

## 1. Introduction

- 1.1 WYG have been appointed by the Isle of Wight (IOW) Council to undertake a feasibility study for a series of highway junctions located throughout the island, with a particular focus on the towns of Newport, Ryde, Shanklin and Sandown. The study has been carried out to identify traffic management issues impacting on all road users and develop proposals that will form part of a package of schemes to be progressed as part of the Council's Local Implementation Plan (LIP) process.
- 1.2 This Technical Note focus on the existing St Mary's Roundabout (Junction 1) and the proposed signalised Forest Road/ Medina Way junction.
- 1.3 The St Mary's roundabout junction is located on the northern edge of Newport, approximately 1km to the North of Newport town centre. The north and eastern arms have 3 lane entries whilst the south and west have 2. There are two lanes of circulatory flow. The speed limit form the North and South arms (A3020 Medina Way) is 40 mph and is 30 mph form Dodnor Ln (East) and Parkhurst Road (West).
- 1.4 The junction has been tested for the base (2017) and future scenario (2034):
- **Existing Junction** – which describes the current conditions in the St Mary's Roundabout.
  - **Proposed signalised Forest Road and unsignalised St Mary's Roundabout** – which comprises the revised layout incorporating the signalised Forest Road/ Medina Way Junction and the modified St Mary's Roundabout.
  - **Proposed signalised Forest Road and signalised St Mary's Roundabout** – which comprises the revised layout incorporating the signalised Forest Road/ Medina Way Junction and includes the signalisation of St Mary's Roundabout.
  - **Proposed signalised Forest Road and signalised crossroad at St Mary's Junction**– which comprises the revised layout incorporating the signalised Forest Road/ Medina Way Junction and includes a signalised crossroad at St Mary's Junction.

## 2. Purpose of Note

- 2.1 The purpose of this note is to summarise the assessment of the existing St Mary's junction and the proposed signalised Forest Road/ Medina Way junction designs.

### 3. Study Area/Junction Background

- 3.1 The St Mary's roundabout is located on the northern edge of Newport, approximately 1km to the north of the town centre. The northern and eastern arms have three lane entries whilst the southern and western arms have two lanes. There are two lanes of circulatory flow. The speed limit from the northern and southern arms (A3020 Medina Way) is 40 mph and it is 30 mph from Dodnor Lane to the east and Parkhurst Road to the west.
- 3.2 The junction forms part of the main route from Newport towards Cowes, as well as giving access to the St Mary's Hospital, the Isle of Wight College, an industrial estate, and the residential area of Hunnyhill.
- 3.3 **Figure 3.1** presents a site location plan of the existing four-arm roundabout junction.

**Figure 3.1 Existing St Mary's Roundabout**



Source: Google Satellite Image, November 2017

- 3.4 **Figure 3.2** shown the proposed arrangement for the St Mary's roundabout and Forest Road.

**Figure 3.2 Proposed St Mary's Roundabout – Forest Road Junction**



Source: Isle of Wight Council, November 2017

## 4. Data Collection

4.1 Traffic flow surveys were undertaken by MHC Traffic Ltd on Thursday 20th July 2017 to establish the baseline traffic conditions for the local highway network on the IOW. A range of surveys were undertaken including:

- Manual Classified Counts (MCC) for turning flow information;
- Automatic Traffic Counts (ATCs) were placed at strategic locations on the network allowing the speeds to be obtained;
- Queue length surveys at stop lines; and
- Traffic video surveys.

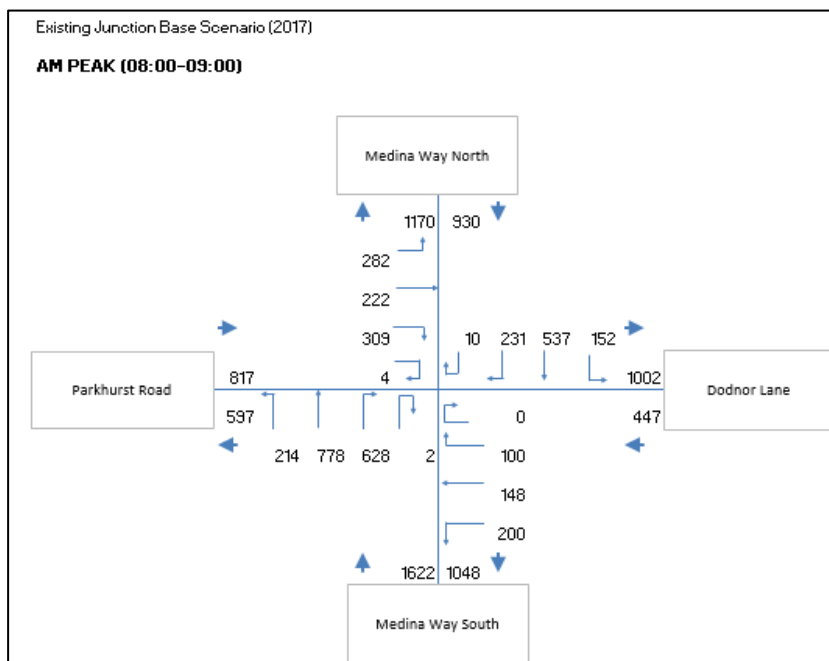
4.2 The data collected as part of the surveys was used directly for calibrating and validating the existing scenario for both the 'Junctions 9' and 'LinSig' models. Video footage of the surveyed junctions was reviewed to ensure that the base models reflect the on-street road conditions as closely as possible.

