



# **A3095 Corridor Improvements**

## **12 Month Evaluation Report**



# 1 Introduction

## 1.1 BACKGROUND

1.1.1 In 2018, Bracknell Forest Council submitted a business case to the Thames Valley Berkshire Local Enterprise Partnership (TVBLEP) to secure funding for improvements to the A3095 corridor.

1.1.2 The primary objectives of this business case are set out below.

**Table 1.1 – Scheme objectives and measures of success**

Scheme Objective	Desired outcomes	Measurement	Acceptable Threshold
Reduce north-south journey times	Reduction in travel time	Conduct peak hour journey time surveys	10% reduction in peak hour journey times
Improve journey time reliability for all road users	Reduction in day-to-day variability of travel time	Conduct peak hour journey time surveys across a number of days	5% reduction in day-to-day travel time variability
Improve accessibility to Bracknell Town Centre and employment areas	Reduction in journey times to and from the town centre and employment areas	Conduct peak hour journey time surveys	10% reduction in peak hour journey times
Improve connectivity to the Strategic Road Network	Reduction in journey times to and from the strategic road network	Conduct peak hour journey time surveys	10% reduction in peak hour journey times
Improve road safety and reduce the risk of accidents	Reduction in accidents along the scheme corridor	Analyse road traffic collision data along scheme corridor	5% reduction in accidents along the scheme corridor

1.1.3 This corridor runs from Rackstraw crossroads, which is between Sandhurst and College Town in the south of the Borough, through central Bracknell and north towards Hawthorn Hill in the north of the Borough. It forms part of the original inner ring road developed in

the post-war years, and the main capacity constraints today are the junctions where radial and orbital routes intersect.

1.1.4 The project focussed on the stretch of the corridor between Hanworth Roundabout (A3095 Mill Lane / South Hill Road / Hanworth Road / A3095 Crowthorne Road / Great Hollands Road) and the Golden Retriever Roundabout (A3095 Crowthorne Road / New Forest Ride / A3095 Foresters Way / Nine Mile Ride) to the south of Bracknell Town Centre. It also included associated junction improvements at Hanworth Road / Ringmead and minor alterations to the A3095 Crowthorne Road corridor.

1.1.5 This particular stretch of the route between the Hanworth Roundabout and Golden Retriever intersections with the A3095 corridor had been identified for improvement, as it had become characterised by poor journey times and peak hour traffic queuing in both directions. This was particularly so on the A3095 Mill Lane arm of the Hanworth Roundabout.

1.1.6 As a result of the delays experienced on the Mill Lane approach to Hanworth Roundabout, it was observed that significant numbers of vehicles were exiting the A3095 at Wildridings Roundabout and bypassing Mill Lane on the adjacent Ringmead before re-joining the route via Great Hollands Road. This rat running was causing disruption to local residents, so any improvements had to derive a solution to this issue.

1.1.7 Solutions were therefore developed to address these issues, thus improving journey times and traffic flows, improving safety and reducing carbon emissions. They were also developed to help improve accessibility for non-car modes. The improvements were designed to create a managed corridor and gate the traffic levels through the junctions, particularly in the southbound direction.

1.1.8 This report has been prepared to evaluate the 12-month performance of the improvements to this section of the A3095 corridor in line with the requirements of TVBLEP.

## **1.2 SCHEME DETAILS**

1.2.1 The works undertaken included;

- Replacement of Golden Retriever Roundabout with a fully signalised junction. This improvement also included the introduction of MOVA to control the signals at the junction. This scheme was one of the mitigation measures required to help unlock the nearby 1,000-unit housing development at the Transport Research Laboratory.

- Capacity improvements to the existing signalised arrangement at Hanworth Roundabout, including the provision of a direct two-laned link through the roundabout to connect Mill Lane southbound with Crowthorne Road westbound and upgrading of the signal equipment and controller. This improvement also included the introduction of MOVA to control the signals at the junction.
- Improvements to the existing junction at Ringmead / Hanworth Road to a fully signalised junction that is now linked to the new signals on the Hanworth Roundabout. This improvement also included the introduction of MOVA to control the signals at the junction.

1.2.2 These improvements were part of a wider programme to improve access between the M3 and M4 via the A3095, A329 and A329M.

