Idea description, name or number:	G416b - Rigid headspan with ATF also moved		
Date of assessment: 24/2/16	Stage 2 - Visual improvement fact	Stage 1 Result: Pass tor x Impact factor:	51
1st Stage Filtering	Not	(e max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	<b>,</b>
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) OTI roiling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	D 100	) 0
	Large improvement		7	D	75
	Minor improvement		3	D	0
	No discernible difference			D	0
					75
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	D 40	) 0
i.e. anticpiated failure compared with Series 1)	No difference to Series 1	1	7	D	28
	Slightly lower than Series 1		3	D	0
	Anticipated to be higher failure compared to Series 1			D	0
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	
for construction and maintenance)	Likely to require series of small disruptive possessions for installation	1	7	- ···	7
	Likely to require small disruptive possessions of installation		3	n	0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0	0	0
	Significant long term disruptive possessions for installation and/or maintenance				0
Fimescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	
product approvals planning network change etc.)	0-1 years prior to improved visual amenity	1		n	, 3
product approvals, planning, network change etc.)	1-5 years prior to improved visual amenity		3	n	,
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale		0	n n	0
	Si years prior to improved visual amenity of cadsing delay of over 1 year to electrineation amescale	3		0	0
Other environmental impact	Environmental Benefits locally or offsetting	1	10	D 20	20
	No impact		7	D	0
	Some disruption to local area - construction traffic etc.		3	D	0
	Major disruption - short term			D	0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	0
to workforce and public)	No impact		7	D	0
	limited additional risk (small amount exposure to install or maintain)	1	3	0	6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			D	0
				100	)
			Total w	eighted score	68

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

As for G416 - Rigid Headspan but also with the ATF removed from the structure.

#### Idea description, name or number:

# AS2 - Amend structure/beams to more beautiful structure/bespoke structure with ATF also buried (N101)

Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement fac No	Stage 1 Result: Pass tor x Impact factor: te max score = 100	46.9
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	- Sporton
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Rallway Group Standards (TSI) Dff rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	) 100	) 0
	Large improvement	1	70	)	70
	Minor improvement		30	)	0
	No discernible difference		(	)	0
					70
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		100	) 40	) 0
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1	1	70	)	28
	Slightly lower than Series 1		30	)	0
	Anticipated to be higher failure compared to Series 1		(	)	0
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)	1	100	) 10	) 10
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		70	)	0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30	)	0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			)	0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		100	) 10	) 0
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		70	)	0
(	1-5 years prior to improved visual amenity	1	30	)	3
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s	(	)	0
Other environmental impact	Environmental Benefits locally or offsetting	1	10	) 20	) 20
	No impart		7(		
	Some disruption to local area - construction traffic etc		3(	)	0
	Major disruption - short term		(	)	0
Safoty factors	Improved i.e. loss maintenance, greater electrical clearances etc.		10	) 20	
(to workforce and public)	No impact		70	) 20	, 0
to workforce and publicy	limited additional risk (small amount exposure to install or maintain)	1	20	, )	6
	High risk (to workforce due to extensive exposure for install/maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	I	(	)	0
				100	1
			Total we	ighted score	67
			10101110		. 07

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: Option as for AS1 but with ATF also removed.

Idea description, name or number:			
	G416 - Rigid headspan		
Date of assessment: 24/2/16		Stage 1 Result: Pass	
	Stage 2 - Visual improvement facto	or x Impact factor:	43.4
1st Stage Filtering	Note	e max score = 100	
Factors	Impact	Selection	Notes on basis/reason for
			rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
initial date	VERY Significant delay to introduction of new service OR VERY significant duration with no	Pass	
	improvement to visual impact of current electrification infrastructure = reject		
	· · · · · · · · · · · · · · · · · · ·		
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement	1	70		70
	Minor improvement		30		0
	No discernible difference		C		0
					70
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		100	40	0
(i.e. anticplated failure compared with Series 1)	No difference to Series 1	1	70		28
,	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		C		0
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		100	10	0
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation	1	70		7
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		0		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		100	10	0
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity	1	70		7
(	1-5 years prior to improved visual amenity		30		O
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s	C		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		C		0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc.		100	20	
(to workforce and public)	No impact		70	20	0
·····	limited additional risk (small amount exposure to install or maintain)	1	30		
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		C		0
				100	
			Total we	ighted score	62

Notes:

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: This concept will need bespoke design. Possibly taller stantions. Hinged rods or wires/bars/beams to provide the rigidity and performance of the portal structure but to try and mimick the visual appearance of a headspan structure.

## Idea description, name or number:

# VTTC - Use same structure as being used on Moulsford Viaduct - back to back TTC's

Date of assessment: 24/2/16	Stage 2 - Visual improvement facto	Stage 1 Result: Pass or x Impact factor:	40.8
1st Stage Filtering	Note	e max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route 140 mph Linespeed	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed	Pass Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	) 0
	Large improvement		7	D	0
	Minor improvement		3	D	60
	No discernible difference			D	0
					60
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	D 4	) O
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1	1	7	D	28
	Slightly lower than Series 1		3	D	0
	Anticipated to be higher failure compared to Series 1			D	0
Engineering Access/impact on current rail service	POP or adjacent land (no impact on operational railway)	1	10	n 1	10
(for construction and maintonanco)	Likely to require series of small discuntive persessions for installation		7	n 1	, io
(or construction and maintenance)	Likely to require series of small disruptive possessions over E (10 years for maintenance		2	5	0
	Likely to require small district possessions every 57 to years for maintenance		3	5 n	0
	Significant long term discuptive possessions for installation and/or maintenance			J	0
	significant long term distributive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works	1	10	D 1	) 10
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	D	0
	1-5 years prior to improved visual amenity		3	D	0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s		D	0
Other environmental impact	Environmental Benefits locally or offsetting		10	0 2	0 0
·	No impact	1	7	D	14
	Some disruption to local area - construction traffic etc.		3	D	0
	Major disruption - short term			D	0
Safaty factors	Improved i.e. loss maintenance, greater electrical clearances etc.		10	n 2	
(to workforce and public)	No impact		7	n 21	, U
(to workforce and public)	No impact limited additional rick (cmall amount expective to install or maintain)	1	2	5	0
	High risk (to workforce due to extensive exposure for install/maintain)		3	n	0
	failure)				Ū
				10	)
			Total we	eiahted scor	68

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: Need to review construction method for existing i.e. are foundatons installed on one side while other side is operational? Would need to review if the geometry works for having foundations/posts in the 10 foot, signal sighting issues etc.

#### Idea description, name or number:

# VTTC2 - Use same structure as being used on Moulsford Viaduct - back to back TTC but split into TTC for use on 2 track sections

Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement far N	Stage 1 Result: Pass ictor x Impact factor: lote max score = 100	40.8
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	d Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTr rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current quaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 7( 3(	) 100 ) )	0 0 0 60 0 60
Impact Factors:					
Long term Reliability (i.e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10( 7( 3(	) 40 ) )	) 0 28 0 0
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	100 70 30	) 10 ) )	) 10 0 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	100 70 30 (	) 10 ) )	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	100 70 30	) 20 ) )	) 0 14 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	100 70 30	) 20 ) )	) 0 0 6 0
			Total we	100 eighted score	) 68

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: Potential solution for 2 track sections of AONB

Idea description, name or number:     PSC - Portal with curved corners       Date of assessment: 24/2/16     Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor:     39       1st Stage Filtering     Impact     Selection     Notes on basis/reaso rejection       Factors     Impact     Greater impact/lower visual amenity     Pass       Overall environmental impact     Significant/long term negative impact to the local area which cannot be reasonably mitigated     Pass
Date of assessment: 24/2/16       Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: 39 Note max score = 100         Factors       Impact       Selection       Notes on basis/reaso rejection         Visual Impact       Greater impact/lower visual amenity       Pass         Overall environmental impact       Significant/long term negative impact to the local area which cannot be reasonably mitigated       Pass         Compliance with Functional Requirements:       Significant/long term negative impact to the local area which cannot be reasonably mitigated       Pass
Date of assessment: 24/2/16       Stage 1 Result: Pass Stage 2 - Visual improvement factor x impact factor: 39 Note max score = 100         Factors       Impact       Selection       Notes on basis/reaso rejection         Visual impact       Greater impact/lower visual amenity       Pass         Overall environmental impact       Significant/long term negative impact to the local area which cannot be reasonably mitigated       Pass         Compliance with Functional Requirements:       Significant visual impact       Significant visual impact
PSC - Portal with curved corners         Date of assessment: 24/2/16       Stage 1 Result: Pass Stage 2 · Visual improvement factor x Impact factor: 39 Note max score = 100       39         Factors       Impact       Selection       Notes on basis/reaso rejection         Visual Impact       Greater impact/lower visual amenity       Pass         Overall environmental impact       Significant/long term negative impact to the local area which cannot be reasonably mitigated       Pass         Compliance with Functional Requirements:       Significant/long term negative impact to the local area which cannot be reasonably mitigated       Pass
PSC - Portal with curved corners         Date of assessment: 24/2/16       Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: 39 Note max score = 100       39         Factors       Impact       Selection       Notes on basis/reaso rejection         Visual Impact       Greater impact/lower visual amenity       Pass         Overall environmental impact       Significant/long term negative impact to the local area which cannot be reasonably mitigated       Pass         Compliance with Functional Requirements:       Significant / Second S
Date of assessment: 24/2/16     Stage 1 Result: Pass Stage 2 - Visual improvement factor: Nimpact factor: Note max score = 100     39       Factors     Impact     Selection     Notes on basis/reaso rejection       Visual Impact     Greater impact/lower visual amenity     Pass       Overall environmental impact     Significant/long term negative impact to the local area which cannot be reasonably mittigated     Pass
Stage 2 - Visual improvement factor x Impact factor: Note max score = 100     39       Factors     Impact     Selection     Notes on basis/reaso rejection       Visual Impact     Greater impact/lower visual amenity     Pass       Overall environmental impact     Significant/long term negative impact to the local area which cannot be reasonably mitigated     Pass       Compliance with Functional Requirements:     Significant/long term negative impact to the local area which cannot be reasonably mitigated     Pass
Ist Stage Filtering     Note max score = 100       Factors     Impact     Selection     Notes on basis/reason rejection       Visual Impact     Greater impact/lower visual amenity     Pass       Overall environmental impact     Significant/long term negative impact to the local area which cannot be reasonably mitigated     Pass       Compliance with Functional Requirements:     Environmental     Environmental
Factors         Impact         Selection         Notes on basis/reasc rejection           Visual Impact         Greater impact/lower visual amenity         Pass           Overall environmental impact         Significant/long term negative impact to the local area which cannot be reasonably mitigated         Pass           Compliance with Functional Requirements:         Functional Requirements         Functional Requirements
Visual Impact Greater impact/lower visual amenity Pass Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements:
Visual Impact         Greater impact/lower visual amenity         Pass           Overall environmental impact         Significant/long term negative impact to the local area which cannot be reasonably mitigated         Pass           Compliance with Functional Requirements:         Compliance with Functional Requirements         Compliance with Functional Requirements         Compliance with Functional Requirements
Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements:
Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements:
Compliance with Functional Requirements:
compilance with indictional Requirements.
ELL logislation & Pailway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation – reject Pass
Lo registration e namedy croup standards (si) Any ovvides non-compliance i a capanet run 102 - EMIL traine - reject Pass
Di roming sock strategy for folde Arig bovious for companie te, cannot on the velocitarits - reject Pass
Rectional times An objects increased = rolect Parts
Section and uniming times Arry Opproved a diverse migrate (interact) = reject. Pass
Bauto Availability Any chiais adverse impact (or during using) route clearances Pass
Route Availability Ally Devidus adverse impact (reduction) – reject.
Timeframe
VERY Significant delay to introduction of new service OR VERY significant duration with no Pass
improvement to visual impact of current electrification infrastructure = reject
Safety Significant adverse impact on safety (construction or operational) Pass

