



Wokingham Borough Council

ARBORFIELD CROSS RELIEF ROAD

Monitoring and Evaluation One Year After
Opening “lite” Report



Wokingham Borough Council

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Report

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Report

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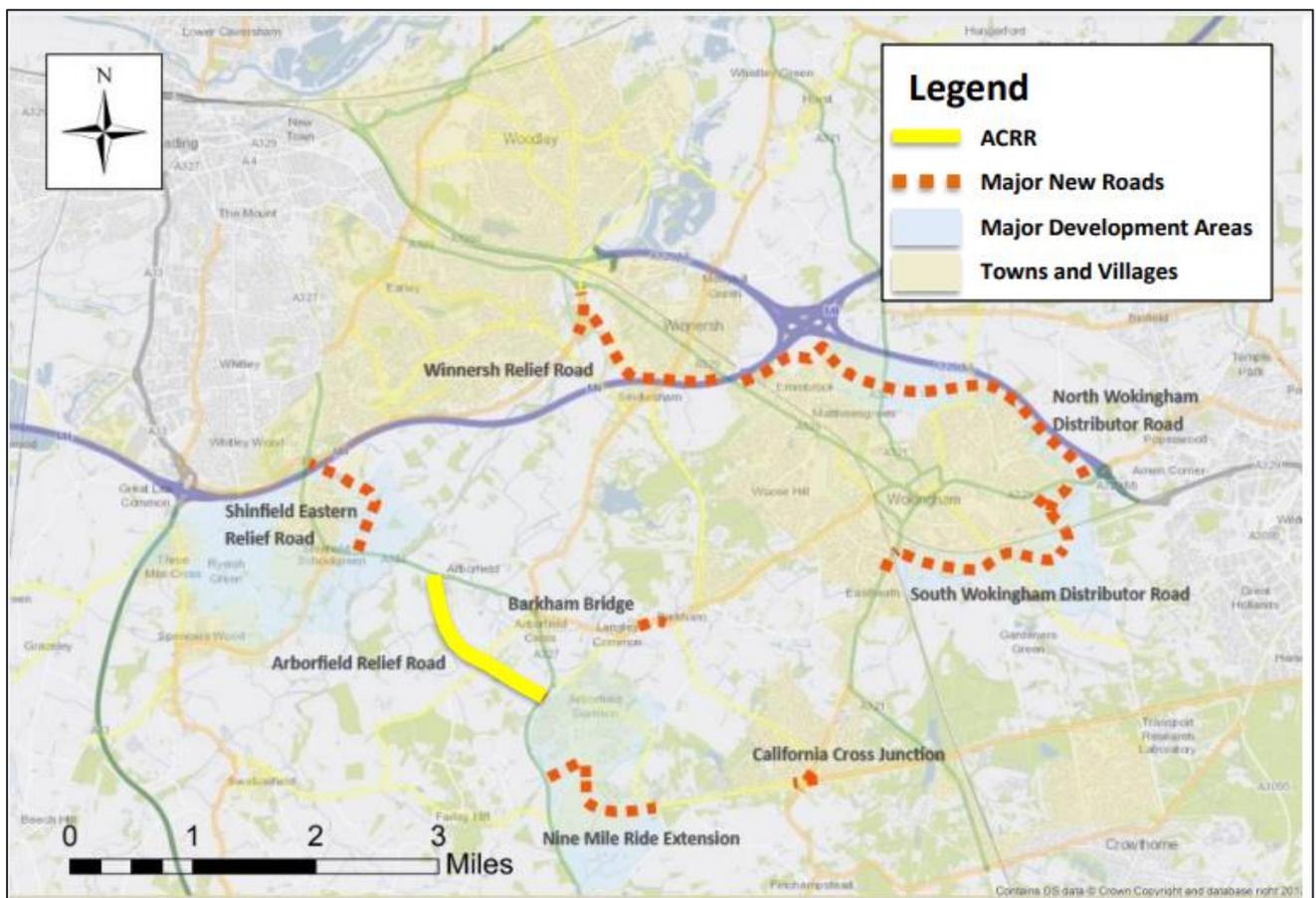
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RISK REGISTER

1. INTRODUCTION

- 1.1.1. The Arborfield Cross Relief Road (ACRR) is a new road built to seek to mitigate the impact on the A327 from planned developments, particularly the Arborfield Strategic Development Location (SDL). The requirement for a relief road was identified in the Council's Core Strategy, Supplementary Planning Documents (SPD) and subsequent planning permissions.
- 1.1.2. The route runs to the west of Arborfield Cross, bisecting Swallowfield Road, and linking A327 Reading Road in the north and A327 Eversley Road in the southeast as shown in Figure 1-1. The road is a 2.3km long single carriageway, 7.3m wide road within open countryside with shared-use pathways. There are two new roundabout junctions that connect the new road to the existing network along the A327, a new staggered priority junction at Swallowfield Road and a new shared-use (non-motorised user) green bridge where Arborfield footpath 17 crosses the new road.

