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City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Agenda for a meeting of the Regeneration and Environment Overview and Scrutiny Committee to be held on Tuesday, 28 November 2023 at 5.00 pm in Committee Room 1 - City Hall, Bradford

Members of the Committee – Councillors

LABOUR	CONSERVATIVE	GREEN	LIBERAL DEMOCRAT
K Hussain Rowe Wheatley Kauser Mitchell Steele	Herd	Watson	R Ahmed

Alternates:

LABOUR	CONSERVATIVE	GREEN	LIBERAL DEMOCRAT
Mohammed Choudhry Dodds S Khan	Davies	Warnes	Griffiths

Notes:

- This agenda can be made available in Braille, large print or tape format on request by contacting the Agenda contact shown below.
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- If any further information is required about any item on this agenda, please contact the officer named at the foot of that agenda item.

From: **To:**

Asif Ibrahim
Director of Legal and Governance
Agenda Contact: Su Booth/Louis Kingdom

Phone: 07814 073884/07890 416570
E-mail: susan.booth2@bradford.gov.uk/louis.kingdom@bradford.gov.uk

A. PROCEDURAL ITEMS

1. ALTERNATE MEMBERS (Standing Order 34)

The Director of Legal and Governance will report the names of alternate Members who are attending the meeting in place of appointed Members.

2. DISCLOSURES OF INTEREST

Members Code of Conduct – Part 4A of the Constitution)

To receive disclosures of interests from members and co-opted members on matters to be considered at the meeting. The disclosure must include the nature of the interest.

An interest must also be disclosed in the meeting when it becomes apparent to the member during the meeting.

Notes:

(1) Members must consider their interests, and act according to the following:

Type of Interest	***You must:***
Disclosable Pecuniary Interests	*Disclose the interest; not participate in the discussion or vote; and leave the meeting <u>unless</u> you have a dispensation.*
Other Registrable Interests (Directly Related) ***OR*** *Non-Registrable Interests (Directly Related)*	*Disclose the interest; speak on the item <u>only i</u> the public are also allowed to speak bu otherwise not participate in the discussion o vote; and leave the meeting <u>unless</u> you have a dispensation.*
Other Registrable Interests (Affects) ***OR*** *Non-Registrable Interests (Affects)*	*Disclose the interest; remain in the meeting, participate and vote <u>unless</u> the matter affects the financial interest or well-being* *(a) to a greater extent than it affects the financial interests of a majority o inhabitants of the affected ward, and* *(b) a reasonable member of the public knowing all the facts would believe that i would affect your view of the wider public*

interest; in which case speak on the item only if the public are also allowed to speak but otherwise not do not participate in the discussion or vote; and leave the meeting unless you have a dispensation.

(2) Disclosable pecuniary interests relate to the Member concerned or their spouse/partner.

(3) Members in arrears of Council Tax by more than two months must not vote in decisions on, or which might affect, budget calculations, and must disclose at the meeting that this restriction applies to them. A failure to comply with these requirements is a criminal offence under section 106 of the Local Government Finance Act 1992.

(4) Officers must disclose interests in accordance with Council Standing Order 44.

3. MINUTES

Recommended –

That the minutes of the meeting held on 03 October 2023 be signed as a correct record (previously circulated).

(Su Booth / Louis Kingdom – 07814 073884 / 07890 416570)

4. REFERRALS TO THE OVERVIEW AND SCRUTINY COMMITTEE

Members are requested to consider how they wish to deal with referrals.

Any additional referrals that have been made to this Committee up to and including the date of publication of this agenda will be reported at the meeting.

The following referral has been made:

At the meeting of full Council on 17 October 2023 the following motion was considered and referred to the Regeneration and Environment Overview and Scrutiny Committee:

Street Lighting

That with the addition of the following words the motion be amended to read as follows:

Council notes that:

- The Smart Street Lighting Project is already saving energy and reducing costs. The programme represents a £45m investment

in street lighting infrastructure across the district and will see over 56,000 bulbs and over 15,000 lighting columns replaced. This will reduce energy consumption by two thirds and reduce carbon emissions by thousands of tonnes.

- Like many councils, Bradford Council employs a widely used approach of dimming some of their streetlights for some time during the hours of darkness. This approach is refined based on footfall and traffic usage.
- Light pollution during the hours of darkness is harmful to wildlife in every ecosystem and is a key contributor to the unprecedented global decline in insect numbers which scientists are referring to as the "insect apocalypse". The selection of lighting used for the project was carefully considered for any potential impact on the local environment in consultation with the Council's Biodiversity Officer.
- Some streetlights need to be on overnight for safety reasons.

Council resolves:

- To complete the Smart Street Lighting Project, maximising financial and carbon savings, as quickly as possible
- **Take a report to the Regeneration & Environment Scrutiny Committee outlining progress on the programme and the Council's approach to overnight dimming, allowing members to feedback comments for officers to consider.**

5. INSPECTION OF REPORTS AND BACKGROUND PAPERS

(Access to Information Procedure Rules – Part 3B of the Constitution)

Reports and background papers for agenda items may be inspected by contacting the person shown after each agenda item. Certain reports and background papers may be restricted.

Any request to remove the restriction on a report or background paper should be made to the relevant Strategic Director or Assistant Director whose name is shown on the front page of the report.

If that request is refused, there is a right of appeal to this meeting.

Please contact the officer shown below in advance of the meeting if you wish to appeal.

(Su Booth / Louis Kingdom – 07814 073884 / 07890 416570)

B. OVERVIEW AND SCRUTINY ACTIVITIES

6. BRADFORD BECK PILOT STUDY 1 - 28

The Strategic Director, Place will submit a report **(Document "Q")** which outlines the work undertaken within the catchment since the previous report in October 2022. The Bradford Beck Pilot Study was

first discussed by Members in April 2013 and has been before the Overview and Scrutiny Committee on an annual basis since then.

Recommended –

(1) That the Friends of Bradford's Becks and the Strategic Director, Place be requested to work jointly on studies and proposals.

(2) That the Friends of Bradford's Becks be invited to report back in a year's time.

(3) That this report be noted and that the ongoing collaboration between officers and the Friends of Bradford's Becks be supported.

(4) That Members express Bradford Council's support and appreciation to Friends of Bradford's Becks for the work to tackle pollution, promote community engagement and restore and improve the beck and its catchment.

(Edward Norfolk – 01274 433905)

7. WATER MANAGEMENT AND RESILIENCE IN THE BRADFORD DISTRICT 29 - 52

The Strategic Director, Place will submit a report **(Document "R")** which provides an update regarding the Council's progress of all Water Management and Resilience initiatives within the district. The report has been brought to the committee on an annual basis to highlight progress made against each recommendation of the Water Management Scrutiny Review.

Recommended –

(1) That the Committee consider the contents of this report and provide views and comments.

(2) That the Committee determine when to receive the next report which provides an update on the Councils progress of all Water Management and Resilience initiatives within the district.

(Edward Norfolk – 01274 433905)

8. BRADFORD CLEAN AIR ZONE (CAZ) UPDATE REPORT 53 - 74

The Strategic Director, Place will submit a report **(Document "S")** which provides an update on the operation and monitoring of the CAZ since introduction on the 26th September 2022.

Recommended –

That the Committee notes and provides comments on the report.

(Andrew Whittles – 07581 007609)

9. SMART STREET LIGHTING 75 - 90

The Strategic Director, Place will submit a report **(Document "T")** which advises members of the forthcoming tender for the Out-of-Scope Column Replacement Contract with a value in excess of £2 million in line with the requirements of Contracts Standing Orders (CSO 7.2.1) prior to the commencement of the procurement process.

In response to a motion submitted to the Council meeting on the 17th October 2023, the report will also provide information regarding the progress of the Smart Street Lighting project and the utilisation of the CMS for variable lighting levels.

Recommended –

(1) That the Committee notes it is the intention of the Strategic Director, Place to award a new contract for 'Out-of-Scope Column Replacement' as part of the Smart Street Lighting Project to an external contractor to commence on 19th February 2024.

(2) That the Committee notes the work that has already been completed and the benefits of the project.

(3) That the Committee notes the dimming profiles implemented within the CMS that meet the recommended lighting levels appropriate for the road type as prescribed by the British and European Standards for Road Lighting are the most energy efficient whilst still providing a safe environment for vehicular and pedestrian road users.

(Allun Preece – 01274 434019)

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City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Report of the Strategic Director of Place to the meeting of Regeneration and Environment Overview and Scrutiny Committee to be held on 28th November 2023.

Q

Subject:

Bradford Beck Pilot Study

Summary statement:

The Bradford Beck Pilot Study was first discussed by members in April 2013 and has been before the Environment & Waste Management Overview and Scrutiny Committee on an annual basis since then. It was resolved on 18th October 2022 that the ongoing collaboration between officers and Friends of Bradford Beck be supported; also that the Friends of Bradford Beck be congratulated for the work they have undertaken throughout the years. This report outlines the work undertaken within the catchment since the previous report in October 2022.

Strategic Director:

David Shepherd
Strategic Director of Place

Portfolio:

Regeneration, Planning & Transport

Report Contact:

Edward Norfolk
Principal Drainage Engineer
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E-mail: edward.norfolk@bradford.gov.uk

Overview & Scrutiny Area:

Regeneration and Environment.

EQUALITY & DIVERSITY:

The public sector equality duty in s149 of the Equalities Act applies to the Council in the exercise of its functions. Those functions will include most, if not all, of the proposals and other measures referred to in this report. The duty is to "have due regard to the need to (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited under [the 2010 Act], (b) advance equality of opportunity between persons who share relevant protected characteristics and persons who do not share it.". In summary, this includes the need to remove or minimise disadvantages suffered by persons that are connected to that relevant protected characteristic and taking steps to meet the needs of persons who do not share it and encouraging persons who share a relevant protected characteristic to take account of disabled person's disabilities and makes it clear that compliance with the duties 'may involve treating some persons more favourably than others'. It is evidence that all of the schemes and proposals referred to in this report have the potential to impact on persons who share one of more of the relevant protected characteristics.

1. SUMMARY

The Bradford Beck Pilot Study was first discussed by members in April 2013 and has been before the Environment & Waste Management Overview and Scrutiny Committee on an annual basis since then. It was resolved on 18th October 2022 that the ongoing collaboration between officers and Friends of Bradford Beck be supported; also, that the Friends of Bradford Beck be congratulated for the work they have undertaken throughout the years. This report outlines the work undertaken within the catchment since the previous report in October 2022.

The Committee also resolved that a report considering the issue of main river status for Bradford Beck be presented to the Committee within 12 months. The details of this matter are included within section 3 of this report.

2. BACKGROUND

Since the Committee meeting of October 2022 there has been cooperation on a range of projects between Council officers of various services and Friends of Bradford's Becks (FOBB). This report outlines the work carried out over the last year in collaboration to the catchment plan produced by FOBB that was supported by the Environment and Waste O&S Committee in 2013.

The Friends of Bradford Becks have provided an update to their work streams over the last year and their report is included as Appendix 1.

The Environment Agency has been approached on pollution incidents that have been reported within the Bradford Beck catchment over the last year. This data is included as Appendix 2.

3. REPORT ISSUES

Throughout the course of the year there have been work streams and developments involving FOBB and Council department in relation to Bradford Beck. An update on existing and emerging projects and initiatives are discussed throughout this section.

Sustainable Drainage Systems

Retrofitting sustainable drainage systems into our urban landscapes is now seen as a priority and is the strategy used on redevelopment projects in the Bradford Beck catchment. One scheme currently being constructed is the Top of Town public realm improvements that includes high quality upgrades to the conservation area in the form of highway improvements and sustainable landscaping works at North Parade, Rawson Square, and Northgate. A network of rain gardens is being implemented and these are areas of planting designed to temporarily soak up rainwater to reduce pressure on storm water drains, help tackle climate change and reduce flood risk. The scheme will create a safe, healthy, attractive and community friendly environment with high quality public spaces which supports new and existing businesses. The Council will promote these sustainable drainage solutions in all future city centre regeneration schemes as they provide multiple benefits.

By reducing surface water runoff into local sewerage networks, schemes will help reduce the discharge from Yorkshire Waters Combined Sewer Overflows that connect to the Beck improving the water quality of the natural environment. Preliminary discussions have begun between the Council and Yorkshire Water at identifying areas where the implementation of nature-based drainage solutions will reduce flood risk, improve urban water body quality and reduce combined sewer overflow discharges.

Bradford Beck River Restoration Project

CBMDC, The Environment Agency, The Friends of Bradford Beck and the Wild Trout Trust worked in partnership to deliver a 3 year £90,000 EA funded scheme to re-naturalise the northern length of Bradford Beck. The project included measures to improve fish passage, facilitate public access and deliver habitat creation measures on a length of beck between Briggate B6149 and the River Aire. The project is now complete, and all outputs have been delivered. The scheme has delivered valuable improvements to support the Naturalising Bradford Beck scheme.

Further work is now being planned to remove or bypass the small weir that sits between Briggate and the culvert as this is the last major barrier to fish passage between Poplar Road and the River Aire. The recently approved district heating plant in the city centre (planning reference 23/01541/MAF) committed to a commuted sum of £20,000 for works on Bradford Beck to be paid via the Section 106 legal agreement for works including surveys and the creation of a fish pass at Shipley Field Weir.

Naturalising Bradford Beck

Following many years of work from the Friends of Bradford Becks, the Aire Rivers Trust (ART) and the council funding was secured in 2021 to design and deliver a de-culverting scheme. The funding allowed a number of surveys, appraisals and options to be drawn up for the works to be carried out. It was hoped the scheme would be delivered between autumn 2022 and summer 2023. The key deliverables were to:

- Remove or bury the concrete culvert.
- Create a naturalistic channel and bank profile with minimal artificial structures.
- Enhance wildlife value and fish passage through habitat creation and removal of structures.
- Reduce flood risk from a 1:5 to a 1:50 risk of flooding in any one year with no increase downstream flood risk.
- Create a linear park with improved public access and amenity value

Whilst not a technical output for the funding a key element of the scheme for stakeholders was to create a more natural looking watercourse that could be easily viewed and enjoyed by the general public. The beck would form the centre piece of a new linear park, vastly increasing public interest in the beck and its health. The scheme would align with the aims of the Water Framework Directive.

The total budget of £3.6m was split evenly between the Local Transport Fund and the European Regional Development Funds. The ERDF funding was confirmed in spring 2021 with an end date of June 2023 leaving a tight window for design and delivery. The transport funding programme was more flexible and did not influence the project programme.

A number of options were drawn up in liaison with the FoBB, the EA and ART. These varied from a semi-natural design comprising gently sloping riverbanks and loose stone bed, to more engineered options comprising high retaining walls and a concrete bed. Layout plans are included in the attachments.

This transition from a more naturalistic scheme to a more engineered scheme was driven by a combination of accumulated constraints and Covid related inflation in the construction industry. These combined to increase costs.

The council did try to deliver the scheme however a further increase in costs at the tender stage pushed the budget beyond the available funding. With half of the funding needing to be spent by the end of June 2023 we had no option but to postpone delivery of the scheme until the design could be refined and more funding secured.

Whilst this was very disappointing for all involved the work did allow the council to gather further information of the beck and various constraints. Existing feasibility work was more akin to a visioning document rather than a systematic exploration of technical constraints. In effect the project delivered this feasibility work as part of the survey and design development phase of the works.

The main constraints complicating delivery of the scheme are as follows:

- Depth of the bed- The depth of the bed in relation to the ground surface is around 7-8m. This depth would require a significant volume of materials to be removed to both expose the channel and to create a semi-natural bank profile. Our aim was initially to have a bank slope no steeper than 1:3 to allow for maintenance of the site. The initial design would have required around 17-18,000m3 of material to be removed. The most modest scheme with significant retaining structures would have required around 7,000m3 to be removed. Options for removal of this material included the creation of landform on an adjacent area of the beck valley and removal directly to a tip.
- Land contamination- Much of the beck valley is contaminated to some degree. Whilst there were no land uses on the site that would have caused serious contamination bore hole data looks to show that contaminated material has been brought in from elsewhere and used to fill the site. The degree of contamination is highly variable within the project area. The exact positioning of the channel will have a huge impact on how much of the ground is contaminated and to what degree. The most recent survey suggested that a channel location immediately to the east of the culvert would have required a significant amount of hazardous material to be removed. There may have been more than 50% of the material in this location classed as hazardous.
- Culvert Location Adjacent to Valley Road- one major constraint that came out of the project was the proximity of the concrete culvert to Valley Road at the northern end of the site. This complicated its removal and or modification of the culvert as there was a risk of the road collapsing if the culvert was removed without additional support being provided. Whilst a sheet piling option was considered this would have been expensive and there were issues with it being very close to services.

- As a result, it was considered pragmatic to retain some or all of the culvert and stabilise at least one half with foam concrete to prevent collapse. Initial quotes for this were around £800,000 (£1.6m for both sides).
- Stability of the culvert- The culvert is considered to be in poor condition and in need of replacement or strengthening. As a result the option to demolish and remove the culvert was looking problematic as it might need support to avoid an uncontrolled collapse during demolition. Again this points towards the need to fill some or all of the culvert with some kind of structural concrete.
- Flashy nature of the beck and significant drop in height across the site area- The modelling carried out during the early design phases of the scheme indicated that in high flows a 'riprap' bed would have been washed away. This problem was exacerbated by the significant fall through the culvert. This led the consultants insisting that the bed would need to be constructed with reinforced concrete to withstand flows and avoid the risk of the retaining wall supporting Valley Road being undermined. All stakeholders including council officers were unhappy with this as it failed to deliver on the naturalising aims of the scheme and would have looked unsightly.
- In addition, this became extremely expensive when requirement for fish passage were incorporated into the design. This included the creation of pool and riffle sequences with complex formed concrete structures and embedded boulders.
- Bat protection issues- We were advised that the culvert could be a roost for bats and as such the works would either need to be carried out in the summer or bats were excluded during the autumn rooting if the work needed to be carried out in the winter. Due to funding constraints the latter option was pursued but a flash flood washed away the structures to prevent bat access. As such that option was abandoned and the work programme modified to allow for summer only working on and around the culvert.
- Yorkshire Water Sewer and existing cycleway- To the east of the culvert location a sewer and a well-used cycleway are likely to limit to extent to which the channel can be moved to the east. Relocating both would have logistical and cost implication but these will need to be balanced with the higher contamination levels further west.

Many of these constraints interact with each other to further complicate delivery. Delivery was further hampered by COVID related inflation which vastly increased costs in the construction industry pushing even the most basic scheme over budget.

The Council are still committed to delivering the scheme with the three core outputs of reduced flood risk, ecological enhancement (including fish passage) and improved amenity

value. At present we feel a budget of around £5m is required to deliver a scheme that can deliver on these outputs and funding streams are being investigated.

Pitty Beck Environmental Improvements

CBMDC is working in partnership with JUMP to deliver a range of environmental improvements across the district to promote physical activity in the 5-11 age group. The lottery funded project is one of 12 local delivery pilots currently being implemented across the country. The Pitty Beck scheme has a value of £100k and involved developing a network of paths and supporting infrastructure aimed at encouraging young people to take part in active outdoor recreation. In addition to crushed stone paths and a footbridge a number of seats, a picnic area, signage and habitat creation was implemented. The phase 1 scheme was completed last year with the installation of a new footbridge. We are currently in the early stages of a second phase to install informal play facilities on the site.

