



Edgware Supplementary Planning Document

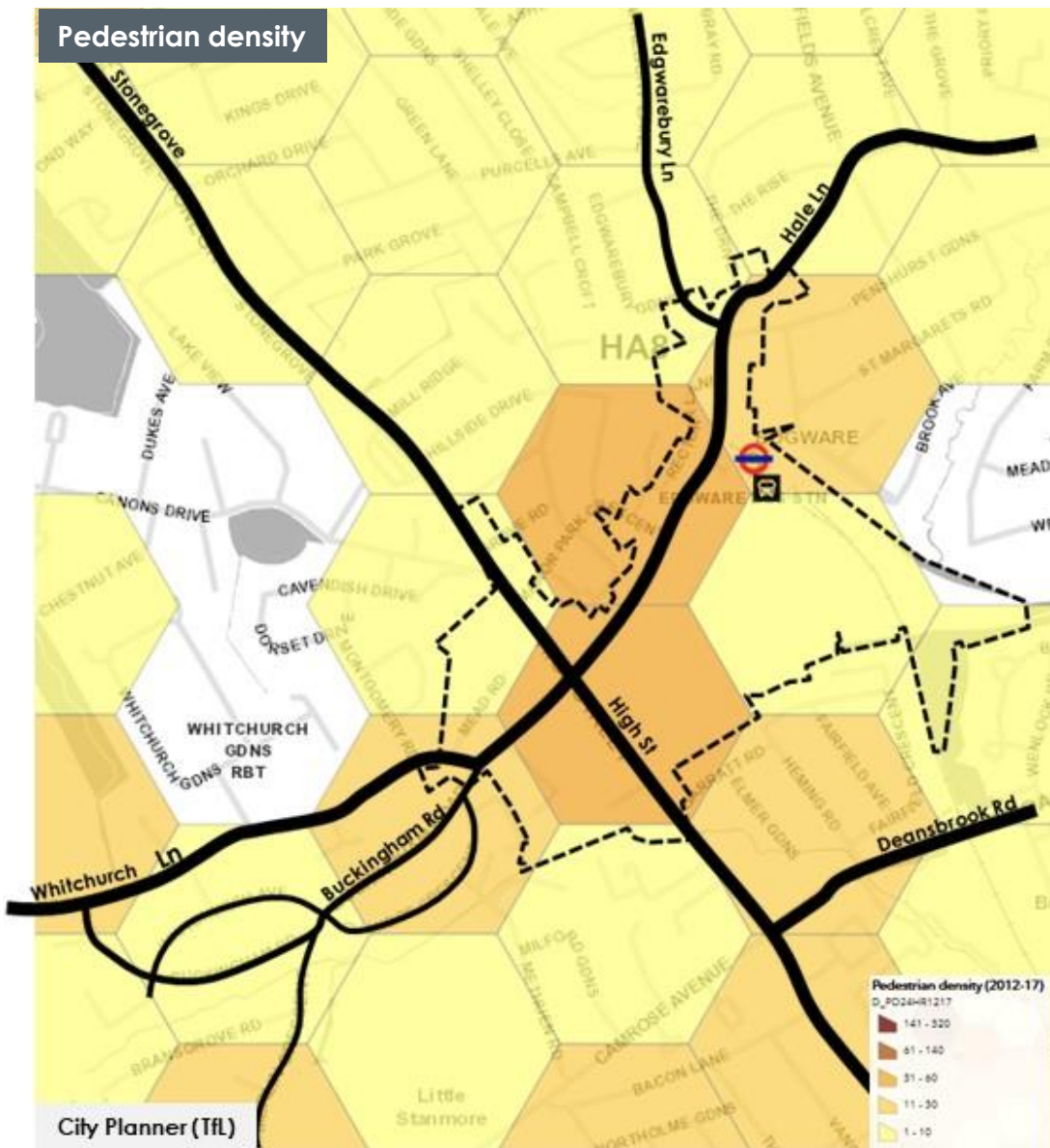
Transport Study Baseline Appendix

September 2020

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Walking



Based on TfL's City Planner tool, existing pedestrian densities are highest along Station Road and High Street, in the vicinity to the Edgware station and the core commercial centre. Slightly lower pedestrian densities are recorded on the edges of the town centre; north of Edgware station, along Whitchurch Lane and Buckingham Road, and along Deansbrook Road and the residential streets to the north.



Staggered signalised crossing on Station Road – pedestrian environment is constrained by substantial lengths of guard railing



Pedestrian walking Church Way – a pedestrian only link connecting residential neighbourhoods with the town centre



Pedestrian environment along Station Road – street clutter (A-boards), bins, bus stop



Very narrow pedestrian link between Church Way and Fairfield Crescent



The pedestrian experience at the LU station is dominated by taxi / vehicle pickup and drop-off

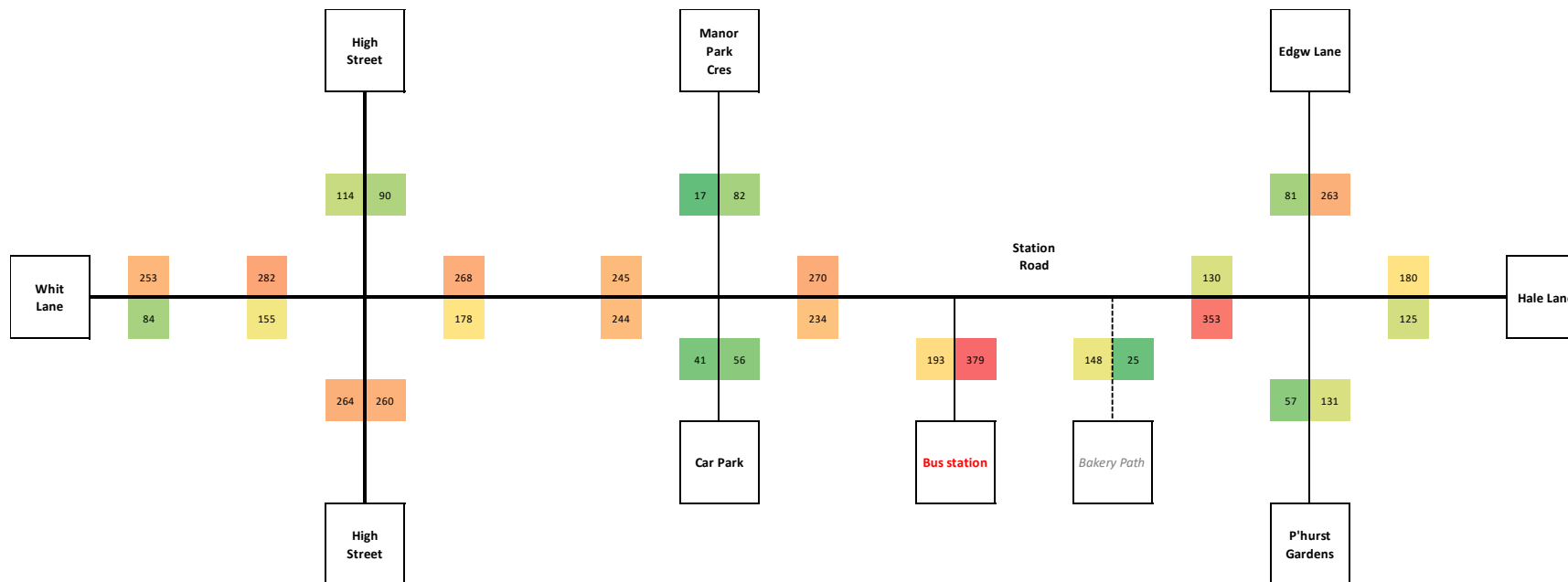


Pedestrian crossing of the High Street with a central island but traffic signals for pedestrians

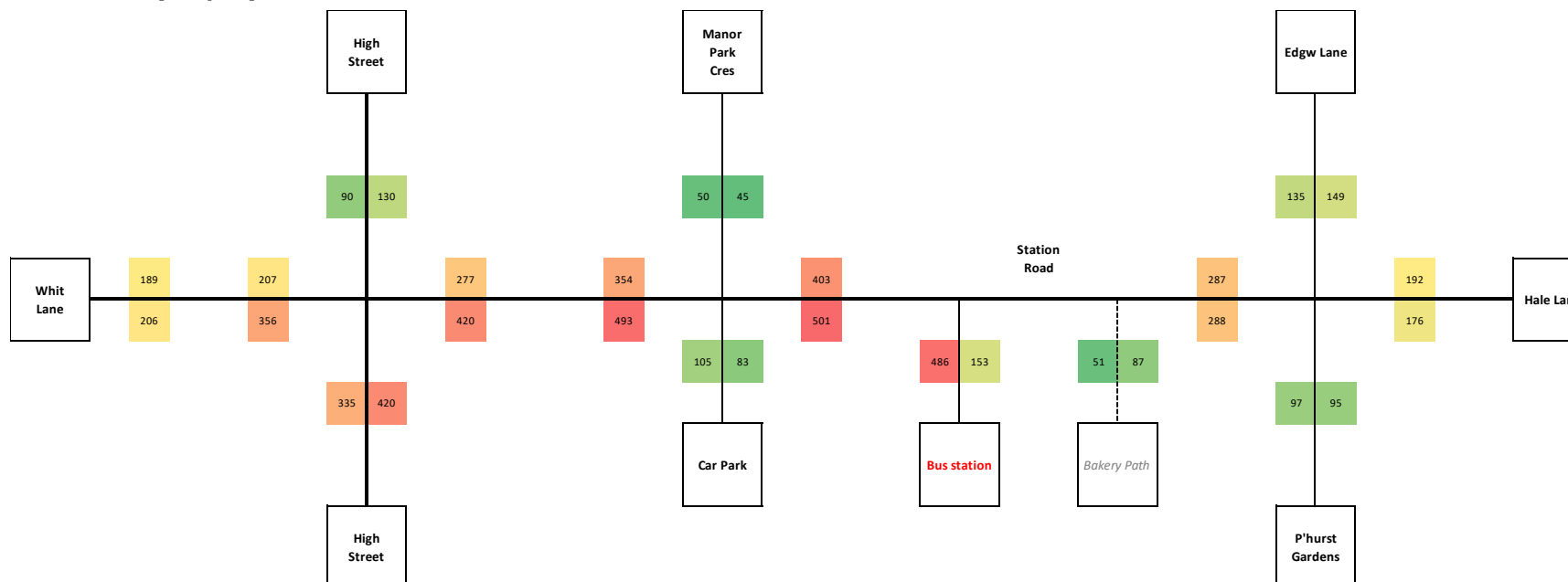
Walking – surveyed flows

Pedestrian flows along the core Station Road corridor (and adjoining streets including A5 High Street) were collected on Tuesday 25th February – a representative weekday that avoided school holidays (and before any Coronavirus-related downturn and lockdown).

AM Peak hour (8-9am)

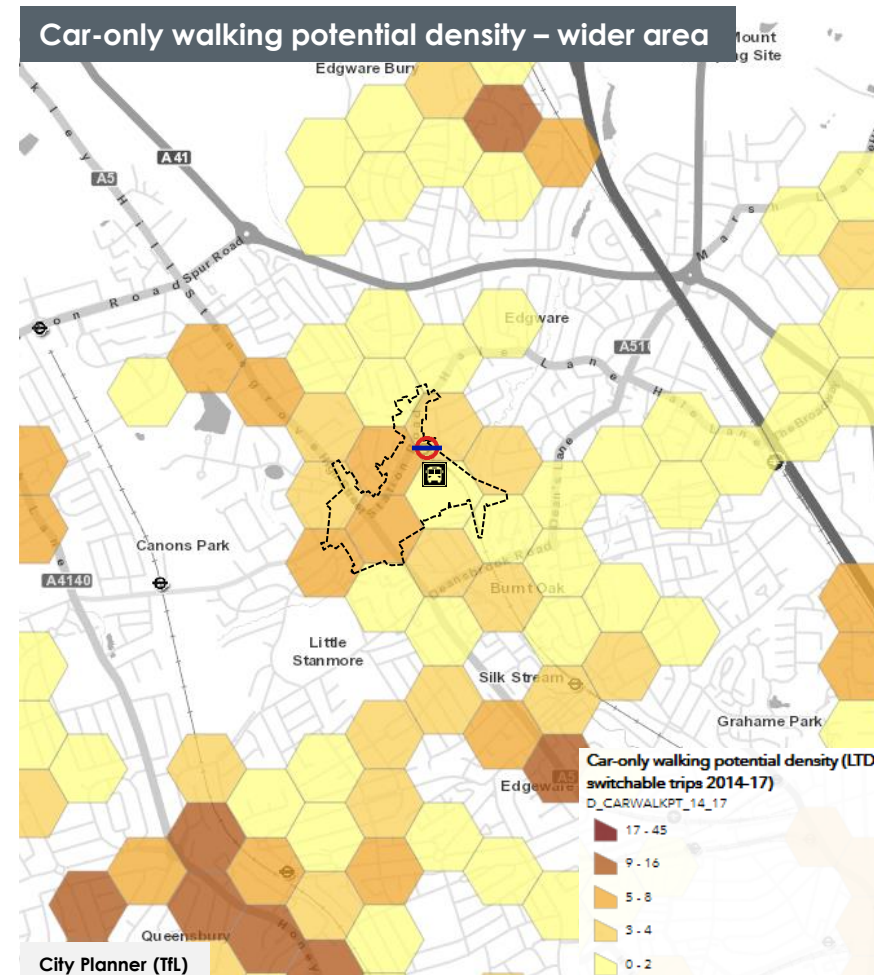
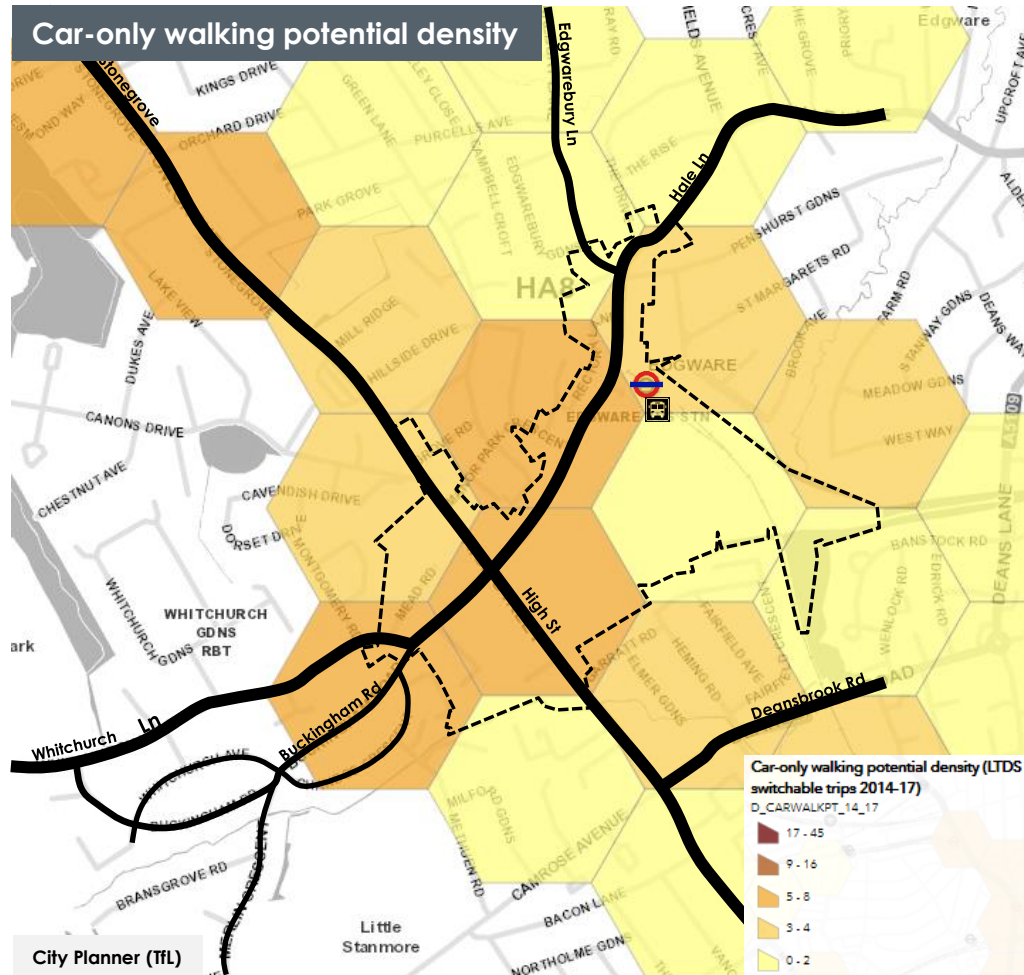


PM Peak hour (5-6pm)



- Peak AM pedestrian flows were observed closest to the bus station and tube station, in excess of 500 people per hour
- More widely, Station Road sees highest flows with noticeable decreases in activity on the adjacent side roads
- Typical peak pedestrian flow is in the order of 8 people per minute in both directions [this compares to approximately 25 vehicle per minute in the peak, indicating a strong bias to car movement in the area] close to the bus station and tube station and along the south side of Station Road towards High Street – this is attributed to be primarily due to Broadwalk Centre retail activity
- There is a noticeable decrease in activity on adjacent side roads – although flows higher than AM peak
- A typical peak pedestrian flow is 15 people per minute in both directions [unlike the AM, this is comparable to the volume of vehicle movement]

Walking – future potential



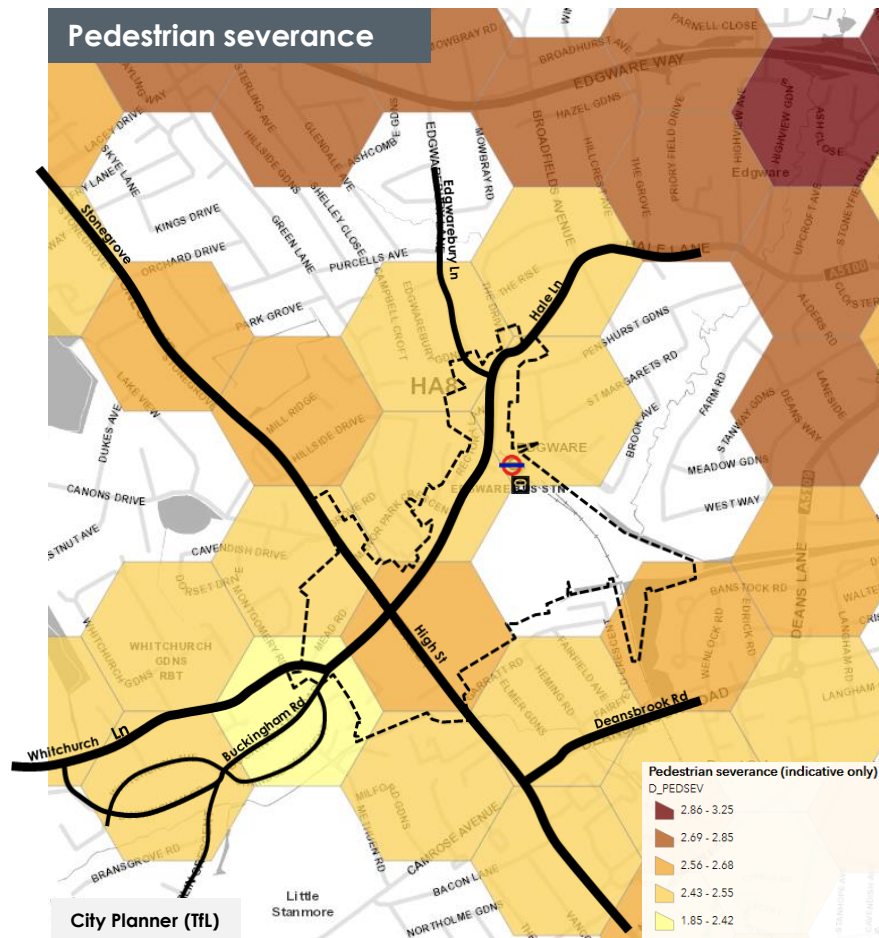
TfL's City Planner tool provides an indication on different area's potential for car journeys to be switched to walking journeys.

There are a substantial number of car-only switchable trips within the area, especially in the town centre's core – along Station Road, High Street and part of Buckingham Road and Whitchurch Lane.

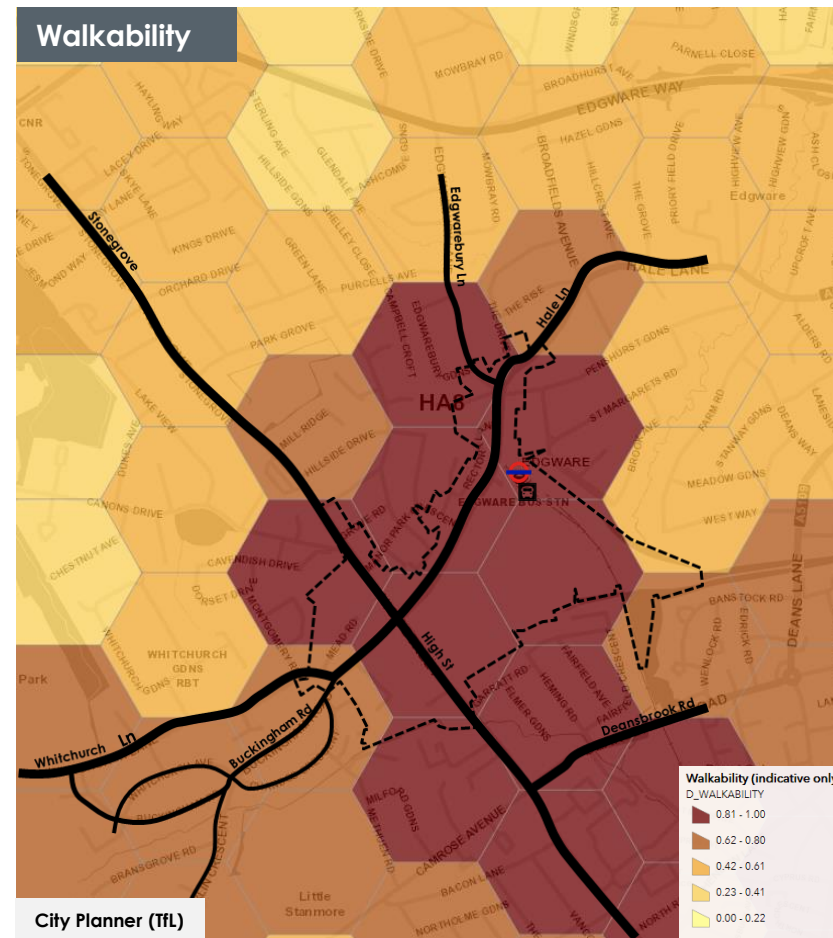
Whilst for the wider Edgware area there are potentially limited additional areas for walking trips that relate specifically to Edgware town centre, it is important to note the wider context for car-based movement in the Borough:

"TfL's analysis indicates that Barnet has the highest number of trips currently driven which can be converted to walking or cycling" [Barnet Long Term Transport Strategy, p23]

Walking – Severance and Walkability



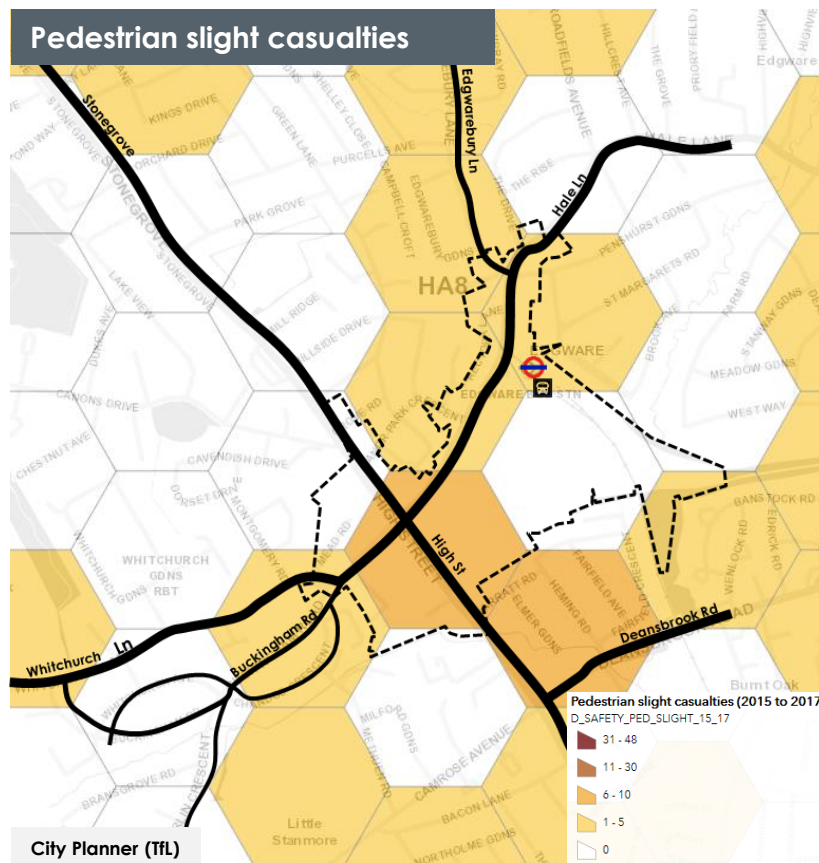
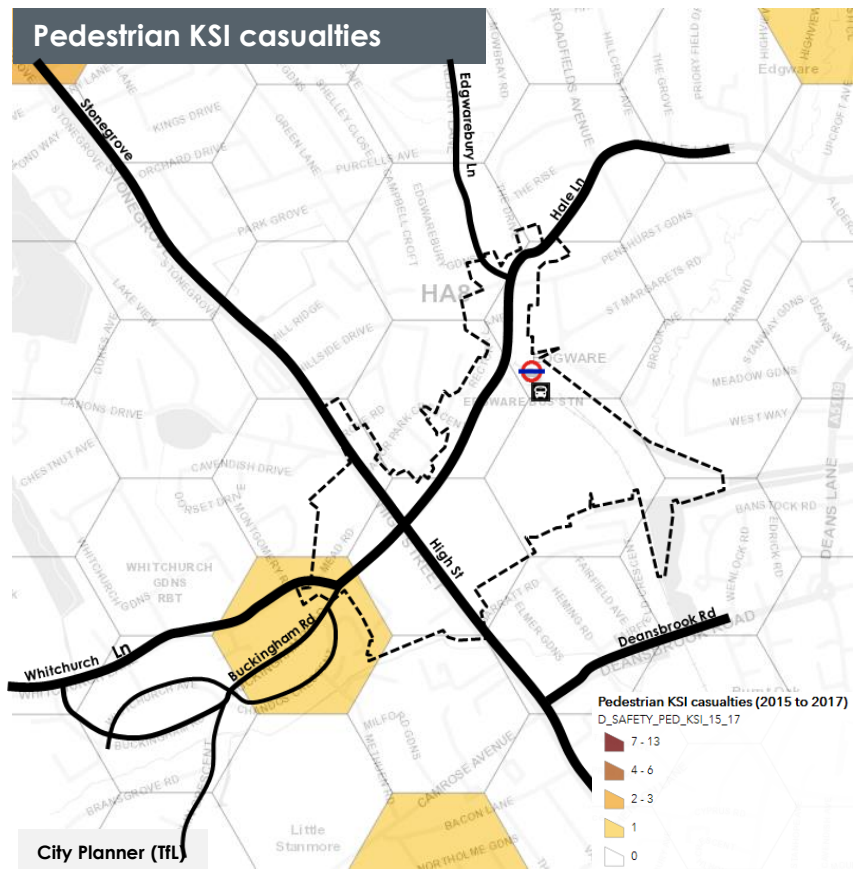
Pedestrian severance is identified as medium-low along Station Road and the High Street. It increases north to the SPD area, towards Edgware Way, due to vehicle domination. The barrier presented by the tube lines to east-west movement is omitted from this analysis however.



