

The Network Rail (Leeds to Micklefield Enhancements) Order

CD 7.23 – Level Crossing Safety Proof of Evidence of Andy Cunningham

Amended optioneering Tables

Key:

Colour	Status
	Option Rejected
	Option Recommended

3.9 Barrowby Lane – OPTIONEERING

3.9.1 The table below shows the CBA and GDF on previous NRA options considered.

Option	Term	ALCRM risk score	ALCRM FWI	Cost	Benefit Cost Ratio	Status	Comments
Closure via extinguishment / Diversion	Long Term	M13	0	60K	CBA 7.461 CBA+GD 18.903	REJECTED	This option provides a positive CBA and removes all unacceptable risk at the Crossing but there is no suitable diversionary route.
Closure by stepped footbridge	Long Term	M13	0	2.5M	CBA 0.1794 CBA+GD 0.4486	REJECTED	This option does not pass a CBA.

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Closure by ramped Bridleway bridge	Long Term	M13	0	2.5M	CBA 0.1794 CBA+GD 0.4486	RECOMMENDED	This option's costs have been estimated at 2.5M along with Barrowby Lane been <u>at</u> 1.5M total cost of bridge 4M. CBAs combined together produce a positive -CBA <u>of</u> $0.4486+0.5232=0.9718$. <u>Business decision whether to install.</u>
Implementing low-cost improvements to the Level Crossing.	Short Term	C4	0.002930531	15K	CBA 0.3183 CBA+GD 0.7959	REJECTED	Implementing all feasible low-cost options will not reduce risk SFAIRP.
Installation of Integrated MSL	Long Term	C4	0.002930531	0	CBA 0 CBA+GD 0	REJECTED	This option is already installed.

4.8 Barrowby Foot – Optioneering

4.8.1 The table below shows the CBA and GDF on previous NRA options considered.

Option	Term	ALCRM risk score	ALCRM FWI	Cost	Benefit Cost Ratio	Status	Comments
Closure via extinguishment / Diversion	Long Term	M13	0	60K	CBA 5.2319 CBA+GD 13.0796	REJECTED	This option provides a positive CBA and removes all unacceptable risk at the Crossing No suitable diversionary route available.
Closure by stepped footbridge	Long Term	M13	0	2.5M	CBA 0.1256 CBA+GS 0.3139	REJECTED	This option does not pass a CBA.
Closure by ramped footbridge	Long Term	M13	0	1.5M	CBA 0.2093 CBA+GD 0.5232	RECOMMENDED	This option does pass a CBA. The cost has been split with Barrowby Lane and so combined scores to provide one bridge and close both crossings. CBA+GD $0.532+0.4486=0.9718$, which is close to positive CBA. <u>Business decision whether to install. $6-1.238$</u>
Installation of Overlay MSL	Long Term	C12	0.00000435	150K	CBA 0.1840 CBA+GD 0.4600	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk).

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Installation of Integrated MSL	Long Term	C12	0.00000435	2M	CBA 0.0213 CBA+GD 0.0533	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk).
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5.7 Garforth Moor – OPTIONEERING

5.7.1 The table below shows the CBA and GDF on previous NRA options considered.

Option	Term	ALCRM risk score	ALCRM FWI	Cost	Benefit Cost Ratio	Status	Comments
Closure via extinguishment / Diversion	Long Term	M13	0	60K	CBA 10.3760 CBA+GD 25.94	RECOMMENDED	This option provides an intensively positive CBA and removes all unacceptable risk at the Crossing
Closure by stepped footbridge	Long Term	M13	0	2.5M	CBA 0.2490 CBA+GD 0.6226	REJECTED	This option does not pass a CBA. There is also insufficient room within NR's land holdings to allow for the construction of a bridge. Land and Planning constraints.
Closure by ramped footbridge	Long Term	M13	0	3.5M	CBA 0.1779 CBA+GD 0.447	REJECTED	This option does not pass a CBA. There is also insufficient room within NR's land holdings to allow for the construction of a bridge. Land and Planning constraints.
Implementing low-cost improvements to the Level Crossing.	Short Term	C3	0.00669795	15K	CBA 0.3183 CBA+GD 0.7959	REJECTED	Implementing all feasible low-cost options will not reduce risk SFAIRP.
Installation of Supplementary Audible Warning Device (SAWD)	Short Term	C3	0.00669795	25K	CBA 0 CBA+GD 0	REJECTED	Does not pass CBA. Does not provide adequate mitigation. The whistle boards are not compliant and so cannot install Supplementary audible Warning Device (SAWD)

