

Tackling Congestion and Poor Air Quality in Camden, Bath

January 2018



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1. Executive Summary

Camden Residents' Association has been discussing and consulting with residents in our area on measures to ameliorate congestion, speeding and poor air quality on our streets. This 53 page report sets out proposals for actions that will limit dangers for our residents and those using our streets but it won't eradicate them.

We urge B&NES council to develop a comprehensive traffic reduction plan for Bath which also recognises the special difficulties in Camden and much of NE Bath.

Most of what has been achieved on Camden Road over recent years has been neutral in ultimate effect, soon eclipsed by adaptive behaviours from drivers or has simply made things worse by creating perversities. Long term problems persist and are now known to be a cause of poor air quality on what are essentially residential streets.

Camden Road is used by 7,000 cars a day. At peak time it is a rat run which offers an alternative to slow progress along the A4, ie London Road and the Paragon. The ultimate end-to-end rat run involves Lower Swainswick, Larkhall's back streets, Eastbourne Avenue, and Camden Road and culminates in further rat running round Belgrave Crescent, St Margaret's Hill and Upper Hedgemoor, so many more people are affected than might be first thought.

To put some scale on this, 7000 cars is 33% of that on the arterial London Road and yet Camden Road is single track in places with slow, stop-start traffic generating high emissions. Off peak the road can be very quiet, unlike London Road, which strongly suggests that at peak times the comparative flows are much closer. It is at these times that we see many pedestrians also using the road and being threatened by bad driving manoeuvres and forced to breathe in dirty air.

Congestion and poor quality air will probably be regarded as a Bath-wide issue and will require a Bath wide solution, such as implementing Low Emissions Zones along the arterial roads. This might make an eye-catching headline but is at risk of pushing yet more traffic along constricted residential streets such as ours.

We are putting the case for NE Bath to be considered particularly carefully as it draws in traffic from the East and North, obviously, but also from the South of the city. The streets making up the principal rat-runs are narrow and appear to hold on to vehicle emissions for various reasons we discuss in the report, so not only do those living on these streets endure congested traffic but they are also breathing illegally dirty air.

Our report lists 70 recommendations of which 30 address this bigger NE Bath picture. We commend our proposals to the decision-makers as they offer fresh and viable solutions to long standing issues and get back to root causes using hard evidence wherever possible.

From the deep detail various themes could be abstracted and these have been dealt with using a form of systems thinking by viewing our local issues in a larger context, or as we have described it as the 'bigger picture' of NE Bath.

What seems to be incontrovertible is that the road systems serving NE Bath and providing the means of entering the city centre are not coping. Furthermore they will come under greater pressure still into the future as the reason for living and moving into and around Bath strengthen.

We must act now with both our short term measures but also introduce an absolute paradigm shift in both:

- the city's transport, parking and air quality policies and their enactment
- the major routes and links into and around Bath



2. The Background

There are three principal means by which traffic avoids the main A4 route along London Road and the Paragon, and each of these affects our residents. These are:

1. Camden Road and Eastbourne Avenue and their adjoining streets (red)
2. Upper and Lower Hedgemead, Gays Hill, Pera Road and Thomas Street (orange)
3. Bennett Lane and Snow Hill (purple)

Whilst these are three different road systems their problems and issues are very similar in origin and manifestation. Residents have made strong representations to the CRA and are now suggesting remedial proposals.

This paper examines both the first two routes in turn and suggests refinements to the existing set up. It also looks at a slightly bigger picture too in the hope of suggesting an approach to a wider solution to the Larkhall rat run.





3. Core Areas of Difficulty

- ✓ Camden Road is like two different streets at peak and off peak
- ✓ Camden is an inadvertent cross roads
- ✓ It is afflicted with congestion and high levels of air pollution

Camden Road is a residential street and a thoroughfare linking Larkhall and Fairfield Park with the centre and west of the city. It is used by pedestrians, cyclists and vehicles. It has been described as 'two streets': in peak hours the road is congested and slow moving; in the quieter times one in three drivers break the 20 mph speed limit and are very threatening to other users and residents. This pattern is reflected in the surrounding streets too.

Being close to Cleveland Bridge the Camden area is also a means of getting to and from the SE and the north of the city and looks to offer a quicker route than the London Road and Lansdown Road. Unwittingly it has become like a much used crossroads. No doubt other neighbourhoods face one or more challenges but we believe Camden is uniquely beset by this coincidence of issues.

- Levels of congestion with associated pollution in peak times and speeding in off peak times are increasingly intolerable for those living and walking in Camden
- Camden Residents' Association is united in its concerns over this. The contributors to this report all live in the Camden and Hedgemoor systems and are extremely well placed to see what is happening throughout the day and night, every day of the year on the roads they live on
- We recognise a Bath-wide solution is still some way off but wish local action to be taken. Examples of the problems appear in this document with local solutions set out in the report for consideration
- We have also looked at the wider situation and used data from the recent Larkhall Transition report 'on School Runs' to provide an approach to the morning peak. There is a complementary study required to consider the evening peak
- We understand that any work done to reduce traffic flows in Camden will exacerbate the problems faced on London Road. A tipping point must be very close now where a radical solution has to be found to relieve the London Road
- The consequential effects of too much traffic in our area is causing, we believe, air pollution at levels well beyond what the Council considers are just within EC limits.

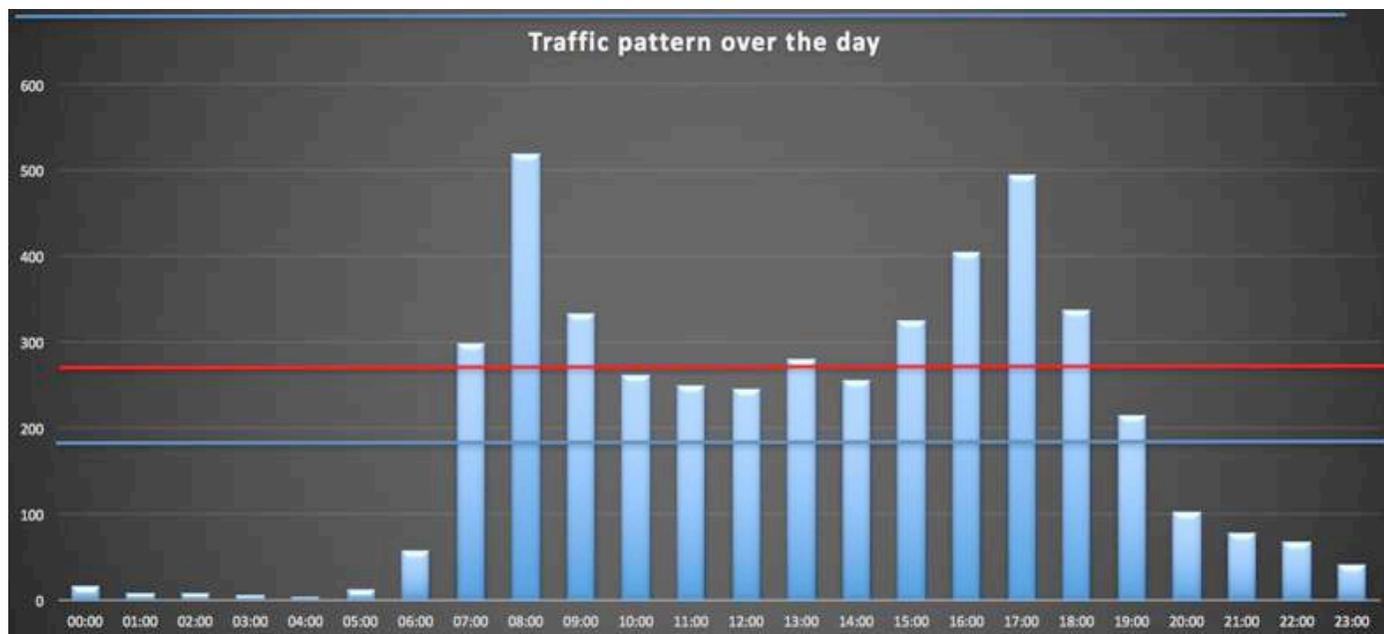
Camden Road – two different streets

Traffic volumes in Camden 'ebb and flow' because of commuter rush hours and other 'disruptive' events such as Bath rugby matches and the Christmas Market. The data comes from the latest council figures we have from January 2014 when all vehicle movements were recorded and measured over a 24 hour period.

¹ <http://transitionlarkhall.uk/wp-content/uploads/2016/12/Pngs.pdf>



- The vertical axis depicts hourly vehicle numbers
- The blue line is the average for the day
- The red line is a way of showing where the peaks break through. That is:
 - am, 0730 - 0930
 - pm, 1530 – 1830



At peak you would expect less speeding due to congestion and off peak for speeding to rise. The figures in the table bear this out.

At its worst one in 3 cars is speeding.

The fact that there is speeding at peak is borne out by our observations of drivers' behaviour. After a bottleneck there is often a tendency 'to put the foot down' out of impatience or a sense of urgency.

Speeding is dealt with in greater detail in chapter 7.

Period	Duration	Speeders	Total	%age
At peak am	3	240	1149	21%
At peak pm	4	248	1557	16%
Overnight	12	199	604	33%
During day	5	325	1286	25%
TOTAL	24	1012	4596	22%



Camden is an inadvertent Cross Roads

The recent Larkhall Transition study examines congestion related to school runs. Our analysis of their data suggests that it is a major influence but probably not the only factor.

Schools are one of several major destinations for vehicles (others being the commercial centre and the RUH) which cause cross city journeys. These journeys rely upon major arterial routes which get snarled up at rush hour. People confronted with this journey every day get ever more resourceful for finding ways to speed up their journey. This often involves 'cut throughs'.

The map opposite shows, from our observations, what these routes are. In simplistic terms these are, in the morning:

- NE to SW from the A46 to the city centre and beyond
- SE to NW from the A4 and A36.