Figure 1-1 - Location of ACRR



MONITORING AND EVALUATION PLAN

- 1.1.3. As part of the ACRR Full Business Case (FBC), a Monitoring and Evaluation Plan (MEP) was produced in accordance with the Department of Transport (DfT) guidelines as set out in the Monitoring and Evaluation Framework for Local Authority Major Schemes (September 2012) and the Monitoring and Evaluation Strategy (March 2013).
- 1.1.4. The DfT guidance identifies three tiers of monitoring and evaluation, namely:
- Standard Monitoring, where schemes monitor and report on a standard set of measures;
 - Enhanced Monitoring, for schemes costing more than £50m or which are anticipated to have a significant impact on particular indicators; and
 - Fuller Evaluation, for a DfT-specified selection of schemes.
- 1.1.5. The ACRR is a project with an overall cost less than £50m and has therefore not been specified for fuller evaluation. As such it falls into the Standard Monitoring tier.
- 1.1.6. The MEP outlined a monitoring and evaluation framework to demonstrate that the funding obtained has provided value for money and that any lessons learnt are captured as evidence to inform future decision making.
- 1.1.7. The following measures were identified to be used to assess the scheme in accordance with the DfT Standard monitoring measures outlined below:
- Scheme build;
 - Delivered scheme;
 - Costs;
 - Scheme objectives;
 - Travel demand;
 - Travel times and reliability of travel times;
 - Impacts on the economy; and
 - Carbon Impacts
- 1.1.8. Following the availability of the one-year post scheme data collection findings, which will correspond with the timings of (same months as) the collected baseline data, the full ACRR report will be submitted in January 2023. In the interim this report presents a 'lite' document, in which only the following are assessed.
- Scheme build;
 - Delivered scheme;
 - Costs;
 - Scheme objectives; and
 - Impacts on the economy.

1.2. SCOPE

- 1.2.1. The scope of this 'lite' report is to outline the metrics and measures used to assess the delivery of the scheme, and to determine whether the scheme has been successful in achieving the related aims and objectives set and agreed at the start of the scheme development.
- 1.2.2. This report builds on the baseline report which was issued in September 2020. The ACRR was opened in November 2020. This is an interim assessment with a focus on scheme delivery and

construction. In January 2023 a full one year after opening report will be provided including the assessment of the performance of the scheme. This delay is due to one year after opening surveys needing to take place at the same time of year after the baseline surveys, as requested by the DfT. The baseline link count surveys were undertaken in February/March, manual classified junction turning counts in October and non-motorised user counts in September.

- 1.2.3. On completion of the five year after opening data collection exercise, a further full assessment of the delivery and performance of the scheme will be made.

1.3. SCHEME OBJECTIVES

- 1.3.1. The primary objective of the ACRR scheme is to address the constraints in the Arborfield area by providing additional capacity on the road network.
- 1.3.2. In order to achieve the primary aim of the scheme, and in response to the problems and opportunities identified, clear objectives have been established for the scheme. A distinction has been drawn between the desired high level or strategic objectives and the scheme specific objectives.
- 1.3.3. The strategic objectives for the ACRR are set out below:
- Objective L1-01: Unlock the delivery of planned development in Wokingham as set out in the Wokingham Borough Council (WBC) Core Strategy;
 - Objective L1-02: Minimise any adverse impact of future developments by managing growth in traffic congestion and transport related emissions and noise; and
 - Objective L1-03: Improve health outcomes by encouraging and enabling physical activity.
- 1.3.4. The scheme specific objectives for the ACRR, which are in addition to the strategic objectives, are set out below:
- Objective L2-01: Reduce the growth in traffic flows at the Arborfield Cross roundabout;
 - Objective L2-02: Reduce growth in transport related emissions and noise in the Arborfield area;
 - Objective L2-03: Support access to 2,700 dwellings at the Arborfield Garrison, thereby helping to support delivery of WBC's Core Strategy planned development; and
 - Objective L2-04: Encourage use of active modes for journeys within the Arborfield area.
- 1.3.5. The initial issue, scheme inputs and outputs are outlined in the scheme's logic map presented in Appendix A, as well as the short-, medium- and long-term outcomes which link back to the ACRR's objectives.

