

**M42 Junction 6 Improvement
Scheme Number TR010027
Volume 6
6.3 Environmental Statement
Appendix 4.1 Initial Options Report**

Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

January 2019

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed Forms
and Procedure) Regulations 2009**

**M42 Junction 6 Improvement
Development Consent Order 202[-]**

**6.3 Environmental Statement
Appendix 4.1 Initial Options Report**

Regulation Number	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010027
Application Document Reference	6.3
Author	M42 Junction 6 Improvement Project Team and Highways England

Version	Date	Status of Version
1	January 2019	DCO Application

Appendix 4.1 – Initial Options Assessment

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Initial options assessment for January 2016 workshop

Option Numbers	Option Theme	Description	North Junction	South Junction	Junction 6	MSA	Junction Links	HS2/BIA Links	Structures Impact	Geotech Impact	Envmt Impact	Buildability Impact	Highway Design Impact	Traffic Impact (Connectivity & Resilience)	Statutory Undertakers Apparatus Impact (Pylons Only)
1	North and South Junction	Original Study Work New North and South Junctions, J6 part retained	Yes	Yes	Part-retained (A45 Slips and Circulatory)	No	Yes	Yes via North Junction	2	2	1	2	1	1	Approximately 12 132kv pylons
1A		Original Study Work revision to Option 1 - increased weaving north junction	Yes	Yes	Part-retained (A45 Slips and Circulatory)	No	Yes	Yes via North Junction	2	2	1	2	2	1	Approximately 10 132kv pylons
1B		New North and South Junction	Yes	Yes	Part-retained (A45 Slips and Circulatory)	No	No	Yes via North and South Junctions	2	2	1	2	1	1	Approximately 10 132kv pylons
1C		New North and South Junction with MSA	Yes	Yes	Part-retained (A45 Slips and Circulatory)	Yes	No	Yes via North and South Junctions	2	2	1	2	1	1	Approximately 10 132kv pylons
1D		New North and South Junction with parallel link roads	Yes	Yes	Part-retained (A45 Slips and Circulatory)	No	Yes	Yes via North and South Junctions	2	3	1	2	1	3	Approximately 17 132kv pylons
1E		New North and South Junction with parallel link roads and MSA link	Yes	Yes	Part-retained (A45 Slips and Circulatory)	Yes	Yes	Yes via North and South Junctions	2	2	1	2	1	3	Approximately 17 132kv pylons
2	South Junction Only	Original Study Work - New South Junction and connecting to J6 via parallel links (these link roads have additional diverge connections from the M42)	No	Yes	Part-retained (A45 Slips, M42 N Facing Slips and circulatory)	No	Yes	Yes via South Junction	2	4	1	3	3	4	Approximately 15 132kv pylons
2A		Original Study Work - New South Junction re-positioned for MSA Location, connecting to J6 via parallel links (these link roads have additional diverge connections from the M42)	No	Yes	Part-retained (A45 Slips, M42 N Facing Slips and circulatory)	Yes	Yes	Yes via South Junction	2	1	1	3	3	4	Approximately 19 132kv pylons
2B		New Southern Junction with parallel links to J6, positioned to reduce impact on AW and to serve the MSA	No	Yes	Part-Retained (A45 Slips and M42 N facing slips inc circulatory)	Yes	Yes	Yes via South Junction	2	2	1	3	3	3 to 4	Approximately 16 132kv pylons
2C		New Southern Junction with merge and diverge access to the M42, positioned for MSA	No	Yes	Retained	Yes	No	Yes via South Junction	4	2	1	3	2	3	Approximately 6 132kv pylons
2D		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and flood zones	No	Yes	Part-Retained (A45 slips, M42 N Facing Slips and circulatory)	No	Yes	Yes via South Junction	2	4	1	3	3	3 to 4	Approximately 15 132kv pylons
2E		New Southern Junction with merge and diverge access to the M42, positioned to reduce impact on AW and Flood Zones	No	Yes	Retained	No	No	Yes via South Junction	4	4	1	3	2	3	Approximately 6 132kv pylons
2F		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and to serve the MSA - alternative links to Damson Parkway and A452	No	Yes	Part-Retained (A45 Slips and M42 N facing slips inc circulatory)	Yes	Yes	Yes via South Junction, Damson Parkway and A452	1	2	1	3	3	1	Approximately 15 132kv pylons
2G		New Southern Junction with parallel links to J6, positioned to reduce impact on AW and to serve the MSA - alternative links to Damson Parkway and A452 Stonebridge Island	No	Yes	Part-Retained (A45 Slips and M42 N facing slips inc circulatory)	Yes	Yes	Yes via South Junction, Damson Parkway and Stonebridge Island	1	2	1	3	3	2	Approximately 17 132kv pylons
2H		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and to serve the MSA - alternative links to A45 and A452 Stonebridge Island	No	Yes	Part-Retained (A45 Slips and M42 N facing slips inc circulatory)	Yes	Yes	Yes via South Junction, Clock I/C and Stonebridge Island	1	2	1	3	3	3	Approximately 17 132kv pylons
2J		New Southern Junction with parallel links to J6, positioned to reduce impact on AW and to serve MSA - alternative links to A45 and HS2	No	Yes	Part-Retained (A45 Slips and M42 N facing slips inc circulatory)	Yes	Yes	Yes via South Junction	1	1	1	3	3	3	Approximately 17 132kv pylons
3	Interchange	Interchange	No	No	Remodelled	No	No	A45/A452	1	4	2	1	3	4	Approximately 12 132kv pylons
3A		Interchange with MSA	No	No	Remodelled	Yes	No	A45/A452	1	2	2	1	2	4	Approximately 12 132kv pylons

