



Residential Development, Cudworth Parkway, Cudworth Transport Assessment

May 2026

Project number 2466

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1.0 Introduction

- 1.1 Paragon Highways have been appointed to prepare this Transport Assessment relating to a proposed residential development on land off the A628 Cudworth Parkway, Cudworth in the district of Barnsley. Figure 1 shows the site location in relation to the local highway network.

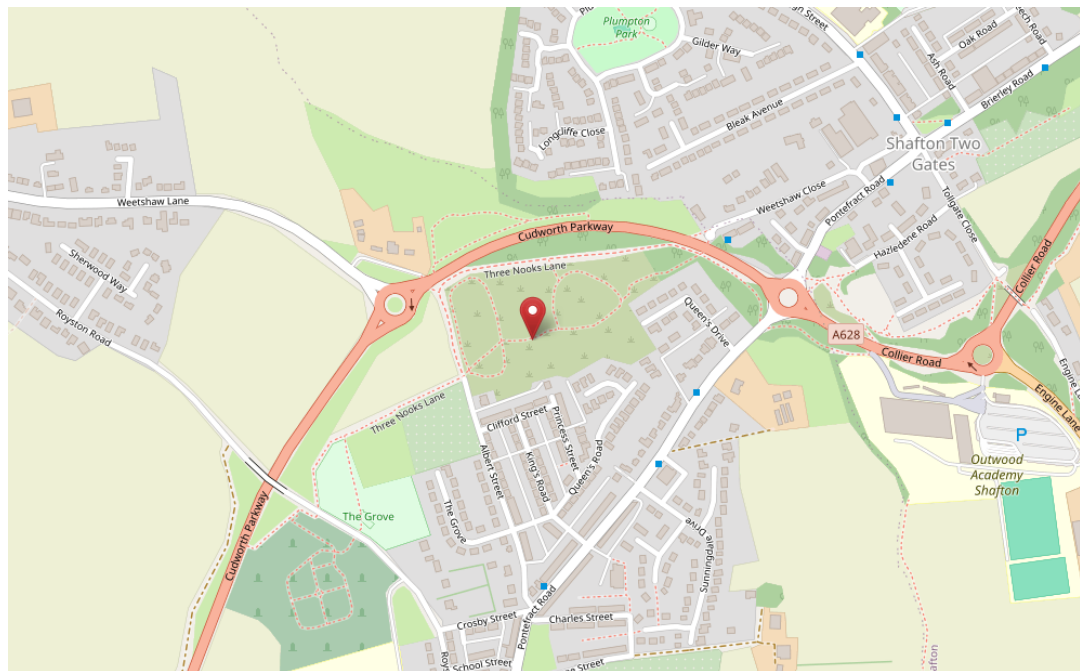


Figure 1 Site location

- 1.2 The proposals are to develop the site for residential use, providing approximately 144 new dwellings comprising a mix of detached, semi-detached, and terraced properties. The dwellings will offer a range of 2, 3, and 4 bedrooms and will be served by a typical road hierarchy accessed from the existing roundabout at the A628 Cudworth Parkway/Weetshaw Lane junction.
- 1.3 This Transport Assessment follows a scoping note that has been forwarded to Barnsley Council (Scoping Note July 2025) that provided information on trip rates, likely traffic growth, committed development and traffic distribution. Unfortunately, the Council are unable to comment on the information provided within the Scoping Note.

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- 1.4 This Transport Assessment considers the site access and traffic impact associated with the proposed development and considers the road safety record and the impact on the local highway network. This assessment demonstrates that the proposals should be acceptable for planning approval purposes.

2.0 Existing Situation

Site Description

- 2.1 The site is located towards the northern border of Cudworth and the southern border of Shafton, approximately 1.5km to the village centre of Cudworth and 1.0km to the village centre of Shafton. The site has been allocated for housing as part of Barnsley's Local Plan (HS36).
- 2.2 The application site is a large open area of greenfield land, bounded by Cudworth Parkway A628 to the north and west, with residential dwellings to the east and south. Outwood Academy Shafton is located 700 metres to the east of the proposals, whilst industrial parks are located to the southeast along Engine Lane offering job opportunities, as well as shops and services within nearby Cudworth and Shafton centres for commercial and recreational purposes. Dorothy Hyman Sports Centre is located approximately 2.2km to the south providing leisure facilities. Hemsworth bus station is located approximately 5.5km to the northeast of the proposed development within a 20 minute cycle distance.
- 2.3 The proposed development will gain access from the existing roundabout located at the A628 Cudworth Parkway/ Weetshaw Lane junction.

Local Highway Network

- 2.4 The main site access is taken from the A628 Cudworth Parkway, which is a primary route that connects the town of Pontefract with Barnsley and then travels west to Manchester and further connections to other primary routes to the east of Manchester. This section of the A628 travels between Pontefract and Barnsley travelling through the settlements of Ackworth, Hemsworth, Brierley, Shafton, and Cudworth. Subsequently, the road is subject to heavy traffic volumes during the network peak hours. In the vicinity of roundabout junction that is proposed to serve the site, the A628 is a two way single carriageway road with footways provide on both sides to the northeast/ east of the roundabout junction. To the southwest of the roundabout the road contains a shared footway/ cycle way along the southeast side of the road and a grass verge to the northwest side.
- 2.5 Along the site frontage on the northeast of the roundabout the A628 contains a carriageway width of around 7.3m with each footway measuring 2m in width. This section of the A638 is subject to a 40mph speed limit.

- 2.6 To the southwest side of the roundabout the carriageway kerb to kerb is around 9.3m in width although a 1m hard strip is provided on both sides narrowing the usable width to around 7.3m. This section of the A628 is subject to the national speed limit (60mph). The shared cycleway/ footway located on the southeast side of the road is around 3m in width and contains appropriate signage. The section of A628 Cudworth Parkway contains street lighting to main road standards. Pedestrian crossing facilities are provided at each splitter island on all three arms of the junction in the form of dropped tactile crossings. Each splitter island contains illuminated bollards and there are no Traffic Regulation Orders along this section of the A628 other than the speed limits. It is considered that the road is suitable for its day to day use by all traffic in terms of layout and condition.
- 2.7 To the immediate north of the site frontage near parallel to Cudworth Parkway there is a redundant section of road named Three Nooks Lane, which is also used as a shared route for pedestrians and cyclists and can be reached via Bridleway 69 to the east, Bridleway 71 to the southwest, and Albert Street to the south. This section of road formed a local route to residential properties located off Weetshaw Lane and Shaw Lane prior to Cudworth Parkway being constructed. The road contains a bituminous surface and is considered suitable for its day to day use.
- 2.8 Weetshaw Lane forms the northwest arm of the roundabout junction and provides access to residential properties and subsequently Shaw Lane and its employment areas eventually leading to the local settlement of Carlton. The road is subject to moderate traffic volumes during network peak hours with lighter volumes throughout the remainder of the day. In the vicinity of the roundabout junction the road is a two way single carriageway road with footways provided on both sides. The carriageway is around 7.4m in width with 2m wide footways provided on both sides. The road is subject to a 40mph speed limit from the roundabout for 260m before changing to a 30mph speed limit prior to the build-up section of Weetshaw Lane. The road contains street lighting to main road standards with a low bridge along the route adjacent to the employment areas along Shaw Lane.