1.4. MEP DATA REQUIREMENTS

- 1.4.1. In assessing the delivery and effectiveness of the scheme, a number of metrics were identified through which the delivery and performance of the scheme could be assessed. Further information on the Monitoring and Evaluation process can be found in the Monitoring and Evaluation Plan.
- 1.4.2. Based on the data requirements, a data collection exercise was undertaken, in accordance with the methodology outlined in the MEP. A summary of the data collected (or to be collected) to monitor and evaluate the ACRR scheme is defined in the table included in Appendix B, along with the rationale for its inclusion; the proposed data collection methods; and the proposed frequency of data collection.



1.5. REPORT STRUCTURE

1.5.1. Following this introduction, the structure of this report includes the following:

- Chapter 2 - Scheme Delivery
- Chapter 3 - Economic Impact
- Chapter 4 - Conclusion

2. SCHEME DELIVERY

2.1. INTRODUCTION

- 2.1.1. This section outlines the assessment of the constructed scheme in terms of cost, programme and risk. It also compares whether the completed scheme differs from the scheme as originally designed.
- 2.1.2. The baseline assessment is based on the detail provided in the Full Business Case (FBC), with the one year after opening assessment compared against these forecasts.

2.2. DELIVERED SCHEME

- 2.2.1. As outlined in the FBC, the proposed scheme was to provide a new section of highway linking the A327 Reading Road in the north and the A327 Eversley Road in the south-east. The key features of the ACRR scheme included:
- A new single carriageway approximately 2.3km in length and approximately 7.3m wide with a 50mph speed limit;
 - New junctions to connect the proposed alignment into the existing road network;
 - A roundabout at the junction with Reading Road in the north;
 - A staggered priority junction where the alignment crosses Swallowfield Road;
 - A new three-arm roundabout at the junction with Eversley Road in the south;
 - A shared use pathway (approximately 3m wide) alongside the eastern side of the proposed carriageway;
 - A green bridge where the proposed alignment bisects an existing footpath approximately 350m to the south-east of the junction with Swallowfield Road;
 - Urban realm improvements planned for Arborfield village.
- 2.2.2. Of the above, all have been delivered one year after opening apart from the urban realm improvements planned for Arborfield village. The parish councillors and residents have been consulted on the improvements in the village and the works are due to begin in June 2022.
- 2.2.3. Construction included fencing, vehicle restraint barriers, kerbing, elements of surface water drainage (including swales), lighting, drainage, two attenuation ponds, two ecological ponds, road signs, road markings, fencing and street furniture (being removed, relocated or replaced) along with resurfacing the existing road tying in with the scheme. The new road crosses two existing public right of ways, ARBO 17 and ARBO 22, with a new green bridge where existing Public Right of Way ARBO 17 crosses it.
- 2.2.4. A contextual drawing of the proposed scheme is included in Figure 2-1.

Figure 2-2 - ACRR built scheme, (Source: Google Maps).



2.3. SCHEME COST

- 2.3.1. In the FBC the capital cost of the scheme, at 2019 Quarter 1 prices, was established at £28.299m of which £24m was obtained from the DfT with the remainder being funded by WBC.
- 2.3.2. Table 2-1 gives the breakdown of the scheme cost estimate for delivery of ACRR and spend profile from the business case. The total forecast scheme cost includes all scheme development cost, all land costs, accurate Part 1 and other claim estimates, core contract team costs, survey costs, enabling works and construction costs including risks.

