

CALDERDALE LOCAL PLAN

SITE ALLOCATIONS ASSESSMENT METHODOLOGY STATEMENT

APPENDIX 8 – CALDERDALE ACCESSIBILITY ASSESSMENT METHODOLOGY NOTE

Calderdale Metropolitan Borough Council

2018



Calderdale Accessibility Assessments March 2018 - Methodology Note

Project Undertake accessibility assessments for by public transport to key destinations and provide catchments contours based on walk routes.

Project Details

This project has been initiated by Calderdale Council and the West Yorkshire Combined Authority in order to assess the accessibility of key destinations.

Accessibility is the extent to which individuals and households can access day to day services, such as employment, education, healthcare, food stores and town centres, for the purposes of this project, by walking and public transport modes. The accessibility outputs reflect the current public transport network (Quarter 1 2018 data).

The methodology uses is broadly based on the criteria set out by the Department for Transport, Transport connectivity and accessibility of key services statistics guidance¹.

Methodology – General

Visography TRACC² (TRACC) is a transport accessibility tool which was developed in conjunction with the Department for Transport, local authorities and transport planners. It calculates travel time using a multitude of public transport and road travel modes to give accurate journey times from many origins to many destinations. At every stage of running the TRACC software, certain assumptions are made that affect the results.

The criteria being used in TRACC for this project is as follows for all the assessments:

Day and Time:	Tuesday 7am - 9am.
Modes of transport:	Bus, train, and walking (All journeys will involve walking. Some journeys will only involve walking (depending on the 'maximum connection distance' used – see below), others will use two modes i.e. walking to a bus stop, then taking the bus, then walking to the destination. Some journeys may use more than two modes.)
Walking Speed:	4.8 Km/h
Use Road Network for walk routes	Yes
Walking Variance:	1.2 (Multiplier applied to the straight line distance from origin and destination to stop and stop to stop when not using the road network.)

¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/230789/accessibility-statistics-guidance.pdf

² TRACC version 1.2.0.1

Maximum Time:	Up to 60 minutes (A maximum time between origin and destination.)
Maximum Connection Distance to First Stop / Destination:	400m
Interchange Allowed:	Yes (5 minute interchange penalty applied)

Methodology 1 – Origin Destination Assessments

The destinations assessed using a travel time indicator. A travel time indicator shows the journey time from a set of origins to multiple destination sets. The output provides an indication of the shortest travel time within the parameters set within TRACC.

Origins

The journey time calculation is calculated on district wide assessment. Each site is NOT individually tested. In this calculation, a regular grid matrix with origin points spaced every 200 meters (Figure 1) has been used. This equates to 9,095 origin points across the district.

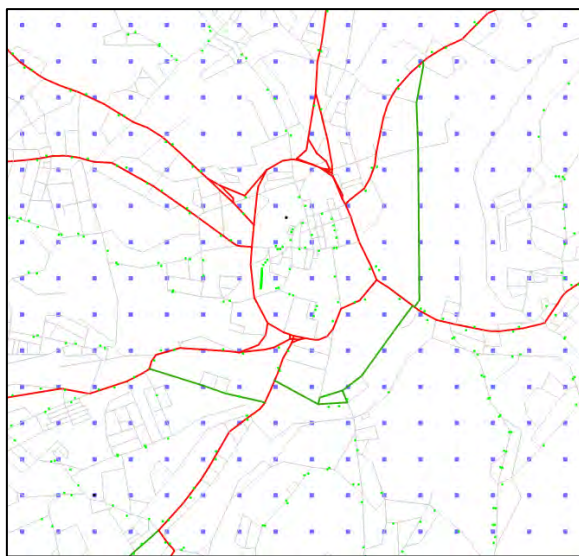


Figure 1 - Origin Points example

Destinations

The destination sets are broadly in line with those used in the DfT Accessibility Statistics. Some local data (local centres and Town / District centres) have been used in addition to the DfT destinations. The destination set used are:

1. Employment
2. Colleges
3. Secondary Schools
4. Junior and Infant School
5. GPs
6. Local Centres
7. Shops selling day to day goods
8. Hospitals

These data set have been provided by Calderdale Council.