Traffic Surveys

Traffic surveys were carried out at the A628 Cudworth Parkway/Weetshaw Lane roundabout junction on the 18th June 2025, and at the Shafton Roundabout and the Pontefract Road roundabout on the 23rd February 2026. The turning counts included cars/LGVs and HGVs between 7:00am and 9:30am and between 4:00pm and 6:30pm. The surveys identified that the morning peak hour occurred between 7:15am and 8:15am and the evening peak hour occurred between 4:30pm and 5:30pm. The 2025 survey data for the A628 Cudworth Parkway/Weetshaw Lane roundabout has been factored to a 2026 base year using TEMPro. The traffic survey information can be found at Appendix A.

Active Travel (Walking and Cycling)

- 2.9 Given the size of the proposed residential development, it would not meet Active Travel England's requirements to assess the ten active travel assessment criteria (150 dwelling trigger). However, the site's sustainable transport options are described below.
- 2.10 The site is situated in easy reach of the nearby services and amenities within Cudworth and Shafton for employment, retail and leisure opportunities. Outwood Academy Shafton is located 700 metres to the east of the proposals, whilst industrial parks are located to the southeast along Engine Lane offering job opportunities.
- 2.11 Footway provision is available from Cudworth Parkway to the Outwood Academy Shafton and also the local services in Shafton including hot and cold food outlets and convenience stores. The local facilities and amenities within Cudworth can be reached to the south via Three Nooks Lane and Albert Street. Cudworth contains schools, a supermarket, primary health care facilities, and many local shops and businesses.
- 2.12 The proposals also include enhancements to Public Right of Way No. 69 (bridleway), which will be integrated with the internal site layout via a path running along the northern boundary. This route will connect to the internal footway network at multiple locations, whilst also providing a direct link to the existing footway along Cudworth Parkway. This link will be lit and surfaced to an appropriate standard for its daily use.
- 2.13 The walking catchment can be found at Figure 2 and covers a 20-minute walking distance from the proposed development site.

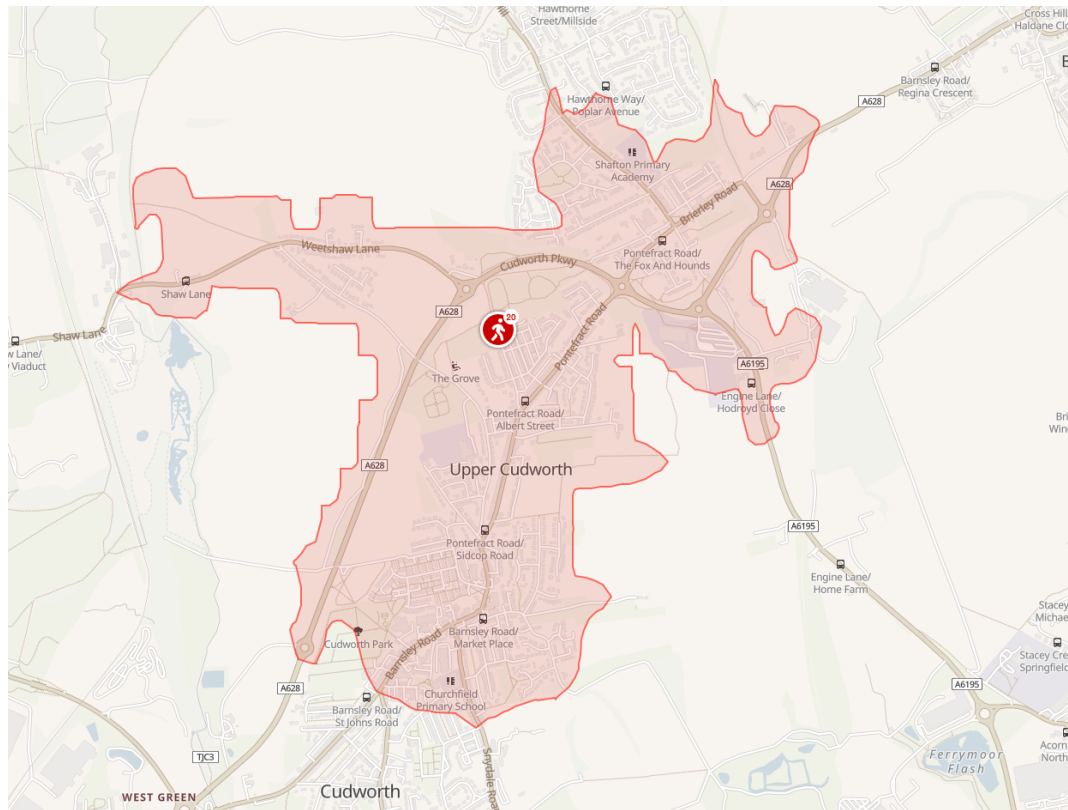


Figure 2 Walking isochrone

- 2.14 Cycle connections exist adjacent to the site in the form of bridleways via Three Nook Lane, and also the shared cycleway/ footway provided on Cudworth Parkway providing a route along the A628 and providing further access towards Barnsley Town Centre, Carlton Industrial Estate and Monk Bretton. The Transpennine Trail can be reached at Shaw Lane to the west of the site or via West Green Way to the southwest utilising the shared cycleway/ footway. This section of Transpennine Trail is largely traffic free and provides further links to Wombwell, Worsbrough, and Barnsley Town Centre.
- 2.15 Within 20 minute cycling distance of the site there are the residential areas of Lundwood, Monk Bretton, Athersley, Carlton, Royston, South Hiendley, Hemsworth, Brierley and Grimethorpe in addition to the whole of Cudworth. There are extensive employment areas located off the A6195 to the west of Grimethorpe, those located within Carlton Industrial Estate, and those located on the A61 Wakefield Road at Smithies.
- 2.16 Figure 3 identifies the destinations which can be reached during a 20-minute cycle journey from the proposed development site.