Being close to Cleveland Bridge the Camden area is also a means of getting from the SE to the north of the city and looks to offer a quicker route than the London Road and Lansdown Road. Unwittingly it has become like a much used crossroads. No doubt other neighbourhoods face one or more challenges but we believe Camden is uniquely beset by this coincidence of issues





4. Camden Road and Adjoining Streets (red routes)

Previous situation

- For many years Camden Road and its side roads have been used as an alternative to the heavily congested London Road
- They are narrow, residential streets which were never designed for taking through traffic and harbour exhaust fumes from motor vehicles
- In the past the major problem was speeding vehicles – sometimes in excess of 50 mph
- Traffic calming measures implemented 14 years ago, in 2003, are no longer adequate to cope with the present day volume of vehicles

Current situation

- The Council estimates that around 7000 vehicles per day now use Camden Road, which is 33% that of London Road, which is a wider designated trunk road
- However traffic flow on Camden Road is very tidal so in peak hours respective flows are probably a lot closer when both routes are at full capacity and consequently congested
- Congestion causes more incidents and more pollution which is contained by the narrowness of the streets
- As congestion has increased drivers' behaviours have changed:
 - More assertive driving at narrow points where only one stream of cars can go at any one time
 - encroachment onto the pavement, vehicle damage, shouting and bad language
 - high acceleration and speeding after getting through a blockage
 - making use of even less suitable routes through narrower streets, such as the 'Hedgemoads'.
- Council data from 2014² shows the speed limit of 20mph is broken by over 1 in every 5 vehicles. Outside working hours it is 1 in 3. It also shows that most of the speeding is between 20 and 26mph. This doubles the risk of a serious injury and increases the risk of fatalities by a half
- Serious injury is a major concern for pedestrians using the narrow pavements with high walls offering no obvious point of refuge. It is a popular walking route from children to St Saviours, St Stephens and St Andrews primary schools, Atelier Nursery and St Marks Secondary school
- On the evening before and during the day of waste collection the pavements are cluttered with recycling containers which further narrow the walkway. Parents with children using buggies and scooters struggle to pass one another. Exemption from placing recycling on the pavement itself for Prospect Place are being considered by the council at the time of writing this paper.

² provided to us in November 2016 as the latest data on record and analysed by JeremyLabram.com Ltd



5. Illustrations

The illustrations have been arranged in sets to demonstrate particular themes.

The commentary for each is divided into three sections: title, bullet points for each issue and potential solution.

Congestion through Camden Road system



Queuing traffic in front of Camden Crescent

- Idling and causing pollution
- Excessive traffic volumes at peak hours
- Waiting for a gap at a 6 way junction
 - Camden Road
 - Upper Hedgemoad (UHM)
 - Lansdown Road, up and down
 - Morford Street
 - Camden Row
- The turn from UHM takes 36 seconds per car which causes frustration
- ❶ The junction, as designed, causes major congestion, confusion and is a hazard for pedestrians and needs to be redesigned



Continual traffic idling and polluting during peak periods

- Most traffic is not serving the residents
- Existing arrangements cause tidal flow through narrow sections and thereby create confrontations due to poor forward visibility

R2. Forward visibility needs to be improved



Traffic cutting through Belgrave Crescent from Camden Road on its way to Alpine Gardens and Upper Hedgemoad

- Alternative rat runs created are when Camden Road is congested and blocked
- Very few passing places
- Pavement encroachment inevitable
- Driver conflict inevitable

R3. Make Belgrave Crescent 'access only'



Larger vehicles using Camden Road system

Pavement safety compromised



Bus travelling SW along Camden Road

- As a result of the re-routing of buses to and from Larkhall and Fairfield Park the frequency of buses travelling in both directions along Camden Road has doubled
 - Each bus requires the cooperation of drivers coming in the opposite direction to give way and let them through
 - In places car drivers, who are lower to the ground, cannot see the bus in time
 - The starting and stopping of buses seems to cause very high level of engine noise
- 24.** As bus travel is to be encouraged and made convenient then the road needs to give some priority for buses to run unimpeded
- 25.** The buses need to be less polluting buses



Wide vehicle on Camden Road, and using kerb to allow opposing stream of traffic through.

- Large trucks and lorries require large amounts of maneuvering space in the very narrow sections of Camden Road. Where there is the possibility of mounting the curb they will do it.

- Refuse vehicles also seen mounting pavement

26. Restrict larger vehicles from using Camden Road as a through route



Building supplies truck blocking the pavement on south side of Camden Road

- This creates a safety concern
- Other vans and trucks inevitably have to load and unload which creates ad hoc blockages during peak hours

Enforce parking violations

27. Restrict the hours for loading and unloading



Skip truck climbing up Snow Hill past Frankley Terrace and wedged between the wall and a van parked on the pavement

- Car damaged
- Total hold up
- Snow Hill junction with London Road is wide and looks enticing
- 8. Ban larger vehicles except for access
- 9. Formalise pavement parking if necessary
- 10. Install width restriction signage at the junction

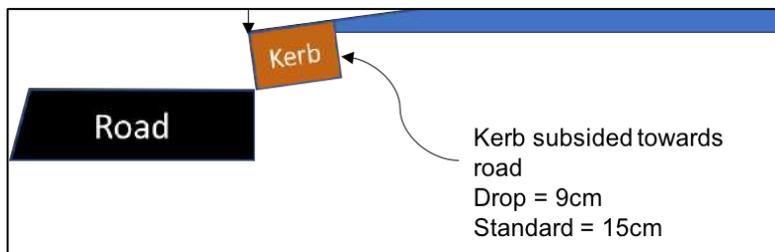


At a bus stop damage to pavement from heavier vehicles

- Re-laid by council in 2015 and now broken
- Possible trip hazard
- People waiting at the bus stop are endangered
- Note how low the drop from the top of the kerb to the road surface is reduced (see next picture)



Inadequate Pavements



Measurements taken outside 22 Prospect Place

- Pavement edges are so low they do not prevent drivers from encroaching
- Clear evidence of kerb stones subsiding
- Clear evidence of repeated road surfacing lifting surface of road closer to the top of the kerb

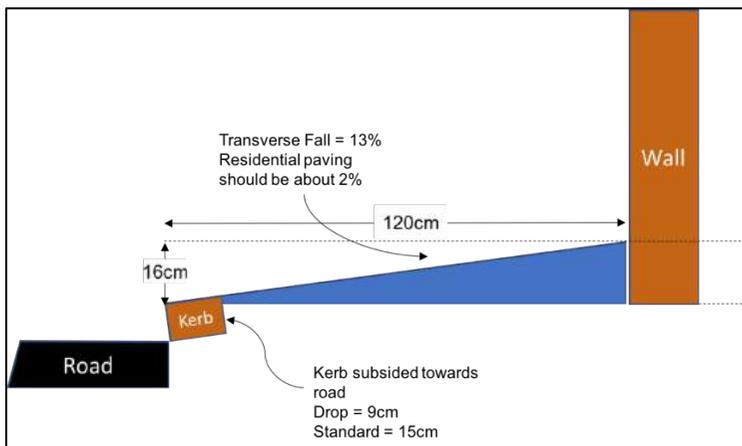
11. Pavement edge needs resetting at many points along Camden Road



Low kerb and double yellow lines outside Belgrave Villas

- traffic always very close to pavement edge – not protected by parked cars
- only a 9cm high kerb
- This situation also applies along much of the north side of Camden Road

12. Pavement edge needs lifting rather than more bollards which obstruct pavement users



ref: http://www.pavingexpert.com/gradient_01.htm#drain

Measurements taken outside 22 Prospect Place

- Pavement 'transverse fall' is dangerously steep
 - Liable to cause wheeled devices to veer towards road. E.g.:
 - children's scooters,
 - parents' buggies
 - mobility scooters
 - Liable to cause walkers to tend to kerb edge and road surface
- 213.** Pavement edge needs further resetting to make the transverse fall much less steep as well as lifting the pavement edge away from road surface



Waste collection day on Camden road looking NE

- Different waste collection vehicles arrive on two to three occasions per week
 - Create obstructions along the length of the road
 - Each household's waste narrows the pavement
 - Pavement width is very much below standard 'safe' widths
 - Obstructions make situation very dangerous
- 214.** Presenting waste for collection behind the curtilage is being considered by the council at the time of writing but needs agreeing for those houses with opaque doors that need to be kept closed

	<p>“Camden Road Narrows” looking NE</p> <ul style="list-style-type: none"> • Two way traffic flow with double yellow lines on both sides • Narrow road so vehicles forced to drive very close to one another • Increased risk of swerving • This van’s mirror just about encroaching onto narrow pavement • Absolutely no refuge for pedestrians • Many pedestrians from free parking area, Fairfield Park, Larkhall schools
<p>St Stephen’s Road</p> <p>We also have clear evidence of pavement encroachment and physical damage caused on the St Stephen’s Road hairpin which needs ameliorating.</p>	<p>Recent damage has involved a perimeter wall, a garage wall and the corners of two cars parked legally in the upper section of St Stephen’s Road.</p>
<p>Belgrave Crescent</p> <p>As soon as Camden Road gets congested use is made of Belgrave Crescent as a bypass which then brings in other complementary cut throughs from Gay’s Hill, alpine Gardens and Upper Hedgemoad.</p>	<p>Although the intensity of traffic is less than on Camden Road this observation does illustrate how congestion spreads, as indeed it does from London road into the Camden system.</p>



6. Proposed Measures

This section considers how specific and locational issues could be addressed for the benefit of residents and drivers.

215. These detailed recommendations for the Camden System are held under one numbered recommendation.

#	Issue	Road	Location	Proposed measures	Pros	Cons
1	Speeding	Camden Cres	The Lodge	New 'Camden Safe Zone' signs	<ul style="list-style-type: none"> Inexpensive 	<ul style="list-style-type: none"> No enforcement
2	Safety	Camden Cres	The Lodge	Central island widened	<ul style="list-style-type: none"> Highlights road priority change 	<ul style="list-style-type: none"> Cost
3	Speeding	Camden Cres	Opposite 7	Speed bumps replaced with table	<ul style="list-style-type: none"> Current bumps ineffective 	<ul style="list-style-type: none"> Cost
4	Speeding	Camden Cres	Opposite 13	New speed bumps	<ul style="list-style-type: none"> Current bumps ineffective 	<ul style="list-style-type: none"> Cost
5	Congestion	City View	Opposite 1	New loading bay marked	<ul style="list-style-type: none"> Provides residents' loading 	<ul style="list-style-type: none"> Loss of one parking place
6	Speeding	City View	Opposite 9	Speed table repaired	<ul style="list-style-type: none"> Greater effectiveness 	<ul style="list-style-type: none"> None
7	Damage	City View	Opposite 7	Protect CPZ bays with built out kerbs	<ul style="list-style-type: none"> Protects vehicles in bays 	<ul style="list-style-type: none"> None
8	Congestion	Berkeley Place	Opposite 4	Replace CPZ space with loading bay	<ul style="list-style-type: none"> Provides residents' loading 	<ul style="list-style-type: none"> Loss of one parking place
9	Congestion	Up Cam Place	Outside 3	Give way to buses sign facing westwards	<ul style="list-style-type: none"> Better bus flow 	<ul style="list-style-type: none"> None
10	Congestion	Up Cam Place	Outside 25	Remove one CPZ space and replace with loading bay Extend CPZ eastwards by one space. Building out pavement to protect bay.	<ul style="list-style-type: none"> CPZ space not lost Protects vehicles in bays 	<ul style="list-style-type: none"> Cost
11	Damage	Up Cam Place	From 4-17	Insert additional bollards to prevent pavement parking	<ul style="list-style-type: none"> Only few required 	<ul style="list-style-type: none"> Cost



