



Church Commissioners for England

Land at Barnham

Transport Strategy Report

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1. Introduction

- 1.1 The development is located between the three villages of Barnham to the east, Eastergate to the north and Westergate to the west. At present the principal highway network in the area comprises the A29 which passes to the west of the site and the B2233, which passes to the north of site.
- 1.2 The A29 runs in along a north-south axis between the A27 at Fontwell and the A259 at Bognor Regis passing through Westergate, crossing the railway line by means of a level crossing at Woodgate and then through Lidsey and Shripney to the south. On completion of the under construction Bognor Regis Relief Road which will provide an alternative alignment to the A259 north of Bognor Regis, the A29 will intersect with this new east-west corridor in the vicinity of Oldlands Farm.
- 1.3 The B2233 provides access to the A27 (westbound) further west of the Fontwell interchange, crosses the A29 north of Westergate passes through Eastergate and Barnham before also providing access to the A259 between Bognor Regis and Littlehampton.

2. A29 Re-alignment

- 2.1 The proposals for a new residential-led community at Southergate will facilitate the realignment of the A29 through the site. The proposed realigned A29 will enable significant improvement of the existing A27 route, primarily through the bypass of the existing level crossing of the railway line at Woodgate which in turn will facilitate the closure to vehicle traffic of this crossing, and will also serve as the principal point of access for the new community.
- 2.2 The new crossing of the railway line will take the form of a road overbridge, with embankment approaches on both sides; this will eliminate the existing delays caused to traffic on the A29 through the closure of the level crossing gates at Woodgate which can be for up to 20-25 minutes in every hour.
- 2.3 The realigned A29 will be designed to different applicable highway design standa Roads and exhibit different design characteristics dependant on the role and nature of the road along its route. The section of this report which follows sets out the parameters and design specifications of the



proposed new road, including an explanation of the selection of the appropriate design speeds, identification of the treatment of pedestrian crossing facilities.

- 2.4 It is particularly concerned with the element of the A29 section which facilitates the delivery of the new community at Southergate. This comprises the section of the alignment between Barnham Road to the north of the site and rejoining the A29 at Lidsey, and includes proposals for improvements to A29 Nyton Road / B2233 Barnham Road War Memorial junction.
- 2.5 The appropriate design speed, and consequently the designated speed limit as well as the streetscape principles of the re-aligned road have been carefully selected to achieve a balance between the competing objectives for the route, namely providing a high quality north-south route between the A27 and A259, including serving as a gateway to Bognor Regis, and providing a neighbourhood distributor road for the new residential community which must be both permeable to pedestrians and non-car modes and provide a structuring feature accommodating mixed uses such as retail and community facilities.
- 2.6 We have therefore designed the section of the route which passes through the heart of the community as a 30 mph high street, with frequent pedestrian crossing opportunities, and side roads being accessed by means of give-way junctions with pedestrian refuges, rather than roundabouts as on the rest of the route.
- 2.7 The highway design parameters for the balance of the realigned A29 have identified a speed limit of 40mph as the appropriate treatment of the road with junctions mainly being in the form of roundabouts, and pedestrian crossing points taking the form of uncontrolled pedestrian refuges. This will allow the road to achieve both of its primary objectives, and we would develop this design further in partnership with West Sussex County Council and Arun District Council.

3. East-West Connection

- 3.1 Within the residential development at Southergate we have acknowledged the importance of establishing a new east-west connection between Westergate to the west of the site and the centre of the new community, with its variety of facilities including primary school, local shops and other local facilities. This new east-west route will also provide pedestrian and cycle access to the east to provide linkage to Barnham centre to access the railway station, shops and facilities. This route will



greatly improve the connections for existing residents within Westergate and will relieve highway pressure by providing an alternative route for traffic movements to Barnham Road.

4. Crossing of the existing railway

- 4.1 The A29 currently crosses the West Coastway east-west railway line at the existing level crossing at Woodgate. This level crossing is down and closed to vehicle traffic for up to 30 minutes each hour for rail traffic and therefore vehicles are subject to localised congestion at peak times and delays throughout the day.
- 4.2 A key component of the development will be to provide a new bridge over the railway line as part of a proposed realignment of the A29 which will enable the existing level crossing to be removed. The bridge will be designed as a single carriageway crossing with footway/cycleways on each side to accommodate all vehicular traffic as well as cyclists and pedestrians. Earthworks will be required to allow for the required gradients, although landscaping will be provided on the embankments to minimise the visual impact of the bridge.
- 4.3 An underpass will be provided beneath the proposed railway crossing, adjacent to the existing railway line which will be designed as a cycle/footway. This will help to ensure that the railway crossing does not act as a barrier to east-west movements and provide permeability for cyclists and pedestrians through the development.