Table 2-1 - Summary of estimated business case scheme costs

Year	Land costs	Land compensation costs	Client project management costs	Stage 1 pre-construction costs	Utility diversion costs	Stage 2 construction costs	Total
Pre 2016/17			£627,649				£627,649
2016/17	£12,708		£509,666				£522,374
2017/18	£7,262		£769,066				£776,328
2018/19	£1,880,369		£538,921	£2,570,143			£4,989,433
2019/20	£27,600	£800,000	£220,000	£1,713,494	£121,773	£10,406,203	£13,289,070
2020/21	£13,800		£170,000		£386,572	£4,653,301	£5,223,673
2021/22		£257,143	£10,000			£200,000	£467,143
2022/23		£257,143	£10,000			£300,000	£567,143
2023/24		£257,143	£10,000			£500,000	£767,143
2024/25		£257,143	£10,000				£267,143
2025/26		£257,143	£10,000				£267,143
2026/27		£257,143	£10,000				£267,143
2027/28		£257,143	£10,000				£267,143
Total	£1,941,739	£2,600,000	£2,905,302	£4,283,637	£508,345	£16,059,504	£28,298,527

2.3.3. Table 2-2 shows the actual costs spent on this project. Note that these are the interim costs due to the ACRR project still being live and incurring costs one year after opening. This is due to the contract covering multiple schemes, active work delivering the village improvements, and post construction land processes still being completed. The original budget allowance for Land Compensation Costs has been forecast as these will require management for up to 7 years post construction. Additionally, a Stage 4 safety audit report has been commissioned and this could suggest additional works being necessary. However, this does not have budget provision in the current forecast.

Table 2-2 – Post scheme costs up to February 2022 and forecast to project completion (estimate forecast shown in blue)

Year	Land costs	Land compensation costs	Client project management costs	Stage 1 pre-construction costs	Utility diversion costs	Stage 2 construction costs	Total
Pre 2016/17			£627,649				£627,649
2016/17	£12,708		£509,666				£522,374
2017/18	£200,096		£769,066				£969,163
2018/19	£1,880,369		£287,833	£1,240,199	£209,788		£3,618,189
2019/20	£104,642		£283,291	£1,548,352	£52,066	£7,721,618	£9,709,970
2020/21	£137,963		£262,774	£790,516		£8,015,990	£9,207,243
2021/22	£100,000		£32,889	£11,780	-£162,256	£450,000	£423,412
2022/23	£100,000	£257,143	£610,000		£75,000	£640,000	£1,682,143
2023/24		£257,143	£10,000				£267,143
2024/25		£257,143	£10,000				£267,143
2025/26		£257,143	£10,000				£267,143
2026/27		£257,143	£10,000				£267,143
2027/28		£514,286	£10,000				£524,286
Total	£2,535,780	£1,800,000	£3,433,167	£3,590,847	£174,597	£16,827,608	£28,362,000

2.3.4. It was proposed that one year after scheme opening based on the cost estimates, profiling and final costs, an assessment on the financial performance in terms of scheme delivery could be completed. However, this will be confirmed in the five year after opening report since the one-year after opening costs still contain some estimates (in blue above).

2.3.5. There is a negative value (in red above) in Utility Diversion costs in 2021/22, because during construction a set of SSE ducts were installed for the entire length of the scheme. SSE have paid for this and the credit is merely the income received for that work. The cost to deliver it is included in the construction costs so it is offset, and not a saving in reality.

2.3.6. Based on these estimates, there will be an overspend of £63,473, although this is only 0.22% of the estimated total cost. Since it is not a substantial change in cost there will not be an updated Present Value of Cost. The overspend was due to issues with drainage and SGN (gas company) works delaying the project as outlined below in sections 2.4.3 and 2.4.4. One of the project targets was to build the scheme to budget and despite there being an overspend, 0.22% is considered to be very minor given the scale of costs.

2.4. CONSTRUCTION PROGRAMME

2.4.1. The FBC outlines the overall programme key milestones in delivering the ACRR scheme, these are then compared to the actual dates the programme occurred, these are shown in Table 2-3.

2.4.2. At high-level, most of the key milestones were met with the detailed design being completed ahead of schedule and the completion of the works falling behind schedule.

Table 2-3 - Programme key milestones

Key Milestones	Anticipated Programme Date	Actual Programme Date & Comment
Planning permission granted	10th January 2018	Work on the planning application for the ACRR began in late 2015. The Planning Application was submitted and validated under planning reference (172209). Full Planning Consent was granted for the Relief Road at Planning Committee on 10 January 2018.
Detailed design commences (PBA)	January 2018	January 2018
Detailed design completion	Winter 2019	Spring 2019
Full Business Case submission	31 May 2019	Submitted to DfT on 31st May 2019
Approval sought from DfT/LTB	June-July 2019	24th July 2019 – Robert Fox of DfT confirmed that the Business Case was “with minister”.
Works start	25 June 2019	In Winter 2018/Early 2019 site preparation and utilities re-routing were undertaken. Project mobilisation was undertaken in June 2019 for works to commence on site on the 25 June 2019.
Completion works	June 2020	The ACRR opened in November 2020. However, the urban realm improvements in Arborfield village only start construction in June 2022.

