

Ashbourne Optioneering Comparison														
To be read in conjunction with Highways Alignment Optioneering Overview drawing ABR-ACM-HML-GEN_Z2-SK-CH-10000_P01.2														
Option	Summary	Features	Design Speed	Route Length (km)	Within Flood Zone	Land Constraints and Planning Restrictions	Tissington Trail	Preliminary Surface-Surface Cut/Fill Balance	Highway Geometry				Landscape Concerns / Issues	Heritage Concerns/Issues
									Opportunity for Overtaking	Departures/relaxations due to Horizontal Profile	Departures/relaxations due to Vertical Profile	Departures/relaxations due to Roundabout Geometry		
Option 1 (RED)	Similar to original Western Option A but with roundabout at north end & avoids solar farm to south end.	Requires construction of additional roundabout on AS2 at southern extent, west of HWRC facility. New roundabout at north end of scheme replacing Spend Lane junction with AS15 opposite Sandybrook Hall	70kph (for the first 700m) and 85kph thereafter	3.26	Cuts through Flood Zone 3. Would impact Hemmone Brook flood plan to the south of the AS2 and the River Dove/Bentley Brook (overlapping the defence flood extent) on east north of the AS2 and potentially a small EA flood defence located eastward to 'The Libby'. Will require full EA flood modelling of Bentley Brook & River Dove in addition to flood compensation. Highway levels may need to be increased to ensure infrastructure flood resilience. This could conflict with adjacent properties. Existing EA Hemmone Brook modelled flood outline solely and/or modelled flood levels to be used to confirm flood plan extent/flood risk from the Brook.	Listed mileage post in vicinity of AS2 roundabout at south end of scheme. Sandybrook hall is a grade II listed building	Tissington Trail bridge over highway required. Trail levels may need to be increased on approach. Impact on farm underpass to be considered.	Total preliminary cut/fill balance shows as predominantly in fill. Cut: 30622.122+1896.474 Fill: 77102.560+1362.264 Net: 46480.443-534.210 <-B>	Opportunity for +550m of FOSD overtaking. Near straight 5670mR allowing overtaking in both directions (vertical permitting, K285m, 1% longitudinal)	One-step below relaxation - 255mR for 70kph design speed 40kph section to avoid solar panels. If flat would need to screen with landscaping to restrict natural visibility where overtaking not appropriate. May require double white line system used as per Section 9 CD 109 to tie-in with current systems in place on the AS2 and AS15 to the north.	Vertical departures from standard required for North Roundabout. Spend Lane and AS15 South arm would require steep approach gradients.	None	Northern end: greater encroachment into floodplain of River Dove and Bentley Brook with increased proximity to and truncation of FF19W and more sensitive pastures/prospects. Additional effects arising from potential floodplain compensation works in the area, and visual effects from slight embankment on floodplain. Proximity to residential receptors (The Stables, main elevation of Brooklands Farm, Bridge Barn). Longer eastern/northern section resulting in greater visibility from Peak District and I* listed houses. The closest listed buildings to this Option are the grade II listed Sandybrook Hall (1100264), and associated stables (1203577) and boundary walls (1100325). The walls are located adjacent to the AS15 close to the proposed roundabout. A grade II listed millpost south of Suckthorne (1203598) is also located close to the south-western end of the Option on the AS2. Areas of medieval ridge and furrow are also recorded within the fields along the proposed route on the online Derbyshire Historic Environment Record (HER).	There are three conservation areas, one scheduled monument and over 100 listed buildings within 1km of Option 1. The conservation areas comprise: Ashbourne, approximately 370m south-east, Calow Hall 150m north and Mapleton 400m north-west of the Option. The scheduled monument is a Medieval settlement including part of open field system, 200m south of Bank Farm (NHLE: 1018871) and is located approximately 870m west of the Option. The listed buildings are mostly concentrated in Ashbourne, and include the grade I listed Church of St Oswald (NHLE: 1207715), Old Grammar School (1207596), and mansion (1335130) as well as the grade II* listed Church of John the Baptist and numerous grade I and II* listed houses. The closest listed buildings to this Option are the grade II listed Sandybrook Hall (1100264), and associated stables (1203577) and boundary walls (1100325). The walls are located adjacent to the AS15 close to the proposed roundabout. Areas of medieval ridge and furrow are also recorded within the fields along the proposed route on the online Derbyshire Historic Environment Record (HER).