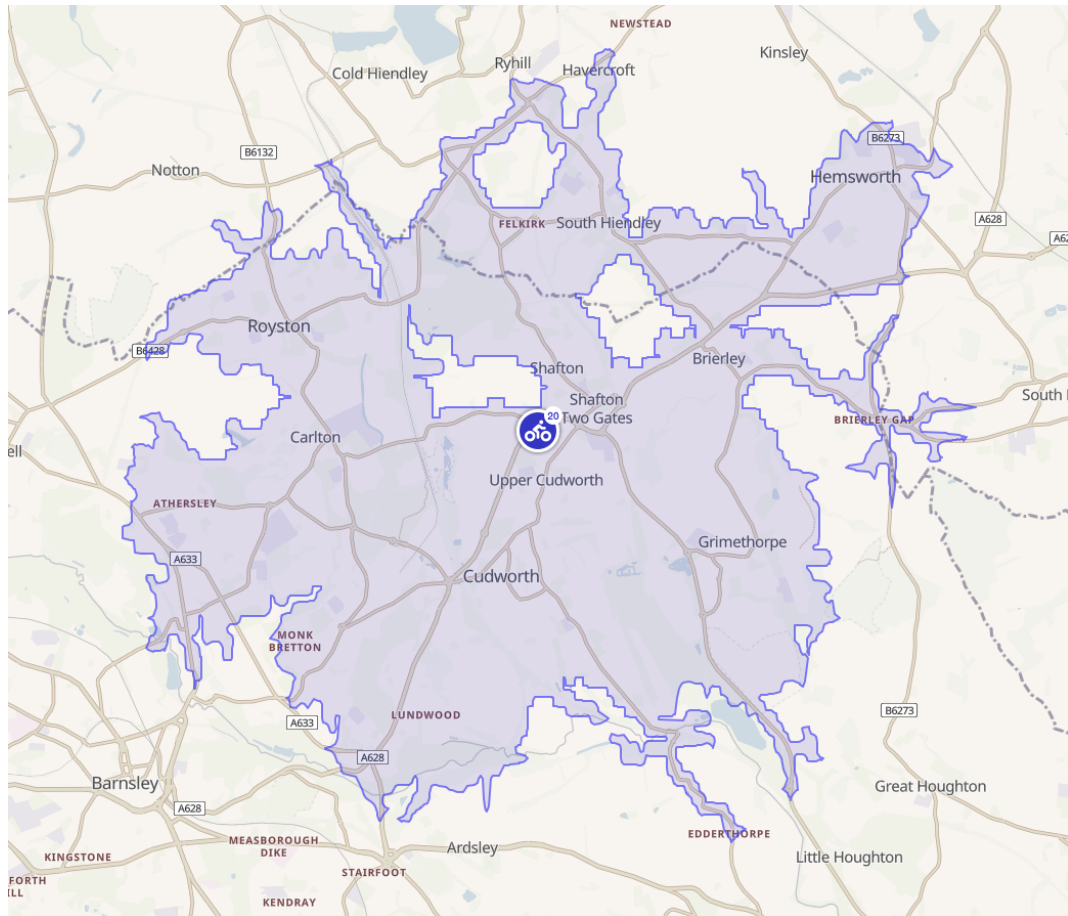


Figure 3 Cycling isochrone

- 2.17 The proposals include cycle parking either within the proposed garages or within garden sheds/ storage areas.
- 2.18 The proposals include links to Three Nook Lane and the wider bridleway network.

Public Transport

- 2.19 The bus stop located closest to the proposed development site is located on Pontefract Road to the south of the application site. This bus stop contains a bus layby with bus stop clearway markings, passenger shelter, and timetable information. It can be reached using Three Nook Lane and Albert Street to the south and is located around 360m from the centre of the site. The development proposed suitable internal pedestrian facilities to link to bus stops.

2.20 The table at Figure 4 summarises the services which utilise these local fare stages.

Number	Route	Typical Frequency		
		Mon – Fri	Sat	Sun & Late Evening
27/ 27A/ 27B	Barnsley – Shafton – Brierley – Grimethorpe – Darfield – Wombwell	60 mins	60 mins	120 mins
28	Barnsley- Cudworth – Shafton – Grimethorpe – Brierley – Hemsworth – Pontefract	60 mins	60 mins	60 mins
38/ 39	Barnsley – Grimethorpe – Cudworth – Shafton – Brierley – Hemsworth – Pontefract	60 mins	60 mins	-
198	Barnsley – Shafton – Newstead – Hemsworth	60 mins	60 mins	-

Figure 4 Bus Services

- 2.21 As can be identified from the table at Figure 4, there are bus services that provide links to the large towns of Barnsley and Pontefract with 4 services per hour to Barnsley and 2 services per hour to Pontefract. The settlements of Shafton, Brierley, Grimethorpe, Wombwell, and Hemsworth are also served via the nearest bus stops. Barnsley Interchange provides convenient access to the railway network.
- 2.22 Given the excellent bus services available within 400m of the site, and that the bus stop infrastructure is of high quality, no improvements to the bus network to serve the development are considered to be justified.
- 2.23 Barnsley railway station can be accessed using the bus services listed above, and provides regular services to Leeds, Sheffield, Meadowhall, Huddersfield, Nottingham and Lincoln Central.
- 2.24 The site is in a very sustainable location due to its proximity to local fare stages with frequent high quality links to local service centre areas including employment, leisure and essential services. The site is within walking distance of the services and amenities within Cudworth and Shafton and within cycling distance of large employment areas such as Carlton Industrial Estate.

Road Traffic Accidents

- 2.25 The injury accident record for the last 5 year period up to the 17th March 2025 has been obtained from Barnsley Council. The study period conforms to current industry practices for appraising the safety of the local highway network.
- 2.26 The search area shown within Figure 5 below includes the A628 Cudworth Parkway, Weetshaw Lane, and the A628 Collier Road providing some 800m in each direction from the site access roundabout junction. The accident data can be found at Appendix B.

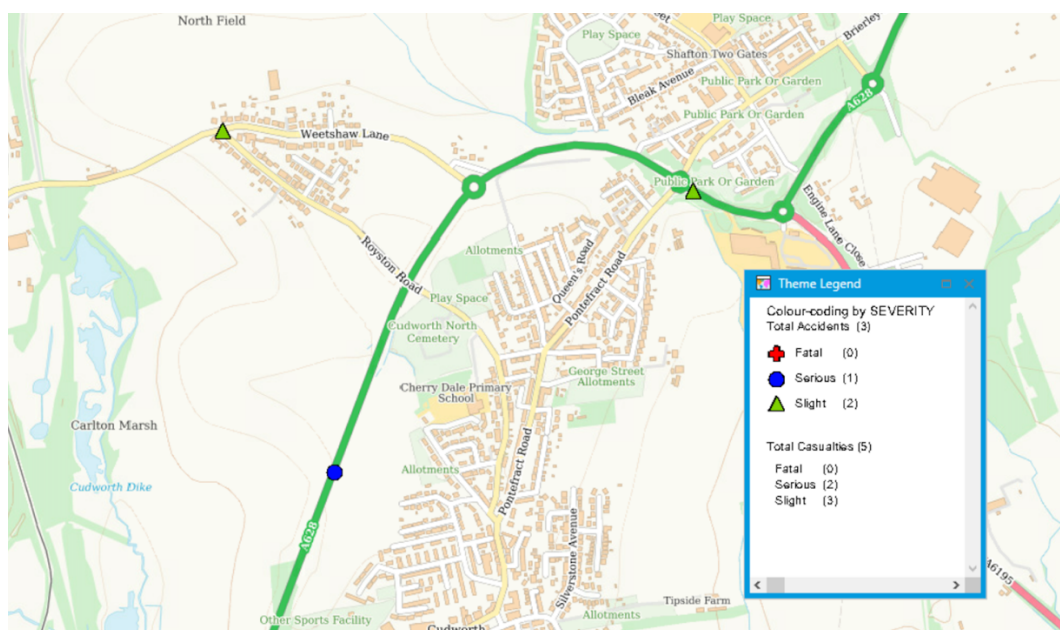


Figure 5 Accident study area

- 2.27 As can be seen from the study area within Figure 5, there have been a total of 3 police reported injury accidents along the A628 and Weetshaw Lane during the 5-year study period. Two of the collisions occurred in 2023 with one being classified as serious and the other as slight and one collision in 2024, which was classified as slight. All the collision occurred during dry road surface conditions and daylight hours.