The SPD area and surrounding residential neighbourhoods are identified as highly walkable. Indicative walkability decreases in surrounding neighbourhoods to the north of the site – however it still classifies as medium.

“Journey distances in Barnet do not mean that car is an inevitable choice... TfL estimate that there are almost half a million journeys per day in Barnet that could be converted from motorised transport to walking and cycling... The key barriers to walking and cycling are environments dominated by fast flowing traffic, lack of walking and cycling infrastructure and fears over safety.” [Barnet Long Term Transport Strategy, p.8]

Walking – KSIs/ casualties



There were no pedestrian KSI (killed or seriously injured) incidents between 2015 and 2017 within Edgware town centre. Only one incident was recorded south to the SPD area – by Whitchurch Lane/ Buckingham Road.

The lack of pedestrian KSI incidents within the SPD area implies that road safety is currently not a primary issue – though this might be an effect of constrained pedestrian environment, prioritising movement over place despite the commercial function of the town centre.

Slight casualties between 2015 to 2017 occurred along the Station Road (1-5 slight casualties recorded per section) and High Street (6-10 slight casualties recorded per section).



Ad-hoc crossing on High Street



Hale Lane junction prioritises vehicle movement making crossing uncomfortable/ unsafe

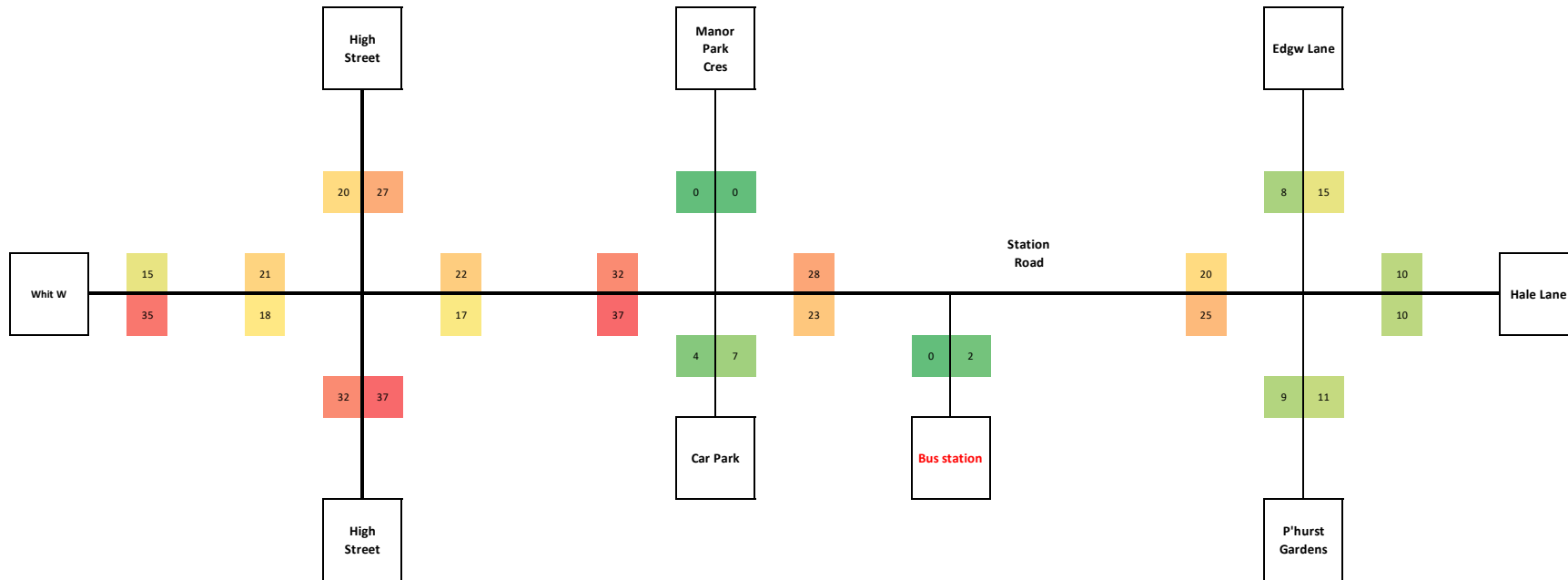


Omni-present guard rails restrict pedestrian movement and negatively affect perception of safety

Cycling – surveyed flows

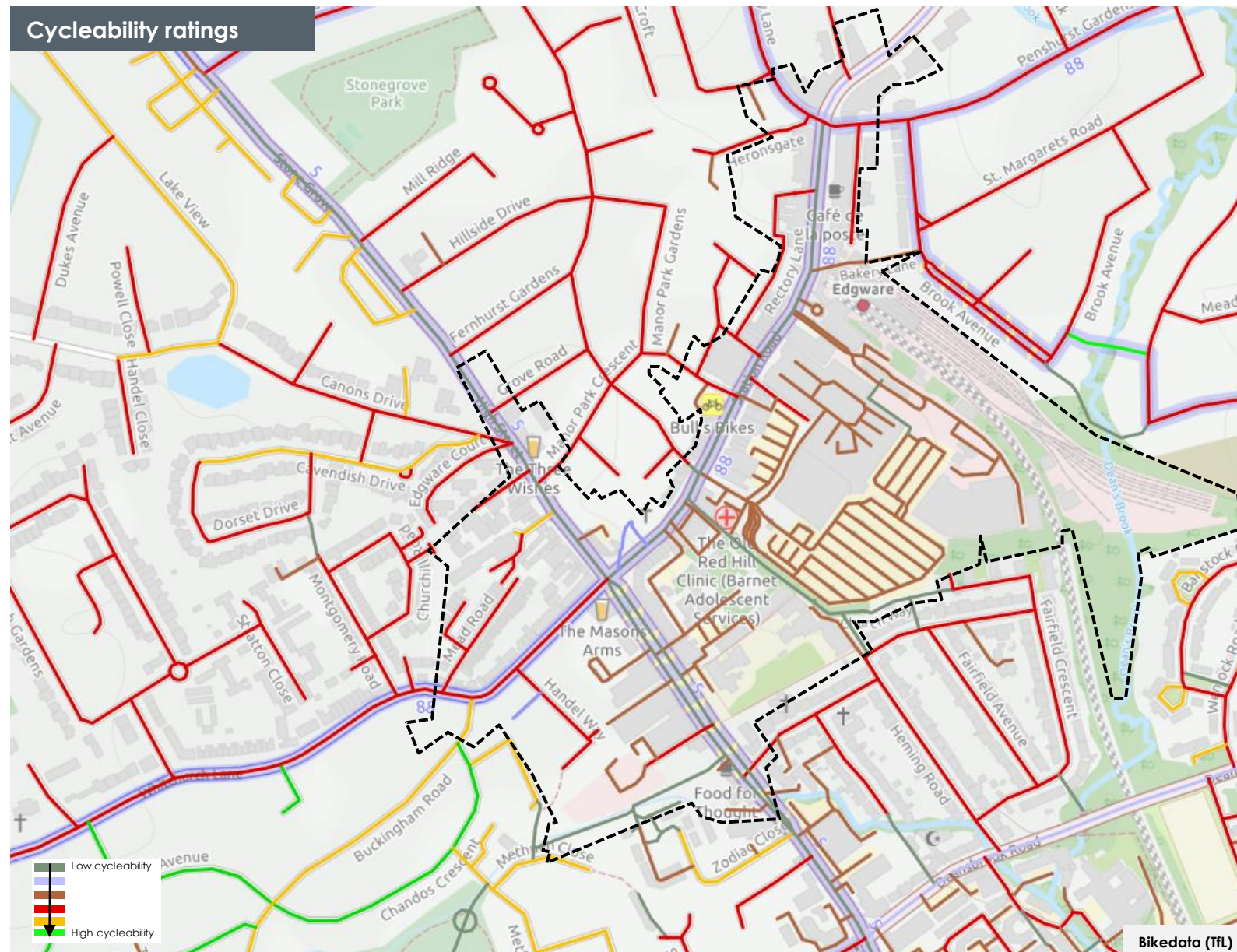
Cycling flows along the core Station Road corridor (and adjoining streets including A5 High Street) were collected on Tuesday 25th February – a representative weekday that avoided school holidays (and before any Coronavirus-related downturn and lockdown).

All day (7am-7pm)



- Unlike pedestrian and vehicle flows, cycle flows presented for all day (12 hours; 7am-7pm) due to the very low totals observed
- The highest flows were observed in/around the High Street / Station Road junction
- Peak flows on any particular link are typically in the order of 1-4 cyclists per hour in each direction
- This data is consistent with identified low cycleability ratings (see next page) and a wider trend identified in Barnet's Long Term Transport Strategy that "Only 2% of trips in Barnet are currently cycled, a number that is significantly lower than some neighbouring boroughs. For example, 8% of trips in Haringey are cycled." [page 37]

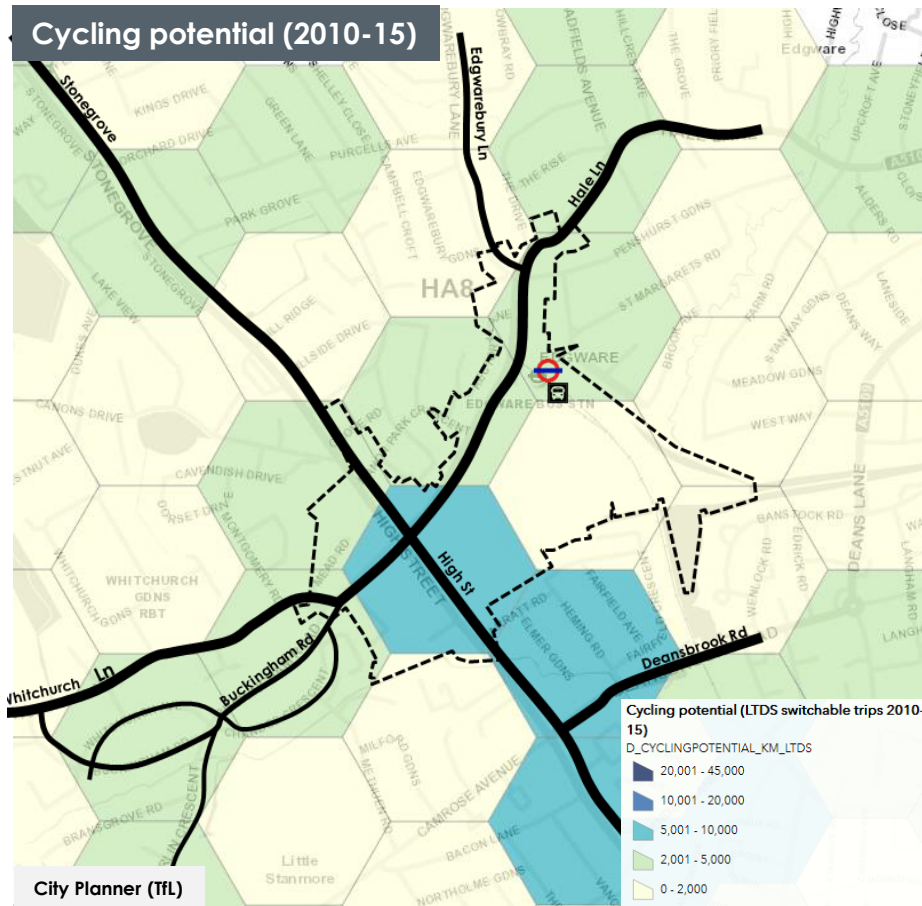
Cycleability



This diagram shows ratings of the cycleability rating of all streets and path in Edgware town centre. Cycleability is assessed based on the road type, dedicated cycle provision, link quietness and speed.

The assessed cycleability of the SPD area varies from low to medium. There are a number on non-cycleable, pedestrian only routes where cyclists need to dismount. Station Road and High Street are the least cycleable, due to major road character, low quietness and speed ratings.

Cycling potential



TfL's City Planner tool provides an indication on different area's potential for car journeys to be switched to cycling journeys.

There is a low-medium cycling potential within the SPD area which indicates that a modest number of trips currently taking places by non-cycling modes could be switched to cycling.

More strategically, the highest cycling potential in the area has been identified along A5 (southbound), which connects the SPD area and Colindale and Hendon.



Cycle parking provision by Edgware underground and bus station



Ever-present guard rails are often utilised as cycle parking



'No cycling allowed' sign on Church Way



A bicycle temporarily parked by Greggs while the cyclist runs errands

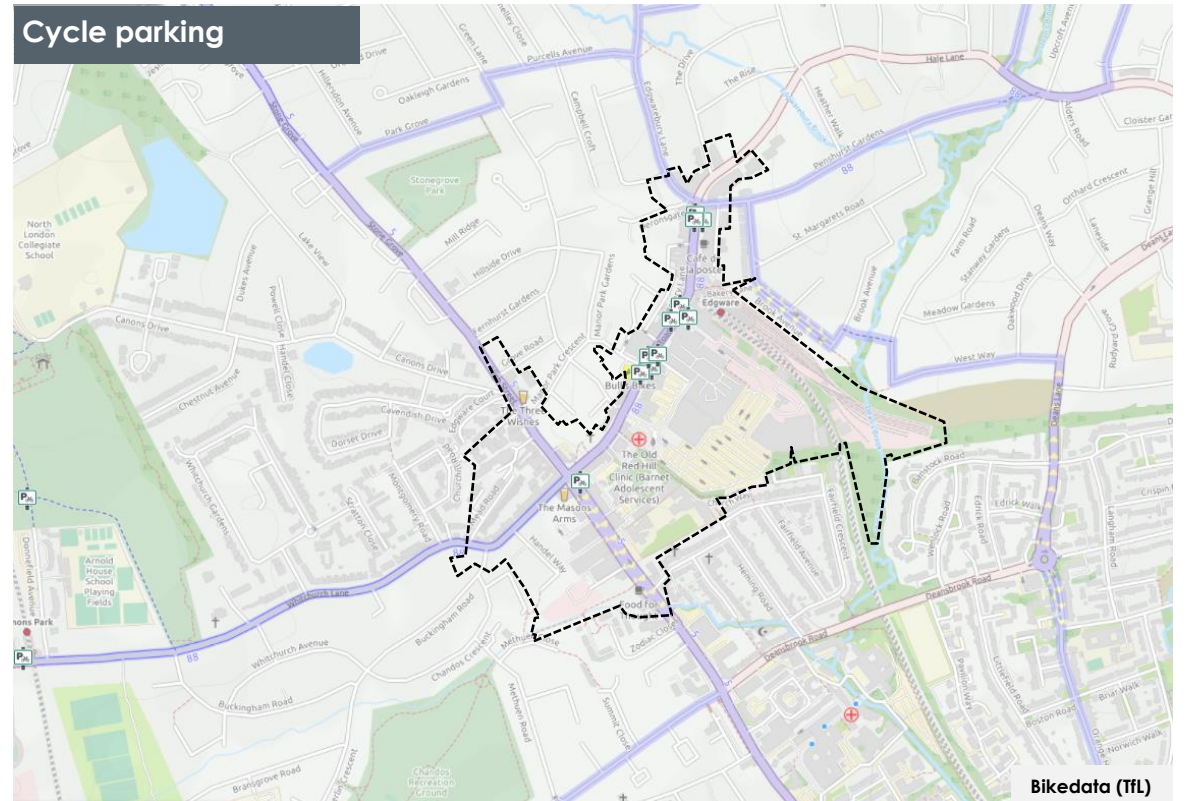
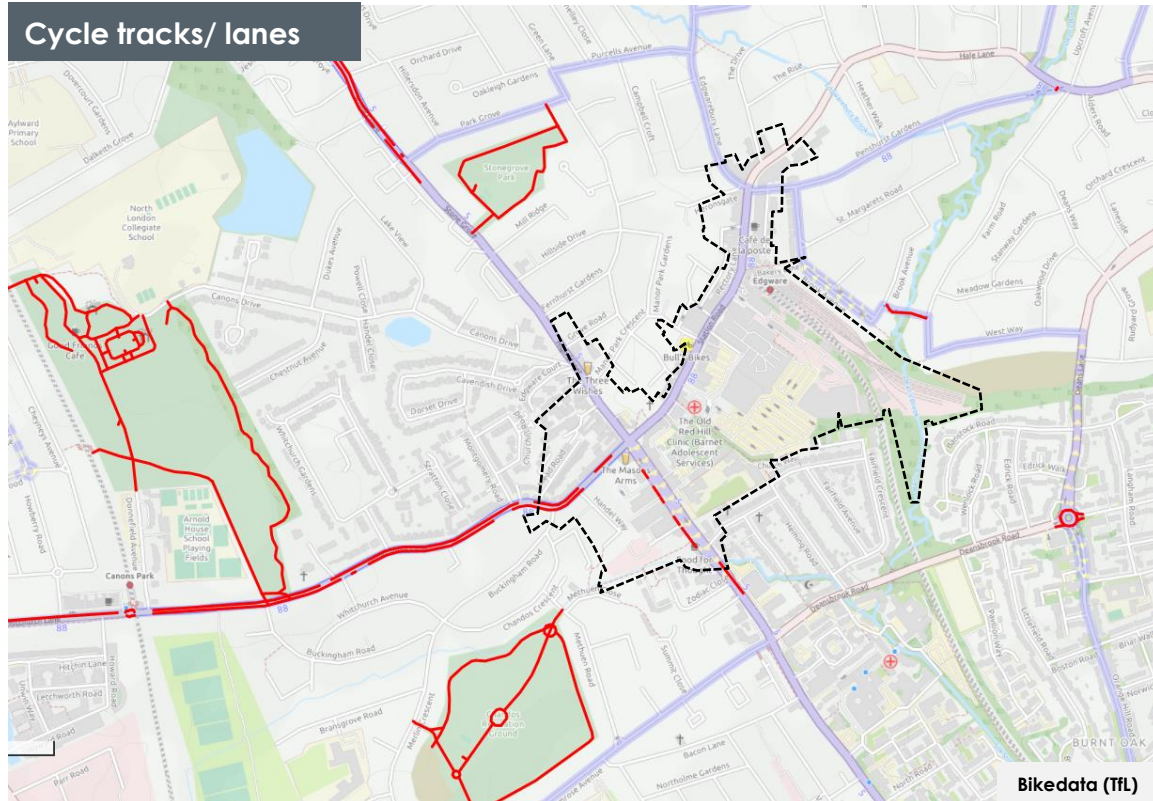


Vehicle dominated Station Road/ High Street junction is an uncomfortable cycling environment



Sheffield stands on Station Road

Cycle infrastructure

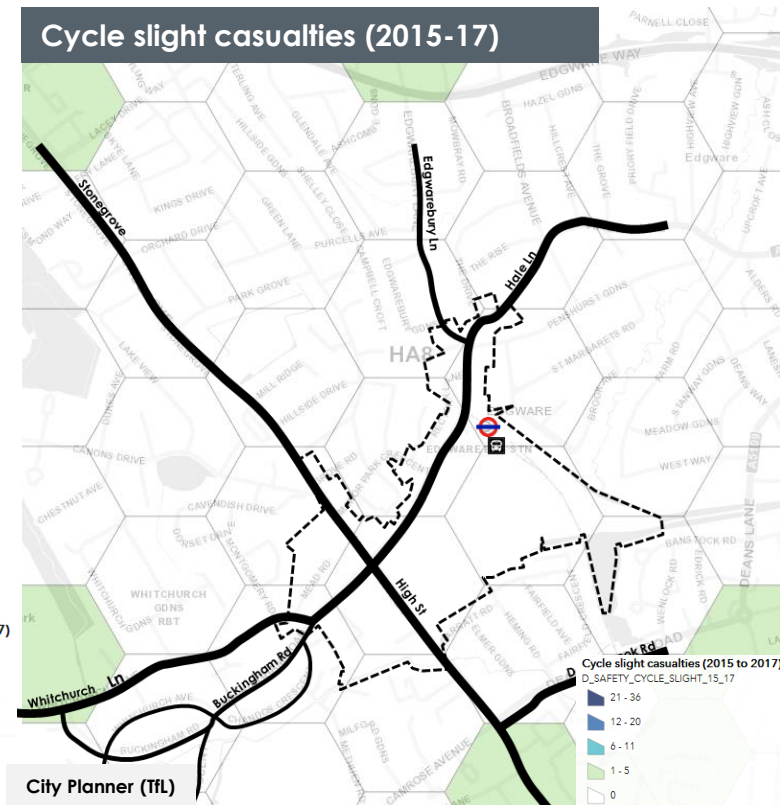
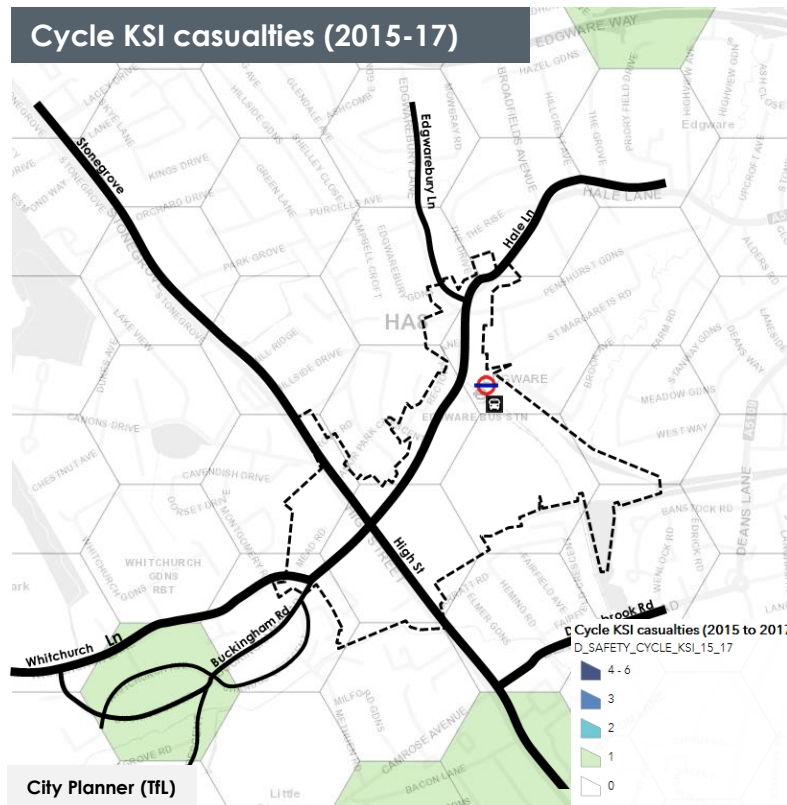


Cycle lane provision within the SPD area is very limited. The only designated infrastructure within the site are on-street cycle tracks along High Street: however, road markings are not visible/ poorly maintained. There are designated cycle lanes further out of the town centre along Whitchurch Lane and parts of Stonegrove.