Option 2 (ORANGE)	Passes between HWRC and cemetery then lies into Option 1 south of Mapleton Bridge, being identical to Option 1 once north of Mapleton Road up to the AS15	New roundabout to replace existing on AS2 at southern extent, incorporating left / right out connections to Watery Lane. New roundabout at north end of scheme replacing Spend Lane junction with AS15 opposite Sandybrook Hall	70kph (for the first 700m) and 85kph thereafter	3.25	While initially avoid route of Flood Zone 3, does cut through Flood Zone 3. Will require full EA flood modelling of Bentley Brook & River Dove in addition to flood compensation. Highway levels may need to be increased to ensure infrastructure flood resilience. This could conflict with adjacent properties.	Land adjacent to Watery Lane is owned by Derbyshire Dales District Council (DDDC) but is subject to a land covenant. It is understood that DDC as the acquiring authority is able to overreach these restrictions through compulsory acquisition so it should have no bearing on the development in this area. Encroaches on existing allotment and cemetery ground owned by DDC. Sandybrook hall adjacent to proposed junction with AS15 is a grade II listed building	Tissington Trail bridge over highway required. Trail levels may need to be increased on approach. Impact on farm underpass to be considered.	Total preliminary cut/fill balance shows as predominantly in fill.	No opportunity for FOSD overtaking	None	Vertical departures from standard required for North Roundabout. Spend Lane and AS15 South arm would require steep approach gradients.	Departures for high entry path radius on AS2 SW arm	As Option 1 for eastern/northern section. Fewer impacts on floodplain to Dove, but large cutting E of sewage works may have greater visual influence in early years, possibly including from Ochover Hall area (large concentration of listed buildings)	There are three conservation areas, one scheduled monument and over 100 listed buildings within 1km of Option 2. The conservation areas comprise: Ashbourne, approximately 370m south-east, Calow Hall 150m north and Mapleton 400m north-west of the Option. The scheduled monument is a Medieval settlement including part of open field system, 200m south of Bank Farm (NHLE: 1018871) and is located approximately 870m west of the Option. The listed buildings are mostly concentrated in Ashbourne, and include the grade I listed Church of St Oswald (NHLE: 1207715), Old Grammar School (1207596), and mansion (1335130) as well as the grade II* listed Church of John the Baptist and numerous grade I and II* listed houses. The closest listed buildings to this Option are the grade II listed Sandybrook Hall (1100264), and associated stables (1203577) and boundary walls (1100325). The walls are located adjacent to the AS15 close to the proposed roundabout. Areas of medieval ridge and furrow are also recorded within the fields along the proposed route on the online Derbyshire Historic Environment Record (HER).