## 5. Traffic Flows

## Existing Junction Base Traffic Flows (2017) – Do Nothing Scenario

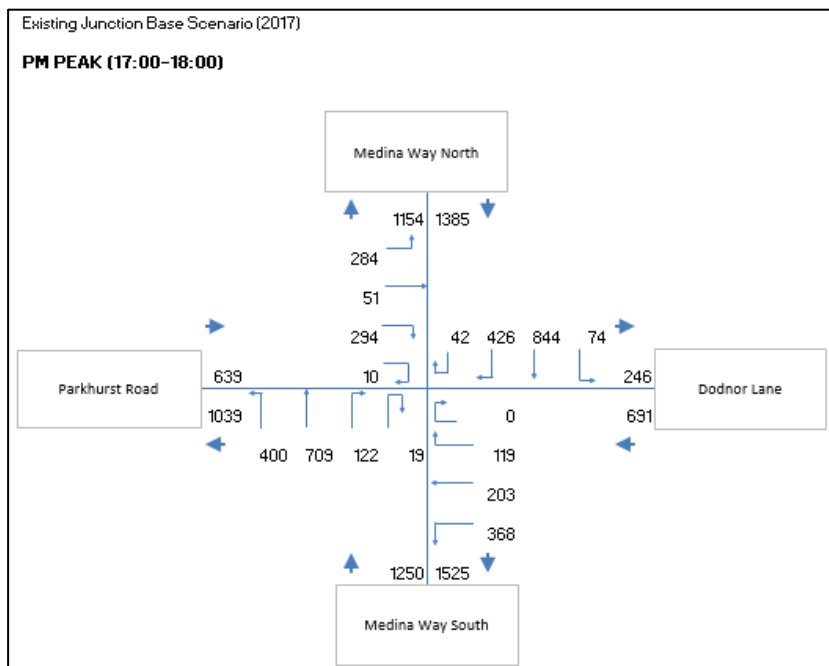
- 5.1 This section details the current traffic flows at the junction, determined from the survey data. These are shown in **Figures 5.1** and **5.2**.

**Figure 5.1 Existing Junction Base AM Traffic Flows (PCUs)**



- 5.2 **Figure 5.2** below shows the traffic flows for the PM Peak (17:00-18:00).

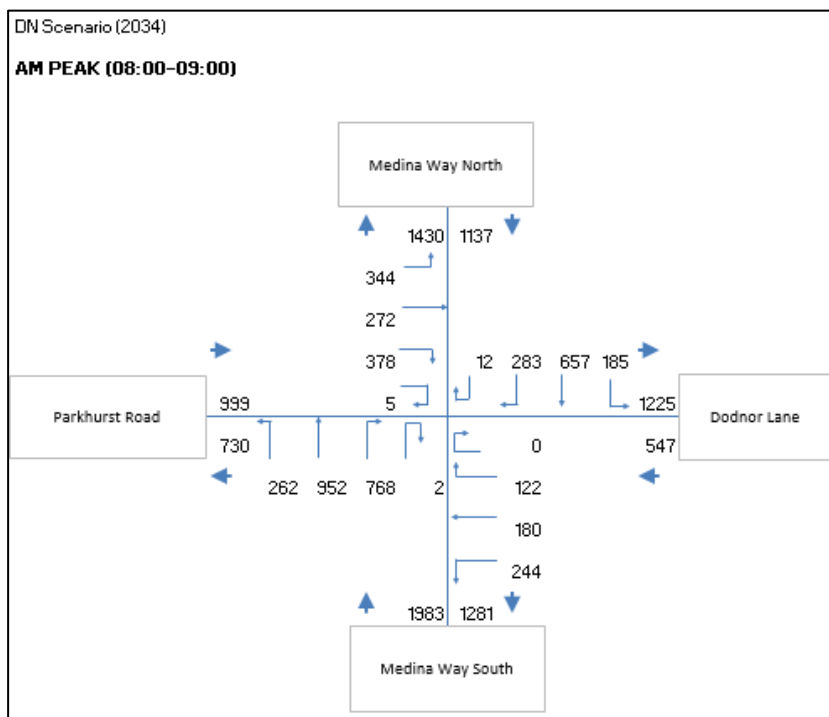
**Figure 5.2 Existing Junction Base PM Traffic Flows (PCUs)**



## Existing Junction Future Traffic Flows (2034) – Do Nothing Scenario

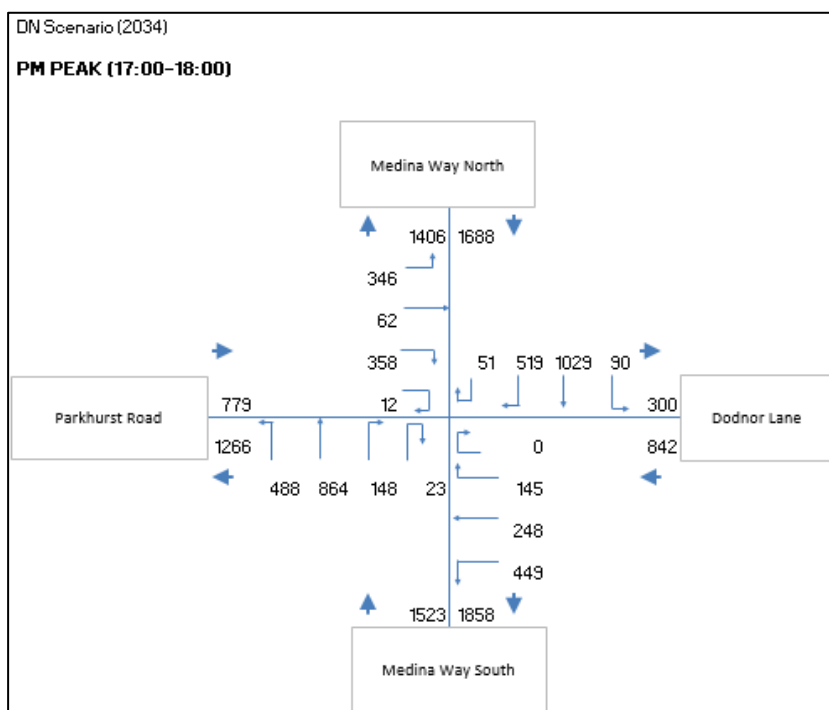
- 5.3 This section details the current traffic flows at the junction, determined from the survey data. These are shown in **Figures 5.3** and **5.4**.

**Figure 5.3 Existing Junction Future AM Traffic Flows (PCUs)**



5.4 **Figure 5.4** below shows the traffic flows for the PM Peak (17:00-18:00).

