

# KENDAL TOWN COUNCIL

## Environment and Highways Committee

Tuesday 7<sup>th</sup> May 2019 at 7.00 pm  
in The Mayor's Parlour, Town Hall, Kendal

- PRESENT** Councillors Jonathan Owen (Chair), Eamonn Hennessy (Vice Chair), Giles Archibald, Shirley Evans, Adam Edwards and Chris Rowley
- APOLOGIES** Councillors Jonathan Cornthwaite and Julia Dunlop
- OFFICERS** Stacy Hurley (Project Manager) and Nicky King (Council Secretary)
- 1112/18/19 PUBLIC PARTICIPATION**  
None.
- 1113/18/19 DECLARATIONS OF INTEREST**  
None.
- 1114/18/19 PRESENTATION ON '20'S PLENTY' BY PAUL HOLDSWORTH**  
The Chair advised that Paul Holdsworth was unable to attend the meeting, but had conveyed that he was keen to work alongside KTC on the '20's Plenty' project. He had volunteered to be the '20's Plenty' co-ordinator and was eager to reinvigorate the initiative. KTC had carried out a survey a couple of years ago.
- 1115/18/19 MINUTES OF THE MEETING HELD ON 25<sup>TH</sup> MARCH 2019**  
The Chairman presented the minutes of the meeting held on 25<sup>th</sup> March 2019.  
Councillor Evans noted the following corrections:  
Minute 984/18/19 – Save Kendal's Trees Campaign  
Wording to be amended to read “.....letters in support of **the flood defences** scheme”.  
Minute 1000/18/19 – Carbon Neutrality  
Second paragraph to read “**Councillor Evans was keen to ensure the involvement of young people in the Citizens Jury.** Councillor Rowley commented that.....”.
- RESOLVED** That the minutes of the meeting of the Committee held on 25<sup>th</sup> March 2019 be accepted as a correct record, subject to the amendments highlighted.
- MATTERS ARISING (Not on Agenda)**
- 1116/18/19 Minute 1000/18/19 – New Railings**  
Stacy Hurley had contacted CCC Highways to seek permission for the new railings. She advised that one part is definitely a public right

of way and a permit will be required. She is waiting for further details from CCC in this respect. The other part is owned by South Lakes Housing. SLH is seeking their permission. Members agreed that they were happy for Stacy Hurley to proceed once approvals had been received.

**1117/18/19**Minute 982/18/19 – Mental Health Mile

Stacy Hurley advised that an official request for funding had been received from Jogging Pals and the invoice had been paid.

**1118/18/19**Minute 988/18/19 – Unity Sculpture

Stacy had spoken to the Ward Councillor, Graham Vincent, regarding the Committee's wish to leave the unity sculpture as it is. He was in agreement with the decision as were SLDC Green Spaces team.

**1119/18/19**Minute 989/18/19 – Tree Tub Enhancements

Stacy Hurley had met with Steve Wilson at Kendal College. The idea of using wood from pallets will not work due to the length of the strips of wood. An alternative option is currently being costed. A possible time delay had been mentioned and it was agreed that the College would proceed with the prototype and look at timescale again once this is in place. It may be that an external contractor will need to be engaged if the College are unable to meet timescales.

**1120/18/19**Minute 1000/18/19 – Cyclists at Gooseholme

Councillor Rowley asked how best to progress this matter. Councillor Archibald suggested he contact Anthea Lowe, Solicitor to SLDC, for clarification.

**1121/18/19**Minute 992/18/19 – Kendal Cycle Route Map

Councillor Rowley had previously been tasked with contacting all Councillors to request volunteers to form an active travel sub-group. The Chair advised that Karen Gee from Kendal Cycling Club was keen to be an active volunteer.

**1122/18/19**Minute 995/18/19 – New Bus Shelter at Valley Drive

Stacy Hurley had checked with the Town Clerk on whether the proposal meets with KTC policy. The policy refers to main access routes into the town centre that are well travelled and stipulates "not estates". She had therefore contacted Barbara Studholme and Councillor C Hogg to advise that Committee were unable to fund maintenance of the bus shelter as the criteria was not met.