Option 3 (ORANGE)	Identical to Option 1 from AS2 to Mapleton Bridge but then diverges north of Mapleton Bridge to lie in to shortest roundabout route on the AS15 circa. 150m north of the existing AS15 junction with Windmill Lane	Requires construction of additional roundabout on AS2 at southern extent, west of HWRC facility. New roundabout at north end of scheme replacing Spend Lane junction with AS15 opposite Sandybrook Hall	70kph (over entire length)	2.12	Cuts through Flood Zone 3. Will require full EA flood modelling of Bentley Brook & River Dove in addition to flood compensation.	Listed mileage post in vicinity of AS2 roundabout at south end of scheme	Highway structure over Tissington Trail required. Trail levels may need to be reduced on approach. Impact on existing Tissington Trail farm underpass to be considered.	Total preliminary cut/fill balance shows as predominantly in fill.	Opportunity for +550m of FOSD overtaking	One-step below 255mR for 70kph design speed 40kph section to avoid solar panels. If flat would need to screen with landscaping to restrict natural visibility where overtaking not appropriate. Suggest double white line system used as per Section 9 CD 109 to tie-in with current systems in place on the AS2 and AS15 to the north.	Completely not possible to complete vertically as the existing slope of the ground is too steep on the approach to the northern roundabout. Existing road gradient circa 8%, just below location for roundabout, would be a significant departure	Option 2 ICD 30m shown, has to be smaller than normal due to properties constraining approach arms. Needs traffic modelling. OK for car & 7.5t side by side but HDV would take both lanes on circulatory	Southern end: greater encroachment into floodplain of River Dove and Bentley Brook with increased proximity to and truncation of FF19W and more sensitive pastures/prospects. Visual effects of slight embankment on floodplain. Proximity to residential receptors (The Stables, main elevation of Brooklands Farm, Bridge Barn). Extensive, engineered (congruous) curved embankment at northern roundabout, with potential visual impacts in most directions, including sensitive receptors to N (NP) and south (residential)	There are three conservation areas, one scheduled monument and over 100 listed buildings within 1km of Option 3. The conservation areas comprise: Ashbourne, approximately 240m south-east, Calow Hall 150m north and Mapleton 600m north-west of the Option. The scheduled monument is a Medieval settlement including part of open field system, 200m south of Bank Farm (NHLE: 1018871) and is located over 900m north-west of the Option. The listed buildings are mostly concentrated in Ashbourne, and include the grade I listed Church of St Oswald (NHLE: 1207715), Old Grammar School (1207596), and mansion (1335130) as well as the grade II* listed Church of John the Baptist and numerous grade I and II* listed houses. The closest listed buildings to this Option are the grade II listed millpost south of Suckthorne (1203598), located close to the south-western end of the Option on the AS2 and The Gables, a grade II listed building approximately 150m north of the roundabout on the AS15. Areas of medieval ridge and furrow are also recorded within the fields along the proposed route on the online Derbyshire Historic Environment Record (HER).
Option 4 (GREEN)	HWRC/Cemetery roundabout then passes south of barn at Mapleton Road before lie in to shortest roundabout route on the AS15	New roundabout to replace existing on AS2 at southern extent, incorporating left / right out connections to Watery Lane. Passes between existing farm house and adjacent barn conversion south of Mapleton Brook. New roundabout at north end of scheme replacing Spend Lane junction with AS15 opposite Sandybrook Hall	70kph (for the first 1300m) and 85kph thereafter	2.88	Avoids route of Flood Zone 3, but will likely require full EA flood modelling of Bentley Brook in addition to flood compensation.	Land adjacent to Watery Lane is owned by Derbyshire Dales District Council (DDDC) but is subject to a land covenant. It is understood that DDC as the acquiring authority is able to overreach these restrictions through compulsory acquisition so it should have no bearing on the development in this area. Encroaches on existing allotment and cemetery ground owned by DDC. Sandybrook hall adjacent to proposed junction with AS15 is a grade II listed building	Tissington Trail bridge over highway required. Trail levels may need to be increased on approach. Impact on farm underpass to be considered.	Total preliminary cut/fill balance shows as predominantly in fill.	No opportunity for FOSD overtaking	One-step below relaxation - 255mR for 70kph design speed to avoid sewage works	The maximum proposed vertical grade of 8% is the maximum	Departures may be required for high entry path radius on AS2 SW arm	As Option 1 for eastern/northern section. Fewer impacts on floodplain to Dove, but cutting along central section may have greater visual influence from more sensitive locations to north, possibly increase impacts. Truncation of FF19.	There are three conservation areas, one scheduled monument and over 100 listed buildings within 1km of Option 4. The conservation areas comprise: Ashbourne, approximately 370m south-east, Calow Hall 150m north and Mapleton 600m north-west of the Option. The scheduled monument is a Medieval settlement including part of open field system, 200m south of Bank Farm (NHLE: 1018871) and is located approximately 870m west of the Option. The listed buildings are mostly concentrated in Ashbourne, and include the grade I listed Church of St Oswald (NHLE: 1207715), Old Grammar School (1207596), and mansion (1335130) as well as the grade II* listed Church of John the Baptist and numerous grade I and II* listed houses. The closest listed buildings to this Option are the grade II listed Sandybrook Hall (1100264), and associated stables (1203577) and boundary walls (1100325). The walls are located adjacent to the AS15 close to the proposed roundabout. Areas of medieval ridge and furrow are also recorded within the fields along the proposed route on the online Derbyshire Historic Environment Record (HER).