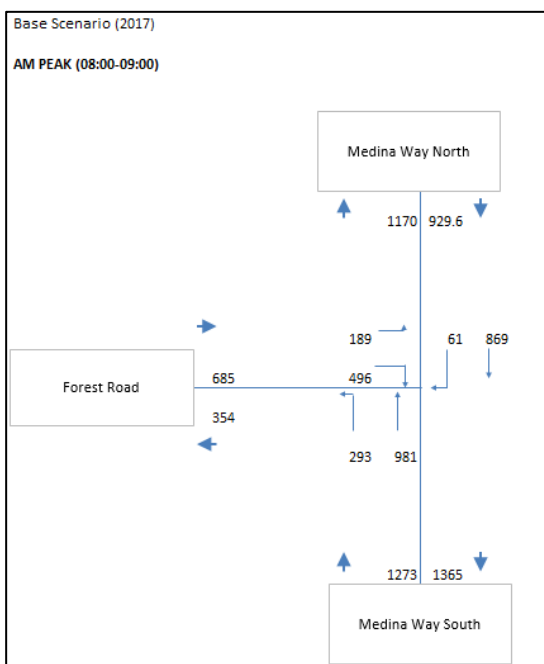
**Figure 5.4 Existing Junction Future PM Traffic Flows (PCUs)**



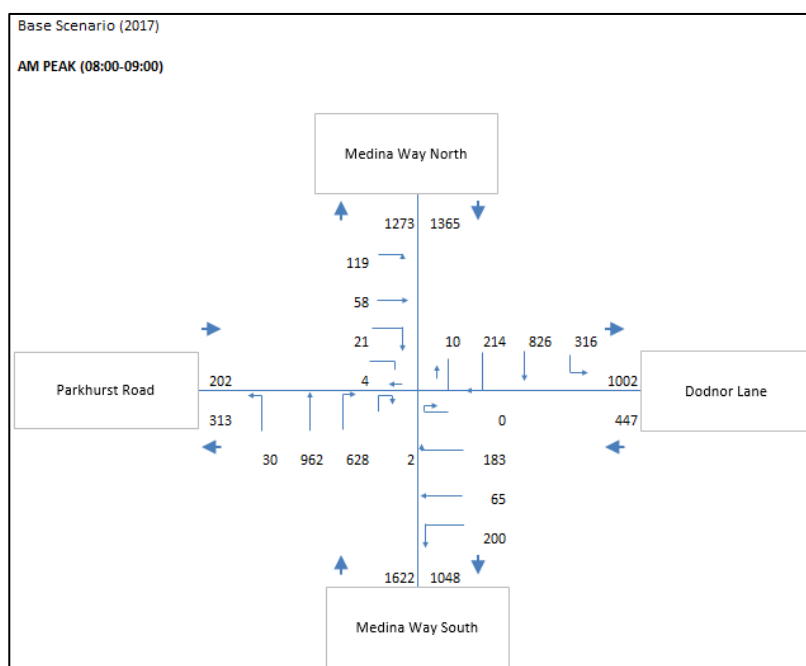
### Proposed Scheme Base Traffic Flows (2017)

5.5 This section details the traffic flows after the reassignment to the new Forest Road/ Medina Way signalised junction and modified St Mary's Roundabout. These are shown in **Figures 5.5, 5.6, 5.7 and 5.8.**

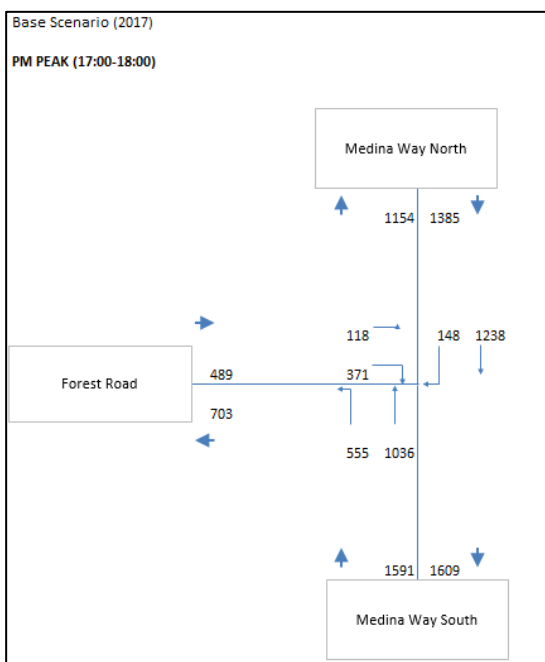
**Figure 5.5 Forest Road / Medina Way Proposed Scheme Base AM Traffic Flows (PCUs)**



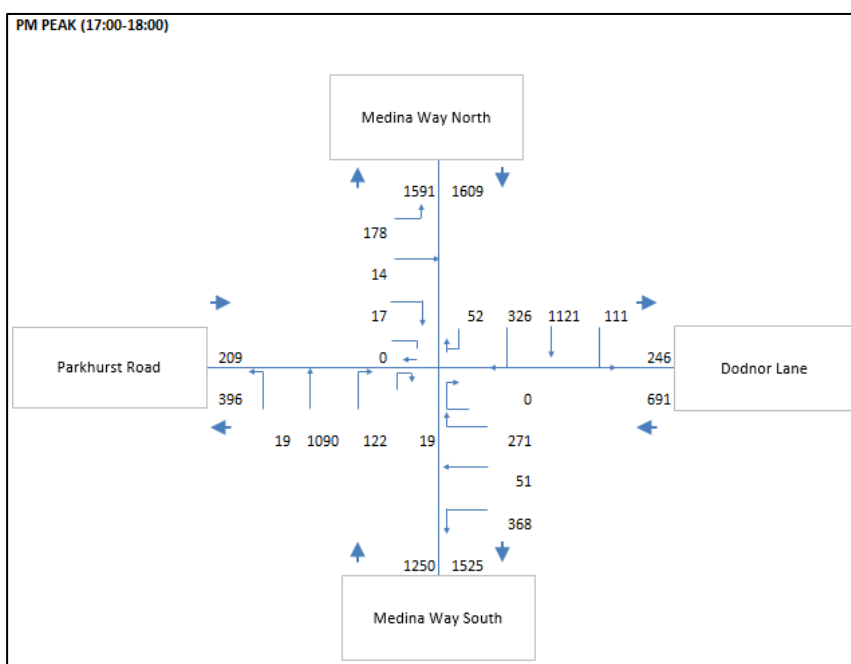
**Figure 5.6 St Mary's Roundabout Proposed Scheme Base AM Traffic Flows (PCUs)**