## 2 Scheme Build

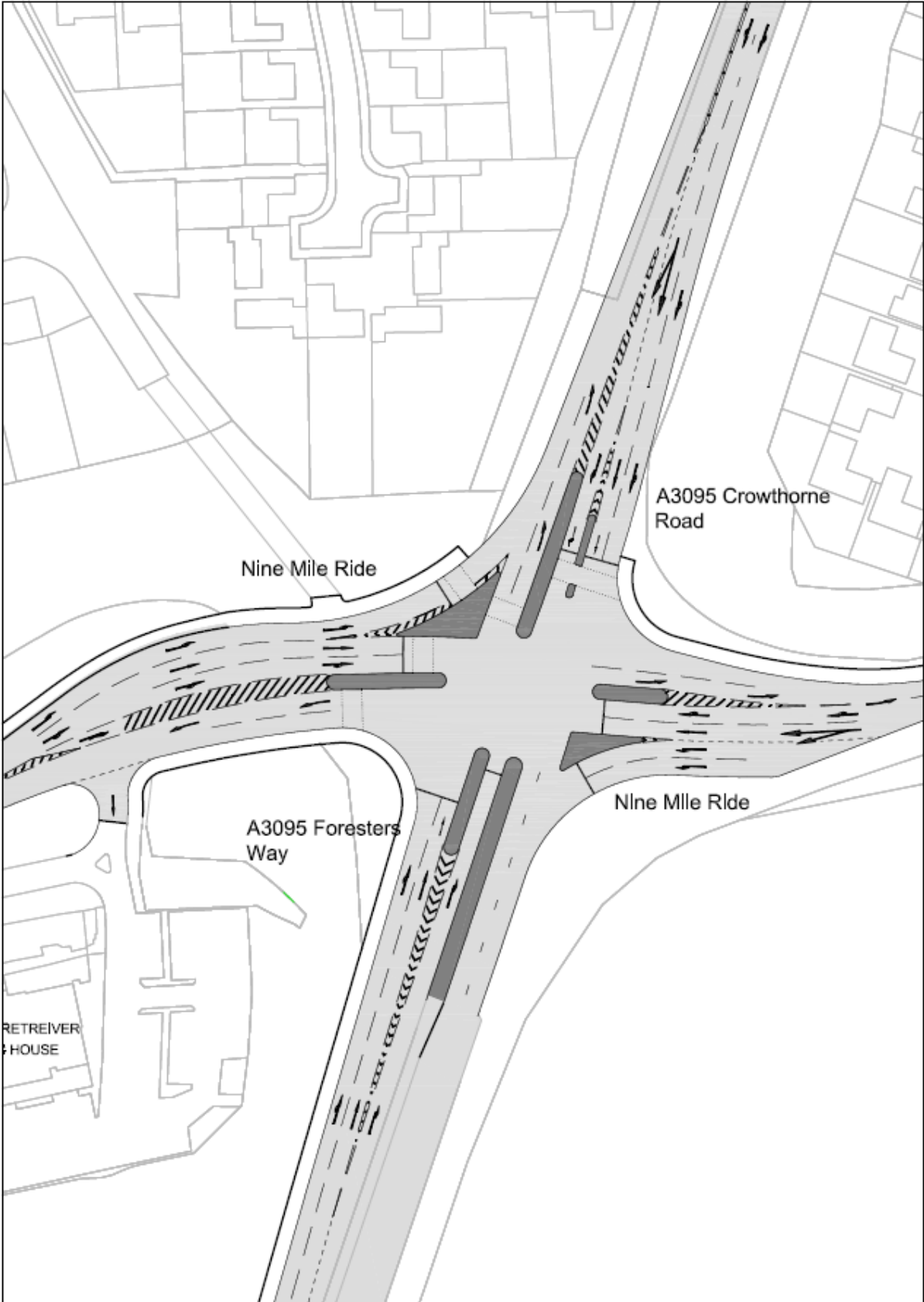
### 2.1 PROJECT PROGRAMME

- 2.1.1 Planning for the improvements commenced in 2018 with detailed design and auditing being undertaken throughout 2019.
- 2.1.2 The key delivery stages were detailed on the project programme which was modified because of the Covid restrictions. It outlined an overall 11-month construction period to complete the improvements to the corridor from June 2020 to May 2021.
- 2.1.3 The original pre-Covid programme was set to commence in late July 2020 at the start of the school holidays, however when the Covid restrictions were introduced in March 2020, this enabled earlier commencement of the works, thus benefiting from the quiet roads.
- 2.1.4 The original pre-Covid programme had been planned for work on both junctions to take place during off-peak hours, with lane closures implemented between the AM and PM peak periods. During the Covid lockdown, this was no longer a requirement due to the extremely low level of traffic. This allowed the working days to be extended, thus enabling the works to be completed approximately three months earlier than originally planned.