There are 31 cycle stands provided along Station Road, including 6 in front of Edgware underground and bus station. There are 5 of cycle stands (10 cycle spaces) at the High Street/ Station Road junction.

As guardrails are often utilised as cycle parking, it appears that the area is lacking inconveniently located on-street cycle parking provision.

Cycling – KSIs / casualties



There were no cycle KSI casualties (killed or seriously injured) in the vicinity of the SPD area between 2015-2017.

No slight cycle casualties (between 2015-2017) were recorded either.

There are no specific road danger hot-spots within the SPD area; however, this is attributed to the low levels of cycling within the area rather than a positive reflection on cyclist safety.



Cyclist dismounting before entering a pedestrian only link

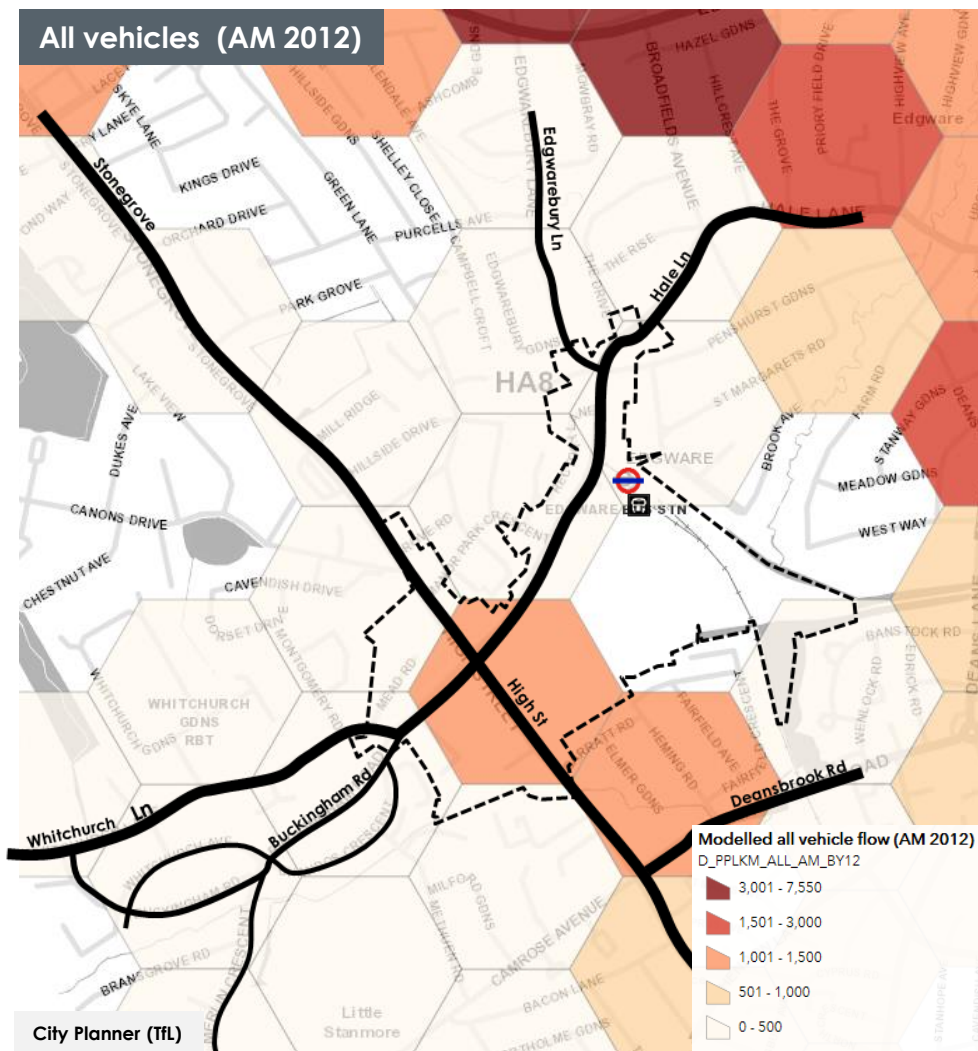


Cyclist spotted on Station Road – levels of cycling are very low in the town centre, resulting in lack of casualties despite vehicle dominated environment

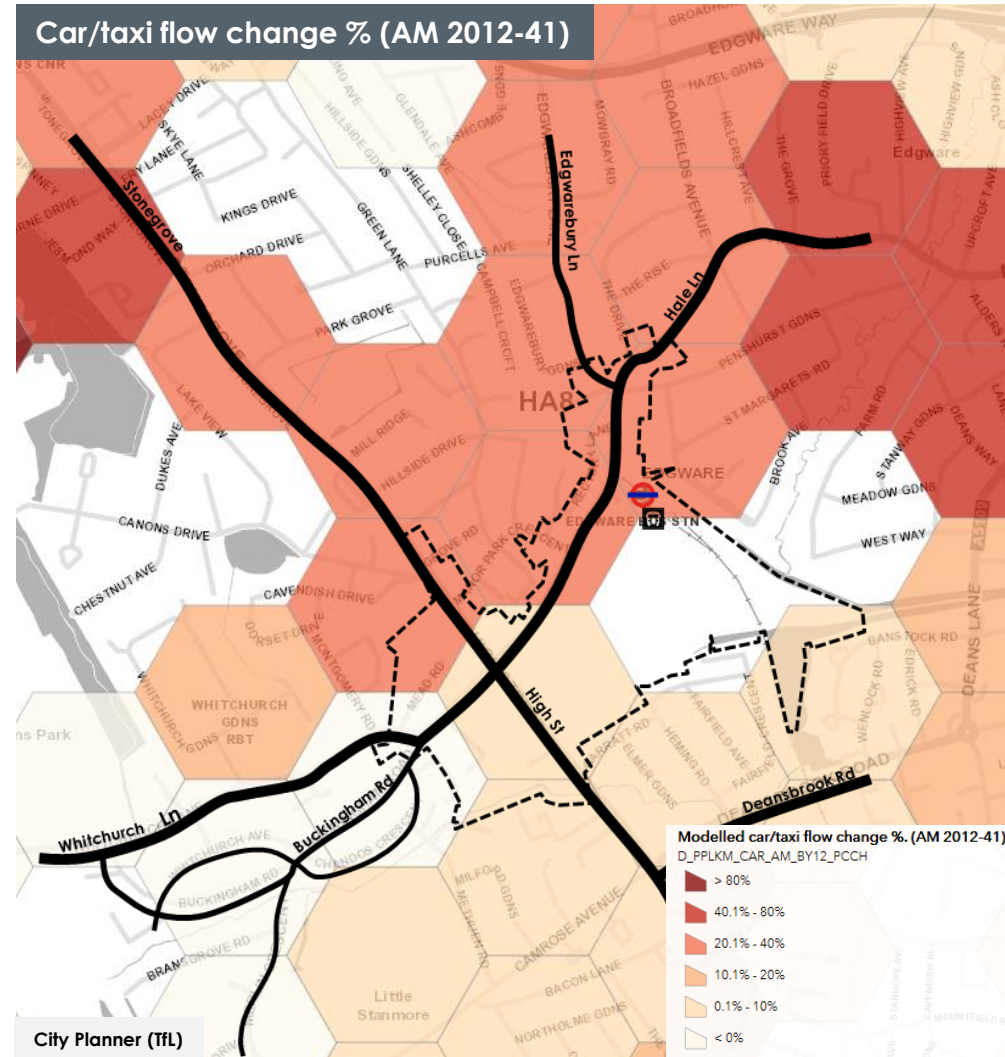


Cycling on footway to avoid the junction

Highway network flows



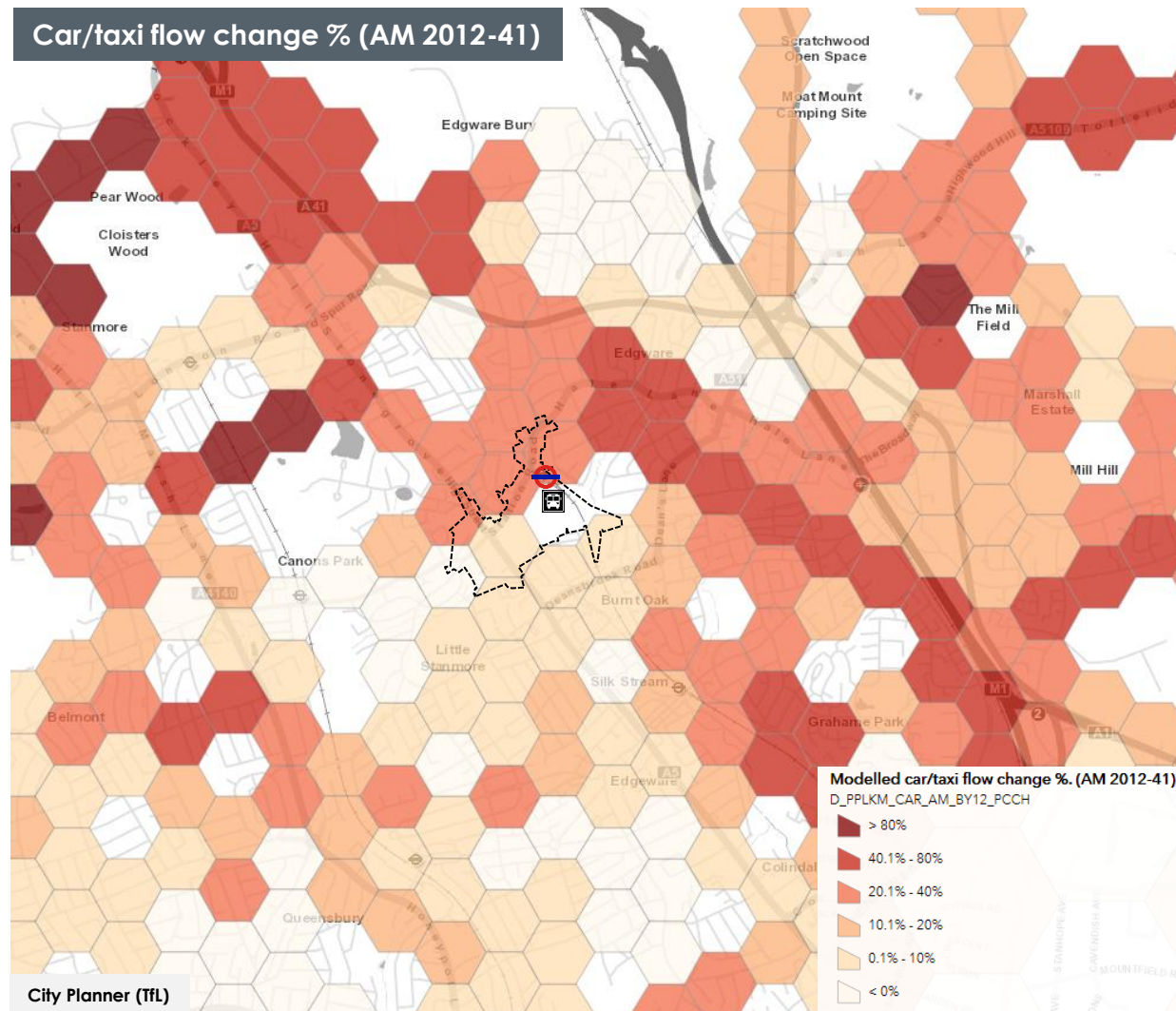
Modelled AM peak period vehicle flows (2012) from TfL's City Planner dataset show the highest number of vehicles within the SPD area at the High Street / Station Road junction. The Station Road corridor and to the north of the SPD area have lower levels of vehicle flow, and are noticeably lower than the wider area, particularly close to the A41 corridor in the north east.



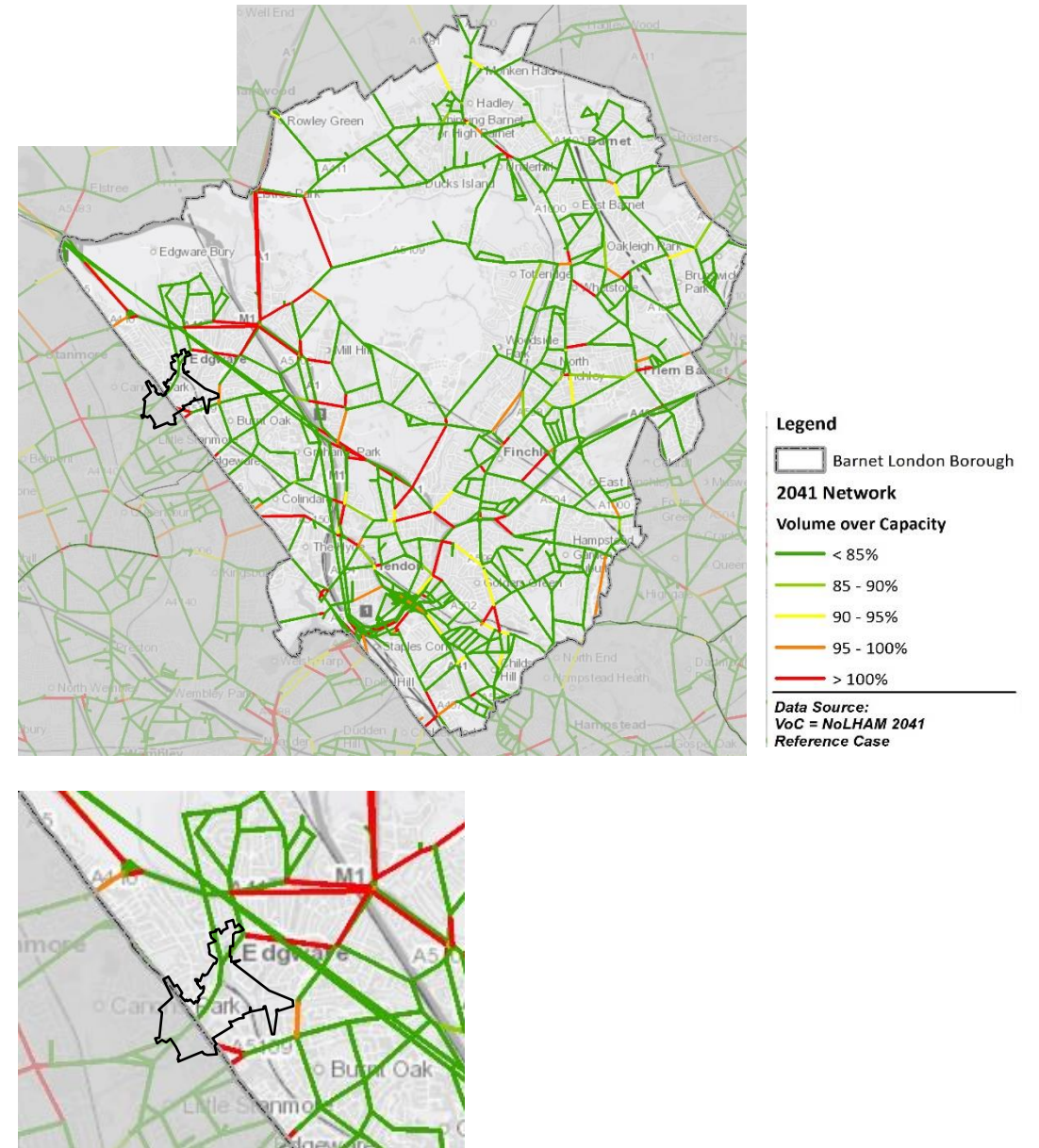
Again from the City Planner dataset, by 2041 an increase of 20-40% in car/taxi flows might be expected along the section of Station Road, Edgwarebury Lane, Hale Lane and northern section of High Road and Stonegrove.

A more modest increase (up to 10%) is expected in the southern section of High Street. No change is predicted along Whitchurch Lane and Buckingham Road.

Highway network flows – wider area



When looking at a much wider area, it can be seen that potential future changes in highway flows in the immediate Edgware town centre area are not as high as some of the surrounding areas – particularly to the north-west, north and south-east. This however could be attributable to capacity constraints on the network itself.



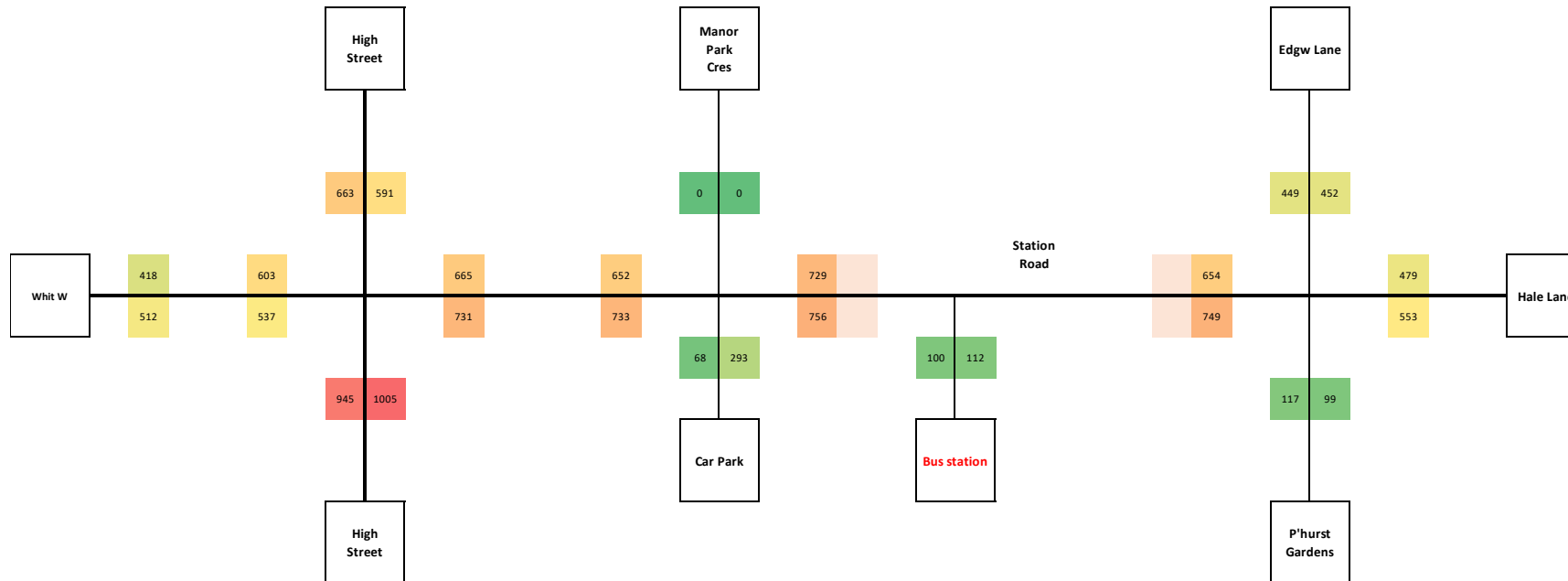
A separate modelling study undertaken for Barnet's Long Term Transport Strategy investigated future highway network pressure in 2041.

The plan above shows the whole Borough and surrounding areas; the area specifically covering Edgware indicates that the highway network will not be under undue pressure.

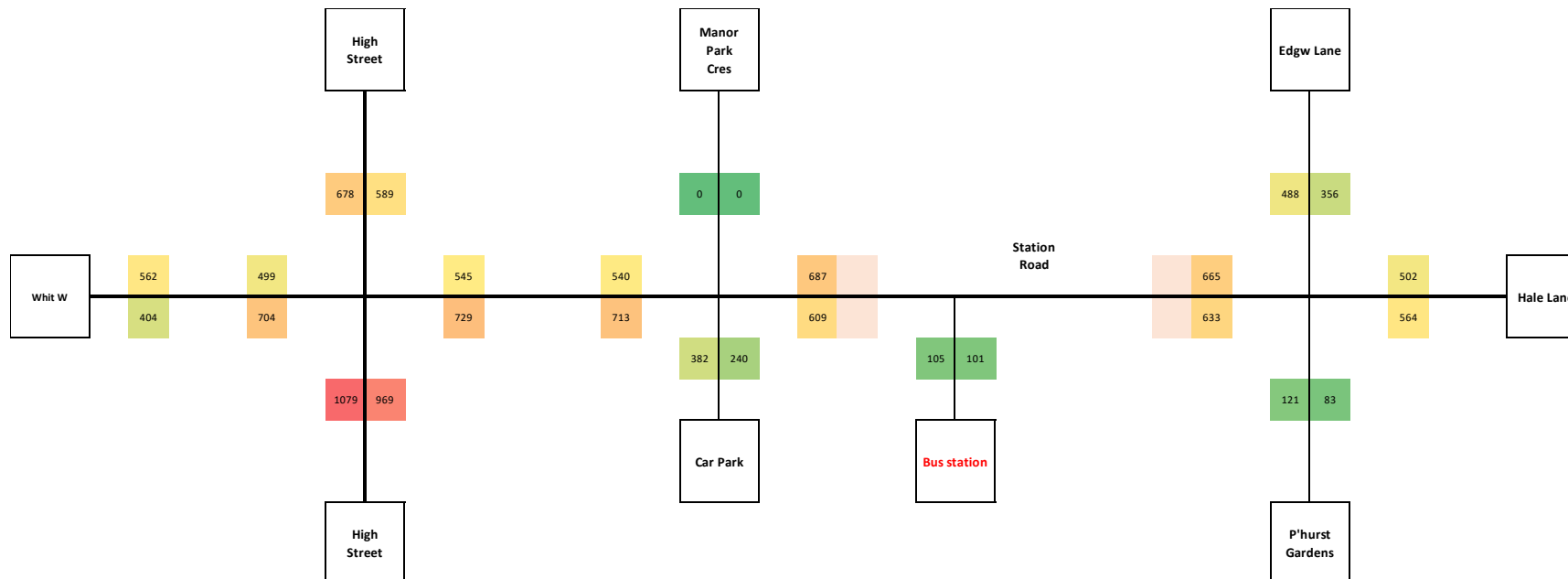
Highway network – surveyed flows

Vehicle flows along the core Station Road corridor (and adjoining streets including A5 High Street) were collected on Tuesday 25th February – a representative weekday that avoided school holidays (and before any Coronavirus-related downturn and lockdown).

