


Project: Compiled by: Document ref:		Queensbury Tunnel Greenway Feasibility Study 10533-ICA											
Assessment Summary		Corridors - for locations see Figure 5, Queensbury Tunnel Greenway Feasibility Study											
		1	2	3a	3b	4	5	6	7	8	9		
Design Criteria		Cullingworth - Keighley	GNRT (Cullingworth - Queensbury)	Valley Floor (Bradford - Queensbury)	Thornton Road (Bradford - Thornton)	Halifax - Queensbury Tunnel	Station Road (Queensbury N to town)	Queensbury Tunnel	Clayton variation (Bradford - Clayton - Queensbury)	Bradshaw variation (Holmfild - GNRT)	CatherineS Variation (Halifax - Queensbury town)		
Coherence	Score	3	4	4	5	4	2	4	4	4	2		
	Comments	Potential links with existing NCN at each end, and a local cycle route at Hainworth. The route provides limited potential for day to day journeys, being mostly outside urban settings.	Includes GNRT NCN link, and local route cycle routes to Harecroft, Wilsden and Harden.	Links to existing NCN at both ends, and local cycling and walking routes at Bradford end of corridor.	Links to existing NCN at both ends, and local cycling and walking routes at Bradford end of corridor. Good opportunity for day to day cycling support.	No current links to NCN, but potential to link Ovenden to central Halifax and associated network and infrastructure.	Existing NCN link, rated poor. Links to GNRT, and local footpaths. Severe gradient limits consistency of provision compared to other corridors.	Arguably critical link in wider Keighley/ Bradford/ Halifax regional network. Link to existing GNRT at northern end.	Links with local cycling and walking routes at Bradford end. Links with NCN at Queensbury end. Some potential for day to day destination cycling support.	Link with GNRT at northern end, and takes in Ilkington at southern end.	Links to NCN at northern end, footpaths and bridleways, but limited day to day destination potential.		
Directness	Score	5	5	3	2	3	4	5	3	2	3		
	Comments	Corridor is the shortest link, with no major roads/severance.	Corridor as direct as possible give waterbody obstacles, and provides good opportunity for continuous progress.	Corridor slightly indirect to provide greenway option. Major roads to be navigated at Bradford end	Direct link from Bradford to exiting NCN, but not so direct link for other strategic towns. Higher potential for stop start as urban artery.	Corridor present reasonably direct link from Halifax to qtr. southern portal. Complex highway network at Halifax end presents challenging environment for maintaining forward momentum	Shortest link from Town to northern Tunnel portal. No obstacles to momentum (gradient excepted) and provide link to Brown lane not available to vehicles.	Shortest possible link, with no obstacles, between tunnel portals.	Reasonably direct link linking Bradford-Clayton-Queensbury. Corridor provides good opportunity for greenway/on-road hybrid route, compromising between distance/opportunity for forward momentum.	Indirect route avoiding use of tunnel. Significantly extends distance to Queensbury and Bradford.	Provides reasonably direct link between Halifax and Queensbury, avoiding ancient woodland.		
Safety	Score	3	5	4	4	2	5	4	3	3.5	2		
	Comments	Outside Keighley and Cullingworth, the corridor is largely open fields which could facilitate traffic-free options. At northern and southern ends of corridor, existing road layouts are likely to constrain options.	Potential to develop traffic free route within corridor.	Traffic free potential beyond A6177	Segregated roadside route proposed. Objectively safe, but perception of safety may be reduce among less confident users.	Complex highway network with limited route options presents challenge to provision of safe and perceived safe route at southern end. Highly dependent on route choice -route options likely to include pinch points.	Virtually traffic free, open environment.	Traffic free. Would require lighting to provide secure tunnel environment.	potential greenway sections allows for safe traffic-free provision. Routes through Clayton itself and onward to Queensbury are more constrained.	Beyond Ilkington, the corridor is largely open fields which could facilitate traffic-free options. Possible pinch points within on-road route options	Potential for traffic free sections, but likely on-road required at northern/southern ends. Complex highway network with limited route options presents challenge to provision of safe and perceived safe route at southern end.		