**Figure 5.7 Forest Road / Medina Way Proposed Scheme Base PM Traffic Flows (PCUs)**



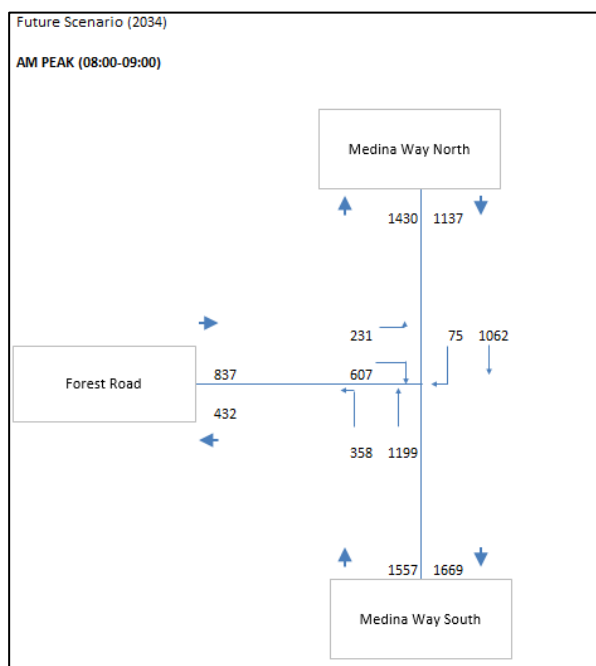
**Figure 5.8 St Mary's Roundabout Proposed Scheme Base PM Traffic Flows (PCUs)**



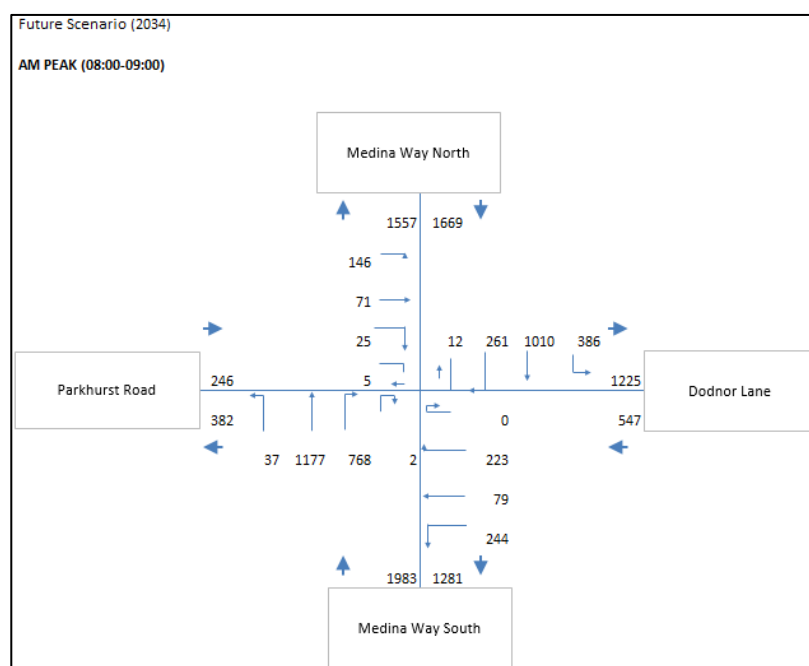
## Proposed Scheme Future Traffic Flows (2034)

- 5.6 This section details the growth in traffic flows to the new Forest Road/ Medina Way signalised junction and for the St Mary's Roundabout. Local and regional growth rates have been obtained from TEMPRO and applied to the baseline turning movements. These are shown in **Figures 5.9, 5.10, 5.11** and **5.12**.