2.4.3. A key issue for the project was that drainage was not developed properly at the design stage. At a number of locations once on-site, issues with drainage were understood further and had to be

adapted from the initial plans. This included a re-design of the piping at the northern roundabout. There was a new outfall needed at the southern roundabout which became an improvement and can be tied into for the future works in the area. Additionally, the topography was not properly understood at points where the road ran in a cutting and a further drainage channel was not planned for. However, in adding this there were improvements for the Farley Hill fields drainage and alongside Greensward Lane. Likewise, there were some springs between the green bridge and Duck's nest farm which were unknown until the digging down for the green bridge was underway.

- 2.4.4. The SGN gas company works to lay a gas pipe delayed the project where they did not perform to their programme. Unfortunately, these had to be finished before the project could proceed in order for the road not to be dug up twice.
- 2.4.5. Additionally, more minor issues included altering a badger tunnel, additional lodge visibility planting to help screen residences; and vandalism to the green bridge.
- 2.4.6. A key win for the project was the geology upon which the ACRR was built. In fact, a prior (rejected) application was for a quarry at the site. A number of materials were excavated but then used for the base of the site. There were recycled type 1 materials which were used to build up areas which lay below the water board, and other areas where virgin stone (type 1) could be directly used. This meant that while some cost was associated with excavation, there was a net gain where materials did not need to be imported.
- 2.4.7. As a result of a new, slightly different way of laying the area of the roundabout between the kerb and the lining on the ACRR roundabouts, a new standard detail has been implemented in Wokingham based upon these.
- 2.4.8. Overall, there was good governance of the project, and it was managed properly. There were also running value engineering meetings which helped the project have the best value for money and would have saved approximately £0.25 million. There was good liaison with the neighbours and there have been no noise claims.

2.5. RISK

- 2.5.1. The final version of the Risk Register is found in Appendix E which shows the original project risks and all of the Early Warnings that were raised post-Contract. The Register shows both the original risk score and the mitigated score, as well as the original risk values and final costs associated with each risk.

3. ECONOMIC IMPACT

3.1. INTRODUCTION

- 3.1.1. A means of assessing the impact of the scheme on the above outcomes and objectives is by monitoring the delivery of employment and residential property in the local area. An increase in the number of dwellings and jobs in the study area will have the resultant impact of supporting the local economy.
- 3.1.2. The relief road is intended to minimise the impact of traffic growth on the villages of Arborfield and Arborfield Cross and the surrounding rural lanes. A sustainable new village with about 3,500 new homes is being built on the former Arborfield Garrison site. Shinfield Parish is also seeing significant development, with about 3,000 new homes being built in extensions to Shinfield Village, Three Mile Cross and Spencers Wood.
- 3.1.3. The Arborfield Garrison site has permission to build 800 of 3500 dwellings without the ACRR scheme in place, meaning the 2,700 dwellings are dependent on the ACRR scheme being built.
- 3.1.4. The Monitoring & Evaluation one year / five year after reports, will include the number of planning permissions and dwellings that have been built out (completions) within the Arborfield Garrison site following the completion of the scheme, to understand how the road scheme contributed to the delivery of the houses at the site.
- 3.1.5. WBC commits to carry out an evaluation of the housing numbers delivered directly as a result of the scheme. This evaluation includes:
- The number of houses delivered.
 - The planned housing build-out trajectory.
 - The reasons for why planning permission has/hasn't been applied for/granted.
 - The reasons why house completions have / haven't occurred.
 - Any related lessons learned.
- 3.1.6. The findings of the evaluation and questionnaire will be reported in the one year and five year after scheme opening reports

3.2. ONE YEAR AFTER OPENING

- 3.2.1. Firstly, the housing building rates will be discussed. The completion data is available for 2020/2021. Only housing data from large developments of 10+ housing sites was available, along with the Strategic Development sites. The house building rates for those in relation to the ACRR are presented in Figure 3-1.
- 3.2.2. The ACRR opened in November 2020, Figure 3-1 shows that in the 2020/2021 period, the total number of houses constructed (107) and under construction (212) fall 29 short of the total permitted house building rates (348). This is still 92% of the total, with only 8% not started.
- 3.2.3. It is likely that housing building rates were not as prevalent during 2020 and 2021 due to the COVID-19 pandemic, although these are still high compared to other years in the Figure 3-1.
- 3.2.4. Additionally, Brexit created uncertainty in the economy and led to issues with the labour market.