#	Issue	Road	Location	Proposed measures	Pros	Cons
12	Damage	Low Cam Place	Outside 10	Build out pavement to protect CPZ bay	<ul style="list-style-type: none"> Protects vehicles in bays 	<ul style="list-style-type: none"> Cost
13	Damage	Low Cam Place	From 13-16	New bollards to prevent pavement parking	<ul style="list-style-type: none"> Prevents damage to paving 	<ul style="list-style-type: none"> None
14	Congestion	Low Cam Place	From 13-16	Give way sign for buses facing eastwards	<ul style="list-style-type: none"> Better bus flow 	<ul style="list-style-type: none"> None
15	Damage	Belgrave Place	Outside 10	Protect CPZ bay with built out pavement	<ul style="list-style-type: none"> Protects vehicles in bays 	<ul style="list-style-type: none"> Cost
16	Speeding	Belgrave Place	Outside 1	Refurbish speed bumps	<ul style="list-style-type: none"> Reduce speeding 	<ul style="list-style-type: none"> Cost
17	Congestion	Belgrave Place	Outside ?>	Move bus stop from outside ? to new location	<ul style="list-style-type: none"> Removes bottleneck 	<ul style="list-style-type: none"> Council suggest resident consultation needed
18	Safety	Prospect Place	Outside 10-30	Add additional slim bollards to (15)	<ul style="list-style-type: none"> Prevents pavement parking and encroachment 	<ul style="list-style-type: none"> Reduces effective width of narrow pavement
19	Congestion	Prospect Place	Outside 5	Give way to buses facing westwards sign	<ul style="list-style-type: none"> Better bus flow 	<ul style="list-style-type: none"> None
20	Congestion	Malvern Villas	Outside 3	Give way to buses sign facing eastwards	<ul style="list-style-type: none"> Better bus flow 	<ul style="list-style-type: none"> None
21	Damage	Malvern Villas	Outside 3	Protect CPZ bay by building out pavement	<ul style="list-style-type: none"> Protect vehicles in bays 	<ul style="list-style-type: none"> Cost
22	Speeding	Camden Road	Rising Sun	<p>New Camden Safe Zone sign</p> <p>Potentially widen pavement to narrow road and create pinch point</p>	<ul style="list-style-type: none"> Announces a new zone and increases speed limit awareness 	<ul style="list-style-type: none"> None
23	Safety	Gays Hill	Gays Hill, Belgrave Cres junction	Remove one CPZ bay	<ul style="list-style-type: none"> Better visibility currently proposed by council 	<ul style="list-style-type: none"> Loss of one space



#	Issue	Road	Location	Proposed measures	Pros	Cons
24	Damage	Gays Hill	End to end	Build out pavement to protect CPZ	•	• Loss of one space
25	Damage	Gays Hill	Outside 1	Build out pavement to protect CPZ	• Protects vehicles in bays	• Loss of one space
26	Damage	Gays Hill	From 18-34	Build out pavement to protect CPZ	• Protects vehicles in bays	• Loss of one space
27	Damage	Gays Hill	From 37-43	Build out pavement to protect CPZ	• Protects vehicles in bays	• Loss of one space
28	Damage	Gays Hill	From 1-43	Introduce at least 3 speed bumps	• Replace existing chicanes	• Cost
29	Damage	St Stephen's Road	Hairpin	Posts and raised kerbs (akin to north kerb)	• Protects walls and garages	• Cost

We should also spare a thought for cyclists. School children are intimidated by the peak time traffic and have taken to using the pavement. This creates a another hazard for pedestrians and residents entering the pavement from gated front gardens.

216. Cycling along Camden Road has to be made safer



7. Speeding on Camden Road

We have conducted further analysis of the latest data the council has on speeds recorded in January 2014 by Camden Crescent. We have looked at the distribution of vehicle speeds.

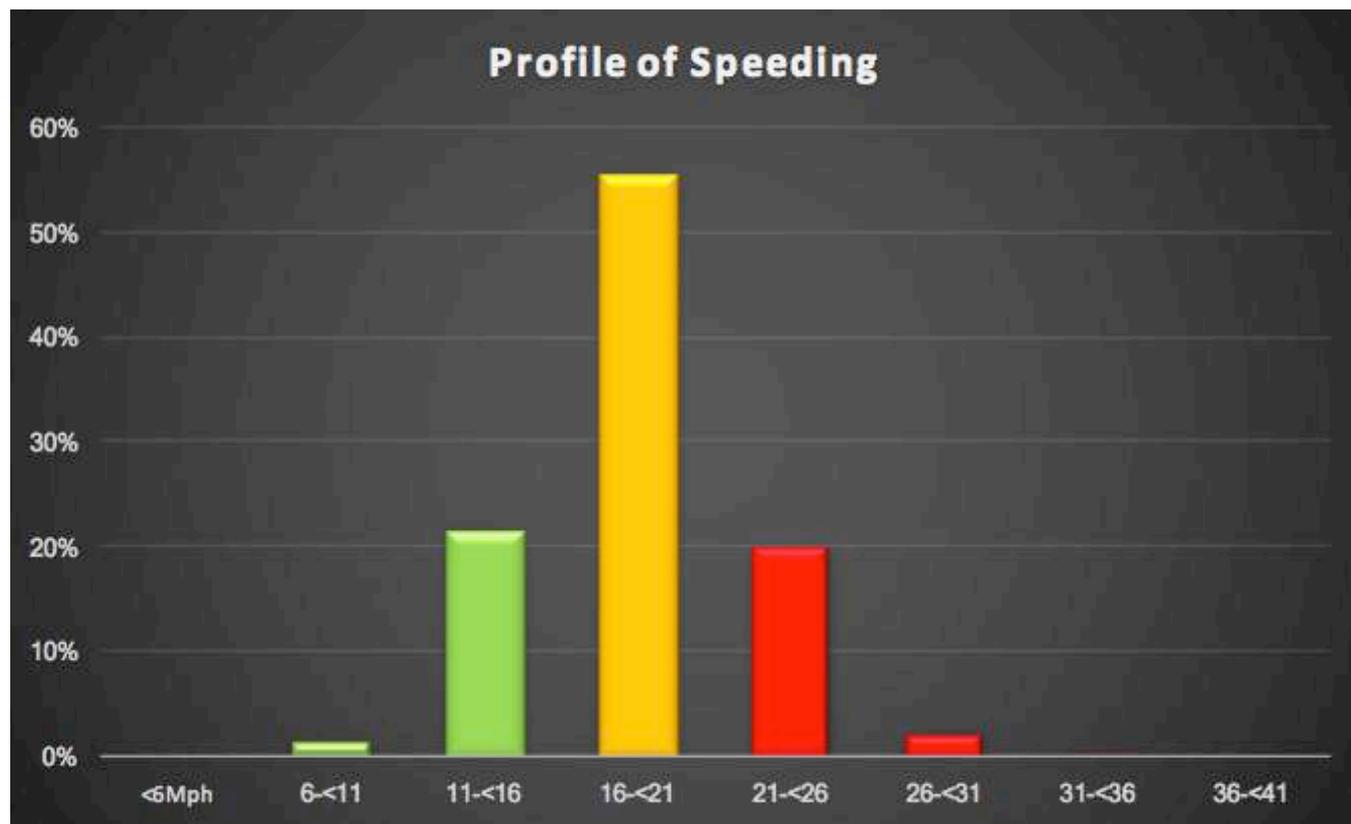
The green columns depict vehicles travelling within the speed limit of 20mph. The orange column depicts cars close to or slightly over the limit and the red blocks depict definite violations of the speed limit.

Most speeding looks quite small scale and virtually all would meet a 30mph speed limit. Is it therefore a significant issue or not? And if so, what is causing it?

Is this non-compliance with the speed limit important?

At first glance it may not appear so but when considered in percentage terms as opposed to absolute numbers then it does look more serious.

- 30mph is 50% more than 20 mph.
- Were this a 30mph limit and we were considering 45mph, would we not consider this a gross violation?





Secondly and more importantly the lethality of an accident increases considerably as the speed of impact increases. We have linked up the effect of speeding from a US study with the historic data from 2014 supplied by the council.

Unfortunately the speed bands do not start and stop at 20mph, the speed limit, they are displaced by 1mph. We took the midpoints of the two closest speed bands and plotting them on the lethality graph as dashed white lines.