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

actors         Range         Selection         Scoring         weightir           /isual Improvement factor         Significant improvement/virtually unnoticeable         100         1           Large improvement         70         70         70	g Overall Score 00 0 0 60 0 60
/isual Improvement factor Significant improvement/virtually unnoticeable 100 Large improvement 70 Minor improvement 30	0 00 0 60 0 60
Large improvement 70 Minor improvement 30	0 60 0 60
Minor improvement 30	60 0 60
Winter improvement 30	0 60
No discernible difference 0	60
mpact Factors:	
.ong term Reliability Better than Series 1 anticipated 100	40 0
i.e. anticpiated failure compared with Series 1) No difference to Series 1 1 70	28
Slightly lower than Series 1 30	0
Anticipated to be higher failure compared to Series 1 0	0
noineering Access/impact on current rail service ROR or adiacent land (no impact on operational railway) 1 100	10 10
for construction and maintenance) Likely to require series of small disruptive possessions for installation 70	0
Likely to require small disruptive possessions every 5/10 years for maintenance 30	-
Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction 0	0
Significant long term disruptive possessions for installation and/or maintenance	
Emercele - design_development & installation Can be installed in parallel with current electrification works 100	10 0
incluid abrilling and work change at a) 0.1 years prior to improved visital amonity 10.1	5 5
1-5 vars prior to improved visual amonity 30	,
5. Social prior to improved visual amontu or causing delay of over 1 year to electrification timescales 0	0
se years prior to inproved visual amenity or causing delay of over 1 year to electrimation innessales of	0
2014 Dther environmental impact Environmental Benefits locally or offsetting 100	20 0
No impact 1 70	14
Some disruption to local area - construction traffic etc. 30	0
Major disruption - short term 0	0
Safety factors Improved i.e. less maintenance, preater electrical clearances etc. 100	20 0
to workforce and public) No impact 70	0
limited additional risk (small amount exposure to install or maintain) 1 30	6
High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	0
	00
Total weighted so	re 65

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves a portal built with radiused members instead of traditional right angles.

#### Idea description, name or number:

# AS1- Amend structure/beams to more beautiful structure/bespoke structure (ATF still in place)

Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement facto Note	Stage 1 Result: Pass r x Impact factor: e max score = 100	36.6
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7 3	0 100 0 0 0	0 0 60 0 0 60
Impact Factors:					
Long term Reliability (i.e. anticpiated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10 7 3	0 40 0 0 0	) 0 28 0 0
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	0 10 0 0	0 10 0 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	0 10 0 0 0	) 0 0 3 0
Dther environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	0 20 0 0 0	) 0 14 0 0
Safety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact Imited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	0 20 0 0 0	) 0 0 6 0
			Total w	100 eighted score	)

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: Idea of the existing beam being replaced with a curved or wing shaped beam. Can be light underneath and dark on top.

## Idea description, name or number:

	VP - Use same structure as being used on Moulsford Viaduct - Portal		
Date of assessment: 24/2/16	·	Stage 1 Result: Pass	
1st Stage Filtering	Stage 2 - Visual improvement factor Note	max score = 100	34
Factors	Impact	Selection	Notes on basis/reason for relection
Visual Impact	Greater impact/lower visual amenity	Pass	.,
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30	) 100 ) )	) 0 0 50 0 50
mpact Factors:					
ong term Reliability i.e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Silghtly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	100 70 30 0	) 40 ) )	) 0 28 0 0
Engineering Access/Impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	100 70 30 0	) 10 ) )	) 10 0 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works O-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	100 70 30	) 10 ) )	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	100 70 30 0	) 20 ) )	) 0 14 0 0
Safety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10( 7( 3(	) 20 ) )	) 0 0 6 0
			Total we	100 eighted score	)

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

The boom on the portal being used on the viaducts is smaller than the standard series 1 and therefore looks better.

Idea description, name or number:	N108 - Standard Headspan using existing masts		
Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement facto Note	Stage 1 Result: Pass ir x Impact factor: e max score = 100	23.8
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTF rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (Increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference	1	10 7 3	0 100 0 0 0	) 0 70 0 0
mpact Factors:					70
.ong term Reliability i.e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10 7 3	0 40 0 0 0	) 0 0 0 0
Engineering Access/Impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	0 10 0 0 0	) 0 7 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	0 10 0 0 0	) 0 7 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	0 20 0 0 0	0 0 14 0 0
afety factors to workforce and public)	Improved I.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	0 20 0 0 0	) 0 0 6 0
			Total w	100 eighted score	) e 34

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Standard headspan solution. Will need engineering review to determine if it is suitable for 140 mph linespeed and can meet funcitional requirements.

Idea description, name or number:			
	Standard Lattice Beam as used in UK Railways - SL1		
Date of assessment: 24/2/16		Stage 1 Result: Pass	
1st Stage Filtering	Stage 2 - Visual improvement factor x Impact factor: 23.8 Note max score = 100		
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:	Any obvious non-compliance that is unlikely to find reasonable mitigation - reject	Page	
DfT rolling stock strategy for route	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & FMI1 trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	
,		1 4 5 5	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7 3	0 100 0 0 0	) 0 0 35 0 35
Impact Factors:					
Long term Reliability (i.e. anticpiated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Silphtly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10 7 3	10 40 10 10 0	) 0 28 0 0
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or fix to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	0 10 0 0 0	) 10 0 0 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	10 10 10 10 0	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	0 20 0 0 0	) 0 14 0 0
Safety factors (to workforce and public)	Improved I.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	0 20 0 0 0	0 0 0 6 0
			Total w	100 eighted score	) e 68

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: This option involves the use of a standard lattice beam in use already in UK railways in place of the series 1 beams - see picture:



Idea description, name or number:			
	ATF - Move ATF only and chop off rugby post upstands		
Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement fac No	Stage 1 Result: Pass stor x Impact factor: ote max score = 100	22.2
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTF rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current quaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30 (	) 100 ) ) )	0 0 30 0 30
mpact Factors:					
ong term Reliability .e. anticpiated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	100 70 30	) 40 ) )	) 0 28 0 0
ngineering Access/impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	100 70 30 (	) 10 ) )	10 0 0 0
imescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	100 70 30	) 10 ) )	) 10 0 0 0
ther environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	100 70 30	) 20 ) )	) 20 0 0 0
afety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	100 70 30	) 20 ) )	0 0 6 0
			Total we	100 eighted score	) e 74

Notes

Notes. 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the removal of the ATF wires from the portal and putting them in the ground in ducting or troughing and the removal of the 'rugby post' upstands. The view of the group was that this would improve the visual appearance of the structures. This is also a sub-option with the other structural options. There are potential issues with putting the ATF in the ground - interference with other cables and potential cable strickes (safety) - these will need to be reviewed.

#### Idea description, name or number: N109 - Bracing to reduce cross member beam dimensions Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 19.5 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Pass Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Pass Pass Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no Pass improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) Pass

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference	1	10 7 3	D 100 D D D	) () () 30 () 30 30 30
Impact Factors:					
Long term Reliability (i.e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10 7 3	D 40 D D D	) () 28 () ()
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	D 10 D D D	) 10 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5-years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	D 10 D D D	) () 7 () ()
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	D 20 D D D	) ( 14 (
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact Iimited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	D 20 D D D	) () () () ()
			Total w	100 eighted score	)

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This option involves the redesign of the portal structure with the introduction of bracing to reduce the component member sizes. Functionally there should be no difference in performance to series 1

Idea description, name or number:	1 or a series of green bridge/tunnels - A203		
Date of assessment: 24/2/16	Stare 2 - Vicual improvement facto	Stage 1 Result: Pass	10.2
1st Stage Filtering	Note	e max score = 100	17.2
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	?	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	?	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTF rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

			Criteria			
Factors	Range	Selection	Scoring	weighting	Overall Score	
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	) 100	) 0	
	Large improvement		7	)	0	
	Minor improvement	1	3	)	30	
	No discernible difference			)	0	
					30	
Impact Factors:						
Long term Reliability	Better than Series 1 anticipated		10	) 40	0 0	
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1	1	7	)	28	
	Slightly lower than Series 1		3	)	0	
	Anticipated to be higher failure compared to Series 1			)	0	
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	) 10	0	
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation	1	7	, ,	, 3	
(isi construction and maintenance)	Likely to require small disruptive possessions every 5/10 years for maintenance		31	5	0	
	Likely to require small disruptive possessions every 3710 years for maintenance		5	, 1	0	
	Significant long term disruptive possessions for installation and/or maintenance			- -	0	
Timescale - design, development & installation	Can be installed in parallel with current electrification works		10	) 10	0	
(product approvals, planning, network change etc.)	0.1 years prior to improved visual amenity		7	י ז	, 0 0	
(product approvais, planning, network change etc.)	1.5 years prior to improved visual amenity	1	3	5	3	
	Figure prior to improved visual amonity or causing dolay of over 1 year to electrification timescale			5	5	
	St years prior to improved visual amenity of causing delay of over 1 year to electrification timescale	3		,	0	
Other environmental impact	Environmental Benefits locally or offsetting	1	10	) 20	20	
	No impact		7	)	0	
	Some disruption to local area - construction traffic etc.		3	)	0	
	Major disruption - short term			)	0	
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc.		10	) 20	0	
(to workforce and public)	No impact		7	)	0	
	limited additional risk (small amount exposure to install or maintain)	1	3	5	6	
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		-	)	0	
				100	)	
			Total we	eighted score	64	

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review; This option involves the installation of green bridges to break up the long range views of the electrification and has been use don highway schemes. There is a question mark over whether this would improve the visual amenity - it has scored 30 on the basis of what potential it has, but would need to be set in the site context. There is also a question mark over the overall environmental impact due to the potential amount of construction traffic that may be required to build and transport materials to the structures.