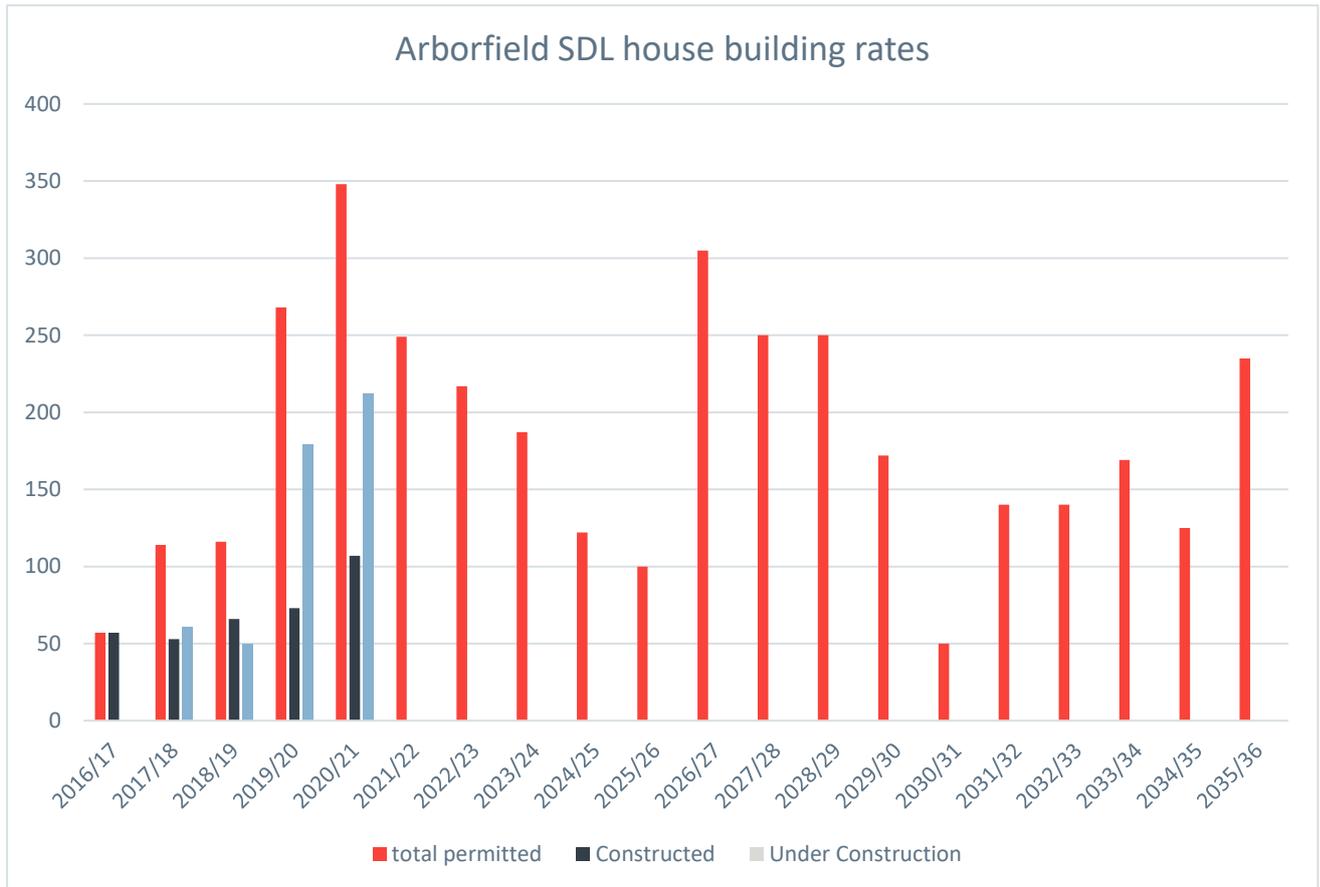


Figure 3-1 - Housing building rate in Arborfield SDL (Arborfield Garrison & Hogwood Farm)