**Figure 5.9 Forest Road / Medina Way Proposed Scheme Future (2034) AM Traffic Flows (PCUs)**

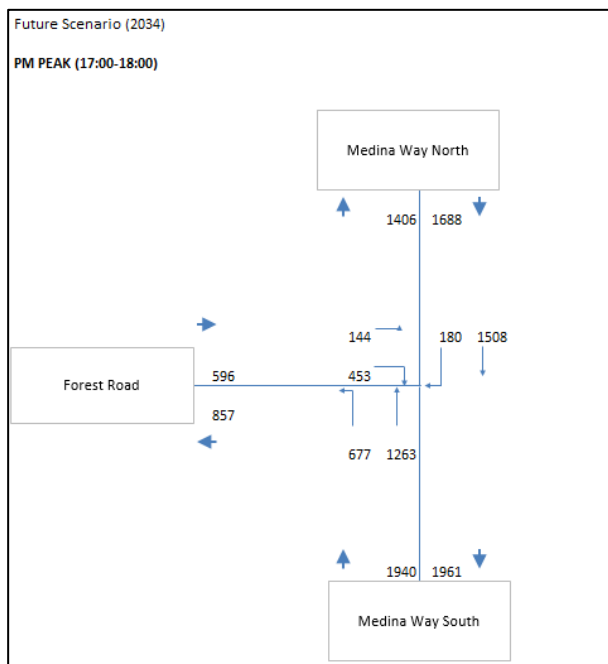


**Figure 5.10 St Mary's Roundabout Proposed Scheme Future (2034) AM Traffic Flows (PCUs)**

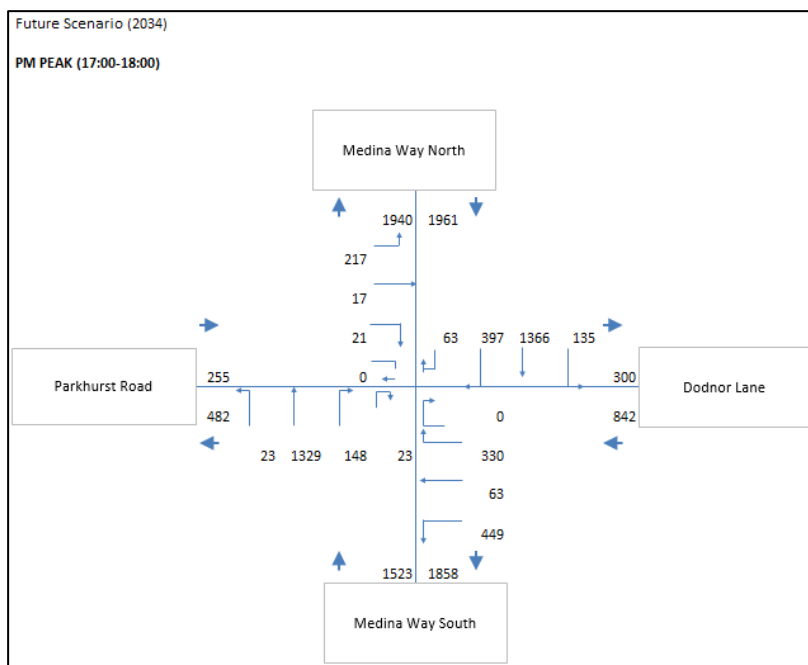




**Figure 5.11 Forest Road / Medina Way Proposed Scheme Future (2034) PM Traffic Flows (PCUs)**



**Figure 5.12 St Mary's Roundabout Proposed Scheme Future (2034) PM Traffic Flows (PCUs)**



## 6. Modelling

- 6.1 The roundabout modelling software within 'Junctions 9' was used to model the four-arm roundabout junction, and 'LinSig v3' was used for the signalised junction. The modelling has been undertaken for two weekday periods determined to be the network peaks in terms of traffic volumes, with the AM peak between 08:00 and 09:00 and the PM peak between 17:00 and 18:00. These peaks were identified through analysis of traffic count data. The base year modelling used the survey data collected in July 2017. Future year modelling for 2034 was subsequently carried out in order to test the proposed changes to the network and assess the impact on the performance of the junction.

### St Mary's Roundabout Results – Existing Junction – Base Year – Do Nothing Scenario

- 6.2 The results of the modelling of the existing junction for a 2017 base year are summarised in **Table 6.1**. The full outputs are included as **Appendix A**.

**Table 6.1 St Mary's Roundabout Existing Junction Base Year 2017**

Approach	2017 Existing Junction Base Year Assessment			
	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
1 - Dodnor Ln	0.35	0.6	0.37	0.6
2 - Medina Way (S)	0.73	2.8	0.45	0.8
3 - Parkhurst Rd	0.77	3.3	0.34	0.5
4 - Medina Way (N)	0.71	2.5	0.60	1.5

- 6.3 The existing junction base year results indicate that the junction operates within capacity during the AM and PM peaks, with the maximum Ratio of Flow to Capacity (RFC) of 0.78.

### St Mary's Roundabout Results – Existing Junction – Future Year – Do Nothing Scenario

- 6.4 The results of the modelling of the existing junction for a 2034 future year are summarised in **Table 6.2**. The full outputs are included as **Appendix A**.

**Table 6.2 St Mary's Roundabout Existing Junction Future Year 2034**

Approach	2017 Existing Junction Base Year Assessment			
	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
1 - Dodnor Ln	0.47	0.9	0.72	2.5
2 - Medina Way (S)	0.93	11.4	0.83	4.8
3 - Parkhurst Rd	1.15	76.6	0.69	2.1

4 - Medina Way (N)	0.97	16.5	1.15	131.5
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- 6.5 The existing junction future year results indicate that the junction operates over capacity on both peaks, with the maximum Ratio of Flow to Capacity (RFC) of 1.15 on Parkhurst Rd and on the AM peak, and 1.15 on the north approach of Medina Way on the PM peak.

### St Mary's Roundabout Results – Forest Road/Medina Way Signalised & St Mary's Roundabout Unsignalised – Base Year

- 6.6 The results of the modelling of the proposed junction for a 2017 base year are summarised in **Table 6.3**. The full outputs are included as **Appendix B**.

**Table 6.3 St Mary's Roundabout Proposed Base Year**

Approach	2017 Proposed Base Year Assessment			
	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
1 - Dodnor Ln	0.35	0.6	0.68	2.1
2 - Medina Way (S)	0.74	2.9	0.62	1.6
3 - Parkhurst Rd	0.21	0.3	0.19	0.2
4 - Medina Way (N)	0.83	4.9	0.79	3.6

- 6.7 The proposed scheme will lead to a reduction of vehicles entering and exiting the roundabout from the Parkhurst Road arm. Consequently, there will be a significant reduction in the RFC during both the AM and PM peaks, on Parkhurst Road, particularly in the AM peak. However, Medina Way (N) will be negatively affected due to the increase in traffic from the traffic diverted from Forest Rd, however the arm will still operate within capacity.

### St Mary's Roundabout Results – Forest Road/Medina Way Signalised & St Mary's Roundabout Unsignalised – Future Year

- 6.8 The results of the modelling of the proposed junction for a 2034 base year are summarised in **Table 6.4**. The full outputs are included as **Appendix B**.

**Table 6.4 St Mary's Roundabout Proposed Future Year**

Approach	2017 Existing Base Year Assessment			
	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)	
	RFC	Queue (PCU)	RFC	Queue (PCU)
1 - Dodnor Ln	0.45	0.9	1.02	24.6
2 - Medina Way (S)	0.93	11.7	0.79	3.6
3 - Parkhurst Rd	0.33	0.5	0.28	0.4
4 - Medina Way (N)	1.09	88.4	0.97	20.0

- 6.9 The modelling indicates that the increase in traffic due the growth and the reassignment of traffic from Forest Road into Medina Avenue puts further pressure on the junction. Medina Way (S) arm is operating close to capacity with an RFC of 0.93 on the AM peak. Medina Way (N) is expected to be operating above its theoretical capacity on the AM peak and operating close to capacity on the PM peak.

### Forest Road/ Medina Way Results – Forest Road/Medina Way Signalised & St Mary's Roundabout Unsignalised – Base Year

- 6.10 The results of the modelling of the proposed signalised junction for a 2017 base year are summarised in **Table 6.5**. The full outputs are included as **Appendix C**.

**Table 6.5 Forest Road/ Medina Way Proposed Base Year**

Arm Cycle time :72 seconds	AM Peak			PM Peak		
	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1 - Medina Way (S)	51.2%	7.7	16.9	81.3%	4.3	13.9
2 - Forest Rd	51.0%	3.2	25.6	63.2%	4.4	40.5
3 - Medina Way (N)	37.5%	4.5	11.5	76.1%	5.0	11.3
PRC	75.8%			18.3%		
Total Delay (pcu/hr)	10.75			10.94		

Table 6.4 shows that the proposed signalised junction will operates within capacity with a 72 second cycle time, with an overall Practical Reserve Capacity (PRC) of 75.8% in the AM peak and 18.3% in the PM peak.