Option 5 (BLUE)	HWRC/Cemetery roundabout then passes south of barn at Mapleton Road before lie in to shortest roundabout route on the AS15	New roundabout to replace existing on AS2 at southern extent, incorporating left / right out connections to Watery Lane. New roundabout at north end of scheme 100-150m north of existing AS15 junction with Windmill Lane	70kph (over entire length)	1.72	Completely out of Flood Zone 3. Could impact Hemmone Brook flood plan. Existing EA Hemmone Brook modelled flood outline solely and/or modelled flood levels to be used to confirm flood plan extent/flood risk from this Brook to the existing roundabout.	Land adjacent to Watery Lane is owned by Derbyshire Dales District Council (DDDC) but is subject to a land covenant. It is understood that DDC as the acquiring authority is able to overreach these restrictions through compulsory acquisition so it should have no bearing on the development in this area. Encroaches on existing allotment and cemetery ground owned by DDC.	Highway structure over Tissington Trail required. Trail levels may need to be reduced on approach. Impact on farm underpass to be considered.	Total preliminary cut/fill balance shows as predominantly in fill. Cut: 103092.776 Fill: 188796.036 Net: 80763.259 <-B>	No opportunity for FOSD overtaking	One-step below relaxation - 255mR for 70kph design speed to tie into AS15 roundabout	Unless the route passes over the Tissington Trail, it would not be possible (without significant departures) as the existing slope of the ground is too steep on the approach to the northern roundabout. The maximum proposed vertical grade of 8% is the maximum	Departures for high entry path radius on AS2 SW arm	Fewer impacts on floodplain to Dove, but extensive cuttings along elevated central section may have greater visual influence from more sensitive locations to north, possibly increase impacts. Truncation of FF19.	There are three conservation areas, one scheduled monument and over 100 listed buildings within 1km of Option 5. The conservation areas comprise: Ashbourne, approximately 240m south-east, Calow Hall 150m north and Mapleton 600m north-west of the Option. The scheduled monument is a Medieval settlement including part of open field system, 200m south of Bank Farm (NHLE: 1018871) and is located over 900m north-west of the Option. The listed buildings are mostly concentrated in Ashbourne, and include the grade I listed Church of St Oswald (NHLE: 1207715), Old Grammar School (1207596), and mansion (1335130) as well as the grade II* listed Church of John the Baptist and numerous grade I and II* listed houses. The closest listed buildings to this Option are the grade II listed millpost south of Suckthorne (1203598), located close to the south-western end of the Option on the AS2 and The Gables, a grade II listed building approximately 150m north of the roundabout on the AS15. Areas of medieval ridge and furrow are also recorded within the fields along the proposed route on the online Derbyshire Historic Environment Record (HER).