Calculation

A separate model run has been undertaken for each destination set. For the housing sites the 'inbound' journey has been used. This measures the journey time from the Origin to the Destination.

The TRACC calculation determines the shortest journey time from each origin point to the destination points within set selected (using the criteria set out above). Each origin is given a total overall journey time (which includes a walk to a bus / rail stop, travel time and walk to final destination). Where more than one destination can be reached, the origin is given the shortest overall journey time between the origin and destination.

A journey time contour is then created using the origin grid.

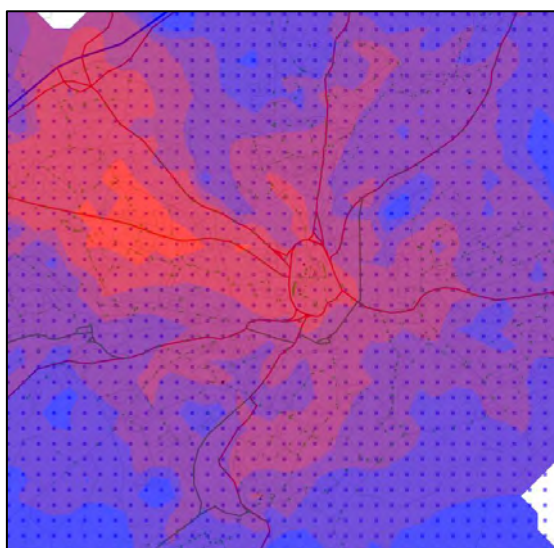


Figure 2 - Journey Time Contour Example

For each destination set the maximum journey time was set to 60 minutes.

Outputs

Each destination type has a journey time contour produces based on 5 minute time bands. The GIS shape files have been provided to Calderdale to produce the outputs.

Methodology 2 – Walk Catchments

The walk catchments have been undertaken to using the ArcGIS Network Analyst extension. The software allows catchments to be calculated based on walking distances through the ITN road network and Urban Paths network from / to a destination.

Destinations

The destination sets selected are:

1. Bus stops with a weekday 30 min frequency
 - This information was based on the current public transport network (Quarter 1 2018 data) downloaded using the bus stop frequency calculator within TRACC.
2. Train Stations
 - Train stations within Calderdale have been used.
3. Public Parks
 - The public parks have been provided by Calderdale. As these are polygon features, a regular grid matrix with destination points spaced every 50 meters (Figure 3) has been used.

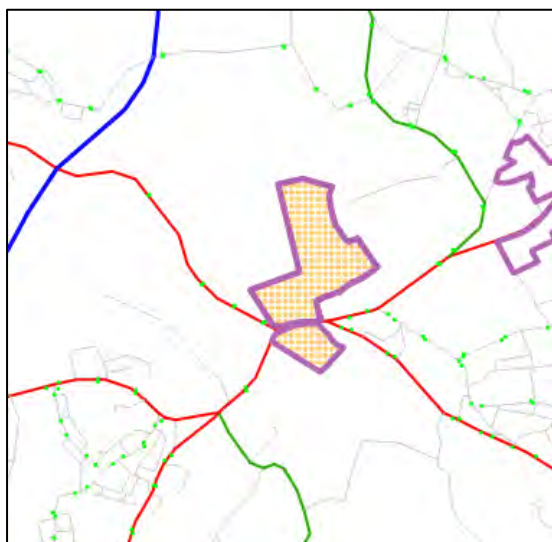


Figure 3 – Public Park destinations

Calculation

The ArcGIS Network Analyst extension used the road and path network to measure accurate walk distances along the network based on a specified distance.