Councillor Archibald questioned the action taken and a general discussion ensued. Costs were also raised and it was noted that £800 was held in a memorial account in the name of a former KTC Councillor who had lived in the area which would be used towards the installation of a new bus shelter. Some members considered this money should be utilised and the proposal would be a suitable project. Stacy Hurley noted that CCC approval had not been obtained, but commented that this situation may since have changed.

The Chair concluded that Committee were more receptive to the proposal if the installation costs were being raised by the third party group and requested Stacy Hurley obtain more detailed information

on costs. Councillor Hennessy said several residents had mentioned they would welcome a new bus shelter on Valley Drive.

**RESOLVED**

That Stacy Hurley obtain more detailed information on costs and provide feedback.

**1123/18/19****NO SMOKING SIGN IN BUS SHELTERS**

Committee considered a request received from a resident for a no-smoking sign in Blackhall Road bus shelter as smoke lingers under the cover. The Project Manager advised that 10 signs could be purchased for £10.89 and the Townscape Manager would attach to all part-covered shelters when he was next maintaining. Councillor Owen proposed that the signs be purchased and attached. This was seconded by Councillor Hennessy and carried unanimously.

**RESOLVED**

That no-smoking signs be purchased and attached by the Townscape Manager to all part-covered bus shelters.

**1124/18/19****GREENWALL ENVIRONMENTAL IMPACT RESEARCH FROM CLLR ROWLEY**

Councillor Rowley presented a report outlining literature and research around Green Wall impacts on pollution. The purpose of the report was to try and ensure the stated aim of reducing air pollution in Lowther Street was realistic from a costs and benefits point of view before the project proceeds to the installation stage.

An assessment from Nick Hewitt, Distinguished Professor of Atmospheric Chemistry, Lancaster University was referred to. This noted that of all the green infrastructure options available to mitigate urban air pollution, green walls are potentially one of the most effective – in the right situation and if large enough. The report carried on to suggest that the size of the Green Wall proposed for Lowther Street would have no discernible effect on air quality in a “normal” street. It also advised that green infrastructure should only ever be a third best option, with reducing emissions always being the best and most effective option.

The report concluded that, in the case of Lowther Street, the proposal would not provide sufficient benefit compared to costs. The proposed wall is not large enough or positioned low enough to provide significant benefit. The problem at Lowther Street is part of a much wider problem for Kendal, including too much traffic, poor walking and cycling infrastructure and pollution.

Councillor Rowley suggested that the project be temporarily shelved as data on particulates is expanded, riverside and other changes in Kendal are completed and a review of traffic in Kendal is published, alongside other proposals currently in development. He commented that the project has provided a valuable learning experience and the evidence gathered should be used in future decisions.

A general discussion then ensued. Councillor Archibald commented that it would be useful to append the report to the minutes of the

meeting. Councillor Rowley will seek permission from Nick Hewitt to publish his assessment.

Councillor Hennessy had concerns regarding the change of tack. Members agreed that this has been a learning process. More than one choice of location has been considered (originally a much larger green wall at Longpool was proposed, but permission could not be obtained). Committee then endeavoured to focus in on the only part of town which is known to exceed Government guidelines. New science has also come to the fore since the start of the project (for example the importance of PM2.5 as well as nitrogen dioxide).

The Chair proposed a pause in the project in light of information learned. This was seconded by Councillor Rowley and carried unanimously. It was noted that the Planning Approval is valid for a period of two years.

Councillor Rowley commented that as the Environment Agency work progresses, KTC should look for an opportunity to implement a similar type of project. Stacy Hurley was requested to clarify if the LIP funding agreed for the Greenwall could be considered for alternative projects providing a better outputs for the same cause.

#### **RESOLVED**

1. That Councillor Rowley seek permission from Nick Hewitt to publish his assessment with the minutes.
2. Stacy Hurley to clarify Greenwall funding availability.

#### **RECOMMENDATION**

That the Green Wall project be temporarily shelved in light of information learned.

**1125/18/19**

#### **ASSET PLOTTING UPDATE**

Stacy Hurley provided an update and showed an example of asset plotting. Simon Unsworth is in the process of plotting KTC assets on a map. The initial plan is for KTC to have all assets plotted in one place. Privacy issues are currently being investigated, along with the possibility of sharing read-only access with Councillors and outside parties.

Committee wished to note thanks to Simon Unsworth, acknowledging that it is a large task.