Comfort	Score	2	5	4	3	3	1	5	3	2	2		
	Comments	Gradients and elevation gain are high, and extended sections of uphill/downhill present. Width to accommodate all users possible in open sections.	Gradients are generally <5%. Well Heads Tunnel provides option to limit elevation gain. Good potential to accommodate all users.	Good potential to accommodate all users beyond A6177. Extended uphill/downhill sections, but gradients largely<6%.	Potential to accommodate all users along majority of length. Extended lengths of uphill/downhill, but gradients generally shallow (<5%).	Potential to accommodate all users highly dependent on route choice. Extended lengths of uphill/downhill, but gradients generally <5%.	Continuous gradient over whole length, with significant portion >10%, max 17.5%.	Good potential to accommodate all users, traffic free.	Varied comfort depending on whether traffic-free or on-road. Continuous gradients over most of corridor length, though mostly <5%,	Limited potential to accommodate all users likely at some locations, particularly at southern end. Extended sections of incline. Gradients largely <5%, though some areas exceed 7%.	Continuous incline along length. Gradients generally between 5-10%, reaching 15%.		
Attractiveness	Score	4	5	4	2	3.5	2	5	3	3	2		
	Comments	Corridor provides link to existing GNRT, known to be attractive destination for cycling. If corridor were to incorporate traffic free route, it would provide an attractive extension to the GNRT.	Corridor contains existing high-demand section in GNRT. Extension to this with tunnel attraction likely to enhance attractiveness.	Potential to provide attractive off-road route linking to existing NC at Queensbury end. Potential to form values greenspace route in suburban area.	Urban artery with limited destination value in its own right. Provides utility link to NCN, and day to day destinations.	Potential to provide safe route linking residential areas to day to day destinations and Queensbury Tunnel portal.	Severe gradient limits attractiveness of otherwise high-scoring route.	High heritage value makes this corridor an attractive destination.	Potential to provide attractive off-road route linking to existing cycle network at Bradford end. Potential to form values greenspace route in suburban area.	Provide potential link to Ogden Water Country park, and indirect link to GNRT at northern end.	Central section of corridor may provide attractive conditions (albeit with challenging gradients). Constrained entry and exits to corridor likely to reduce attractiveness.		
Total Design Score		17	24	19	16	15.5	14	23	16	14.5	11		
Design Rank		4	1	3	5	7	9	2	5	8	10		
Contextual Criteria													
Strategic Context	Score	3	5	2	5	4	3	5	5	3	2		
	Comments	Corridor identified in Bradford Cycle Strategy, WYCA Infrastructure Connectivity Plan.	Corridor identified in Bradford Cycle Strategy, WYCA Infrastructure Connectivity Plan. Potential to provide link between Cullingworth and a future MT network, and Thornton Cycle Superhighway.	Would require additional links to connection residential urban areas to wider cycle network at Bradford End. Bypasses Strategic town of Clayton.	Corridor identified in Bradford Cycle Strategy, WYCA Infrastructure Connectivity Plan. High utility value, and potential to connect residential areas to future MT stops in W. Bradford. Planned extension to Cycle superhighway under TCF funding.	Corridor identified in connectivity plan Appendix 2 (Halifax to Ovenden). Potential to link residential areas to future MT stop in Halifax, and upgraded Rail station facilities.	Corridor not identified independently in strategic documentation, but provide strategic link from Queensbury tow to wide identified corridors.	listed as key corridor for CBMDC decision. High potential to provide strategic link for transport corridors and wider tourism objectives. However strategic values relies on development of connecting corridors.	Corridor identified in Bradford Cycle Strategy, WYCA Infrastructure Connectivity Plan. Potential to connect residential areas to future MT stops in W. Bradford. Planned extension to Cycle superhighway under TCF funding.	Provides alternative corridor linking Halifax-Keighley (and indirectly Bradford and Queensbury) excluding tunnel. Incorporates Ilkington into network	Provides alternative corridor linking Halifax-Queensbury (and indirectly Bradford and Halifax excluding tunnel. Excludes other southern strategic towns.		