### Forest Road/ Medina Way Results – Forest Road/Medina Way Signalised & St Mary's Roundabout Unsignalised – Future Year

- 6.11 The results of the modelling of the proposed signalised junction for a 2034 future year are summarised in **Table 6.6**. The full outputs are included as **Appendix C**.

**Table 6.6 Forest Road/ Medina Way Proposed Future Year**

Arm Cycle time :72 seconds	AM Peak			PM Peak		
	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1 - Medina Way (S)	62.3%	10.1	18.9	100.2%	40.9	73.5
2 - Forest Rd	61.5%	4.1	28.1	70.7%	5.6	42.4
3 - Medina Way (N)	45.5%	6.0	12.3	92.5%	7.0	12.8
PRC	44.4%			-2.8%		

Total Delay (pcu/hr)	14.47	15.00
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- 6.12 Table 6.5 shows that the Medina Way (S) approach is predicted to be significantly affected during the PM peak by the flows turning right from Medina Way (N) into Forest Road. Delays are predicted to be in excess of 73.5 seconds per vehicle for this approach.
- 6.13 As a result, it is considered that removing the give way lane for left-turning traffic into Forest Road and adding a signal control for the slip road will improve the efficiency of the junction. This scenario has been modelled, and the results are summarised in **Table 6.7** and the full Linsig outputs are available on **Appendix D**.

**Table 6.7 Forest Road/ Medina Way Sensitivity Test – Signalisation of Slip Road Future Year**

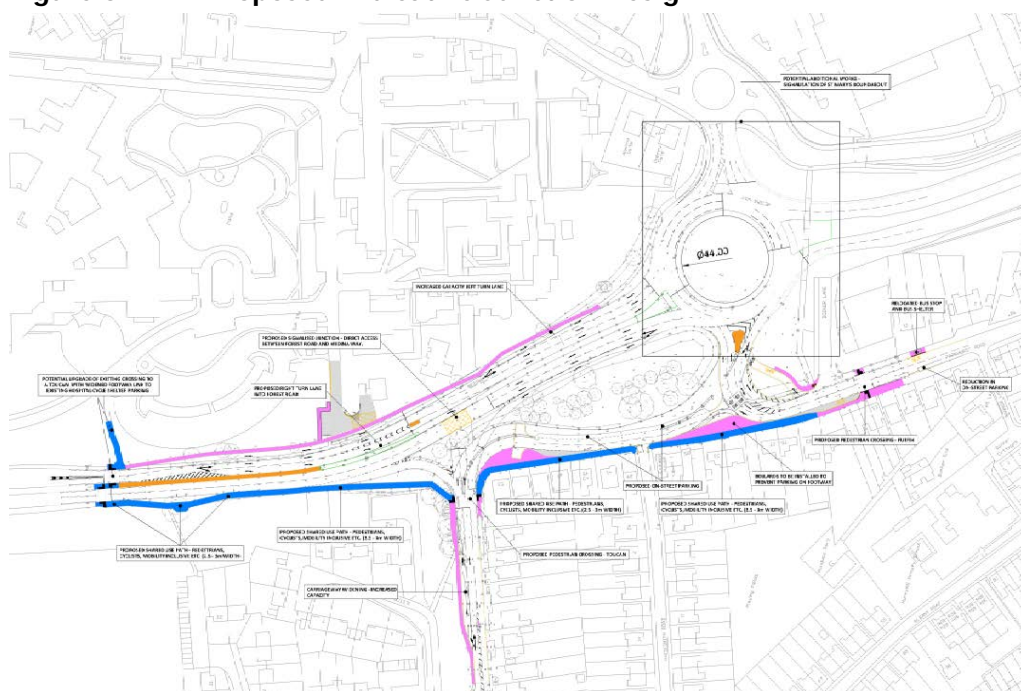
Arm Cycle time :72 seconds	AM Peak			PM Peak		
	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1 - Medina Way (S)	66.5%	9.7	15.9	72.0%	10.5	15.2
2 - Forest Rd	64.5%	4.2	30.2	71.3%	4.0	43.1
3 - Medina Way (N)	44.6%	5.7	11.8	67.3%	7.4	12
PRC	35.4%			25.0%		
Total Delay (pcu/hr)	15.46			18.37		

- 6.14 The results confirm that by signalising the left turn of Medina Way (S), the degree of saturation during the PM peak will be reduced on both the northern and southern arms of Medina Way.

### Signalised St Mary's Roundabout Proposal

- 6.15 A new roundabout signalised junction design has been modelled and tested. Alterations were proposed to allow increased circulatory capacity on the roundabout.
- 6.16 The proposed indicative junction design is shown in **Figure 6.1** below and included in **Appendix E**.

**Figure 6.1 Proposed Indicative Junction Design**



6.17 The modelling output results for the proposed junction design (as shown in Figure 6.1) are presented in **Table 6.8** below and full output results are included in **Appendix E**.

LinSig Results – St Mary’s Signalised Roundabout Results – Base Year

**Table 6.8 St Mary’s Signalised Roundabout: Proposed Junction Base Year**

Arm Cycle time 120 secs	AM Peak			PM Peak		
	Deg Sat (%)	MMQ (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1/2+1 - Medina Way South Entry Left Ahead	60.5%	7.0	10.0	57.2%	20.5	6.0
1/3 - Medina Way South Entry Ahead	33.0%	6.3	10.1	51.7%	13.2	10.2
2/1 - Forest Road Entry Left	31.5%	0.8	4.4	19.9%	0.1	3.8
2/2 - Forest Road Entry Right	58.3%	6.3	49.0	39.0%	4.3	49.1
2/3 - Forest Road Entry Right	55.5%	6.2	47.8	62.6%	7.8	55.9
3/1 - Medina Way North Exit Ahead	36.6%	6.9	8.9	46.9%	9.3	8.1
3/2 + 3/3 - Medina Way North Exit Ahead Right	59.7%	4.4	15.2	59.7%	6.7	16.6
4/2 + 4/1 - Medina Way South Exit Left Ahead	53.3%	7.3	13.0	53.3%	8.5	7.5
4/3 + 4/4 - Medina Way South Exit Ahead Right	56.5%	7.1	13.2	52.4%	7.1	6.7
5/1 - Forest Road Exit Ahead	24.6%	1.9	3.1	50.1%	3.6	4.0
7/2 + 7/1 - Forest Road Entry Ahead	38.3%	3.8	4.4	25.3%	2.0	3.8
9/2 + 9/1 - Dodnor Lane Left	39.5%	5.8	41.9	62.8%	11.3	43.8
9/3 + 9/4 - Dodnor Lane Right Ahead	38.1%	4.2	39.1	46.2%	5.9	36.5
11/1 - Medina Way South Ahead Left	54.9%	11.8	9.6	60.4%	14.8	22.5