5. Gateways

- 5.1 The majority of the A29 has been designed based on a 40mph speed limit (as will be discussed in more detail below), however the section of the road which pass through the main residential area and act as the neighbourhood spine for the proposed development will be subject to a 30mph speed limit. This will reflect the residential character of the area, with properties fronting onto the road and enable permeability across the development for cyclists and pedestrians.
- 5.2 In order to reflect the change in function and character of the road, the entry into the residential area will need to be clearly defined through the introduction of gateway features. This will ensure that vehicles speeds are sufficiently slowed as the speed limit of the road changes from 40mph to 30mph. These gateway features will be a mix of traditional engineering solutions such as road markings, signage etc. with creative landscaping and carriageway layout and design.

6. Summary of Alignment Options

- 6.1 WYG has considered in detail the potential alignment of the A29 between Barnham Road and the existing A29 north of Lidsey, given that this alignment largely comprises land within the control of the Church Commissioners and would form the key access and route through the Southergate

development. Through the provision of this section of the A29, together with improvements at the existing War Memorial junction, development of the Southergate site could be facilitated.

6.2 However, to accord with the interests of facilitating the ADC/WSCC ambitions for the realigned A29, to provide a link to the existing strategic highway network, WYG has investigated further options for the possible extension of the A29. These options, together with that detailed in 6.1, are summarised below:

- **Option 1** - Barnham Road to Lidsey Road (Dwg No. A076162-004) and A29 Nyton Road / Fontwell Avenue / B2233 Barnham Road (War Memorial) junction (Dwg A076162-010)
- **Option 2** - Barnham Road to Shripney Road (Dwg. No.A076162-005)
- **Option 3** - Barnham Road to BRRR at Oldlands Farm (Dwg. No.A076162-006)
- **Option 4** - Fontwell Avenue to Lidsey Road (Dwg No.A076162-002)
- **Option 5** - A29 Fontwell Roundabout to BRRR at Oldlands Farm (Dwg No.A076162-007)

6.3 It is anticipated that each of these options could implemented in a phased manner as funds and land became available. The key components and design characteristics of each of the indicative alignments for the new A29 for each of the 5 Options listed above are described in more detail below.

7. A29 Realignment Opt 1, Barnham Road to Lidsey Road (Dwg No. A076162-004)

7.1 Option 1 shows an indicative design for the section of proposed A29 alignment between Barnham Road to the north of the site passing through the new community at Southergate and rejoining the existing alignment of the A29 at Lidsey Road to the north of the caravan park.

7.2 The new A29 has been designed as a 7.3m wide single carriageway road with a provision of 2m wide footways on both sides (not shown on the plan). The majority of the alignment design has been based on the implementation of a 40mph speed limit (hence the road has been subject to a 70kph design speed), with a centreline radius of 1,020m.

7.3 The section of proposed alignment between the proposed Barnham Road roundabout at the north of the site and the indicative internal roundabout south of the proposed neighbourhood centre has been designed as a 30mph road (subject to a 60kph design speed), with the tightest centreline radius of 720m. This section includes a 10.8m wide section in, where the location of two indicative future accesses has been shown and a central pedestrian reserve provided to assist in pedestrian permeability.

7.4 The height of the proposed road bridge over the railway lines has been assumed to be 5.2m. Gradients of 1:40 (2.5%) have been assumed on the approaches to the bridge, with sag & crest



curve values based on 40mph (70kph design speed). The earthwork embankments on either side of the rail bridge approach are based on 1:3 slopes.

8. A29 Nyton Road / Fontwell Avenue / B2233 Barnham Road (War Memorial) junction (Dwg A076162-010)

- 8.1 In addition to the A29 realignment scheme between Barnham road and Lidsey Road outlined in Option 1 (Dwg A076162/004) an additional off-site highway improvement scheme is proposed for the Fontwell Avenue / Barnham Road junction at Westergate, known as the War Memorial roundabout.
- 8.2 The proposed improvement would involve the implementation of a traffic signal controlled junction in place of the existing mini-roundabout to enable optimisation of the junction performance. The improvement would also require localised widening of the carriageway on two of the approaches to this junction, namely Fontwell Avenue and Barnham Road. This widening would allow the formation of two approach lanes on each of the three approaches and significantly improve the capacity of the junction.
- 8.3 This improvement would be required to compliment the realigned A29 under options 1-3, however if ADC / WSCC extended the realignment of the A29 further north to meet with the Existing A29 at either Fontwell Avenue north of the war memorial junction (option 5) or to meet with the A27 at the Fontwell Roundabout (Option 6) it would no longer be required in capacity terms.