Ecological / Protected Sites Context	Score	3	2	3	4	3	5	2	4	1	3		
	Comments	Scheduled Ancient Monument present in corridor, may challenge potential for traffic free alignment. Agricultural land use provides opportunity for BNG.	Ecological challenges likely to be present, particularly if use of tunnel proposed. Tunnel and existing higher quality habitat likely to raise challenge for BNG,.	Ecological challenge dependent on final route alignment. Presence of existing wooded habitat within corridor.	High potential for BNG within corridor or at displaced site. Highway-based route unlikely to present significant ecological challenge.	Priority habitat present in corridor. Woodland present in Dean Clough/Ovenden Brook raises ecological challenge for traffic free options.	Low ecological challenge, potential for BNG.	Tunnel environment highly likely to provide high ecological challenge.	Potential for BNG is woodland habitat in valley is avoided.	Corridor adjacent to South Pennine Moors Designated Site	Open agricultural land and urban extremities provide potential for BNG. Ancient woodland in corridor restricts route potential.		
Total Other Score		6	7	5	9	7	8	7	9	4	5		
Other Rank		7	4	8	1	4	3	4	1	10	8		
Total Overall Score		23	31	24	25	22.5	22	30	25	18.5	16		
Overall Rank		6	1	5	3	7	8	2	3	9	10		

Corridors and route numbers based on route options pdfs. Links shown		
Corridor	Route option	Comments after site visit
Keighley to Cullingworth	1	Unsuitable alignment (N-section). Several dangerous sections in north with no options for alteration. S-section (from southern junction with 1e) has option for traffic free alignment alongside Keighley Road.
	1a-1	Potential to provide space for separation/off-road. Discarded due to lack of suitable links.
	1a-2	Possible link between Keighley Road (1) and Bridleway network (1b/1f). Challenges with gradient and pinch points.
	1b	Preferred alignment beyond Keighley centre (but greenway may start at Hainworth Road). Provides coherent route between Keighley and Cullingworth, passing through Woodhouse.
	1c	Route unavailable for examination during site visit. Currently a footpath.
	1d	Unsuitable alignment. Route heavily used by freight, with challenging junctions.
	1e	Potential for attractive traffic free provision, but requires additional elevation gain over alternative options.
	1f	Possible link avoiding disused railway
	1	Preferred alignment, following line of railway where possible. A number of tunnels/bridges will need to be circumvented or reopened to complete line.
	2	Valley/road-based route to avoid Well Heads tunnel. Challenging alignments on Brighouse Rd (NW/SE direction). Thornton Road - where does TCF funded route end? Out of keeping with traffic-free character of GNRT.
Cullingworth to Station Road	2	May need revisiting if tunnel option impossible.
	3	Includes cobbles and stepped obstructions. Off railway alignment
	4	Flat grass bank - discarded as links to unsuitable sections
	5	Too close to allotments, steep
	6	Possible except steep section of Foster Park View. Retained as alternative, discarded after discussion with GNRT
	7	Steep road in places, with blind bends
	8	Steep road, blind bends, away from railway alignment
	9	Technically likely possible. Retained as alternative, discarded after discussion with GNRT
	10	Steep to narrow footbridge
	11	Possible parallel alignment to railway
West Bradford & Halifax	12	Technically likely possible. Joins to steep road with tight bends
	1	The Avenue - taken forwards as preferred alignment
	2	Clayton Road - possible - consider as alternative to the avenue
	3	Steep in place but potential for meander
	4	includes narrow track on steep hillside
	6	Thornton Road - retained option
	7	Brighouse Road. Tricky alignment. Discarded as preference - may be necessary if Well Heads Tunnel not viable.
	8	A629 - plenty of space along most of its length. Discarded as part of corridor 8 non-tunnel option as bypasses Queensbury
	9	Viable - discarded due to lack of link at southern end and as part of corridor 8 non-tunnel option as bypasses Queensbury