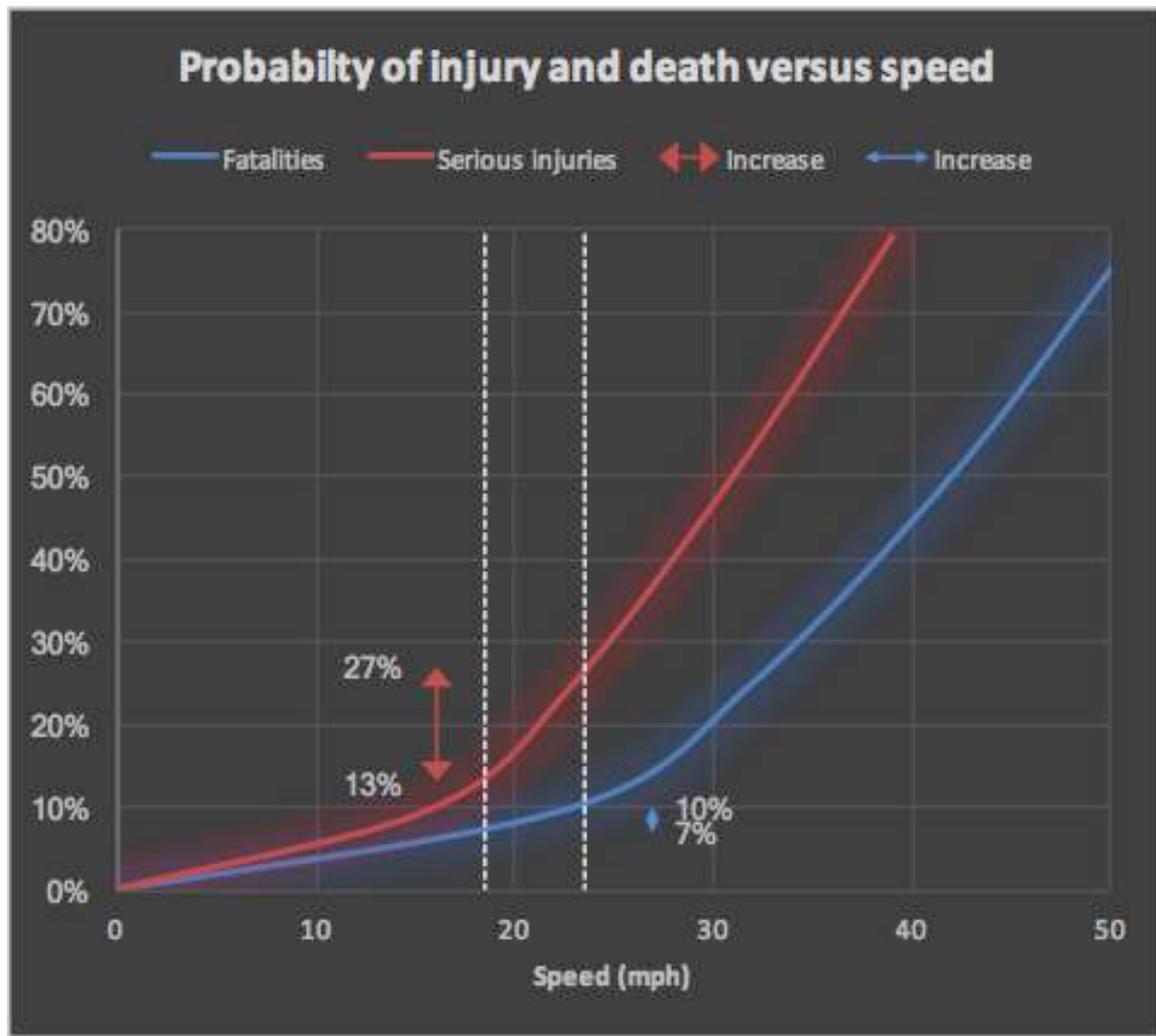
By measuring the difference of probability over these two speeds we can see that the effect of what might seem like gentle speeding is quite dramatic:

- the risk of serious injury more than doubles (13% to 27%)
- the risk of death goes up by nearly a half (7% to 10%)

So the rhetorical questions are:

1. Should anyone be content to continue tolerating speeding when it more than doubles the risk of personal injury for pedestrians?
2. Do we have to wait for the 'inevitable to happen' before there is a call to act?

Most of us, as residents, are highly concerned about the need for compliance with the 20 mph limit because it affects our personal safety and that of the many pedestrians from further away using the same pavements.





Causality hypotheses

A significant observation from the speeding data is that virtually no one exceeded 30mph which is the normal inner city speed limit. Might this not suggest that most people are 'good' and speeding is simply done in ignorance of the 20 mph speed limit and in the belief that the standard 30mph limit applies?

If so, why might this be? When we looked at the situation on Camden Road from a driver's perspective there were a number of plausible explanations for their transgression which all relate to a lack of awareness of the speed limit:

- The signage entering the Camden Road both ends is misleading when judged by the standards of other zones in the city, the reminder signs are exceptionally infrequent and wearing away on the road surface, although this last issue is to be addressed in 2018.
- There should be a minimum of a reminder roundel every 15 seconds. At 20 mph, the maximum permissible speed, this requires a reminder sign every 140 metres. Camden Road requires a further 5 signs as a minimum. We are suggesting many more on the next page subject only to exceptional aesthetic considerations.
- If one is driving across Bath using the back streets the speed limit in Bath is changing several times and it is difficult to keep up with
- Camden Road is a bus route which might suggest to some it is a main road with a 30mph limit
- Camden Road is quite wide as it passes the Crescent and does not look like a 20mph zone

Testing the hypotheses

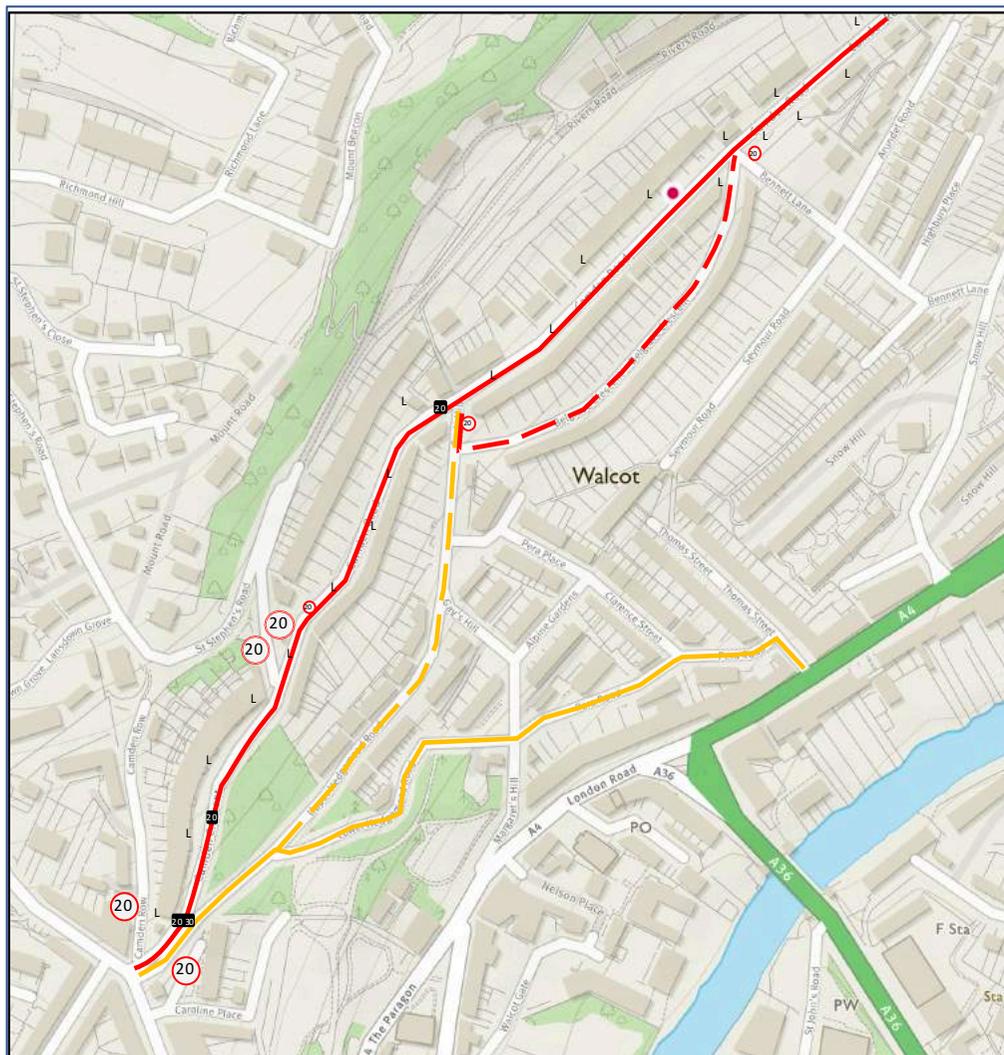
If we chose to deal with the easy-to-fix causes then it could have a major effect on the level of speeding. Maybe we need:

- better signage as we enter the 20mph zone
- more reminders along the route, as there are so many hazards to deal with along the way?

We have looked at the current signage and these are our observations and conclusions:



Observations



Study of speed signage on CR

Only two 20mph on lamp-posts along whole length of CR
 • 19 missed opportunities
Awareness could be increased 10 fold

Miscellaneous 'Slow' painted on road
 • What does slow mean?
Meaningless

3 x '20' mph painted on road
 • Eroded and difficult to see and obscured by traffic
Virtually no utility

At bottom of StStepRd
 • Two double-sided large 20mph roundels = 4 large signs
 • Impossible to exceed going uphill
 • Giving way at junction downhill
No utility at all

At west end of CCresc
 • Painted '30' inviting drivers to speed up as they approach junction
Dangerous and unnecessary

Entry into the Camden system from west
 • No large 20mph roundel for CR
 • There is for UpHedge
 • There is for CamRow (no through road)
Implication is 30mph

Solutions

R17. Improve entry into 20mph zone at Camden Road from Lansdown Road (30mph)

- Make large and unambiguous
- Compliant with national standards
- Re-use unnecessary signs from StStepRd
- Affix small double sided 20 mph roundels on every lamp post – 19 required

R18. Adjust exit from 20 mph zone nearing Lansdown Road

- Do not encourage acceleration towards junction

R19. Repaint road surface logos

- Over-paint slow signs to read 20mph
- Repaint 20mph signs

R20. Consider different coloured road surface

R21. Consider use of digital speed sign

Summing Up

People talk about enforcement and training people to wield cameras and citizen's arrests. Step one is surely to make sure that people have little or no reason for not being aware of the speed limit by making signage more frequent on lamppost signs and refresh the worn out roundels on the road surface.

The use of a greater amount of standard signage, as is done in other parts of Bath will not cost much as some of it just requires redeploying of existing signs.

This could have two effects:

1. improve driver awareness of the especially low speed limit
2. provide residents and pavement users with a something to point at as speeding drivers pass

Below are illustrations which make the various points above.



Northfields Close, a cul de sac, with exemplary signage



Camden Road with illegible 20 mph roundels



Margaret Hill with full and clear signage, albeit going up a hill which is difficult to speed on



Camden Road bereft of 20mph signage whilst Camden Row, a no through road, and Upper Hedgemoor, an extremely narrow road, are correctly signed

8. Upper and Lower Hedgemead Roads (orange routes)

Background

- Upper Hedgemead Road (UHR) (including a portion of Alpine Gardens (AG) at the north end) and Lower Hedgemead Road (LHR) are residential roads with 37 dwellings ranging from Victorian to late 20th century
- The roads are in Resident Parking Zone 15, providing 17 parking spaces. There are also 16 free parking spaces at the southern end of UHR.
- These roads are narrow and have no shops, services or bus routes. Therefore, access is only required for residents, emergency and service vehicles
- Pedestrians of all ages commute to work or school, to and from centre of town, along both roads and through Hedgemead Park
- The roads are single track in places, with bends compromising visibility
- There are two hazardous exits from UHR. Northbound from Gay's Hill into Camden Road is steep with poor visibility, and southbound into Lansdown Road has a narrow approach, and is a complex junction
- Other than the speed restrictions there are no other calming measures.