AM Peak hour (8-9am)



PM Peak hour (5-6pm)

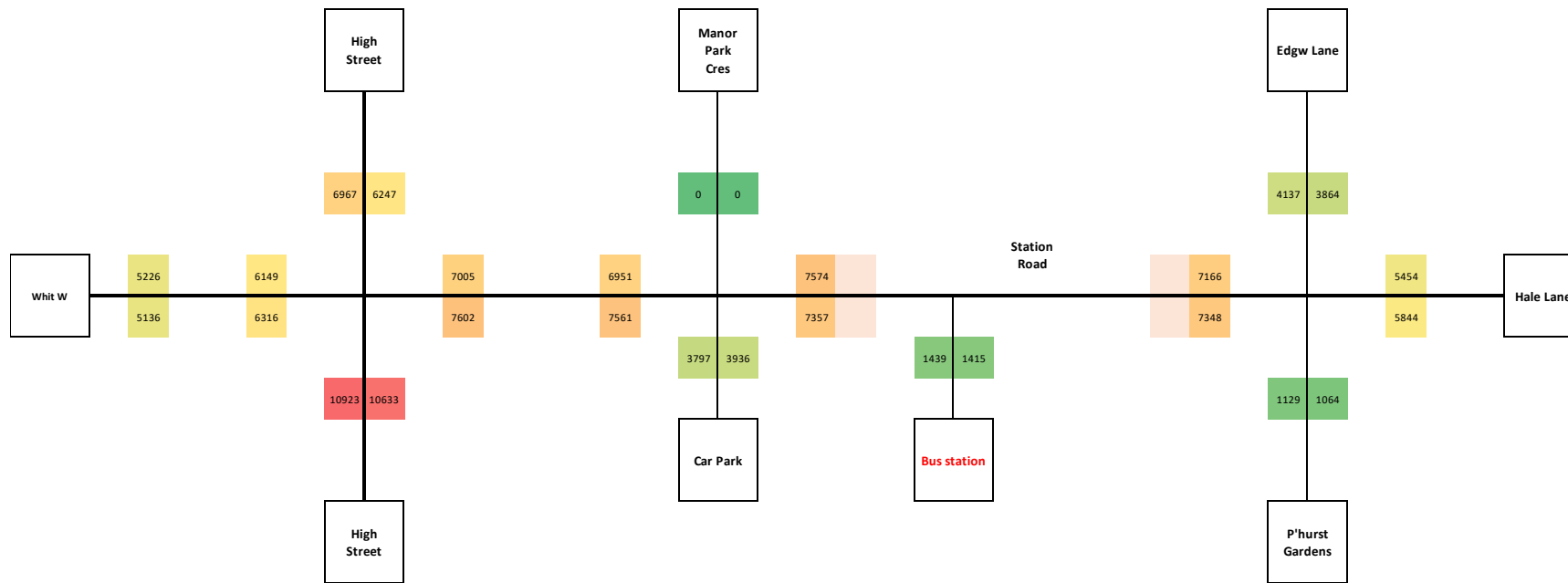


- AM peak vehicle flows were observed on the major highway links – High Street and Station Road
- Station Road traffic flows are in the order of 1,500 vehicles per hour in both directions
- Other key routes into the SPD area (Edgwarebury Lane, Hale Lane, Whitchurch Lane) have lower flows of c.1,000 vehicles per hour but are still busy and often congested with queuing
- Approximately 200 vehicles (two-way) use the bus station/garaging link

- PM peak vehicle flows follow a similar pattern to the AM peak
- were observed on the major highway links – High Street and Station Road
- Station Road traffic flows are in the order of 1,300 vehicles per hour in both directions (a modest reduction compared to the AM)
- Other key routes into the SPD area (Edgwarebury Lane, Hale Lane, Whitchurch Lane) have lower flows of c.1,000 vehicles per hour but are still busy and often congested with queuing

Highway network – surveyed flows

All day total (7am-7pm)

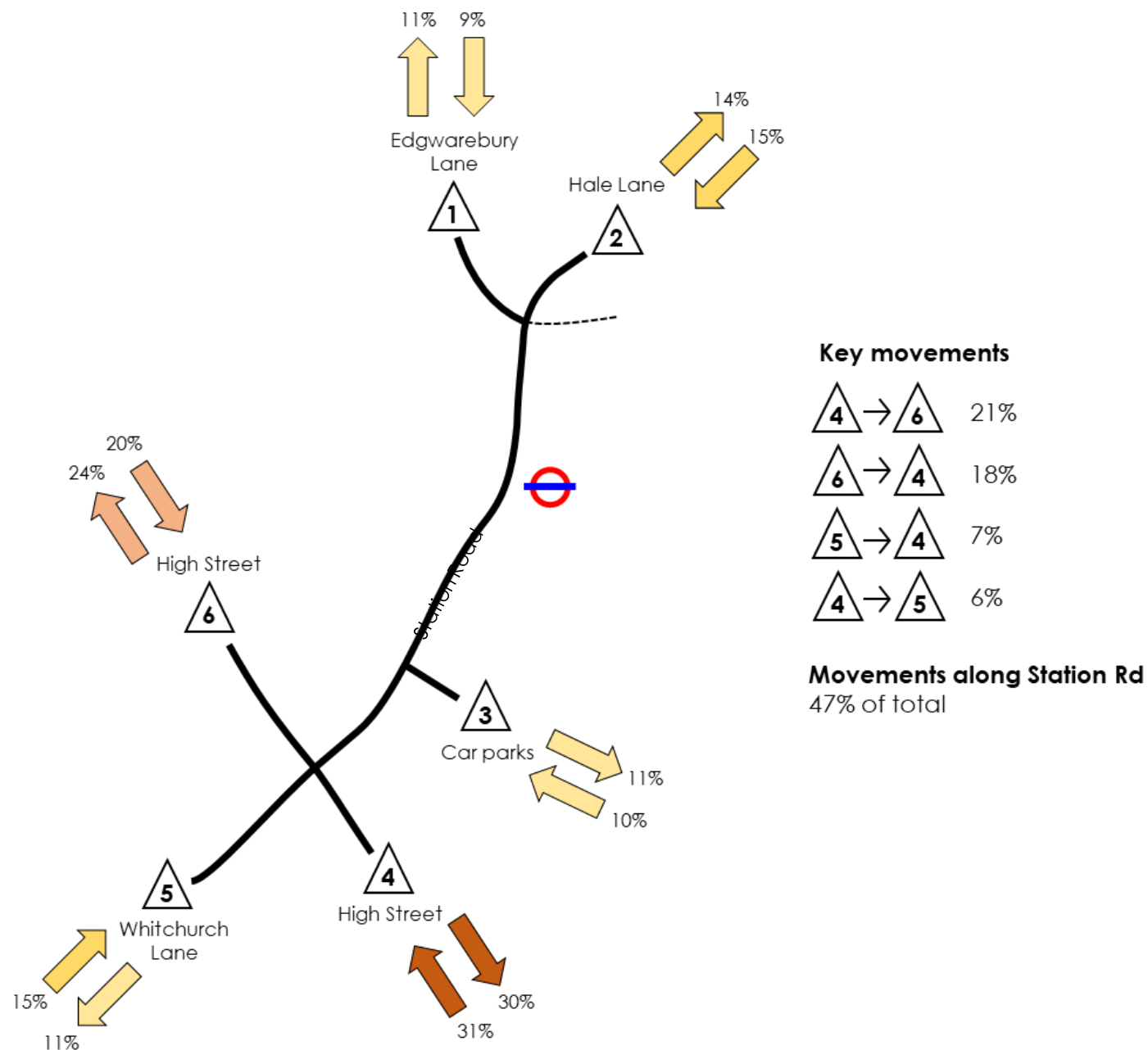


- Across a 12-hour day (7am-7pm), the High Street south of Station Road sees the highest flow with greater than 20,000 movements (two-way)
- Station Road traffic flows are in the order of 15,000 vehicles across the 12 hour period
- Of this flow, approximately 10% is directly related to movement into/out of the bus station and bus garaging
- Other key routes into the SPD area (Edgwarebury Lane, Hale Lane, Whitchurch Lane) have lower flows of c.10,000 vehicles per 12 hour period
- Approximately 3,000 vehicles (two-way) use the bus station/garaging link – highlighting the importance of managing bus operations and ensuring public realm and pedestrian impacts are minimised

Highway network – surveyed patterns of movement

As well as conventional surveys of traffic flows in the SPD area, automatic number plate recognition (ANPR) surveys were undertaken on the same day. By capturing vehicle number plates at a range of entry / exit points surrounding the town centre and then matching them, it is possible to have a better understanding of vehicle-based town centre movement patterns.

A summary of the analysis is shown here, focussing on entry / exit splits by key direction (ie what percentage of the observed town centre movement enters and exits at the five main links in the area) and key movement 'pairs' (ie origin link to destination link).



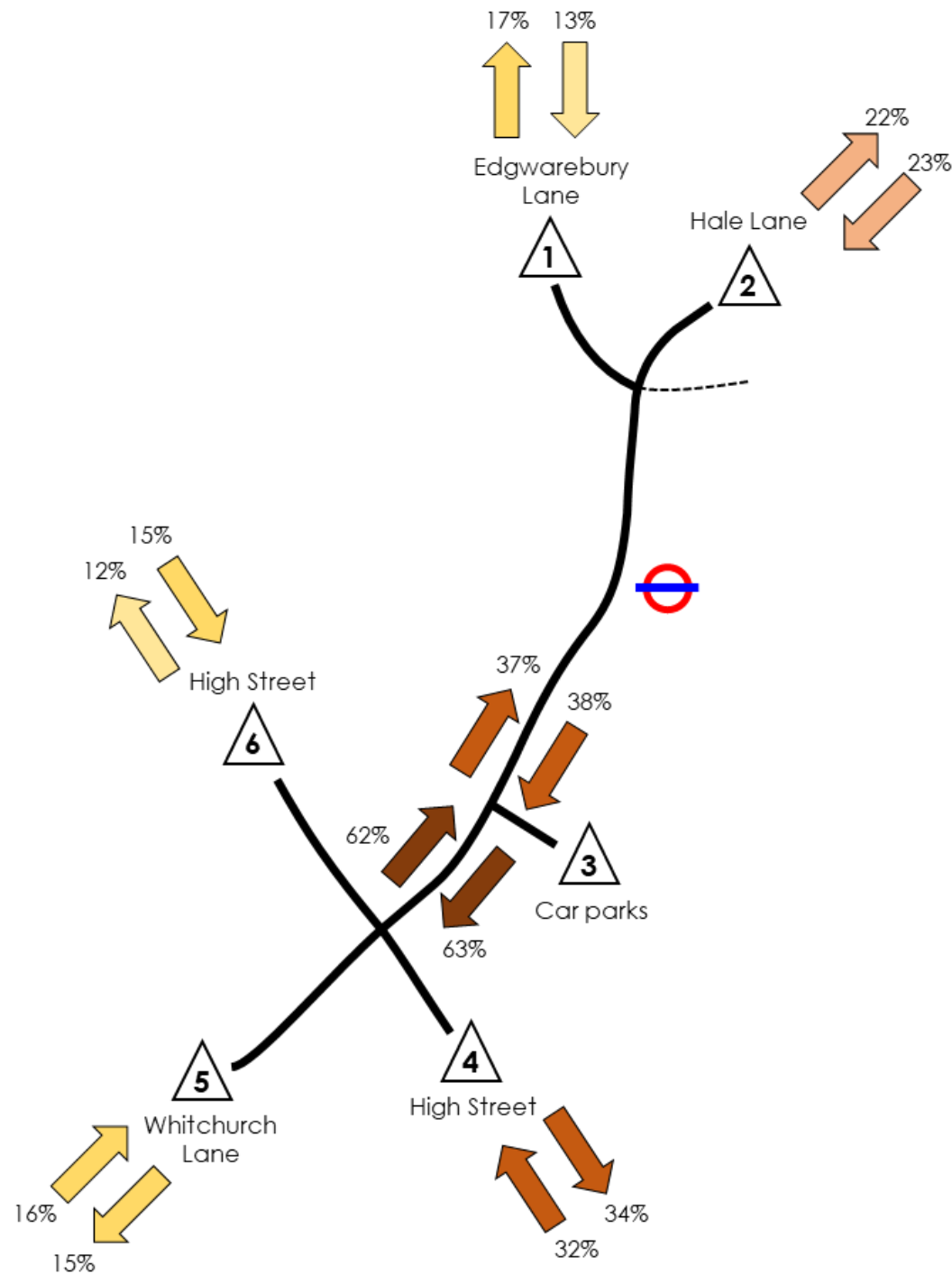
- Over half of the town centre movement captured in the surveys enters / exits along the A5 High Street (both north and south of Station Road)
- By contrast, entries / exits from the east (Edgwarebury Lane and Hale Lane) and from the west (Whitchurch Lane) are lower, typically half that of the A5

• **The scale of movement into / out of the off-street car park access represents c.10% of all movement taking place within the surveyed town centre area – ie through movement dominates**

- Specific, dominant movements within the SPD area all relate to the western part of the surveyed area: High Street (north-south and vice versa) and High Street to/from Whitchurch Lane. These four paired movements accounts for nearly half of all movement within the SPD area

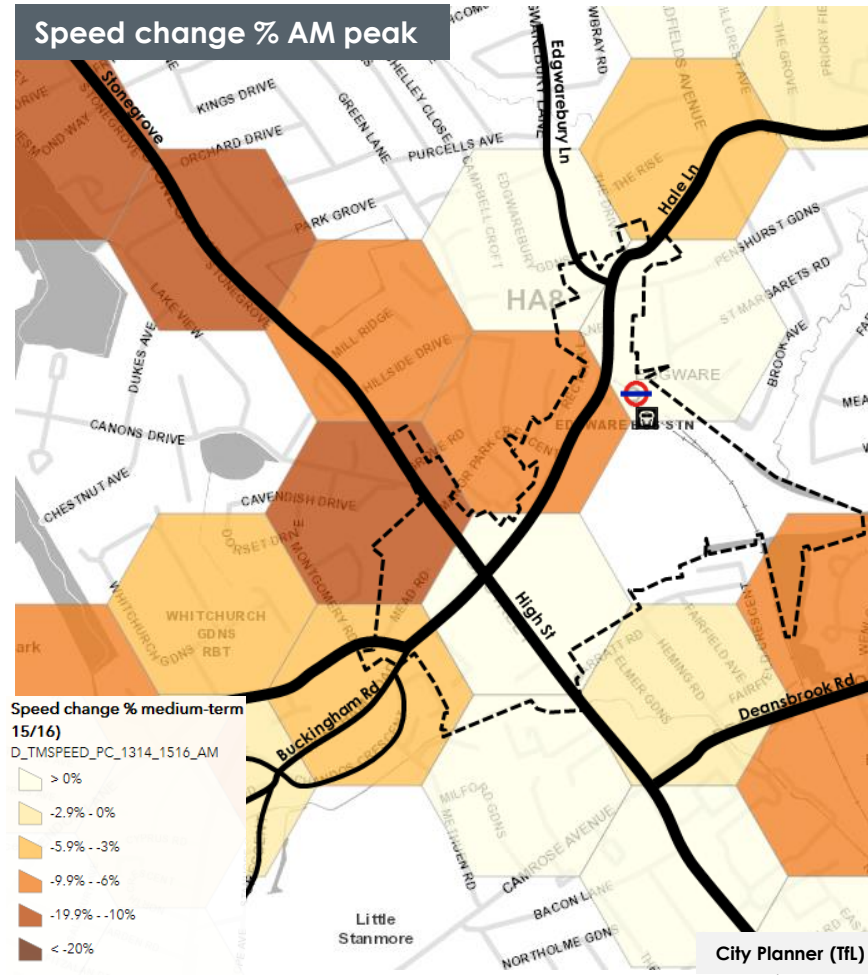
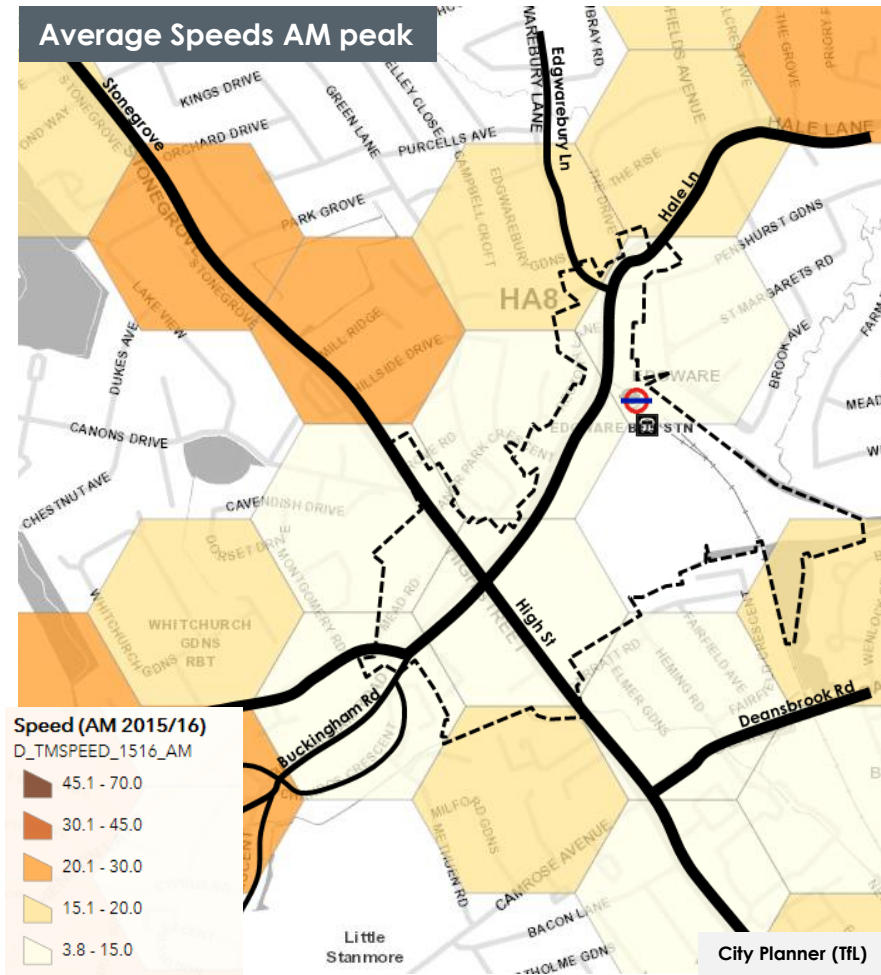
Highway network – off-street car park entry/exit link splits

Following on from the overall splits by entry / exit link on the previous page, specific analysis of car park arrival destinations was undertaken using the ANPR dataset.



- Observed demand for the off-street car parking is broadly equal split across three directions:
 - To/from the south via High Street (32%-34%);
 - To/from the west and north-west via High Street and Whitchurch Lane (27%-31%); and
 - To/from the east and north-east via Hale Lane and Edgwarebury Lane (36%-39%)
- Overall, nearly two-thirds of demand comes from Station Road (west) and one-third from Station Road (east)
- The implied catchment served by High Street (south) has, in principle, a better range of public transport alternatives to vehicles and so could be more 'switchable'.

Highway – network performance



Based on TfL City Planner data, average speeds recorded during the morning peak (2015/16) within the core of Edgware Town Centre were typically low, below 15 mph.

This is consistent with vehicle speed surveys undertaken at several locations along Station Road.

There was a -6% to -9.9% change (decrease) in traffic speeds along Station Road by the Edgware station from 2013/14 and 2015/16. A decrease of -10% to -19.9% was recorded along the northern section of High Street. This indicates a worsening highway performance in recent years, consistent with average bus speeds too.

Analysis of video data collected in February 2020 confirms peak period congestion and queuing in a number of locations in the town centre including A5 High Street, Whitchurch Lane / Buckingham Road and Hale Lane.



Southbound queuing on High Street during peak hours

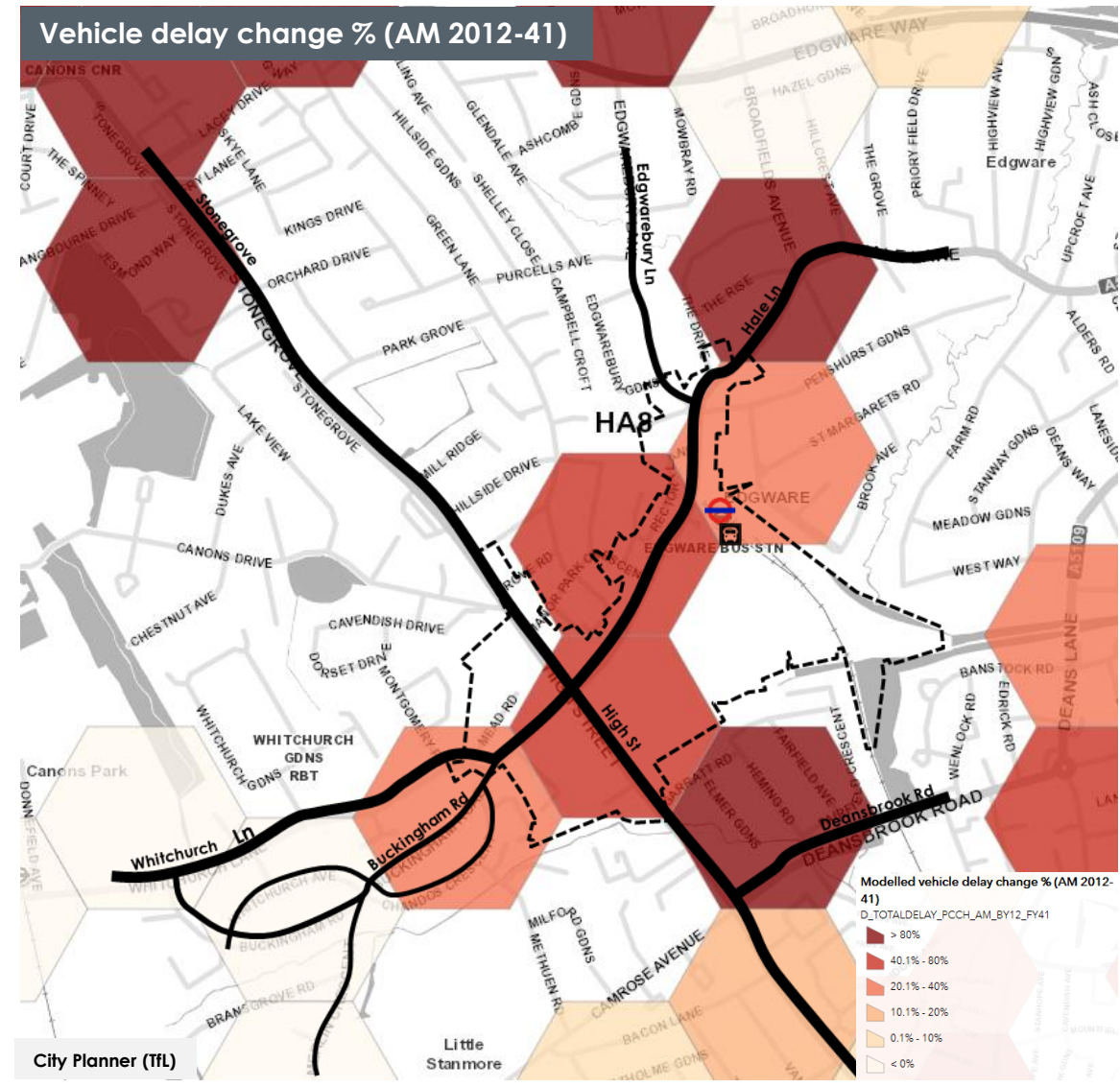
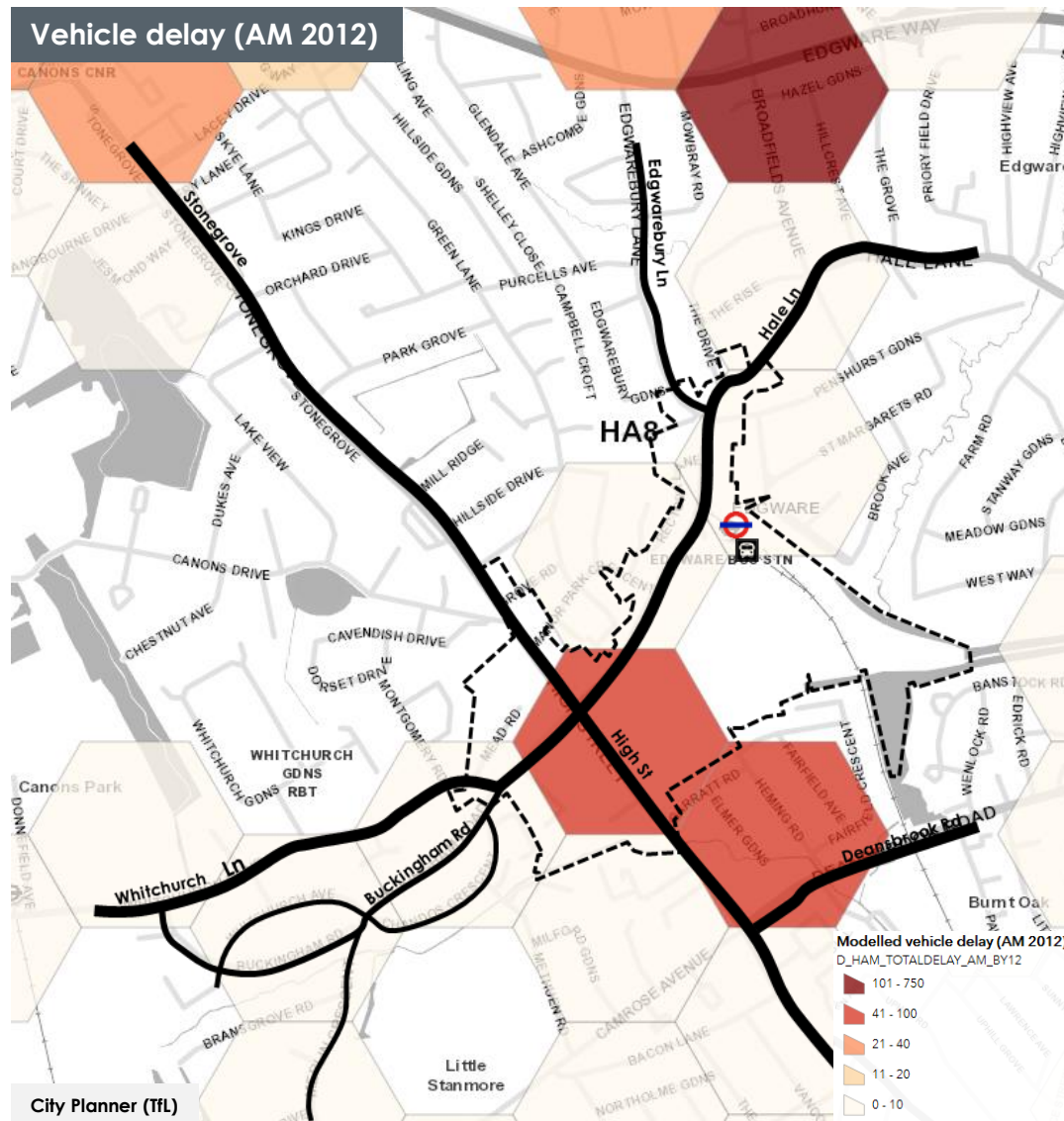