9. A29 Realignment Opt 2, Barnham Road to Shripney Road (Dwg. No.A076162-005)

- 9.1 The alignment for Option 2 is as per Option 1 Barnham Road and the proposed internal development access roundabout south of the railway line. South of this roundabout an alternative alignment for the realigned A29 is shown meeting with the existing A29 further south at a new roundabout on Shripney Road. This additional section of proposed alignment between Shripney Road proposed roundabout the southern site access roundabout has been based on a 7.3m wide single carriageway road subject to a 40mph speed limit (70kph design speed).



10. A29 Realignment Opt 3, Barnham Road to BRRR at Oldlands Farm (Dwg. No.A076162-006)

- 10.1 The alignment for Option 3 is as per Option 1 between Barnham Road and the proposed internal development access roundabout south of the railway line. South of this roundabout an alternative alignment for the realigned A29 is shown heading south to meet the A259 at a new roundabout on the under construction Bognor Regis Relief Road at Oldlands Farm.
- 10.2 The section of proposed alignment between the future Bognor Regis Relief Road proposed roundabout and site access roundabout to the south of the railway line is a 7.3m wide single carriageway all purpose road. The design has been based on 40mph speed limit (70kph design speed), with centreline radii of 1020m. The provision of 2m footways should be made on both sides (not shown on the plan).

11. A29 Realignment Opt 4, Fontwell Avenue to Lidsey Road (Dwg No.A076162-002)

- 11.1 The alignment for Option 4 is as per Option 1 between Lidsey road and Barnham Road. North of the proposed A29 / Barnham Road roundabout an additional section of proposed re-alignment is shown between Barnham Road and a new roundabout on Fontwell Avenue. This extension to the realigned A29 is shown as a 7.3m wide single carriageway road. The design has been based on 40mph speed limit (70kph design speed), with the tightest centreline radius of 360m, which will require superelevation of 5% in that area. The provision of 2m footways should be made on both sides (not shown on the plan).

12. A29 Realignment Opt 5, A29 Fontwell Roundabout to BRRR at Oldlands Farm (Dwg No.A076162-007)

- 12.1 Option 5 is designed as per option 3 between the BRRR at Oldlands Farm and Barnham Road, with an alternative alignment for the A29 shown between Barnham Road and the A27/A29 Fontwell Roundabout. Option 5 proposes that the Fontwell Roundabout be retained as at present as a four-arm roundabout junction, with new A29 alignment replacing Fontwell Avenue as the fourth southern arm.



- 12.2 The section of proposed A29 alignment between Barnham Road proposed roundabout and Fontwell Roundabout has been designed as a 40mph (70kph design speed) single carriageway all-purpose road, with the tightest centreline radius of 360m, which will require superelevation of 5% in that area. The provision of 2m footways should be made on both sides (not shown on the plan).
- 12.3 The highway alignments as set out above have been based on horizontal design criteria only, as existing levels information was not available at this initial concept stage. The highway alignment will be adapted to local levels and ground conditions as the design evolves.

13. Conclusions

- 13.1 As set out in the options detailed above, Option 1 would enable the development of a strategic residential-led, mixed-use development at Barnham (Southergate) and the provision of realigned A29; including a new road bridge crossing of the West Coastway rail line and the subsequent removal of the existing level crossing. Option 1 has been developed with close consideration of the Three Villages Visioning Brief, prepared on behalf of Arun District Council, to ensure that the key principles detailed within this document are reflected in the proposed designs.
- 13.2 To further enable further wider benefits from the realignment of the full A29, further options have been investigated which looks at further phased extensions to the section of realigned A29 provided within the Southergate site. Each of the further options provides an additional section of road towards ADC's eventual ambition to provide the full A29 link between the A27(T) at the existing Fontwell roundabout to the proposed Bognor Regis Relief Road (realigned A259).
- 13.3 The Southergate scheme will enable and facilitate an important component of this link, namely the replacement of the level crossing with a new road over-bridge. This report has shown how the full A29 realignment scheme could be achieved with the full support of ADC, WSCC and the HA.