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4	North Junction Only	New Northern Junction with parallel links to Junction 6	Yes	No	Retained	No	Yes	Yes via North Junction	4	4	3	2	1	2	Approximately 6 132kv pylons
4A		New Northern Junction with parallel links to Junction 6 and MSA	Yes	No	Retained	Yes	Yes	Yes via North Junction	4	4	3	2	1	2	Approximately 6 132kv pylons
5	The Do Minimum Options	Do Nothing which includes Amey PPP Scheme	No	No	Retained	No	No	As existing	1	N/A	4	N/A	N/A	N/A	N/A
5A		Do Nothing which includes Amey PPP Scheme and MSA	No	No	Retained	Yes	No	As existing	1	N/A	4	N/A	N/A	N/A	N/A
6		Do minimum - tbc based on traffic figures	No	No	Retained	No	No	TBC	1	N/A	N/A	N/A	N/A	N/A	TBC
6A		Do minimum - tbc based on traffic figures	No	No (MSA bridge)	Retained	Yes	No	TBC	1	N/A	N/A	N/A	N/A	N/A	TBC
7		Low Cost Do Something - Amey PPP Scheme with dedicated lefts at Junction 6	No	No	Retained but improved	No	No	A45/A452 and HS2 Works	1	3	4	1	3	2	Approximately 2 132kv pylons (depending on NEC stats levels)
8		Birmingham Business Park Roundabout with South Facing Slips to M42	No	No	Retained	No	No	A45/A452 and HS2 Works	1	3	3	2	1	1	Approximately 2 132kv pylons
9		HS2 Extend and amend enabling works	No	No	HS2 Proposals	No	No	HS2 Works	3	3	3	2	2	1	Approximately 4 132kv pylons
10		HS2 GSJ relocated over the M42 and connected to Birmingham Business Park via parallel links	No	No	Part Retained	Yes	No	HS2 Works and existing routes	3	4	3	1	2	1	Approximately 7 132kv pylons
11		(5 lanes) All Lanes Running, including new southern junction with Dedicated left turns on the south side of Junction 6	No	No	Part Retained	Yes	No	No - HS2 Works only and BIA as existing	4	4	2	2	3	3	Approximately 4 132kv pylons
12		HS2 GSJ relocated over M42 and connected to Birmingham Business Park HS2 Proposals	No	No	Part Retained	Yes	No	HS2 works	3	4	N/A	2	2	1	Approximately 3 132kv pylons
13		Traffic Modelling Exercise - Review Signage Arrangements within and outside Birmingham Box Network to encourage drivers to take other routes							N/A	N/A	N/A	N/A	N/A	N/A	N/A