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- 2.28 The first collision, which was classified as serious occurred in March 2023 on the A628 Cudworth Parkway around 800m southwest of the site. This collision involved a car travelling north to south behind a goods vehicle travelling in the same direction and in slow moving traffic failed to stop resulting in a shunt type collision. This collision had contributory factors of following too close and distraction in vehicle.
- 2.29 The second collision which was classified as slight occurred in May 2023 at the Royston Road junction with Shaw Lane. This collision involved a car waiting to turn left into Shaw Lane that waited for a lorry to pass and a car travelling northwest collided into the rear of the car waiting to turn left. This collision had a contributory factor of careless reckless or in a hurry.
- 2.30 The third collision which was classified as slight occurred in July 2024 on the A628 Collier Road to the southeast of the Shafton Roundabout junction. This collision involved a motorcyclist overtaking traffic slowly and colliding with a pedestrian that ran into the road from the nearside. This collision has a contributory factor of crossing road masked by stationary or parked vehicle.
- 2.31 It should be noted that there were no collisions at the existing roundabout junction between Cudworth Parkway and Weetshaw Lane.
- 2.32 Given the low traffic impact on the SRN, it is not considered justified to provide a collision study that includes routes to and connections with the SRN.
- 2.33 Given the above, there are no significant clusters of accidents and it would appear that these collisions were disparate events with differing manoeuvres and vehicle types.
- 2.34 The injury accident record along the local highway network does not indicate a road safety problem that would warrant treatment or be a cause for concern as a result of the change in traffic flows as a result of the development proposals.

3.0 Development Proposals

Proposed Development

- 3.1 The proposals are to develop the site for residential purposes. At the time of writing, it is proposed to deliver approximately 144 new dwellings.
- 3.2 The development will comprise a mix of detached, semi-detached, and terraced properties. The internal layout will follow a clear street hierarchy, consisting of traditional estate roads, shared surface streets, and private shared driveways. The design will accord with Barnsley Council's adoptable standards and the South Yorkshire Residential Design Guide (2011).
- 3.3 The proposed site layout is included at Appendix C.

Access and Parking Provision

- 3.4 Vehicular access to the site will be taken from the existing roundabout at the A628 Cudworth Parkway/Weetshaw Lane junction. A new arm will be created on the roundabout to serve as the main access road into the development.
- 3.5 The new arm will be located to the southeast of the roundabout and designed in accordance with the Design Manual for Roads and Bridges (DMRB). An ARCADY capacity assessment has been undertaken, the findings of which are presented in Section 5.0.
- 3.6 The junction design incorporates a pedestrian refuge island with illuminated bollards and a beacon. Tactile paving will be provided on both approaches and within the refuge. The 2.0m-wide footways proposed within the site will connect directly to the existing footway network on Cudworth Parkway.
- 3.7 The internal layout comprises traditional estate roads with a 5.5m-wide carriageway and 2.0m-wide footways on both sides. Shared surface streets will include hard margins and visitor parking in accordance with Barnsley Council's guidance. The design speed for estate roads is 20mph, achieved through raised junctions and vertical deflections (speed tables), consistent with the South Yorkshire Residential Design Guide. Shared surface streets will have a design speed of 15mph, achieved through alignment and layout.
- 3.8 Visibility splays at internal junctions have been assessed. A minimum of 2.4m x 43m is provided from junctions onto the main spine road, and 2.4m x 25m from

shared surface streets. All visibility splays are contained within the proposed highway boundary and meet current design guidance.

- 3.9 Car parking provision will comply with Barnsley Council's SPD: Parking (adopted November 2019), providing at least one space for dwellings with 1–2 bedrooms and two spaces for dwellings with 3 or more bedrooms.
- 3.10 Visitor parking will be provided on shared surface streets, generally at a ratio of one space per four dwellings, in line with SPD requirements. Some flexibility is allowed within the SPD and has been applied where appropriate.
- 3.11 Each dwelling will be equipped with an electric vehicle charging (EVC) point. For properties with garages, the EVC point will be installed internally. For those without garages, charging facilities will be provided in a practical location with convenient access to the dwelling's parking space.

Pedestrian and Cycle Provision

- 3.12 The proposed footway network within the site will connect into the existing provision on Cudworth Parkway. The existing Three Nooks Lane cycle route will tie into a shared surface arrangement at the northern site boundary, enabling cyclists to utilise the internal road network before re-joining Three Nooks Lane via a separate shared surface connection to the south.
- 3.13 A number of pedestrian connections are proposed to integrate the development with the surrounding area. The proposals also include enhancements to Public Right of Way No. 69 (bridleway), which will be integrated with the internal site layout via a path running along the northern boundary. This route will connect to the internal footway network at multiple locations, whilst also providing a direct link to the existing footway along Cudworth Parkway. This link is intended to provide a convenient route for local journeys, particularly for school children travelling to the nearby Outwood Academy.
- 3.14 Whilst the bridleway route offers a relatively direct connection to the school, it is anticipated that pedestrian movements from the development will be distributed across the wider network of links. In particular, alternative routes connecting to Cudworth via Three Nooks Lane/Albert Street and through the internal site layout will provide more direct access to local facilities, including shops and services, and are therefore expected to attract a significant proportion of pedestrian trips.

3.15

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- 3.16 As such, the bridleway connection to Cudworth Parkway forms one of a number of complementary pedestrian routes, ensuring permeability of the site whilst avoiding an over reliance on any single access point.
- 3.17 It should be noted that there is no vehicle or pedestrian link onto Queens Drive.
- 3.18 The internal road and pedestrian/cycle routes mentioned above will be lit and surfaced to appropriate standards, ensuring that routes remain safe and attractive for all users throughout the day and year.
- 3.19 Secure cycle parking will be provided in accordance with Barnsley Council's SPD. Where garages are provided, internal cycle storage will be available. Where garages are not provided, alternative provision (such as a shed or similar structure within the rear garden) will be included. In addition, a secure ground anchor or cycle storage bolt will be provided.

Servicing

- 3.20 The site layout accommodates turning movements for fire appliances and large refuse vehicles, in accordance with the South Yorkshire Residential Design Guide. The proposed layout therefore adequately caters for the servicing requirements of the development.

4.0 Transport Policy

- 4.1 When considering transport policy compliance for planning applications, the main thrust of local, regional and national policy is that new development should be conveniently accessible by a range of sustainable transport modes, including public transport, cycling and walking. Further details of the relevant policy documents are set out below.

National Policy

National Planning Policy Framework – Promoting Sustainable Transport

- 4.2 The National Planning Policy Framework (NPPF) was first published in March 2012 and was updated most recently by the Department for Levelling Up, Housing & Communities in December 2024.