**1126/18/19**

#### **GREEN SPACES – NOBLES REST**

At the last meeting progress in respect of a new entrance at Nobles Rest had been raised. Stacy Hurley advised that she had spoken to the Civic Society who are raising money for the project. They are currently working with structural engineers on proposed plans. A meeting is scheduled for 14<sup>th</sup> May and it is hoped a planning application will be submitted before then. Stacy Hurley will update further at the next Committee meeting.

It was also mentioned that central planting of perennials was due to take place tomorrow and wild flower planting in the autumn. Bog planting was also planned. It had been reported by SLDC that the

path had been mainly clear of rainwater following recent heavy rainfall. There had been previous mention of spiking the area and Stacy Hurley agreed to follow this up.

#### Abbot Hall

The preferred design for the new play area at Abbot Hall has now been chosen. Work will start after the May half term, with completion scheduled early in the summer holidays (weather permitting).

#### Fletcher Park

Currently in consultation with South Cumbria Rivers Trust. Flooding proposal awaited prior to any further work taking place.

#### Beck Community Centre Trim Trail

Project on hold due to ownership issues. SLDC Legal Team are pursuing.

#### Hallgarth

Youth activity equipment will be installed in June. Low noise options are being investigated. Installation of gates is planned for mid to late summer.

#### New Road Common

Councillor Archibald advised that planters will be going in soon.

### **RESOLVED**

Stacy Hurley to provide a further update on Nobles Rest entrance at the next Committee meeting. Also follow up the suggestion of spiking work at Nobles Rest.

### **1127/18/19**

#### **WOOLPACK YARD UPDATE**

Stacy Hurley confirmed she had been in contact with the Architect. Completion was anticipated at the end of June at the earliest. SLDC Planning Officers are supportive of a collaborative sign, but an application for advertising consent will be required. Holland & Barrett have given consent for a sign and the Freehold Landlord has given provisional consent, however the latter will be subject to formal license. Information is awaited on costings for production and design element before contacting businesses.

### **1128/18/19**

#### **KENDAL CASTLE DIRECTIONAL SIGNAGE**

Stacy Hurley advised that a signage audit has been carried out and mapped. A three tiered approach is planned (1) exchanging like for like, (2) filling in gaps and (3) aspirational suggestions. The next phase will be a costing exercise.

Councillor Hennessy commented that it is important to have signage on the Canal Path. There was a general discussion regarding areas of footpaths which are in poor repair. The footpath running up past the Ski Club towards the Castle was noted as being badly deteriorated. Stacy Hurley will clarify who the Ward Councillor is for this area and make contact.

Councillor Archibald asked who would lead on the signage project. It was noted that £5k has been budgeted and Members agreed Stacy Hurley should move the project forward. SLDC are currently not involved other than Stacy consulting with them on her audit findings and inviting feedback. The next step would be to contact Cumbria Highways.

**RESOLVED**

Stacy Hurley to clarify the Ward Councillor for the Kendal Ski Club area and move the signage project forward.

**1129/18/19****CARBON NEUTRALITY UPDATE – CLLR OWEN**

Councillor Owen advised that the subgroup are continuing to meet, with input from experts. A Citizens Jury has been suggested and a presentation by Peter Bryant had been made at the April Full Council meeting. Funding to be sought for the shortfall of approximately £15k towards the cost of a Jury (£5k has been allocated in the KTC budget, with total costs anticipated to be in the region of £20k). The next step is to draft a business case for investment to enable fundraising.

The subgroup will next meet in June. Peter Bryant will be giving advice on who to invite on the Oversight Group. It was agreed that this group needs to be well composed.

A general discussion then took place. Councillor Evans raised the matter of youth involvement on the Jury and mentioned a contact from South Lakeland Youth Council, a young person called Daniel who was a 'Pioneer of Sustainable Hope (POSH)' ambassador. It was agreed that the Chair would meet with Daniel and Jonah Tom who had also made contact via MP Tim Farron. It was noted that Councillor Blackman had previously mentioned the South Lakes Pupil Parliament and Councillor Rowley agreed to follow this up. He is in touch with the head teachers involved in the South Lakes Pupil Parliament and is awaiting a response.

Committee agreed they wished to ensure young people have a loud voice and an opportunity to make this heard. Councillor Archibald commented that a two-way process was necessary.

**RESOLVED**

Councillor Owen to meet with Daniel and Jonah Tom. Councillor Rowley to follow up with the South Lakes Pupil Parliament.