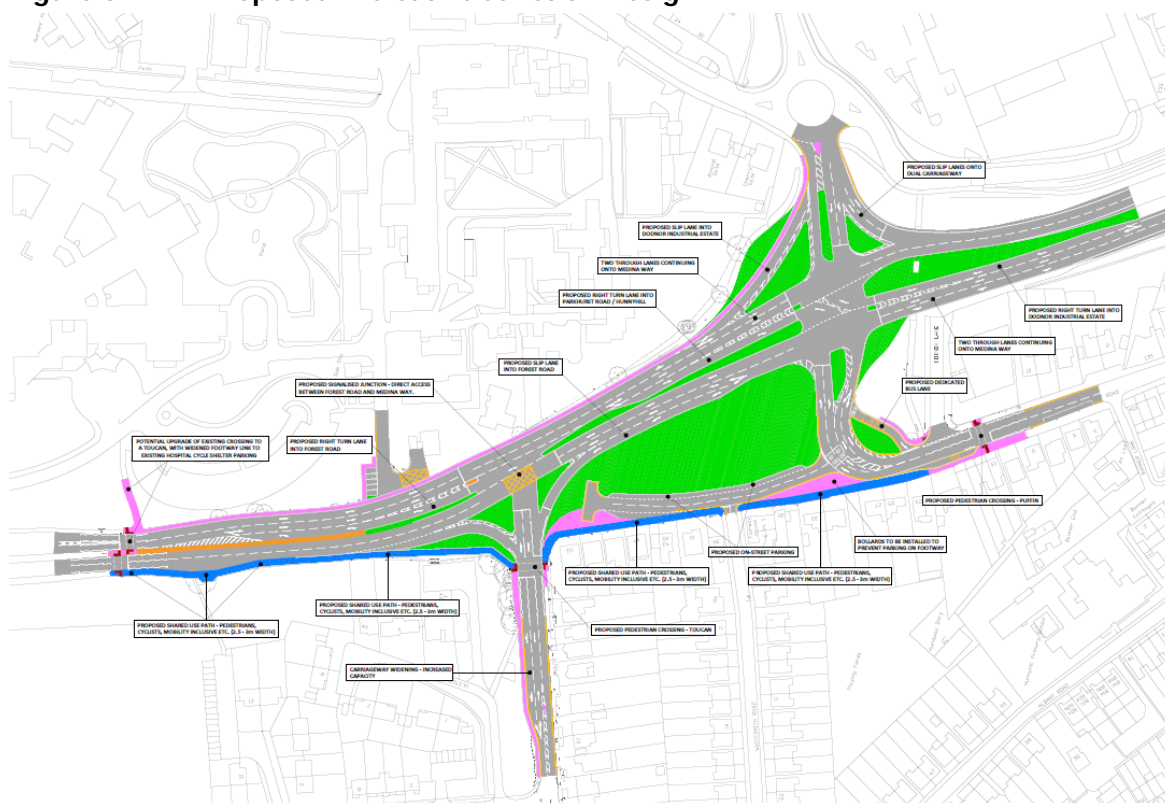
11/2 - Medina Way South Ahead	60.2%	14.0	10.4	59.3%	14.5	22.3
12/1 - Medina Way South	33.7%	0.3	1.4	58.3%	0.7	2.3
12/2 - Medina Way South	21.4%	0.1	1.2	22.0%	0.1	1.2
13/1+13/2 - Parkhurst Road Left Ahead Right	27.2%	0.8	3.4	43.5%	3.3	8.4
15/1 - Ahead	34.8%	6.0	10.9	62.2%	12.6	11.1
15/2 - Ahead Right	41.1%	5.6	10.2	51.6%	7.0	7.1
15/3 - Right	8.9%	1.6	10.8	14.6%	2.1	4.7
16/1 - Ahead	47.8%	4.6	38.9	33.4%	5.1	28.0
16/2 - Ahead Right	52.7%	4.5	39.6	41.7%	8.0	25.7
16/3 - Right	29.9%	1.1	25.2	19.6%	4.0	20.2
17/1 - Ahead	42.0%	6.9	24.1	12.4%	1.3	31.2
17/2 - Ahead Right	48.3%	9.0	24.2	29.7%	3.4	31.2
17/3 - Right	3.6%	0.5	24.0	3.2%	0.3	30.6
18/1 - Ahead	43.5%	0.4	1.7	41.2%	0.3	1.6
18/2 - Ahead Right	31.0%	0.2	1.4	34.5%	0.3	1.4
18/3 Right	19.4%	0.1	1.2	5.7%	0.0	1.0
PRC	48.7%			43.7%		
Total Delay (pcu/hr)	43.37			46.12		

- 6.18 The base year results as shown in Table 6.8 for the proposed signalised roundabout, indicate that the junction operates within recommended capacity during the AM and PM Peaks. The junction operates with a PRC of 48.7% in the AM Peak, whilst a PRC of 43.7% is recorded in the PM Peak. It is shown that all arms currently operate with a DoS of below 90%.
- 6.19 However, the modelling shows that there would be significant queuing on the circulatory carriageway (Arms 15 to 18), for which there is insufficient space. For example, queues of 12.6 vehicles are anticipated on Lane 15/1, which would only have space for around six vehicles to queue before blocking traffic.
- 6.20 Consequently, it is not considered that this design is viable, as it would lead to significant operational issues. As a result, the 2034 scenario has not been tested as it would lead to significantly longer queues.