Queueing along Whitchurch Lane and Buckingham Road



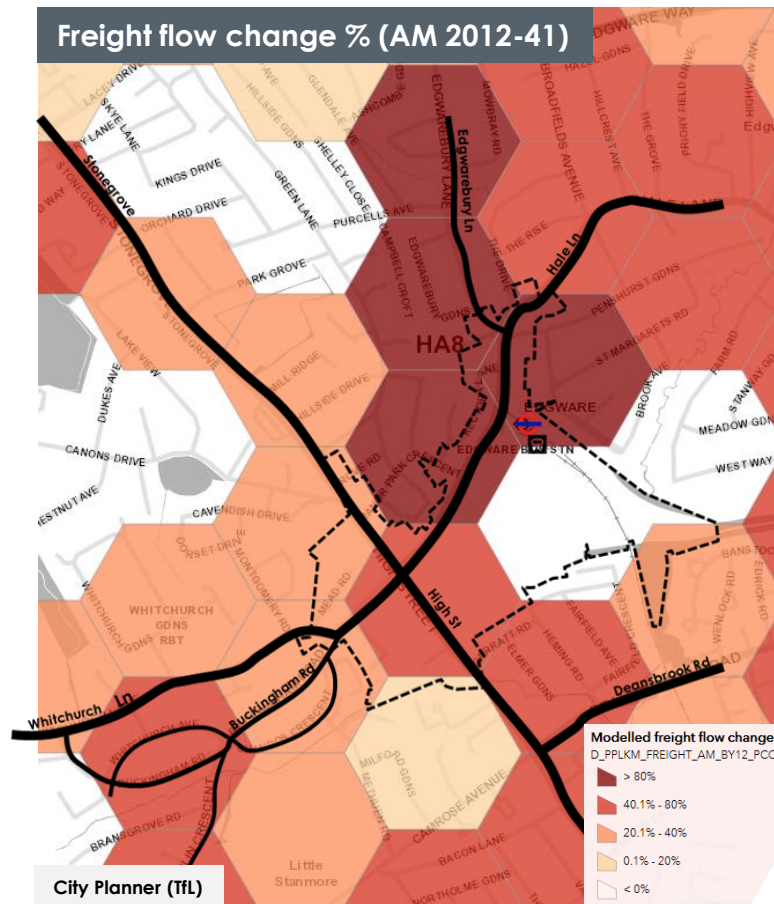
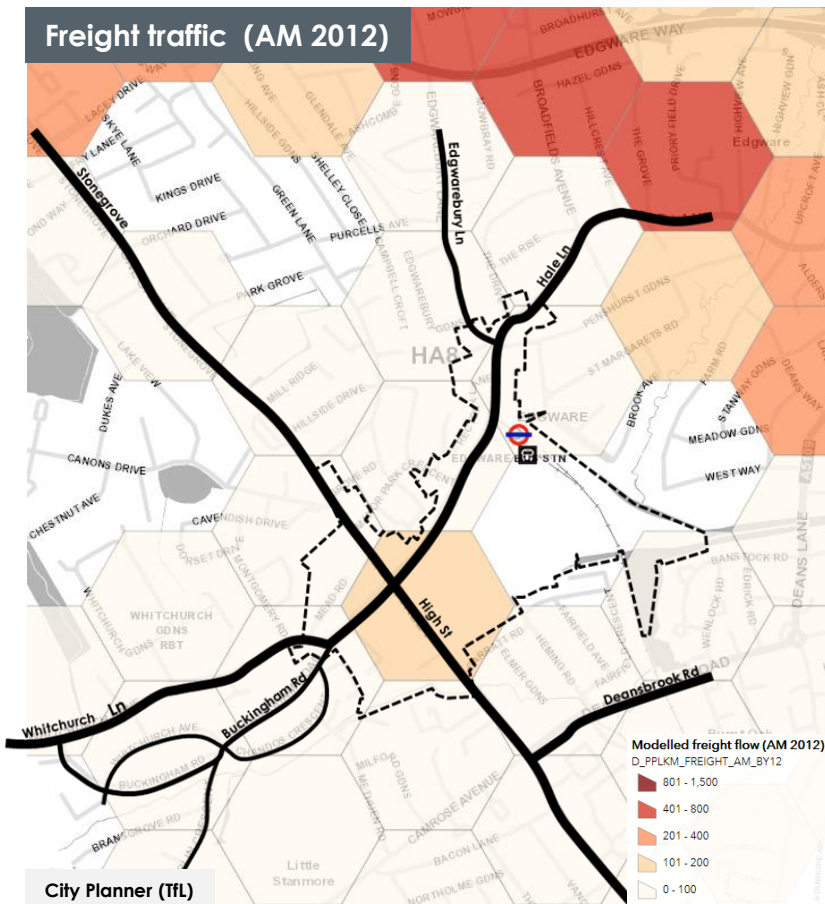
Southbound queuing on Hale Lane

Highway network delays (AM)



There are significant vehicle delays along the southern section of High Street, all the way towards the junction with Deansbrook Road. Further increase in delays are predicted by 2041 – 40.1% - 80% along Station Road and southern section of High Street, 10.1 – 20% increase along Buckingham Road and northern section of Station Road and over 80% increase along Hale Lane and around Deansbrook Road/ High Street junction.

Highway network freight flows



Based on the modelled freight flow (AM 2012) map, at present the majority of freight movement in the area is focussed around Edgware Way (A41), which is a strategic route into/out of London.

Freight flows are very low within the SPD area, with most concentrated along the southern section of High Street (by Station Road/ High Street junction).

Based on TfL's modelling, it is expected that the freight flow change (AM 2012 – 41) within the site and surrounding neighbourhoods will reach over 80% increase along Station Road and Edgwarebury Lane and between 40 - 80% increase along High Street and Hale Lane.

This will need careful future consideration and management.



Conflict between two heavy goods vehicles on High Road

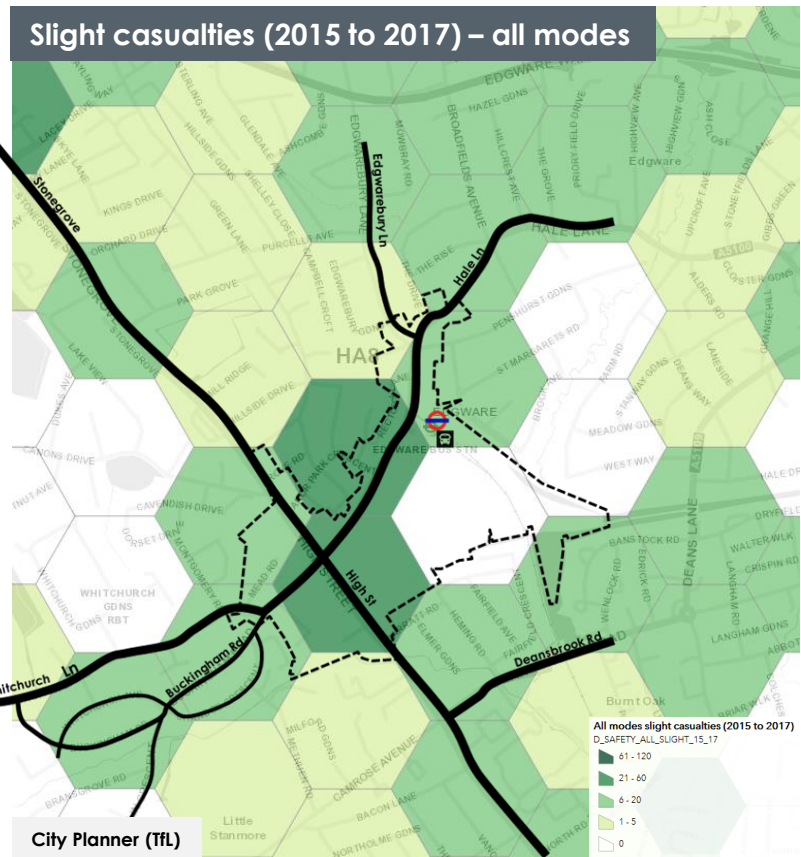
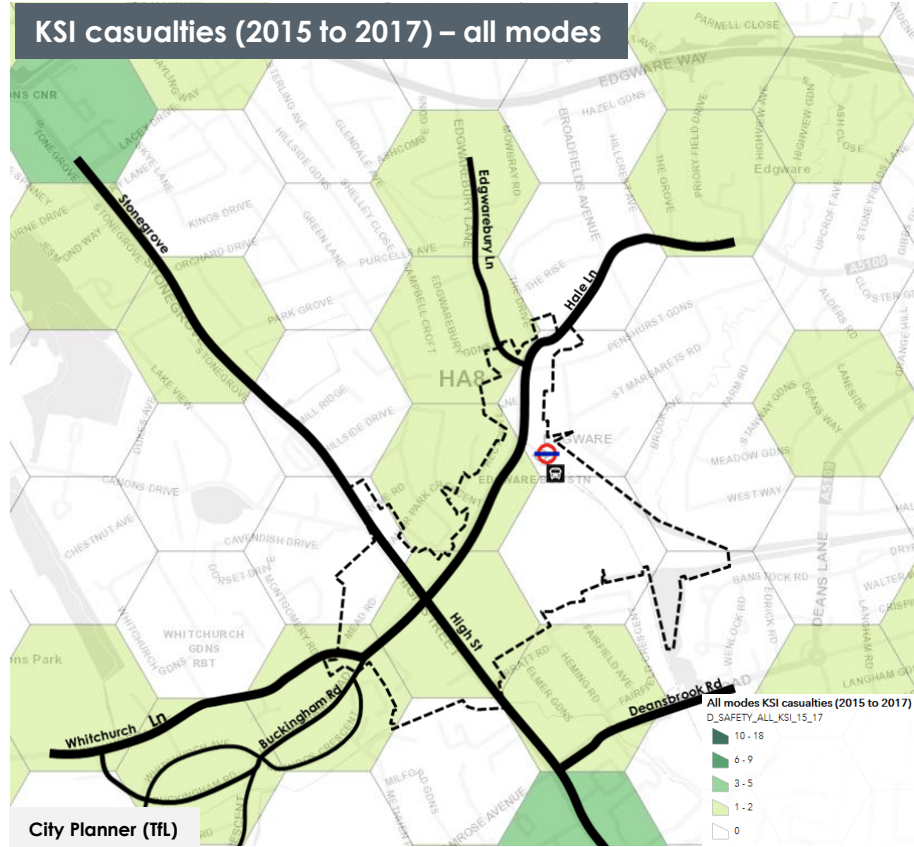
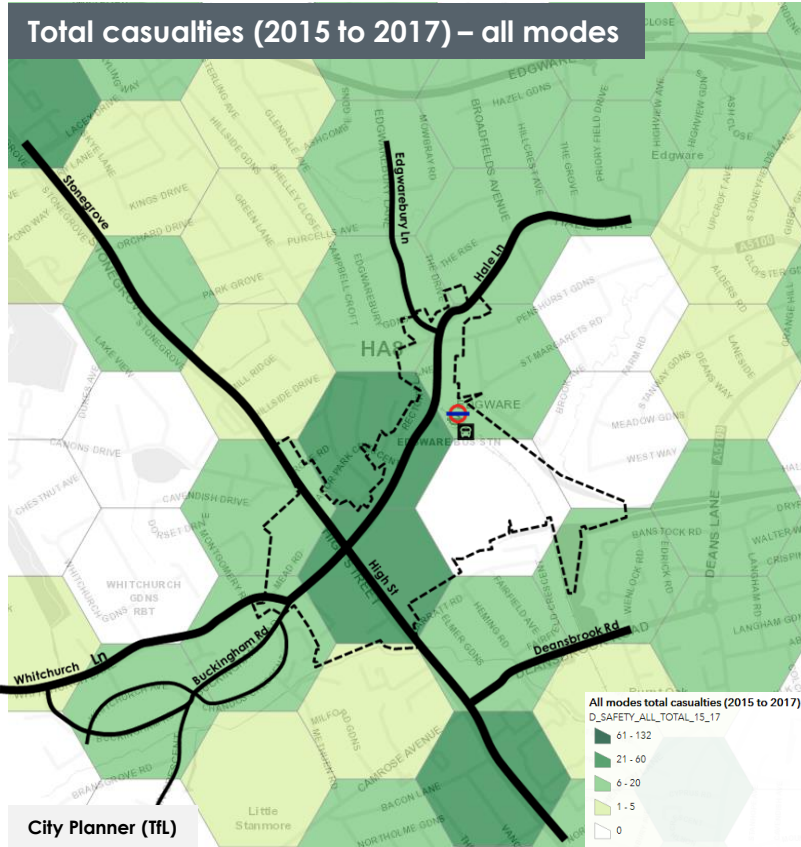


Trolleying goods into local shops on Station Road



Heavy goods vehicle on Whitchurch Lane

Road safety – wider area



Maps showing casualties for all modes (recorded between 2015 – 2017) indicate that:

- Very few KSI casualties were recorded – 1-2 per cell along key movement corridors.
- A significantly higher number of slight collisions occurred in this area; Brent Street – section of Station Road south of Edgware station and southern section of High Street were locations with 21-60 incidents registered.

A map showing the approximate location and severity of the collisions is presented on the next page.



Area-wide vehicle domination and peak time queuing makes the environment intimidating for cyclists and pedestrians

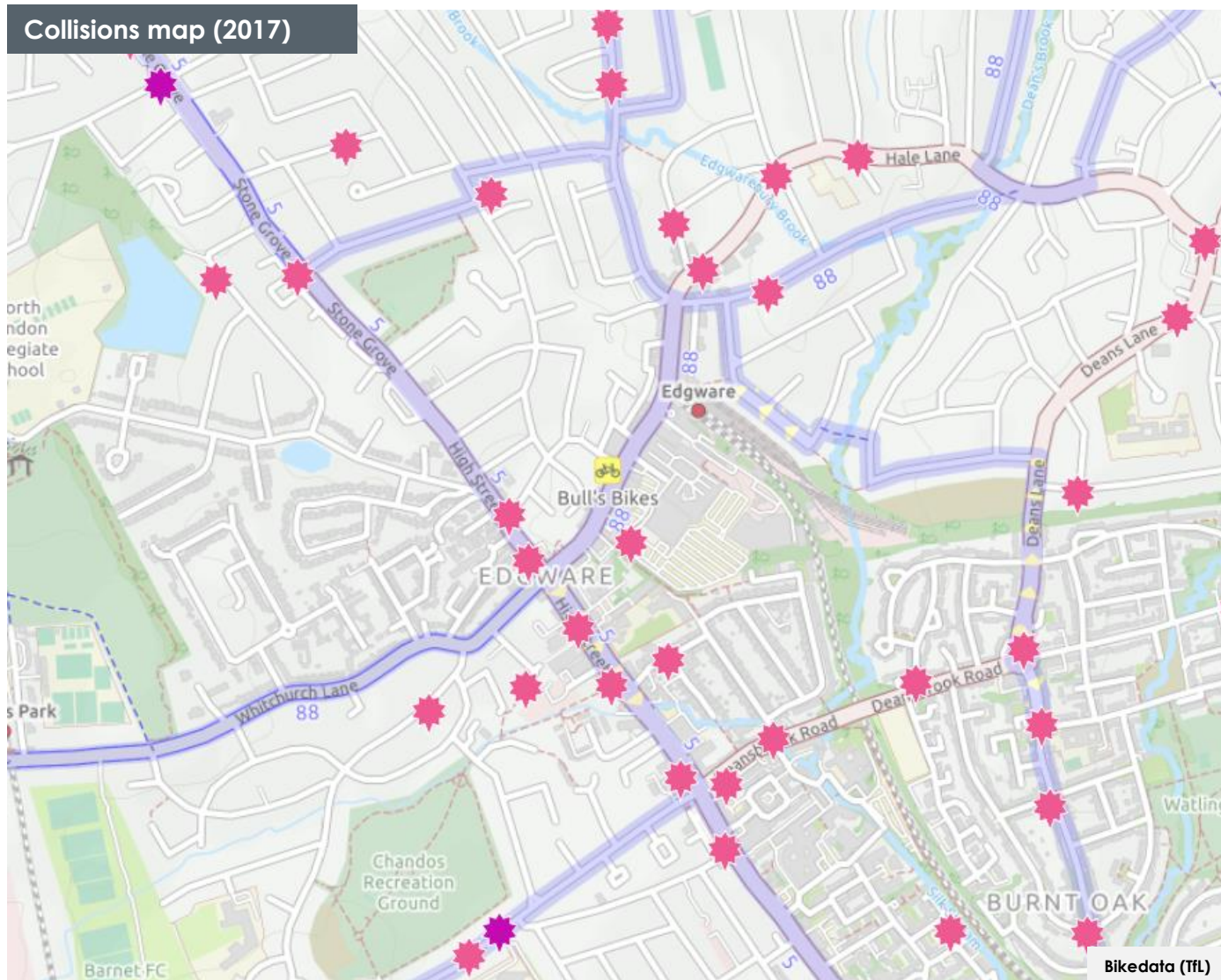


Lack of dedicated cycle infrastructure makes it dangerous to cycle especially on main roads



Damaged guard rail

Road Safety – SPD area



Map available from TfL's Bikedata Tool was extracted for year 2017. They show approximate location of collisions, where casualties were either cyclists, pedestrians or car occupants. The data is from DfT/police STATS19. Pink stars represent 'slight' casualties and purple 'serious' casualties. There were no fatal collisions recorded in the area above. The number of collisions is slightly higher than shown; some of the stars indicate more than one collision.

The analysis of spatial distribution of collisions identified Station Road and High Street junction as the only area of road safety-related concerns within the SPD boundary.

The rest of collisions are scattered in the surrounding area of the town centre – there are no prominent spatial patterns.



Illegal manoeuvre on Station Road

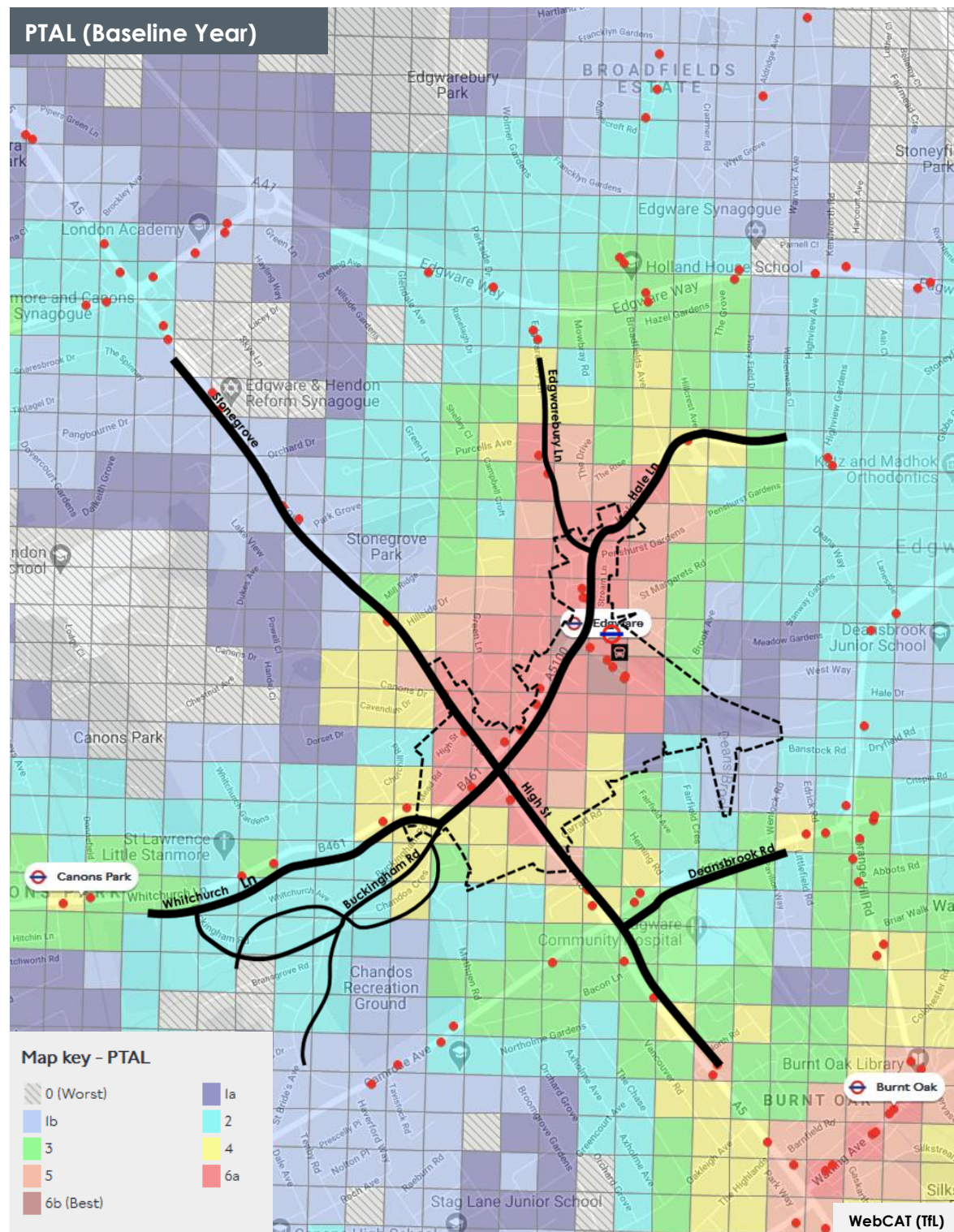


Due to poor crossing provision, pedestrians cross ad-hoc increasing risk of collisions



Car parked on a cycle lane can pose a risk for cyclists

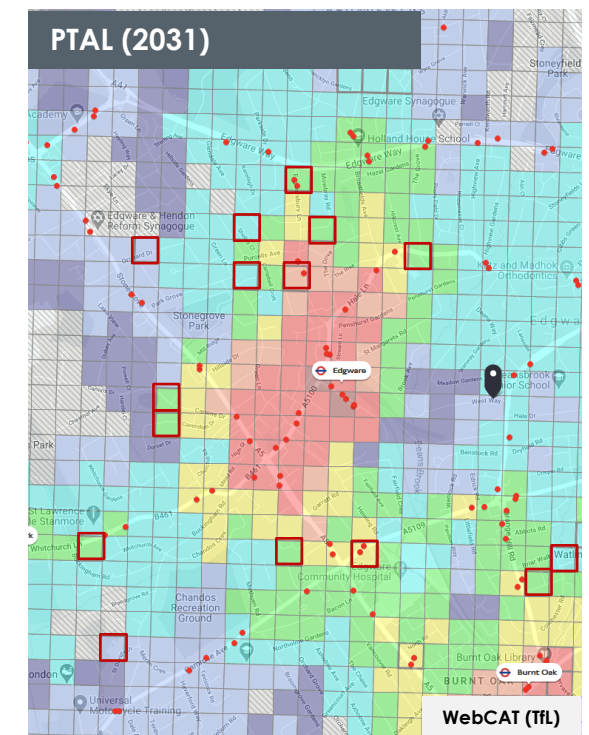
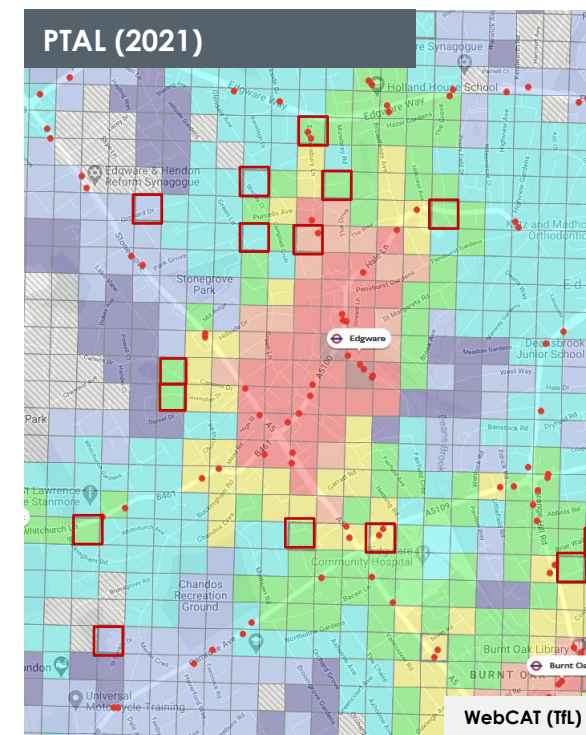
Public Transport Accessibility



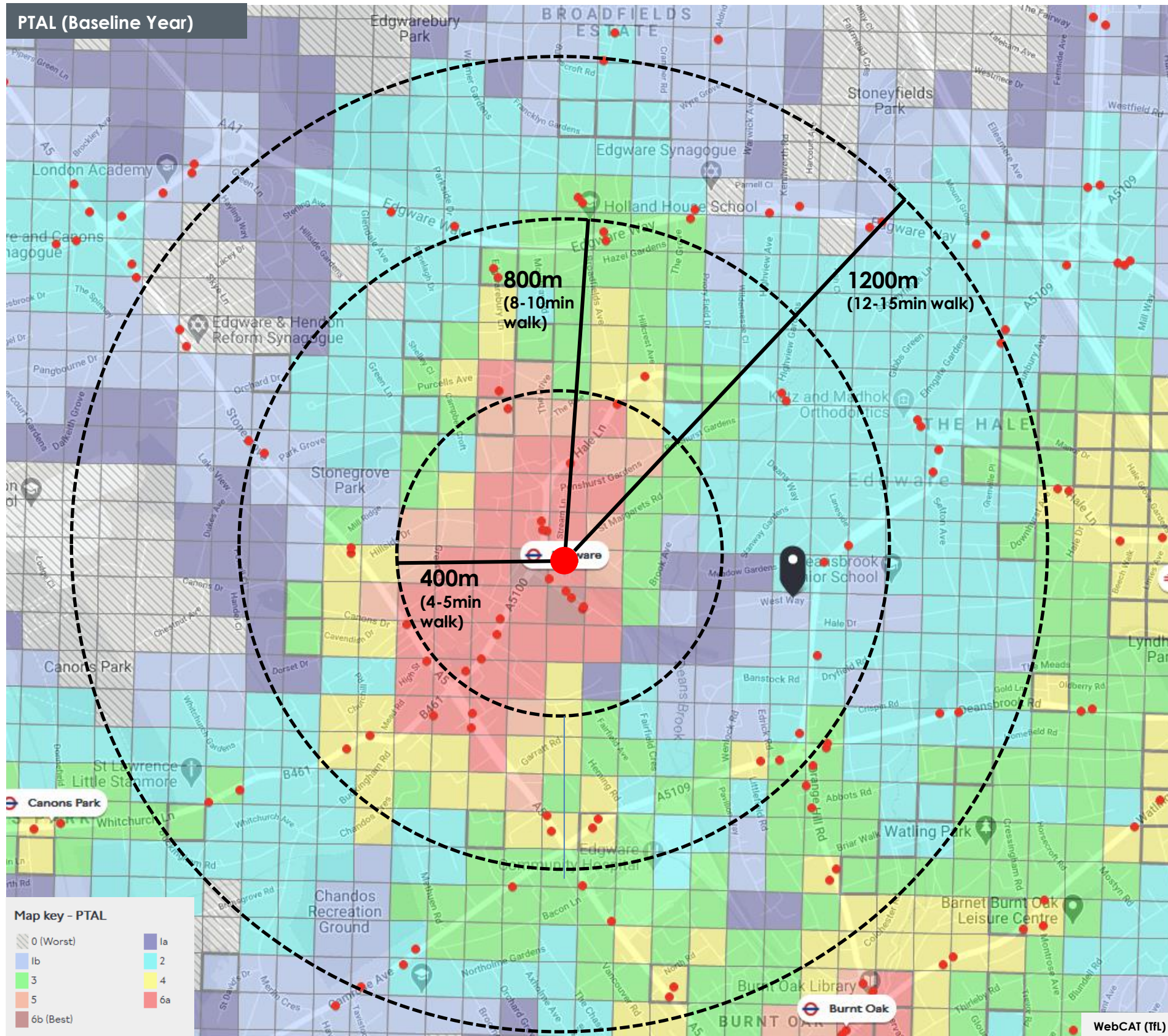
The map on the left shows Public Transport Accessibility Level (PTAL) scores for SPD site and surrounding areas. The PTAL ratings show the degree of public transport connectivity, between poor (0) and very well connected (6b).