- 3.2.5. When looking at the house building rates for the area cumulatively in Figure 3-2, only 356 dwellings were constructed by 2020/21 when the ACRR opened, this is well below the 800 dwellings which were given permission without the scheme in place (although this was guidance rather than a trigger – more on this below). Although another 502 dwellings were under construction at the time and 45 dwellings not started, giving a total of 903 houses permitted. By 2035/36, the final year of available data, there are a total of 3,614 dwellings permitted.
- 3.2.6. Whilst 800 new dwellings in Arborfield SDL was deemed the point where the ACRR was needed as mitigation to support growth, it was not a formal trigger. Feedback from the WBC planning team highlighted that not having a formal trigger in the SDL section 106 planning permissions (which would have prevented the developers going above a certain number until the ACRR was complete) has been helpful in giving all parties, developers and WBC, more flexibility.

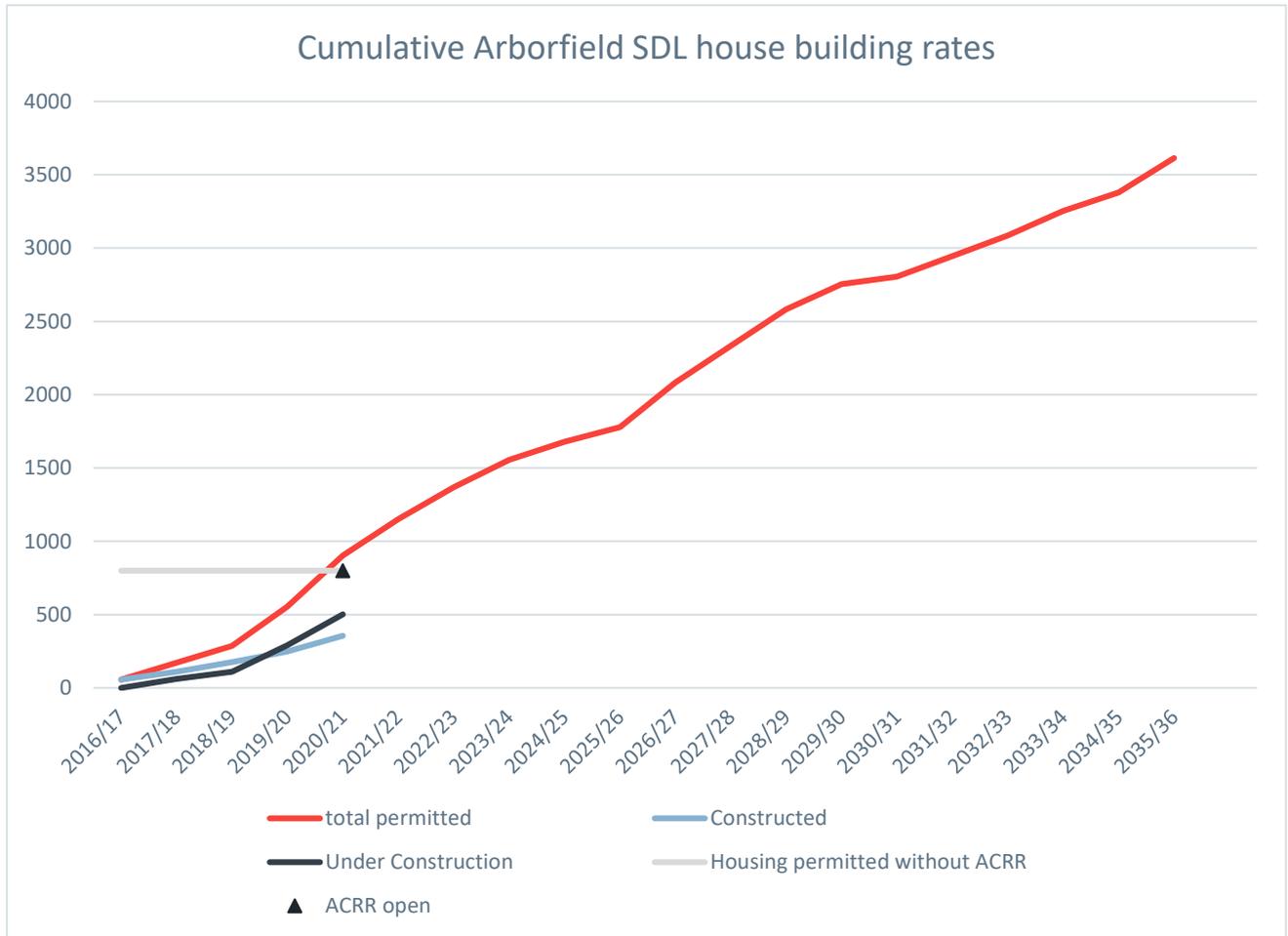


Figure 3-2 - Cumulative house building rate in Arborfield SDL (Arborfield Garrison & Hogwood Farm)