**1130/18/19****ACTIVE TRAVEL**

Stacy Hurley advised she had contacted Laura Chapman at SLDC to obtain a digital copy of a map which had previously been shared by Councillor Archibald. She had not been able to obtain this and it was suggested that she ask Laura Chapman to contact Councillor Archibald direct.

The previous suggestion of a constituted active travel sub-group was discussed. It was agreed this should be a stand-alone group but with links to the Planning Committee subgroup. Councillor Rowley had previously been tasked with contacting all Councillors to request volunteers to form an active travel sub-group. He was awaiting

clarification on the work of the Planning Committee sub-committee looking at Environment Agency work, which is expected to offer opportunities for cycling. It was decided that a separate Environment & Highways subcommittee should be formed as well with a wider brief on active travel. Councillor Rowley and the Chair to meet and set up such a group informally at first. The Chair advised that Karen Gee from Kendal Cycling Club was keen to be an active volunteer.

**RESOLVED**

1. Stacy Hurley to ask Laura Chapman at SLDC to contact Councillor Archibald regarding the digital map.
2. Councillor Rowley and the Chair to meet and set up an active travel sub-group informally at first.

**1131/18/19****ITEMS FOR THE NEWSLETTER**

It was noted that there was plenty of material. Stacy Hurley, Simon Unsworth and Councillor Hennessy to meet to review content.

**RESOLVED**

Stacy Hurley, Simon Unsworth and Councillor Hennessy to meet to review content.

**1132/18/19****REVIEW OF SPEND AGAINST BUDGET 2019/20**

The Project Manager presented the Budgetary Control Statement to the end of March 2019. The following was highlighted:

Signage Improvements

There is £450 left over from a completed project which can be reallocated. It was suggested that this could be allocated to the castle signage project. Councillor Archibald queried the budget and recalled KTC previously voting money over a three year period. Stacy Hurley agreed to seek clarification with the Town Clerk.

Environment Reserve

There is £1,638 left over which is available for use on green spaces (possibly the previously mentioned path by the Ski Club which is in need of repair). It was agreed that the Project Manager would obtain contractor costings for the next meeting.

Somervell Garden Maintenance

Councillor Rowley questioned what Somervell Garden Maintenance referred to on the budget. It was mentioned that a nominal amount has previously been given for an historical garden. Project Manager to obtain clearer information of what this is.

**RESOLVED**

1. Project Manager to seek clarification on budget for the Signage Improvements budget.
2. Project Manager to obtain contractor costings for repair works to the path by the Ski Club.
3. Project Manager to obtain information regarding Somervell Garden

**1133/18/19****ANY OTHER BUSINESS**Kendal Leaflet Series

The Project Manager advised that there was sufficient stock until the end of the year and suggested this be revisited in September. She reported the possibility of combining the Welcome and Cultural leaflets and will present further information at the next meeting.

Councillor Archibald mentioned the Kendal Courtesy Toilet Scheme leaflet and commented that it was important people have access to this. The Project Manager will speak to Paula at Kendal Futures in this respect.

Biodiversity

Councillor Archibald raised the issue of biodiversity and asked Members to consider how Committee could raise the matter to a higher level of importance.

The Chair suggested ring-fencing monies for the use of ecologists when considering planning applications for large housing developments. Difficulties in respect of timescales were discussed and it was observed that ecology reports have to be provided by applicants for large schemes.

Councillor Hennessy said there is lots that can be done to influence householders and suggested using the KTC newsletter.

There was a suggestion that KTC consider involving CALC. Councillor Rowley commented that CALC have a statutory responsibility to look at biodiversity. Committee discussed forming a small group to consider the issue further, draw up an action plan and request thoughts for consideration. It was agreed that Biodiversity be added to the agenda of the next meeting for further consideration. Cllr Owen will contact everyone to encourage suggestions be brought to the next meeting.

Flood Defences

Councillor Edwards observed that people are asking when the flood defences work will be commencing. It was noted that this is in the hands of the Secretary of State.

**RESOLVED**

1. Project Manager to present an idea of combining certain leaflets from the Kendal Leaflet Series at the next meeting.
2. Project Manager to speak to Paula at Kendal Futures in respect of the Kendal Courtesy Toilet Scheme leaflets.
3. Biodiversity to be added to the agenda for the next meeting. Councillor Owen to request suggestions for consideration.