### 2.2 SCHEME CONSTRUCTION – GOLDEN RETRIEVER

- 2.2.1 Between June 2020 and May 2021, BFC delivered improvements to the Golden Retriever Roundabout. The works on this junction consisted of eight phases programmed to be constructed in the most time-efficient way and reducing disruption to traffic remaining on the roads to a minimum.
- 2.2.2 The programme commenced with the widening of Foresters Way to develop the dedicated right turn lane into Nine Mile Ride. This was followed closely by the removal of the central island of the roundabout and removal of the traffic islands around it. Traffic management was set out to create a temporary central island while the works continued.
- 2.2.3 Following this, construction of the signalised junction continued, with the improvements to each arm intertwined with the final phase of installing the traffic islands on them, along with the associated signal infrastructure. The traffic signals were commissioned in May 2021.

Figure 1 – Golden Retriever signalised junction



## 2.3 SCHEME CONSTRUCTION – HANWORTH ROUNDABOUT

- 2.3.1 Between June 2020 and May 2021, BFC delivered improvements to Hanworth Roundabout and the junction of Hanworth Road / Ringmead.
- 2.3.2 The construction commenced on the Crowthorne Road arm of the junction, working round the junction in a clockwise direction modifying each arm in turn to accommodate the capacity improvements designed.
- 2.3.3 Whilst the works around the periphery of the roundabout were underway, the construction of the two-lane southbound flythrough was undertaken, with the final traffic signal installation and commissioning taking place in May 2021.
- 2.3.4 While the final phases of the construction of the Hanworth Roundabout improvement were being completed, development of the new signalised junction at Hanworth Road / Ringmead with associated pedestrian / cycle crossing facilities was undertaken between March and April 2021, with commissioning taking place at the same time as the main roundabout.

**Figure 2 – Hanworth Roundabout**





## 3 Scheme Costs

### 3.1 BUDGET ESTIMATE

3.1.1 The project commenced in 2018 with an estimated cost of £8,019,000, comprising £5.519M funding from the TVBLEP and a £2.5M local contribution.

3.1.2 The projected cost breakdown over the life of the project was as follows

**Table 3.1 – Projected annual budget requirements**

Financial Year	Cost	TVBLEP	BFC
2018/2019	£200,000	£200,000	
2019/2020	£1,800,000	£1,800,000	
2020/2021	£6,019,000	£3,519,000	£2,500,000
<b>Total</b>	<b>£8,019,000</b>	<b>£5,519,000</b>	<b>£2,500,000</b>

### 3.2 PROJECT SPEND

3.2.1 Upon completion, the project came in just over £10.3M, with the overspend covered by BFC.

3.2.2 This was primarily down to the impact of Covid restrictions and a design revision that had been prompted by an alternative layout that reduced the ecological impact of the original design. By modifying the proposals for Hanworth Roundabout we were able to provide similar capacity improvements but without the need for a significant loss of trees that would have been removed with further widening of Crowthorne Road. In addition to this, the budget also increased due to extra greening works and additional measures had to be introduced to comply with social distancing regulations alongside the increased cost of materials during the construction period.

# 4 Delivered Scheme

## 4.1 HANWORTH ROUNDABOUT

Photo 1 – Hanworth Roundabout looking south before improvements (image from Google Maps)



Photo 2 – Hanworth Roundabout looking south after improvements (image from Google Maps)



Photo 3 – Hanworth Roundabout looking north before improvements (image from Google Maps)



Photo 4 – Hanworth Roundabout looking north after improvements (image from Google Maps)



## 4.2 HANWORTH ROAD / RINGMEAD SIGNALISED JUNCTION

Photo 5 – Hanworth Road / Ringmead before improvements (image from Google Maps)



Photo 6 – Hanworth Road / Ringmead after improvements (image from Google Maps)