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- 4.3 The NPPF sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans can provide sufficient housing and other development in a sustainable manner.
- 4.4 Paragraph 109 of Chapter 9 suggests that transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:
- Making transport considerations an important part of early engagement with local communities;
 - Ensuring patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places;
 - Understanding and addressing the potential impacts of development on transport networks;
 - Realising opportunities from existing or proposed transport infrastructure and changing transport technology and usage – for example in relation to the scale, location or density of development that can be accommodated;
 - Identifying and pursuing opportunities to promote walking, cycling and public transport use; and
 - Identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for environmental gains.
- 4.5 The proposals include a layout that complies with the policy, with suitable street hierarchy, pedestrian and cycle provision along with suitable parking for potential residents and their visitors. The site access points, and external road junctions have been appraised so that the impacts at these junctions can be considered. The proposals also include public transport improvements, pedestrian and cycle link improvements.
- 4.6 Paragraph 115 within Chapter 9 of the NPPF states that in assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- Sustainable transport modes are prioritised taking into account of the vision for the site, the type of development and its location;
- Safe and suitable access to the site can be achieved for all users;
- The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through vision-led approach.

4.7 Paragraphs 116 and 117 of Chapter 9 of the NPPF states that development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe. Within this context, applications for development should

- Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- Address the needs of people with disabilities in relation to all modes of transport;
- Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

4.8 The proposals are considered to be compliant with the above, the internal design follows typical hierarchy of consideration, providing good quality pedestrian and cycle links and connections to the wider network. The internal design and connections will meet the Council's adoptable standards in terms of layout and

levels. EV charging infrastructure will be provided within the site for residents in accordance with current local policy. The internal layout allows for emergency vehicles and waste collection vehicles to enter and exit the site in a forward gear.

- 4.9 Paragraph 118 of Chapter 9 of the NPPF also states that all developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.
- 4.10 A travel plan has been produced and accompanies this Transport Assessment.
- 4.11 The development aligns with the NPPF by addressing transport considerations from the earliest stages of planning. It ensures that any potential impacts on the transport network are addressed, and opportunities from promoting sustainable transport modes, such as walking, cycling, and public transport, are identified and pursued.

Local Transport Plan

- 4.12 The Sheffield City Region Transport Strategy sets out the transport priorities for the region up to 2040. The Transport Strategy seeks to:
- To improve connection for residents and businesses to economic opportunity
 - Provide a cleaner and greener Sheffield City Region
 - provide a safe, reliable and accessible transport network
- 4.13 The Strategy seeks to strengthen the region's economy and provide sufficient housing to support economic and population growth. Also, the following will have to be considered as part of the Strategy:
- Improving the transport network connectivity and providing greater capacity are vital in enabling growth.
 - Travel choices, enabling the public to make the most sustainable choices about when and how they travel need to be improved.
 - Connectivity, ensuring people can make integrated and safe journeys using transport networks on which they can rely.

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- Enhancements to improve the overall network to make it more fit for journeys in the future.

Local Policy

4.14 Barnsley Council's Local Plan was adopted January 2019. Chapter 12 deals with Transport and provides relevant policy.

4.15 Policy T3 deals with new development and sustainable travel. The policy states: -

New development will be expected to:

Be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists;

Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people set out in the relevant Supplementary Planning Document;

Provide a transport statement or assessment in line with guidance set out in the National Planning Policy Framework and guidance including where appropriate regard for cross boundary local authority impacts; and

Provide a travel plan statement or a travel plan in accordance with guidance set out in the National Planning Policy Framework including where appropriate regard for cross boundary local authority impacts. Travel plans will be secured through a planning obligation or a planning condition.

4.16 Policy T4 deals with new development and transport safety. The policy states: -

New development will be expected to be designed and built to provide all transport users within and surrounding the development with safe, secure and convenient access and movement.

If a development is not suitably served by the existing highway or would create or add to problems of safety or the efficiency of the highway or any adjoining rail infrastructure for users, we will expect developers to take mitigating action to make a financial contribution to make sure the necessary improvements go ahead. Any contributions will be secured through a planning obligation or planning condition.

DfT Circular 01/2022

4.17 Government guidance within this policy paper provides the policies with regard to strategic road network (SRN) and the delivery of sustainable development.

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- 4.18 Local planning authorities and development promoters are encouraged to identify any potential impacts on the SRN that may result from development proposals and discuss at the earliest opportunity.
- 4.19 This policy paper advises that a Transport Assessment must consider the existing and forecast levels of traffic on the SRN, alongside any additional trips from committed developments that would impact the same section (link or junction) as the proposed development. An opening year assessment to include trips generated by the proposed development, forecasted growth and committed development shall be carried out to establish the residual transport impacts of the proposed development.
- 4.20 The information provided within this report complies with the requirements of Circular 01/22 and would include junction performance assessments on the SRN if the anticipated volume of development traffic would require it. There are no junctions with the SRN that are impacted by the development, and this is confirmed by National Highways.
- 4.21 It is considered that this site is in compliance with local and national transport policies due to the sustainable location of the site with good quality facilities for travel from modes other than the single occupancy private car trips.

5.0 Traffic Impact

Proposed Development Traffic

- 5.1 To determine the anticipated traffic generations for the site it has been necessary to examine data from the national TRICS database.
- 5.2 The development proposes around 144 dwellings served from a new arm on the existing roundabout on Cudworth Parkway. The table at Figure 6 show the trip rates and generations for total vehicles for the development. The TRICS output includes the 85th percentile rates and are considered robust. The TRICS output can be found at Appendix D.

	AM 8:00 – 9:00			PM 17:00 – 18:00		
	Arrive	Depart	Total	Arrive	Depart	Total
144 residential properties						
Trip Rate	0.165	0.462	0.627	0.444	0.149	0.593
Traffic generations	24	66	90	64	21	85

Figure 6 Proposed Trip rates and generations

- 5.3 As can be seen from the table above the development would generate 90 trips in the morning peak hour and 85 trips in the evening peak hour.
- 5.4 The multi-model TRICS output has also been considered. The daily multi-model trips for the development can be seen in the tables below:

Mode of Travel	TRIP RATE	Generations (144 Dwellings)
People	7.073	1019
Pedestrians	0.667	96
Cyclists	0.102	15
Public Transport	0.201	29
Vehicle Occupants	6.101	879

Figure 7 Multi-modal TRICS Output

Traffic Surveys

- 5.5 It has been necessary to carry out surveys at those junctions to be considered in capacity terms.

Traffic surveys were carried out at the A628 Cudworth Parkway/Weetshaw Lane roundabout junction on the 18th June 2025, and at the Shafton Roundabout and the Pontefract Road roundabout on the 23rd February 2026. The turning counts included cars/LGVs and HGVs between 7:00am and 9:30am and between 4:00pm and 6:30pm. The surveys identified that the morning peak hour occurred between 7:15am and 8:15am and the evening peak hour occurred between 4:30pm and 5:30pm. The 2025 survey data for the A628 Cudworth Parkway/Weetshaw Lane roundabout has been factored to a 2026 base year using TEMPro. The traffic survey information can be found at Appendix A.