#### Idea description, name or number:

# N113 - Longitudinal headspans to increase span (3D headspan with half of uprights removed)

Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement factor Note	Stage 1 Result: Pass r x Impact factor: : max score = 100	18.2
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTr rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current ugalign/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass ? Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference	1	100 70 30 0	) 100 ) )	) 0 70 0 0 70
Impact Factors:					
Long term Reliability (i.e. anticpiated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10( 7( 3(	) 40 ) )	) 0 0 0 0
Engineering Access/impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	100 70 30	) 10 ) )	0 0 0 3 0
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	100 70 30 0	) 10 ) )	) 0 0 3 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10( 7( 3(	) 20 ) )	) 0 14 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No Impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	100 7( 30	) 20 ) )	) 0 0 6 0
			Total we	100 National Score	26

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This option is to take the form of a standard headspan and introduce longitudinal headspans to reduce the number of uprights. This is however, likely to result in more issues and potentially higher failure rate than the standard headspan solution.

#### Idea description, name or number:

## A106 - Mix of headspans and portals (could be alternate or could be say 1 portal followed by a number of headspans)

Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement fa N	Stage 1 Result: Pass ctor x Impact factor: ote max score = 100	17.15
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	I Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTI rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

actors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7 3	0 100 0 0 0	) 0 0 35 0 35
mpact Factors:					
ong term Reliability i.e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		10 7 3	0 40 0 0 0	0 0 0 15 0
Engineering Access/Impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	0 10 0 0	) 0 7 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5- years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	0 10 0 0 0	0 0 7 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	0 20 0 0 0	0 0 14 0 0
Safety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact Iimited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	0 20 0 0 0	0 0 0 6 0
			Total w	100 eighted score	) e 49

Notes

Notes. 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves the use of standard portals mixed with headspans with the portal aiming to provide the reliability and the headspans to improve the visual appearance. This could be alternate portal and headspans or could be say 1 portal then 2 or 3 headspan sections. This would need engineering review to determine if it could work and will also need visual representation to see if it actually improves the visual amenity over the baseline series 1.

## Idea description, name or number:

#### K117 - Move ATF towards centre of boom and chop off rugby post upstands

	KTT7 - Move ATF towards centre of boom and chop off rugby post upstands		
Date of assessment: 24/2/16 1st Stage Filtering	• Stage 2 - Visual improvement fact Noi	Stage 1 Result: Pass or x Impact factor: te max score = 100	14.2
Factors	Impact	Selection	Notes on basis/reason for
			rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTF rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 71 31	) 100 ) )	) 0 0 20 0 20
Impact Factors:					
.ong term Reliability ].e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10 7 3	) 40 ) )	0 0 28 0 0
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	) 10 ) )	) 0 7 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	) 10 ) )	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	) 20 ) )	) 20 0 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact Imited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	) 2( ) )	0 0 0 6 0
			Total we	100 eighted score	) e 71

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Allows reduction of devegetation extents. May be issues withmaintenance for access.

#### Idea description, name or number:

#### DE with 'mirror paint' or mirrored finish steelwork

	P3 - Painting existing structures - with minor paint or minored minish steelwork		
Date of assessment: 24/2/16	Stage 2 - Visual Improvement fact	Stage 1 Result: Pass or x Impact factor:	13.6
1st Stage Filtering	Not	e max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (TSI)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
DfT rolling stock strategy for route	Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 71 31	) 100 ) )	) 0 0 20 0 20
Impact Factors:					
.ong term Reliability ].e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly Jower than Series 1 Anticipated to be higher failure compared to Series 1	1	10) 7) 3)	) 40 ) )	) 0 28 0 0
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	) 10 ) )	) 10 0 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	) 10 ) )	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	) 20 ) )	) 0 14 0 0
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact Iimited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10) 7) 3)	) 20 ) )	) 0 0 6 0
			Total we	100 eighted score	) e 68

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: The view was that this could reflect the surrounding landscape, trees etc and so scored higher visually than other painting options, however there could be issues with glare to train drivers and to the public. This would need further review. This option will also need maintenance and cleaning.

#### Idea description, name or number:

actors

Safety

#### N115 - Boom material non conductive (remove Small parts steel) Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 13.5 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Visual Impact Pass Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Pass Pass Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no Pass improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational) Pass

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	0 0
	Large improvement		7	0	0
	Minor improvement		3	0	50
	No discernible difference			0	0
-					50
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 4	0 0
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	0
	Slightly lower than Series 1		3	0	0
	Anticipated to be higher failure compared to Series 1	1		0	0
ingineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 1	0 0
for construction and maintenance)	Likely to require series of small disruptive possessions for installation	1	-	0	7
,	Likely to require small disruptive possessions every 5/10 years for maintenance			0	0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	0
	Significant long term disruptive possessions for installation and/or maintenance			-	-
imescale - design_development & installation	Can be installed in parallel with current electrification works		10	10 1	0 0
product approvals, planning, petwork change etc.)	0.1 years prior to improved visual amenity		-	0	0
product approvals, planning, notivorit onange etc.,	1-5 years prior to improved visual amenity			0	0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s 1		0	0
	Si years prior to improved visual amenity of causing aciay of over 1 year to electrineation amescale	3 1		0	0
Other environmental impact	Environmental Benefits locally or offsetting		10	0 2	0 0
	No impact	1	7	0	14
	Some disruption to local area - construction traffic etc.		3	0	0
	Major disruption - short term			0	0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	10 2	0 0
to workforce and public)	No impact		-	0	0
	limited additional risk (small amount exposure to install or maintain)	1	3	0	6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	0
				10	0
			Total w	eighted scor	e 27

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea is to replace the steel boom with a boom made from non-conductive material and in doing so remove some of the small parts steel. This solution is hower, unproven, and would need significant time for development, testing etc and is likely to be less reliable than the Series 1 baseline.

#### Idea description, name or number:

#### N106 - Remove need for all structures to take longitudinal loads - intermediate slimmer structure Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 11.4 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Pass Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Pass Pass Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no Pass improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) Pass

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	J 100	) 0
	Large improvement		7	J	0
	Minor improvement		3	C	20
	No discernible difference			J	0
					20
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	J 40	) 0
(i.e. anticplated failure compared with Series 1)	No difference to Series 1		7	C	0
	Slightly lower than Series 1	1	3	C	12
	Anticipated to be higher failure compared to Series 1			)	0
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)	1	10	0 1/	) 10
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7		
ior construction and maintenance)	Likely to require small disruptive possessions every 5/10 years for maintenance		3		-
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			Ĵ	0
	Significant long term disruptive possessions for installation and/or maintenance			-	-
Timescale - design_development & installation	Can be installed in parallel with current electrification works		10	0 10	) 0
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity	1	7		
product approvals, planning, notificitie inaligo etc.,	1-5 years prior to improved visual amenity		3	, )	0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s	-		0
		5			
Other environmental impact	Environmental Benefits locally or offsetting		10	) 20	) 0
	No impact	1	7	C	14
	Some disruption to local area - construction traffic etc.		3	J	0
	Major disruption - short term			)	0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 21	) 0
(to workforce and public)	No impact	1	7	C	14
	limited additional risk (small amount exposure to install or maintain)		3	J	0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			)	0
				10(	)
			Total w	inhted score	- > 57

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

Option to remove longitudinal loads in some of the portals where their visual impact is most severe. This may then allow slimmer structures to be installed.

Idea description, name or number:			
	P3 - Painting existing structures - graduated colour		
Date of assessment: 24/2/16	Stage 2 - Visual improvement f	Stage 1 Result: Pass actor x Impact factor:	10.2
1st Stage Filtering		Note max score = 100	
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigate	ed Pass	
Compliance with Functional Requirements:			
EU legislation & Railway Group Standards (15)	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMI1 trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		15
	No discernible difference		C		0
mpact Factors:					15
.ong term Reliability	Better than Series 1 anticipated		100	40	0
i.e. anticplated failure compared with Series 1)	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		C		0
ingineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)	1	100	10	10
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		70		0
· · · · · · · · · · · · ,	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		C		0
	Significant long term disruptive possessions for installation and/or maintenance				
ïmescale - design, development & installation	Can be installed in parallel with current electrification works	1	100	10	10
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		70		0
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	S	C		0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		C		0
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
to workforce and public)	No impact		70		0
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		C		0
				100	
			Total we	ighted score	68

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This could involve a lighter colour towards the sky depending on viewing points.