Destination Set	Lower Threshold	Upper Threshold	Other
Bus stops with a weekday 30 min frequency	<400m	Between 400m-2km	>2km
Distance to train station	<800m	Between 800m-2km	>2km
Public Park	<600m	Between 600m-2km	>2km

Outputs

Each destination type has a walk distance contour produces based on threshold detailed in the table above. The GIS shape files have been provided to Calderdale to produce the outputs.

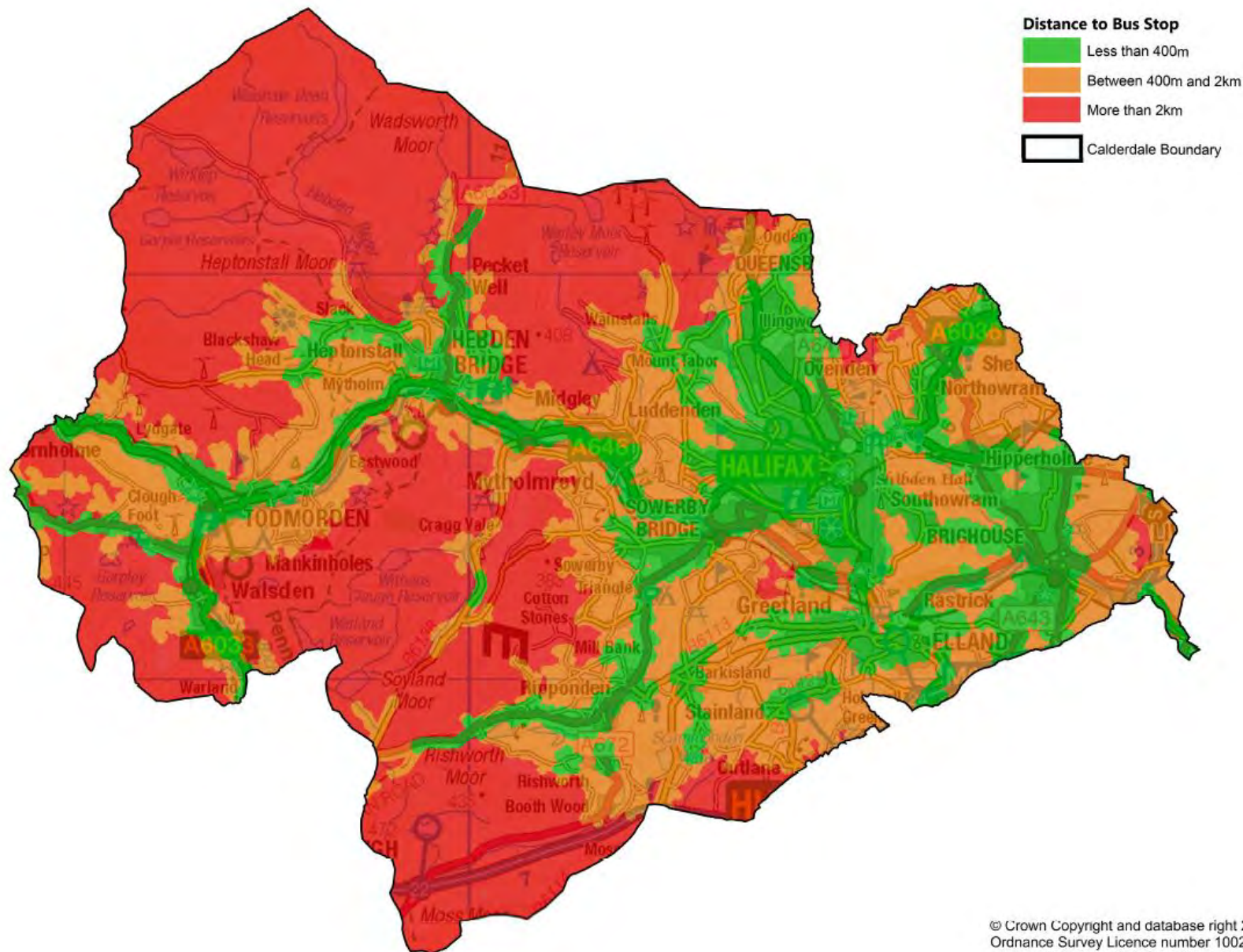
Calderdale Outputs

The results of the TRACC modelling was provided by WYCA to Calderdale Council where the results were used to create the following scoring for the sites:

