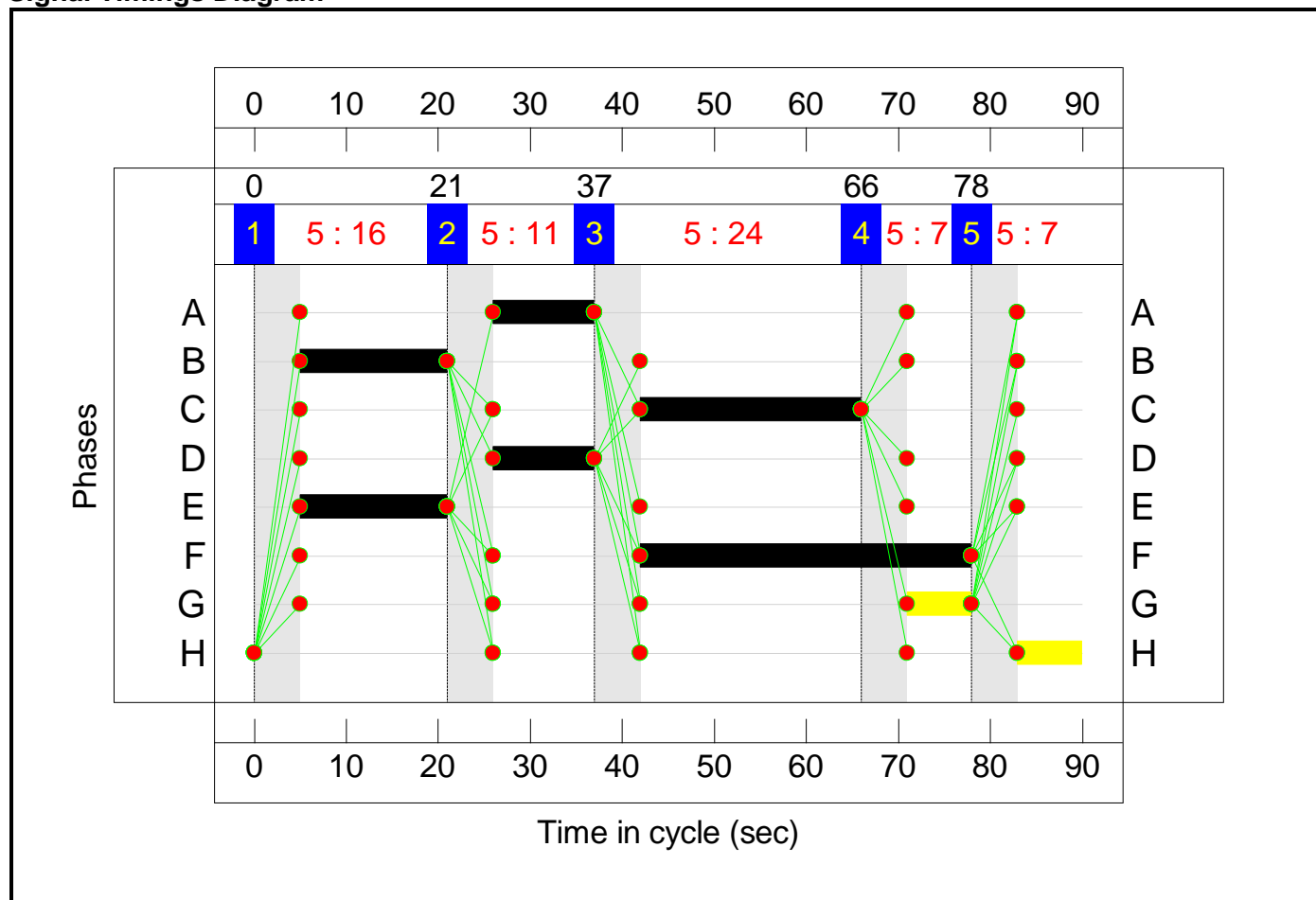
Stage Sequence Diagram



Stage Timings


Stage	1	2	3	4	5
Duration	16	11	24	7	7
Change Point	0	21	37	66	78

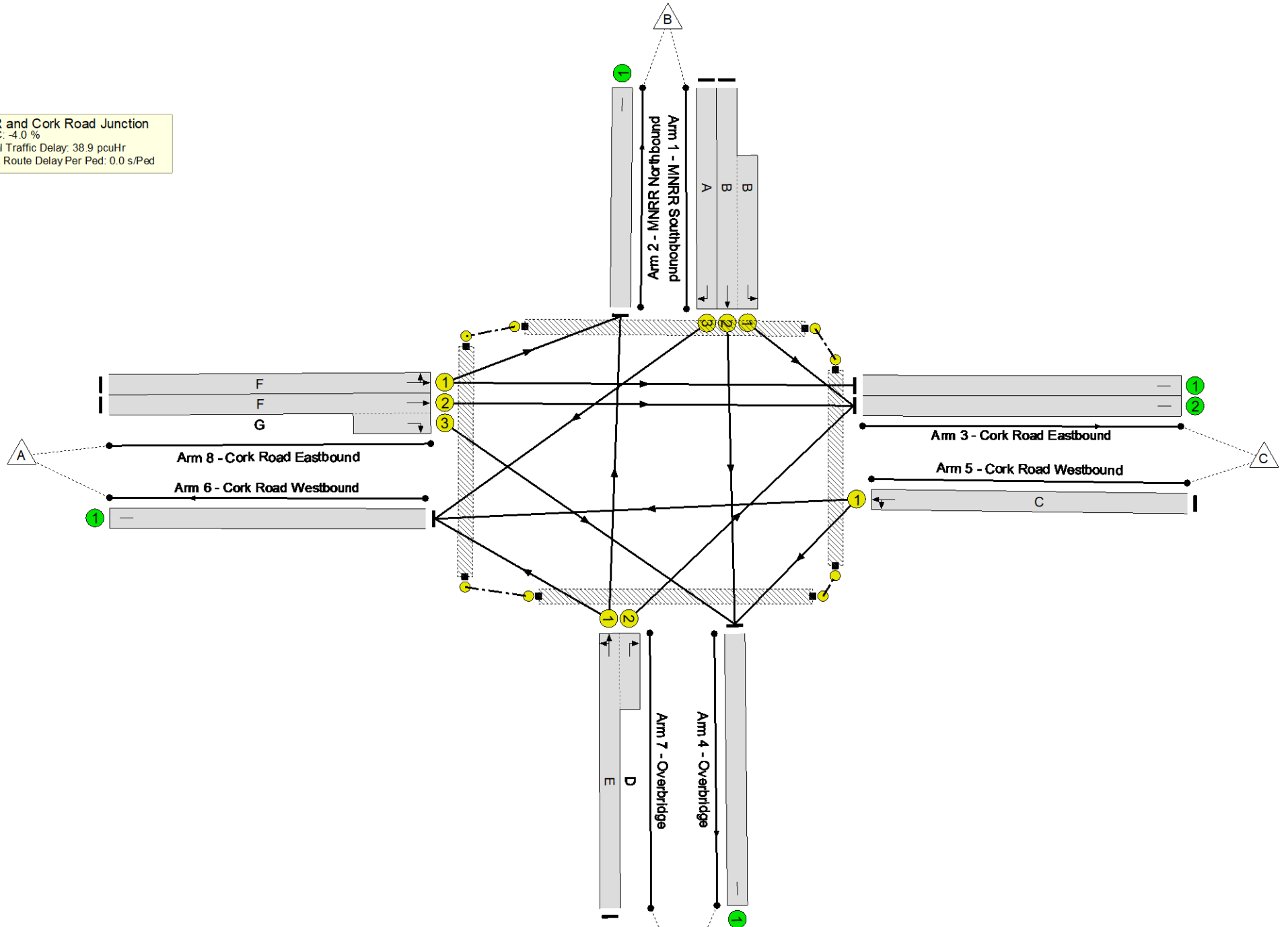
Signal Timings Diagram



Full Input Data And Results  
**Network Layout Diagram**

# Full Input Data And Results


**MNRR and Cork Road Junction**  
 PRC: 4.0 %  
 Total Traffic Delay: 38.9 pcuHr  
 Ave. Route Delay Per Ped: 0.0 s/Ped





## Full Input Data And Results

Full Input Data And Results

**Network Results**

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	93.6%
MNRR and Cork Road Junction	-	-	N/A	-	-		-	-	-	-	-	-	93.6%
1/2+1/1	MNRR Southbound Left Ahead	U	N/A	N/A	B		1	16	-	388	1940:1912	366+48	93.6 : 93.6%
1/3	MNRR Southbound Right	U	N/A	N/A	A		1	11	-	219	1821	243	90.2%
2/1	MNRR Northbound	U	N/A	N/A	-		-	-	-	692	Inf	Inf	0.0%
3/1	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
3/2	Cork Road Eastbound	U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%
4/1	Overbridge	U	N/A	N/A	-		-	-	-	763	Inf	Inf	0.0%
5/1	Cork Road Westbound Left Ahead	U	N/A	N/A	C		1	24	-	499	1940	539	92.6%
6/1	Cork Road Westbound	U	N/A	N/A	-		-	-	-	439	Inf	Inf	0.0%
7/1+7/2	Overbridge Ahead Right Left	U	N/A	N/A	E D		1	16:11	-	392	1940:1781	336+135	83.2 : 83.2%
8/1	Cork Road Eastbound Left Ahead	U	N/A	N/A	F		1	36	-	474	1634	672	70.6%