Current situation

- There are two access points to Hedgemead Park in LHR. The park, which is popular with dog walkers, parents with young children using the play area and visitors to Bath, has been restored this year, and is promoted on the council website. This highlights the need to keep this area safe and enjoyable for residents and visitors
 - UHR and LHR are being used by “rat running” vehicles wishing to bypass other congested routes, particularly Camden Road and London Road.
 - The behaviour of drivers can be confrontational particularly through the narrow section of UHR near to the Lansdown Road junction
 - Often once in the narrow section close to Lansdown Road drivers are forced to reverse back or mount the pavement to pass one another in a very enclosed situation
 - Fire Service vehicles cannot use the NW end of UHR as it is made too narrow by the parking spaces. An agreement to extend double yellow lines into the free parking area, dated Autumn 2016 has not been actioned
 - The safety of park users is threatened by frustrated drivers who are often speeding as they get through bottlenecks both on the local pavements and as they exit the park through the gate directly onto LHR
- 22.** The current use of the roads is inappropriate and residents unanimously agree that both UHR and LHR should be designated as 'Access Only'. This action would also reduce rat-running in Belgrave Crescent, Pera Road and Thomas Street.



More detailed position on speeding traffic

It has been demonstrated widely that a 20 mph speed limit significantly reduces deaths to pedestrians. This is in place on these streets but it is not enforced.

- A traffic survey carried out by the council in December 2016 reported mean traffic speeds to be within the police tolerance of 26mph (30% over) and therefore did not warrant further action.
- This is a simple averaging calculation which overlooks the detailed information discernible from the data. The data shows that at peak times nearly all southbound vehicles were travelling between 20 and 35mph – at or above the speed limit, and many were travelling in excess of 25mph.
- The survey cameras were positioned on slower, narrower sections: UHR in the narrow area of road outside Leopold Buildings, and in LHR on the bend in the road. Our residents' experiences suggest that speeding is even greater on other sections of these roads.
- The community police team state that the layout of the roads precludes monitoring by the Speed Camera Partnership Unit. They have a hand-held camera, but limited resources. There is no community speed watch scheme available in this area to involve residents in traffic monitoring.

23. Despite our endeavours there is little more we can do to override the council's decision to do no more on speeding. We recommend that this is reviewed.



9. Illustrations

Hedgemoad Traffic System



This map highlights areas of specific difficulty

- A,B and C are particularly narrow sections
- These are discussed in turn in the next few sections
- Area 'C' highlights a lack of pavement
- Most of LHR has no pavements despite vehicles travelling uphill or downhill at speed
- Area 'F' highlights a second pedestrian exit from the park directly onto the road



Pedestrian Safety



Looking NE from Lansdown Road ('A')

- the only pavement, repeatedly encroached
- no refuge for pedestrians and cyclists
- hilly situation – less easy to control cars

R24. Pavement encroachment needs eradicating on UHR



Dangerous or awkward junctions



Looking NW from the top of UHR

- Congestion can cause cars to wait across the complex junction with LR and CR
- This can result in a queue developing northbound in LR



Looking further NE from Lansdown Road ('A')

- Wider van causing a confrontation with oncoming traffic
- Such confrontation inevitable because:
 - visibility of whole narrow section is impossible from a car seat
 - There is no priority guidance or setting
 - no restriction on larger width vehicles

This can result in awkward uphill reversing as far as the junction and out onto LR or cars mounting the pavement



Dangerous junction of LHR and UHR

- Going NW from LHR:
 - no white lines giving indication of priority
 - hill start required
 - visibility poor due to parked cars in UHR
- Going E from UHR down LHR
 - vehicles travelling NE on UHR veer down LHR at high speed

close to pedestrian gate into Hedgemoor Park ('G')

Excess traffic



Looking SW past Leopold Buildings ('B')

- Vibrations and noise in properties because of:
 - the narrow pavement
 - proximity to the curtilage
 - Light-wells just beyond the railings
 - Vaults under the pavement and road



10. Proposed Measures

25. These detailed recommendations for the Hedgemoad System are held under one numbered recommendation.

#	Issue	Road	Location	Proposed measures	Pros	Cons
	Inappropriate vehicular use	All	all	<ul style="list-style-type: none"> Restrict vehicular access to residents, emergency and service vehicles, and those parking in designated CPZ 15 spaces If this option is rejected, the following measures are proposed for consideration 	<ul style="list-style-type: none"> Stop rat running with knock-on benefits for Belgrave Crescent, Pera Road and Thomas Street. Enhance pedestrian safety at junctions Inexpensive 	<ul style="list-style-type: none"> enforcement potentially difficult
1.0	Speeding	All	All	<ul style="list-style-type: none"> Further monitoring in new positions 	<ul style="list-style-type: none"> Inexpensive 	<ul style="list-style-type: none"> enforcement costs
1.1	Speeding	All	All	<ul style="list-style-type: none"> Improved '20 mph' signs 	<ul style="list-style-type: none"> Inexpensive 	<ul style="list-style-type: none"> enforcement costs
1.2	Speeding	All	near A at C near F	<ul style="list-style-type: none"> Further signage saying "Residential Area – Please Respect 20mph speed limit" 	<ul style="list-style-type: none"> Inexpensive 	<ul style="list-style-type: none"> enforcement costs
1.3	Speeding	UHR	G	<ul style="list-style-type: none"> Vehicle activated speed sign 	<ul style="list-style-type: none"> Inexpensive 	<ul style="list-style-type: none"> dynamic – research suggests that it has more effect on drivers



#	Issue	Road	Location	Proposed measures	Pros	Cons
2.0	Dangerous junction (LR and UHR)	UHR	A	<ul style="list-style-type: none"> • Prioritise vehicles travelling NE • Erect 'give way' signage • Provide waiting area for yielding vehicles by sacrificing some parking spaces • Yellow hatchbox for narrow area 	<ul style="list-style-type: none"> • Remaining free parking bays made Zone 15 – revenue generator • Tidal traffic flow ensures emergency vehicles can pass • Could reduce morning rat-running 	<ul style="list-style-type: none"> • may not solve visibility issue without removal of many parking bays
2.1	Dangerous junction (LR and UHR)	UHR	A	<ul style="list-style-type: none"> • Make 'A' one way - NE only 	<ul style="list-style-type: none"> • Easy concept 	<ul style="list-style-type: none"> • Creates further issues at Gays Hill with awkward left turn onto Camden Road • No support from UHR residents
2.2	Service vehicles unable to use UHR	UHR	A	<ul style="list-style-type: none"> • Extend double yellow lines into free parking 	<ul style="list-style-type: none"> • Ensures use by Service Vehicles • Increases visibility • Previously agreed 	<ul style="list-style-type: none"> • Loss of two free parking spaces
2.3	Dangerous junction (LR and UHR)	UHR	D	<p>Give way marking</p> <p>Raised pavement across top of LHR</p> <p>Reduce privet hedge</p> <p>Consider pier on SE edge of UHR</p>	<ul style="list-style-type: none"> • Pedestrians safer • Slower vehicles • Less vehicle collisions 	<ul style="list-style-type: none"> • Raised pavement costly



#	Issue	Road	Location	Proposed measures	Pros	Cons
5	Wide vehicles creating further congestion	LHR	Junction with Margaret Hill	Width restriction sign and kerbs	<ul style="list-style-type: none"> • Less congestion • Pedestrians safer 	<ul style="list-style-type: none"> • Provision for emergency vehicles to pass
6	Pavement peters out	UHR	C	Raised pavement across Gays Hill	<ul style="list-style-type: none"> • Slower vehicles • Pedestrians safer 	<ul style="list-style-type: none"> • Raised pavement costly



11. Bigger Picture – first views

Introduction

No man is an island,
Entire of itself,
Every man is a piece of the continent,
A part of the main.

John Donne

It has become increasingly clear to us in this study that the traffic situation in our area of Bath, probably in common with other congestion hot-spots, is a closely connected system. Any changes or new influences will have their effects both here and most importantly elsewhere.

At the tactical level tweaks can be made to work where the system has 'redundancy', in other words, room to flex. Our area of Bath at peak times has absolutely no flexibility – "push here and something spills out over there". There is little or no room for manoeuvre.

In these situations you have to create some space to work. In this situation it means restricting traffic into the Camden system. This section proposes, albeit unilaterally, a way of doing this.

Summary

This analysis of the data presented in the Larkhall Transition Report has yielded very useful information on the behaviour of drivers entering the city from the north along the A46 and choosing to cut through Larkhall on a Monday morning in October 2016.

The obvious conclusions are that a large number of drivers, probably regular drivers, use Larkhall and then the Camden System to avoid congestion on London Road. They are coming from the East, the South East, the South as well as the North to do this.

To do this they decide to use the Swainswick exit from the A46, either arriving from the north before it meets the A4 or from the south, having elected to go north away from the city.

The following analysis uses the vehicle counts taken at various junctions and demonstrates what decisions were taken at each junction and how appropriate these were in relation to the type of road.

This then raises real issues about the quality of life for inhabitants living on or using the narrower streets during the peak morning hours and how they might be ameliorated.

As for the evening peak this was not been examined by the Larkhall Transition Study so we could do no further analysis. Our previous work above suggests that it is probably longer in duration and at perhaps lower levels. This would fit with the general *modus operandi* of the many needing to get to a similar start time for the day but more variability over when the working or school day finishes.

The solutions are unlikely to be simple reversals of the morning time solutions, and how the two solutions would interact when superimposed has not been envisaged. All this points to some more work needing to be done.

There are other traffic peaks caused by shopping and sporting events, for example, where drivers not familiar with Bath aim for the centre looking for parking and cause congestion doing this, only to have to escape the centre to find a space. It is really difficult to understand why there is no signage at the A420 Nimlet roundabout directing cars to the park and ride at Lansdown. This is pointed out also in the section related to pollution.



We do sympathise with those people living on and using the London Road. If we were to eradicate our congestion and push it down to them then it gets even more unpleasant for them. Sometimes however to get a big strategic shift requires a problem to get so acute that barriers to its solution are swept aside by its critical priority.