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| 1 | Very small overall impact | Would have a very small positive impact, possibly with undesirable consequences |
| 2 | Minor impact | Would have a modest overall impact |
| 3 | Moderate impact | Expected to have a reasonably significant impact on the problem identified |
| 4 | Significant impact | Expected to significantly alleviate the problem |
| 5 | Fully addresses the identified problem | Expected to fully solve the identified problem, without any undesirable consequences |

Further options assessment post-workshop with initial sifting

Option Number	Option Theme	Description	Drawing Number	Initial Engineering Assessment								Progress	Comments
				Structures Impact	Geotech Impact	Envmt Impact	Buildability Impact	Highway Impact	Traffic Impact	Ops & Safety Impact	Stats Apparatus		
1	North and South Junction	Original Study Work New North and South Junctions, junction 6 part retained	HE551485-MOU-GEN-M42 J6-SK-D-0101	2	2	1	2	1	1	N/A	12 132kv pylons	NO	Option 1 evolved into Option 1A; significant weaving issue as a DIS
1A		Original Study Work revision to Option 1 - increased weaving north junction	HE551485-MOU-GEN-M42 J6-SK-D-0102	2	2	1	2	2	1	1	10 132kv pylons	NO	Option 1A evolved into 1B with better weaving distance but still DIS but short slip road lengths (standard tapers)
1B		New North and South Junction	HE551485-MOU-GEN-M42 J6-SK-D-0103	2	2	1	2	1	1	1	10 132kv pylons	NO	Option 1B evolved into 1D; slip roads evolved into lane gain/drop & ghost islands
1C		New North and South Junction with MSA	HE551485-MOU-GEN-M42 J6-SK-D-0104	2	2	1	2	1	1	1	10 132kv pylons	NO	As 1B with MSA
1D		New North and South Junction with parallel link roads	HE551485-MOU-GEN-M42 J6-SK-D-0105	2	3	1	2	1	3	1	17 132kv pylons	YES	Evolved from 1B & removes M42-A45 severance issue;
1E		New North and South Junction with parallel link roads and MSA link	HE551485-MOU-GEN-M42 J6-SK-D-0106	2	2	1	2	1	3	1	17 132kv pylons	YES	As 1D but with MSA; but need to assess weaving impact
2	South Junction	Original Study Work - New South Junction and connecting to Junction 6 via parallel links (these link roads have additional diverge connections from the M42)	HE551485-MOU-GEN-M42 J6-SK-D-0107	2	4	1	3	3	4	N/A	15 132kv pylons	NO	Option 2 evolved from 1A
2A		Original Study Work - New South Junction re-positioned for MSA Location, connecting to Junction 6 via parallel links (these link roads have additional diverge connections from the M42)	HE551485-MOU-GEN-M42 J6-SK-D-0108	2	1	1	3	3	4	2	19 132kv pylons	YES	As 2 with MSA (and junction slightly repositioned)