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Installation of Overlay MSL	Long Term	C4	0.003641453	150K	CBA 0.5048 CBA+GD 1.2619	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk). Unable to install due to the proximity of the station.
Installation of Integrated MSL	Long Term	C4	0.003641453	1.2M	CBA 0.0953 CBA+GD 0.2382	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk). Unable to install due to the proximity of station.

6.7 Peckfield – OPTIONEERING

6.7.1 The table below shows the CBA and GDF on previous NRA options considered.

Option	Term	ALCRM risk score	ALCRM FWI	Cost	Benefit Cost Ratio	Status	Comments
Closure via extinguishment / Diversion	Long Term	M13	0	60k	CBA 11.6189 CBA+GD 29.042	RECOMMENDED	This option provides an intensively positive CBA and removes all unacceptable risk at the Crossing
Closure by stepped footbridge	Long Term	M13	0	2.5M	CBA 0.2789 CBA+GD 0.6971	REJECTED	This option does not pass a CBA. There is also insufficient room within NR's land holdings to allow for the construction of a bridge. Land and Planning constraints.
Closure by ramped footbridge	Long Term	M13	0	6M	CBA 0.1162 CBA+GD 0.2905	REJECTED	This option does not pass a CBA. There is also insufficient room within NR's land holdings to allow for the construction of a bridge. Land and Planning constraints.
Implementing low-cost improvements to the Level Crossing.	Short Term	B3	0.008144742	15K	CBA 0.4007 CBA+GD 1.0019	REJECTED	Implementing all feasible low-cost options will not reduce risk SFAIRP.
Installation of Overlay MSL	Long Term	C4	0.002078772	150K	CBA 1.0583 CBA+GD 2.6457	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk). Unable to install due to proximity of rail junctions and station nearby.

Installation of Integrated MSL	Long Term	C4	0.002078772	1.2M	CBA 0.1582 CBA+GD 0.3957	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk). Unable to install due to proximity of rail junctions and station nearby.
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7.8 Highroyds Wood – OPTIONEERING

7.8.1 The table below shows the CBA and GDF on previous NRA options considered.

Option	Term	ALCRM risk score	ALCRM FWI	Cost	Benefit Cost Ratio	Status	Comments
Closure via extinguishment / Diversion	Long Term	M13	0	60K	CBA 5.8736 CBA+GD 14.6840	RECOMMENDED	This option provides an intensively positive CBA and removes all unacceptable risk at the Crossing
Closure by stepped footbridge	Long Term	M13	0	2.5M	CBA 0.1410 CBA+GD 0.3524	REJECTED	This option does not pass a CBA. There is also insufficient room within NR's land holdings to allow for the construction of a bridge. Land and Planning constraints.
Closure by ramped footbridge	Long Term	M13	0	3.5M	CBA 0.1007 CBA+GD 0.2517	REJECTED	This option does not pass a CBA. There is also insufficient room within NR's land holdings to allow for the construction of a bridge. Land and Planning constraints.
Implementing low-cost improvements to the Level Crossing.	Short Term	C5	0.000804929	15K	CBA 0.5937 CBA+GD 1.4842	REJECTED	Implementing all feasible low-cost options will not reduce risk SFAIRP.

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Installation of SAWD	Short Term	C5	0.000784 641	25K	CBA 0 CBA+GD 0	REJECTED	Does not pass CBA. Does not provide adequate mitigation (residual risk).
Installation of Overlay MSL	Long Term	D5	0.000580 573	150K	CBA 0.2082 CBA+GD 0.5205	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk). Unable to install due to rail junctions within the strike in.
Installation of Integrated MSL	Long Term	D5	0.000580 573	1.2M	CBA 0.0391 CBA+GD 0.0978	REJECTED	This option does not pass a CBA. Does not provide adequate mitigation (residual risk). Unable to install due to rail junctions within strike in.