Idea description, name or number:			
	P4 - Painting existing structures - Camouflage /dazzle		
Date of assessment: 24/2/16	Stage 2. Visual improvement for	Stage 1 Result: Pass	10.2
1st Stage Filtering	stage z - visual improvement fac No	ote max score = 100	10.2
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:	Any obvious non-compliance that is unlikely to find reasonable mitigation - reject	Deco	
DfT rolling stock strategy for route	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMI1 trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no	Pass	
	improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		100	100	) 0
	Large improvement		/(		0
	Minor improvement		30		15
	No discernible difference		(		15
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		100	40	) 0
i.e. anticpiated failure compared with Series 1)	No difference to Series 1	1	70		28
	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		(		0
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)	1	100	10	) 10
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		(		0
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works	1	100	10	) 10
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		70		0
· · · · · · · · · · · · · · · · · · ·	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s	(	1	0
Other environmental impact	Environmental Benefits locally or offsetting		100	20	) 0
	No impact	1	70		14
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		(	1	0
afety factors	Improved i.e. less maintenance, greater electrical clearances etc.		100	20	0
to workforce and public)	No impact		70		Ō
	limited additional risk (small amount exposure to install or maintain)	1	30		6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		(	I	0
				100	)
			Total we	ighted score	68

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Can be location specific

#### Idea description, name or number: P6 - Painting existing structures - different colour post to bean Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 10.2 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Pass Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Pass Pass Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no Pass improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) Pass

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7/ 3/	0 100 0 0 0	) 0 0 15 0
mpact Factors:					15
ong term Reliability i.e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10 7 3	0 4( 0 0 0	) 0 28 0 0
ingineering Access/limpact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	0 10 0 0	) 10 0 0 0
ïmescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works O-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5- years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7/ 3/	0 10 0 0 0	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	0 20 0 0 0	0 0 14 0 0
iafety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No Impact Iimited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	0 20 0 0 0	) 0 0 6 0
			Total we	100 eighted score	) e 68

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

It was considered that painting the mast a different colour to the beam could provide an improvement in some situations/locations.

Idea description, name or number:

#### P7 - Painting existing structures - with heat sensitive paint Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 10.2 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Pass Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Pass Pass Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Pass Safety Significant adverse impact on safety (construction or operational) Pass

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7 3	) 100 ) )	0 0 0 15 0
mpact Factors:					15
ong term Reliability .e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Silghtly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10) 7) 3)	) 40 ) )	0 28 0 0
ngineering Access/Impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	) 10 ) )	10 0 0 0
imescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10) 7) 3)	) 10 ) )	10 0 0 0
ther environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	) 20 ) )	0 0 14 0 0
afety factors o workforce and public)	Improved Le. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	) 20 ) )	0 0 6 0
			Total we	100 ighted score	68

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

veed to review if such a paint exists/what the change would be and how this would be of benefit over a blended/graduated or camouflage paint

S423 - Painting existing structures - Textured coating		
	Stage 1 Result: Pass	40.0
Stage 2 - visual improvement fac No	Stage 2 - Visual improvement factor x Impact factor: 10.2 Note max score = 100	
Impact	Selection	Notes on basis/reason for
Greater impact/lower visual amenity	Pass	rejection
Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
	Deer	
Any obvious non-compliance that is unlikely to find reasonable mitigation = reject	Pass	
Must be capable of delivering line speed	Pass	
Any obvious adverse impact (increase) = reject.	Pass	
No negative impact on current guaging/route clearances	Pass	
Any obvious adverse impact (reduction) = reject.	Pass	
VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Significant adverse impact on safety (construction or operational)	Pass	
	Stage 2 - Visual improvement far         No         Impact         Greater impact/lower visual amenity         Significant/long term negative impact to the local area which cannot be reasonably mitigated         Any obvious non-compliance that is unlikely to find reasonable mitigation = reject         Must be capable of delivering line speed         Any obvious adverse impact (increase) = reject.         No negative impact or current quaging/route clearances         Any obvious adverse impact (increase) = reject.         VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact or current electrification infrastructure = reject         Significant adverse impact on safety (construction or operational)	Stage 1 Result: Pass Stage 2 · Visual improvement factor: Impact factor: Note max score = 100         Impact       Selection         Greater impact/lower visual amenity       Pass         Significant/long term negative impact to the local area which cannot be reasonably mitigated       Pass         Any obvious non-compliance that is unlikely to find reasonable mitigation = reject       Pass         Any obvious non-compliance that is unlikely to find reasonable mitigation = reject       Pass         Any obvious non-compliance that is unlikely to find reasonable mitigation = reject       Pass         Any obvious non-compliance that is unlikely to find reasonable mitigation = reject       Pass         Any obvious non-compliance it.       Pass         Any obvious non-compliance it.       Pass         Nust be capable of delivering line speed       Pass         Any obvious adverse impact (increase) = reject.       Pass         No negative impact on current quaging/route clearances       Pass         Any obvious adverse impact (reduction) = reject.       Pass         VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject       Pass         Significant adverse impact on safety (construction or operational)       Pass

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	) 100	) 0
	Large improvement		/	)	0
	Minor improvement		31	)	15
	No discernible difference			)	0
mpact Factors.					15
mpact ractors.					
ong term Reliability	Better than Series 1 anticipated		10	) 40	) 0
i.e. anticpiated failure compared with Series 1)	No difference to Series 1	1	7	)	28
	Slightly lower than Series 1		3	)	0
	Anticipated to be higher failure compared to Series 1			)	0
nnineering Access/impact on current rail service	POP or adjacent land (no impact on operational railway)	1	10	) 1(	10
for construction and maintonanco)	Likely to require series of small disruptive possessions for installation		7	, ic	, 10 0
tor construction and maintenance)	Likely to require series of small disruptive possessions for installation		2	,	0
	Likely to require shall utsi uplive possessions every 5710 years for maintenance		3	2	0
	Likely to require blockade of 2 weeks of longer to installation and/or maintenance.			,	0
	significant long term disruptive possessions for installation and/or maintenance				
Fimescale - design, development & installation	Can be installed in parallel with current electrification works	1	10	) 10	) 10
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	)	0
	1-5 years prior to improved visual amenity		3	)	0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s		)	0
Other onvironmental impact	Environmental Bonefits locally or offsetting		10	ر ۱ کر	
Stiler environmental impact	No impact	1	10	20	/ U
	No impact Some disruption to local area - construction traffic etc.	1	2	,	14
	Major disruption, short form		3	, 1	0
	wajor disi dpitori • short term			'	0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	) 20	) 0
to workforce and public)	No impact		7	)	0
	limited additional risk (small amount exposure to install or maintain)	1	3	)	6
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			)	0
				10(	1
			Total w	inhted score	, 68
			i Otali we	ignicia score	. 00

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: This option involves the application of a textured coating or paint to the existing structures to reduce the effect of the galvanised steelwork.

#### Idea description, name or number:

# P2 - Painting existing structures - aged colour or treat with ageing agent or weathering steel

#### Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 8.16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Pass Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Pass Pass Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Pass Safety Significant adverse impact on safety (construction or operational) Pass

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		100 70 30	) 100 ) )	) 0 0 12 0 12
Impact Factors:					
.ong term Reliability ].e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Silothy lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10( 7( 3(	) 40 ) )	0 0 28 0 0
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or fix to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	100 70 30	) 10 ) )	) 10 0 0 0
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s	100 70 30 0	) 10 ) )	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	100 70 30 0	) 20 ) )	) 0 14 0 0
safety factors to workforce and public)	Improved I.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	100 70 30	) 2( ) )	0 0 0 6 0
			Total we	100 eighted score	)

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

The aim of this would be fo rthe structures to blend in better.

lc

Idea description, name or number:			
	N105 - Bigger structures further apart		
Date of assessment: 24/2/16		Stage 1 Result: Pass	
1st Stage Filtering	Stage 2 - Visual improvement fact Not	or x Impact factor: te max score = 100	7.9
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Pass	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTr rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (Increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass Pass	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass	
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		100	100	0
	Large improvement		70		0
	Minor improvement		30		10
	No discernible difference		C		0
Impact Factors:					10
Long term Reliability	Better than Series 1 anticipated		100	40	0
(i.e. anticplated failure compared with Series 1)	No difference to Series 1	1	70		28
· · · · · · · · · · · · · · · · · · ·	Slightly lower than Series 1		30		0
	Anticipated to be higher failure compared to Series 1		C		0
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)	1	100	10	10
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		70		0
	Likely to require small disruptive possessions every 5/10 years for maintenance		30		0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		C		0
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		100	10	0
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity	1	70		7
	1-5 years prior to improved visual amenity		30		0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s	C		0
Other environmental impact	Environmental Benefits locally or offsetting	1	100	20	20
	No impact		70		0
	Some disruption to local area - construction traffic etc.		30		0
	Major disruption - short term		C		0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		100	20	0
(to workforce and public)	No impact	1	70		14
	limited additional risk (small amount exposure to install or maintain)		30		0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		C		0
				100	
			Total we	ighted score	79

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: May fail wind loading requirements of TSI. General view that this would only improve visual amenity very slightly over the baseline.

Idea description, name or number:			
	P1 - Painting existing structures - single colour		
Date of assessment: 24/2/16		Stage 1 Result: Pass	( <b>a</b>
1st Stage Filtering	Stage 2 - visual improvement fact No	6.8	
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity	Pass	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass	
Compliance with Functional Requirements:		D	
DFT rolling stock strategy for route	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMI I trains = reject	Pass	
140 mph Linespeed	Must be capable of delivering line speed	Pass	
Sectional running times	Any obvious adverse impact (increase) = reject.	Pass	
Gauging	No negative impact on current guaging/route clearances	Pass	
Route Availability	Any obvious adverse impact (reduction) = reject.	Pass	
Timeframe			
	VERY Significant delay to introduction of new service OR VERY significant duration with no	Pass	
	improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)	Pass	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7 3	0 100 0 0 0	) 0 0 10 0 10
mpact Factors:					
ong term Reliability i.e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Silphtly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	10 7 3	0 40 0 0 0	) 0 28 0 0
ingineering Access/impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	10 7 3	0 10 0 0 0	) 10 0 0 0
imescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 s	10 7 3	0 10 0 0 0	) 10 0 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10 7 3	0 20 0 0 0	) 0 14 0 0
afety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	10 7 3	0 20 0 0 0	0 0 0 6 0
			Total w	100 eighted score	) 68

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Only scored 10 visual as a single colour paint unlikely to be suitable for different viewpoints, times of year, lighting conditions.

#### Idea description, name or number: TSC - Use of timber, stone or concrete materials for structure Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 6.5 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection ? Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Pass Pass Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no Pass improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) Pass

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement		100 70 30	) 100 ) )	i 0 0 10
	No discernible difference		(	)	0 10
mpact Factors:					
ong term Reliability .e. anticplated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1	1	100 70 30	) 40 ) ) D	1 0 28 0 0
ngineering Access/impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or fix to timetable during construction Significant long term disruptive possessions for installation and/or maintenance	1	100 70 30	) 10 ) )	i 10 0 0 0
imescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	1 'S	10( 7( 3(	) 10 ) ) D	) 0 7 0 0
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term	1	10( 7( 3(	) 20 ) ) D	) 0 14 0 0
afety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	1	100 70 30	) 20 ) )	) 0 0 6 0
			Total we	100 eighted score	)

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

The use of materials such as timber, stone or concrete to form part of the structure were considered but throought that at best could only provide a very small visual improvement.