### 4.3 GOLDEN RETRIEVER SIGNALISED JUNCTION

Photo 7 – Golden Retriever Roundabout looking south before improvements (image from Google Maps)



Photo 8 – Golden Retriever signalised junction looking south after improvements (image from Google Maps)



Photo 9 – Golden Retriever Roundabout looking west before improvements (image from Google Maps)



Photo 10 – Golden Retriever signalised junction exit looking west after improvements (image from Google Maps)



# 5 Travel Demand

## 5.1 OBSERVED TURNING COUNTS

5.1.1 Junction turning counts were undertaken in March 2019 and were repeated in September 2022 to illustrate the pre and post implementation effect of the corridor improvements. The construction of the improvements occurred during the national lockdown due to the Covid-19 pandemic, so the positive effects of the improvements were also seen against a backdrop of travel demand that had been permanently changed by the events of the preceding 14 months.

5.1.2 Surveys were undertaken at the following junctions.

- Wildridings Roundabout (2019 & 2022),
- Hanworth Roundabout (2019 & 2022),
- Hanworth Road / Ringmead priority junction (2019),
- Hanworth Road / Ringmead signalised junction (2022),
- Golden Retriever Roundabout (2019); and
- Golden Retriever signalised junction (2022).

5.1.3 All of the junctions were surveyed in the AM (07:00-10:00) and PM (16:00-19:00) peak periods with queue lengths observed at five-minute intervals across all arms.

5.1.4 As previously noted, the original layout of Hanworth Roundabout gave rise to significant levels of queuing and delay, particularly along the A3095 Mill Lane arm of the junction.

5.1.5 As a result of this, large numbers of vehicles were observed leaving the A3095 via Wildridings Roundabout and proceeding along Ringmead adjacent to Mill Lane. They would then re-join the A3095 at Hanworth Roundabout via Great Hollands Road, further compounding the delay for vehicles on Mill Lane who would have to give way to vehicles approaching from the right as per the Highway Code.

5.1.6 This created a continuous loop of delay and therefore resulted in increasing queue levels along A3095 Mill Lane.

5.1.7 To understand the impact of the improvements on the observed rat running along Ringmead, automatic number plate recognition surveys were undertaken in 2015 and again in 2022 to assess any changes in the volume of traffic undertaking the bypass from the A3095.

## 5.2 WILDRIDINGS ROUNDABOUT

5.2.1 Tables 5.1 and 5.2 below show the total number of vehicles passing through the junction during the busiest hours of the AM and PM peak periods for both 2019 and 2022.

**Table 5.1: Total vehicles entering Wildridings Roundabout: AM Peak**

AM Peak	Total Vehicles
March 2019	4222
Sept 2022	3550
<b>change from 2019</b>	<b>-15.9%</b>

**Table 5.2: Total vehicles entering Wildridings Roundabout: PM Peak**

PM Peak	Total Vehicles
March 2019	3714
Sept 2022	3446
<b>change from 2019</b>	<b>-7.2%</b>

5.2.2 This reduction in traffic is in part a reflection of the changes in travel patterns brought about by the Covid 19 pandemic as it reflects a trend seen across the borough.

5.2.3 A comparison of Annual Average Daily Traffic (AADT) recorded along this part of the corridor between 2019 and 2022 shows an approximate 12% reduction, a figure that was also recorded on the adjacent A322 corridor. The numbers at this junction clearly therefore reflect this trend.

## 5.3 HANWORTH ROUNDABOUT

5.3.1 Tables 5.3 and 5.4 below show the total number of vehicles passing through the junction during the busiest hours of the AM and PM peak periods for both 2019 and 2022.

**Table 5.3: Total vehicles entering Hanworth Roundabout: AM Peak**

AM Peak	Total Vehicles
March 2019	4523
Sept 2022	3834
<b>change from 2019</b>	<b>-15.2%</b>



**Table 5.4: Total vehicles entering Hanworth Roundabout: PM Peak**

<b>PM Peak</b>	<b>Total Vehicles</b>
March 2019	3566
Sept 2022	3621
<b>change from 2019</b>	<b>+1.5%</b>

5.3.2 This reduction in traffic in the AM peak is in part a reflection of the changes in travel patterns brought about by the Covid 19 pandemic as it is a trend seen across the borough.