**1134/18/19****DATE OF NEXT MEETINGS – MONDAY 8<sup>TH</sup> JULY 2019 AT 7PM**

The meeting closed at 9.03pm.

**Summary of Information, Resolutions and Recommendations to Council**

<b>Min</b>	<b>Subject</b>	<b>Information/Resolution/Recommendation to Council</b>	
<b>1122</b>	New Bus Shelter at Valley Drive	<b>RES</b>	That Stacy Hurley obtain more detailed information on costs and provide feedback.
<b>1123</b>	No Smoking Sign in Bus Shelters	<b>RES</b>	That no-smoking signs be purchased and attached by the Townscape Manager to all part-covered bus shelters.
<b>1124</b>	Greenwall Environmental Impact Research	<b>RES</b>	<ol style="list-style-type: none"> <li>1. That Councillor Rowley seek permission from Nick Hewitt to publish his assessment with the minutes.</li> <li>2. Stacy Hurley to clarify Greenwall funding availability.</li> </ol>
		<b>REC</b>	That the Green Wall project be temporarily shelved in light of information learned.
<b>1126</b>	Nobles Res	<b>RES</b>	Stacy Hurley to provide a further update on Nobles Rest entrance at the next Committee meeting. Also follow up the suggestion of spiking work at Nobles Rest.
<b>1128</b>	Kendal Castle Directional Signage	<b>RES</b>	Stacy Hurley to clarify the Ward Councillor for the Kendal Ski Club area and move the signage project forward.
<b>1129</b>	Carbon Neutrality Update	<b>RES</b>	Councillor Owen to meet with Daniel and Jonah Tom. Councillor Rowley to follow up with the South Lakes Pupil Parliament.
<b>1130</b>	Active Travel	<b>RES</b>	<ol style="list-style-type: none"> <li>1. Stacy Hurley to ask Laura Chapman at SLDC to contact Councillor Archibald regarding the digital map.</li> <li>2. Councillor Rowley and the Chair to meet and set up an active travel sub-group informally at first.</li> </ol>
<b>1131</b>	Items for the Newsletter	<b>RES</b>	Stacy Hurley, Simon Unsworth and Councillor Hennessy to meet to review content.
<b>1132</b>	Review of Spend Against Budget 2019/20	<b>RES</b>	<ol style="list-style-type: none"> <li>1. Project Manager to seek clarification on budget for the Signage Improvements budget.</li> <li>2. Project Manager to obtain contractor costings for repair works to the path by the Ski Club.</li> <li>3. Project Manager to obtain information regarding Somervell Garden</li> </ol>

<b>1133</b>	AOB	<b>RES</b>	<ol style="list-style-type: none"><li>1. Project Manager to present an idea of combining certain leaflets from the Kendal Leaflet Series at the next meeting.</li><li>2. Project Manager to speak to Paula at Kendal Futures in respect of the Kendal Courtesy Toilet Scheme leaflets.</li><li>3. Biodiversity to be added to the agenda for the next meeting. Councillor Owen to request suggestions for consideration.</li></ol>
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# **An Evidence base for the proposed Green Wall in Lowther Street**

## **Introduction**

This short report is intended to outline the literature and research that I have accessed online around Green Wall impacts on pollution. It seems important, before proceeding, to ensure that the stated aim of reducing air pollution in Lowther Street is realistic from a costs and benefits point of view.

There has been considerable research on green walls, much from London but elsewhere also. The majority seems to be on Green Walls which act as a physical barrier, for example between a playground and a major road. Studies give data on both PM<sub>2.5</sub> (Ultrafine particles) and NO<sub>2</sub> (Nitrogen dioxide, formed chemically when NO meets oxygen)

**Local Advice** (from Nick Hewitt, Distinguished professor of Atmospheric Chemistry Lancaster University)

Nick sent me the following assessment.:

“Of all the green infrastructure options available to mitigate urban air pollution, green walls are potentially one of the most effective – in the right situation, and if large enough. The right situation means a narrow street canyon, and large enough means covering a very substantial proportion of both sides of the canyon with vegetation. Green walls cannot make air quality worse, which street trees can do. However, I think it is safe to say that a 3 x 6 m green wall will have no discernible effect on air quality (i.e. ground level concentrations) in a “normal” street.