The phase two scheme is being currently being agreed. This is likely to include habitat creation works and the installation of street furniture and informal play features. The value is around £30k. We hope to be starting on site in the next 6 months.

Postmans Walk

CBMDC secured £90k from the Towns Fund to deliver a range of environmental improvements at an open space overlooking North Beck in Keighley. The works involved refurbishing a dilapidated seating area to discourage anti-social behaviour and encourage more people to visit the space. Works included improving visibility through woodland management, repaving paths, replacing dilapidated furniture, installing new safety railings and removing fly-tipped debris. The Aire Rivers Trust delivered a complimentary project to develop native habitat on recently cleared areas. It is hoped the works will lead to the space being used for active recreation by the local community.

This is complete and currently in a 12-month defects period. The scheme has been well received.

Land Drainage Investigations

Bradford Councils Land Drainage Team regularly investigate reports of blocked or collapsed watercourses within the Bradford Beck Catchment. Blockages can lead to an increased risk of flooding, risk of environmental pollution incidents and impacts on the amenity quality of an area.

Land drainage law is complex and is covered within the Land Drainage Act 1991. The Council is able to offer advice about problems associated with land drainage, including ditches, streams, rivers and other watercourses. Essentially, a landowner is responsible for the drainage of their land. If a watercourse passes through land, under the Land Drainage Act 1991, the landowner is classified as a ‘Riparian Owner’ and is responsible for maintaining the flow within the watercourse and to ensure an impediment to that flow does

not exist.

The Council only has a responsibility for watercourse when the Council is the landowner. Other than that, the Council do have powers to act in certain circumstances, to mitigate against the effects of flooding generated from land drainage matters.

If a landowner fails to carry out necessary maintenance on a watercourse, the Council can serve notice and carry out works if ditches have become blocked resulting in a flood risk or health hazard. These powers are contained in the Land Drainage Acts 1991 and Sections of the Public Health Act 1936 but are not instantaneous - the process between first notification of a problem and serving a notice can take years, and further stages are required if the landowner defaults on the notice.

Occasionally investigations reveal blockages on land that is unregistered. In these instances, the Council conduct a review to understand the risk posed by any defects and if quick interventions will reduce the risk and avoid on-going issues that can take up large amounts of resource. Land Drainage investigations have led to the removal of abandoned vehicles in Bull Greave Beck, a tributary to Bradford Beck, helping to reduce flood risk, improve amenity and prevent pollution to the watercourse.

LIFE Critical

The Council continues to work on the LIFE Critical European project at Horton Park. LIFE Critical is an EU project that adapts older city neighbourhoods, so they are equipped for the effects of climate change. Westbrook Beck, which flows through the ponds and water features of Horton Park, stopped flowing a few years ago. With support from the University of Bradford, the project objectives are to mitigate the effects of climate change by carrying out work to neighbourhood parks. The thing that makes this different to some other programmes it that the emphasis is on citizen science and recruiting the community to help deliver change with a strong emphasis on improving local drainage, air pollution, loss of ecological diversity and the heat island effect. The innovative approach addresses the problems that these neighbourhoods face with regard to adaptation by exploiting the potential of nearby parks for climate adaptation. Crucial for this approach is the proactive involvement of citizens and co-ownership, because without their support the changes to the parks are difficult to realize. The Council will work with FOBB to find solutions to this issue during the development of the project. Sustainable Drainage Systems (SuDS) will also be installed in the park. These are a more natural way to reduce the likelihood of flooding by transporting surface water elsewhere, slowing the flow of water or using materials to encourage the water to soak into the ground or evaporate.

Sediment Control

Following a series of sediment pollution incidents involving new developments, the Council met with FOBB to discuss if there were any opportunities through the development control and planning process to help prevent future pollution incidents. Although the policy and responsibility for sediment control is complicated, it was agreed that guidance and warnings

could be included in pre planning application advice and as footnotes on planning application decision notices with the intention of raising awareness to developers of these types of pollution incidents. It was also agreed that planning condition requiring the details of temporary site drainage runoff would be used where the is a risk of sediment pollution being generated during the construction period of a development.

Bradford Beck Hydraulic Modelling

Bradford Beck is a heavily culverted, non-main river, watercourse and given the urban nature of the watercourse, it is important to know the current and future flood risk that the Beck poses. Managing flood risk in the catchment is a key tool in reducing pollution incidents but also to manage biodiversity and ecology within a watercourse that is heavily modified from its natural course.

The Council have recently commissioned a specialist consultant to create a new build computer model of Bradford Beck and its tributaries. The completed model will be ready early next year and will provide computer generated flood outlines and depths in the Bradford Beck Catchment. The model will be used as the evidence base for the emerging Level 1 and Level 2 Strategic Flood Risk Assessment updates for this catchment and the Council will also use the new model for evaluating flood risk management options in future capital works schemes. As part of the project the Council will be undertaking a full structural and geometric survey of the culverted sections of Bradford Beck. This will be achieved by using remote laser scanning technology that will provide a full three dimensional computer model of the culvert structure allowing this data to be used for a multitude of projects. This 3D model can be incorporated into the Virtual Bradford 3D city model helping visualise flood risk scenarios and engage with elected members and the public.

Bradford Beck designation

This section of the paper reports on the following issues:

a) the distinction between main rivers and ordinary watercourses, including the procedure for designation; and
b) riparian owner responsibilities to maintain watercourses; and
c) Considerations for designating Bradford Beck as a Main river;

The distinction between main rivers and ordinary watercourses, including the procedure for designation;

At the present time, the Council is the operating authority for ordinary watercourses and the Environment Agency (EA) is the operating authority for main rivers in the district. ordinary watercourses can be designated as main river through a process of “enmainment”. Once designated, the EA will become the operating authority for these new main rivers. Enmainment also places a requirement on adjacent land for up to 8 metres from the centre line of the main river to be kept clear for access. In built up areas, this requirement is introduced on redevelopment.

The Environment Agency has permissive powers to undertake flood defence works (such as capital schemes and maintenance) on main rivers. On ordinary watercourses these powers reside with local authorities or, where they exist, with internal drainage boards.

For either designation the Environment Agency are the statutory authority that has relevant powers to deal with water pollution incidents and Water Framework Directive objectives.

The major rivers in England (and Wales) are designated as main river as well as many more minor watercourses. Some rivers may have a mixture of main river and ordinary watercourse sections. In recent years most amendments to main river maps have been to change the designation of small stretches of rivers, rather than the whole river.

The Environment Agency is responsible for maintaining a map of the main river (the Main River Map) and making any changes to it, and determining whether or not a watercourse, or part of a watercourse, is to be treated as a main river or part of a main river.

Section 193 of the Water Resources Act 1991 requires the Environment Agency to keep maps showing those watercourses which have been designated as "main rivers". Watercourses which do not appear on the map are regarded as "ordinary watercourses".

Section 193 of the Water Resources Act 1991 sets out the procedures for amending the Main River map.

The main river map also shows where the Environment Agency intends to make changes. These are highlighted as ‘additions’ and ‘deletions’.

In England, the Environment Agency decides which watercourses are main rivers. It consults with other risk management authorities and the public before making these decisions. The main river map is then updated to reflect these changes.

Statutory guidance sets out the basis on which the Environment Agency should decide whether or not a river or watercourse is treated as a ‘main river’. The guidance has been issued under section 193E of the Water Resources Act 1991. The guidance is recited below for the information of the committee.

Criteria for determining whether or not a watercourse or part of a watercourse is suitable to become or to remain a main river or a part of a main river

References to a watercourse include both a whole watercourse and parts of a watercourse.

The criteria below are primarily directed at the management of flood risk. Any determination will need to be made in the context of the Environment Agency's other relevant functions (and this may include environmental considerations, where relevant).

1. Principal criteria

Flood consequence

1.1. A watercourse should be a main river if significant numbers of people and/or properties are liable to flood. This also includes areas where there are vulnerable groups and areas where flooding can occur with limited time for warnings.

Managing flooding across the catchment

1.2. A watercourse should be a main river where it could contribute to extensive flooding across a catchment.

1.3. A watercourse should be a main river if it is required to reduce flood risk elsewhere or provide capacity for water flowing from, for example, a reservoir, sewage treatment works or another river.

2. Secondary considerations if changing the status of a watercourse

An efficient network

2.1. When considering changing the status of a watercourse, the Environment Agency should avoid short stretches of watercourses of alternating main river and ordinary watercourse status to provide clarity and to minimise inefficiency through multiple authorities acting on the same watercourse.

Competence, capability and resources

2.2. When considering changing the status of a watercourse, the Environment Agency should consider if those taking on responsibility have sufficient competence, capability and/or resources for flood risk management, including whether their governance enables sufficient competence, capability and/or resources, and local

accountability. In carrying out this assessment, the Environment Agency should seek Defra's views.

Other relevant criteria

2.3. The Environment Agency may have regard to other relevant factors that it considers appropriate when exercising its discretion to determine whether to change the status of a watercourse or part of a watercourse. The Environment Agency should consider relevant benefits or costs for the local community and representations from the local community and others in response to consultation.

While the designation of "main river" and "ordinary watercourses" may lead to differences of approach, there are numerous reasons why such differences may exist; these reasons are set out below for the information of the Committee.

i. All flood and coastal defence legislation is *permissive,* ie there are no obligations to provide defences, either to a given standard or at all. Within this overarching principle, there are *powers* for the Environment Agency to undertake flood defence measures on main rivers while on ordinary watercourses such powers reside with local authorities and internal drainage boards (IDBs). In the light of this, the operating authorities will establish their policy. In the absence of the operating authority assuming responsibility, it is retained by the riparian owner. The requirement under high level targets for operating authorities to produce policy statements will place their approaches to these responsibilities on the public record.

ii. A local authority or IDB may not have actively managed flood risk on an ordinary watercourse. However, there is no guarantee that changing its designation to main river, and bringing it under the Environment Agency, would automatically mean that the Agency afforded it any higher priority. The Agency would need to consider and prioritise its work programme within available resources according to their assessment of flood risk.

iii. There will also be differences in approach between, and possibly within, Environment Agency regions. The involvement of executive flood defence committees in setting priorities and budgets means that work which one committee is willing to undertake, another may not.

Riparian owner responsibilities to maintain the condition of watercourses

Flood and coastal defence legislation is generally *permissive*- there are *powers* for the operating authorities to maintain rivers and flood defences but *no obligations* on them to do so.

Should the operating authority not undertake maintenance then this responsibility falls to the riparian owner, though that party is not normally obliged to do so. Legal requirements to carry out maintenance or repair work may exist by prescription, custom, tenure, covenant or by statute but these are rare.

The Water Resources Act 1991 and Land Drainage Act 1991 do not impose maintenance obligations on riparian owners but they do empower the operating authorities to serve notices on landowners requiring them to ensure a free flow of water through their land, for example by removing obstructions. If a watercourse passes through land, under the Land Drainage Act 1991, the landowner is classified as a 'Riparian Owner' and is responsible for maintaining the flow within the watercourse and to ensure an impediment to that flow does not exist.

If a landowner fails to carry out necessary maintenance on a watercourse, then the Council can use powers under the Land Drainage Act 1991 to serve notice requiring them to undertake the remedial works. Failure to comply with such a notice may result in the Council undertaking the work and recharging the owner the costs of doing so.

There are also provisions under the Land Drainage Act 1991 for landowners to bring a case before the Agricultural Land Tribunal if they consider that their land has been injured by, for example, a neighbour's failure to maintain or cleanse ditches etc.

Considerations for designating Bradford Beck as a Main river;

Bradford Beck is designated an ordinary watercourse and under its function as Lead Local Flood Authority, City of Bradford Metropolitan District Council are the operating authority.

Bradford Beck is an ordinary watercourse that flows through Bradford City Centre and on to the River Aire at Shipley. A catchment plan is included within Appendix C for information of the committee. The upper catchment within Thornton, Allerton and Clayton is mainly pasture land and the smaller streams that lead to Bradford Beck are mainly open, natural watercourses. As the watercourse reaches Bradford city centre it runs underground after being built over in the 19th century. It is culverted as it runs from Bradford city centre to Queen's Road after which it runs mostly in an open, heavily modified unnatural channel to Shipley. The watershed for Bradford Beck catchment is approximately 22 square miles (58 km^2) and has divided the beck into two sections; the upper part is named Clayton Beck then it is named Middlebrook Beck before it passes underneath Cemetery Road in Lidget Green to the west of the City Centre, the name changes to Bradford Beck. From here to the outfall point into the River Aire at Shipley Bradford Beck is approximately 9.11km in length.

The approximate total length of ordinary watercourse in the Bradford District is 760.96 Km, based on the national Detailed River Network mapping. As a percentage of the total Ordinary Watercourses in the district Bradford Beck represents approximately 1.2%.

Should Bradford Beck be designated as Main River this would lead to the transfer of certain powers and responsibilities to the Environment Agency leading to potential differences in Bradford Becks management. There are numerous reasons why such differences may exist; these reasons are set out below for the information of the Committee.

- Under the terms of the Water Resources Act 1991, and the Land Drainage Byelaws 1991, the prior written consent of the Environment Agency is required for any proposed works or structures, in, under, over or within 8 metres of the top of the bank of a main river.

- Permissive powers of enforcement would transfer to the Environment Agency. Should the beck become defective, and require enforcement action, the Environment Agency would need to consider and prioritise its work programme within available resources according to their assessment of flood risk.

- Permissive powers of flood defence powers would transfer to the Environment Agency. The Agency would subsequently have the strategic oversight for the delivery of flood risk management projects on Bradford Beck and would need to consider and prioritise its work programme within available resources according to their assessment of flood risk.

- Emergency works as a result of enforcement action or flood recovery, would be progressed by the Environment Agency. The Agency would need to consider and prioritise its work programme within available resources according to their assessment of flood risk.

- Any flood risk management assets promoted by the Environment Agency on Bradford Beck would benefit from being eligible to claim Flood Defence Grant in Aid funding from DEFRA for the future maintenance of new assets.

4. FINANCIAL & RESOURCE APPRAISAL

The Council do not receive ringfenced funding to deliver statutory land drainage duties on ordinary watercourses. Any enforcement, flood defence or emergency works on ordinary watercourses are considered and prioritised within available resources according to the assessment of flood risk.

5. RISK MANAGEMENT AND GOVERNANCE ISSUES

None

6. LEGAL APPRAISAL

There are no legal implications directly arising from this report.

7. OTHER IMPLICATIONS

7.1 SUSTAINABILITY IMPLICATIONS

None

7.2 TACKLING THE CLIMATE EMERGENCY IMPLICATIONS

None

7.3 COMMUNITY SAFETY IMPLICATIONS

None

7.4 HUMAN RIGHTS ACT

None

7.5 TRADE UNION

None

7.6 WARD IMPLICATIONS

None

7.7 AREA COMMITTEE ACTION PLAN IMPLICATIONS (for reports to Area Committees only)

Not applicable

7.8 IMPLICATIONS FOR CHILDREN AND YOUNG PEOPLE

None

7.9 ISSUES ARISING FROM PRIVACY IMPACT ASSESSMENT

None

8. NOT FOR PUBLICATION DOCUMENTS

None

9. OPTIONS

Members are asked to consider the report and provide views and comments.

10. RECOMMENDATIONS

1. That the Friends of Bradford's Becks and the Strategic Director, Place be requested to work jointly on studies and proposals.

2. That the Friends of Bradford's Becks be invited to report back in a year's time.

3. That this report be noted and that the ongoing collaboration between officers and the Friends of Bradford's Becks be supported.

4. That Members express Bradford Council's support and appreciation to Friends of Bradford's Becks for the work to tackle pollution, promote community engagement and restore and improve the beck and its catchment.

11. APPENDICES

Appendix 1 - Friends of Bradford Becks summary of activities 2023.

Appendix 2 – Environment Agency's reported pollution incidents 2022/ 2023.

Appendix 3 – Bradford Beck Catchment Plan

12. BACKGROUND DOCUMENTS

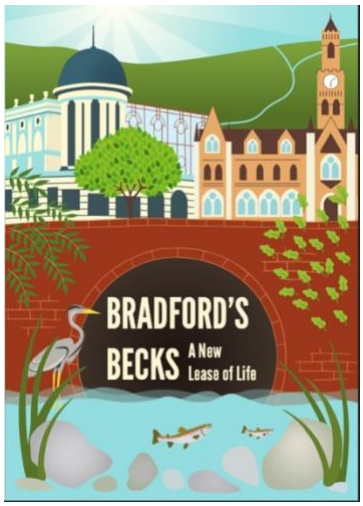
Bradford's Becks – a New Lease of Life
Available online from:
Catchment Management Plan – bradford-beck.org

Friends of Bradford's Becks summary of activities 2022-23

Friends of Bradford's Becks report to Regeneration and Environment O&S Committee, November 2023

Introduction

The Friends of Bradford's Becks (FOBB) is a community group of Bradford based residents and ecologists. We are keen to see the eventual restoration of the Bradford Beck river system as a contribution to the quality of the city. FOBB was formed to achieve the six visions in the catchment management plan[1] which was written after widespread consultation during 2011. The visions are:



- clean (i.e. free of pollution)
- visible
- accessible
- thriving (i.e. good ecologically)
- cared for becks
- in a water wise city

The catchment plan was supported by the Environment and Waste O&S Committee in 2013, and officers were requested to give FOBB assistance with the resulting projects. We have reported back to the Committee in each year since; this is our report for the last 13 months to October 2023.

More about us at www.bradford-beck.org and Facebook @BradfordsBecks

Good news stories from 2022-23

Beck Festival 2023

We put on a Festival near the Beck by Valley Rd (Shipley) in August. Despite clashing with the Women's World Cup final, we had over 300 visitors to discover and celebrate with music and stories, making art and models, and learning about Bradford Beck and FOBB. The feedback was very positive. The Festival is summarised in a 3-minute video on our YouTube channel (search @BradfordsBecks). Thanks to Bradford Culture & Heritage for the grant.

[1] Aire Rivers Trust, 2012. Bradford's Becks: a new lease of life. Available from https://bradfordbeckdotorg.files.wordpress.com/2013/02/bradfordsbecksfinalweboptimised.pdf

Trout in the Town

FOBB has been awarded Silver Chapter status by the Wild Trout Trust's Trout in the Town initiative. This reflects our work with the Environment Agency and Bradford Council to improve the river for migratory fish and other wildlife.
https://www.wildtrout.org/content/trout-town

Bradford Beck film

We commissioned a film describing the state of Bradford Beck and the work of FOBB. It was premiered at the Festival and has now been viewed over 1500 times to entirely positive comments, including from some of your fellow Councillors! Make a cuppa, as its 13 minutes long, and take a look; it's on our YouTube channel. Thanks to Bradford Culture & Heritage for the grant.