There would also be other issues with their introduction which would have to be assessed.

Idea description, name or number:	TL - Lower track to reduce height of equipment			
Date of assessment: 24/2/16	24/2/16 Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor:			
ist otago i ittoi ilig		5 max 50010 - 100		
Factors	Impact	Selection	Notes on basis/reason for	
Visual Impact	Greater impact/lower visual amenity	Pass	rejection	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Pass		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DfT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Pass Pass Pass Pass Pass Pass		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Pass		
Safety	Significant adverse impact on safety (construction or operational)	Pass		

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	) 100	) 0
	Large improvement		7	)	0
	Minor improvement		3	)	10
	No discernible difference			)	0
					10
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated	1	10	) 40	) 40
(i.e. anticplated failure compared with Series 1)	No difference to Series 1		7	)	0
	Slightly lower than Series 1		3	)	0
	Anticipated to be higher failure compared to Series 1			)	0
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	) 1(	) 0
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7		
ior construction and maintenance)	Likely to require small disruptive possessions every 5/10 years for maintenance		31	5	0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction	1		5	0
	Significant long term disruptive possessions for installation and/or maintenance			-	-
Timescale - design, development & installation	Can be installed in parallel with current electrification works		10	) 1(	) 0
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7		
product approvals, planning, network change etc.)	1-5 years prior to improved visual amenity	1	3	5	3
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s .		5	0
	- · · · · · · · · · · · · · · · · · · ·				
Other environmental impact	Environmental Benefits locally or offsetting		10	) 20	) 0
	No impact		7	)	0
	Some disruption to local area - construction traffic etc.	1	3	)	6
	Major disruption - short term			)	0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	) 20	) 0
(to workforce and public)	No impact		7		
·····	limited additional risk (small amount exposure to install or maintain)	1	3	-	
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	·		)	0
				100	)
			Total we	eighted score	e 55
					-

Notes

Notes. 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: This option involves the lowering of the track to reduce the overall height and impact of the electrification. Assume reduce overall height b0.5m by slabtrack It was howwever, viewed that this would not provide a very big improvement and is likely to be very disruptive and expensive.

#### Idea description, name or number:

actors

Visual Impact

Timeframe

Safety

DN - Do nothing Stage 1 Result: Pass Stage 2 - Visual improvement factor x Impact factor: Note max score = 100 Date of assessment: 24/2/16 0 1st Stage Filtering Impact Selection Notes on basis/reason for rejection N/A Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Pass Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Pass DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Pass Pass Pass Pass Gauging Route Availability No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Pass Pass VERY Significant delay to introduction of new service OR VERY significant duration with no Pass improvement to visual impact of current electrification infrastructure = reject

Pass

Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	) 100	) 0
	Large improvement		7	)	0
	Minor improvement		31	)	0
	No discernible difference	1		)	0
					0
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	) 40	) 0
(i.e. anticplated failure compared with Series 1)	No difference to Series 1	1	7	)	28
,	Slightly lower than Series 1		3	)	0
	Anticipated to be higher failure compared to Series 1			)	0
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)	1	10	) 1(	) 10
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7		
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	-	-
	Likely to require shall also aprice possessions every or to years to maintenance			5	0
	Significant long term disruptive possessions for installation and/or maintenance			- -	
Timescale - design, development & installation	Can be installed in parallel with current electrification works	1	10	) 1(	) 10
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7		
product approvals, planning, network onlinge etc.)	1-5 years prior to improved visual amenity		3	5	0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s		5	0
	Si years prior to improved visual amenity of eadsing delay of over 1 year to electrineation timescale	3		,	0
Other environmental impact	Environmental Benefits locally or offsetting		10	) 20	) 0
	No impact	1	7	)	14
	Some disruption to local area - construction traffic etc.		3	)	0
	Major disruption - short term			)	0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	) 2(	) 0
(to workforce and public)	No impact	1	7		14
	limited additional risk (small amount exposure to install or maintain)		3	-	0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		-	)	0
				100	)
			Total we	eighted score	9 76
				-	

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. All crist phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This option is the baseline option of - do nothing and leave the Series 1 portals in place - also allows for comparison on scores.

Idea description, name or number: N104 - Smaller masts closer together (series 1) Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	0
	Minor improvement		3	0	C
	No discernible difference			0	C
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
ingineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	C
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	iles		0	C
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	C
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	C
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)
			Total w	eighted score	e (

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

It was viewed that having smaller masts but having them closer together would reduce the visual amenity and so has been rejected.

#### Idea description, name or number:

N201 - Coasting

# Date of assessment: 24/2/16

1st Stage Filtering	Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100			
Factors	Impact	Selection	Notes on basis/reason for rejection	
Visual Impact	Greater impact/lower visual amenity		<b>,</b>	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated			
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTr rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (Increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject Reject		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject			
Safety	Significant adverse impact on safety (construction or operational)			

Stage 1 Result: Reject

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large Improvement		/	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	0 40	) (
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	(
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
(to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				100	)
			Total w	eighted score	

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review: Unable to have gap - cannot maintain linespeed or power electric trais through gap in overhead electrificaton. Would require modification to trains. Train spec is already defined. Issues if train broke down or had to stop at a signal or for safety reasons.

## Idea description, name or number:

# N207 - Reduced structural requirements (smaller beams etc) by reducing running speed

Date of assessment: 24/2/16 1st Stage Filtering	Stage 2 - Visual improvement factr Not		
Factors	Impact	Selection	Notes on basis/reason for
Visual Impact	Greater impact/lower visual amenity		rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject		
Safety	Significant adverse impact on safety (construction or operational)		

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7 3	0 100 0 0 0	) () () () () () () () () () () () () ()
Impact Factors:					(
Long term Reliability (i.e. anticpiated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		10 7 3	0 4( 0 0 0	
Engineering Access/Impact on current rail service (for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		10 7 3	0 10 0 0	
Timescale - design, development & installation (product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works O-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescal	es	10 7 3	0 10 0 0	) ( ( (
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		10 7 3	0 20 0 0 0	) (
Safety factors (to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		10 7 3	0 20 0 0	
				100	)
			Contract and service	a table to be a second	

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was generated without recourse to any constraints and was on the basis that the loads would be lower for a reduced running speed and hence, the structural requirements would be reduced. However, this does not comply with the functional requirement.

#### Idea description, name or number:

N208 - Use 3rd Rail (with or without shroud) & also 4th Rail

Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Reject No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) Reject

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	C
	No discernible difference			0	0
npact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
.e. anticplated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
or construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
· · · · · · · · · · · · · · · · · · ·	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	C
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification times	cales		0	C
ther environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	C
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
o workforce and public)	No impact		7	0	
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event o failure)	f		0	C
				100	)
			Total w	eighted score	e O

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. All crist phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This is rejected on the grounds that it will not comply with the rolling stock strategy for the route.

It is also unsafe to introduce more 3rd (and 4th) rail.

#### Idea desc

Idea description, name or number:	N211 - Cut & Cover /Cut and lower line		
Date of assessment: 24/2/16	Stare 2 - Visual improvement fact	Stage 1 Result: Reject	
1st Stage Filtering	Not	ie max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Reject	
Compliance with Functional Requirements: EU legislation & Rallway Group Standards (TSI) DTr rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

actors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement Minor improvement No discernible difference		10 7 3	0 100 0 0 0	) () ) )
mpact Factors:					(
.ong term Reliability j.e. anticpiated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		10 7 3	0 40 0 0	) ( ( (
Engineering Access/impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or looper to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		10 7 3	0 10 0 0	) ( ( (
Timescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescal	es	10 7 3	0 10 0 0 0	) () () ()
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		10 7 3	0 20 0 0 0	) ( ( (
Safety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		10 7 3	0 20 0 0 0	
				100	)
			Tetelou	- Index of a second	- /

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This option involves cut and cover i.e to lower the line and put in tunnel or to lower the line in a deep cutting so that it is out of view. This would involve significant overall environmental impact, major disruption to the existing operational service and would take a significant amount of time to undertake with the existing structres left in place.

#### Idea description, name or number:

actors

Visual Impact

Timeframe

Safety

N213 - Re-route the line Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Reject Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Reject VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

factors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
mpact Factors:					
.ong term Reliability	Better than Series 1 anticipated		10	10 41	) (
i.e. anticplated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	10 11	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	(
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
Fimescale - design, development & installation	Can be installed in parallel with current electrification works		10	10 11	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	les		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 2	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	10 21	) (
to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				10	)

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. All crist phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under revie

This option involves the re-routing of the line outside of the AONB however, this would have signifiant overall environmental impact in the surrounding areas and would take a significant amount of time to undertake, with the existing structures left in place.

Idea description, name or number: K128 - Large structure/statement structure Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	(
	No discernible difference			0	(
mpact Factors:					
.ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticplated failure compared with Series 1)	No difference to Series 1		7	0	
, , , , , , , , , , , , , , , , , , ,	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
ingineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
	Likely to require small disruptive possessions every 5/10 years for maintenance			0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	0
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescal	es		0	C
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)
			Total w	eighted score	e (

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
 Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
 All criteria are judged in comparison to very line protocol and the section of a state assessment will take place if more than ten options persist have any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
 It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was to create a large or statement structure as is common with say iconic bridges. The general view however, was that this was not appropriate at this location and would not improve the visual amenity.

#### Idea description, name or number:

actors

Safety

F207 - Use of Magley Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Reject No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	0
	No discernible difference			0	0
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	10 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	C
	Significant long term disruptive possessions for installation and/or maintenance				
Fimescale - design, development & installation	Can be installed in parallel with current electrification works		10	10 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	les		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	10 20	) (
to workforce and public)	No impact		7	0	C
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)
			Total w	eighted score	. (

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea (use of Maglev form of transportation) was put forward in the ideas generation phase prior to the functional requirements being made available. As such this does not comply with the DTT rolling stock strategy for the route and therefore is not a suitable option.