5.3.3 The small increase in traffic in the PM peak reflects the reduction in rat running along the adjacent Ringmead, brought about by the improvements. These are discussed further in Section 5.6. Although the overall corridor has seen a reduction in traffic levels, this has been offset at Hanworth Roundabout by the rerouting of traffic that had previously been rat running along Ringmead to bypass queuing on Mill Lane. This has resulted in a greater throughput of traffic at the junction.

#### **5.4 HANWORTH ROAD / RINGMEAD**

5.4.1 Tables 5.5 and 5.6 below show the total number of vehicles passing through the junction during the busiest hours of the AM and PM peak periods for both 2019 and 2022.

**Table 5.5: Total vehicles entering Hanworth Road / Ringmead: AM Peak**

<b>AM Peak</b>	<b>Total Vehicles</b>
March 2019	1312
Sept 2022	1581
<b>change from 2019</b>	<b>+20.5%</b>

**Table 5.6: Total vehicles entering Hanworth Road / Ringmead: PM Peak**

<b>PM Peak</b>	<b>Total Vehicles</b>
March 2019	1533
Sept 2022	1596
<b>change from 2019</b>	<b>+4.1%</b>

5.4.2 The increase in traffic reflects the improved efficiency and control at the junction resulting in a greater throughput of traffic.

## 5.5 GOLDEN RETRIEVER

5.5.1 Tables 5.7 and 5.8 below show the total number of vehicles passing through the junction during the busiest hours of the AM and PM peak periods for both 2019 and 2022.

**Table 5.7: Total vehicles entering Golden Retriever junction: AM Peak**

AM Peak	Total Vehicles
March 2019	4036
Sept 2022	3709
<b>change from 2019</b>	<b>-8.1%</b>

**Table 5.8: Total vehicles entering Golden Retriever junction: PM Peak**

PM Peak	Total Vehicles
March 2019	3810
Sept 2022	3358
<b>change from 2019</b>	<b>-11.9%</b>

5.5.2 This reduction in traffic is in part a reflection of the changes in travel patterns brought about by the Covid 19 pandemic as it is a trend seen across the borough.

5.5.3 A comparison of AADT between 2019 and 2022 showed a 22% reduction in traffic in the vicinity of the junction along Crowthorne Road. The smaller reduction at this location shown above is due to drivers' improved ability to cross the junction in an east – west direction following the upgrade.

5.5.4 This improvement has also significantly reduced queuing levels along Nine Mile Ride heading westbound, thus reducing delay.

## 5.6 RINGMEAD RAT RUNNING ANALYSIS

5.6.1 Surveys undertaken in 2015 prior to the improvement works illustrated the scale of the issue of rat running along Ringmead to bypass the queue formed where A3095 Mill Lane joined the Hanworth Roundabout.

5.6.2 The surveys undertaken indicated that 290 out of 432 vehicles (67%) turning left into Ringmead after leaving the A3095 via Wildridings Roundabout were proceeding directly to Great Hollands Road to re-join the A3095 at Hanworth Roundabout during the PM peak period.

5.6.3 The post-implementation surveys undertaken in September 2022 showed that nine out of 154 (6%) were turning left into Ringmead and using this route to bypass A3095 Mill

Lane. This demonstrates a significant reduction in the numbers of drivers using this route as they are now far more likely to use Mill Lane because of the improvements.

5.6.4 This represents a massive improvement in both the efficiency of the Hanworth Roundabout and the quality of life for residents on Ringmead who had previously been affected by the excessive levels of rat running. The redesign of Hanworth Roundabout has effectively implemented two means of reducing the southbound delays previously seen on Mill Lane as it provides a more efficient junction, and it removes the conflicting flow of traffic that had been rat running.

# 6 Journey Times

## 6.1 INTRODUCTION

6.1.1 This section details the journey times now observed on the southern section of the A3095 corridor following the introduction of these improvements. It compares journey times from a recent survey (September 2022) with those recorded before any of these schemes were introduced.

6.1.2 The journey time routes were as follows;

- The A3095 from Broadmoor Roundabout to the Mill Lane slip roads at Ellesfield Avenue in the northbound direction.
- The A3095 from the Mill Lane slip roads at Ellesfield Avenue to Broadmoor Roundabout in the southbound direction.