Donation to FOBB

As a result of our reporting of their pollution of Pitty Beck (see photo) from 2016-18, Keepmoat Homes and Applebridge Construction signed an Enforcement Undertaking with the Environment Agency to behave better. It included donations totalling £135K to FOBB. Most of the money has been used to create a Water Quality Office post in the Aire Rivers Trust. This will enable us to be more effective in tracing pollution problems.

Japanese Knotweed

FOBB volunteers have been working with Aire Rivers Trust over the past few years to treat Japanese Knotweed along the becks. The worst area is a dense thicket of on Bradford Council owned land around Bull Greave Beck. Here it is spreading to neighbouring land and into the watercourse and so further downstream. I'm pleased to say that, as a result of our reporting, a contract has been issued for treatment to start in the spring.

Awareness raising

We continue to push the Bradford Beck (good and bad!) in the conventional media and on social media.

There have been at least 10 articles about the Becks/Festival/FOBB in the T&A in the period.

We held 4 litter picks, including a new location on Haigh Beck (Thorpe Edge).

We have given 6 talks to local groups and have more arranged up to next summer.

The Bradford Beck film (see above) continues to attract new viewers.

New and on-going issues

Valley Rd deculverting

This is the project to daylight and renaturalise a short reach on the Beck alongside Valley Rd. Last year we reported that there were delays in completing the design. We were very sad to be told that the entire project has been put on hold because costs had exceeded the budget. This was to be a major new chapter in the history of the Beck and a commitment to enhancing 'blue-green' spaces in the city in time for the City of Culture. We are told there is still a desire to proceed but we are not optimistic.

To help out, we have asked friends in the business to review the current designs to see if significant cost reductions are possible.

Pollution continues

Despite our pollution spotting and reporting over the last eleven years, serious pollution still occurs. The photo shows black septic water in the Beck on 17th Oct 2023, graded as a category 2 incident by the Environment Agency. It is similar to the sewage pollution that wiped out the beck in 2018 for which Yorkshire Water was fined £1.6M. We believe that illegal effluent disposal, misconnections and faulty sewer overflows in the extensive culverts in the city are significant. Bradford Beck and its tributaries will not become an asset to the city until more systematic investigations are undertaken.

In 2021 we reported pollution of Eastbrook to you. This pollution is still happening more than 2 years later. It happens because Broadacre House, originally the headquarters of Yorkshire Water, is misconnected directly to Eastbrook instead of the sewer. The main part of Broadacre House was converted into a Premier Inn, and the annex into flats. Premier Inn is keen to correct the drainage but the developer and freeholder of the block of flats (LIV3 West Street LTD, sole Director Kissun Parmar) is not cooperating. This is scandalous and we would appreciate any pressure that can be brought to bear.

We are developing a 3-year strategy to find and report the sources of pollution in the culverted system. It will require a partnership between the Environment Agency, Bradford Council, Yorkshire Water and us. We would appreciate an agreement to work together from the Director of Place and the Drainage Section including, for example, sharing mapping and surveys, assisting with access for monitoring water quality, and follow-up on any sources that fall within the Council's remit for enforcement.

Should Bradford Beck be main river?

Whether the Beck is enmained is a question of the capital and maintenance resources for flood protection available to Bradford Council versus the Environment Agency. Areas on the Beck (Middlebrook estate, around Shipley station) are already being flooded. Many of the culverts are probably beyond their design life and under capacity. For example, the culvert alongside Valley Rd Shipley was condemned some years ago, and some of the very old culverts alongside Thornton Rd are probably at risk of collapse. Matters are only going to get worse as climate change brings more extreme weather; government guidance is to design for at least 23% increase in peak flow in the 2080s compared to the 2000.

The questions we would ask are:

- Does Bradford Beck meet the criteria for enmaining? *We believe it does. Bradford is the **only** sizeable urban area in England where the central waterway is not main river.*
- Why was it not enmained in the early 2000s when the criteria were drawn up and many other waterways were?
- How much budget is allocated to capital repairs and maintenance by Bradford and how does this compare with the Environment Agency's average spend on open and culverted main rivers?
- Has the Environment Agency been consulted about possible enmaining?

Plans for wetlands

Last year we reported that WYCA would make contributions to the Aire Rivers Trust towards work on three wetland projects in the Bradford area – at Chellow Dene, Pitty Beck and on Red Beck/Northcliffe Dyke. These got bogged down in planning and budget issues, but planning permission was granted for the Chellow Dene work in early November.

We have been exploring the possibility of creating a wetland and fish pass at the large weir on Middlebrook. Yorkshire Water have generously assisted with this work and funded a feasibility study. The next step is to engage with the landowner of the Woolcombers Mill in Fairweather Green. Could the Director of Place help?

Damage to plaque trail

The route of the culverted beck in the city centre is marked with a trail of 15 pavement plaques. Plaque 4 in Millergate has been destroyed by persons unknown (a crane foot?). It will cost about £1500 to replace.

Plaque 1 will finally be installed in Thornton Rd by Bradford Live in the spring; it has been held in storage so that it doesn't get damaged during the building works.

More on the trail at https://markingbradfordbeck.org/

Beck Festival 2024

We are planning a festival for 2024. We hope to have an event which is centred on the tributaries and involves community centres and groups across Bradford.

The coming year

We will continue to campaign to make the Beck and its tributaries assets to Bradford and the environment. We will:

- hunt out pollution and work as closely as possible with Yorkshire Water, Bradford Council and the Environment Agency to stop it.
- seek opportunities re-naturalise and improve access to the beck.
- create a festival to celebrate the tributary becks, and plan for an event in 2025.

Support in the coming year

We ask for continued support in our campaign to improve Bradford's Becks for both the city's and the environment's benefit. We appreciate the continued engagement with the Drainage and Landscape teams.

We have one specific request:

> **A formal agreement to work together to develop and enact a strategy to find pollution sources in the culverts.**

Barney Lerner
Chair, Friends of Bradford's Becks
BradfordsBecks@gmail.com

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Ref No.	Date	Location	NGR	Water - incident category	Cause type	Incident cause	Premises	Pollutant type	Pollutant
2102377	27/09/2022	Crossley Hall	SE 13751 33541	Category 3 (Minor)	Unauthorised Activity	Illegal Waste Site	Metal Recycling	Oils and Fuel	Mixed/Waste Oils
2121884	07/01/2023	Longside Lane	SE 15430 32975	Category 3 (Minor)	Containment and Control Failure	Combined Sewer Overflow (CSO)	Combined Sewer Overflow	Sewage Materials	Crude Sewage
2100872	20/09/2022	Middlebrook at Glenbrook Drive	SE 13495 33100	Category 3 (Minor)	Unauthorised Activity	Unauthorised Discharge or Disposal		Inert Materials and Wastes	Construction and Demolition Materials and Wastes
2119563	21/12/2022	Bradford Beck at Westholme Street	SE 15889 32977	Category 3 (Minor)	Cause Not Identified	Not Identified	Construction and Demolition	Inert Materials and Wastes	Construction and Demolition Materials and Wastes
2133271	27/02/2023	Crossley Hall	SE 13493 33095	Category 3 (Minor)	Unauthorised Activity	Unauthorised Discharge or Disposal	Private Dwellings	Contaminated Water	Other Contaminated Water
2102377	27/09/2022	Crossley Hall	SE 13751 33541	Category 3 (Minor)	Unauthorised Activity	Illegal Waste Site	Metal Recycling	Atmospheric Pollutants and Effects	Smoke
2075327	06/07/2022	Law Farm	SE 08193 33829	Category 3 (Minor)	Fires	Other Fire	Arable	Contaminated Water	Firefighting Run-Off
2074506	02/07/2022	Brow Wood, Bolton, Bradford	SE 16134 35375	Category 3 (Minor)	Containment and Control Failure	Wrong Connection		Sewage Materials	Crude Sewage
2062734	19/05/2022	Bradford Beck at Ambler Mill	SE 16424 33885	Category 3 (Minor)	Cause Not Identified	Not Identified		Sewage Materials	Grey Water
2102377	27/09/2022	Crossley Hall	SE 13751 33541	Category 3 (Minor)	Unauthorised Activity	Illegal Waste Site	Metal Recycling	Specific Waste Materials	Vehicles and Vehicle Parts
2087380	09/08/2022	Bradford Berck by Poplar Rd	SE 15330 36283	Category 3 (Minor)	Unauthorised Activity	Vandalism	Combined Sewer Overflow	Sewage Materials	Grey Water
2079206	17/07/2022	Bradford Beck by Poplar Rd	SE 15253 36509	Category 3 (Minor)	Natural Causes	Natural Process		Inert Materials and Wastes	Mineral Materials and Wastes
2092527	21/08/2022	Pinch Beck Thornton	SE 10033 32426	Category 3 (Minor)	Cause Not Identified	Not Identified		Pollutant Not Identified	Not Identified
2115243	25/11/2022	Peel Park	SE 16409 33929	Category 3 (Minor)	Cause Not Identified	Not Identified		Pollutant Not Identified	Not Identified
2074504	02/07/2022	Bradford Beck Briggate Shipley	SE 15106 37638	Category 3 (Minor)	Containment and Control Failure	Wrong Connection		Sewage Materials	Grey Water
2108801	28/10/2022	West Scholes Housing Development	SE 09840 31362	Category 3 (Minor)	Other Cause	Other		Sewage Materials	Grey Water
2130095	14/02/2023	Powell Rd No.2 CSO	SE 15633 35947	Category 3 (Minor)	Unauthorised Activity	Vandalism	Combined Sewer Overflow	Sewage Materials	Crude Sewage
2060385	11/05/2022	Chellow Dean Beck, Stoney Lane	SE 11394 35033	Category 3 (Minor)	Containment and Control Failure	Process Plant Failure (sudden)	Water Treatment Works	Contaminated Water	Other Contaminated Water
2095836	31/08/2022	Chellow Dene Beck nr Chellow Heights	SE 11478 34950	Category 3 (Minor)	Natural Causes	Natural Process	Other Natural Source	Inert Materials and Wastes	Rocks and Gravel

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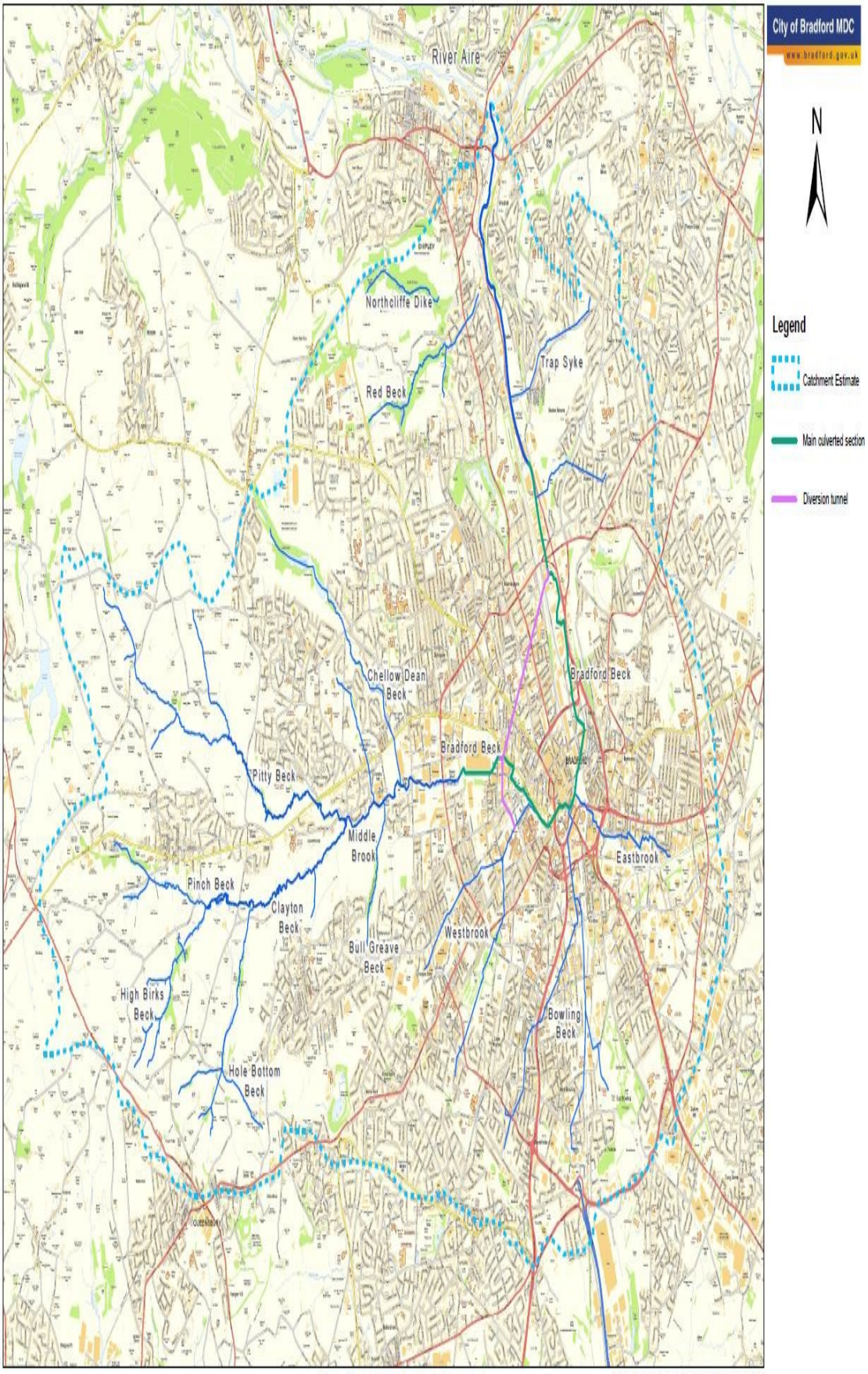
City of Bradford MDC
www.bradford.gov.uk
N
Legend
Catchment Estimate
Main culverted section
Diversion tunnel
River Aire
Northcliffe Dike
Red Beck
Trap Syke
Chellow Dean Beck
Bradford Beck
Bradford Beck
Pitty Beck
Middle Brook
Eastbrook
Pinch Beck
Clayton Beck
Bull Greave Beck
Westbrook
High Birks Beck
Bowling Beck
Hole Bottom Beck
0 500 1,000 2,000 3,000 Meters
Bradford Beck Catchment
Contains Ordnance Survey data © Crown copyright and database right 2010

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City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Report of the Strategic Director of Place to the meeting of Regeneration and Environment Overview and Scrutiny Committee to be held on 28 November 2023

R

Subject:

Water Management and Resilience in the Bradford District

Summary statement:

The Environment and Waste Management Overview Scrutiny Committee undertook a wider scrutiny review into water management across the district following the devastating winter 2015 floods. The Water Management Scrutiny Review was endorsed by the Environment and Waste Management Overview Scrutiny Committee at their meeting on 4th July 2017 where it was recommended to be considered by the Corporate Overview and Scrutiny Committee in their meeting on the 26th October 2017 where it was subsequently endorsed.

Following its adoption, The Water Management Scrutiny Review included twenty-six recommendations and the report has been brought to the committee on an annual basis to highlight progress made against each recommendation. The majority of the recommendations raised in the original Water Management Scrutiny Review Report are now deemed satisfied.

At the October 2022 meeting it was resolved That Bradford Council's Regeneration and Environment Overview and Scrutiny Committee receives a report back before the end of October 2023 which provides an update to the Councils progress of all Water Management and Resilience initiatives within the district.

Strategic Director:

David Shephard
Strategic Director of Place

Portfolio:

Planning, Transportation and Highways

Report Contact:

Edward Norfolk
Principal Engineer Land Drainage
Phone: (01274) 433905

Overview & Scrutiny Area:

Regeneration and Environment

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EQUALITY & DIVERSITY:

The public sector equality duty in s149 of the Equalities Act applies to the Council in the exercise of its functions. Those functions will include most, if not all, of the proposals and other measures referred to in this report. The duty is to “have due regard to the need to (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited under [the 2010 Act], (b) advance equality of opportunity between persons who share relevant protected characteristics and persons who do not share it.”. In summary, this includes the need to remove or minimise disadvantages suffered by persons that are connected to that relevant protected characteristic and taking steps to meet the needs of persons who do not share it and encouraging persons who share a relevant protected characteristic to take account of disabled person’s disabilities and makes it clear that compliance with the duties ‘may involve treating some persons more favourably than others’. It is evidence that all of the schemes and proposals referred to in this report have the potential to impact on persons who share one of more of the relevant protected characteristics.

1. SUMMARY

The Environment and Waste Management Overview Scrutiny Committee undertook a wider scrutiny review into water management across the district following the devastating winter 2015 floods. The Water Management Scrutiny Review was endorsed by the Environment and Waste Management Overview Scrutiny Committee at their meeting on 4th July 2017 where it was recommended to be considered by the Corporate Overview and Scrutiny Committee in their meeting on the 26th October 2017 where it was subsequently endorsed.

Following its adoption, The Water Management Scrutiny Review included twenty-six recommendations and The report has been brought to the committee on an annual basis to highlight progress made against each recommendation. The majority of the recommendations raised in the original Water Management Scrutiny Review Report are now deemed satisfied or are dealt with as day to day activities by a host of council services. In this respect, the original report has achieved it objectives.

Within the October 2022 meeting it was resolved That Bradford Council's Regeneration and Environment Overview and Scrutiny Committee receives a report back before the end of October 2023 which provides an update to the Councils progress of all Water Management and Resilience initiatives within the district.

2. BACKGROUND

The floods of December 2015 inundated over 1,000 homes and businesses across a wide swathe of Bradford District and turned the lives of many hundreds of local people upside down. The cost of the damage to residential and commercial property is estimated to have been around £34 million. The broader social, environmental and economic impacts were even greater in scope as residents struggled to cope with the upheaval to their everyday lives through the months that followed.

Water management in Bradford was again unfortunately put to the test in 2020 by the wettest February on record when Strom Ciara and Strom Dennis caused widespread incidents across the district. Approximately 300mm of rainfall fell in a four-week period. To put this in context the average annual rainfall for Bradford is circa 950mm. This caused a reported 71 residential properties and approximately 60 businesses to succumb to internal flooding. This also caused four schools to flood and be forced to close plus large lengths of the highway network becoming impassable. In total over 900 flooding incidents were reported through the contact centre during the period. This was a stark reminder of the importance of flood risk and water management within the district.

In January and February of 2021, several storms caused widespread disruption and incidents across the district. These events again highlighted where existing processes in the response to flood risk had improved but also where further work was required.

Storm Franklin brought around 90mm of rainfall in a 24 hour period during February 2022. The Rainfall landing on an already saturated catchment causing local drainage infrastructure to stress and at times be overwhelmed. To put this level of rainfall in context, the average monthly amount of rainfall for the whole of February is 75mm, since records began.

The larger main rivers the River Aire, River Worth and River Wharfe peaked at high levels but no reports of property flooding from these river systems were raised. There were a large number incidents recorded from non-main river and surface water flooding, (including a landslip on Westlea Avenue, Riddlesden and surface water flooding in Low Moor and in East Morton). In total the Council received 60 incidents to investigate surface water flooding of properties. Fifteen properties were recorded to succumb to internal flooding.