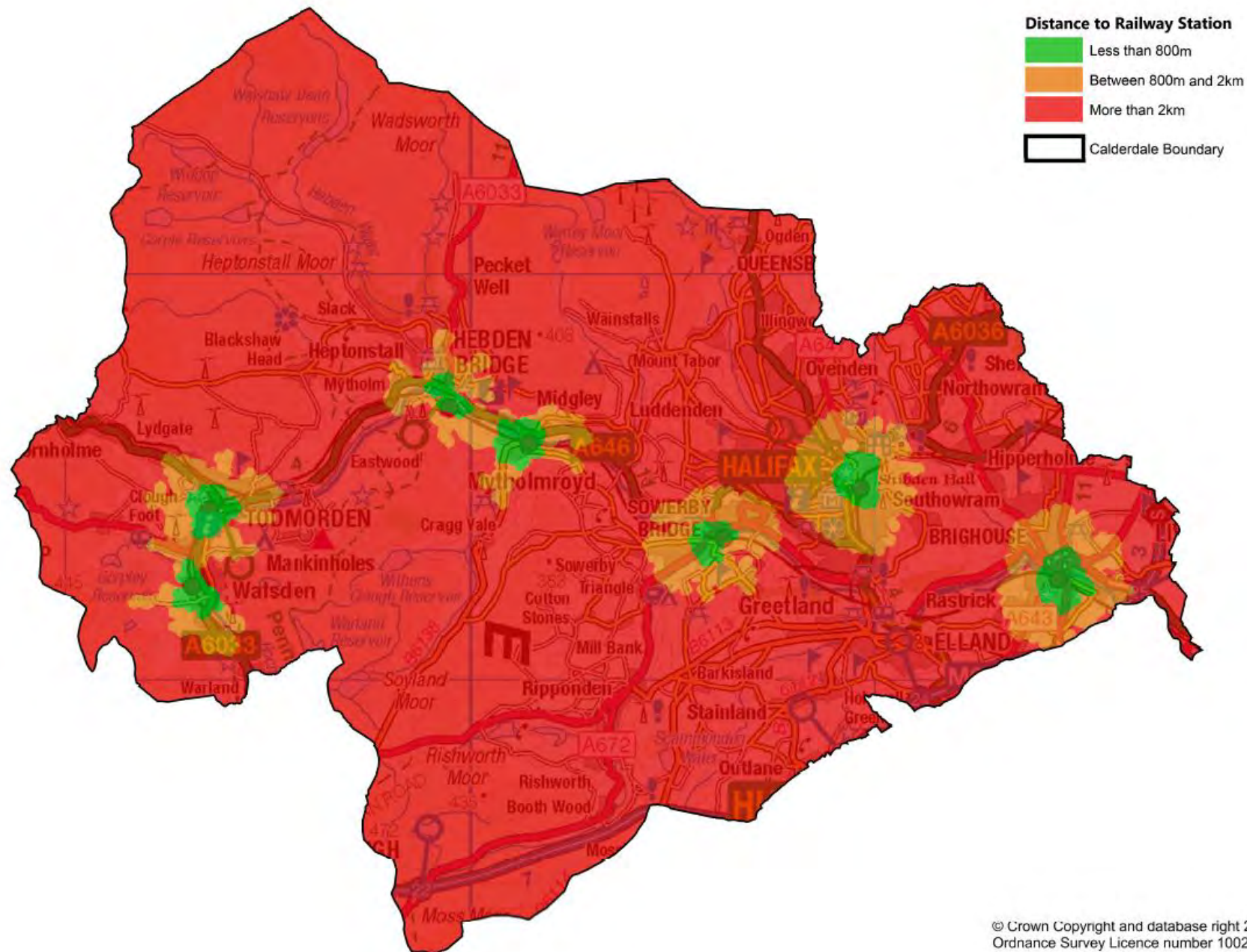
Factors	National Planning Policy Framework (Reason for inclusion)	RAG Score			National Standards	Local Standards (Settlement Hierarchy unless stated)
		3	2	1		
Distance to bus stop	17. actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable	Site <400m	Site between 400m-2km	Site >2km	Institute of Highways and Transportation Guidelines = Max walking distance to bus stop should not be more than 400m and Guidance within Manual for Streets (DfT,2007, 2010) identifies 2km as a distance where walking could reasonably replace car journeys.	Walking distance = 400m The parameter is set for a distance of 400m to a bus stop with at least two buses every 30 minutes.
Distance to railway station	17. actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in	Site <800m	Site between 800m-2km	Site >2km	Guidance within Manual for Streets (DfT,2007, 2010) identifies 2km as a distance where walking could reasonably replace car journeys.	Walking Distance = 800m