#### Idea description, name or number:

## K211 - Cut & Cover - differentiat between fast and slow lines i.e. fast on to

	K211 - Cut & Cover - differential between fast and slow lines i.e. fast on top		
Date of assessment: 24/2/16	• Stage 2 - Visual improvement facto	Stage 1 Result: Reject or x Impact factor: Not assessed	
ist stage i intering	NOR	s max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		<b>,</b>
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated	Reject	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTF rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current ugaign/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)		

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
					(
npact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
nnineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
	Likely to require small disruptive possessions every 5/10 years for maintenance			0	
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction.		Ŭ	0	(
	Significant long term disruptive possessions for installation and/or maintenance			-	
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
· · · · · · · · · · · · · · · · · · ·	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification times	ales		0	(
other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
afety factors	Improved i e loss maintenance, greater electrical clearances etc.		10	0 20	
to workforce and public)	No impart		7	0 20	, (
	limited additional risk (small amount exposure to install or maintain)			0	
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of		Ŭ	0	(
	failure)			-	
				100	)
			Total w	oightod score	

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This option involves cut and cover i.e to lower the line and put in tunnel or to lower the line in a deep cutting so that it is out of view and also to differentiate between the lines. i.e. the fast lines on top. This would involve significant overall environmental impact, major disruption to the existing operational service and would take a significant amount of time to undertake with the existing structres left in place.

Idea description, name or number: F305 - Painting - make the structures into artwork Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	C
	No discernible difference			0	C
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
ingineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	C
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	iles		0	C
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	C
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	C
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)
			Total w	eighted score	e (

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
 Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
 All criteria are judged in comparison to very line protocol and the section of a state assessment will take place if more than ten options persist have any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
 It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was to make the structures into artwork by painting them. The group view in assessment was that this would probably make the structures looke worse and so was rejected.

Idea description, name or number: K224 - Camouflage netting/synthetic lvy/vegetation Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) Reject

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	0
	Minor improvement		3	0	(
	No discernible difference			0	0
mpact Factors:					
.ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticplated failure compared with Series 1)	No difference to Series 1		7	0	(
, , , , , , , , , , , , , , , , , , ,	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		-	0	0
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
· · · · · · · · · · · · · · · · · · ·	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	les		0	C
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
• • • • • • • •	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	C
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc.		10	0 20	) (
to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)
			Total w	eighted score	e (

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

The group view was that the ues of camouflage netting or synthetic ivy/synthetic vegetation wrapped around or fitted to the structures would make the structures look worse. There is also significant safety issues with fixing such netting or synthetic materials in relation to proximity to the live OLE and risk/likelihood of it coming loose in places thus creating an unsafe condition.

#### Idea description, name or number:

actors

Visual Impact

Timeframe

Safety

K304 - Cladding Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

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Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. All crist phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

The group view was that cladding the structures would make them look worse. There would also be other issues with ensuring that the cladding components cannot come loose/ fail off.

#### Idea description, name or number:

F213 - OLE activated by trains - comes out of 4 foot

	Tere of demanded by mains demos out of moot			
Date of assessment: 24/2/16	State 2. Visual improvement factor	Stage 1 Result: Reject		
1st Stage Filtering	stage 2 - visuai improvement factor x impact factor: Not assessed Note max score = 100			
Factors	Impact	Selection	Notes on basis/reason for rejection	
Visual Impact	Greater impact/lower visual amenity		-j	
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated			
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTI rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	? Reject Reject		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject		
Safety	Significant adverse impact on safety (construction or operational)	Reject		

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	0
	No discernible difference			0	C
					C
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		Ŭ	0	0
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesc	ales		0	C
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	0
	Some disruption to local area - construction traffic etc.		3	0	0
	Major disruption - short term			0	C
afety factors	Improved i elless maintenance, greater electrical clearances etc.		10	0 20	
to workforce and public)	No impact		7	0	, ,
	limited additional risk (small amount exposure to install or maintain)			0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of		Ū	0	C
	failure)				
				100	)
			Tetelou	a lada da al a a a al	

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This concept is for the contact wire to rest within the 4 foot and the tains to have some form of roller system whereby the contact wire would lift and pass over the trains as the pass through the area. This idea is clearly a concept. Group view that this would not work with the trains already planned, would not be safe and would need significant development testing etc that it could not be implemented in any reasonabable timeframe. It is also unlikely to achieve linespeed.

#### Idea description, name or number:

K219 - Rising falling OLE (like washing line)

Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject ? DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe Reject VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) ?

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

actors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	(
	No discernible difference			0	C
					C
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	0
, , , , , , , , , , , , , , , , , , ,	Slightly lower than Series 1		3	0	0
	Anticipated to be higher failure compared to Series 1			0	C
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
	Likely to require small disruptive possessions for installation		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	
r	1-5 years prior to improved visual amenity		3	0	0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s .		0	C
Other environmental impact	Environmental Renefits locally or offsetting		10	0 20	) (
	No impart		7	0	
	Some disruption to local area - construction traffic etc		3	0	(
	Major disruption - short term			0	0
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	0	0
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2 and stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This concept is that a collapsable system within the 6 foot is activated by the approach of a train, opening up to allow power to be feed and then closing after the train has passed. The concept was that this would look like a series of rotary washing lines. Clearly a high level concept. The group view that this would take a very significant time to develop, test etc It is likely that this would be unable to be proven and may also be non compliant with many of the other functional requirements and potentially unsafe.

#### Idea description, name or number:

1st Stage Filtering actors

Visual Impact

Timeframe

Safety

## K226 - Reduced number of tracks or bi-directional tracks Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 Impact Selection Notes on basis/reason for rejection Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Reject VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	) (
	Large improvement		7	0	(
	Minor improvement		3	30	(
	No discernible difference			0	(
					(
npact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	10	(
	Anticipated to be higher failure compared to Series 1			0	(
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation			10	
	Likely to require small disruptive possessions every 5/10 years for maintenance			30	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		-	0	(
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	00 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	
5	1-5 years prior to improved visual amenity		3	30	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timeso	ales		0	(
ther environmental impact	Environmental Reports locally or offsetting		10	10 <i>2</i> (	
Aner environmentarimpact	No impact		-	10 20	, (
	Some disruption to local area construction traffic atc		,	0	(
	Major disruption - short term			0	
	Major disruption - short term			0	(
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	30	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				100	)
			Total w	eighted score	. (

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
 Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
 All criteria are judged in comparison to very line protocol and the section of a state assessment will take place if more than ten options persist have any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
 It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This option was rejected as it would take a significant time to undertake. It would also impact on capacity of the infrastructure for running services.

#### Idea description, name or number: G426 - Use the moulsford viaduct TTC structures staggered Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	C
	No discernible difference			0	C
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	C
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	iles		0	C
ther environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	C
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	C
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)
			Total w	eighted score	. 0

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under revie

This ldea was to use the Twin track cantilevers designs from the back to back twin track cantilevers being used on the Moulsford viaduct and to stagger them rather than using portals. The group assessed this, however, on reflection viewed that the portal structures or back to back cantilevers would look better than splitting them into two track cantilevers.

#### Idea description, name or number: G427 - Use Series 1 TTC's staggered instead of portals Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	10 10	) ()
	Large improvement		7	0	C
	Minor improvement		3	0	0
	No discernible difference			0	0
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	10 41	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	0
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
ingineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	10 11	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
· · · · · · · · · · · · · · · · · · ·	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	C
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	10 11	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	les		0	C
Other environmental impact	Environmental Benefits locally or offsetting		10	10 21	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	C
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	10 21	) (
to workforce and public)	No impact		7	0	
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				10	)
			Total w	eighted score	e (

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was to use the Series 1 track cantilevers designs and to stagger them rather than using portals. The group assessed this, however, on reflection viewed that the portal structures would look better than splitting them into two track cantilevers.

#### Idea description, name or number:

actors

Safety

K105 - Use different shape portal -(see photo from presentation) - TGV Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Reject Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	
	Large improvement		7	0	0
	Minor improvement		3	0	(
	No discernible difference			0	C
					(
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	
.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	0
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	(
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	. (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	0
	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescal	es		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	0
	Major disruption - short term			0	(
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	
to workforce and public)	No impact		7	0	C
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	
			Total w	eighted score	

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was to use a different shape portal i.e. as used on the TGV line see picture below:

However, the group assess that this would nto improve the visual amenity over the baseline model.



Idea description, name or number: A323 - Transparent/translucent FRP Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	0 40	) (
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	(
·	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
4 ····································	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	25		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
(to workforce and public)	No impact		7	0	(
,	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				100	)
			Tetelou		-

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. All crist phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was for the OLE structures to be designed and made from transparent or translucent FRP material. The group view in assessment was that this would not improve the visual

amenity compared to the baseline series 1

#### Idea description, name or number:

A321 - Glass structures (opaque or Transparent) Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no Reject improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational) ?

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

actors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable Large improvement		10 7	0 100 0	) (
	Minor improvement No discernible difference		3	0	(
mpact Factors:					
ong term Reliability i.e. anticpiated failure compared with Series 1)	Better than Series 1 anticipated No difference to Series 1 Slightly lower than Series 1 Anticipated to be higher failure compared to Series 1		10 7 3	0 40 0 0 0	) () () ()
ingineering Access/impact on current rail service for construction and maintenance)	ROR or adjacent land (no impact on operational railway) Likely to require series of small disruptive possessions for installation Likely to require small disruptive possessions every 5/10 years for maintenance Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction Significant long term disruptive possessions for installation and/or maintenance		10 7 3	0 10 0 0	
imescale - design, development & installation product approvals, planning, network change etc.)	Can be installed in parallel with current electrification works 0-1 years prior to improved visual amenity 1-5 years prior to improved visual amenity 5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescal	es	10 7 3	0 10 0 0 0	) (
Other environmental impact	Environmental Benefits locally or offsetting No impact Some disruption to local area - construction traffic etc. Major disruption - short term		10 7 3	0 20 0 0 0	) (
afety factors to workforce and public)	Improved i.e. less maintenance, greater electrical clearances etc No impact limited additional risk (small amount exposure to install or maintain) High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		10 7 3	0 20 0 0	) () () () () () () () () () () () () ()
				100	)

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2 and stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was for the OLE structures to be designed and made from some form of glass. Whilst glass has been used in construction i.e.GRP, it was viewed that this has not been undertaken for rail structures of this nature and so would take a significant time to develop, prove etc - also it was throught that these are unlikely to improve the visual amenity.