Articulate road closures were put in place due to surface water flooding of the highway network and many minor roads and rights of ways were also unpassable. Power cuts affecting more than 1000 properties in the district. The Thackley Railway Tunnel (Airedale Line) flooded (water seeping through roof and walls) – which resulted in the Leeds / Bradford / Ilkley / Shipley lines being closed temporarily.

The impact of flash flooding in urban areas has been felt within our communities.

Horton Grange is located to the west of Bradford city centre is an urban inner-city settlement consisting predominately of residential, terraced properties with local businesses present in the area. There also a place of worship and a NHS GP practice within the study area. Flood risk to the study area is generated by high intensity surface water overland flows and this request is following two recent flood events that have overwhelmed the local drainage systems leading to property flooding. These events occurred in October 2022, and more recently in June 2023, where on both occasions around 20 properties reported internal flooding. These two relatively concurrent flood events have escalated a need for a scheme to be progressed urgently.

The flood events over the last 8 years have highlighted that Water Management is still a key challenge and how the Council engages and approaches this challenge over the coming years will be critical to providing a prosperous and sustainable district that allows individuals, households and businesses to adapt, change and innovate to address the tests presented by climate change. High quality water management requires a multitude of organisations and stakeholders to collaborate effectively.

3. REPORT ISSUES

Bradford Council's Capital Flood Risk Management Programme

Since the major floods in 2015 the Council have recognised the need for a long-term strategic approach to managing flood risk across our district. The Council have worked with the Environment Agency and Yorkshire Water to scope and develop a Bradford Flood Programme Board ('the Board'). The Board objectives alongside ongoing scheme development, is a priority to focus on identifying and delivering cost-beneficial solutions for communities at risk of flooding within the district. The Board was established in January 2017 and have progressed and supported the emergence of a capital flood risk programme of works for the district. The work conducted by the Council in recent years has provided the tools and knowledge to develop a healthy and progressive capital flood risk management programme. Not only have projects advanced within areas initially impacted by Storm Eva in 2015, but largely due to the many partnerships and relationships formed in creating the programme, this has provided a springboard towards unearthing a multitude of multi organisation flood risk management schemes in the district.

The Board was established in January 2017 and have progressed and supported the emergence of a capital flood risk programme of works for the District. Presented in Appendix 1 is a copy of the latest Bradford Council Capital Flood Risk Programme. This programme details the capital works schemes to better protect properties from flood risk in the district.

The programme illustrates the spread of projects between the Aire and Wharfe Catchment. The programme shows the forecasted delivery of projects and where currently funding gaps exist based on their eligibility to attract Flood Defence Grant in Aid from the Department for Environment, Flood and Rural Affairs (DEFRA), this being the main source of government funding to fund projects to reduce flood risk. Since last year's meeting two schemes have been delivered with the programme. Emergency repairs to a culvert structure were progressed under the Bradford Live project in the city centre and a scheme to reduce persistent highway and property flooding on Redcar Lane in Keighley were delivered. Tender documentation is currently being prepared to deliver a scheme at Skipton Road in Keighley following the successful application for Flood Defence Grant in Aid funding to the Environment Agency.

It is essential that the schemes in the Councils programme continue to be progressed collaboratively to ensure our high-risk communities are resilient to future climate changes and an increased risk of flooding.

Community Engagement

There is a need for Bradford Council to play a part in helping to develop the ability of communities to look after themselves to a greater degree than they currently do. Bradford Council's Emergency Planning Team have developed local Flood and Emergency plans with Parish and Town Councils within Bradford District. Bradford Council have provided Flood Packs for properties at risk and have secured funding for river stewardship works in collaboration with partners and community groups through the Bradford Flood Programme Board Flood Resilience Group. Different communities are at various stages with their emergency plans. A brief description of the plans in place are below.

Addingham – early engagement, template plan supplied.
Baildon – group established, we are re-engaging with then to ensure plans etc. are in place and appropriate.
Bingley – plan updated and at training stage with them.
Bingley Rural – early engagement
Harden – plan updated, and training delivered.
Haworth, Cross Roads and Stanbury – plan in progress, proposed flood barrier for Haworth.
Menston – template plan with them for development.
Keighley East – Initial engagement, template plan left with them.
Keighley Central - Initial engagement, template plan left with them.
Oxenhope – Plan in place, active group, with small number of resources.
Shipley – Initial engagement, template plan left with them.
Silsden – Plan in place, active group (coming back online asap) flood barrier in production, training TBA
Wilsden – Plan reviewed and due to deliver training soon TBC
Wyke, Low Moor and Royds – working with local Cllrs on identifying centres to be used

as reception centres to support local evacuations.

The River Aire and its tributaries in Bradford are extensive and flood risk is widespread. There is a need to engage with multiple communities within Bradford District regarding the risk they face and their role in mitigating that risk and being more resilient. The Council recognise that this a considerable undertaking and something that the Council do not have the resources to do on what we would consider to be an effective level. This is however what we need our communities to be. Bradford Council have facilitated match funding to support the River Aire Care project. River Aire Care provides a mechanism to support residents and businesses to deliver direct improvements to their communities. This in turn provides a sense of wellbeing, pride and ownership of their immediate environment. River Aire Care is a programme of raising community resilience to flooding throughout the River Aire catchment through awareness raising, community clean ups, volunteer opportunities, group support and an apprenticeship for a young people/person. This programme builds on existing work and ensures its continuity as future funding plans are developed.

A staff member from the Aire Rivers Trust will support local volunteer groups to raise flood awareness, care for their rivers and improve local biodiversity. These include supporting existing groups (i.e. River Worth Friends) and helping newer ones grow (i.e. Friends of Silsden Beck). This project will grow capacity for environmental conservation and river stewardship within the catchment and within the Trust, through a Countryside Worker apprenticeship.

The project will provide outreach work and awareness raising with targeted communities, such those in the vicinity of the Keighley and Stockbridge Scheme, to improve flood resilience. This will include the updating of a flood awareness pack for the Bradford district.

Climate Change and Adaption

According to the 2018 UK Climate Change Projections average sea level could increase by over a metre by the end of the century (Met Office, 2019) and at 2C global warming without adaptation between 10% and 125% more people could be affected by river flooding worldwide. Limiting global warming to 1.5C halves the increase in flooding impact (Met Office 2018) underlining the importance of acting now to adapt to flooding and coastal change. According to the World Health Organisation climate change is one of the greatest threats to global health in the 21st century (WHO, 2015). The climate emergency is the defining issue for local government over the next ten to twenty years and The City of Bradford Metropolitan District Council declared a Climate Emergency in 2019 and joined the Leeds City Region Climate Coalition which is aiming for a net zero carbon region by 2038.

A climate resilient district will not be effectively delivered by Bradford Council working on their own. We all need to take action now so that we are ready for what the future will bring. We need all Risk Management Authority's (RMA's), individuals, communities, the third sector, businesses, farmers, land managers and infrastructure providers to contribute to planning and adapting to future flooding in the authority area so that Bradford District is a flood resilient district. The government's Environment Bill (Parliament 2020a) and Agriculture Bill (Parliament UK, 2020b) recognise that we need to make nature's power part of our solution and support farmers and land managers to take a more integrated approach to flood risk and water resource management. Our

work to date has enabled us to develop good working partnerships and it is our intention to grow those partnerships further to enable us to deliver the flood alleviation projects and resilience measures that the district needs. The consultation on the emerging National Resilience Strategy (December 2021) reports that most respondents believe that more can be done to assess (82%, 268 respondents) and communicate (80%, 261) risk, whilst 76% (246) consider that everyone has a part to play in improving the UK's resilience.

The Council are currently updating its Strategic Flood Risk Assessment (SFRA) in line with new guidance released this year. Within the update maps of predicted flood risk will be published from detailed computer flood mapping. This will inform the flood risk aspects and policies of the site allocations process. The latest climate change allowances will be considered to identify flood risk extents from all sources of flooding. The mapping outputs will assess the effects of climate change on all sources of flooding and identify areas where it is expected climate change to increase flood risk. The maps will also determine where the effects of climate change will make existing development unsustainable. This process will help identify any development that may need to be relocated to sustainable locations.

The National Planning Policy Framework (NPPF) sets out how the planning system should help minimise vulnerability and provide resilience to the impacts of climate change. Making allowances for climate change in flood risk assessments is a way of achieving this. NPPF and supporting planning practice guidance on flood risk and coastal change explain when and how flood risk assessments should be used. This includes demonstrating how flood risk will be managed now and over the development's lifetime taking climate change into account. Local planning authorities refer to the published guidelines when preparing local plans and considering planning applications.

Advice on climate change was previously set at a national level however research suggested that future guidelines for changes to peak river flows as a result of climate change might be more appropriate if considered on a regional scale. New allowances were produced by the EA in April 2016 (Flood Risk Assessments: Climate Change Allowances) and there are different allowances for different periods of time over the next century. Bradford District lies within the Humber river basin district and allowances for changes to peak river flows range from 10 to 50%. Peak rainfall intensity is set nationally at a range of 5 to 40%.

It is imperative that the effects of more extreme flooding in Bradford District are mitigated against, and plans and schemes are developed to better manage and adapt to any increased risk of local flooding as a result of climate change. This affects the functions of all RMA's and all Council departments.

Working with Natural Processes (WwNP) in Bradford

Working with Natural Processes (WwNP) or Natural Flood Management (NFM) is a type of flood risk management used to protect, restore and re-naturalise the function of catchments and rivers to reduce flood and coastal erosion risk.

WwNP has the potential to provide environmentally sensitive approaches to reduce flood risk in areas where hard flood defences are not feasible and to increase the lifespan of existing flood defences. WwNP and NFM are used interchangeably in the UK though the term WwNP is now used by Defra. Bradford Council work with RMA's and other partners to deliver WwNP projects across the Bradford district.

Bradford Council have contributed to the evidence base for WwNP by undertaking pilot projects in Bradford District on both the Aire and Wharfe Catchments on Harden Moor and Ilkley Moor. Further detail so these projects are included in Appendix 2. Whilst the primary objective is flood risk reduction, the nature of WwNP means that it is multidisciplinary and requires input from multiple fields to ensure that measures enhance the existing environment rather than irrevocably changing it to the detriment of other environmental, social or economic objectives. For these reasons, WwNP projects are very much partnership efforts, from the landowners to the communities, to organisations already working in the area and to the organisations delivering the projects. For Bradford Council, WwNP projects as a landowner requires the Land Drainage team to work with Countryside and Rights of Way and Parks and Green Spaces Team.

Bradford Council is a partner in the Natural Environment Research Council funded Yorkshire Integrated Catchment Solutions Programme (iCASP) which is funded until 2026. The aim is to use research to make a difference to the environment, economy and society and to promote Yorkshire as a global leader in implementing resilient catchment management. Bradford Council has been involved in a number of iCASP projects involving modelling of WwNP and takes part in the Community of Practice, a group set up by iCASP to bring together people working on different natural flood management projects across Yorkshire. Bradford regularly attends the iCASP Community of Practice (CoP). The meetings provide a forum for networking, learning and disseminating best practice: they are designed to build regional capacity amongst WwNP practitioners through sharing knowledge and discussing challenges and opportunities. The meetings enable participants to undertake informal continuing professional development (CPD). Many of the meetings take place on sites where WwNP interventions have been installed to allow a tour guided by those who have designed and installed the WwNP measures.

The approaches that have been implemented in these projects are all replicable on other catchments within the district and Bradford Council as LLFA and a landowner will continue to work with partners to realise more WwNP projects across Bradford district.

Local Flood Risk Management Strategy

The Flood and Water Management Act 2010 places a statutory duty on the City of Bradford Metropolitan District Council, as Lead Local Flood Authority for Bradford District, to develop a Local Flood Risk Management Strategy. This Strategy must detail the Risk Management Authorities and the functions that they can exercise within the authority area, assess flood risk, the objectives for managing that risk and the measures undertaken to implement those objectives.

This Strategy is currently being updated and will outline the City of Bradford Metropolitan District Council's approach to managing flood risk from all sources throughout the district and is been developed to align with current legislation and guidance. It builds on work undertaken since the publication of the first Strategy in 2016

and aims to continue the forward momentum to better manage the risks and consequences of flooding from ordinary watercourses, surface water, groundwater, rivers, sewers, reservoirs and canals. Objectives within the Local Flood Risk Management Strategy are applicable to the whole of Bradford District and work is ongoing on both the Aire and Wharfe catchments.

Strategic Council Polices relating to water management

Policy SC6 of the Councils Core Strategy, includes provisions to provide clearer direction to new development in contributing towards linking areas and corridors of Green Infrastructure. The policy also now provides for further strategic information on Green Infrastructure as it provides a common thread that links other important issues in the Core Strategy including: local resilience to climate change (in relation to the provision of flood water storage, sustainable drainage and urban cooling), sustainable transport and housing, leisure and tourism, health and well-being and making space for water.

Within Policy SC6 the River Corridors of the Aire and Wharfe and the South Pennine Moors are identified as strategic Green Infrastructure assets due to the opportunities offered to enhance the living landscape as a resource for people and wildlife and to address future needs for flood alleviation, water management, carbon capture and recreation.

Policy EN7 of the Councils Core Strategy, includes provisions to 'Safeguard areas which have the potential to increase flood storage provision and improve defences within the Rivers Aire and Wharfe corridors' and 'The Council will not permit development in areas within the functional floodplain (Flood Zone 3b) as defined in the most up-to-date SFRA with the exception of water compatible uses and essential infrastructure'.

Partnership Working

The Council are working with the Leeds Flood Alleviation Scheme Phase 2 (Leeds FAS2) project team, in partnership with the Environment Agency, to develop a catchment wide approach to reducing flood risk. This includes Natural Flood Management (NFM) measures on the upper and mid stretches of the River Aire as an integral part of phase 2 of the scheme. The scheme is identifying with landowners, which land is suitable for NFM measures. Also, as part of the scheme, potential areas have been identified and shared with partners and the Leeds FAS2 project team. A substantial land bank is required to deliver the Leeds FAS NFM programme and requires a significant amount of buy in from numerous landowners. The Leeds FAS2 project team are very keen to continue to work with large landowners throughout the River Aire Catchment and have continuously engaged with the Council on the potential to implement NFM measures within the district.

West Yorkshire has launched an innovative programme to make the region more resilient to flooding and climate change. The five Lead Local Flood Authorities (LLFA's), Environment Agency and West Yorkshire Combined Authority are partners, and they have support from local stakeholders including academic partners, community-based groups, Third Sector organisations and Yorkshire Water. The Programme will work at catchment level and across administrative boundaries.

The WY FLIP will focus on innovation, exploring new ways of working including bringing together people who do not normally work together such as representatives from the private sector, community groups, charities and volunteers with a keen interest in flood resilience. Collaboration is key and representatives outside of the flood risk and environment sectors will be involved including the finance and insurance sector, transport, education, technology and health to ensure a holistic approach and other benefits for our communities. Learning from the programme will be shared across organisations to help others deliver similar projects successfully across the region, nationally and internationally.

WY FLIP has been kick-started with 2 years of funding from the Yorkshire Regional Flood and Coastal Committee to develop core activities, establish a governance structure and attract more funding to deploy projects and sustain the Programme into the future.

The Wharfe Flood partnership is comprised of Local Authorities within the River Wharfe catchment: North Yorkshire Council, CBMDC and Leeds City Council, the Environment Agency, Yorkshire Water and the Yorkshire Dales Rivers Trust (YDRT). The role of the partnership is to develop projects with partners in the Wharfe catchment and approve Local Levy spend for projects. The Wharfe Flood Partnership has previously approved Local Levy funding for the Addingham 4 Becks project and has recently approved funding for a Wharfe Soil Aeration project led by YDRT and Stage 1 of the River Wharfe NFM Assessment Proposal. It is proposed that the NFM assessment for the River Wharfe catchment is expanded in three stages over the coming financial years. Further projects being developed include the installation of SUDS, this is following on from the Soak it up project where Yorkshire water have been working with schools to retrofit Suds in the school`s grounds

Bradford Council is also part of the White Rose Forest Partnership. The White Rose Forest is the community forest for North and West Yorkshire, working in partnership with local authorities, landowners, businesses and communities to increase woodland across the region and improve our natural environment. Through the partnership millions of trees are being planted in urban centres and countryside that will help manage flood risk, mitigate the impact of climate change, create jobs and provide happier and healthier places for us all to live, work in and enjoy. The vision of White Rose Forest is ‘to create a genuinely sustainable and well wooded landscape in North and West Yorkshire which will benefit local people, the economy and wildlife’.

Bradford Council are an active member of The Yorkshire Regional Flood and Coastal Committee Environment Sub-group champions and acts as an advocate for environmental outcomes and natural contributions to FCERM in Yorkshire. The group covers a range of topics such as, use of Local Levy funding for a strategic approach for Natural Flood Management across the YRFCC area, river basin planning and biodiversity schemes through to beaver reintroduction.

Property Level Flood Resilience

Property Flood Resilience, also widely known as Property Level Protection (PLP), provides property owners and professional partners with practical and cost-effective steps to help lower flood risk, through the use of affordable bespoke products.

These offer an innovative and effective response which ‘plugs the gap’ that previously existed between engineered flood protection schemes, and either sandbags or the ‘do nothing’ option. The approach aims to identify products and measures that are appropriate for the person, flood and property together, helping to reduce flood damage and increase peace of mind.

The Council are a board member of the West Yorkshire Flood Innovation Programme (WYFLIP), maintaining oversight of the programme throughout its lifecycle and to facilitate executive decision made at a strategic level to ensure that the activities of the programme align with the core themes and principles. This collaborative work with other West Yorkshire Authorities, Environment Agency and Leeds University through the Yorkshire Integrated Catchment Solutions Programme (iCASP) programme has provided the basis to develop region wide innovative flood resilience initiatives. Bradford Council lead on the theme of Property Level Protection and are currently project managing the WYFLIP Property Flood Resilience project that will pilot new techniques to improve the long-term effectiveness of Property Flood Resilience solutions. Given that there are known gaps where current Property Flood Resilience approaches do not offer long-term success, the project has the potential to significantly improve the future use of Property Flood Resilience across West Yorkshire. The project involves undertaking 250 property level resilience surveys – 50 surveys per local authority area – to be carried out across the region with communities to identify what more can be done to help both residential and business properties become more resilient to flooding. The results and data form the surveys will be used to populate and test the prototype Property Flood Resilience Assured tool and builds on the work undertaken within the DEFRA funded Yorkshire Flood Resilience Pathfinder project enhancing the understanding and uptake of Property Flood Resilience across West Yorkshire. Learning from the project will be shared across organisations to help others deliver similar projects across the region.

Sustainable Drainage Systems (SuDS) in Bradford

A key component of climate change mitigation for Bradford will be flood resilience, and much the schmes that are promoted and developed need to explore innovative solutions for Sustainable Drainage Systems (SuDS) and Nature Based Solutions (NBS). Retrofitting sustainable drainage systems into our urban landscapes is now seen as a priority and is the strategy used on redevelopment projects in the district.

Retrofitting sustainable drainage systems into our urban landscapes is now seen as a priority and is the strategy used on redevelopment projects in the Bradford Beck catchment.