Edgware town centre is very well-connected - the area along Station Road and by Edgware station scored well at between 5-6b (best), primarily due to the proximity to the underground station and good provision of frequent bus services. The PTAL rating decreases rapidly to the east of the SPD area reflecting the severance caused by the tube lines and long walking distances.

Very minor changes from the baseline year to 2021 – specific locations are located on the maps below with red squares. No change is anticipated for those areas between 2021 and 2031.



Public Transport Accessibility – Edgware Station

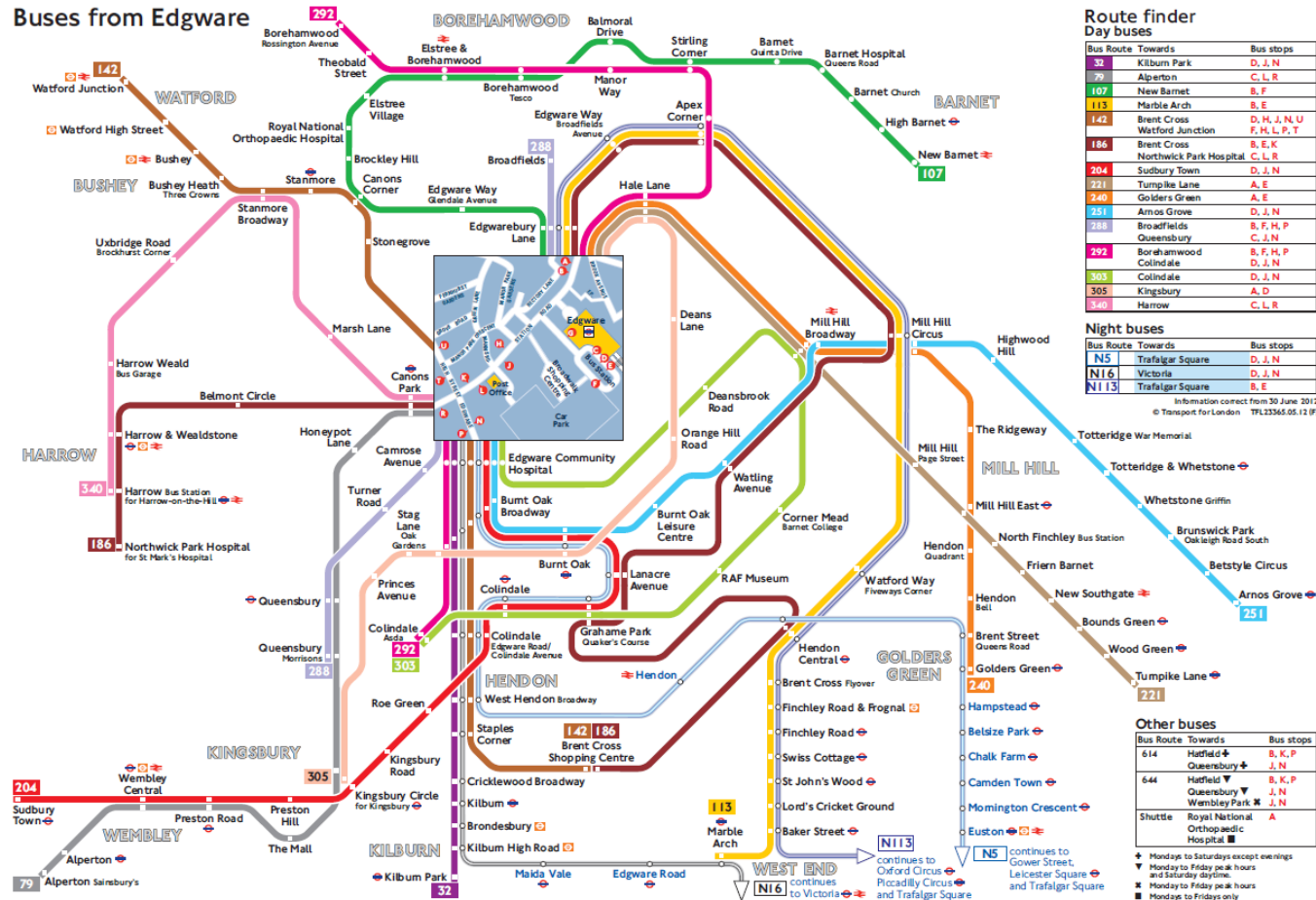


The map on the left shows Public Transport Accessibility Level (PTAL) scores for the wider area, with estimated distance (m) and walking time (min).

The highest PTAL scores (6b-5) are concentrated by the Edgware underground and bus stations. As the distance from the station increases the PTAL scores decrease. The lowest PTAL scores (1a-2) are observed north, east and west of the SPD site, partially due to increasing distance from the station, and severance caused by the railway line and Edgware Way.

Buses – routes / services

The diagram below shows all bus routes within the site and surrounding neighbourhoods.



Passengers waiting outside bus station



Services 32 (southbound) and 292 (northbound) on High Street

Looking to the future, the Long Term Transport Strategy states that "Improving orbital connections across the borough and into neighbouring boroughs is vital so that residents have a choice of ways to travel." [page 42]

Bus	32	79	107	113	142	186	204	221	240	251	288	292
Peak	Every 8-11min	Every 10-13min	4-5 per hour	Every 4-8/5-9min	Every 8-12min	7 per hour	Every 7-11min	Every 6-10min	8 per hour	Every 8-12min	Every 9-12minutes	8 per hour
Off-peak	Every 12-13min	4 per hour	3 per hour	Every 11-12min	Every 10-13min	Every 10-13min	Every 12-13min	Every 12-13min	3 per hour	Every 10-15min	3-4 per hour	4 per hour

Bus	303	340	605	606	642	688	N5	N16	N113
Peak	4 per hour	Every 9-12min	Mon-Fri 1 per day (AM)	Mon-Fri 4 per day (PM)	Mon-Fri 5 per day (AM)	Mon-Fri 2 per day (PM)	2 per hour	3 per hour	1-2 per hour
Off-peak	2-3 per hour	4 per hour	n/a	n/a	n/a	n/a	n/a	n/a	n/a

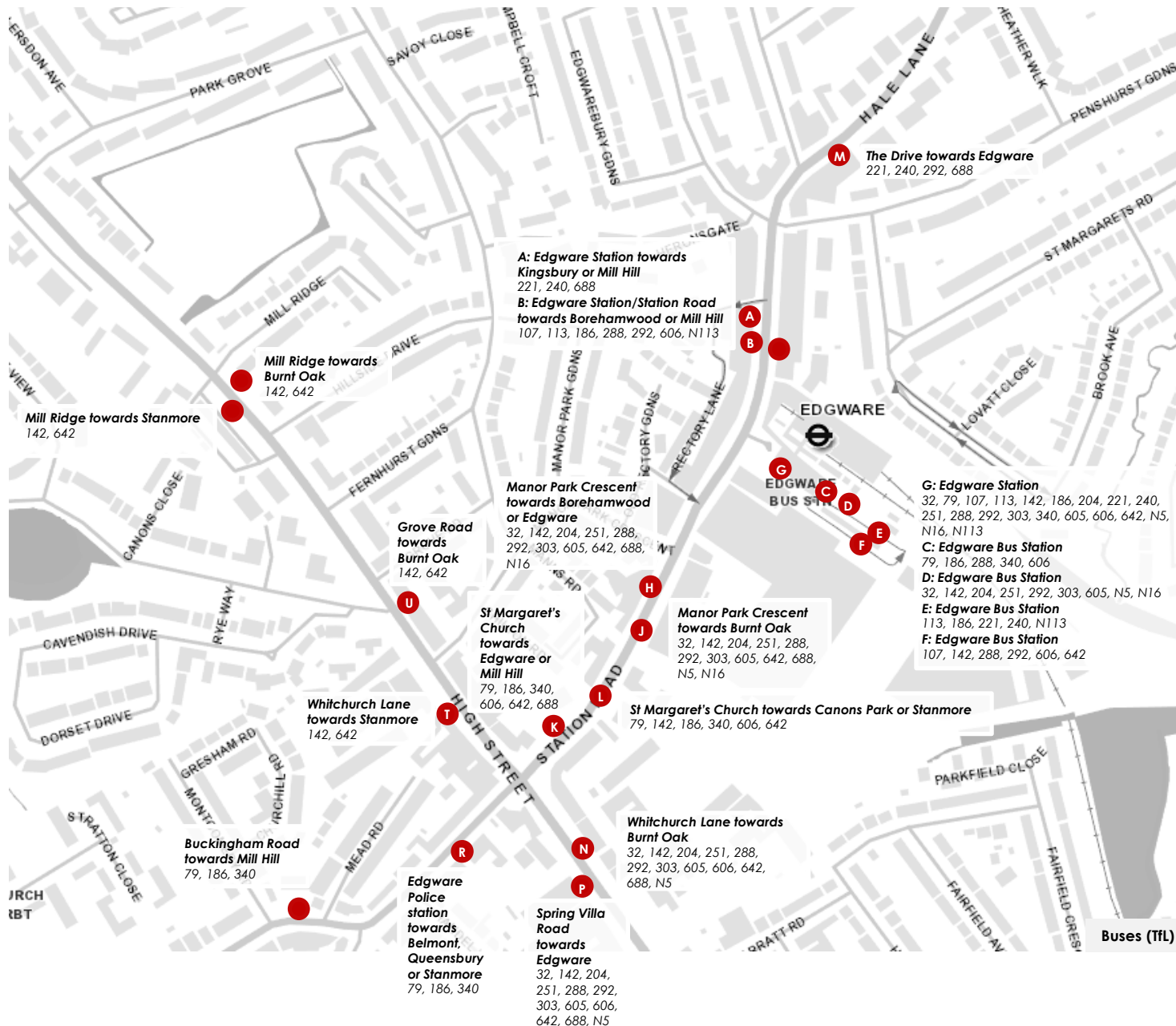


Bus 286 approaching Edgware Lane/ Hale Lane junction

Buses - stops

The map below shows the distribution of bus-stops within the site and surrounding neighbourhoods. Edgware bus station is the main bus hub for the area - it caters for local trips but also as an interchange for longer journeys.

The rest of bus stops are concentrated along Station Road and High Street. There are also some on Whitchurch Lane, Stonegrove and Hale Lane.



Bus stop H on Station Road

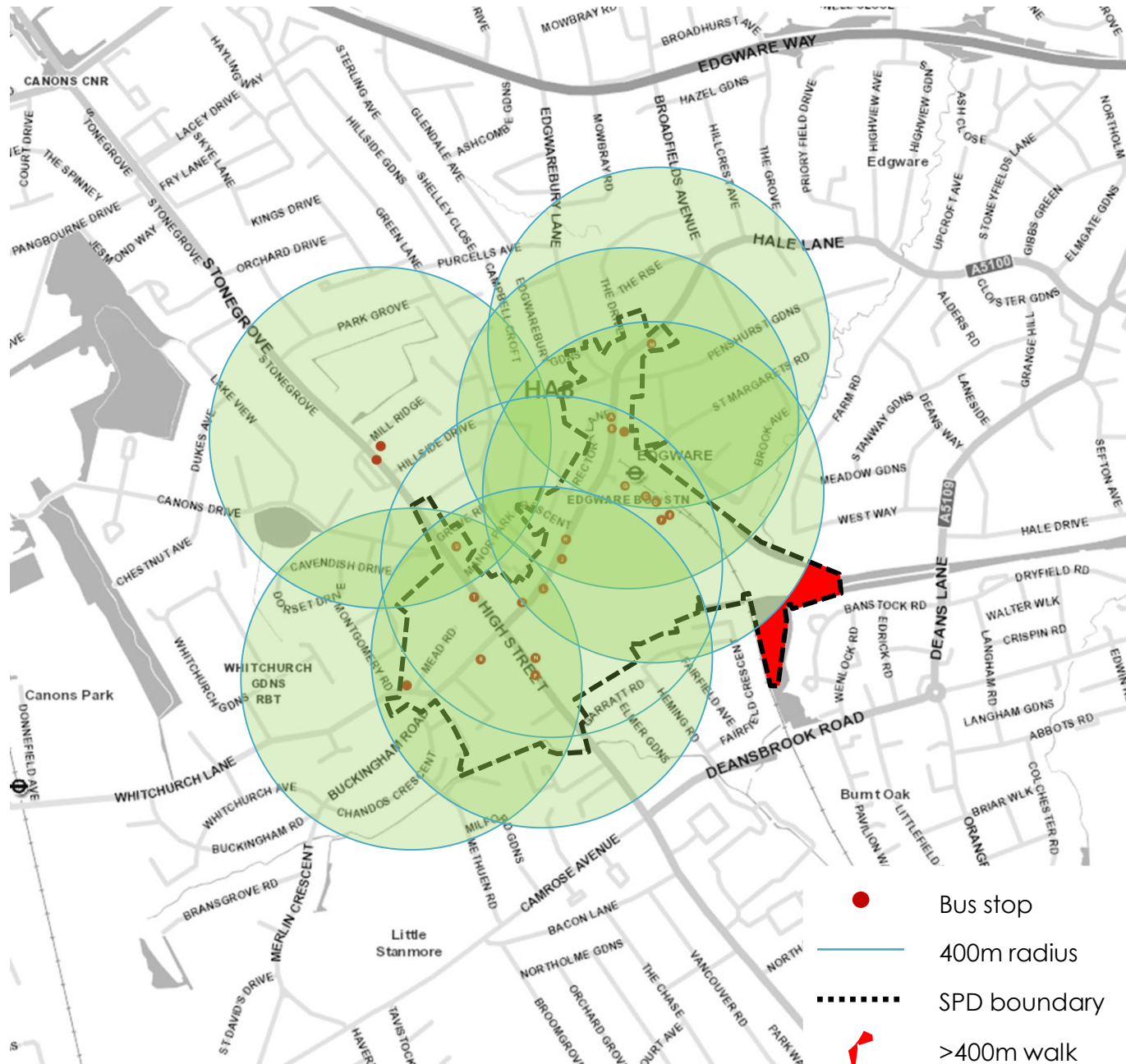


Station Road is well served by buses



Bus stop G acts as an interchange between bus : tube

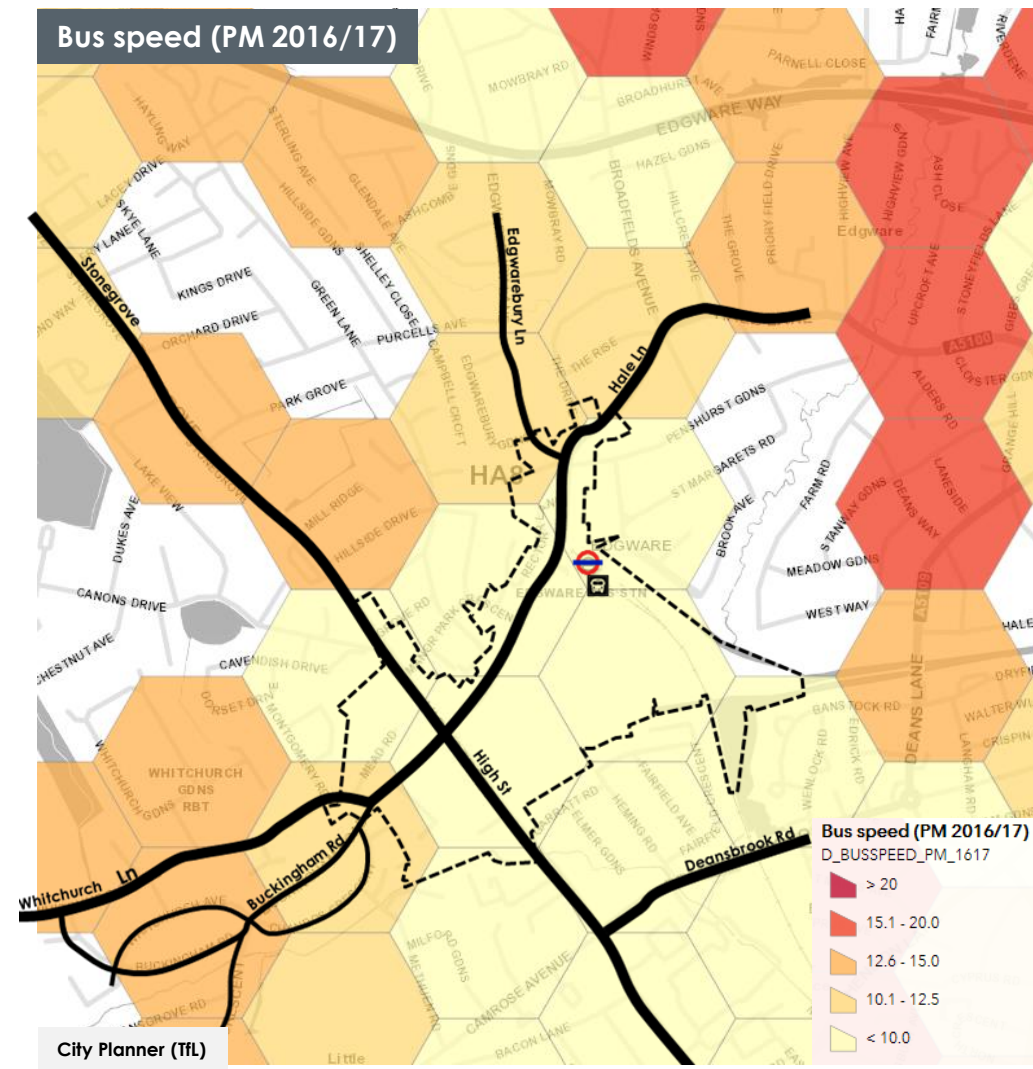
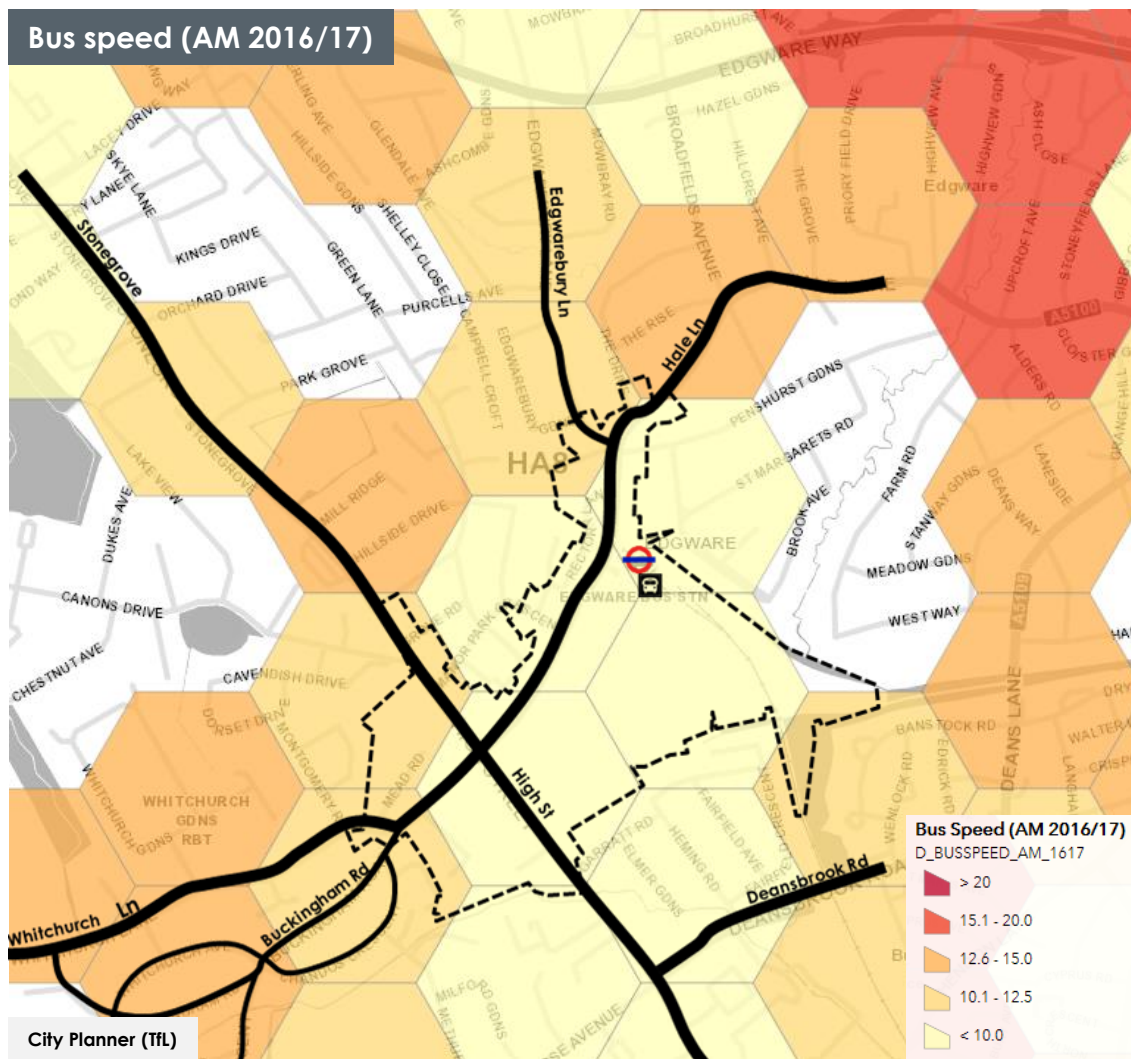
Buses – accessibility to stops



The diagram on the left shows the 400m (4-5min walk) radius distance from each of the bus stops clusters within (and in close vicinity to) the SPD site boundary.

There is a good coverage within a 400m walk distance which covers virtually of the all of the SPD area (assuming no tube line severance). This good coverage also extends beyond the immediate SPD area into the surrounding residential neighbourhoods.