## New Crossroad Proposal

- 6.21 A new design has been developed, a crossroad signalised junction with a slip lane into Dodnor Lane.
- 6.22 Taking into account the future year results, the main capacity issues experienced at the junction are found on the Medina Way and Dodnor Lane arms, which currently experience the highest queues and highest RFC. Subsequently, it is hoped that the proposed indicative design addresses these issues and provides additional capacity at the junction.
- 6.23 The proposed indicative junction design is shown in **Figure 6.2** below and is attached in **Appendix F**.

**Figure 6.2 Proposed Indicative Junction Design**



6.24 The modelling output results for the proposed junction design (as shown in Figure 6.1) are presented in **Table 6.9-6.10** below and full output results are included in **Appendix F**.

LinSig Results – St Mary's Crossroad Results – Base Year

**Table 6.9 St Mary's Crossroad: Proposed Junction Base Year**

Arm Cycle time 90 secs	AM Peak			PM Peak		
	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1/2+1 - Medina Way South Entry Left Ahead	30.5%	2.6	2.2	42.4%	4.9	3.1
1/3 - Medina Way South Entry Ahead	64.9%	6.9	8.0	79.1%	10.1	12.9
2/1 - Forest Road Entry Left	51.0%	3.5	18.6	38.5%	1.8	25.6
2/2 - Forest Road Entry Right	54.2%	6.0	34.4	48.7%	3.0	42.6
2/3 - Forest Road Entry Right	51.6%	5.8	33.8	64.4%	4.3	47.1
3/1 - Medina Way North Exit Ahead	36.6%	5.5	8.8	36.2%	4.8	6.0
3/2 + 3/3 - Medina Way North Exit Ahead Right	44.2%	4.1	12.8	75.1%	6.9	13.2
4/2 + 4/1 - Medina Way South Exit Left Ahead	69.7%	8.9	19.1	72.1%	13.7	23.5
4/3 + 4/4 - Medina Way South Exit Ahead Right	70.2%	23.5	27.1	81.5%	22.1	31.1
5/1 - Forest Road Exit Ahead	26.7%	3.5	7.8	54.4%	2.7	4.4
7/2 + 7/1 - Forest Road Entry Ahead	40.7%	3.9	5.5	27.1%	2.1	4.8





9/2 + 9/1 - Dodnor Lane Left	16.6%	1.3	11.2	37.1%	3.1	18.3
9/3 + 9/4 - Dodnor Lane Right Ahead	73.0%	5.6	68.4	80.0%	6.8	58.5
11/1 - Medina Way South Ahead Left	76.9%	12.1	40.6	51.7%	8.4	23.7
11/2 - Medina Way South Ahead	85.9%	15.1	48.7	82.3%	17.2	34.9
11/3 - Medina Way South Right	84.7%	16.8	39.1	26.5%	2.6	32.1
13/1+13/2 - Parkhurst Road Left Ahead Right	40.5%	2.5	23.0	39.8%	5.2	24.0
PRC	3.7%			9.3%		
Total Delay (pcu/hr)	47.01			46.66		

6.25 As shown in Table 6.8, the proposed junction design is shown to operate with great capacity in both peak periods for the base scenario.

### LinSig Results – St Mary’s Crossroad Results – Future Year

Arm Cycle time 90 secs	AM Peak			PM Peak		
	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)	Deg Sat (%)	Mean Max Queue (pcu)	Av. Delay Per PCU (s/pcu)
1/2+1 - Medina Way South Entry Left Ahead	44.80%	4.2	2.5	56.0%	6.4	3.4
1/3 - Medina Way South Entry Ahead	76.20%	9.9	11	86.1%	14.1	17.0
2/1 - Forest Road Entry Left	67.60%	5.1	36.9	47.5%	2.3	28.4
2/2 - Forest Road Entry Right	54.60%	6.8	40.6	67.3%	4.7	51.3
2/3 - Forest Road Entry Right	53.90%	7	40.1	70.5%	5.1	51.3
3/1 - Medina Way North Exit Ahead	47.20%	10.5	13.8	41.4%	5.9	6.3
3/2 + 3/3 - Medina Way North Exit Ahead Right	72.5%	7.3	18.9	91.3%	10.5	14.8
4/2 + 4/1 - Medina Way South Exit Left Ahead	89.00%	19.7	38.8	92.4%	21.7	43.6
4/3 + 4/4 - Medina Way South Exit Ahead Right	84.80%	26.1	43.6	90.2%	26.6	45.2
5/1 - Forest Road Exit Ahead	30.10%	1.7	2.7	66.2%	6.9	7.6
7/2 + 7/1 - Forest Road Entry Ahead	47.80%	5	4.9	34.1%	3.0	5.1
9/2 + 9/1 - Dodnor Lane Left	20.30%	2	13.5	42.6%	3.7	16.9
9/3 + 9/4 - Dodnor Lane Right Ahead	93.80%	11	112.9	90.2%	9.9	72.7
11/1 - Medina Way South Ahead Left	94.60%	25.7	77.7	85.0%	17.4	40.1
11/2 - Medina Way South Ahead	96.10%	27.6	84.8	92.3%	21.7	52.2
11/3 - Medina Way South Right	98.30%	36.1	84.8	29.6%	3.1	30.7
13/1+13/2 - Parkhurst Road Left Ahead Right	45.40%	4	28.2	45.2%	6.3	22.8
PRC	-9.2%			-4.1%		
Total Delay (pcu/hr)	96.13			76.10		

**Table 6.10 St Mary's Crossroad: Proposed Junction Future Year**

- 6.26 As shown in Table 6.9, the results for the proposed St Mary's crossroad indicate that in the AM and PM Peaks the proposed junction would operate with an overall negative PRC in both peaks. However, no individual arm is operating with a PRC over 100%, and the majority of arms are expected to operate significantly below capacity. Queueing is most significant on Medina Way South, with queues of up to 36 vehicles turning right in the AM peak hour. This volume of queueing can be accommodated by the highway network, and therefore it is considered that the proposed junction represents a viable solution which provides a significant capacity benefit when compared with the existing roundabout.
- 6.27 Furthermore, MOVA has not been included within the modelling, and there will be potential to refine the the junction through its use. Therefore, the results presented represent a worst-case scenario.