By reducing surface water runoff into local sewerage networks, schemes will help reduce the discharge from Yorkshire Waters Combined Sewer Overflows that connect to the Beck improving the water quality of natural environment. Preliminary discussions have begun between the Council and Yorkshire Water at identifying areas where the implementation of nature-based drainage solutions will reduce flood risk, improve urban water body quality and reduce combined sewer overflow discharges.

Bradford Council has delivered highway improvements and sustainable landscaping works to an area of the City Village locally known as the ‘Top of Town’, focused on North Parade, Rawson Square and Northgate. A network of ‘rain gardens’ have been

established as part of a drainage system designed to help mitigate local flooding risks for the project. Rain gardens are areas of planting designed to temporarily hold, filter and soak away any rain water that runs off buildings and paved areas in a more sustainable manner rather than straight into sewers not preventing overloading the sewers. Whilst planting semi-mature trees will contribute to the physical landscape, it will also create new habitats and increase biodiversity. Providing wildlife corridors and connections between green spaces. Providing options for wildlife to travel is extremely important to urban biodiversity. Similar SUDs features and principles are being delivered for One City Park and Transforming Citys Fund projects.

The Council continues to work on the LIFE Critical European project at Horton Park. LIFE Critical is an EU project that adapts older city neighbourhoods so they are equipped for the effects of climate change. Westbrook Beck, which flows through the ponds and water features of Horton Park, stopped flowing a few years ago. With support from the University of Bradford, the projects objectives are to mitigate the effects of climate change by carrying out work to neighbourhood parks. The thing that makes this different to some other programmes it that the emphasis is on citizen science and recruiting the community to help deliver change with a strong emphasis on improving local drainage, air pollution, loss of ecological diversity and the heat island effect. The innovative approach addresses the problems that these neighbourhoods face with regard to adaptation by exploiting the potential of nearby parks for climate adaptation. Crucial for this approach is the proactive involvement of citizens and co-ownership, because without their support the changes to the parks are difficult to realize. The Council will work with FOBB to find solutions to this issue during the development of the project. Sustainable Drainage Systems (SuDS) will also be installed in the park. These are a more natural way to reduce the likelihood of flooding by transporting surface water elsewhere, slowing the flow of water or using materials to encourage the water to soak into the ground or evaporate.

Water Quality Improvements

Although not falling under the same regulations in terms of flood risk management there can be considerable overlap between water quality and flood risk. Members of Bradford Council earlier in the year approved a motion “Respecting Our Rivers”,:

By reducing surface water runoff into local sewerage networks, schemes will help reduce the discharge from Yorkshire Waters Combined Sewer Overflows that connect to the river networks within the district, improving the water quality of natural environment. Preliminary discussions have begun between the Council and Yorkshire Water at identifying areas where the implementation of nature based drainage solutions will reduce flood risk, improve urban water body quality and reduce combined sewer overflow discharges.

Yorkshire Water Services, working with contractors Ward and Burke, have been on site in Ilkley completing works to create a new transfer sewer. These works started to reduce discharges from Rivadale View CSO, which discharges into the designated bathing area, as well as reduce risk of pollution from a manhole on the public footpath which has historically lifted and had issues with sewage escapes. The new sewer is being installed using a tunnel boring machine to minimise disruption to the community. Key statistics:

· 3404 Cubic meters storage in the tunnel
· 835 meters in length (running from Wharfe Street car park to Ashlands playing field

before turning down to Ilkley Sewage Treatment Works)
· 1.98M diameter
· Reduce number of spills in an average year by circa 40%
· Reduce volume of spills in an average year by circa 50% This first phase of the works should be complete and operational early within 2024.

Land Drainage Investigations

Bradford Councils Land Drainage Team regularly investigate reports of blocked or collapsed watercourses within the Bradford Beck Catchment. Blockages can lead to an increased risk of flooding, risk of environmental pollution incidents and impacts on the amenity quality of an area.

Land drainage law is complex and is covered within the Land Drainage Act 1991. The Council is able to offer advice about problems associated with land drainage, including ditches, streams, rivers and other watercourses. Essentially, a landowner is responsible for the drainage of their land. If a watercourse passes through land, under the Land Drainage Act 1991, the landowner is classified as a 'Riparian Owner' and is responsible for maintaining the flow within the watercourse and to ensure an impediment to that flow does not exist.

The Council only has a responsibility for watercourse when the Council is the landowner. Other than that, the Council do have powers to act in certain circumstances, to mitigate against the effects of flooding generated from land drainage matters.

If a landowner fails to carry out necessary maintenance on a watercourse, the Council can serve notice and carry out works if ditches have become blocked resulting in a flood risk or health hazard. These powers are contained in the Land Drainage Acts 1991 and Sections of the Public Health Act 1936, but are not instantaneous - the process between first notification of a problem and serving a notice can take years, and further stages are required if the landowner defaults on the notice.

Occasionally investigations reveal blockages on land that is unregistered or where emergency works are necessary. In these instances, the Council conduct a review to understand the risk posed by any defects and if quick interventions will reduce the risk and avoid on-going issues that can take up large amounts of resource.

Data and Technology

The collection, review and reuse of data is becoming increasingly important and a necessary tool to analysing water management, responding to flood events and providing evidence to prioritise resources and initiatives. The Council has worked within a wide range of projects that support better water managements through the use of data and technology

Flow monitoring (funded through the EU Smart Cities and Open Data Reuse project (SCORE)) was put in place to establish baseline flow rates on Backstone Beck and this monitoring has remained beyond the completion of physical works to determine the efficacy of the natural flood management project. This has been published as open data and has been used to inform studies by iCASP and Yorkshire Water. Fixed point

photography posts are also in place on the moorland allowing visitors to submit photos of the landscape in order to monitor changes. The images captured enable us to see the change in the landscape where interventions are in place. Dales Land Net have a series of soil moisture content monitors installed in the upper catchment and Moors For The Future have installed three cameras and three water pressure loggers behind dams in each of the three main tributary channels to Backstone Beck to determine how the dams respond to high water flows – pairing time-lapse with pressure files. In addition, dipwells were installed near the Dales Land Net equipment plus cameras with views of Ilkley. These will remain in place until the end of this year. The flow monitors will be in place for a further 18 months to enable us to undertake post-intervention assessment.

The Council have commissioned a specialist consultant to create a new build computer model of Bradford Beck and its tributaries. The completed model will be ready early next year and will provide computer generated flood outlines and depths in the Bradford Beck Catchment. The model will be used as the evidence base for the emerging Level 1 and Level 2 Strategic Flood Risk Assessment updates for this catchment and the Council will also use the new model for evaluating flood risk management options in future capital works schemes. As part of the project the Council will be undertaking a full structural and geometric survey of the culverted sections Bradford Beck. This will be achieved by using remote laser scanning technology that will provide a full three-dimensional computer model of the culvert structure allowing this data to be used for a multitude of projects. This 3D model can be incorporated into the Virtual Bradford 3D city model helping visualise flood risk scenarios and engage with elected members and the public.

iCASP have undertaken a project to assess the effectiveness of the recently implemented NFM measures on Ilkley Moor. An open-source rain-on-grid catchment and river model has been built that takes into account rainfall and river flow monitoring data collected over the last three years. The work has built on on previous iCASP NFM projects such as Hardcastle Crags in Calderdale, but with the advantage of access to a significant quantity of monitoring data at the site. Backstone Beck has provided an ideal NFM test case for integrating multiple stakeholder issues in one model and draws together separate pieces of iCASP NFM project work and staff experience in one project.

There are many flood risk management authorities, asset owners and local authorities invested in the outcomes of the modelling, but none have responsibility for the whole catchment. The aim is to provide partners with a better holistic understanding of how changes will impact on the surface water in the catchment. Partners will be encouraged to co-develop and co-fund a mutually beneficial open model that transcends individual interests. It will help assess what proposed changes to drainage arrangements within the catchment might mean for the Beck, for example, helping to explore a potential diversion of Ilkely Tarn outflows from the combined sewer. Work such as this is valuable to wider water management issues such as water quality and the Wharfe at Cromwheel Bathing Water Designation. Bradford Council are working with Yorkshire Water and the Environment Agency to better understand all pressures on the river at the Bathing Water designation point and other LLFA's for the wider Wharfe catchment.

The Council offers an electronic stay connected email bulletin service to residents. The Stay connected is one of the Council's corporate communication channels. One service that can be signed up to is the delivery of up to date weather warning and flooding alerts and information about preparing for flooding before, during and after an event.

This service can be signed up to at the following link,

Stay Connected - sign up for email alerts | Bradford Council

To ensure the districts residents can prepare themselves for flood events and to improve their resilience, the Council offer advice on their website about property flood resilience measures and plans. This advice can be viewed at the following link

Flooding information and support | Bradford Council

Maintenance funding for water management assets

The Land Drainage & Flood Risk Management service do not receive capital funding to undertake maintenance works on Council owned drainage infrastructure. The responsibility of drainage infrastructure will depend on which department or service manages the function of each individual asset. The Land Drainage & Flood Risk Management service work with the Environment Agency, Yorkshire Water and other organisations to identify and progress flood risk schemes within their capital works programme to address property flooding and is actively looking for match funding to reduce the pressure on existing drainage systems.

The Highways Service manages a range of existing drainage infrastructure including assets such as the carrier drains that serve the highways, road gullies, roadside ditches, drainage outfalls, and culverted watercourses that pass under the highway. Budgets used to maintain these assets are limited and base revenue budgets have decreased over recent years due to the spending constraints the Council is facing. However, under the initial 5-year City Region Sustainable Transport Settlement (CRSTS), implemented in 2022/23, capital funding for 'Asset Management and Enhancements' includes an allocation for 'Drainage', which is allowing the Council to implement further repair and improvement works across the district.

The Council maintain 25 trash screens that protect downstream culvert systems from becoming blocked. The Trash Screens therefore provide protection to many key highway networks works plus approximately 250 residential properties. The maintenance works to keep the trash screens cleared are currently funded through Council staff revenue budgets.

As the Council promotes and delivers more flood risk management projects through its Capital Flood Risk Management Programme to meet the needs of a changing climate, there will be additional funding stresses in maintaining these assets. The Government do not provide revenue funding to local authorities for the maintenance of flood risk management schemes. All authorities will be facing this increasing challenge after the impact of years of austerity and budgetary pressures meaning more innovative ways to manage assets will need to be explored.

4. FINANCIAL & RESOURCE APPRAISAL

The measures being undertaken by the Council and its partners through these funding streams are being delivered through a range of specific capital grants and revenue

budgets. Over the last year the service delivered a programme of works of circa £1.2m across its portfolio of programmes.

With the progression of the flood risk capital programmes the service has had to procure additional support for delivery of its programmes to supplement its own internal resources. As the intensity of delivery for these programmes ramps up over the next couple of years this is likely to be a maintaining trend.

The Government do not provide revenue funding to local authorities for the maintenance of flood risk management schemes. All authorities will be facing this increasing challenge after the impact of years of austerity and budgetary pressures meaning more innovative ways to manage assets will need to be explored.

5. RISK MANAGEMENT AND GOVERNANCE ISSUES

The programmes of schemes and proposals described in this report are subject to robust risk management and governance arrangements to ensure their delivery is effectively managed at both Environment Agency and Council levels. Individual programme boards, comprising representatives of the Council and their EA counterparts meet on a monthly basis to review progress of individual schemes. A rigorous risk management process is applied to these projects and programmes with comprehensive risk registers being developed and maintained at both project and programme levels.

6. LEGAL APPRAISAL

There are no legal implications directly arising from this report.

7. OTHER IMPLICATIONS

7.1 SUSTAINABILITY IMPLICATIONS

The requirements of these policies have been adopted as far as possible across all schemes which are at an advance stage of delivery (Outline Business Case or later) within the delivery programmes and are fully adopted in schemes which are in the early stages of development.

7.2 TACKLING THE CLIMATE EMERGENCY IMPLICATIONS

In the context of the Climate Emergency declared by the Council in January 2019, reducing greenhouse gas emissions is a priority for the district. The projects described in the programme of works in this report are required to report and value their carbon impact.

The Environment Agency uses a net carbon benefit approach to capture the carbon costs, carbon emissions avoided and any carbon sequestration of flood risk management schemes. This uses the Green Book approach to carbon costing combined with specific research on the carbon emissions avoided and carbon sequestration that flood risk managements can provide.

Flood risk management schemes provide carbon avoided benefits as their implementation, offsets the carbon spent in emergency and repair works in recovery

after a flood event. This carbon avoided is calculated over the lifetime of the flood risk management intervention.

7.3 COMMUNITY SAFETY IMPLICATIONS

None

7.4 HUMAN RIGHTS ACT

Any Human Rights implications arising from schemes described in this report are taken into account in the development of that scheme.

7.5 TRADE UNION

There are no trade union implications associated with this report.

7.6 WARD IMPLICATIONS

All wards in the district are impacted by flood risk and water management. The wards in which the measures described in this report are implemented will generally benefit from the improvements. Appropriate consultation has, and will continue, to take place with Ward Members and local communities during the development of individual projects.

7.7 AREA COMMITTEE ACTION PLAN IMPLICATIONS (for reports to Area Committees only)

Not applicable

7.8 IMPLICATIONS FOR CHILDREN AND YOUNG PEOPLE

There are no implications arising as a consequence of this report.

7.9 ISSUES ARISING FROM PRIVACY IMPACT ASSESMENT

Not applicable

8. NOT FOR PUBLICATION DOCUMENTS

None

9. OPTIONS

Members are asked to consider the report and provide views and comments.

10. RECOMMENDATIONS

That Bradford Council's Regeneration and Environment Overview and Scrutiny Committee to:

(i) Consider the contents of this report and provide views and comments.

(ii) Determine when to receive the next report which provides an update on the Councils progress of all Water Management and Resilience initiatives within the district.

11. APPENDICES

Appendix 1 Flood Risk Management Projects Highlights

Appendix 2 Bradford Councils Capital Flood Risk Management Programme

12. BACKGROUND DOCUMENTS

Water Management Scrutiny Review Report 2017

Env2MayDocAMAppendixDraft Report - Water Management Scrutiny Review KW.pdf (moderngov.co.uk)

Bradford Councils Strategic Flood Risk Assessment

Evidence Base | Bradford Council

Bradford Councils Local Flood Risk Management Strategy 2016

bradford-lfrms-final.pdf

Appendix 1 Flood Risk Management Projects Highlights

City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Bradford Live Culvert Remedation Works

During the course of the Bradford Live refurbishment project, it came to light that there are a number of cast iron beams located within the Bradford Beck culvert, directly under the site. Some of these beams are very badly corroded.

The discovery of the culvert condition did not become apparent until the building refurbishment project was well underway, so any works to the culvert were going to be severely hampered by the construction works on the building, above.

Access to the culvert was a major concern. There was no space above the culvert, because this was in constant use by the Bradford Live Main Contractor. Also, working from above was not practicable, due to the thickness of the ground floor slab and the lack of available space within the Odeon building for plant and machinery. This meant that any solution to remove the corroded beams and replace them from above was not possible and an alternative solution was needed.

The Coucnil worked closely with specialist contractors to agree a solution to install twin structural GRP liners within the culvert, and grout them in place, to achieve composite action, rendering the existing corroded beams redundant.

In order to fill the void, between the liners and the existing culvert, core holes were drilled through the slab of the Odeon building in the space between the existing beams. The positions of the beams were surveyed using a laser scanner and this allowed them to be accurately marked out on top of the floor slab. The void was infilled with a high strength, structural, grout.

The project was completed to time and within budget and the solution has saved significant costs, compared with the alternative of replacing the steel beams within the Bradford Live site.

Environmentally, the project saved 229T of carbon and helped the Council meet their carbon saving goals.

This is project is an excellent example of the benefits of Early Contractor Involvement, and of the benefits of the Client working closely with a Design and Build Contractor.

City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Redcar Lane Flood Alleviation Works

Further to the establishment of the Board one project to make it to construction within the Bradford Capital Flood Risk Programme this year was the Redcar Lane Flood Alleviation Scheme. The project was first established using £15k local levy investment from the YRFCC. This allowed the project team to develop a business case for a fully funded Flood Defence Grant in Aid scheme to the value of £100k

Redcar Lane is a small ‘B’ road that connects Keighley to Eastburn. The road and properties adjacent the road had flooded in recent times during the 2015 and 2020 flood events. The project included the installation of the flood relief system to divert water from the highway and properties to an adjacent infiltration system located in a nearby field. The project was completed in early 2023.

City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Ilkley Moor Resilience Project

The Backstone Beck Natural Flood Management (NFM) Project fully completed in April 2022 and whilst CBMDC have continued flow monitoring and worked with iCASP and YW to utlise monitoring data for ongoing modelling work (covered in YW engagement) the drainage and Countryside and Rights of Way teams feel there is a need to secure multiple benefits from the Councils moorland management and enhance the works already achieved on the Backstone Beck catchment by replicating the works over a minimum of two further watercourse catchments.

Peatland Restoration on Ilkley Moor

A PAG funding bid was successful in securing £200k of Climate Emergency Funding for Peatland Restoration works. The works will improve peat quality and quantity over time thus improving carbon sequestration through blanket bog creation. Improvements in moorland habitat and biodiversity, increased surface water retention and reduced surface water run-off, erosion and sediment loss are also benefits of such a project. A feasibility study is currently being undertaken by Moors for The Future (MFTF) who are the regional delivery partnership for peatland restoration works in the South Pennine Moors SAC which encompasses moorland within Bradford District. They have the necessary specialist expertise and resources to undertake peatland restoration and are familiar with the NFM interventions having worked on Backstone Beck. The feasibility study has been match funded by Rebel Restoration; they are the charitable arm of the company Rebel Energy and they are supporting the Ilkley Moor Resilience project as their Peatland Restoration Project alongside Seagrass meadow restoration in Wales and England and a rewilding project in Scotland.

This project offers an opportunity for CBMDC to demonstrate a range of NFM interventions to other landowners in the Wharfe catchment which will be valuable to the ongoing work of all LLFAs and partner organisations progressing NFM in this area.