What follows is a set of slides with some explanatory side notes

Basic Topological Model

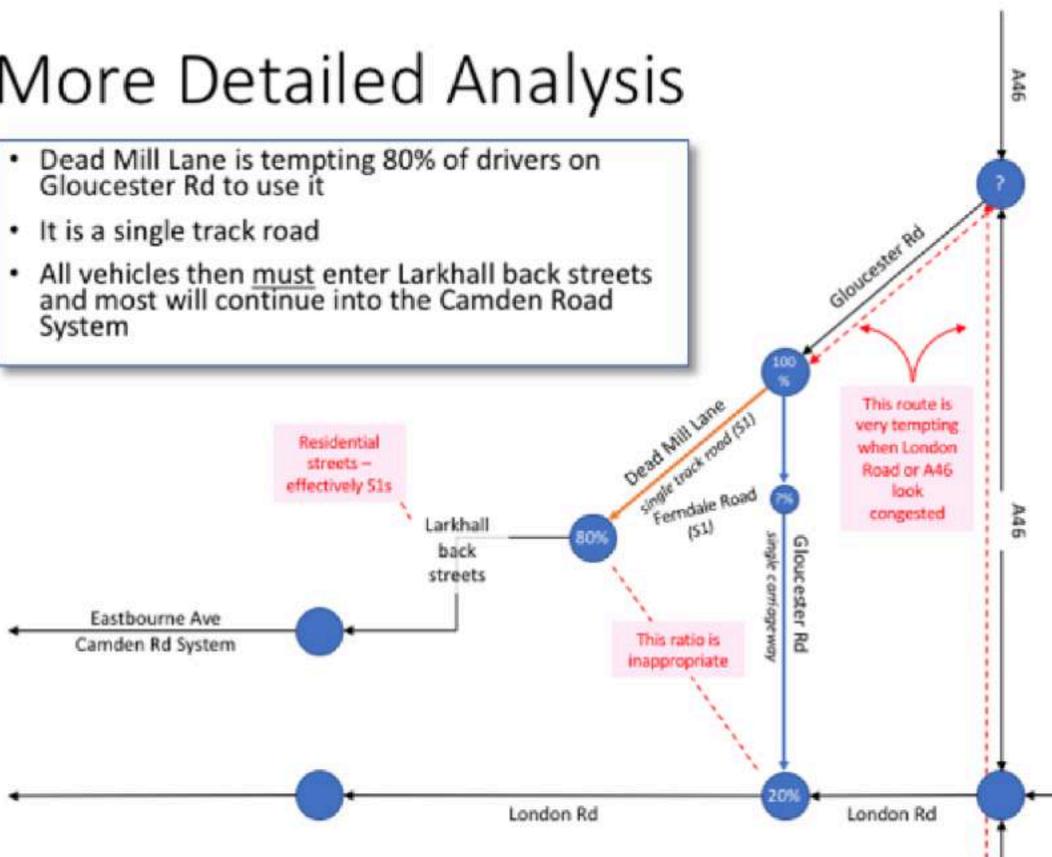
Colours conform to Google maps congestion notation

- This is a simple model of the morning peak-time traffic system to the north east of Bath.
- Traffic from several directions intends to head for either the centre of the city or to get somewhere else
- This necessarily involves the prospect of using the London road which is highly congested
- A rat-run has formed to avoid this
- The rat run offers the prospect of a quicker journey than the A4 trunk road
- It uses very narrow streets which can soon clog up forcing cars along other narrower streets
- Nonetheless the rat-run does appear to offer options including returning to the London Road
- This has many other consequences of importance to those living on the route of the rat-run.



More Detailed Analysis

- Dead Mill Lane is tempting 80% of drivers on Gloucester Rd to use it
- It is a single track road
- All vehicles then must enter Larkhall back streets and most will continue into the Camden Road System

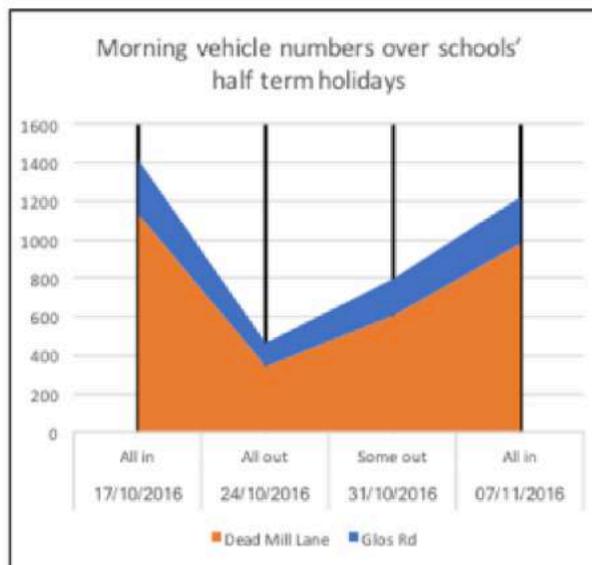


- This diagram takes the model to the next level of detail using data from the Larkhall Transition study
- The percentages are based upon the data and are not estimates
- The use of Gloucester Road which is a two lane road seems appropriate, however most users end up entering the Larkhall back streets on tiny one track roads.



Further Detailed Volumetrics

1. Traffic on Dead Mill Hill, single track road, reached 1323 vehicles over 3 hours \equiv 441 per hour \equiv 7 vehicles per minute
2. At peak hours this is probably considerably more but self limiting
3. 'School-only' journeys are likely to peak close to school start time. This creates the worst effects: congestion, air pollution, driver contention and heightened accident risk
4. 'School only' trips would appear to be a contributory factor as the traffic flow is reduced by:
 - 65% when all schools out
 - 39% when some schools out
5. There are also 'school + parent work' trips. Many of which would continue during half term



ref: Larkhall Transition Study Oct 2016

- This graph presents the absolute numbers over four weeks:
 - prior to half term break
 - all schools closed
 - some schools closed
 - all schools open
- The rat-run remains a favoured route at all times.
- In fact when the schools are off it becomes even more tempting to commuters
- Dead Mill Lane is narrow with poor visibility
- With so much tidal traffic, others trying to use it in the other direction are heavily inconvenienced.



It is sometimes helpful at this stage to refocus on the issue in the light of all the evidence and conclusions gained. We did this and boiled it down to the following set of statements.

Issue Summary

- At morning peak time too many vehicle drivers are using Larkhall and Camden Road as a rat run to central Bath and beyond
- The road capacities are inadequate and therefore their use as a rat run is:
 - ineffective, as it congests and slows every one down
 - doubly dysfunctional, as those living along those streets have to suffer the consequences of the congestion
- Apart from congestion there are other harmful effects on the people living in this environment
- The direct solution is to curb the use of this route by non-local drivers

Issue Resolution

R26. Curb the use of the rat run

- Restrict use of Dead Mill Lane and Ferndale Road at peak times
- This will, in turn, reduce the use of Larkhall back streets and the Camden Road System (CRS)

R27. London Road will be made busier and may force drivers to use the CRS. This therefore may require further restrictions to turning right off the London Road into Larkhall.

What might it look like?



1 2

and equivalent heading North on A46



4 3



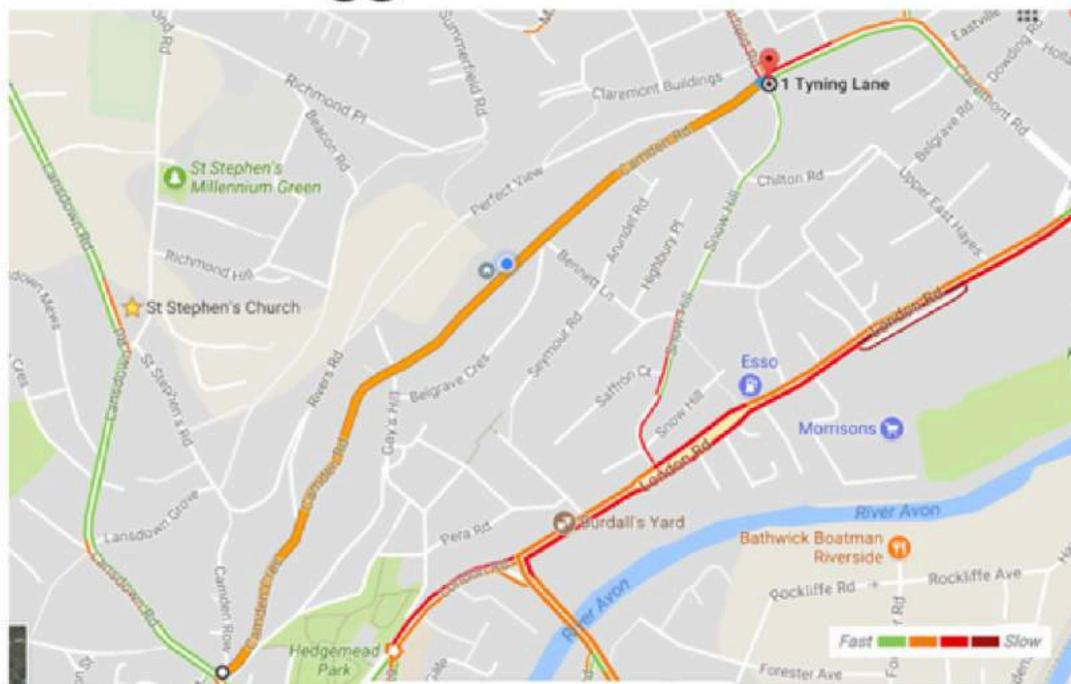
Signage:

1. on A46
2. on Gloucester Road
3. at the top of Dead Mill Lane
4. at the top of Ferndale Road

Special consideration would need to be given to those with a genuine need to access Larkhall at peak times, such as residents, some school children, care workers, emergency vehicles



Further Suggestions



- There is a likely objection from London Road residents and users. However:
 - They already live on and use a designated trunk road (A4)
 - It's in all residents' interest to find a more strategic relief solution for the London Road
- There is a ready source of live information available on congestion on Google Maps
- This was the situation at 08:24, 01/11/17
- Note:
 - The continuous congestion on Camden Road (0.6 miles)
 - The congestion on the cut through down Snow Hill
 - The lack of congestion on Lansdown Road suggesting that this is a much better route in from the north



12. Poor Air Quality in Camden

Introduction

Having considered the direct effects of congestion we now turn to poor air quality which is an indirect effect of large amounts of slower moving traffic. There is plenty of data for the London Road area but very much less for Camden Road which we believe is comparably bad for several unique reasons.

How bad is Bath?

