

APPRAISAL- Greenhouse Gases

Proposal Name: Hucknall Town Centre Improvement Scheme

Current Year of Appraisal:

Proposal Opening year:

Project (Road/Rail or Road and Rail): Road

Overall Assessment Score:

Net Present Value of Carbon Emissions of Proposal (£):

(60 Year Period)

*positive value reflects **net benefit** (i.e. carbon emissions reduction)

Quantitative Assessment:

Change in Carbon Emissions over 60 year appraisal period (tonnes):

(between with scheme and without scheme scenarios)

Change in Carbon Emissions in Opening year (tonnes):

(between with scheme and without scheme scenarios)

Qualitative Comments:

An increase in the the number of total vehicles miles travelled resulting from the new road build has resulted in an increase in the levels of Carbon emitted. However, it is possible that this could be offset by reductions in greenhouse gas emissions that is associated with more efficient traffic flow i.e. vehicles are no longer snarled up on the High Street.

Sensitivity Analysis:

Description:

Upper bound Net Present Value of Carbon Emissions of Proposal (£):

Lower bound Net Present Value of Carbon Emissions of Proposal (£):

Data Sources:

COBA V11 R7 was used to calculate Carbon Emissions. COBA only gives opening year emissions and total levels.

Tonnes of carbon emitted:

Road:		Tonnes of carbon emitted in without scheme scenario	Tonnes of carbon emitted in with scheme scenario
Year			
2011	896	899	
2012			
2013			
2014			
2015			
2016			
2017			
2018			
2019			
2020			
2021			
2022			
2023			
2024			
2025			
2026			
2027			
2028			
2029			
2030			
2031			
2032			
2033			
2034			
2035			
2036			
2037			
2038			
2039			
2040			
2041			
2042			
2043			
2044			
2045			
2046			
2047			
2048			
2049			
2050			
2051			
2052			
2053			
2054			
2055			
2056			
2057			
2058			
2059			
2060			
2061			
2062			
2063			
2064			
2065			
2066			
2067			
2068			
2069			
2070			

Rail:		Tonnes of carbon emitted in without scheme scenario	Tonnes of carbon emitted in with scheme scenario
Year			
2011	0	0	
2012	0	0	
2013	0	0	
2014	0	0	
2015	0	0	
2016	0	0	
2017	0	0	
2018	0	0	
2019	0	0	
2020	0	0	
2021	0	0	
2022	0	0	
2023	0	0	
2024	0	0	
2025	0	0	
2026	0	0	
2027	0	0	
2028	0	0	
2029	0	0	
2030	0	0	
2031	0	0	
2032	0	0	
2033	0	0	
2034	0	0	
2035	0	0	
2036	0	0	
2037	0	0	
2038	0	0	
2039	0	0	
2040	0	0	
2041	0	0	
2042	0	0	
2043	0	0	
2044	0	0	
2045	0	0	
2046	0	0	
2047	0	0	
2048	0	0	
2049	0	0	
2050	0	0	
2051	0	0	
2052	0	0	
2053	0	0	
2054	0	0	
2055	0	0	
2056	0	0	
2057	0	0	
2058	0	0	
2059	0	0	
2060	0	0	
2061	0	0	
2062	0	0	
2063	0	0	
2064	0	0	
2065	0	0	
2066	0	0	
2067	0	0	
2068	0	0	
2069	0	0	
2070	0	0	

Monetary calculation of total change resulting from scheme:

Year	Change in tonnes of carbon emitted	Social cost of carbon per tonne	Social cost of carbon for year change	NPV
2011	3	83.84	251.51	-184.54
2012	0	84.87	0.00	0.00
2013	0	85.90	0.00	0.00
2014	0	86.94	0.00	0.00
2015	0	87.97	0.00	0.00
2016	0	89.01	0.00	0.00
2017	0	90.04	0.00	0.00
2018	0	91.08	0.00	0.00
2019	0	92.11	0.00	0.00
2020	0	93.15	0.00	0.00
2021	0	94.18	0.00	0.00
2022	0	95.22	0.00	0.00
2023	0	96.25	0.00	0.00
2024	0	97.29	0.00	0.00
2025	0	98.32	0.00	0.00
2026	0	99.36	0.00	0.00
2027	0	100.40	0.00	0.00
2028	0	101.43	0.00	0.00
2029	0	102.47	0.00	0.00
2030	0	103.50	0.00	0.00
2031	0	104.54	0.00	0.00
2032	0	105.57	0.00	0.00
2033	0	106.61	0.00	0.00
2034	0	107.64	0.00	0.00
2035	0	108.68	0.00	0.00
2036	0	109.71	0.00	0.00
2037	0	110.75	0.00	0.00
2038	0	111.78	0.00	0.00
2039	0	112.82	0.00	0.00
2040	0	113.85	0.00	0.00
2041	0	114.89	0.00	0.00
2042	0	115.92	0.00	0.00
2043	0	116.96	0.00	0.00
2044	0	117.99	0.00	0.00
2045	0	119.03	0.00	0.00
2046	0	120.06	0.00	0.00
2047	0	121.10	0.00	0.00
2048	0	122.13	0.00	0.00
2049	0	123.17	0.00	0.00
2050	0	124.20	0.00	0.00
2051	0	125.24	0.00	0.00
2052	0	126.27	0.00	0.00
2053	0	127.31	0.00	0.00
2054	0	128.34	0.00	0.00
2055	0	129.38	0.00	0.00
2056	0	130.41	0.00	0.00
2057	0	131.45	0.00	0.00
2058	0	132.48	0.00	0.00
2059	0	133.52	0.00	0.00
2060	0	134.55	0.00	0.00
2061	0	135.59	0.00	0.00
2062	0	136.62	0.00	0.00
2063	0	137.66	0.00	0.00
2064	0	138.69	0.00	0.00
2065	0	139.73	0.00	0.00
2066	0	140.76	0.00	0.00
2067	0	141.80	0.00	0.00
2068	0	142.83	0.00	0.00
2069	0	143.87	0.00	0.00
2070	0	144.90	0.00	0.00

Net Present Value of Carbon Emission -184.54