Bradford Capital Flood Risk Management Programme: Nov 2023 funding and delivery summary

BRADFORD METROPOLITAN DISTRICT COUNCIL

Scheme	Funding Summary £k						Total Funding £k	Scheme Cost £k	Funding Gap £k	Ready for Service	Homes Better Protected	Non-homes better Protected
	FDGiA Eligibility	Defra Booster	CBMDC	WYCA	Other	Local Levy						
Completed Schemes												
Harden Moor NFM (Leeds FAS2)			10		167		177	177		Oct-19	TBC	TBC
Esholt SW Flood Allevation	225					50	275	275		Feb-21	20	1
Backsotne Beck NFM		225	30			-	255	255	-	Aug-21	TBC	TBC
Goose Eye Surface Water Study	419		10			25	454	454	-	Apr-22	32	1
DEFRA PLP 2020 Grant Scheme		250					250	250		Jun-22	51	4
Odeon Culvert Repair			1,500				1,500	1,500		Dec-22	20	40
Redcar Lane Flood Alleviation	44		41			15	100	100	-	Feb-23	3	0
Totals	**688**	**475**	**1,591**	**-**	**167**	**90**	**3,011**	**3,011**			**126**	**46**
Forcasted Schemes												
Skipton Road, Keighley	453		25		575		1,053	1,053	-	Mar-24	29	1
Bingley & Shipley PFR	77				600		677	677	-	Jul-25	48	
Horton Grange SW FAS	870					127	997	1,322		Dec-25	35	
WYFLIP PFR Project	756					187	943	1,600	657	Dec-25	200	
Low Springs, Baildon	125						125	125	-	Dec-25	7	
Addingham, Ilkley Road Main Street	34						34	65	31	Dec-25	3	
Apperley Bridge Surface Water FAS	220					60	280	480	200	Sep-26	22	1
Haworth	164						164	560	396	Nov-26	12	14
Middlebrook Beck FAS	134						134	675	541	May-27	44	
CBMDC Debris Screen Programme	200		20				220	220	-	Jun-28	35	
Bradford Beck FAS	1,741		5	350	100	55	2,251	3,650	1,399	Jul-25	77	158
Addingham Town Beck	225						225	850	625	Jun-28	24	
Menston Dicks Garth Road	261						261	675	414	Jul-28	21	
Keighley and Stockbridge Modelling & Flood Alleviation Scheme	3,080				12,300	86	15,466	20,583	5,117	Jul-28	497	280
Silsden Beck Flood Alleviation	400		5			60	465	3,067	2,602	Jul-29	56	20
Culvert Refurb Programme	1,610		5			60	1,675	2,000	325	Sep-29	21	0
Burley in Wharfedale SW Study	142		5			30	177	410	233	Sep-29	55	5
Baildon Drainage Study	120		5			30	155	275	120	Sep-29	12	14
Ilkley Denton Road FAS*	1,921				-		1,921	4,825	2,904	Jul-30	51	
Ilkley Denton Road Reduced Scope												
Ilkley Backstone Beck Culvert	19						19	200	181	Jul-31	20	
Oakworth Beck FAS	200						200	346	146	Jul-31	47	0
Cottingley, Gill Wood FAS	249						249	350	101	Jul-32	17	
Bradford River Aire FAS	1,036		10			157	1,203	15,781	14,578	Jul-33	80	46
Total	**14,037**	**-**	**80**	**350**	**13,575**	**852**	**28,894**	**59,789**	**30,570**	**Total**	**1,213**	**585**

Notes: Figures in GREEN shade indicate schemes led by the Envionment Agency

*This SOC showed this scheme was not economically viable and therefore further development of a scheme to reduce risk to all properties on Denton Road and the surrounding area will not continue

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City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Report of the Strategic Director, Place to the meeting of Environment & Regeneration Overview and Scrutiny Committee to be held on 28th November 2023

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Subject:

Bradford Clean Air Zone (CAZ) Update Report

Summary statement:

This report provides an update on the operation and monitoring of the CAZ since introduction on the 26th September 2022

EQUALITY & DIVERSITY:

The Council has carried out an extensive Distributional Analysis and Equality Impact Assessment as part of the development of the Clean Air Plan which has been approved by the Government. This work has informed the development of the Clean Air Zone and supported the applications for funding to help mitigate against any adverse impacts of the CAZ.

Our assessments show that poor air quality disproportionately affects our most deprived communities and improvements in air quality will benefit the health of those communities most.

David Shepherd
Strategic Director, Place

Report Contact: Andrew Whittles,
Director of Air Quality Programmes
Phone: 07581 007609
E-mail: Andrew.whittles@bradford.gov.uk

Portfolio:

Air Quality & Climate Change

Overview & Scrutiny Area:

Regeneration & Environment

1. SUMMARY

1.1 A Class C Charging Clean Air Zone (CAZ) was implemented in Bradford on the 26th September 2022 following a Ministerial Direction from the Government. This report updates the Committee on the operation and monitoring of the CAZ and related programmes over the past year

2. BACKGROUND

2.1 Levels of nitrogen dioxide (NO2) are above legal limits at several locations in the District and in 2018, the Government issued a Ministerial Direction requiring the Council to prepare an outline business case (OBC) by October 2019 that would achieve compliance with legal limits in the shortest possible timeframe and by 2021 at the latest. The Government required the Council to benchmark any options to improve air quality against a CAZ D, involving all vehicle types, to determine improvement in the shortest possible timeframe. The Council looked at many options, including electric bus routes, traffic management & traffic light phasing and park and park and ride facilities, however, a CAZ was the only option that the Government would accept that achieved compliance in the shortest possible timeframe.

2.2 On the 12th February 2020, the Council received a further Ministerial Direction[1] requiring the implementation of a CAZ C, involving buses, coaches, taxis, lorries and vans, to achieve compliance with legal limits for NO2 by 2022 at the latest. The Council Executive Committee resolved on the 18th February 2020 to undertake consultation regarding the introduction of the CAZ, and, following consultation, the Council Executive Committee resolved on the 2nd March 2021 to implement a Class C Clean Air Zone. The area of the CAZ covers the area of the District where levels of NO2 are elevated and can be seen on the following link - https://www.bradford.gov.uk/breathe-better-bradford/where-is-the-clean-air-zone/where-is-the-clean-air-zone/

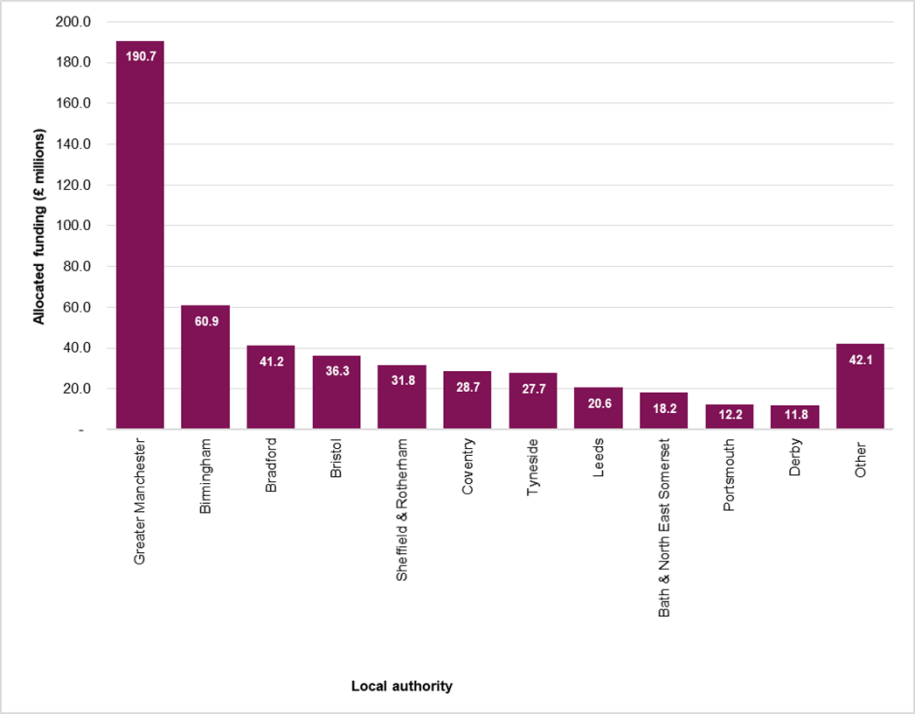
2.3 The implementation of the CAZ is entirely funded by Government under the New Burdens provisions and a total of £41.2m has been provided for the development of the CAZ enforcement systems and Clean Air Funding (CAF) to help local businesses upgrade to CAZ standard. The CAF is a competitive fund and the Council has secured almost £34m in mitigation funding which is the highest level of funding provided to an authority for a CAZ of this type. Figure 1 shows the National Audit Office figures for total Government funding awards under the New Burdens regime for Directed authorities to meet legal limits for NO2. Additionally, the Council is unique in providing an extensive exemptions programme to assist both businesses and residents to adjust to the CAZ over time. The value of the exemptions programme is estimated to have a value in excess of £100m throughout the duration of the CAZ

2.4 Other CAZ have been introduced in Bath, Birmingham, Portsmouth, Bristol,

[1] Environment Act 1995 (City of Bradford Metropolitan District Council) Air Quality Direction 2020 (publishing.service.gov.uk)

Sheffield and Newcastle and the Government has stated that Manchester and Salford Councils are likely to require a CAZ. Low Emission Zones (LEZ), which replicate a CAZ D, are being implemented in Glasgow, Edinburgh, Dundee and Aberdeen, and a Zero Emission Zone has been introduced in Oxford and an Ultra-Low Emission Zone (ULEZ) is in force in London.

Figure 1 – Total Government New Burdens funding to Directed authorities (NAO, 2022)



Note: Greater Manchester comprises 10 local authorities

2.5 The Bradford CAZ covers 9.3 sqm using 340 ANPR cameras linked to the Government Central Service, including the DVLA database, the Government Taxi Database, General Purpose White List and the Council's White List of local exemptions. Vehicle operators can check their vehicles for CAZ compliance on the Government Central Service Vehicle Checker - https://www.gov.uk/clean-air-zones. The CAZ is sign posted, in line with Government requirements, at 3,700 locations in the district, advising motorists that they are approaching, entering, within or leaving the CAZ.

The Government make a charge of £2 for every payment made to enter a CAZ[2]. The Government set the range of charging levels for each vehicle type and the Council has negotiated the lower levels of charging for CAZ authorities and the lowest charging level for taxis in the UK

The CAZ operations system is the largest digital engineering project that the Council has undertaken involving 16km of digital ducting and 5 new digital rings around the City. From digital architecture design agreement with the Government it took 12 months to the launch of the CAZ on the 26th September. The Council is the

[2] https://www.legislation.gov.uk/uksi/2020/1444/contents/made

only CAZ authority to deliver all CAZ infrastructure and operations in-house, including all signage, creating and supporting skilled jobs.

Any non-compliant vehicle operator that is liable to pay the daily charge and does not make the payment is liable for a penalty charge notice (PCN). The PCN is £120 plus the daily charge, reduced to £60 plus the daily charge if paid within 14 days

2.6 The legal requirements of the CAZ, including charges and exemptions, are laid down in the sealed Bradford CAZ Charging Scheme Order (CSO) 2022[3]. Annex 3 of the CSO lays out the areas that the net proceeds of any revenue generated by the CAZ will be shared over the first 5 and 10 year periods following the introduction of the CAZ. This does not mean that the CAZ will be in place for these periods of time – only that any net revenue may be used for the programmes identified over these periods of time

2.7 The Council has been directed to implement a Charging Clean Air Zone. The Government CAZ Framework[4] makes clear there is no such thing as non-charging CAZ. The Framework states;

"However, for the avoidance of confusion, for the purpose of this document, a clean air zone refers specifically to a charging clean air zone. This is an area where a local authority applies charges using powers under the Transport Act 2000 to deliver NO2 reductions. The previous version of this document referred to non-charging clean air zones along with a number of activities local authorities could take in such zones. As the term clean air zone has since come to refer specifically to a charging scheme version 3.0 of this document has removed the concept of a non-charging clean air zone."

The Government has directed the installation of monitoring at key locations in the district. The Government is just starting to publish the process that a CAZ Authority needs to follow in order for the Government to remove the CAZ Direction. To determine whether this has been achieved there is a 4 state road map;

State 1 - on track to achieving success
State 2 - achieved success
State 3 - demonstrated to be maintaining success with measures in place
State 4 - likely to continue maintaining success in the absence of measures implemented in the Clean Air Plan

All CAZ Authorities are currently classified as State 1 by the Government.

3. REPORT ISSUES

The Bradford CAZ was successfully launched on the 26th September 2022. This report outlines key areas for discussion in respect of operating and evaluating a CAZ and delivering wider benefits since launch

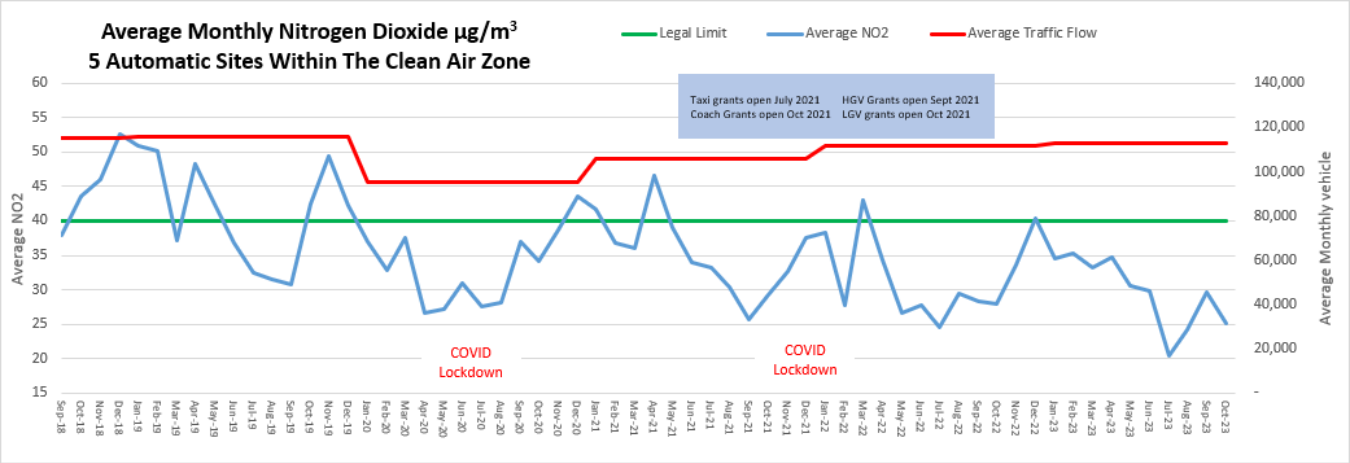
[3] https://www.bradford.gov.uk/media/7229/bradfordcleanairzonechargingorder2022.pdf
[4] https://www.gov.uk/government/publications/air-quality-clean-air-zone-framework-for-england/clean-air-zone-framework

3.1 Air Quality Monitoring

The Council has 400 monitoring points in the district, including sites directed by the Government. We operate seven, long standing automatic monitoring stations which are the most accurate monitoring we use. The five stations on Thornton Road, Manningham Lane, Mayo Avenue, Roolley Lane and Shipley Airedale Road that are within the CAZ show in figure 2 that we are recording the lowest level ever of NO2 in the CAZ area - lower than levels during the lockdown of 2020 when traffic levels reduced by 50%

The station on the Green in Keighley has recorded static readings for NO2 well below the legal limit that have not been affected by the CAZ

Figure 2 – NO2 levels in CAZ area since 2018



Data from the extensive diffusion tube network will be assessed in early 2024 and reported to Government in line with national requirements.

Our monitoring data for 2022 has been published as part of our Air Quality Annual Status Report 2023 on our Breathe Better Bradford website[5] and has been approved by Government

3.2 CAZ Operational Data

The total number of vehicle journeys made into the Bradford CAZ since launch is 64,569,272, made by an average of 1,963,706 distinct vehicles per month as shown in figure 3. **This equates to nearly 5% of all UK vehicles travelling in the CAZ**.

Our data shows that there are around 7,000 electric vehicle movements currently in the CAZ on a daily basis

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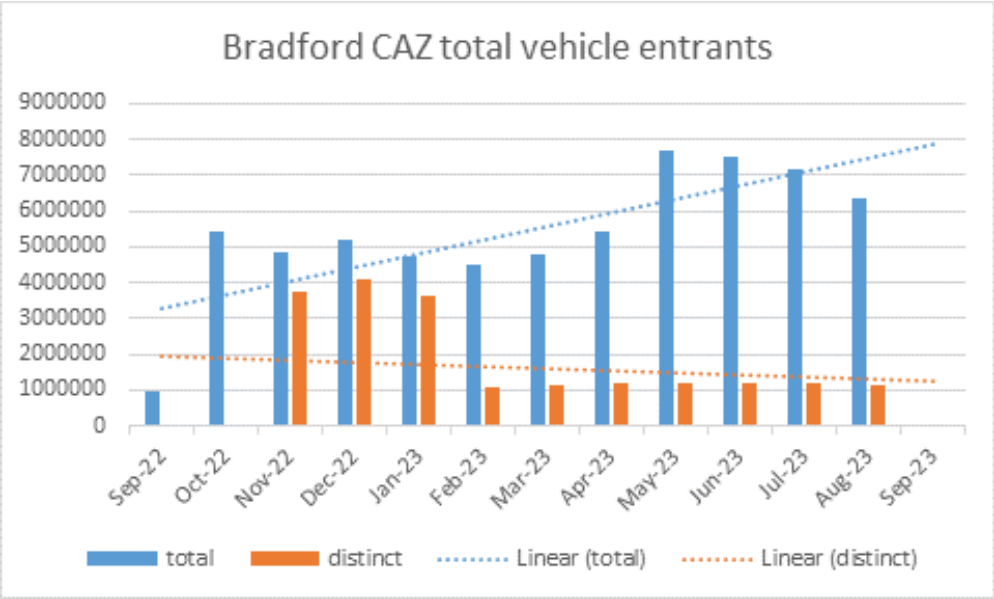
Figure 3 – Total Vehicle Entrants to the CAZ



Our data shows that 99% of the 4,800 Bradford Licensed Taxis (Hackney Carriages and private hire vehicles) are CAZ compliant. The electric hybrid standard for the majority of private hire vehicles is higher than the Ultra-Low Emission Zone (ULEZ standard in London. Bradford licenced taxi compliance data is shown in figure 4.