6.1.3 Prior to any of the improvement schemes being added, this section of the A3095 Mill Lane corridor was characterised by lengthy queues of stationary or slow-moving traffic leading to delays, particularly southbound during the evening peak period.

6.1.4 Journey times were originally recorded in 2019 as part of that year’s refresh of the Bracknell Multi-Modal Transport Model, and a separate micro-modelling study along the same corridor. They were recorded between the hours of 07:45 – 09:15 for the AM peak period and 16:45 – 18:15 for the PM peak period.

## 6.2 AM PEAK JOURNEY TIMES

6.2.1 Table 6.1 summarises the average journey times recorded over a 90-minute period (0745 – 0915) for the AM peaks. They also illustrate the changes between 2019 and 2022.

**Table 6.1 – AM Peak Average Journey Time Comparison 2019 - 2022**

<b>AM Peak</b>	<b>Northbound</b>	<b>Southbound</b>
July 2019	9 minutes 55 seconds	5 minutes 59 seconds
Sept 2022	8 minutes 59 seconds	6 minutes 7 seconds
<b>change from 2019</b>	<b>-56 seconds</b>	<b>+8 seconds</b>

6.2.2 Table 6.1 shows the improvements to the corridor have significantly reduced the northbound journey time when compared with those that were previously recorded. The southbound journey time sees a marginal increase but is essentially unchanged as a

difference of just eight seconds is within the typical range of variation that would be seen within a standard sample.

### 6.3 PM PEAK JOURNEY TIMES

6.3.1 Table 6.2 summarises the average journey times recorded over a 90-minute period (1645 – 1815) for the PM peaks. It also illustrates the changes in journey times between 2019 and 2022.

**Table 6.2 – PM Peak Average Journey Time Comparison 2019 - 2022**

PM Peak	Northbound	Southbound
July 2019	5 minutes 38 seconds	9 minutes 48 seconds
Sept 2022	5 minutes 52 seconds	5 minutes 54 seconds
<b>change from 2019</b>	<b>+14 seconds</b>	<b>-3 minutes 54 seconds</b>

6.3.2 As with the AM peak journey times, Table 6.2 shows the improvements have significantly reduced journey times in the direction of peak demand (southbound), whilst there is again a marginal increase in the opposite (northbound) direction during the busiest part of the PM peak period. Again, this small increase falls within the typical range of variation that would be seen in a standard sample.

6.3.3 The main issues with journey times that were present prior to the introduction of the improvements have clearly been addressed.

### 6.4 JOURNEY TIME VARIABILITY

6.4.1 Tables 6.3 and 6.4 summarise the minimum and maximum journey times recorded on the routes during the AM peak surveys.

**Table 6.3 – AM Peak minimum journey times**

AM Peak	Northbound	Southbound
July 2019	4 minutes 47 seconds	5 minutes 00 seconds
Sept 2022	5 minutes 11 seconds	5 minutes 11 seconds

**Table 6.4 – AM Peak maximum journey times**

AM Peak	Northbound	Southbound
July 2019	18 minutes 39 seconds	8 minutes 32 seconds
Sept 2022	12 minutes 24 seconds	7 minutes 04 seconds

6.4.2 Tables 6.5 and 6.6 summarise the minimum and maximum journey times recorded on the routes during the PM peak surveys.

**Table 6.5 – PM Peak minimum journey times**

<b>PM Peak</b>	<b>Northbound</b>	<b>Southbound</b>
July 2019	4 minutes 58 seconds	6 minutes 09 seconds
Sept 2022	4 minutes 59 seconds	4 minutes 48 seconds

**Table 6.6 – PM Peak maximum journey times**

<b>PM Peak</b>	<b>Northbound</b>	<b>Southbound</b>
July 2019	7 minutes 33 seconds	24 minutes 59 seconds
Sept 2022	6 minutes 41 seconds	6 minutes 39 seconds

6.4.3 The above four tables illustrate a significant reduction in the variability of the journey times now that the improvements have been implemented. This has created far more consistency in journey times, thus meeting one of the objectives stated in Table 1.1.

# 7 Road Traffic Collision Analysis

## 7.1 PRE-IMPLEMENTATION

7.1.1 One of the objectives of the improvements detailed in the business case was a reduction in the level of collisions along the scheme corridor.