Bus speeds

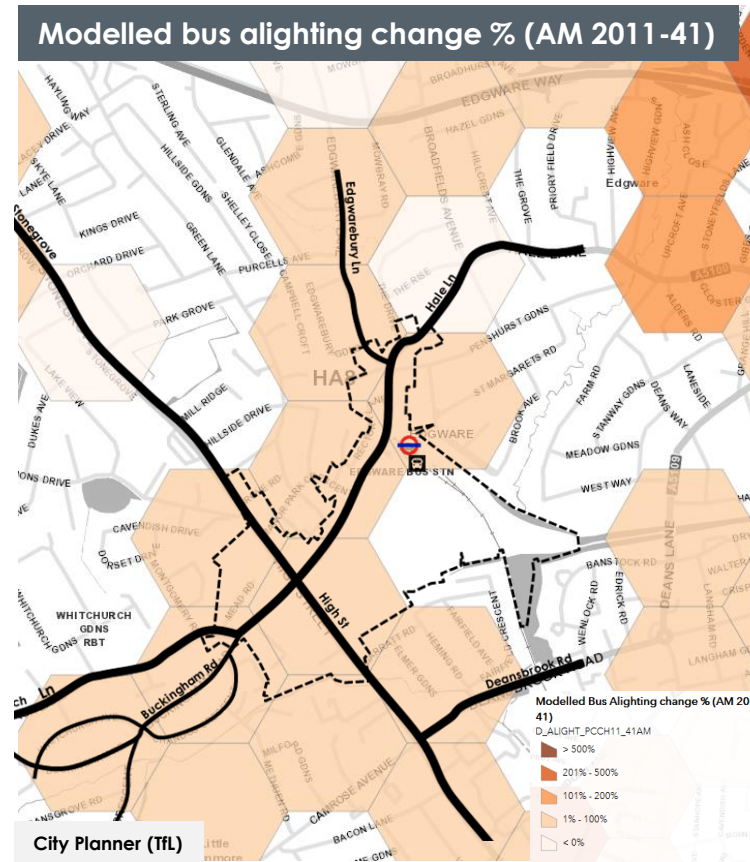
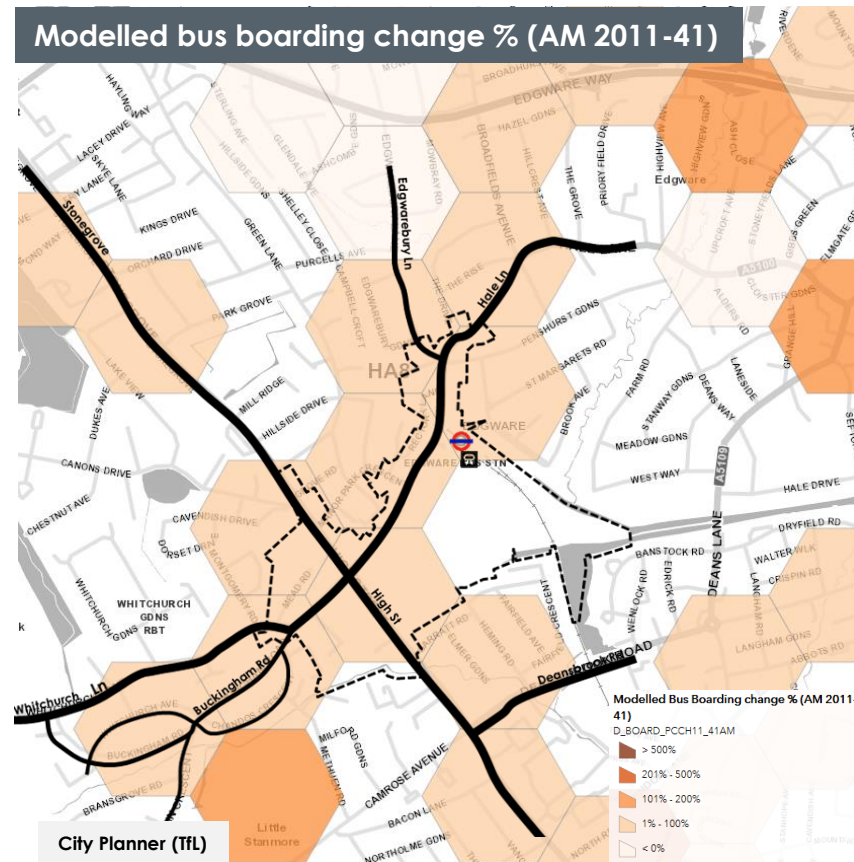


Bus speeds during the morning and afternoon peaks along Station Road and High Street are low - based on TfL's data they frequently dip below <10mph.

Additional information received from TfL indicates that bus speeds are slower in the PM peak than AM peak, c. 7mph during the PM peak on Station Road and the A5 and c. 9 mph in the AM. TfL note that any redevelopment of the town centre will need to protect bus reliability, help reduce delay and support capacity.

The Mayor's Transport Strategy has set Barnet a target of improving average bus speeds by 5 to 15%. Barnet's Long Term Transport Strategy proposals will contribute to this "by reducing congestion, particularly through encouraging more trips to be undertaken by walking, cycling and public transport." [page 45]

Buses – boarding and alighting forecast



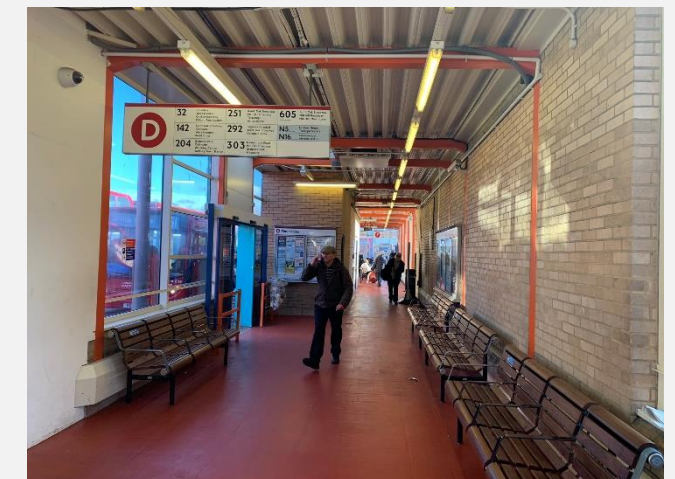
Based on TfL forecasts, it is expected that there will be a substantial increase in bus boarding and alighting activity along Station Road and High Street: a 46% increase in bus boarding and 28% increase in alighting activity.



Bus 288 stopping on Station Road



Buses parked in Edgware bus garage



Edgware bus station

Buses – BODS / Oyster data

Baseline BODS (Bus Origin Destination Survey) data was obtained from TfL for all services operating in Edgware town centre – both through services and those originating/terminating at the bus station.

A high-level review of the dataset indicates that, when all services are combined throughout the day, on average each bus operates at a relatively low level of utilisation, equivalent to c.30% of its total standing capacity. When seated-only capacity is considered there is more variation between routes, with 340 showing particularly high levels of utilisation.

However, allowing for peak hour loadings well in excess of the daily average reported in BODS, indicative peak period utilisations by service are likely to range from 30% to greater than 80% of total standing capacity. Within a particular peak period, the busiest buses could experience higher utilisations still.

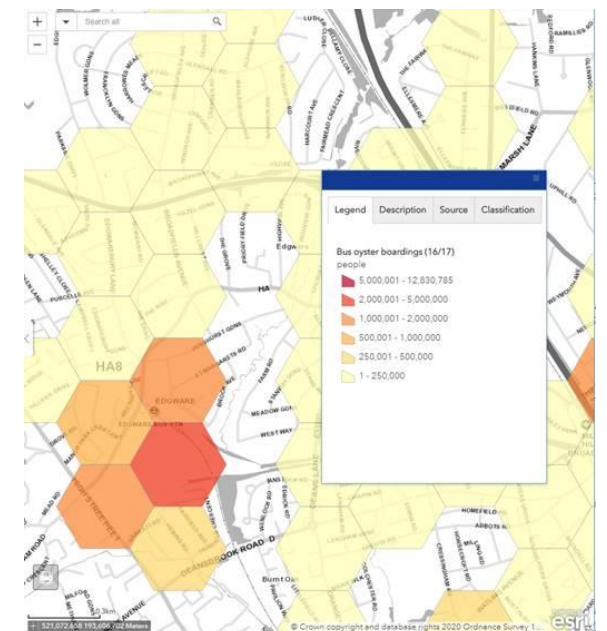
Based on TfL forecasts, it is expected that there will be a substantial increase in bus boarding and alighting activity along Station Road and High Street: a 46% increase in bus boarding and 28% increase in alighting activity. Without any major future capacity improvements this suggests that more bus services will be operating with greater numbers of standing passengers and/or operating full.

Summary bus boarding information was supplied by TfL - based on 2016/17 data in the SPD area there were approximately 5.3 million boardings per annum, with around 2.2 million at the bus station and the balance on street along Station Road and along the A5. This total number of boardings is in the same order of magnitude as tube activity indicating the importance of both modes of public transport.

Furthermore, around one third of LU station users arrive by bus during the AM peak. This increases to over fifty percentage for travel in the evening, with just under a third during most of the day. This highlights the key role the bus station plays in delivering public transport connectivity locally and more strategically.

Route	Direction	Max BODS surveyed loading	Daily services (indicative)	Daily max patronage	Total standing capacity per vehicle (indicative)	Maximum daily standing capacity	% Utilisation	Total seated capacity per vehicle (indicative)	Maximum daily seated capacity	% Utilisation
32	Outbound	31	119	3689	90	10710	34%	64	7616	48%
	Inbound	29	119	3451	90	10710	32%	64	7616	45%
79	Outbound	24	93	2232	90	8370	27%	64	5952	38%
	Inbound	26	93	2418	90	8370	29%	64	5952	41%
107	Outbound	24	66	1584	90	5940	27%	64	4224	38%
	Inbound	27	67	1809	90	6030	30%	64	4288	42%
113	Outbound	27	150	4050	75	11250	36%	45	6750	60%
	Inbound	30	148	4440	75	11100	40%	45	6660	67%
142	Southbound	28	88	2464	90	7920	31%	64	5632	44%
	Northbound	30	89	2670	90	8010	33%	64	5696	47%
186	Southbound	35	88	3080	90	7920	39%	45	3960	78%
	Northbound	30	86	2580	90	7740	33%	45	3870	67%
204	Outbound	26	106	2756	90	9540	29%	64	6784	41%
	Inbound	25	104	2600	90	9360	28%	64	6656	39%
221	Outbound	28	128	3584	90	11520	31%	45	5760	62%
	Inbound	31	128	3968	90	11520	34%	45	5760	69%
240	Outbound	17	68	1156	90	6120	19%	64	4352	27%
	Inbound	18	68	1224	90	6120	20%	64	4352	28%
251	Outbound	21	86	1806	77	6622	27%	27	2322	78%
	Inbound	21	91	1911	77	7007	27%	27	2457	78%
288	Loop	15	98	1470	77	7546	19%	27	2646	56%
292	Southbound	24	67	1608	90	6030	27%	45	3015	53%
	Northbound	25	65	1625	90	5850	28%	45	2925	56%
303	Outbound	11	58	638	77	4466	14%	27	1566	41%
	Inbound	13	57	741	77	4389	17%	27	1539	48%
340	Outbound	21	88	1848	73	6424	29%	26	2288	81%
	Inbound	25	88	2200	73	6424	34%	26	2288	96%
ALL		662	2506	63602		213008	30%		122926	52%

BODS average utilisation analysis

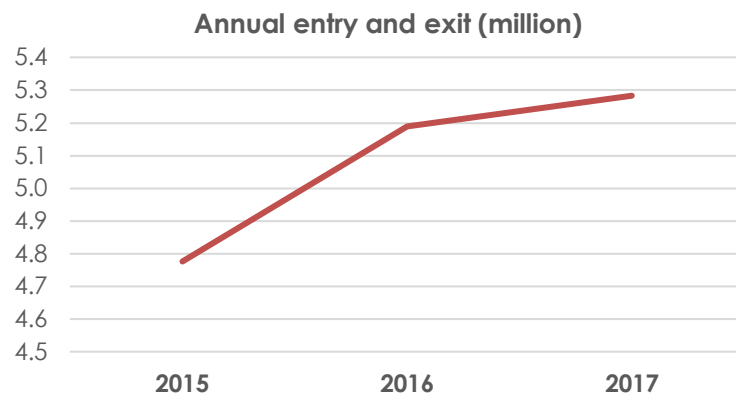


TfL bus boarding density

Underground – Edgware station activity

Edgware underground station is located in Zone 5 and is the terminus of the Edgware branch of the Northern line. All trains serve all stations south to Camden Town and include a number of key borough destinations such as Colindale, Hendon and Brent Cross. Beyond Camden Town services split between the Bank branch (serving Euston, Kings Cross, the City, London Bridge) and the Charing Cross branch (serving Euston, central London, Waterloo) before re-joining at Oval and terminating at Morden.

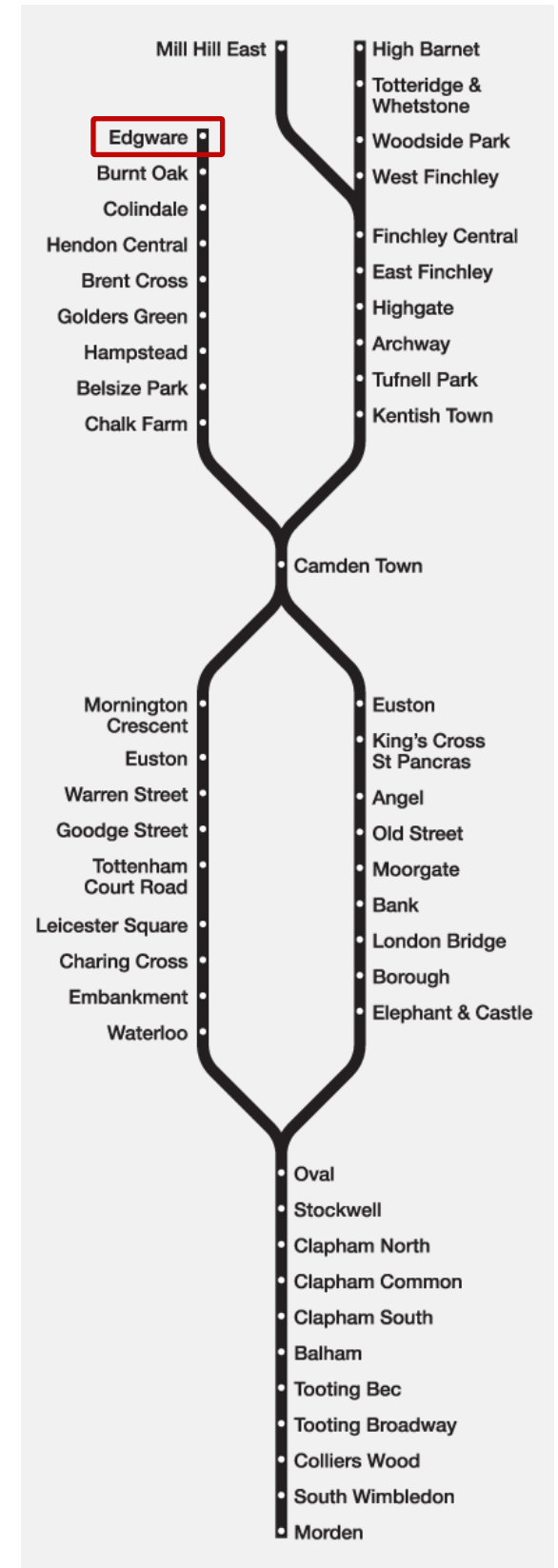
Based on TfL's annual entry and exit data (RODS) there has been an on-going increase in the number of passengers using Edgware station from 4.8mi passengers in 2015 to 5.3mi in 2017. This is the same order of magnitude as bus activity in Edgware indicating the importance of both modes of public transport.



Average daily entry and exit flows are shown below along with average weekday period totals; there are clear AM outbound and PM inbound peaks of activity.

Station	Year	Entry			Exit			Annual Entry + Exit million
		Weekday	Saturday	Sunday	Weekday	Saturday	Sunday	
Edgware	2017	8705	5546	4220	8014	5309	4051	5.28
	2016	8380	5519	3938	8137	5124	3801	5.19
	2015	7702	5236	3946	7303	4951	3690	4.78

Mon-Thu average flows	Early 5-7am	AM Peak 7-10am	Inter Peak 10am-4pm	PM Peak 4-7pm	Evening 7-10pm	Late 10pm-5am
Entry	905	3,459	2,143	1,244	425	114
Exit	98	973	1,813	3,024	1,580	647



Underground – Edgware station operation

Edgware LU station and the Bus Station operate as an integrated interchange. As noted in the bus baseline section, around one third of LU station users arrive by bus during the AM peak. This increases to over fifty percentage for travel in the evening, with just under a third during most of the day.

Whilst the connection between the bus station and LU station is short and direct, it is somewhat constrained and suffers from a poor quality public realm. TfL's Streetscape Guidance notes that *“Most of London’s major bus stations are integrated with other public transport modes, in particular London Underground. The interchange experience is therefore a key consideration in delivering an efficient and beautiful public realm which acts as a pleasing transitional space between transport modes.”*

The station is fully accessible and therefore it is suitable for most mobility-impaired customers including wheelchair users.

A high-level assessment of Edgware LU station requirements undertaken by TfL in 2018 which stated that the ticket hall *“doesn't [appear to] suffer from undue congestion... [and] similarly, the platforms and the staircases leading to them are adequate”*.

Pick-up and drop-off activity for all customers (including mobility-impaired) takes place directly outside the main station entrance. The 'roundabout' layout is efficient from a highway movement perspective but vehicles are prioritised over pedestrians in this location with a poor quality public realm resulting.

The pick-up/drop-off area can be well used during peak periods; video surveys of the area indicate that there can be localised congestion and queuing which impacts Station Road.



Peak up/ drop-off area gets busy during morning peak



Station arrival prioritises vehicles over pedestrians



Alternative station entrance/exits provides a better interchange with bus station

Parking – on-street / AM

On-street parking surveys were undertaken on Tuesday 25th February, the same day as the other elements of the Stage 1 data collection programme.

The surveys took the form of a 'spot counts' of parking activity on each street in the SPD area (and streets immediately adjacent) in the morning, lunchtime/early afternoon and early evening.

AM on-street parking stress



Commentary:

- Across the whole surveyed area, the overall parking stress was relatively low at c.54% - this represents approximately 400 spaces unused
- Hotspots of peak parking activity are on High Street (both north and south of Station Road) and a number of smaller, residential streets (eg Parkfield Close, St Margarets Road).

Parking – on-street / lunchtime

Lunchtime on-street parking stress



Commentary:

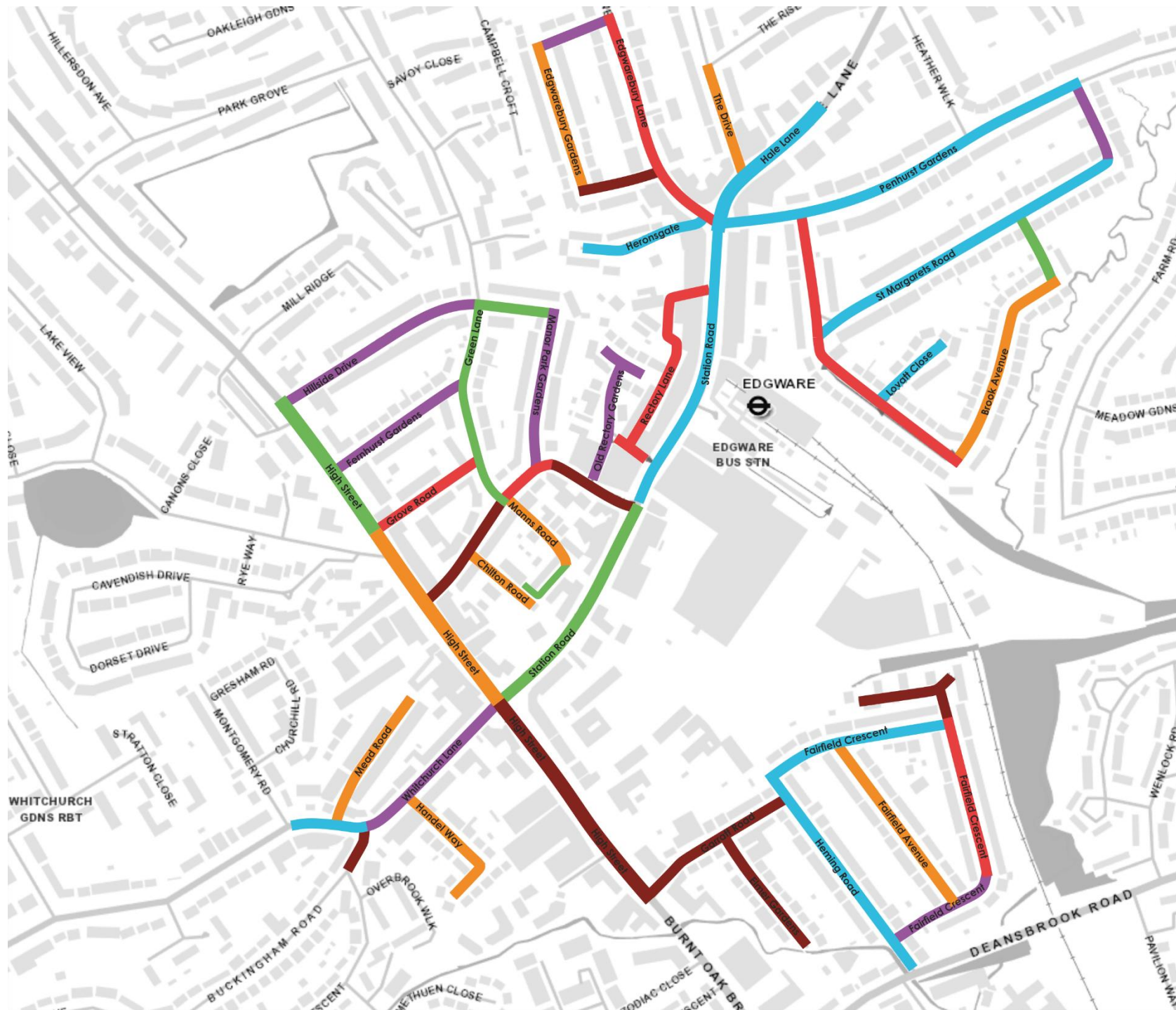
- Across the whole surveyed area, the overall parking stress was noticeably higher than the morning at c.76% - this represents approximately 225 spaces unused
- Hotspots of peak parking activity are on High Street (both north and south of Station Road), south of Whitchurch Lane, streets in the area surrounding the junction of Edgwarebury Lane / Hale Lane and streets in the area access off Garratt Road.

Key

Over 100%	91% to 100%
81% to 90%	71% to 80%
60% to 70%	Under 60%

Parking – on-street / PM

PM on-street parking stress



Commentary:

- Across the whole surveyed area, the overall parking stress was highest during the early evening period at c.83% - this represents approximately 150 spaces unused
- This level of activity is expected due to a combination of (a) higher residential parking demand as people return home and (b) increased short-stay parking linked to restaurants and take-aways
- Hotspots of peak parking activity are around the High Street / Station Road junction (notably take-away activity) and High Street / Garratt Road (church attendance).

Parking – off-street

Summary off-street parking data was supplied by the Broadwalk Centre for the same day as the vehicle and pedestrian surveys - split by short-stay and long-stay locations.

Hour starting	Both car parks				Long-stay				Short-stay			
	Total In	Total Out	Accumulation	% Accum	Total In	Total Out	Accumulation	% Accum	Total In	Total Out	Accumulation	% Accum
0	4	1	3	0%	0	0	0	0%	4	1	3	0%
1	1	0	4	0%	0	0	0	0%	1	0	4	0%
2	3	0	7	1%	0	0	0	0%	3	0	7	1%
3	3	2	8	1%	0	0	0	0%	3	2	8	1%
4	8	7	9	1%	0	0	0	0%	8	7	9	1%
5	20	13	16	1%	5	0	5	2%	15	13	11	1%
6	85	13	88	8%	62	1	66	26%	23	12	22	2%
7	179	16	251	22%	141	0	207	83%	38	16	44	5%
8	251	58	444	39%	30	7	230	92%	221	51	214	24%
9	387	185	646	56%	1	0	231	92%	386	185	415	46%
10	371	307	710	62%	1	0	232	93%	370	307	478	53%
11	381	338	753	65%	9	5	236	94%	372	333	517	57%
12	385	368	770	67%	7	5	238	95%	378	363	532	59%
13	335	329	776	67%	11	6	243	97%	324	323	533	59%
14	354	377	753	65%	6	4	245	98%	348	373	508	56%
15	358	344	767	67%	5	23	227	91%	353	321	540	60%
16	284	407	644	56%	22	15	234	94%	262	392	410	46%
17	209	328	525	46%	25	18	241	96%	184	310	284	32%
18	150	264	411	36%	6	91	156	62%	144	173	255	28%
19	87	176	322	28%	41	0	197	79%	46	176	125	14%
20	41	65	298	26%	10	0	207	83%	31	65	91	10%
21	27	35	290	25%	7	1	213	85%	20	34	77	9%
22	7	24	273	24%	6	0	219	88%	1	24	54	6%
23	9	6	276	24%	1	0	220	88%	8	6	56	6%
Total	3939	3663			396	176			3543	3487		
7-19 total	3644	3321			264	174			3380	3147		
	Max accumulation		776		Max accumulation		245		Max accumulation		540	
	Car park capacity		1150		Car park capacity		250		Car park capacity		900	
	Max utilisation		67%		Max utilisation		98%		Max utilisation		60%	

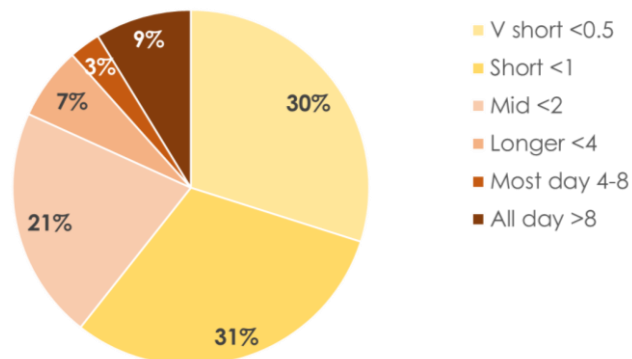
- There is a single off-street car park serving the town centre which offers 1,150 short-stay (250) and long-stay spaces (750)
- This has the effect of focussing car park traffic onto a single access junction (see page 16 for how flows into / out of the car park access compare against the Station Road corridor)
- The key findings are:
 - the long-stay commuter off-street fills up rapidly in the morning and is at practical capacity (95%+) until past 5pm
 - the short-stay shopper parking sees lower levels of utilisation, up to 60% full – but higher levels of churn
- The implied number of empty spaces at peak times are:

- long-stay commuter = 0 spaces
- short-stay shopper = 360 spaces.