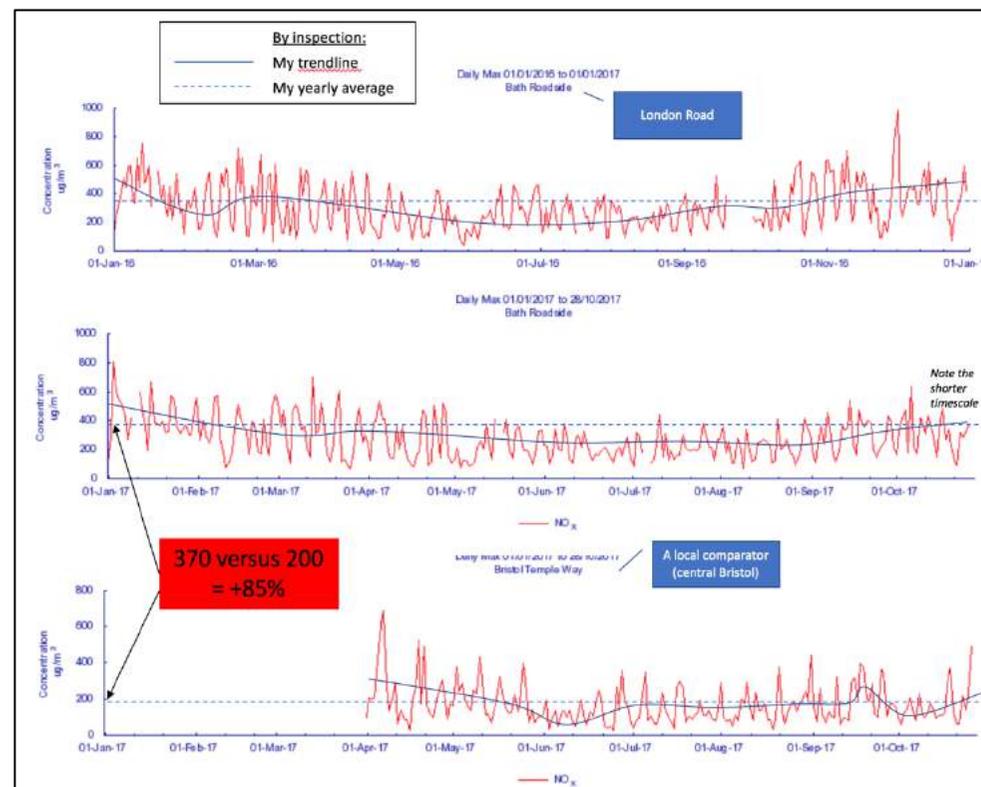
It is generally acknowledged that Bath suffers from high levels of traffic-related air pollution across the city. We downloaded the latest data available from the Defra web site to compare meaningfully Bath with another conurbation.

We chose Bristol which is considerably bigger, busy, close by and normally upwind of Bath.

The contrast was stark. Bath is considerably more polluted than a main arterial road in Bristol. In fact it is 85% more polluted.

We also looked at the year on year (2016/17) data for Bath which showed that there is no significant improvement – if anything there is a marginal increase in pollution levels.

Pollution throughout the year follows a pattern with the colder months being worse than the warmer ones. It is easy to see what looks like an improvement in the first half of the year only to see it get worse in the autumn.



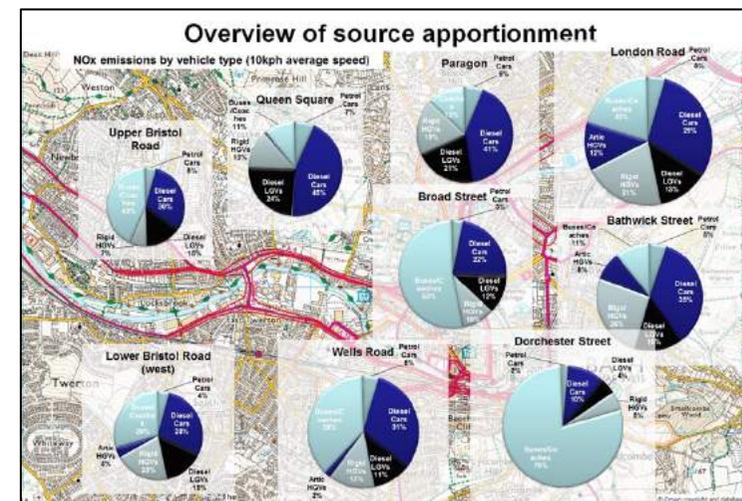


Which bits are worst?

NO_x levels are used as proxy for overall pollution which can also involve other pollutants with much greater general health risks such as particulates.

The recently drafted BANES Air Quality Action Plan³ contains a graphic (see right) which highlights that:

- pollution is generally worst on the east side of the city (the pie charts to the right of the graphic are bigger)
- the very worst pollution found was on the London Road (top right)
- (there is a separate acute problem on Dorchester St caused by the bus station)



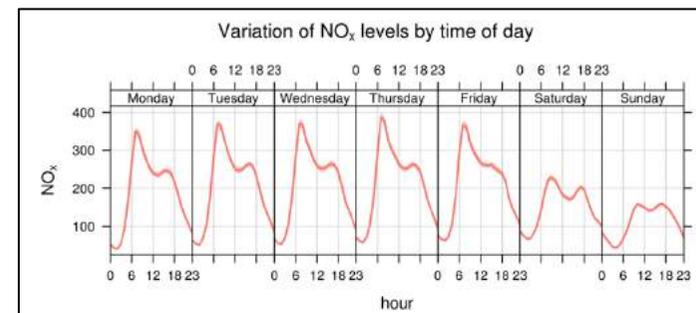
London Road

As for London Road (b) there seem to be three possible explanations for this:

- Much of the road is bounded by high buildings which contain the fumes
- The westerly prevailing winds funnel pollution from the west and the centre of the city towards the east
- At peak times, London Road and Bathwick Street are highly congested with a large proportion (46%) of pollution coming from slow moving HGV traffic.

NO_x levels on London Road were monitored back in 2013 and during the course of seven days and these were presented in a cyclical graph which demonstrates some interesting features:

- from virtually zero, they build up very quickly during the morning peak hours
- they gradually subside during the day before being boosted by the late afternoon peak
- the levels throughout the day are many fold higher than the 40µg/m³ limit set for the average, so most people outside on the street are breathing extremely unhealthy air, which at peak is nine times higher than the limit
- they never really fall to the recommended level and by inspection the average is about 150 µg/m³ which is nearly 4 times over the limit
- Saturday and Sunday are far less acute than during the week but are still well in excess



We can find no further explanation or concern expressed in the report, back in 2013, for these extremely alarming results.

³ Bath Air Quality Action Plan – Consultation Draft (final) In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management August 2017



As legislation continues to force vehicle manufacturers to improve vehicles emission performance we have seen a general improvement over the last five years (see graph to the right). At the current rates of reduction, the Council's arithmetic would suggest that most of Bath will fall below the current limit of $40\mu\text{g}/\text{m}^3$ by the end of this decade. But London Road will not achieve this until 2030.

The figures do seem somewhat suspect as CM4, Chelsea House, is on London Road, opposite where the CM1 sensor is which is picking up much more extreme pollution.

We believe that congestion on London Road would be even worse, were it not for a significant proportion of lighter traffic at peak time finding other rat-run routes along the narrow roads of Larkhall and the Camden and Hedgemoad systems, as has been demonstrated earlier (see chapter 11). So there are two victims of the A4 not being able to cope with the traffic load:

- most obviously the residents and users of London Road
- but also residents and users of Camden Road and its associated streets too.

There is a further perversity in allowing rat-running cars as this may well have an adverse effect on NO_x levels on London Road as it changes the mix of vehicle in favour of HGVs. So given that London Road is chronically congested at peak times the loss of cleaner burning cars in the queue simply makes the situation worse.

Figure 2-2 summarises the annual average NO₂ concentrations at each continuous site between 2006 and 2016, in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

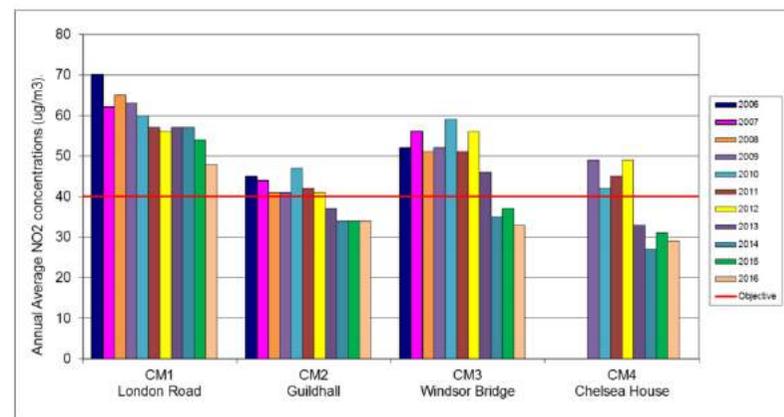


Figure 2-2: NO₂ concentration at continuous monitoring sites



Camden Road

Looking at this from a Camden Road resident's point of view the continual observation, and probably for regular pedestrians too, is that there are a lot of fumes in the air particularly on still days.

Other than high traffic volumes making very slow progress along the road, we suspect there are three further causes for this. These are:

- Camden Road is a very narrow street with high walls on its north side and tall houses virtually abutting the pavement on the south side. These tend to trap car fumes
- Camden Road lies within the wind shadow of Mount Beacon escarpment so that trapped car fumes remain for longer within the lee of the hill (see diagram)
- On windless days fumes from London Road will naturally rise up from London road over Walcot and Camden.

Camden Road has had an elementary type of monitoring point. The recorded reading for 2016 was given by the Council as $36\mu\text{g}/\text{m}^3$. This reading is very close to the EU limit on what is a residential street never designed for commuting traffic.