7.1.2 For the purposes of this analysis, the road traffic collision database held by BFC was interrogated for the area in which the improvements were implemented, with the total number of collisions shown along with a breakdown of the classifications of fatal (Fa), serious (Se) and Slight (Sl). This included;

- Hanworth Roundabout,
- The junction of Hanworth Road / Ringmead,
- Golden Retriever Roundabout / signalised junction,
- Crowthorne Road between Hanworth Roundabout and Golden Retriever.

7.1.3 During the period February 2015 – February 2020, there were 27 collisions along the scheme corridor broken down as follows:

- Hanworth Roundabout – 8 collisions (0 Fa, 0 Se, 8 Sl),
- Hanworth Road / Ringmead – 5 collisions (0 Fa, 0 Se, 5 Sl),
- Golden Retriever Roundabout – 12 collisions (0 Fa, 2 Se, 10 Sl),
- Crowthorne Road between Hanworth Roundabout and Golden Retriever Roundabout – 2 collisions (0 Fa, 0 Se, 2 Sl).

## 7.2 POST-IMPLEMENTATION

7.2.1 During the 9-month period of June 2021 – March 2022 for which information is available, there were 3 collisions along the scheme corridor broken down as follows;

- Hanworth Roundabout – 0 collisions (0 Fa, 0 Se, 0 Sl),
- Hanworth Road / Ringmead – 0 collisions (0 Fa, 0 Se, 0 Sl),
- Golden Retriever Roundabout – 3 collisions (0 Fa, 0 Se, 3 Sl),
- Crowthorne Road between Hanworth Roundabout and Golden Retriever Roundabout – 0 collisions (0 Fa, 0 Se, 0 Sl).

### **7.3 COLLISION ANALYSIS**

7.3.1 The data shown above illustrate a projected figure of 20 collisions over a comparable five-year period post implementation.

7.3.2 This equates to a projected reduction of 26% in road traffic collisions following the implementation of the scheme.



# 8 Conclusions

## 8.1 SUMMARY

- 8.1.1 The original business case for this corridor improvement set out a series of primary objectives that, if achieved, would represent good value for money in delivering all the identified benefits. This evaluation report has demonstrated how the combined delivery of the schemes has met each of these objectives.
- 8.1.2 The programme of improvements for this stretch of the A3095 corridor has delivered benefits that extend beyond any individual improvements in journey times.
- 8.1.3 For years this section of A3095 was characterised by long queues of stationary or slow-moving traffic, particularly on the southbound carriageway towards Hanworth Roundabout and beyond approaching the Golden Retriever Roundabout.
- 8.1.4 It is only upon completion of the entire programme of improvements that the potential benefits first identified in the business case have been brought to fruition.
- 8.1.5 This has been achieved using a combined approach of capacity improvements and adaptive signal technology that allows phasing to be changed and thus manage the movement of traffic along the corridor.
- 8.1.6 Below is an extract from LTP3 that sets out the challenges presented and the identified benefits that were being sought:

**Table 8.1: Transport Challenges in LTP3 and Benefits of A3095 Corridor Improvements**

TRANSPORT CHALLENGES IDENTIFIED	DO THE IMPROVEMENTS HELP RESOLVE THIS?	DESCRIPTION
To reduce delays associated with traffic congestion and improve reliability of journey times	✓	The A3095 corridor improvements will reduce congestion and delay
To maintain and improve, where feasible, the local transport network	✓	The A3095 corridor improvements will contribute to an overall improvement in the local transport network
To reduce greenhouse gas emissions from transport	✓	The A3095 corridor improvements will reduce congestion and the level of greenhouse gas emissions

TRANSPORT CHALLENGES IDENTIFIED	DO THE IMPROVEMENTS HELP RESOLVE THIS?	DESCRIPTION
To encourage and promote accessibility by sustainable modes of transport	✓	Improvements to walking and cycling infrastructure will improve accessibility and encourage more people to travel sustainably
To protect and enhance the quality of natural resources including water, air quality and the natural environment	✓	The A3095 corridor improvements will reduce congestion and the level of greenhouse gas emissions, resulting in improved air quality
To reduce casualties and improve safety on the local transport network	✓	A number of new pedestrian crossings and cycle lanes will be installed, providing improved facilities for vulnerable road users and helping to reduce road casualties
To secure necessary transport infrastructure and services to support development	✓	The improvements are required to provide vital vehicular access and pedestrian / cycle access into and out of the Borough