2B		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and to serve the MSA	HE551485-MOU-GEN-M42 J6-SK-D-0109	2	2	1	3	3	3 to 4	2	16 132kv pylons	YES	Variant of 2A
2C		New Southern Junction with merge and diverge access to the M42, positioned for MSA	HE551485-MOU-GEN-M42 J6-SK-D-0110	4	2	1	3	2	3	2	6 132kv pylons	NO	Sub-standard weaving
2D		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and flood zones	HE551485-MOU-GEN-M42 J6-SK-D-0111	2	4	1	3	3	3 to 4	2	15 132kv pylons	YES	Variant of 2A
2E		New Southern Junction with merge and diverge access to the M42, positioned to reduce impact on AW and Flood Zones	HE551485-MOU-GEN-M42 J6-SK-D-0112	4	4	1	3	2	3	2	6 132kv pylons	NO	Sub-standard weaving
2F		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and to serve the MSA - alternative links to Damsen Parkway and A452	HE551485-MOU-GEN-M42 J6-SK-D-0113	1	2	1	3	3	1	2	15 132kv pylons	NO	Poor connectivity to main stakeholders; increased journey time; but improves severance to communities
2G		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and to serve the MSA - alternative links to Damsen Parkway and A452	HE551485-MOU-GEN-M42 J6-SK-D-0114	1	2	1	3	3	2	2	17 132kv pylons	YES	Severance to Hampton in Arden
2H		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and to serve the MSA - alternative links to A45 and A452 Stonebridge Island	HE551485-MOU-GEN-M42 J6-SK-D-0115	1	2	1	3	3	3	2	17 132kv pylons	YES	Evolved from 2G with existing severance issue to Hampton in Arden
2J		New Southern Junction with parallel links to Junction 6, positioned to reduce impact on AW and to serve the MSA - alternative links to A45 and HS2	HE551485-MOU-GEN-M42 J6-SK-D-0116	1	1	1	3	3	3	2	17 132kv pylons	YES	Evolved from 2G/2H with reduced severance and with direct connection to HS2
2K		Added following Optioneering Workshop. New Southern Junction as per Option 2B but following the alignment of Catherine De Barnes Lane to Clock Interchange.	HE551485-MOU-GEN-M42 J6-SK-D-0132	2	2	1	3	3	3	2	17 132kv pylons	YES	Variant of 2A
2L		Added following Optioneering Workshop. New Southern Junction as per Option 2B but with a Compact Loop at East Way (Variant of Ken Harrison suggestion).	HE551485-MOU-GEN-M42 J6-SK-D-0133	2	2	1	3	3	3	2	18 132kv pylons	YES	Variant of 2A
2M		Added following Optioneering Workshop. New Southern Junction as per Option 2B but with a connection to East Way under the A45 (Ken Harrison).	HE551485-MOU-GEN-M42 J6-SK-D-0134	2	2	1	3	3	3	2	18 132kv pylons	YES	Variant of 2A
3		Interchange	HE551485-MOU-GEN-M42 J6-SK-D-0117	1	4	2	1	3	4	3	12 132kv pylons	NO	Geometric issue with clock interchange; wide footprint; Evolved into Option 3D