Parking durations

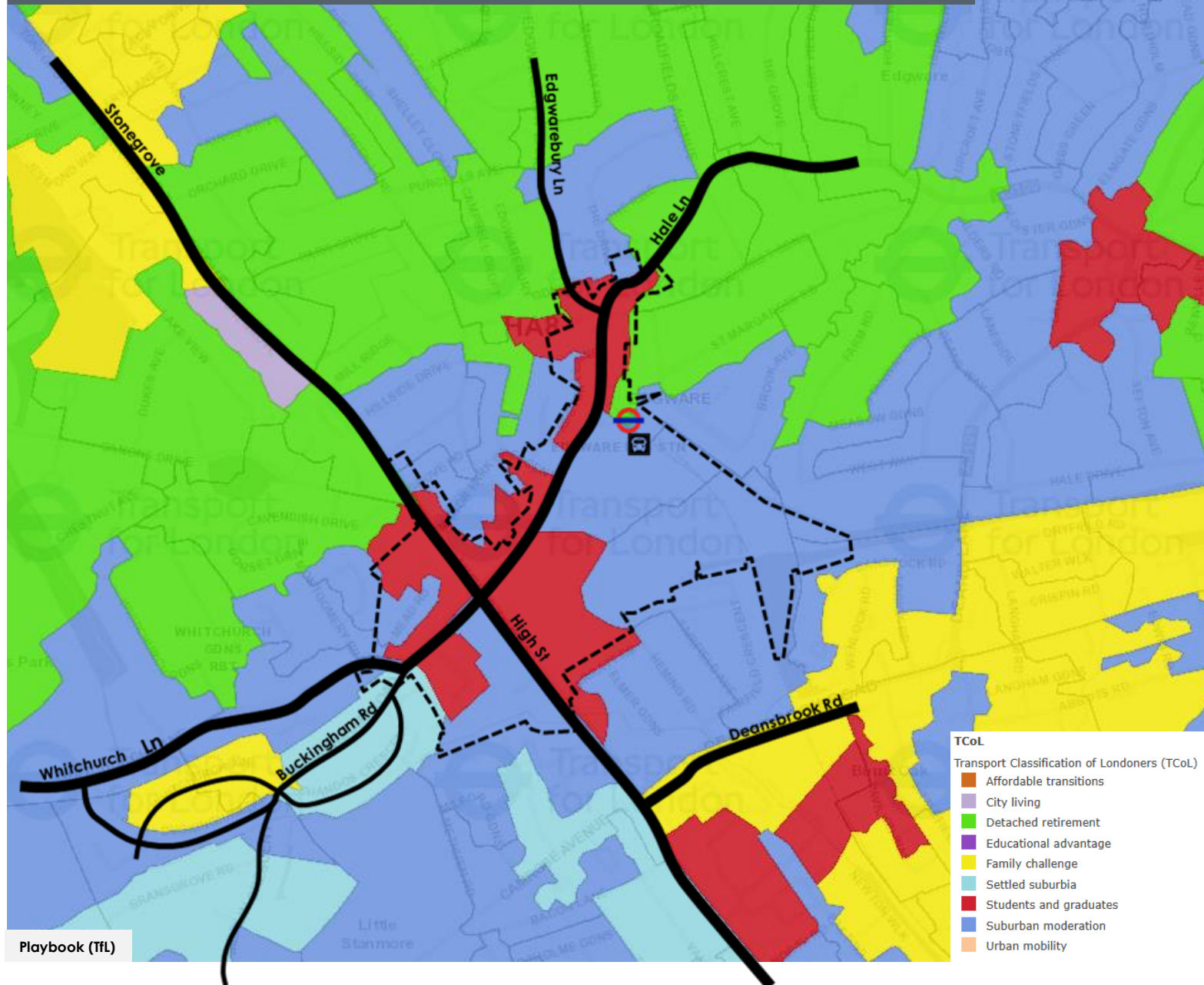
The duration of parking activity was established using ANPR data (see also page 18)

- Approximately two-thirds of all parking activity is less than 1 hour in duration
- Conversely, only 9% of parking activity is all day (longer than 8 hours), equivalent to the capacity of the long-stay car park



Transport Classification of Londoners

Transport Classification of Londoners: segment summary (Transport for London)



The Transport Classification of Londoners (TCoL) is a multi-modal customer segmentation tool developed by TfL, which categorises Londoners on the basis of the travel choices they make, and their motivations.

The SPD area is dominated by 'Students and Graduates' and 'Suburban Moderation'. There is also a high proportion of 'Detached Retirement' and some 'Family Challenge' living in vicinity of the town centre boundary.

Affordable Transitions New jobs & families Low car, high bus, walk, cycle Highest level of change	City Living High incomes High PT esp Tube/active travel Average level of change	Detached Retirement 'Empty nest'/retired Very high car Very low levels of change
Educational Advantage Well educated, high income High PT/active, low car Higher level of change	Family Challenge Low income families High bus, average others Higher level of change	Settled Suburbia Lower income families High car Below average level of change
Students & Graduates Students & young grads Low car, high bus/walk Average level of change	Suburban Moderation Families with children High car, some bus Average level of change	Urban Mobility Young workers, good incomes Low car, high cycle/PT Above average change

Transport Classification of Londoners

Students and Graduates

Current mode use	
Car driver	Below average
Bus	Above average
Rail	Average
Tube	Above average
Walk	Above average
Cycle	Above average

Attitudes	
Car travel is stress-free	Average
Cycling is safe	Above average
Cycling is stress-free	Above average

Propensity to change behaviour	
Any change	Average
Reduce car	Average
Increase walking	Below average
Increase cycling	Above average

Suburban Moderation

Current mode use	
Car driver	Above average
Bus	Below average
Rail	Below average
Tube	Below average
Walk	Below average
Cycle	Below average

Attitudes	
Car travel is stress-free	Above average
Cycling is safe	Average
Cycling is stress-free	Above average

Propensity to change behaviour	
Any change	Below average
Reduce car	Average
Increase walking	Below average
Increase cycling	Well above average

Detached Retirement

Current mode use	
Car driver	Well above average
Bus	Well below average
Rail	Average
Tube	Well below average
Walk	Below average
Cycle	Below average

Attitudes	
Car travel is stress-free	Below average
Cycling is safe	Well below average
Cycling is stress-free	Well below average

Propensity to change behaviour	
Any change	Well below average
Reduce car	Well below average
Increase walking	Well below average
Increase cycling	Well below average

Family Challenge

Current mode use	
Car driver	Below average
Bus	Above average
Rail	Below average
Tube	Average
Walk	Average
Cycle	Average

Attitudes	
Car travel is stress-free	Above average
Cycling is safe	Well above average
Cycling is stress-free	Above average

Propensity to change behaviour	
Any change	Above average
Reduce car	Above average
Increase walking	Well above average
Increase cycling	Well below average

Motivations for behaviour change:

1. Changes to PT
2. Money
3. Lifestyle changes
4. Health & fitness
5. Changes to roads and driving

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Motivations for behaviour change:

1. Changes to PT
2. Lifestyle changes
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4. Health & fitness
5. Changes to roads and driving

It should be noted that new residents to the area, particularly those living in the high-density urban development proposed for the SPD area may come from different segments than those most commonly found at present.

Based on the information extracted from TfL's 'Transport Classification of Londoners' analysis, the SPD area currently has, on average, a medium potential for behaviour change towards sustainable modes.

'**Students and graduates**' have an average propensity to change behaviour, including above average propensity to increase cycling.

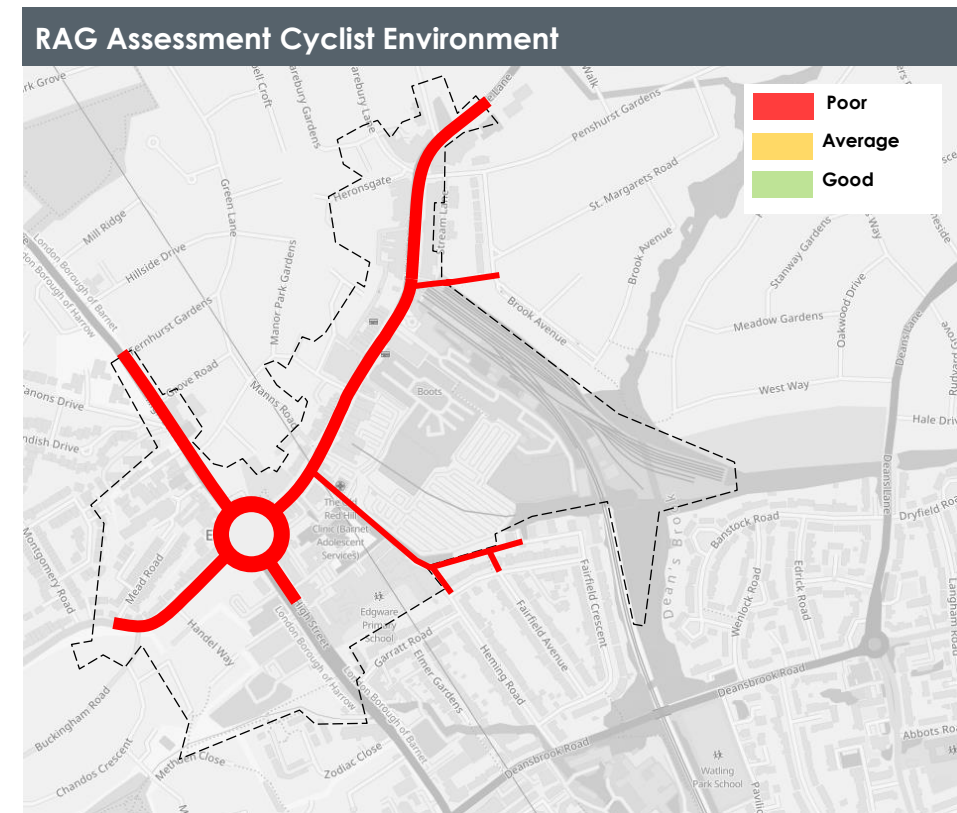
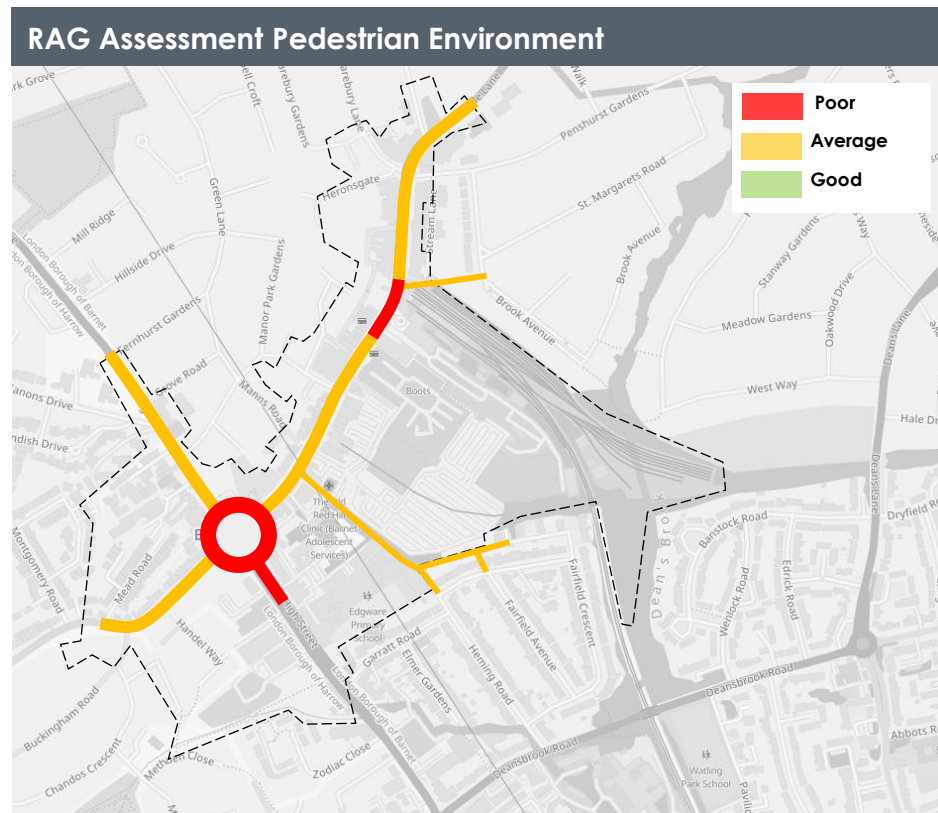
The '**Suburban moderation**' segment has an below average propensity to change behaviour, including an average propensity to reduce car use, below average propensity to increase walking and a well above average propensity to increase cycling.

'**Family challenge**' segment presents another opportunity to encourage people to travel actively into the town centre – they have above average propensity to change, with well above average potential to increase walking and cycling.

A key challenge will involve encouraging modal shift among the '**detached retirement**' segment, whose propensity to change is well below average.

R-A-G Assessment

The diagrams below aims to summarise using 'red for poor', 'amber for average' and 'green for good' the existing situation (pedestrian and cyclist environment) within the SPD site boundary. This takes in to consideration the outcomes of data analysis and site visits.

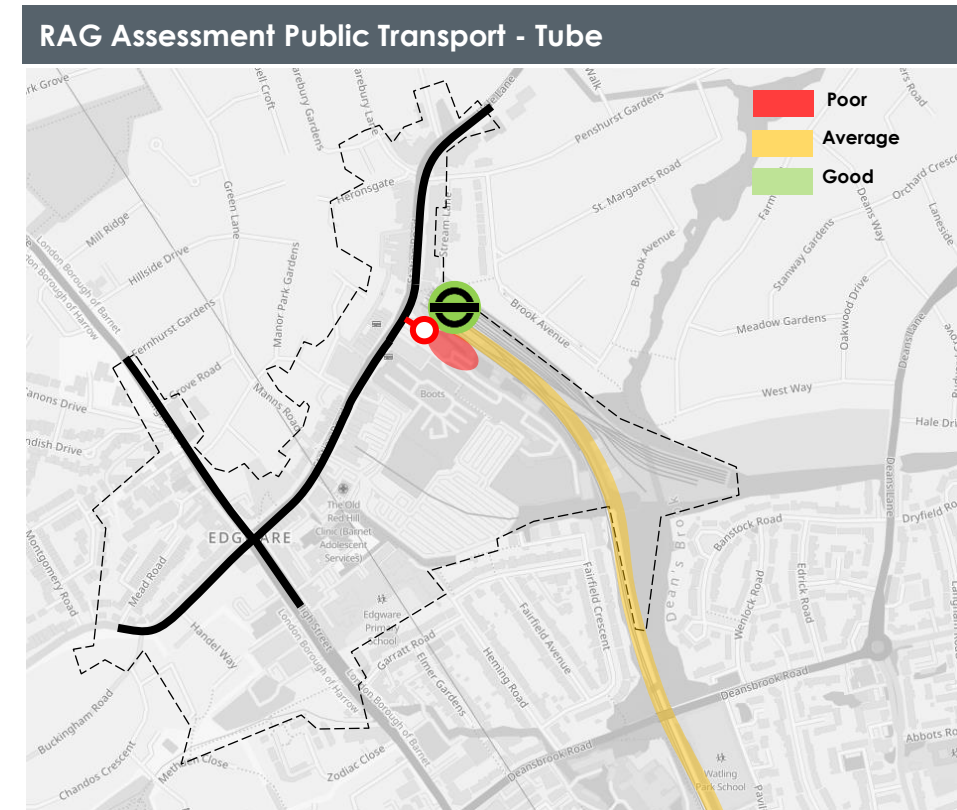
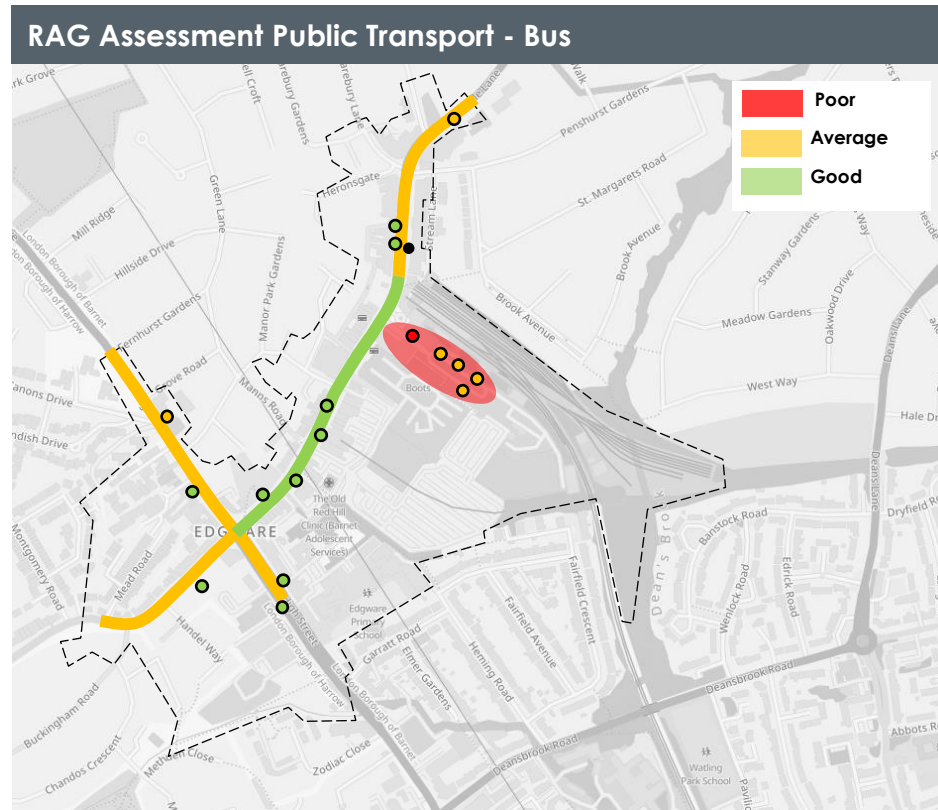


- The highest concentrations of pedestrian activity are found along Station Road
- Survey data reveals highest flows around the tube station and by the shopping centre – the evening peak sees flows approximately twice as high as the morning peak
- There are a substantial number of car-only switchable trips (trips currently made by car with potential to be walked instead) within the area – this is informed by high levels of assessed 'walkability'
- The tube lines create a major barrier to east-west movement and sever the eastern part of the SPD area from the town centre
- There are a number of pedestrian links in the town centre that provide short-cuts to residential areas but these routes are often narrow and poorly lit
- Dedicated pedestrian crossing provision is missing at key junctions (notably High Street / Station Road) with ad hoc crossing activity taking place on many busy links across the SPD area.

- Very low levels of cycling activity were observed – peak link flows being typically in the order of 1-4 cyclists per hour in each direction
- Cycle lane and other infrastructure provision within the SPD area is very limited
- The 'cycleability' of the SPD area varies from low to medium. There are a number on non-cycleable, pedestrian only routes where cyclists need to dismount. Station Road and High Street are the least cycleable due to wide carriageways, high vehicle speeds and no cycling infrastructure
- Based on TfL data there is a low-medium cycling potential within the SPD area. This suggests that a modest number of trips currently taking places by non-cycling modes could be switched to cycling
- The use of guard railing for cycle parking suggests that the area is lacking inconveniently located on-street cycle parking provision
- Due to vehicle domination along the main corridors (High Street and Station Road) cycling does not feel safe, which can deter potential cyclists.

R-A-G Assessment

The diagrams below aim to summarise using 'red for poor', 'amber for average' and 'green for good' the existing situation within the SPD site boundary. This takes in to consideration the outcomes of data analysis and site visits.



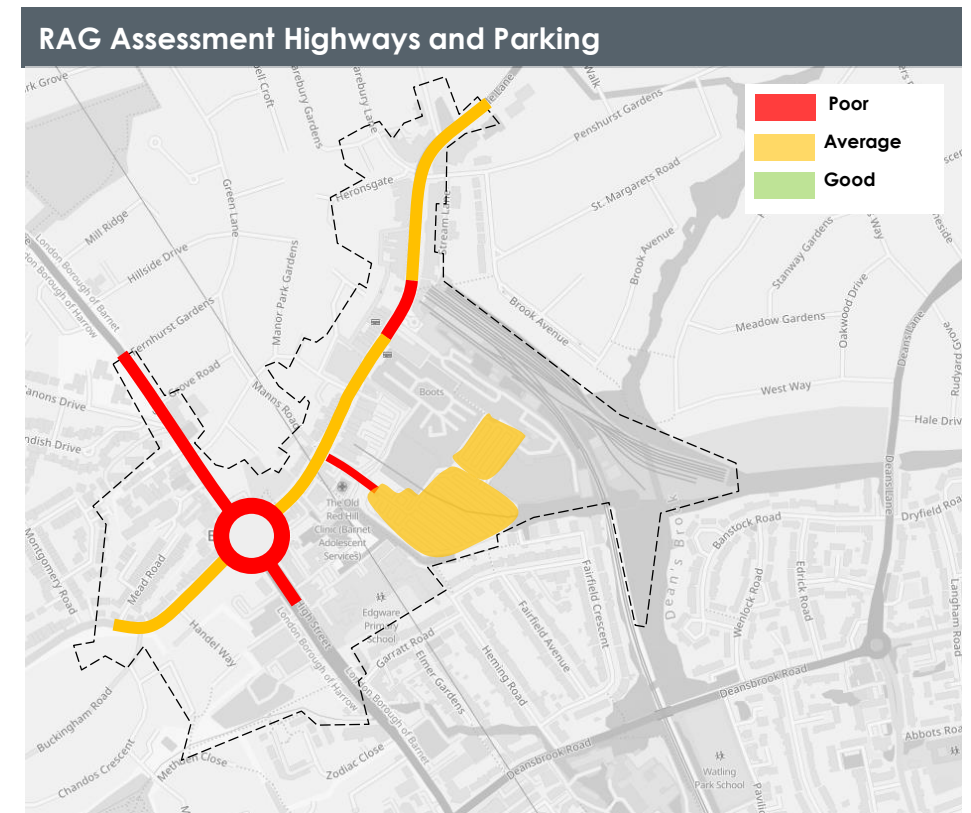
- Edgware town centre is very well-connected - the area along Station Road and by Edgware station scores between PTAL 5 and 6b (the highest rating), derived in part from the good provision of frequent bus services
- Edgware bus station is the main bus hub for the area catering for local trips, an interchange for longer journeys, and interchange with the underground station – the quality of public realm in/around the station is poor and constrained however
- More widely there is a good distribution of bus stops across the SPD area with nearly the whole area within 400m walk of a stop
- Bus stops are generally of high or average standard, and most include shelter and seating provision
- Based on TfL forecasts, it is expected that there will be a substantial increase in bus boarding and alighting activity in the SPD area
- Bus Speeds are slower in the PM peak than AM peak – c.7mph during the PM peak on Station Road and the High Street and c.9 mph in the AM.

- Edgware LU station operates as an integrated interchange with the adjacent bus station – approximately one third of the tube station users arrive by bus during the AM peak
- Whilst busy at peak times, and despite recent growth in entry/exit flows, the station currently operates within capacity – however the trains themselves are highly congested during peak hours towards/from central London
- Despite the station arrival area prioritising vehicles over pedestrians there is peak period congestion and queuing onto Station Road
- Vehicle pick-up/ drop-off area in front of the station makes it accessible for those arriving by car, but creates a congested, vehicle dominated arrival point into the town centre
- During peak times, due to constrained space, there is a pinch point between bus stop G and interchange access to the station.

R-A-G Assessment

The diagram opposite aims to summarise using 'red for poor', 'amber for average' and 'green for good' the existing situation within the SPD site boundary. This takes in to consideration the outcomes of data analysis and site visits.

- Station Road peak traffic flows are in the order of 1,500 vehicles per hour in both directions
- Some queueing occurs during peak times along the main traffic corridors, notably on the A5 High Street
- The existing High Street/ Station Road junction layout creates a pinch-point and is a local collision hot-spot
- Based on TfL forecasting data, by 2041, an increase of 20-40% in vehicle flows is expected along Station Rd, High Street, Edgwarebury Ln and Hale Ln – however this does not necessarily translate into high levels of highway network stress
- Freight flows are currently very low within the SPD area – although significant growth is forecast in future years
- Noise and air pollution are problematic, notably along the Station Road and High Street corridors
- On-street parking in the SPD area is covered by several Controlled Parking Zones (CPZs) that manage residential, pay-for and other parking
- Surveys of on-street parking stress show a varied pattern by street by time of day – notwithstanding localised hotspots of parking activity, overall there was spare capacity observed at all times of day
- There is a single off-street car park serving the town centre which offers 1,150 short-stay and long-stay spaces. This has the effect of focussing car park traffic onto a single access junction
- The long-stay commuter off-street parking is used to capacity whilst the short-stay shopper parking sees lower levels of utilisation, typically 60% full on a weekday.



Quality Control	
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