Traffic Growth

- 5.6 TEMPro has been used to derive local traffic growth factors for the study area, based on the relevant bespoke output areas within Barnsley. For the A628 Cudworth Parkway/Weetshaw Lane roundabout (E02001511 – Barnsley 003), where survey data was collected in 2025, growth has been applied from 2025 to 2036. This results in growth factors of 1.1093 in the AM peak and 1.1083 in the PM peak.
- 5.7 For the Shafton Roundabout (E02001511 – Barnsley 003) and the Pontefract Road roundabout (E02001511 – Barnsley 011), where survey data was collected in 2026, growth has been applied from 2026 to 2036. At the Shafton Roundabout, this results in growth factors of 1.0972 in the AM peak and 1.0964 in the PM peak. At the Pontefract Road roundabout, the derived growth factors are 1.1026 in the AM peak and 1.1017 in the PM peak.
- 5.8 These growth factors have been applied to the respective baseline traffic flows to derive the 2036 future year assessment scenarios.

Committed Development

- 5.9 Committed development has been considered as part of the assessment. The local developments include a site already being considered by the LPA and two sites that are allocated in the local plan. The Council have been unable to confirm that the list below is suitable for robust assessment.

HS31 – High Street, Shafton – 40 dwellings

HS32 – Pontefract Road, Upper Cudworth – 137 dwellings

HS38 – Land off Cudworth Bypass – 192 dwellings

5.10 The locations of the allocations listed above can be seen at Figure 8 below.

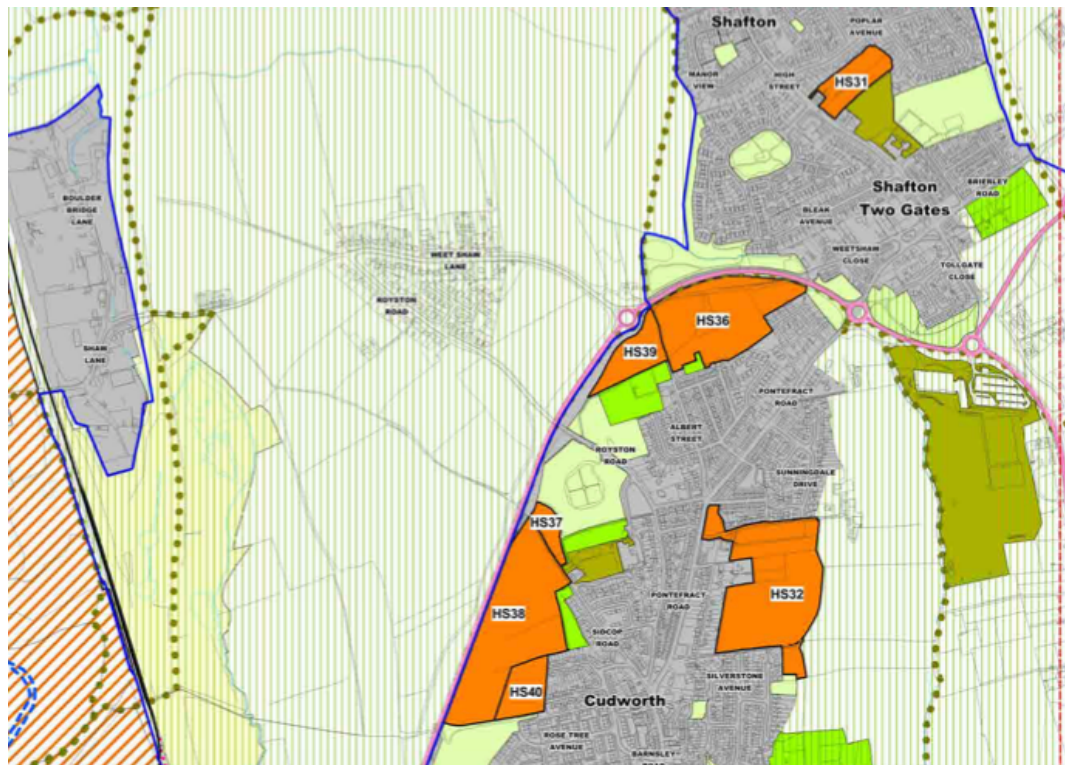


Figure 8 - Housing allocations (Barnsley Local Plan)

5.11 The traffic flows associated with the committed developments above are identified within the traffic flows at Appendix E, which also include proposed development traffic flows for 2025 and 2035 future year scenarios.

Traffic Distribution

5.12 To ascertain the proposed traffic distribution from the site, the census information has been used from the NOMIS website, which provides information on usual residence and place of work.

5.13 The NOMIS output can be found at Appendix E and identified that 50.24% of site traffic would travel to and from the A628 Cudworth Parkway (east), 41.81% would travel to and from Cudworth Parkway (west) and the remaining 7.95% would travel to and from Weetshaw Lane.

Junction Capacity Assessment

- 5.14 Based on the traffic distribution at Appendix E, junction performance assessments at the existing roundabout junctions between the A628 Cudworth Parkway and Weetshaw Lane, the Shafton Roundabout, and the Pontefract Road roundabout are considered to be suitable. It should be noted that the committed flows listed above have been considered as part of the junction performance assessments.
- 5.15 A junction capacity assessment has been carried out for each of the three roundabout junctions using the ARCADY computer program. We have modelled the junctions in the morning and evening peak periods for the application year (2026) and future year (2036) including committed development.

A628 Cudworth Parkway/ Weetshaw Lane/ Site Access – Roundabout Junction

- 5.16 The results of the ARCADY assessment are included at Appendix F and are summarised in the table below: -

	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
2026 Base				
Proposed Site Access	0.00	0.0	0.00	0.0
Cudworth Parkway SW	0.40	0.7	0.41	0.8
Weetshaw Lane	0.17	0.2	0.23	0.3
Cudworth Parkway NE	0.46	0.9	0.48	1.0
2026 Plus Committed				
Proposed Site Access	0.00	0.0	0.00	0.0
Cudworth Parkway SW	0.40	0.7	0.41	0.8
Weetshaw Lane	0.17	0.2	0.23	0.3
Cudworth Parkway NE	0.46	0.9	0.48	1.0
2026 Plus Committed Plus Proposed Development				
Proposed Site Access	0.00	0.0	0.00	0.0
Cudworth Parkway SW	0.46	0.9	0.48	1.0
Weetshaw Lane	0.20	0.3	0.28	0.4
Cudworth Parkway NE	0.54	1.3	0.57	1.5
2036 Base				
Proposed Site Access	0.0	0.0	0.0	0.0

Cudworth Parkway SW	0.42	0.8	0.43	0.8
Weetshaw Lane	0.19	0.3	0.25	0.4
Cudworth Parkway NE	0.49	1.0	0.50	1.1
2036 Plus Committed				
Proposed Site Access	0.0	0.0	0.0	0.0
Cudworth Parkway SW	0.44	0.9	0.46	0.9
Weetshaw Lane	0.20	0.3	0.27	0.4
Cudworth Parkway NE	0.53	1.2	0.54	1.3
2036 Plus Committed Plus Proposed Development				
Proposed Site Access	0.06	0.1	0.02	0.0
Cudworth Parkway SW	0.46	0.9	0.48	1.0
Weetshaw Lane	0.2	0.3	0.28	0.4
Cudworth Parkway NE	0.54	1.3	0.57	1.5

Figure 9 ARCADY Weetshaw Lane Roundabout

- 5.17 From the above analysis it can be seen that the Weetshaw Lane roundabout junction will operate well within the normal requirements for the Ratio of Flow to Capacity (RFC value less than 0.85) during the 2024 and 2034 development scenarios in the working weekday AM and PM peak periods. All average queue lengths would be less than 2 PCUs throughout the peak periods.