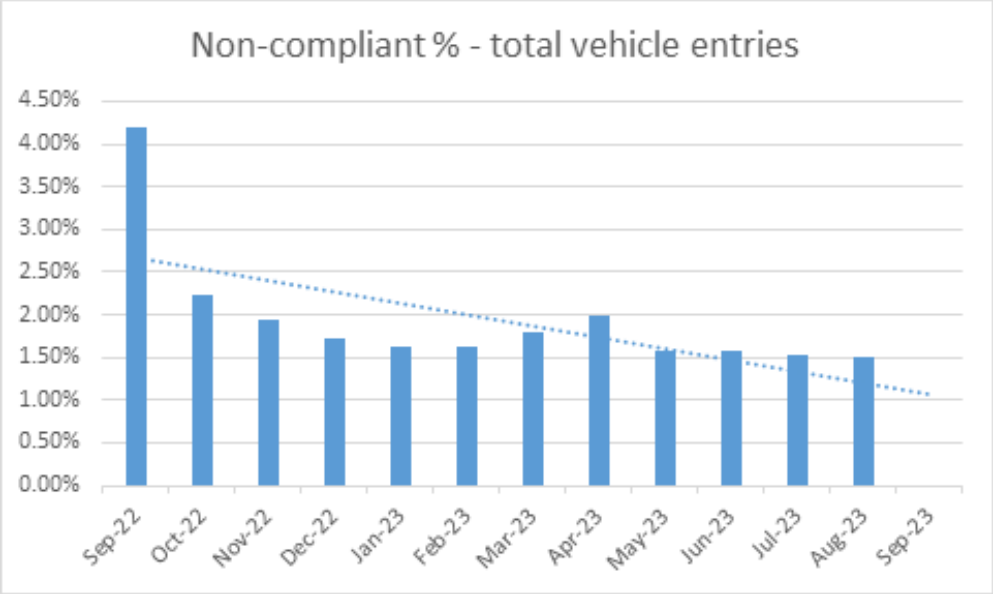
Figure 4 – Bradford Licenced Taxi Compliance

licensed vehicle compliance	Total on fleet	chargeable	non-chargeable	% not charged
Hackney Carriages	212	2	210	99.06
PHV – wheelchair accessible (WAV)	121	5	116	95.87
PHV - 5-8 seat non-WAV	262	8	254	96.95
PHV - 5 seat non-WAV	4224	21	4203	99.5
Total	**4819**	**36**	**4783**	**99.25**

In September 2022 over 4% of all traffic entering the CAZ area was non-compliant and is now 1.5% as shown in figure 5

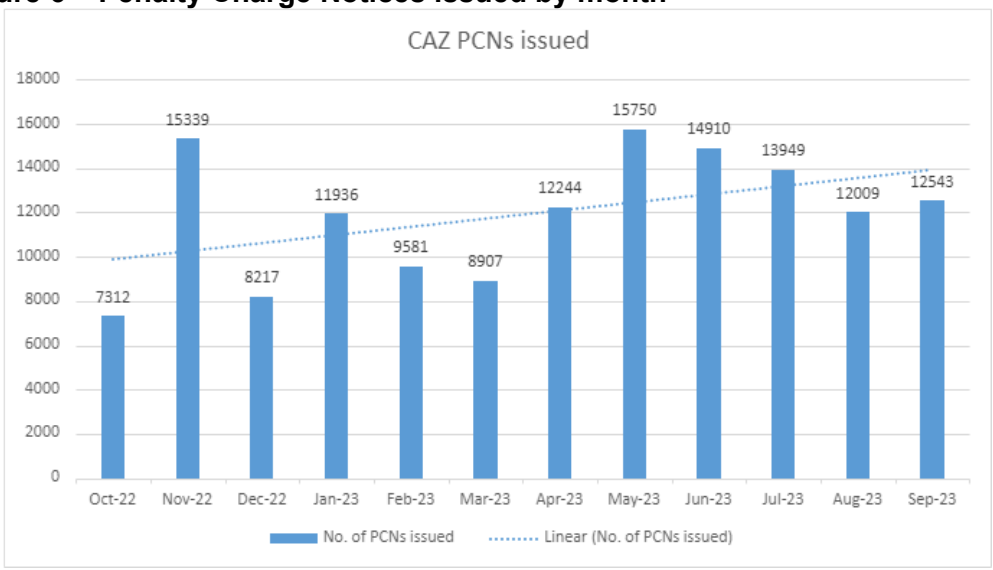
50% of vans entering the CAZ area were non-compliant in September 2023 and by November this number had fallen to 30%. The Council is awaiting DVLA data to confirm that this trend has continued over the last year. HGV compliance has improved from 80% to 97% since the launch of the CAZ. All scheduled and tendered bus services in the CAZ are compliant

Figure 5 – Non-compliant vehicle entries to CAZ (% of total traffic, including cars)



The total number of PCNs issued from launch to the end of September 2023 is 142,697. PCNs issued by month are shown in figure 6.

Figure 6 – Penalty Charge Notices issued by month



A total of 21,037 Representations against PCNs have been received. This is a rate of 14.74% of PCNs issued – this level of Representations has remained consistent since the beginning of 2023. The percentage of accepted representations is 3.3% of PCNs issued.

3.3 CAZ Grants and Exemptions

The Council provides grants for taxi operators, local SMEs and residents to upgrade vehicles so that they are compliant with CAZ standards. Figure 6 provides a breakdown of the CAZ Grant Programmes and figure 7 shows the CAZ Exemption Programme data summary. Grant funding programmes can be found on

the Breathe Better Bradford website (https://www.bradford.gov.uk/breathe-better-bradford/breathe-better-bradford/) and will continue until funding expires.

The Council will continue to look at new grant programmes going forward, including support for zero emission vehicle take-up, including hydrogen fuel cell vehicles.

Figure 6 – Bradford CAZ Grant Funding Summary

grants	Number paid	Amount paid	Number allocated	Value allocated	Original budget	Number remaining	Value remaining
Licensed vehicles – non-EV	1944	£6,677,211	12	£45,600	£7,450,000	200	£727,189
Licensed vehicles - EV	11	£62,800	5	£127,200	£4,291,800	410	£4,101,800
SME LGV/minibus – non- EV	1219	£5,476,588	186	£837,000	£10,354,500	827	£3,721,462
SME LGV/minibus - EV	8	£36,000	0	£0.00	in above	in above	in above
Residents LCV - non-EV	63	£283,450	115	£517,500	in above	in above	in above
Residents LCV EV	0	£0.00	1	£4,500	in above	in above	in above
HGV/HDV/Coaches	435	£6,921,209	28	£448,000	£8,080,000	44	£710,791
Scheduled Buses	74	£1,239,984	-	-	£1,632,000	24	£392,016
Totals	**3754**	**£20,697,242**	**231**	**£1,975,300**	**£31,808,300**	**1505**	**£9,653,258**

The Council has introduced the most extensive CAZ exemption programme in the UK for local residents and SME businesses which has helped in mitigating against the impact of the CAZ and enables adjustment over a longer period of time. The summary of the CAZ Exemption Programme is shown in figure 7.

Figure 7 – Bradford CAZ Exemption Programme Summary

Category	Number	Category	Number
local SME	4375	showman's HGV/haulage	124
Local resident	3372	Specialist vehicles	551
local m/home or horse box	961	Sunset exemptions	200
charity	109	Private hire -5-8 seat*	1148
community transport	119	Private hire -LPG*	326
emergency response	323	Private hire - early adopters*	280
School transport	35		
Combined total (inc PHVs)	11923		
Combined total (not inc PHVs)	10169		
Combined local categories only	8708	85.63% of exemptions are local categories	

* Private hire vehicle exemptions stated above are not exemptions for non-compliant vehicles. These are compliant vehicles which are not recognised as such by the DVLA CAZ vehicle checker[6] and are added to the Council white list

The CAZ Exemption Programme will be in place while ever the Government Directive to operate a CAZ in Bradford remains in place

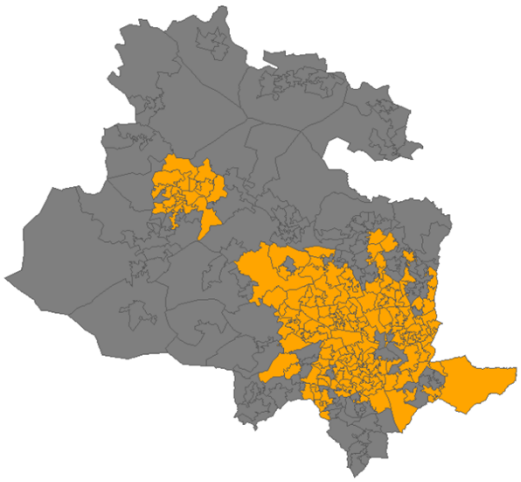
3.4 Bradford EV Taxi Programme

The Council will be launching the £4m Bradford EV Taxi Programme on the 30th November with the highest level of grant in the UK to upgrade to electric. Hackney carriage and private hire vehicle proprietors will be able to access grants of up to £10,000 to assist with the costs of either a purchased or leased electric vehicle (leases of 2 years or longer). This programme ties in with promoting our taxi ambassadors in the UK City of Culture 2025.

The Council has surveyed the licenced fleet to understand interest in the EV Taxi Programme and issues and barriers to take up, including EV infrastructure provision. 1,122 survey responses were received with over 70% expressing interest in going electric. The distribution of responses is shown in figure 8

Figure 8 – Distribution of responses to EV Taxi Survey

Partial postcode	Percentage
BD2	17.53%
BD3	14.93%
BD7	11.65%
BD9	11.08%
BD8	10.5%
BD5	9.61%
BD1	8.59%
BD6	3.84%
BD4	2.3%
Others	27%



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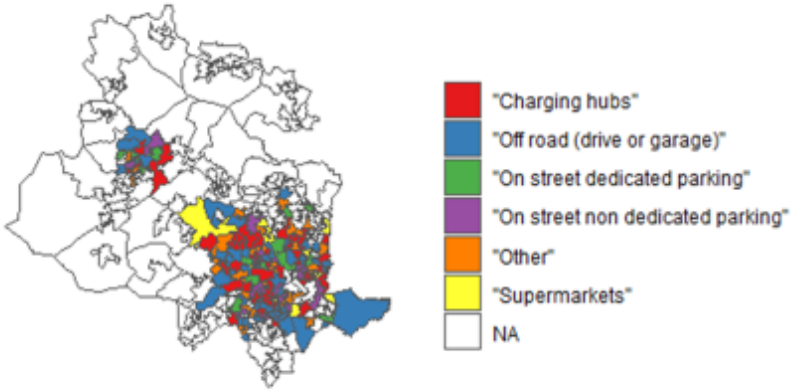
We will build on the consultation with the licenced trade to identify models of EV charging provision opportunities. Initial indication of charging location interest is shown below provided below:

[6] https://vehiclecheck.drive-clean-air-zone.service.gov.uk/vehicle_checkers/enter_details

Do you need more EV charging points to support the switch? (tick all that apply)

When asked what if more EV charging points could persuade them to make the switch to electric vehicles, off-road (drive or garage) was the most popular choice, with 21% choosing this option.



Q9	Percentage
Off road (drive or garage)	21.5%
On street dedicated parking	17..4%
Charging hubs	16.5%
Supermarkets	15.7%
On street non dedicated parking	13.7%
Other	10.5%
NA	4.78%

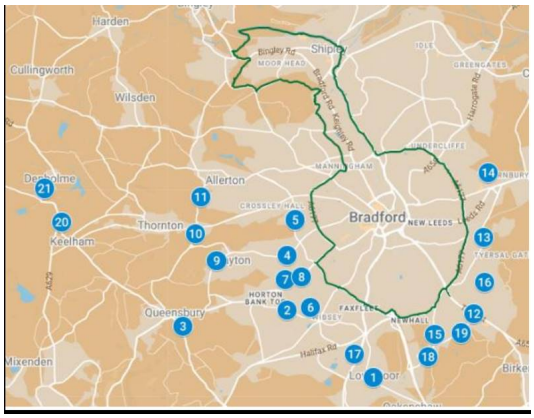
Source: CBMDC EV survey, 1,122 responses, 769 responses with full Bradford postcode details matched to LSOA

3.5 CAZ Traffic Displacement Assessment

The Council has carried out an extensive CAZ Displacement Traffic Assessment[7] using video cameras to monitor levels of traffic at key locations around the district in the week before the CAZ was launched, 2 weeks after launch and 6 weeks after launch. The sites chosen were identified by the transport model, approved by Government

The assessments found that traffic changes at all monitoring sites represented less than 1% of commercial traffic flows and showed that there has been no displacement of traffic due to the CAZ. The sites where displacement monitoring has taken place are identified in figure 9. The monitoring results are shown in figure 10

Figure 9 – Displacement Monitoring Sites



[7] https://www.bradford.gov.uk/media/7321/bradfordcleanairzone-displacementtrafficmonitoringreport.pdf

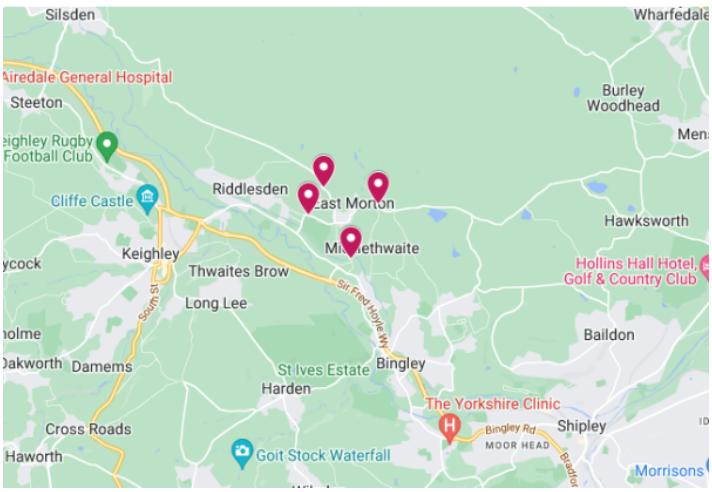
Figure 10 – Displacement Monitoring Results

Site	Location	Post CAZ - Nov	
		avg % commercial	+/- % change avg % commercial vehicles (against pre-CAZ Baseline)
Site 1	Cleckheaton Road	23.03%	-0.50%
Site 2	Beacon Road	16.37%	-0.17%
Site 3	Brighouse & Denholme Road	18.07%	+0.68 *
Site 4	Clayton Road	10.11%	-0.55%
Site 5	Cemetery Road	11.52%	-0.01%
Site 6	Moore Avenue	10.42%	-0.79%
Site 7	Hollybank Road	8.97%	-1.01%
Site 8	Gt Horton Road	8.95%	-0.25%
Site 9	The Avenue	13.65%	-0.96%
Site 10	Chat Hill Road	12.91%	-0.35%
Site 11	Allerton Lane	13.41%	-1.25%
Site 12	Tong Street	23.42%	-0.66%
Site 13	Dick Lane	14.66%	-1.50%
Site 14	Gain Lane	10.96%	-1.12%
Site 15	Bierley Lane	14.63%	-1.01%
Site 16	Broadstone Way		Camera stolen **
Site 17	Netherlands Avenue	9.80%	-1.96%
Site 18	Rockhill Lane		Camera stolen **
Site 19	Shetcliffe Lane		Camera stolen **
Site 20	Brighouse Rd		Road Closure
Site 21	Main Road, Denholme	20.91%	-0.51%

* October data only camera stolen in November
**The Police have made an arrest following the theft of cameras

Additional monitoring has also been carried out manually, counting traffic at the locations in East Morton from the 21st to the 25th November 2022. The monitoring locations are shown in figure 11

Figure 11 – Manual Traffic Council Sites in East Morton



This data has been compared to traffic counting collected in 2019 by the department of Transport (DfT). The 2022 data shows a ~9% reduction in traffic volumes when compared with the data collected in 2019

A NO2 air quality monitor was installed in the centre of East Morton in January 2023 and provisional data by August 2023 shows a level of 10ugm3 which is the lowest level of NO2 that we monitor in the district – the legal limit is 40ugm3

3.6 Clean Air Schools Programme (CASP)

The £1.09m Clean Air Schools Programme will be the first programme implemented using the Clean Air Zone revenue, meaning no additional cost to the Council or Council tax payer.

Air pollution, especially around schools, at the start and end of the school day has negative health impacts on children and families. There are many safety concerns at school drop-off time due to congestion but the impact of toxic fumes from vehicle engines is proven to cause health problems to young children and there's evidence that it can negatively affect educational attainment too.

The Clean Air Schools programme seeks to reduce emissions near schools by working with schools and parents. There will be reductions in cars idling outside schools as a result of new measures to enforce anti-idling. The new programme will also provide specific grants to schools to reduce emissions further, particularly in areas of the poorest air quality.

The council will increase the number of wardens who will work in partnership with schools so increasing enforcement and engagement activity in the roads around school sites. There will also be an engagement programme with staff going into schools to deliver classes on air pollution with workbooks and hand held air monitoring devices to show the kids how air pollution is measured.

Under the Clean Air Schools Programme, individual schools can apply for grants to implement the most effective solutions to reduce emissions and air pollution.

The expressions of interest for grants for the £500,000 fund for grants of £200-£10,000 per school closed on the 20th October. Over a third of schools in the District have expressed interest in the programme. The schools have some brilliant ideas including new footpaths away from traffic for children walking to school, scoot, walk and ride programmes and living green screens to protect playgrounds.
The Clean Air Schools Programme is part of our ambition to make the district a safer and cleaner place to be for people of all ages. Working in partnership with schools we will strengthen enforcement and tackle harmful pollution near the school gates. We also want families to be given more opportunities to enjoy active travel to and from school.

3.7 Clean Air Day, June 15th 2023

Bradford is the UK's youngest City and children are shaping the future of Bradford. The Clean Air Team are working to improve their health by reducing air pollution and we are educating, motivating, and equipping children with the tools to search for ways to reduce air pollution themselves and make their voices heard.

BBC Look North reported on our Clean Air Day event which was marked by hosting the final of a landmark project with Born in Bradford (BiB) at City Hall with more than 150 school children from across the District discovering new ways of reducing air pollution. Young innovators were given time with industry experts to see the Bradford primary school children use their uninhibited creativity to develop a range of inspiring new ideas to reduce air pollution. The grand final saw pupils' ideas judged for originality, applicability and affordability by a panel of industry experts. IVE's Applied Creativity Labs ran over several weeks to equip students with the creative behaviours and thinking skills they need to develop innovative solutions to real world challenges.

The winning idea was 'Thinking Eco Nomically[8]," a social media information campaign that will include popular media channels, videos and stories to create awareness about health problems with air pollution. Other great ideas that were proposed during the event were The Extraordinary Pollution Defeaters; Project Worm; Motor Scoot; The Carbon Trike and air pollution art installations.

Thinking Eco Nomically is now being communicated on radio and social media, including the WYCA platform and the Breathe Better Bradford website

3.8 CAZ Marketing and Communications

Since the launch of the Clean Air Zone we have undertaken a multi channels marketing and communication campaign to ensure that key messages are heard by the relevant audiences.

We have worked on communications plans to reassure and educate drivers in Bradford. Key messaging was used in the campaigns:

[8] Thinking Eco Nomically | Bradford Council

- Check if you need to pay. Asking drivers to check their vehicle on the Government Drive in a Clean Air Zone website.
- Telling Bradford residents and businesses how to apply for grants and exemptions.
- Informing residents about the health impacts of air pollution.

We have continued to build our Breathe Better Bradford website to contain all the information that a driver needs to know about the Clean Air Zone. We are driving our audience to this website where they can find accurate and relevant information about the Bradford CAZ.

Our marketing activity included a campaign with Visit Bradford that has 15 million website visitors and 21,000 email subscribers and we also conducted geo-targeting campaigns that served a total of 511,308 impressions to our audience.

In November 2022 Defra issued their CAZ Bradford Campaign Evaluation Summary Report. Some snapshots of the report are below:

“The proportion of businesses who claimed to know what a clean air zone is has increased significantly since the start of the campaign, with almost all businesses (97%) now claiming to know what a clean air zone is.”