A very important point concerning green infrastructure for air quality (GI4AQ) is that it can only ever be a third best option. Reducing emissions is always the best and most effective option. Increasing the distance between sources and receptors will always be second best, leaving GI4AQ as the third best. That is not to say GI4AQ cannot play a role, and modelling studies do indicate that green walls covering a very substantial fraction of both sides of a street canyon can be effective.

Please see attached a paper I have very recently published on this topic – also available here <https://link.springer.com/content/pdf/10.1007%2Fs13280-019-01164-3.pdf>.

### **No2 or PM2.5? (See graph attached)**

The decision for a green wall came from statistics on NO2 levels in Lowther Street. The problem is that levels of NO2 are only part of the problem. Small particles (PM2.5) is an equally worrying issue.

It seems that the relationship between NO2 and PM2.5 is not linear, depending on position, weather and season. The graph demonstrates that sometimes NO2 is high and PM2.5 is low, and vice versa. PM2.5 is often particularly high in situations where cars accelerate uphill and badly maintained diesels clear out fine particulate matter. It is this relationship which I think we need to clarify as in Lowther Street traffic is going downhill so we might anticipate that particulate matter will be less than NO2. Currently SLDC monitors NO2 regularly, but not PM2.5 for which they only have one analyser.

I would argue on subjective evidence that PM2.5 is a problem in several other parts of Kendal but is ignored because it is not widely monitored, meaning that Lowther Street (in which few of any people live) is being given a false priority over high levels of PM2.5 outside certain houses and well walked areas of Kendal.

### **Conclusions**

Whilst it is clear that Green Walls are potentially a good way of reducing air pollution, and in addition they look great, it appears that the use of them specifically to reduce air pollution needs to be carefully considered in terms of size, height and location as well as alongside other measures.

In the case of Lowther Street I would say that this proposal does not provide sufficient benefit compared to costs. Even on aesthetic grounds the area is not large enough or visible enough to provide significant benefit.

The project has provided a valuable learning experience and the evidence gathered should be used in future decisions. eg. There may be possibilities of low level barriers such as ivy planted along roadside railings.

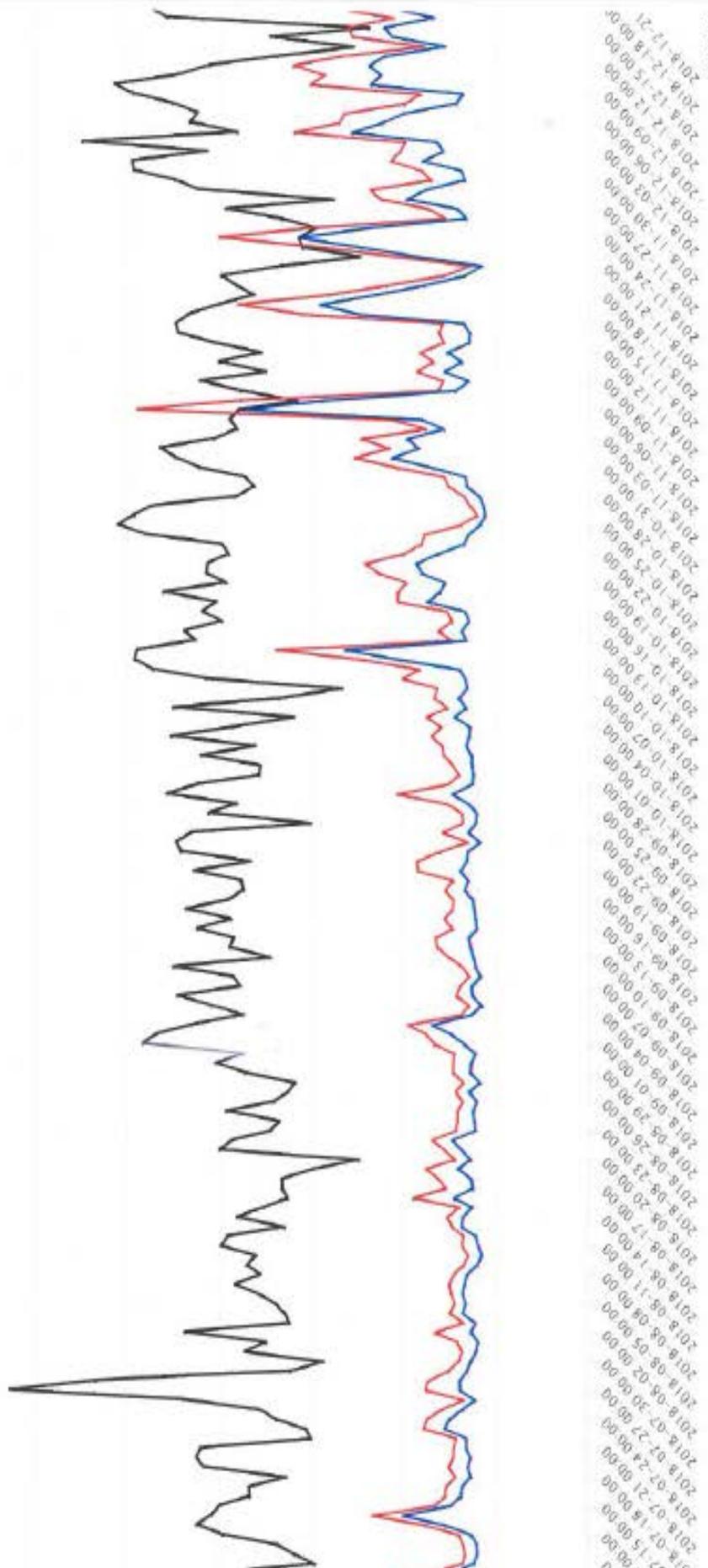
### **Longer term solutions for Lowther Street**