#### Idea description, name or number:

#### K201 - Different form of power for trains (batteries, flywheels, diesel, gas turbines, linear induction motor)

Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Reject No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

actors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		/	D	(
	Minor improvement		31	D	(
	No discernible difference			D	(
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	D 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	D	(
	Slightly lower than Series 1		31	D	(
	Anticipated to be higher failure compared to Series 1			D	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	D 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	D	(
	Likely to require small disruptive possessions every 5/10 years for maintenance		31	D	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			D	(
	Significant long term disruptive possessions for installation and/or maintenance				
Fimescale - design, development & installation	Can be installed in parallel with current electrification works		10	D 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	D	(
	1-5 years prior to improved visual amenity		31	D	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	5		D	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	D	(
	Some disruption to local area - construction traffic etc.		31	D	(
	Major disruption - short term			D	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	D	(
	limited additional risk (small amount exposure to install or maintain)		31	D	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			D	(
				100	)
			Total w	hightod score	

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

Various forms of powering the trains to change the OLE were generated in the ideas phase prior to setting out the functional criteria. None of the ideas listed above comply with the functional criteria and so have been rejected.

## Idea description, name or number:

## K220 - 25kV in track (low level) with system switched on when train is in section

Date of assessment: 24/2/16	• Stane 2 - Visual improvement factor	Stage 1 Result: Reject	
1st Stage Filtering	Note	max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity		
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitigated		
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTF rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (ncrease) = reject. No negative impact on current quaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	Reject	
Safety	Significant adverse impact on safety (construction or operational)	Reject	

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	10 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
					(
npact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
,	Likely to require small disruptive possessions every 5/10 years for maintenance		2	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	10 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timeso	ales		0	(
)ther environmental impact	Environmental Benefits locally or offsetting		10	10 20	) (
	No impact		7	0	
	Some disruption to local area - construction traffic etc.		2	0	(
	Major disruption - short term			0	(
afety factors	Improved i elless maintenance, greater electrical clearances etc.		10	10 20	) (
to workforce and public)	No impart		7	0 20	, (
	limited additional risk (small amount exposure to install or maintain)			0	, (
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of			0	(
	failure)				
				100	)
			Total w	eighted score	, (

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This would not work with the current DFT rolling stock strategy. There would also be significant development required taking a significant time. Significant safety concerns were also raised.

#### Idea description, name or number:

K325 - Slipform wall down the 10 foot Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe Reject VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational) Reject

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

actors	Range	Selection	Scoring	Criteria weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
mpact Factors:					
ong torm Poliability	Potter than Series 1 anticipated		10	0 4	
i.o. anticpiated failure compared with Series 1)	No difference to Series 1		10	0 4	, (
i.e. anticplated failure compared with series 1)	Slightly lower than Series 1		7	0	(
	Anticipated to be higher failure compared to Series 1		J	0	(
nainearing Assocs (impact on surrent roll convice	DOD or adjacent land (as impact as esperational railway)		10	0 1	
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		10	0 1	J (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		1	0	(
	Likely to require shall utsi uplive possessions every 5710 years for maintenance		3	0	(
	Significant long term disruptive possessions for installation and/or maintenance			0	,
imoscalo, dosign dovolonment & installation	Can be installed in parallel with current electrification works		10	0 1	
product approvals, planning, potwork change etc.)	0.1 years prior to improved visual amonity		10	0 1	, (
product approvais, planning, network change etc.)	1.5 years prior to improved visual amenity		7	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	los	5	0	
	Shiperis phone in improved visual amoney of edusing delay of over hyear to electrineation amoste	103		0	, in the second s
Other environmental impact	Environmental Benefits locally or offsetting		10	0 2	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 2	) (
to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				10	)

Notes

Safety

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2 and stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea is for a slipform wall to eb created down the 10 foot with masts on the outer extremities and some form of cable or wires attachign the OLE equipment between the masts and the sliform wall. This was viewed to reduce the visual amenity, would involve lots of work in the cenre of the track and therefore significant safety issues and/or significant time to introduce.

#### Idea de

Idea description, name or number:			
	A205 - Multiple pantographs to eliminate section of wire		
Date of assessment: 24/2/16	Stage 2 - Visual improvement	Stage 1 Result: Reject factor x Impact factor: Not assessed	
1st Stage Filtering		Note max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	10,000,001
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitiga	ted	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DTr rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (Increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.	Reject	
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	I.	
Safety	Significant adverse impact on safety (construction or operational)		

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	) (
	Large improvement		7	0	(
	Minor improvement		3	30	(
	No discernible difference			0	(
mpact Factory					(
mpact ractors.					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	30	(
	Anticipated to be higher failure compared to Series 1			0	(
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	(
,	Likely to require small disruptive possessions every 5/10 years for maintenance			-	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		, in the second s	0	(
	Significant long term disruptive possessions for installation and/or maintenance			-	
imescale - design development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, potwork change otc.)	0.1 years prior to improved visual amonity		-	10	, (
product approvais, planning, network change etc.)	1.5 years prior to improved visual amenity		-	20	
	Figure a spheric to improved visual amonity or causing delay of over 1 year to electrification times	alos		0	(
	5+ years prior to improved visual amenity or causing delay or over 1 year to electrification timesc	ales		0	
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	10	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc.		10	0 20	) (
to workforce and public)	No impact		7	10	
	limited additional risk (small amount exposure to install or maintain)			-	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of			0	, (
	failure)				
				100	)
			Total w	eighted score	. (

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

This idea or concept is to have multiple pantorgraphs on the trains to allow gaps in the OLE structures and wires with the idea being that the train would be able to draw power through one of the pantographs. However, this would not comply with the DfT strategy and would require more anchored structures which is likely to reduce the visual amenity.

Idea description, name or number: A327 - Convert stantions to 'tree structure' Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

Factors	Range	Selection	Scoring	Criteria weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	0 40	) (
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	(
·	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
4 ····································	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	25		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
(to workforce and public)	No impact		7	0	(
,	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				100	)
			Tetelou		-

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
 Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
 All criteria are judged in comparison to very line protocol and the section of a state assessment will take place if more than ten options persist have any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
 It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea is based on what has been undertake with phone masts. However they are generally indivudual and blended in with other trees. In the case of the linear railway corridor, this would be obvious and would reduce the visual amenity.

#### Idea description, name or number:

actors

Visual Impact

Timeframe

Safety

## F320 - Turn structures into a sculpture (sails, allow movement to create a moving image) Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational) ?

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
mpact Factors:					(
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
ingineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
,	Likely to require small disruptive possessions every 5/10 years for maintenance			0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction		-	0	(
	Significant long term disruptive possessions for installation and/or maintenance			-	
imescale - design_development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0.1 years prior to improved visual amenity		7	0 10	, (
product approvals, planning, network change etc.)	1-5 years prior to improved visual amenity		,	0	
	Figure prior to improved visual amonity or causing dolay of over 1 year to electrification times	alos		0	
	s+ years prior to improved visual amenity of causing delay of over 1 year to electrification times.	ales		0	
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
afety factors	Improved i elless maintenance, greater electrical clearances etc.		10	0 20	) (
to workforce and public)	No impact		7	0	
·····	limited additional risk (small amount exposure to install or maintain)			0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	f		0	(
				100	)
			Total w	eighted score	

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This concept was assessed to reduce the visual amenity and so was rejected.

There is also likely to be safety issues with such a concept.

#### Idea description, name or number: N110 - Modify structures to look victorian by adding to them Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	C
	Minor improvement		3	0	(
	No discernible difference			0	(
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	(
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescal	es		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				100	)
			Total w	eighted score	e (

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
 Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
 All criteria are judged in comparison to very line protocol and the section of a state assessment will take place if more than ten options persist have any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
 It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under re

This idea is to modify the existing structures by adding to them to try and make them look victorian such that they would be seen as being part of the landscape when the railway was built. The groups view was that this would reduce the visual amenity.

#### Idea description, name or number:

actors

Visual Impact

Timeframe

Safety

N303 - Artificial Fog Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Reject VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
					(
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	jo 4/	5 (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	
for construction and maintenance)	Likely to require series of small disruptive possessions for installation			0	í i
	Likely to require small disruptive possessions every 5/10 years for maintenance		-	ő	, i i i i i i i i i i i i i i i i i i i
	Likely to require small distribute possessions every 57 to years for maintenance		Ĭ	0	
	Significant long term disruptive possessions for installation and/or maintenance			Č.	
imescale - design_development & installation	Can be installed in parallel with current electrification works		10	10 11	n (
product approvals, planning, potwork change etc.)	0.1 years prior to improved visual amonity		10		
product approvais, planning, network change etc.)	1.5 years prior to improved visual amenity			0	
	F - years prior to improved visual amenity or cousing delay of over 1 year to electrification timese	alac	3	0	
	s+ years prior to improved visual amenity or causing delay or over 1 year to electrification timesc	ales		U	
Other environmental impact	Environmental Benefits locally or offsetting		10	jo 21	5 (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc.		10	10 20	) (
to workforce and public)	No impact		7	0	
·····	limited additional risk (small amount exposure to install or maintain)		2	0	
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				10	0
			Total w	eighted scor	e (

Notes

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review.
 Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included.
 All criteria are judged in comparison to very line protocol and the section of a state assessment will take place if more than ten options persist have any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter.
 It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This was rejected on the basis that it would take a significant timeframe to develop and implement the technology to achieve this - also not clear if this would be a visual improvement.

#### Idea description, name or number:

actors

Timeframe

Safety

N216 - Use trees as masts Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational) Reject

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	0 40	) (
(i.e. anticplated failure compared with Series 1)	No difference to Series 1		7	0	
·····	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
(,	Likely to require small disruptive possessions every 5/10 years for maintenance		. 3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
· · · · · · · · · · · · · · · · · · ·	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timescale	s		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
·	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
(to workforce and public)	No impact		7	0	
	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	(
				100	)
			Total w	eighted score	. (
Notes:				0	

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2 and stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea involves using real trees as masts to replace the steel masts.

This was considered that despite any other likely issues to be unsafe for an electrified rail environment.

Idea description, name or number: K218 - Distraction i.e. Angel of the West Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
					(
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	, (
tor construction and maintenance)	Likely to require small disruptive possessions every 5/10 years for maintenance		,	0	
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance			•	,
imescale - design_development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, petwork change etc.)	0.1 years prior to improved visual amenity		7	0	, (
product approvals, planning, network change etc.)	1.5 years prior to improved visual amenity		,	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification times:	alos		0	, (
	Si years prior to improved visual amenity of eadsing delay of over 1 year to electrineation ames	.0.03		0	, in the second s
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
afety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
to workforce and public)	No impact		7	0	(
	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)	f		0	(
				10	)
			Total w	eighted score	- e (

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2 and stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

Provides no improvement to visual amenity of the electrification but may provide other improved view/distraction - however this is outside the scope of this remit.