Option 6 (MAGENTA)	HWRC/Cemetery roundabout then passes south of barn at Mapleton Road before lie in to intermediate roundabout route on the AS15 adjacent Sandybrook garage	New roundabout to replace existing on AS2 at southern extent, incorporating left / right out connections to Watery Lane. New roundabout at north end of scheme adjacent to Calow Top Caravan park access and opposite Sandybrook Garage.	70kph (however roundabout would likely need a reduced design speed of 50kph (speed limit of 30kph) to achieve forward visibility on the existing road southern approach)	2.07	Completely out of Flood Zone 3. Could impact Hemmone Brook flood plan. Existing EA Hemmone Brook modelled flood outline solely and/or modelled flood levels to be used to confirm flood plan extent/flood risk from this Brook to the existing roundabout.	Passes through land owned by Derbyshire Dales District Council which is subject to a land covenant. Encroaches on existing allotment and cemetery ground owned by Derbyshire Dales. Section of existing road to be used as service road for access to Sandybrook garage and residential properties. Intends to remove demolition of barn opposite Sandybrook garage	Tissington Trail bridge over highway required. Trail levels may need to be increased on approach. Impact on farm underpass to be considered.	Total preliminary cut/fill balance shows as predominantly in cut. Cut: 87268.240 Fill: 33850.098 Net: 51448.142 <-C>	No opportunity for FOSD overtaking	One-step below relaxation - 255mR for 70kph design speed to tie into AS15 roundabout	Tissington Trail levels likely to need raising above road subject to Topo data. Possible alternative is lowering road subject to levels in close proximity to flood zone. The 3.33% gradient into the roundabout is technically a departure according to DMRB, but is a frequently approved and used elsewhere - eg former GC's Design Guide. The maximum proposed vertical grade of 8% is the maximum permitted	Departures for high entry path radius on AS2 SW arm. By helping the existing road section as a service road for the access (including from Ochover Hall area (large concentration of listed buildings)). Less impact than engineered impact (Option 5) but loss of mature trees in Bentley Brook food plan and compromise of field pattern around eastern roundabout. potentially putting in a ghost island right turn off the north arm although may require a departure and/or agreement with RSA team	Fewer impacts on floodplain to Dove, but extensive cuttings along elevated central section may have greater visual influence from more sensitive locations to north, possibly increase impacts. Truncation of FF19.	There are three conservation areas, one scheduled monument and over 100 listed buildings within 1km of Option 6. The conservation areas comprise: Ashbourne, approximately 450m south-east, Calow Hall 150m north and Mapleton 500m north-west of the Option. The scheduled monument is a Medieval settlement including part of open field system, 200m south of Bank Farm (NHLE: 1018871) and is located over 900m north-west of the Option. The listed buildings are mostly concentrated in Ashbourne, and include the grade I listed Church of St Oswald (NHLE: 1207715), Old Grammar School (1207596), and mansion (1335130) as well as the grade II* listed Church of John the Baptist and numerous grade I and II* listed houses. The closest listed buildings to this Option are the Gables, a grade II listed building approximately 70m south of the roundabout on the AS15. Areas of medieval ridge and furrow are also recorded within the fields along the proposed route on the online Derbyshire Historic Environment Record (HER).

- Notes:
- Further consideration of Value For Money (VFM) required to incorporate impacts of options on route length, junction form and traffic speeds.
  - Consideration of land restriction covenants required including likelihood of Compulsory Purchase (CPO)
  - More detailed feasibility options required to assess impact on Tissington trail and options for over/under bridges - to be based on topographical survey once available
  - Consideration of geotechnical constraints required
  - Landscape Concerns / Issues impacts will arise from all options to Tissington Trail / southern access; and landscape/visual impact of northern fringe of Ashbourne, where development is largely hidden by intervening landform.
  - Heritage Concerns/Issues (Options are all fairly similar in terms of number of assets, just differences in distances and a couple of listed buildings close to the ends of options. In terms of the conservation area, I think all of the options would introduce a modern element into the rural landscape, and may be increased noise/light to the north-west. However, there may also be reduced traffic through the Ashbourne CA due to the new road though, which may have a positive effect on the setting.)
  - Ecology: we don't have any known major species constraints at this point, or any designations likely to be affected; there aren't expected to be any showstoppers at this point. Differentiation between the options would likely come from limiting hedgerow loss and the footprint of the project, plus limiting impacts of the riparian habitat alongside the watercourses.