Shafton Roundabout Junction

- 5.18 The results of the ARCADY assessment are included at Appendix F and are summarised in the table below: -

	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
2026 Base				
Cudworth Parkway (A)	0.48	1.0	0.54	1.3
Pontefract Road North (B)	0.45	0.9	0.58	1.5
Collier Road (C)	0.47	1.0	0.67	2.2
Pontefract Road (D)	0.36	0.6	0.37	0.6
2026 Plus Committed				
Cudworth Parkway (A)	0.48	1.0	0.54	1.3

Pontefract Road North (B)	0.45	0.9	0.58	1.5
Collier Road (C)	0.47	1.0	0.67	2.2
Pontefract Road (D)	0.36	0.6	0.37	0.6
2026 Plus Committed Plus Proposed Development				
Cudworth Parkway (A)	0.50	1.1	0.58	1.5
Pontefract Road North (B)	0.50	1.1	0.63	1.8
Collier Road (C)	0.50	1.1	0.71	2.6
Pontefract Road (D)	0.37	0.7	0.39	0.7
2036 Base				
Cudworth Parkway (A)	0.53	1.2	0.59	1.6
Pontefract Road North (B)	0.51	1.1	0.65	2.0
Collier Road (C)	0.53	1.1	0.72	2.8
Pontefract Road (D)	0.38	0.7	0.4	0.7
2036 Plus Committed				
Cudworth Parkway (A)	0.55	1.3	0.61	1.7
Pontefract Road North (B)	0.54	1.3	0.68	2.3
Collier Road (C)	0.53	1.2	0.76	3.4
Pontefract Road (D)	0.41	0.8	0.43	0.8
2036 Plus Committed Plus Proposed Development				
Cudworth Parkway (A)	0.57	1.4	0.64	1.9
Pontefract Road North (B)	0.58	1.5	0.73	2.9
Collier Road (C)	0.55	1.4	0.79	4.0
Pontefract Road (D)	0.43	0.8	0.45	0.9

Figure 10 ARCADY Shafton Roundabout

- 5.19 From the above analysis it can be seen that the Shafton roundabout junction will operate well within the normal requirements for the Ratio of Flow to Capacity (RFC value less than 0.85) during the 2026 and 2036 development scenarios in the working weekday AM and PM peak periods. All average queue lengths would be less than 4 PCUs throughout the peak periods.

Pontefract Road Roundabout Junction

5.20 The results of the ARCADY assessment are included at Appendix F and are summarised in the table below: -

	AM Peak		PM Peak	
	RFC	Queue	RFC	Queue
2026 Base				
Barnsley Road (C)	0.50	1.1	0.49	1.1
Pontefract Road (D)	0.33	0.5	0.40	0.7
Burton Road (E)	0.36	0.6	0.43	0.8
W Green Way (A)	0.36	0.6	0.36	0.6
Cudworth Parkway (B)	0.29	0.5	0.28	0.4
2026 Plus Committed				
Barnsley Road (C)	0.52	1.2	0.51	1.1
Pontefract Road (D)	0.35	0.6	0.43	0.8
Burton Road (E)	0.37	0.6	0.44	0.9
W Green Way (A)	0.37	0.6	0.37	0.6
Cudworth Parkway (B)	0.33	0.5	0.33	0.5
2026 Plus Committed Plus Proposed Development				
Barnsley Road (C)	0.53	1.2	0.52	1.2
Pontefract Road (D)	0.36	0.6	0.45	0.9
Burton Road (E)	0.37	0.7	0.45	0.9
W Green Way (A)	0.37	0.7	0.38	0.7
Cudworth Parkway (B)	0.36	0.6	0.34	0.6
2036 Base				
Barnsley Road (C)	0.53	1.2	0.56	1.4
Pontefract Road (D)	0.37	0.6	0.45	0.9
Burton Road (E)	0.42	0.8	0.49	1.0
W Green Way (A)	0.41	0.8	0.41	0.8
Cudworth Parkway (B)	0.33	0.5	0.31	0.5
2036 Plus Committed				
Barnsley Road (C)	0.57	1.5	0.56	1.4
Pontefract Road (D)	0.39	0.7	0.48	1.0

Burton Road (E)	0.43	0.8	0.50	1.1
W Green Way (A)	0.42	0.8	0.43	0.8
Cudworth Parkway (B)	0.33	0.5	0.31	0.5
2036 Plus Committed Plus Proposed Development				
Barnsley Road (C)	0.58	1.5	0.56	1.4
Pontefract Road (D)	0.40	0.7	0.50	1.1
Burton Road (E)	0.43	0.8	0.52	1.2
W Green Way (A)	0.42	0.8	0.44	0.9
Cudworth Parkway (B)	0.35	0.6	0.32	0.5

Figure 11 ARCADY Pontefract Road Roundabout

- 5.21 From the above analysis it can be seen that the Pontefract Road roundabout junction will operate well within the normal requirements for the Ratio of Flow to Capacity (RFC value less than 0.85) during the 2026 and 2036 development scenarios in the working weekday AM and PM peak periods. All average queue lengths would be less than 2 PCUs throughout the peak periods.
- 5.22 To provide a sensitivity test queue length surveys were carried out at the Shafton roundabout and Pontefract Road roundabout junctions on the 23rd February 2026 so that the model could be adjusted to accord with the mean maximum queue lengths observed during the survey. During the survey the average maximum queues at the Shafton roundabout were noted to be between 3.5 PCUs and 8.9 PCUs during the morning peak and between 2.6 PCUs and 9.4 PCUs during the evening peak. At the Pontefract Road roundabout the average maximum queues were noted to be between 0.7 PCUs and 6 PCUs during the morning peak and between 0.7 PCUs and 21.7 PCUs in the evening peak. There were no queues noted at the Weetshaw Lane roundabout whilst undertaking the survey. The adjusted outputs can be found at Appendix G.
- 5.23 It should be acknowledged that traffic queues were observed on one day only, which can be unreliable because queue lengths have a large daily variability even with the same levels of traffic demand. The average queues shown within the ARCADY model are what you would expect to see if you averaged observations from many days.