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3A	Interchange	Interchange with MSA	HE551485-MOU-GEN-M42 J6-SK-D-0118	1	2	2	1	2	4	3	12 132kv pylons	NO	As 3 with MSA
3B		Added following the Optioneering Workshop. Hybrid Interchange Option.	HE551485-MOU-GEN-M42 J6-SK-D-0136	1	2	2	1	3	3	3	7 132kv pylons	NO	Free-flow but no clover-leaf; issue with M42 SB merge/MSA diverge
3C		Added following the Optioneering Workshop. Hybrid Interchange with connections to Stonebridge Island.	HE551485-MOU-GEN-M42 J6-SK-D-0138	1	2	2	1	2	2	3	16 132kv pylons	NO	Severely reduces land development potential; sub-standard weaving lengths
3D		Alternative Interchange Option	HE551485-MOU-GEN-M42 J6-SK-D-0139	1	2	2	1	2	4	3	14 132kv pylons	YES	Evolved from Option 3-3C with a more practicable geometry & buildability
4	North Junction	New Northern Junction with parallel links to Junction 6	HE551485-MOU-GEN-M42 J6-SK-D-0119	4	4	3	2	1	2	1	6 132kv pylons	NO	To mirror benefits from a southern junction option; sub-standard weaving to J7; Evolved into Option 4B
4A		New Northern Junction with parallel links to Junction 6 and MSA	HE551485-MOU-GEN-M42 J6-SK-D-0120	4	4	3	2	1	2	1	6 132kv pylons	NO	As 4 with MSA
4B		Added following Optioneering Workshop. Variant of a New Northern Junction with alternative slip arrangements to improve weaving.	HE551485-MOU-GEN-M42 J6-SK-D-0131	4	4	3	2	1	3	1	5 132kv pylons	YES	Evolved from 4, 4A and 1D with improved weaving distances
5	Do Minimum/Some things Options	Do Nothing which includes Amey PPP Scheme	HE551485-MOU-GEN-M42 J6-SK-D-0121	1	N/A	4	N/A	N/A	N/A	2	N/A	NO	Use as a 'do nothing' option comparison; progress if MSA planning application refused
5A		Do Nothing which includes Amey PPP Scheme and MSA	HE551485-MOU-GEN-M42 J6-SK-D-0122	1	N/A	4	N/A	N/A	N/A	2	N/A	YES	As 5 with MSA
6		Do minimum - tbc based on traffic figures	Not developed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	Use Option 5 as do minimum
6A		Do minimum - tbc based on traffic figures	Not developed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	Use Option 5A as do minimum
7		Low Cost Do Something - Amey PPP Scheme with dedicated lefts at Junction 6	HE551485-MOU-GEN-M42 J6-SK-D-0125	1	3	4	1	3	2	N/A	2 132kv pylons	YES	Free-flow at grade movements but severs NEC/MMM access
8		Birmingham Business Park Roundabout with South Facing Slips to M42	HE551485-MOU-GEN-M42 J6-SK-D-0126	1	3	3	2	1	1	N/A	2 132kv pylons	NO	Dropped due to HS2 vertical geometry issue; dependent on traffic figures
9		HS2 Extend and amend enabling works	HE551485-MOU-GEN-M42 J6-SK-D-0127	3	3	3	2	2	1	N/A	4 132kv pylons	NO	Dropped due to HS2 vertical geometry issue; dependent on traffic figures
10		HS2 GSJ relocated over M42 and connected to Birmingham Business Park via parallel links	HE551485-MOU-GEN-M42 J6-SK-D-0128	3	4	3	1	2	1	N/A	7 132kv pylons	NO	Dropped due to HS2 vertical geometry issue; dependent on traffic figures
11		(5 lanes)/ All Lanes Running with Dedicated left turns on the south side of Junction 6	HE551485-MOU-GEN-M42 J6-SK-D-0129	4	4	2	2	3	3	2	4 132kv pylons	YES	Future-proofing solution for proposed SMART motorway programme
12		HS2 GSJ relocated over M42 and connected to Birmingham Business Park HS2 Proposals	HE551485-MOU-GEN-M42 J6-SK-D-0130	3	4	3	2	2	1	N/A	3 132kv pylons	NO	Little benefit to scheme objectives; unlikely to relieve congestion at J6
13	Do Minimum/Some things Options	Traffic Modelling Exercise - Review Signage Arrangements within and outside Birmingham Box Network to encourage drivers to take other routes		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NO	Use option 5/5A as do minimum; modelling exercise not applicable
14		M42 Junction 6 with hook turn between NB Diverge and A45 Eastbound Traffic Movements, alternative hook turn SB Diverge to A45 Westbound.	HE551485-MOU-GEN-M42 J6-SK-D-0135	2	3	3	1	1	2	N/A	N/A	YES	Can be combined with Option 15; dependent on traffic figures
15		Added following Optioneering Workshop. Free flow link from A45 E to M42 N under the existing NEC access/egress.	HE551485-MOU-GEN-M42 J6-SK-D-0137	3	3	3	1	1	1	N/A	2 132kv pylons	YES	Combine with Option 14; dependent on traffic figures

1 Very small overall impact
2 Minor impact
3 Moderate impact
4 Significant impact
5 Fully addresses the identified problem

Would have a very small positive impact, possibly with undesirable consequences
Would have a modest overall impact
Expected to have a reasonably significant impact on the problem identified
Expected to significantly alleviate the problem
Expected to fully solve the identified problem, without any undesirable consequences