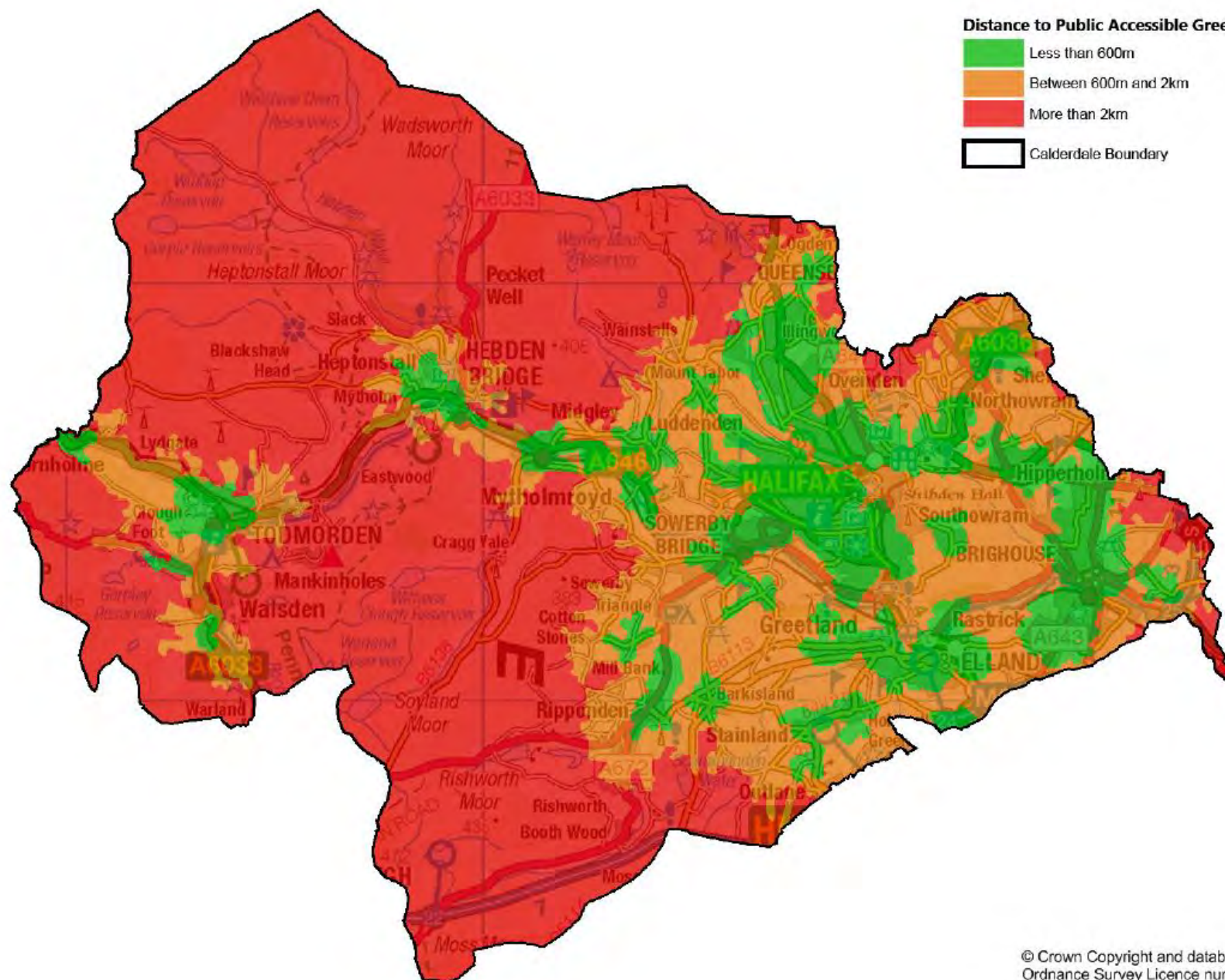
Factors	National Planning Policy Framework (Reason for inclusion)	RAG Score			National Standards	Local Standards (Settlement Hierarchy unless stated)
		3	2	1		
	locations which are or can be made sustainable					
Distance to Public Accessible Green Space	37. Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities. 73. Access to high quality open spaces and opportunities for sport and recreation can make an important contribution to the health and well-being of	Site <600m	Site between 600m-2km	Site >2m	ANGSt - Areas must meet the following: Be within open space of at least 2ha in size no more than 300metres (5 min walk from home); At least one accessible 20 ha site within 2km of home; One accessible 100ha site within 5km of home; One accessible 500ha site within 10km of home; A minimum of 1ha of statutory LNR per 1,000 population	Walking Distance = 600m - originated in the Developer Contributions Towards Meeting Open Space, Sports and Recreation Facilities SPD. Originally derived from Calderdale Open Space Sport and Recreation Study Strategy and Action Plan. Amenity greenspace standards were all settlement areas within 400m of a site (0.04ha - 1ha) and 600m of a site (1ha-3ha) and 1200m of a site