- 5.24 The results of the ARCADY assessment for the 2026 scenarios at the Shafton Roundabout using capacity adjustments to suit the observed mean maximum queue lengths (as surveyed) are included at Appendix G and summarised in the table below: -

	AM Peak		PM Peak	
	RFC	Mean Max Queue (as surveyed)	RFC	Mean Max Queue (as surveyed)
2026 Base				
Cudworth Parkway (A)	0.92	8.9	0.75	3.2
Pontefract Road North (B)	0.88	6.2	0.71	2.6
Collier Road (C)	0.87	6.5	0.91	9.4
Pontefract Road (D)	0.78	3.5	0.72	2.6
2026 Plus Committed				
Cudworth Parkway (A)	0.95	11.7	0.81	4.5
Pontefract Road North (B)	0.96	10.6	0.78	3.6
Collier Road (C)	0.93	9.8	0.97	15.9
Pontefract Road (D)	0.84	4.9	0.77	3.4
2026 Plus Committed Plus Development				
Cudworth Parkway (A)	1.00	19.2	0.83	4.8
Pontefract Road North (B)	0.99	12.7	0.81	4.2
Collier Road (C)	0.94	10.9	0.99	21.2
Pontefract Road (D)	0.85	5.2	0.80	4.0

Figure 12 ARCADY Shafton Roundabout (adjusted for the mean max queue lengths as surveyed)

- 5.25 As can be seen from the above analysis, under 2026 base conditions, with the model adjusted to reflect the mean maximum observed queue lengths (as recorded during the surveys), the Shafton Roundabout operates with RFC values generally around 0.85 during the PM peak. During the AM peak, RFC values range between 0.78 and 0.92, with three arms (A, B and C) exceeding 0.85. In the PM peak, RFC values range between 0.71 and 0.91, with only the Collier Road (Arm C) exceeding 0.85. This indicates that queuing is more pronounced during the AM peak compared to the PM peak. For the base conditions whilst the RFC exceeds normal conditions, the junction would operate within theoretical capacity.
- 5.26 The addition of committed development traffic results in changes to RFC and queue lengths. In the AM peak, the Cudworth Parkway (Arm A), Pontefract Road (Arm B)

and Collier Road (Arm C) arms exceed an RFC by between 0.03 and 0.08, with a maximum RFC of 0.96. In the PM peak, only the Collier Road (Arm C) exceeds normal capacity thresholds, operating close to capacity with an RFC of 0.97.

- 5.27 The introduction of development traffic provides further increases to RFC by between 0.01 and 0.05 during the AM peak and between 0.02 and 0.03 RFC, which is less of an impact when compared to committed development scenarios. The results show a modest increase in queue lengths by 1 and 2 PCUs generally although theoretical capacity is reached on the Cudworth Parkway arm, the development traffic increases queue lengths by 7 PCUs.
- 5.28 The results of the ARCADY assessment for the 2026 scenarios at the Pontefract Roundabout using capacity adjustments to suit the observed mean maximum queue lengths (as surveyed) are included at Appendix G and summarised in the table below: -

	AM Peak		PM Peak	
	RFC	Mean Max Queue (as surveyed)	RFC	Mean Max Queue (as surveyed)
2026 Base				
W Green Way (A)	0.83	4.8	1.09	21.7
Cudworth Parkway (B)	0.74	3.0	0.62	1.7
Barnsley Road (C)	0.78	3.7	0.41	0.7
Pontefract Road (D)	0.40	0.7	0.90	7.7
Burton Road (E)	0.88	6.0	0.99	12.3
2026 Plus Committed				
W Green Way (A)	0.86	5.7	1.14	28.0
Cudworth Parkway (B)	0.84	5.1	0.72	2.6
Barnsley Road (C)	0.83	4.6	0.42	0.8
Pontefract Road (D)	0.42	0.8	0.97	13.2
Burton Road (E)	0.92	7.9	1.04	17.5
2026 Plus Committed Plus Development				
W Green Way (A)	0.88	6.1	1.17	32.8
Cudworth Parkway (B)	0.91	8.2	0.72	2.7
Barnsley Road (C)	0.85	5.3	0.42	0.8
Pontefract Road (D)	0.43	0.8	1.01	19.2

Burton Road (E)	0.94	8.9	1.07	21.0
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Figure 13 ARCADY Pontefract Road Roundabout (adjusted for the mean max queue lengths as surveyed)

- 5.29 As can be seen from the above analysis, under 2026 base conditions, with the models adjusted to reflect the mean maximum observed queue lengths (as recorded during the surveys), the roundabout operates largely within normal capacity thresholds. During the AM peak, only the Burton Lane arm exceeds an RFC of 0.85, with a value of 0.88. In the PM peak, the W Green Way, Pontefract Road and Burton Road arms exceed 0.85, with the W Green Way arm operating over capacity with an RFC of 1.09.
- 5.30 The introduction of committed development traffic results in further increases in RFC at the junction. In the AM peak, the W Green Way, Barnsley Road and Burton Road arms exceed an RFC of 0.85, with a maximum RFC of 0.92. In the PM peak, the W Green Way, Pontefract Road and Burton Road arms exceed 0.85, with both the W Green Way and Pontefract Road arms operating over capacity, with RFCs of 1.14 and 1.04 respectively. However, it should be noted that these arms were already operating close to or above capacity prior to the addition of committed development, with increases in RFC typically in the order of 0.03 to 0.07.
- 5.31 The introduction of development traffic provides an exponential impact to the operation of the junction given how it would operate during the 'with committed development' flow scenario. During the AM peak the development traffic would increase RFC by between 0.02 and 0.07 increasing queue lengths between 1 PCUs and 3 PCUs, which would not be noticeable due to the daily fluctuations in flows. During PM peak scenarios, the introduction of development traffic would increase RFC by between 0.03 and 0.04, resulting in queue lengths increasing by up to 6 PCUs. This modest increase in queue lengths would not be noticeable due to the daily fluctuations in flows through the junction.
- 5.32 Considering the adjusted models for both the Shafton Roundabout and Pontefract Road Roundabout, even though the inclusion of committed development results in a number of arms operating at or above an RFC of 0.85, the overall impact on junction performance due to the proposed development traffic is considered to be small. With the addition of traffic associated with the proposed development (144 dwellings), the assessments show only modest increases in RFC values across all arms, the junctions are shown to either continue to operate within theoretical capacity or experience only marginal increases over and above the committed development scenario in terms of RFC and queue lengths.

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- 5.33 Overall, the results indicate that the junctions would generally continue to operate within theoretical capacity for the 2026 assessment scenarios, notwithstanding the application of capacity adjustments to reflect the observed queue lengths. It should be noted that these adjusted models represent a robust, worst-case scenario, with the unadjusted ARCADY results considered to provide a more representative indication of typical junction operation and average queues throughout the peak periods.
- 5.34 Therefore, the assessments demonstrate that the proposed development (144 dwellings) would have a minimal impact on the operation of the surrounding junctions and access points.

6.0 Conclusion

- 6.1 This report presents the proposals to develop the site for residential purposes for circa 144 dwellings. The dwellings will be a mix of detached, semi-detached, terrace type dwellings. Access to the site will be from vehicular access to the site will be taken from the existing roundabout at the A628 Cudworth Parkway/Weetshaw Lane junction. A new arm will be created on the roundabout to serve as the main access road into the development. This report considers such matters as access, sustainability, car parking and servicing, and presents the proposals in relation to current guidance and data.
- 6.2 The report describes the existing highway network and the proposed development on the site and compares the traffic generations, highway safety and access proposals with the existing and proposed situation. The vehicular access and sustainable elements of the scheme are also assessed. The traffic impact associated with the current development proposals has also been presented.
- 6.3 Junction capacity assessment have been carried out at the Weetshaw Lane roundabout, Shafton roundabout and the Pontefract Road roundabout and has determined that the development traffic would have little impact on junction performance and therefore meets the test within paragraph 116 of the current NPPF.