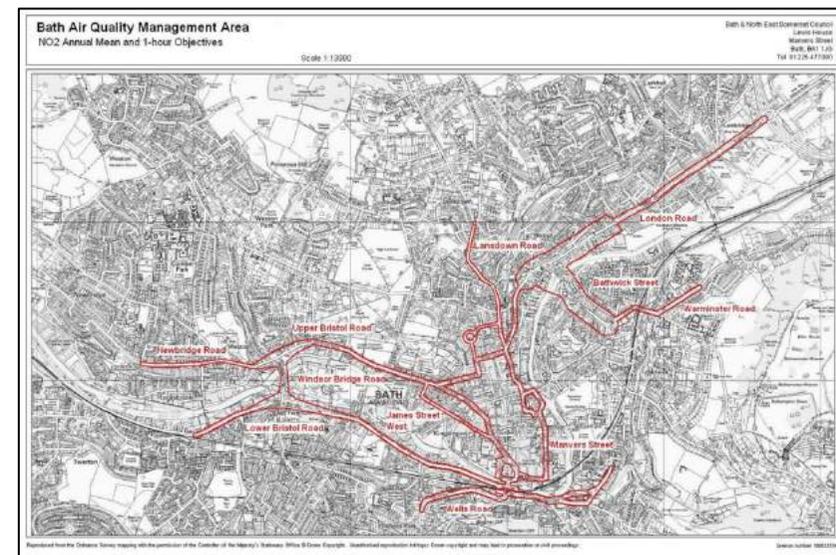
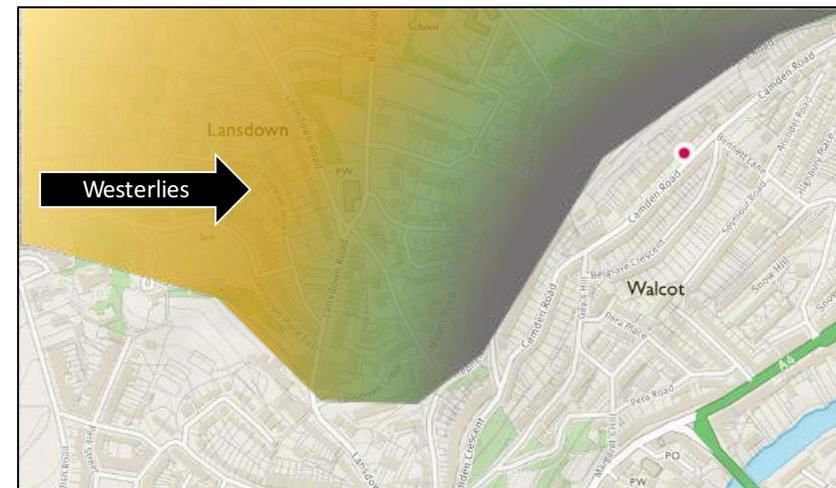
The implementation of the monitoring has been discussed with Council Officers and is suspect. The monitoring tubes were not positioned optimally, both in height from the ground as well as location:

- open location at Gay's Hill junction as opposed to a narrow enclosed section
- higher than head height so not picking up fumes closer to where they are emitted.

Both these would cause the results to underestimate the actual levels encountered by pavement users and residents.

Finally the tube method only gives a rough average, which includes the recovery period throughout the night and so is not a good indicator of typical levels when the road is most in use.

218. We believe it is actually considerably higher and needs to be part of the investigations and considerations for a low emissions zone





A Low Emission Zone

It would be very easy when considering the Council's Getting Around Bath Strategy GABA 10 proposal to define a Low Emission Zone (LEZ) in the way this map suggests, which focuses on the main arterial and circulatory routes without considering the neighbourhoods surrounding those roads.

For Camden this would be an oversimplification and overlook the pollution problems we already suffer from peak traffic volumes at close to 60% of those on the London road coupled with the other factors listed above which tend to entrap fumes.

If the LEZ did not include Camden and Hedgemoor systems, then any traffic restricted from using London Road would be pushed into using our roads even further than they do now.

Rat Running

Our analysis of recent work by Transition Larkhall reveals the existence of a high volume, rat run using Camden that stretches from the A46 in the East to Weston in the West. Much of the traffic uses residential roads in Larkhall and Camden to avoid the London Road and the city centre. Much of this is schools related.

This causes a deep perversity:

- We have parents keen for their children to walk and cycle to school but finding it intolerably risky for them to encourage it
- They see unsafe levels of traffic being driven in a discourteous manner on narrow roads emitting pollution along routes they want their children to use
- From one perspective you could not design a transit system in a worse way.
- Perhaps no one has: it has simply got like this because previous administrations could afford to ignore the big decisions necessary to address it.

229. One answer is to reduce vehicle numbers in Camden, and thereby pollution levels, by discouraging, if not prohibiting, traffic from entering the system if their intention is to use it as a transit route.

- We have suggested earlier in Chapter 11 this might be achieved by restricting the use of Dead Mill Lane and Ferndale Road in Larkhall at peak times in the morning.

230. In addition we continue to campaign for much better signage before the A420 roundabout on the A46 which should aim:

- to encourage visitors to turn right and use the P&R facility at Lansdown
- to encourage the use the same route to get to the RUH
- to give advance warning of congestion ahead.

More and more, drivers are using advanced satellite navigation systems whose algorithms spot cut throughs. As the systems advance they are responding dynamically to traffic conditions ahead and adapting the route to avoid congestion spots. Both Google maps and Bing maps specifically name Camden Road with the same emphasis as for example Gloucester Road. What they don't do is take any account for environmental concerns.

231. The council should ask the SatNav software providers from Google etc. to include the restrictions adopted



Parking

The air on London Road and particularly Camden would be much protected if the Lansdown P&R operated more effectively. It is limited by its high cost which is due to go up in November⁴ and by its operating times. We have taken a fresh look at the deal and feel that it is perverse to charge a car with four adults £12 to park and ride when a single driver will pay only £3.40. Faced with this £12 penalty, a full car will find it cheaper to seek inner city parking.

We test visited it recently and the experience is poor. Lots of puddles, one cold and damp shelter.

The P&R is very unlikely to be the first choice for those visiting from the M4. After avoiding it, those seeking inner city parking on busy days will circulate very slowly around the city looking for scarce spaces and causing further congestion and pollution. On multiple occasions Camden residents have provided advice to exasperated drivers on rugby match days bouncing back out of the city and looking for anywhere to park.

R32. Park and Ride needs significant improvement in the service and pricing

Parking in Camden follows different cycles to the traffic. The peak time is late in the evening which ironically is when parking restrictions on resident's bays finish till the following morning. This again is perverse and catches out many central short-let visitors looking for somewhere to park their cars during the day. P&R, if it offered a sensible degree of car security, would be a cheap and convenient means for people to stay in the city without disturbing arrangements for permanent residents.

⁴ <http://www.bathnes.gov.uk/services/parking-and-travel/park-and-ride/fares>
CRA Paper 10 - final.docx



13. In conclusion

Want of foresight, unwillingness to act when action would be simple and effective, lack of clear thinking, confusion of counsel until the emergency comes, until self-preservation strikes its jarring gong - these are the features which constitute the endless repetition of history

Winston Churchill

We probably did pass a point of no return several years ago and ignored it.

Most of what has been proposed and implemented over recent years has been neutral, soon eclipsed by adaptive behaviours from drivers or has simply made things worse by creating perversities.

Implementing a LEZ makes a good headline but will be attempting forlornly 'to rob Peter to pay Paul' but neither London Road nor Camden Road now have any potential left.

Navigation systems, however intelligent, cannot solve this issue either. Google maps latest version does give us a real time impression of congestion along any road, and if we care to keep looking we can see how conditions change throughout any day. This is a powerful new tool - there is little excuse for not building up data very quickly where we don't have it already.

We commend our proposals to the decision makers as they offer fresh solutions to well demonstrated issues and get back to route causes using hard evidence wherever possible.

What also seems to be incontrovertible is that the road systems serving NE Bath and providing the means of entering the city centre are not coping. Furthermore they will come under greater pressure still into the future as the reason for living and moving into and around Bath strengthen.

We must act now with both our short term measures but introduce an absolute paradigm shift in both:

- the city's transport, parking and air quality policies and their enactment
- upgrading the major routes and links.

We are currently condemning the population of NE Bath and many visitors to one of UNESCO's finest world heritage sites to worsening slow and congested journeys with pollution levels already at dangerous levels well beyond current legal standards.



14. List of Recommendations

This is the list of recommendation from the above text.

	Requirement Number and Description	
1	R1. The junction, as designed, causes major congestion, confusion and is a hazard for pedestrians and needs to be redesigned	
2	R2. Forward visibility needs to be improved	
3	R3. Make Belgrave Crescent 'access only'	
4	R4. As bus travel is to be encouraged and made convenient then the road needs to give some priority for buses to run unimpeded	
5	R5. The buses need to be less polluting buses	
6	R6. Restrict larger vehicles from using Camden Road as a through route	
7	R7. Ban larger vehicles except for access	
8	R8. Formalise pavement parking if necessary	
9	R9. Install width restriction signage at the junction	
10	R10. Pavement edge needs resetting at many points along Camden Road	
11	R11. Pavement edge needs lifting rather than more bollards which obstruct pavement users	
12	R12. Pavement edge needs further resetting to make the transverse fall much less steep as well as lifting the pavement edge away from road surface	
13	R13. Presenting waste for collection behind the curtilage is being considered by the council at the time of writing but needs agreeing for those houses with opaque doors that need to be kept closed	
14	R14. These detailed recommendations for the Camden System are held under one numbered recommendation.	
15	R15. Cycling along Camden Road has to be made safer	
16	R16. Improve entry into 20mph zone at Camden Road from Lansdown Road (30mph)	
17	R17. Adjust exit from 20 mph zone nearing Lansdown Road	
18	R18. Repaint road surface logos	
19	R19. Consider different coloured road surface	



	Requirement Number and Description	
20	R20. Consider use of digital speed sign	
21	R21. The current use of the roads is inappropriate and residents unanimously agree that both UHR and LHR should be designated as 'Access Only'. This action would also reduce rat-running in Belgrave Crescent, Pera Road and Thomas Street.	
22	R22. Despite our endeavours there is little more we can do to override the council's decision to do no more on speeding. We recommend that this is reviewed.	
23	R23. Pavement encroachment needs eradicating on UHR	
24	R24. These detailed recommendations for the Hedgemead System are held under one numbered recommendation.	
25	R25. Curb the use of the rat run by restricting the use of Dead Mill Lane and Ferndale Road at peak times. This will, in turn, reduce the use of Larkhall back streets and the Camden Road System (CRS)	
26	R26. London Road will be made busier and may force drivers to use the CRS. This therefore may require further restrictions to turning right off the London Road into Larkhall.	
27	R27. We believe it is actually considerably higher and needs to be part of the investigations and considerations for a low emissions zone	
28	R28. One answer is to reduce vehicle numbers in Camden, and thereby pollution levels, by discouraging, if not prohibiting, traffic from entering the system if their intention is to use it as a transit route.	
29	R29. In addition we continue to campaign for much better signage before the A420 roundabout on the A46, at Nimlet, which should aim:	
	<ul style="list-style-type: none"> to encourage visitors to turn right and use the P&R facility at Lansdown which has been promised for 12 months now. 	
	<ul style="list-style-type: none"> to encourage the use the same route to get to the RUH 	
	<ul style="list-style-type: none"> to give advance warning of congestion ahead. 	
30	R30. In addition we continue to campaign for much better signage before the A420 roundabout on the A46, at Nimlet, which should aim:	
	<ul style="list-style-type: none"> to encourage visitors to turn right and use the P&R facility at Lansdown which has been promised for 12 months now. 	
	<ul style="list-style-type: none"> to encourage the use the same route to get to the RUH 	
	<ul style="list-style-type: none"> to give advance warning of congestion ahead. 	
31	R31. The council should ask the Satnav software providers e.g. Google etc. to include the restrictions adopted	
32	R32. Park and Ride needs significant improvement in the service and pricing	



15. Main contacts

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