The problem of Lowther Street is part of a much wider problem for Kendal which comes down to some key issues.

1. Too much traffic which is often travelling relatively short distances
2. A poor walking and cycling infrastructure which means relatively few people walk or cycle into the Town
3. Pollution resulting from poor engine maintenance or old vehicles

I would suggest that this proposal be temporarily shelved and re-considered as data on particulates is expanded, riverside and other changes in Kendal (related to trees and flooding particularly) are completed, and a review of traffic in Kendal is published alongside other proposals currently in development.

Particulate Matter (PM 10) - Scaled → (1.2.5.8) Particulate Matter (PM 2.5) - Scaled



## REFERENCES

### **i. THE IMPACT OF LIVING WALLS IN THE REDUCTION OF ATMOSPHERIC PARTICULATE MATTER POLLUTION**

Udeshika Indumali Weerakkody Appuhamillage Staffordshire University A thesis submitted in partial fulfilment of the requirement of Staffordshire University for the degree of Doctor of Philosophy 2018

### **ii. Air pollution: outdoor air quality and health**

Internal Guideline Development Team: Hugo Crombie, Diana O'Rourke, Stephen Robinson Oct 2016

### **iii. Delivering Vertical Greening** 12 Oct 2012 Transport for London

### **iv. PM2.5 An Important cause of Chronic obstructive pulmonary disease** Chi Pang Wen Wayne Gao The Lancet March 2018

### **v. Air in the age of the city Rob MacKenzie NERC**

AIR QUALITY EXPERT GROUP

Impacts of Vegetation on Urban Air Pollution 2018 Department for Environment, Food and Rural Affairs; Scottish Government; Welsh Government; and Department of the Environment in Northern Ireland (*Mostly on Trees*)

### **vi Air pollution in UK: the public health problem that won't go**

**away** *BMJ* 2015; 350 doi: <https://doi.org/10.1136/bmj.h2757> (Published 22 May 2015) *BMJ* 2015;350:h2757 <https://www.bmj.com/content/350/bmj.h2757/rr-1>

### **vii Correlation of Air Quality Data to Ultrafine Particles (UFP) Concentration and Size Distribution in Ambient Air**

Felicitas Kwasny \*, Pierre Madl and Werner Hofmann 2010

### **viii. Demystifying Air Pollution in London full report London Councils 2018**

The impact of a green screen on concentrations of nitrogen dioxide at Bowes Primary School, Enfield Prepared for the London Borough of Enfield Jan 2018 Ania Tremper Envi. Research Group Kings College London

### **ix. Impact of green screens on concentrations of particulate matter and oxides of nitrogen in near road environments**

Prepared for the Royal Borough of Kensington and Chelsea Feb 2015 Ania Tremper Kings College London