	10	Extremely steep in sections
	11	Narrow and windy - heavy traffic for small road. Steep
	12	Steep
	13	On a summit - no good links
	14	Main road - space, but not coherent links.
	15	Main road - space, but discarded as part of corridor 8. Bend at south end not suitable for provision.
	16	Steep. Bypasses main settlements, entry from dangerous bend on A629
	17	Narrow, steep
	18	Steep entry/exit - more direct routes available
	19	Viable - discarded due to lack of coherent ongoing route
	20	Viable - part of TCF fund on Cousin Lane Stretch. Southern stretched retained
	21	Blocked ROW
	22	Viable - option for final alignment
	23	Viable - included in options
	24	Potentially viable, but routed via Heathy Lane in preference
	25	Viable - included in options
	26	Viable - included in options
	27	Viable - included in options
	28	No coherent linking routes
	29	Footpath through fields and stiles - no coherent linking routes
	30	No coherent linking routes
	31	Viable - links to existing footpath
	32	Possible with widening, but between high fences - security issues and link to coherent network dubious in northern section
	33	Link to coherent network dubious. Steep and extensive works required - can be replicated in more central position
	34	No coherent linking routes
	35	Extremely steep in sections
	36	Possible but no coherent links
	37	Good in isolation. No coherent links
	38	Viable - included in options
	39	Possible - included in options
	40	Steep - would need earthworks to reduce gradient. Brings out to non-population area
	41	Would not form coherent network
	42	Shallow and good potential - likely to have landowner issues and possible redirection of ROW
	43	ROW hidden/blocked
	44	Too steep
	45	Partially possible - included in options to Russel Lane
	46	Southern junction highly constrained
	47	Steep - not a better alternative to Station road
	48	Steep - not a better alternative to Station road
	49	Steep - not a better alternative to Station road
	50	Steep - not a better alternative to Station road
	51	Steep - not a better alternative to Station road
	52	Possible with removal of on-road parking
	53	Narrow, discontinuous
	54	Inconclusive - route to link here somewhere
	55	Inconclusive - route to link here somewhere
	56	Possible - taken forward for further assessment
	57	Viable included for further assessment
	58	Possible - taken forward for further assessment
	59	Possible - taken forward for further assessment
	60	Unnecessary detour
	61	Possible - taken forward for further assessment
	62	Maybe - taken forward for further assessment t
	63	Unlikely - boggy and steep at south
	64	Maybe - taken forward for further assessment t
	65	No coherent linking routes
	66	Possible - taken forward for further assessment
	67	Possible - taken forward for further assessment
	68	Possible - taken forward for further assessment
	69	Possible - taken forward for further assessment
	70	Blocked by landowner at west end
	71	Possible - taken forward for further assessment
	72	Possible - taken forward for further assessment
	73	No coherent linking routes
	74	No coherent linking routes
	75	Possible - taken forward for further assessment
	76	Possible - taken forward for further assessment
	77	Possible - taken forward for further assessment
	78	Preference is the Avenue for space available but this is option for town centre area
	79	Possible but get steep
	80	Space but steep
	81	Steep bendy, fast
	82	Busy high speed, but field edge possibilities - taken forward for linking potential
	83	Possible but landowner issues - taken for further assessment t
	1	Narrow approach to tight junction. May be unavoidable in overland route through Queensbury
	2	Possible - link to segment 1 needs further examination
	3	
	4	Discarded No coherent linking routes
	5	No coherent linking routes
	6	No coherent linking routes
	7	Steep, no coherent linking routes
Halifax to Holmfild	8	Links to steep discarded route
	9	Incorrectly assessed - parallel road unsuitable. Section forms part of plans for Halifax

Holmfield to Queensbury

10	Possible - retained as potential link
11	No link to coherent route
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20	Not assessed on site - steep and previously discounted by Calderdale CC. Access to route choices severed by A38
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28	Viable - TCF project fro Calderdale CC. Included in options
29	Not considered suitable - route through town centre suggested as alternative
30	Old lane - included in TCF plans - possible alternative to valley bottom greenway option - not preferred by Sustrans
31	Lee Bank. Tight and challenging but likely to form key access to valley
32	Possible - taken forward
33	Possible - taken forward
34	Road is tight, some opportunity to provide cycle provision with kerb realignment before corner
35	too high up hillside
36	too high up hillside
37	Possible alignment to rear of factories
38	possible alignment through garages
39	possible - take forward
40	possible
41	Possible alignment behind houses
3-4	Blocked at east end. Lack on coherent onward route
3-9	Becomes steep in centre. Parallel road (Heathy Lane) preferred.
3-23	Possible exit to main road, but direct crossing from Heathy Lane preferred
3-30	Viable link to existing footpath, but lack of coherent onward routes
3-31	Viable, but lack of coherent onward route
3-32	Taken forward. Key link
3-37	East End Roper Lane - taken forward
3-38	Likely to form top of overland connection. Taken forward
3-39	Steep and banked. No coherent links
3-40	Lack of coherent onward route
3-41	Likely to have landowner issues
3-42	Likely to have landowner issues
3-43	Steep, busy
3-44	Taken forward. Key overland link

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Queensbury\SECTION 3 WEST_ALL_KA site notes.pdf