Factors	National Planning Policy Framework (Reason for inclusion)	RAG Score			National Standards	Local Standards (Settlement Hierarchy unless stated)
		3	2	1		
	communities					greater than 3ha.



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 Journey Time Data from West Yorkshire Metro





Factors	National Planning Policy Framework (Reason for inclusion)	RAG Score		
		3	2	1
Journey time to town centre	23. recognise town centres as the heart of their communities and pursue policies to support their viability and vitality; 37. Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.	Less than 15 minutes	Between 15 and 30 minutes	More than 30 minutes
Journey time to shops selling day to day goods	37. Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.	Less than 15 minutes	Between 15 and 30 minutes	More than 30 minutes
Journey time to Hospital	70. To deliver the social, recreational and cultural facilities and services the community needs, planning policies and	Less than 30 minutes	Between 30 and 60 minutes	More than 60 minutes

Factors	National Planning Policy Framework (Reason for inclusion)	RAG Score		
		3	2	1
	decisions should: - ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.			
Journey time to GP	70. To deliver the social, recreational and cultural facilities and services the community needs, planning policies and decisions should: - ensure an integrated approach to considering the location of housing, economic uses and community facilities and services.	Less than 15 minutes	Between 15 and 30 minutes	More than 30 minutes
Journey time to primary school	37. Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.	Less than 15 minutes	Between 15 and 30 minutes	More than 30 minutes

Factors	National Planning Policy Framework (Reason for inclusion)	RAG Score		
		3	2	1
Journey time to secondary school	37. Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.	Less than 20 minutes	Between 20 and 40 minutes	More than 40 minutes
Journey time to further / higher education	37. Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.	Less than 30 minutes	Between 30 and 60 minutes	More than 60 minutes
Journey time to primary employment area	37. Planning policies should aim for a balance of land uses within their area so that people can be encouraged to minimise journey lengths for employment, shopping, leisure, education and other activities.	Less than 20 minutes	Between 20 and 40 minutes	More than 40 minutes