- 3.2.7. Speaking more generally, development has happened at a steady pace since outline planning permissions were granted for the SDL (Arborfield Garrison in 2015, Hogwood Farm in 2017). The SDL is very popular place and is attractive to prospective purchasers/occupiers. Part of that has to do with the good transport links to Reading and the M4 corridor, which are now improved as a result of the ACRR (and the Shinfield Eastern Relief Road).
- 3.2.8. Across the Arborfield SDL (Arborfield Garrison and Hogwood Farm) there are now 1,200 completions (as of April 2022) which is a healthy rate of development. Two new schools (one secondary, one primary) have also opened within the SDL. Reserved Matters approvals have been granted across iterative phases / parcels at a steady rate since 2015. A variety of developers have now taken on parcels – not only Crest Nicholson, but also Redrow Homes, Bloor Homes, Millgate Homes, Taylor Wimpey and Westbuild Homes. Sales have been steady, including through the pandemic, and the development commands a price premium. At Hogwood Farm CALA Homes and Barratt Homes operate, with potentially others in the future too. The rate of development at Hogwood Farm is likely to ramp up in the coming years due to the completion of the Nine Mile Ride Extension.

- 3.2.9. All of this demonstrates sustained commercial confidence in the SDL and the infrastructure that supports it (and that will come forward to further support it in future) – developers know that new homes in this area sell well.
- 3.2.10. In terms of employment related development at Arborfield Garrison there has been little employment development. There is a new Co-op convenience store at Bramshill Close which falls within the Arborfield SDL boundary and opened during 2021. It has a total floor space of 370sqm, with a sales area of 241sqm and is therefore able to open 7 days a week. Unfortunately, there is no information on the number of jobs generated.
- 3.2.11. There will hopefully be some employment related development in the future at an extension to the Hogwood industrial estate. The planning permissions for the main SDL development (Arborfield Garrison and Hogwood Farm) both include a significant amount of proposed employment floorspace, however none of this has come forward yet. Crest Nicholson will shortly be consulting the public on proposals for a district centre which will include a medium size supermarket, some retail units and a new pub. There will also be a community centre building that contains a library, a nursery and potentially also some office space units / desks for small businesses or individuals to rent. In terms of delivery, at the earliest it will be 2-3 years. It is hoped that the five year after opening report will have more information on this.
- 3.2.12. However, there have been two developments off the Shinfield Eastern Relief Road on the A327 northwest of the ACRR, approximately a mile from the ACRR. Firstly, 15,628sqm for a research and storage facility with 48 full time employees. Secondly, around 85,000sqm for film stages, workshops and office space to support filming activities. This has 1,500 full time posts generated by the studio and associated functions; 1,463 indirect positions; a further 1,399 direct and 1,355 indirect positions were generated during the construction phase.
- 3.2.13. In terms of construction jobs, at its peak the ACRR will have employed approximately 75 people at approximately month 3 to month 12, with approximately 20 employees otherwise.

3.3. FIVE YEARS AFTER OPENING

This section will be completed following the completion of the data collection exercise five years after opening.

4. CONCLUSION

- 4.1.1. This report presents the outcomes of the 'lite' monitoring and evaluation undertaken as part of the ACRR scheme. The process for monitoring and evaluation was outlined in the Monitoring and Evaluation Plan, in accordance with DfT guidelines.
- 4.1.2. As part of this process, data collection and analysis were undertaken preceding the construction of the scheme to form the baseline conditions from which any subsequent analysis could be completed.
- 4.1.3. Assessment following the completion of the scheme has been undertaken for the one year after opening for the scheme delivery and impact on the economy in this "lite" report.
- 4.1.4. The final one year after report will be produced and issued in January 2023 once traffic data has been collected in the same months of the year as the before data.
- 4.1.5. Five years after opening (Year 5) reporting is estimated to be in 2026.

Appendix A

LOGIC MAP





Appendix B

DATA REQUIREMENTS TABLE



Appendix C

DESIGN REGISTER





Appendix D

AS BUILT DRAWINGS



Appendix E

RISK REGISTER





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