8/2+8/3	Cork Road Eastbound Ahead Right	U	N/A	N/A	F G		1	36:7	-	540	1940:1830	727+125	63.4 : 63.4%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%

Full Input Data And Results

Ped Link: P4	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	0	0.0%
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	0	0	0	20.7	18.2	0.0	38.9	-	-	-	-
<b>MNRR and Cork Road Junction</b>	-	-	0	0	0	20.7	18.2	0.0	38.9	-	-	-	-
1/2+1/1	388	388	-	-	-	3.8	5.2	-	9.0	84.0	8.4	5.2	13.6
1/3	219	219	-	-	-	2.3	3.5	-	5.9	96.7	5.4	3.5	8.9
2/1	692	692	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/2	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	763	763	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	499	499	-	-	-	4.4	5.0	-	9.4	67.7	12.1	5.0	17.1
6/1	439	439	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1+7/2	392	392	-	-	-	3.8	2.3	-	6.2	56.5	7.0	2.3	9.4
8/1	474	474	-	-	-	2.9	1.2	-	4.1	31.0	9.7	1.2	10.9
8/2+8/3	540	540	-	-	-	3.5	0.9	-	4.3	28.9	9.4	0.9	10.2
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
C1		PRC for Signalled Lanes (%):		-4.0		Total Delay for Signalled Lanes (pcuHr):		38.89		Cycle Time (s):		90	
		PRC Over All Lanes (%):		-4.0		Total Delay Over All Lanes(pcuHr):		38.89					

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