#### Idea description, name or number:

actors

Visual Impact

Timeframe

Safety

K216 - Compensation Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. Gauging Route Availability No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
Impact Factors:					(
Long term Reliability	Better than Series 1 anticipated		10	0 40	) (
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	(
· · · · · · · · · · · · · · · · · · ·	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design_development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
(product approvals, planning, petwork change etc.)	0.1 years prior to improved visual amenity		7	0	, (
(product approvals, planning, network change etc.)	1-5 years prior to improved visual amenity		,	0	(
	5+ years prior to improved visual amonity or causing delay of over 1 year to electrification timescale			0	, (
	st years prior to improved visual amenity of causing delay of over 1 year to electrification timescar	75		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i e less maintenance, greater electrical clearances etc.		10	0 20	) (
(to workforce and public)	No impact		7	0 20	, (
	limited additional rick (small amount exposure to install or maintain)		,	0	
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		J	0	(
				100	)
			l'otal w	eighted score	e (
Notes:					

All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. All crist phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

Compensation was put forward as an idea during ideas generation. This provide no visual improvement.

Idea description, name or number:	K217 - Engage the community (get them to build it)		
Date of assessment: 24/2/16	Stage 2 - Visual improvement	Stage 1 Result: Reject	
ist stage Filtering		Note max score = 100	
Factors	Impact	Selection	Notes on basis/reason for rejection
Visual Impact	Greater impact/lower visual amenity	Reject	rejection
Overall environmental impact	Significant/long term negative impact to the local area which cannot be reasonably mitiga	ted	
Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) DIT rolling stock strategy for route 140 mph Linespeed Sectional running times Gauging Route Availability	Any obvious non-compliance that is unlikely to find reasonable mitigation = reject Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject.		
Timeframe	VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject	ı	
Safety	Significant adverse impact on safety (construction or operational)		

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 10	) (
	Large improvement		7	0	C
	Minor improvement		3	80	C
	No discernible difference			0	C
mpact Factors:					0
ong term Reliability	Better than Series 1 anticipated		10	0 4	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	30	C
	Anticipated to be higher failure compared to Series 1			0	C
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	10 1	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	10	
	Likely to require small disruptive possessions every 5/10 years for maintenance		,	0	0
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance			0	
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	00 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	0
r	1-5 years prior to improved visual amenity		3	10	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification times	cales		0	C
)ther environmental impact	Environmental Renefits locally or offsetting		10	10 21	) (
	No impact		7	10 2	, ,
	Some disruption to local area - construction traffic etc		,	0	(
	Major disruption - short term		ŭ	0	C
			10		\
allety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	10 21	
to workforce and public)	No impact		7	0	u a
	High risk (to workforce due to extensive exposure for install/maintain)	of	3	0	0
	failure)				
				10	)
			Total w	eighted score	e (

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review:

Whilst engaging the local community is a good idea, this does not improve the visual amenity and so is outside of the remit.

#### Idea description, name or number:

actors

Safety

K323 - Solar Panels Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe Reject VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational) Reject

2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
'isual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	0
	Minor improvement		3	0	0
	No discernible difference			0	(
npact Factors:					(
ong term Reliability	Retter than Series 1 anticipated		10	0 40	) (
e anticniated failure compared with Series 1)	No difference to Series 1		7	0	, ,
	Slightly lower than Series 1		,	0	(
	Anticipated to be higher failure compared to Series 1		-	0	(
ngineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	
or construction and maintenance)	Likely to require small disruptive possessions every 5/10 years for maintenance		,	0	(
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	(
	Significant long term disruptive possessions for installation and/or maintenance				
imescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	(
	1-5 years prior to improved visual amenity		3	0	0
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	les		0	C
other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	
	Some disruption to local area - construction traffic etc.			0	(
	Major disruption - short term		-	0	C
afety factors	Improved i.e. less maintenance, greater electrical clearances etc.		10	0 20	) (
to workforce and public)	No impart		7	0	, (
	limited additional risk (small amount exposure to install or maintain)		,	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)		ŭ	0	(
				100	)
			Total w	eighted score	, (

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This option was to fit solar panel to the OLE structures. On review this would introduce more visual clutter (similar but worse to cladding), would take a significant timeframe to plan and undertake (proving safety of the system etc) and there would be requirement for regular access for maintenance/cleaning which would introduce operational safety issues.

Idea description, name or number: S422 - Ultra black paint Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering actors Impact Selection Notes on basis/reason for rejection Visual Impact Reject Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: EU legislation & Railway Group Standards (TSI) Any obvious non-compliance that is unlikely to find reasonable mitigation = reject DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Safety Significant adverse impact on safety (construction or operational)

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
Factors	Range	Selection	Scoring	weighting	Overall Score
Visual Improvement factor	Significant improvement/virtually unnoticeable		10	0 100	) (
	Large improvement		7	0	0
	Minor improvement		3	0	C
	No discernible difference			0	0
Impact Factors:					
Long term Reliability	Better than Series 1 anticipated		10	0 40	0 0
(i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	C
	Slightly lower than Series 1		3	0	C
	Anticipated to be higher failure compared to Series 1			0	C
Engineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	0 10	) (
(for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	C
	Likely to require small disruptive possessions every 5/10 years for maintenance		3	0	C
	Likely to require blockade of 2 weeks or longer to install or risk to timetable during construction			0	C
	Significant long term disruptive possessions for installation and/or maintenance				
Timescale - design, development & installation	Can be installed in parallel with current electrification works		10	0 10	) (
(product approvals, planning, network change etc.)	0-1 years prior to improved visual amenity		7	0	C
• • • • • • • •	1-5 years prior to improved visual amenity		3	0	C
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	les		0	C
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	C
	Some disruption to local area - construction traffic etc.		3	0	C
	Major disruption - short term			0	C
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc		10	0 20	) (
(to workforce and public)	No impact		7	0	C
	limited additional risk (small amount exposure to install or maintain)		3	0	C
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	C
				100	)
			Total w	eighted score	e (

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2nd stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

This idea was to use a paint that is very dark. The view however was that this would provide a shadow and will not improve the view when the sky is in the background.

#### Idea description, name or number:

actors

Safety

HS2 - Concept structures as per HS2 design competition Stage 1 Result: Reject Stage 2 - Visual improvement factor x Impact factor: Not assessed Note max score = 100 Date of assessment: 24/2/16 1st Stage Filtering Impact Selection Notes on basis/reason for rejection Visual Impact Greater impact/lower visual amenity Overall environmental impact Significant/long term negative impact to the local area which cannot be reasonably mitigated Compliance with Functional Requirements: Any obvious non-compliance that is unlikely to find reasonable mitigation = reject EU legislation & Railway Group Standards (TSI) DFT rolling stock strategy for route 140 mph Linespeed Sectional running times Any obvious non-compliance i.e. cannot run IEP & EMU trains = reject Must be capable of delivering line speed Any obvious adverse impact (increase) = reject. No negative impact on current guaging/route clearances Any obvious adverse impact (reduction) = reject. Gauging Route Availability Timeframe Reject VERY Significant delay to introduction of new service OR VERY significant duration with no improvement to visual impact of current electrification infrastructure = reject Significant adverse impact on safety (construction or operational)

## 2nd stage assessment (if none of the above are assessed as Reject and more than 10 options passing filtering)

				Criteria	
actors	Range	Selection	Scoring	weighting	Overall Score
/isual Improvement factor	Significant improvement/virtually unnoticeable		10	10 100	) (
	Large improvement		7	0	(
	Minor improvement		3	0	(
	No discernible difference			0	(
					(
mpact Factors:					
ong term Reliability	Better than Series 1 anticipated		10	0 40	) (
i.e. anticpiated failure compared with Series 1)	No difference to Series 1		7	0	(
	Slightly lower than Series 1		3	0	(
	Anticipated to be higher failure compared to Series 1			0	(
indineering Access/impact on current rail service	ROR or adjacent land (no impact on operational railway)		10	10 10	) (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		7	0	, (
for construction and maintenance)	Likely to require series of small disruptive possessions for installation		,	0	
	Likely to require small disruptive possessions every 5/10 years for maintenance			0	(
	Significant long term disruptive possessions for installation and/or maintenance			0	
imessale decign development & installation	Cap be installed in parallel with surrent electrification works		10	0 1	
Imescale - design, development & installation	Can be installed in parallel with current electrification works		10		J
product approvais, planning, network change etc.)	0- I years prior to improved visual amenity		/	0	(
	1-5 years prior to improved visual amenity		3	0	(
	5+ years prior to improved visual amenity or causing delay of over 1 year to electrification timesca	les		0	(
Other environmental impact	Environmental Benefits locally or offsetting		10	0 20	) (
	No impact		7	0	(
	Some disruption to local area - construction traffic etc.		3	0	(
	Major disruption - short term			0	(
Safety factors	Improved i.e. less maintenance, greater electrical clearances etc.		10	0 20	) (
to workforce and public)	No impact		7	0	- (
·····,	limited additional risk (small amount exposure to install or maintain)		3	0	(
	High risk (to workforce due to extensive exposure for install/maintain or risk to public in event of failure)			0	Ċ
				10	
			Total	nor	, ,
				management of the last of the	

Notes

Notes: 1. All criteria are judged in comparison to Series 1 and on the basis that the equipment has already been installed on the sections of line under review. 2. Environmental impact is not part of the remitted assessment criteria, however it is proposed that this should be included. 3. A first phase filtering of the options generated will be undertaken to remove any ideas with rejection criteria. 2 and stage assessment will take place if more than ten options pass through the first filter. 4. It has been agreed in discussion with Network Rail that cost (capital or operating cost) is not to form part of the assessment at this phase.

Free text to record notes/discussions on option under review

Prior to the workshop, M Walker talked to one of the judges of the HS2 design competition and was advised that the designs are commercially confidential and that the designers would not be able to discuss the designs. Given that the designs are in an early development stage and commercially confidential, it was anticpated that there will be a significant time plus likely evolotion to less visually aesthetic structures. Latest available visualisations from the 3 finalists were shown during the ideas generation phase of the workshop so that any aesthetically useful ideas could be considered as part of the ideas generation of unique ideas that where relevant will have been identified separately.