8.1.7 Taking these challenges in turn, the comparison in impacts between 2019 and 2022 demonstrates that this has been a success:

- *Reduce delays associated with traffic congestion* – in 2019 it took on average almost 10 minutes to travel southbound along this stretch during the evening peak. Now the average is under six minutes.
- *To maintain and improve, where feasible, the local transport network* – introducing MOVA-controlled signals along any route will allow peaks in traffic delay to be smoothed out quickly as the timings adjust to accommodate the increased demand. In addition, the significant improvement in southbound journey times approaching Hanworth Roundabout from Mill Lane has resulted in far fewer rat run journeys being observed along Ringmead to Great Hollands Road. This ensures that this part of the local network retains its intended purpose of being a residential feeder route.
- *To reduce greenhouse gas emissions from transport* – whilst the full transition towards electric vehicles still has some way to go, any initiative that reduces queuing and thus idling engines will be helping to achieve this aim. The changes in queue lengths, particularly on A3095 Mill Lane southbound support this.
- *To encourage and promote accessibility by sustainable modes of transport* – The improved junctions at Golden Retriever and Hanworth Road / Ringmead

now incorporate dedicated pedestrian and cycle crossing phases. This is particularly effective in breaking down the barrier that the A3095 presents to north-south and east-west movements by non-motorised modes and linking the residential areas of Bracknell to other areas via the established cycle routes around the borough, particularly Crowthorne.

- *To protect and enhance the quality of natural resources including water, air quality and the natural environment* – as stated above, the removal of long queues of traffic helps to reduce the levels of harmful exhaust fumes.
- *To reduce casualties and improve safety on the local transport network* – the introduction of new or upgraded formal pedestrian and cycle crossing points at the signal junctions has provided a safer environment for these modes to cross and has improved access to the wider pedestrian / cycle network. In addition, the removal of the roundabout at Golden Retriever has significantly reduced the potential for road traffic collisions as all conflicting movements are now controlled by separate signal stages. Initial analysis of collision data suggests there will be a 26% reduction in collisions along the corridor over a five year period.
- *To secure necessary transport infrastructure and services to support development* – the A3095 is a major arterial route in the Borough that will continue to serve existing developments as well as those committed through the planning process. These improvements help to maintain that status and thus deter traffic demand from switching to inappropriate routes.

8.1.8 The other key change to emerge from the comparison of 2019 and 2022 is the overall fall in traffic volumes along the corridor. This is mirroring the patterns being seen across the Borough in which travel behaviour is beginning to settle into a less car-dependent post-Covid norm in which peak hour demand has been reduced.

8.1.9 Notwithstanding this, there have been some increases in throughput at the improved junctions, most notably at Hanworth Road / Ringmead and Hanworth Roundabout where the rat running traffic has returned to Mill Lane due to the more attractive southbound route now offered in the PM peak.

## **8.2 PERFORMANCE AGAINST SCHEME OBJECTIVES**

8.2.1 Table 8.2 illustrates the scheme's status against the initial identified objectives set out in the business case.

**Table 8.2 – Scheme Performance against objectives**

Scheme Objective	Desired outcomes	Acceptable Threshold	Objective Achieved?
Reduce north-south journey times	Reduction in journey time	10% reduction in peak hour journey times	✓
Improve journey time reliability for all road users	Improvement in journey time reliability	5% reduction in day-to-day travel time variability	✓
Improve accessibility to Bracknell Town Centre and employment areas	Reduction in journey times	10% reduction in peak hour journey times	✓
Improve connectivity to the Strategic Road Network	Reduction in journey times	10% reduction in peak hour journey times	✓
Improve road safety and reduce the risk of accidents	Reduction in accidents along the scheme corridor	5% reduction in accidents along the scheme	✓

### 8.3 LESSONS LEARNED

8.3.1 Lessons to be taken forward following the conclusion of this project include ensuring that the right solution is delivered factoring in the impacts of the improvements, not only in terms of highway capacity but also ecological impacts etc.

8.3.2 For example, it was possible to deliver this project without dualling between the junctions. This resulted in a far lower ecological impact along Crowthorne Road, whilst still achieving the desired improvements in capacity.