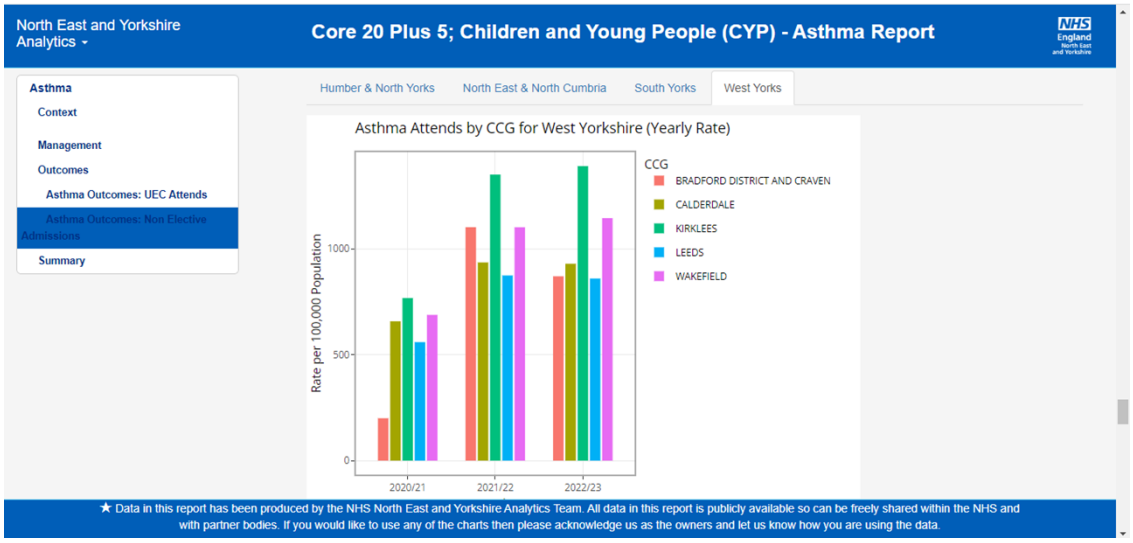
“The proportion of businesses who heard about the clean air zone via the Bradford council website also saw a significant uplift post-campaign. This suggests that the campaign has potentially driven a higher proportion of businesses to act on the campaign's call to action messaging and search "Breathe Better Bradford" which they can find out more information about on the council website.”

“Four-fifths of businesses say they know how to check if vehicles in their fleet are affected by the clean air zone in Bradford, representing a rise since the pre-campaign wave.”

Examples of our marketing in line with the Clean Air Plan Communications and Stakeholder Engagement Plan

3.9 Health Impact Assessment (HIA)

Born in Bradford is carrying out assessments of the health impacts from the CAZ and is due to report in 2024. It is too early to draw conclusions about health data, particularly taking into account the recent pandemic, and health analysis will become clearer in 2024. While NHS data has been published showing static levels of emergency admissions for asthma across West Yorkshire since the pandemic, there appears to be a reduction in Bradford. This may be due to reporting factors. Initial CAZ health impact assessment (HIA) data will be reported by Born in Bradford in 2024.



3.10 CAZ revenue re-investment

Details of how the shares of CAZ revenue will be defrayed, after the cost of operating and decommissioning the CAZ are accounted for, is contained in Annex 3 of the Bradford Clean Air Zone Charging Scheme Order 2022[9].

In addition to the programmes of expenditure outlined in this report, the CAZ reinvestment programme is looking to support:

- Developing the business case and implementation plan for the collection and processing of organic waste through anaerobic digestion, in line with Government requirements, to achieve a sustainable, virtual circle to power our waste collection service from our waste
- Preparation of the Transport Strategy to support the Councils sustainable growth objectives
- Upgrading vehicles to meet CAZ, Ultra-Low Emission and Zero Emission Standards
- Support for the HyBradford Programme and wider hydrogen initiatives to incentivise the uptake of fuel cell vehicles
- Deployment of zero emission infrastructure in partnership with private sector investors to support the Bradford as the City of Culture 2025
- Local Industrial Decarbonisation Programme (LIDP) to support local industrial clusters to develop pathways to reduce overall emissions

4. FINANCIAL & RESOURCE APPRAISAL

4.1 The Council has received £10,376,234 in revenue since the introduction of the CAZ of which £785,634 is payable to the Government Central CAZ Service.

[9] https://www.bradford.gov.uk/media/7229/bradfordcleanairzonechargingorder2022.pdf

Revenue received to date (since launch)

Actual Total	
CAZ charge revenue	£4,233,489.27
PCN	£6,142,745.00
Total	**£10,376,234.27**
CS charge	£785,634.00
Net revenue	**£9,590,600.27**

Revenue received this financial year to date

Actual 2023-24	
CAZ charge revenue	£2,198,255.32
PCN	£3,679,664.00
Total	**£5,877,919.32**
CS charge	£374,834.00
Net revenue	**£5,503,085.32**

5. RISK MANAGEMENT AND GOVERNANCE ISSUES

The implementation of the Clean Air Plan has been governed via the Clean Air Programme Board. Governance, to reflect the wider programme delivery, will be provided by the new Sustainability Programme Board, reporting to Cabinet Management Team (CMT) and the Council Executive Committee

6. LEGAL APPRAISAL

The operation of the CAZ and its enforcement is prescribed by the Transport Act 2000. The Order creating the Zone has been correctly enacted. On that basis the continued operation of the CAZ and enforcement where breaches occur will be lawful provided that there is continued adherence to the statutory requirements. There are no other legal implications at this time.

7. OTHER IMPLICATIONS

7.1 SUSTAINABILITY IMPLICATIONS

The Clean Air Team has become the Sustainability Team of the Council and, in addition to operating and monitoring the CAZ, the service will oversee the delivery of transformative programmes to reduce harmful emissions while creating platforms for inward investment and clean growth

7.2 TACKLING THE CLIMATE EMERGENCY IMPLICATIONS

The Clean Air Team is now the Sustainability Team of the Council and, in addition to operating and monitoring the CAZ, the service will oversee the delivery of transformative programmes to reduce harmful emissions while creating a platform for inward investment and clean growth

The Bradford Clean Air Plan is estimated to achieve a minimum reduction of 150,000 tonnes of CO2e – one of the largest transport emission reduction programmes in the UK

7.3 COMMUNITY SAFETY IMPLICATIONS

None identified other than monitored improvements to community air quality to support health benefits

7.4 HUMAN RIGHTS ACT

The implications of the Human Rights Act 1998 have been taken into account in preparing this report and as part of the decision to create the Clean Air Zone. It is considered that there has been either no impact on those rights which are protected either at all or to such an extent that it would not be proportionate to continue with Clean Air Zone Scheme. Although the Council has considered all rights protected by the Act, in particular, it is satisfied that any interference with Article 8 rights are proportionate and support the protection of public health as permitted by law.

7.5 TRADE UNION

None identified

7.6 WARD IMPLICATIONS

None identified

7.7 AREA COMMITTEE LOCALITY PLAN IMPLICATIONS (for reports to Area Committees only)

None

7.8 IMPLICATIONS FOR CHILDREN AND YOUNG PEOPLE

Local research carried out by Born in Bradford shows an insidious link between air pollution and the health of our children that we believe will be improved significantly through our actions

7.9 ISSUES ARISING FROM PRIVACY IMPACT ASSESMENT

None arising

8. NOT FOR PUBLICATION DOCUMENTS

None

9. OPTIONS

To provide comment

10. RECOMMENDATIONS

The Committee notes and provides comment on this report

11. APPENDICES

None

12. BACKGROUND DOCUMENTS

None

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City of BRADFORD METROPOLITAN DISTRICT COUNCIL

Report of the Strategic Director to the meeting of Regeneration and Environment Overview and Scrutiny Committee to be held on 28th November 2023

T

Subject:

Smart Street Lighting

Summary statement:

The purpose of this report is to advise members of the forthcoming tender for the Out-of-Scope Column Replacement Contract with a value in excess of £2 million in line with the requirements of Contracts Standing Orders (CSO 7.2.1) prior to the commencement of the procurement process.
Also, in response to a motion submitted to the Council meeting on the 17th October 2023, the report will provide information regarding the progress of the Smart Street Lighting project and the utilisation of the CMS for variable lighting levels.

EQUALITY & DIVERSITY:

Compliance with Equality Act 2010 is embedded in the Council's procurement process and requirements. Good street lighting benefits all individuals in the District and has a positive impact on those with visual impairment.

Strategic Director: David Shepherd, Department of Place

Report Contact:
Allun Preece, Principal Engineer
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E-mail: allun.preece@bradford.gov.uk

Portfolio:

Regeneration, Planning and Transport

Overview & Scrutiny Area:

Regeneration and Environment

1. SUMMARY

1.1 To consider the most efficient delivery of the Out-of-Scope column replacements by the procurement of the work using an external contractor.

1.2 This report will update the Committee with the progress of the Smart Street Lighting project installations and the benefits realisation.

1.3 It will outline how the Central Management System is being utilised for dimming the street lighting and the profiles currently in operation with consideration for future lighting levels.

2. BACKGROUND

2.1 In 2018 the Environment and Waste Management Overview and Scrutiny Committee requested a strategy for the ongoing maintenance and replacement of street lighting assets. A project was developed to address the maintenance backlog of the life expired columns and the replacement of all existing luminaires with energy efficient LED units.
The Smart Street Lighting project is an invest to save project to deliver energy efficient LED street lighting across the District, at the time the business case was developed the energy consumed by the street lighting was 27,960,210 kWh per annum with the per unit rate at around 8.6 pence per kWh with an annual bill of £3.25m. The business case estimated around a 65% saving on the energy consumed (kWh).

2.2 As part of the project, the lighting is controlled by a Central Management System (CMS) which is hosted on a LoRAWAN network consisting of 34 gateways across the District providing a low power radio network facilitating communication with each street light. This network can also be utilised for connecting other Smart City applications, examples are use cases such as road surface temperature monitoring, river level sensors, air quality monitoring, even sensors to monitor humidity, temperature in buildings. The network has capacity for around 250,000 devices and the CMS will utilise around 60,000.

2.2 The business case for the Smart Street Lighting project was approved and funding of just under £45m made available through a mix of SALIX funding (£19,084,597) and prudential borrowing (£25,893,509). To simplify the project, it was split into two elements In-Scope which is the standard lantern and column replacements and Out of Scope for the decorative, heritage and other assets that are difficult to access.
Due to the volume of work required a tender process provided Amey OW as the contractor for the In-Scope work. Amey OW did have the option of undertaking the Out-of-Scope work but are unable to deliver it in conjunction with the In-Scope work without affecting the programme and the end date of the project.

2.3 The project installations on site commenced in September 2020 after a survey which was undertaken to identify all the assets and the work type required. The In- Scope assets around 48,000 are split between 3 work types – Lantern Change (around 32,000) Column Replacement (around15,000) and Lantern Change and Sleeve (around 1000).

2.4 The Out of Scope lantern changes (around 3000) will be delivered by the in house teams but the Out-of-Scope Column Replacements (around 1500) cannot be delivered by the in house teams in a timely manner and will therefore be tendered in due course with a commencement date in the new year.

2.5 The project was assessed over a 50 year period with modest inflation applied to the costs of energy which projected a total saving in energy of £166.5m along with a maintenance saving of £23.6m giving a total saving of £189.13m over 50 years. Based on the installations to date forecast savings are around £3.8m this financial year as outlined in Appendix 3.

3. REPORT ISSUES

3.1 Out-of-Scope Column Replacements – These units are probably the most challenging part of the project and will take longer to complete than standard columns. Many of them are in narrow back streets with limited or no vehicular access, the work also includes the disconnection of the old column and the connection of the new column to the mains which can only be completed by Northern Powergrid (NPG) or an accredited Independent Connections Provider (ICP).
Although our in house teams could undertake the column installations and removals this would impact on maintenance operations performance, also, as we are not an ICP we would need to arrange the connection work with Northern Powergrid, experience with the In Scope works has proved that ICP's deliver the connection work at a much lower cost than NPG.

3.2 For these reasons it is proposed that a separate tender is issued to deliver the work to replace 1500 columns concurrently with the In-Scope work being delivered by Amey OW to maximise the energy savings.

3.3 The In-Scope works are progressing well with the contractor having installed 60% of the assets, mainly in residential areas as the traffic routes require traffic management and tend to be restricted in terms of the working times permitted.

3.4 The work that has been completed on the project to date in broad terms is:-

Survey Complete	= 60,080
Design	= 54,309
Lantern Change	= 27,992
Lantern Change and Sleeve (concrete columns)	= 859
Column Replacement (including lantern)	= 9,123

Further details are in Appendix 1

3.5 When undertaking the designs for the new lighting, the criteria for the lighting levels has been derived from BS5489, EN13201 which recommends lighting levels based on traffic volume/pedestrian footfall, environmental factors such as urban/rural etc.
When the contract specification was written the current research was considered and at that time and the majority of LED lighting schemes utilised a colour temperature of 4200 Kelvin (this value denotes where the colour of light emitted sits on the spectrum

– the higher the number the more towards the blue light end of the spectrum).
The colour temperature chosen for the project was 3000 Kelvin – more towards the red end of the spectrum than 4200.
All the new LED lights do not emit any light above the horizontal.

3.6 During the contract preparation the team met with Bradford Council's Biodiversity Officer and considered the impact of the lighting on flora and fauna, especially in areas of known bat roosting sites. Work has also been undertaken in some of these areas to reduce lighting levels/amend the design in consultation with the Biodiversity Officer where there are bat roosts and their activity has been monitored..

3.7 Variable lighting levels – As part of the project the new lighting is controlled by a CMS (Central Management System) which facilitates dynamic control of the street lights. The benefits of the CMS include

- Fault reporting for - loss of supply, various lantern failure symptoms, column not vertical i.e. hit by vehicle.
- Programmable lighting profiles that can include dimming at varying levels, switching off/on at different times, calendar based control of lighting etc.
- Energy consumption reporting as a pseudo meter

3.8 All the new lighting that has been installed has been programmed with a dimming profile based on the type of road. Traffic routes require higher lighting levels and there is less flexibility in reducing the levels to maintain a level that still meets the BS/EN recommendations. Residential roads tend to be used less especially later in the evening and therefore can be dimmed to lower levels – again, whilst still trying to achieve the levels in the BS/EN.

3.9 The old street lighting controlled by photo cells used a switching regime of 811 – this turned the lighting on at 55 Lux and off at 28 Lux, the burn hours (the amount of hours per annum the lights are on) for this regime were 4,125 hours per annum

3.10 The current switching regime/variable dimming profile for Traffic Routes is F10

Switches on at 10 Lux (dusk) 100%
At 22:00hrs dims to 70%
At 06:00hrs increases back to 100%
Switches off at 10 Lux
This equates to burn hours of 3,105 hours per annum

3.11 The current switching regime/variable dimming profile for Residential Roads is F11

Switches on at 20 Lux (dusk) 100%
At 22:00hrs dims to 75%
At 00:00hrs dims to 50%
At 05:00hrs increases back to 100%
Switches off at 20 Lux
This equates to burn hours of 3,065 hours per annum

3.12 It is possible to apply for other variable dimming profiles which can be very easily implemented using the CMS to reprogramme the lighting at minimal cost, basically

officer time to create and apply the profile on the system, and different profiles can be applied to individual lights or groups of lights.

Appendix 2 details examples of the profiles in the CMS system currently in use.

3.13 Careful consideration must be taken when changing the lighting profiles if the proposed levels do not comply with those recommended in BS5489/EN13201, good lighting is proven to reduce crime, the fear of crime and reduce road traffic collisions.

4. FINANCIAL & RESOURCE APPRAISAL

4.1.1 The project funding of just under £45m was agreed by PAG in 2018 and the projected costs are on target with the budget. The procurement of the Out-of-Scope Column Replacement is anticipated to be just over £2m from the funding for the overall project. The development of this contract has been supported by Legal and Procurement officers.

4.1.2 Based on the work completed to date the estimated savings that will be realised once the inventory has been updated are detailed in Appendix 3. The value of the savings can only be evidenced once the revised bills have been processed following the new inventory being passed through the validation and billing process, there is a lag in this process but the bills can be backdated for 13 months, it is intended to accelerate this process to maximise in year savings.

5. RISK MANAGEMENT AND GOVERNANCE ISSUES

5.1 The Smart Street Lighting project reports to a Project Board on a monthly basis which includes evaluation of the risk register to reduce or mitigate risks.

6. LEGAL APPRAISAL

6.1.1 Legal Services have been consulted in relation to the proposed tender

7. OTHER IMPLICATIONS

7.1.1 SUSTAINABILITY IMPLICATIONS

7.1.1 The project is already reducing the energy requirements for the street lighting service and provide more sustainable lighting including improved energy efficiency, reduced maintenance and the need for regular lamp replacement which previously contained many elements of the lamp which were harmful to the environment.

7.2.1 TACKLING THE CLIMATE EMERGENCY IMPLICATIONS

7.2.1 The Smart Street Lighting project is anticipated to reduce the CO^2 emissions for the District by around 6000 tonnes per annum once all the lanterns have been replaced.

7.3 COMMUNITY SAFETY IMPLICATIONS

7.3.1 It has been evidenced that good street lighting, especially white light sources provide a reduction in the fear of crime and better social observation as well as supporting CCTV coverage.

7.4 HUMAN RIGHTS ACT

7.4.1 There are no known human rights implications.

7.5 TRADE UNION

7.5.1 There are no Trade Union Implications

7.6.1 WARD IMPLICATIONS

7.6.1 The project is District wide although the information on the work completed to date by Ward is detailed in Appendix 1

7.7 AREA COMMITTEE LOCALITY PLAN IMPLICATIONS (for reports to Area Committees only)

7.7.1 N/A

7.8 IMPLICATIONS FOR CHILDREN AND YOUNG PEOPLE

There are no implications for children and young people.

7.9 ISSUES ARISING FROM PRIVACY IMPACT ASSESMENT

There are no issues arising.

8. NOT FOR PUBLICATION DOCUMENTS

- None

9. OPTIONS

9.1.1 That the Regeneration and Environment Overview and Scrutiny Committee note that the Strategic Director, Place progresses with the procurement of the Out-of-Scope Column Replacement work.

9.2.1 Or, the Committee request the Strategic Director, Place to utilise the existing contract with Awey OW at additional cost and extension of the completion date.

9.2.2 That the Committee notes the work that has already been completed and the benefits of the project.

9.3.1 That the Committee consider whether the dimming profiles implemented within the CMS are the most energy efficient whilst still providing a safe environment for

vehicular and pedestrian road users.

9.3.2 Or, the Committee request the Strategic Director, Place to evaluate other dimming profiles although these may deem the lighting as not meeting current British Standard recommendations for the type of road.

10. RECOMMENDATIONS

10.1.1 That the committee notes it is the intention of the Strategic Director, Place to award a new contract for 'Out-of-Scope Column Replacement' as part of the Smart Street Lighting Project to an external contractor to commence on 19th February 2024.

10.1.2 That the Committee notes the work that has already been completed and the benefits of the project.

10.1.3 That the Committee notes the dimming profiles implemented within the CMS that meet the recommended lighting levels appropriate for the road type as prescribed by the British and European Standards for Road Lighting are the most energy efficient whilst still providing a safe environment for vehicular and pedestrian road users.

11. APPENDICES

11.1 Appendix 1 – Planned works versus completed work for each work type for the In-Scope work completed by the contractor Amey. Also quantities of the proposed Out-of-Scope column replacement work due to go out to tender and the Out-of-Scope lantern changes to be completed by the in house teams.

11.2 Appendix 2 – Examples of dimming profiles currently utilised in the Central Management System and an example of a load graph.

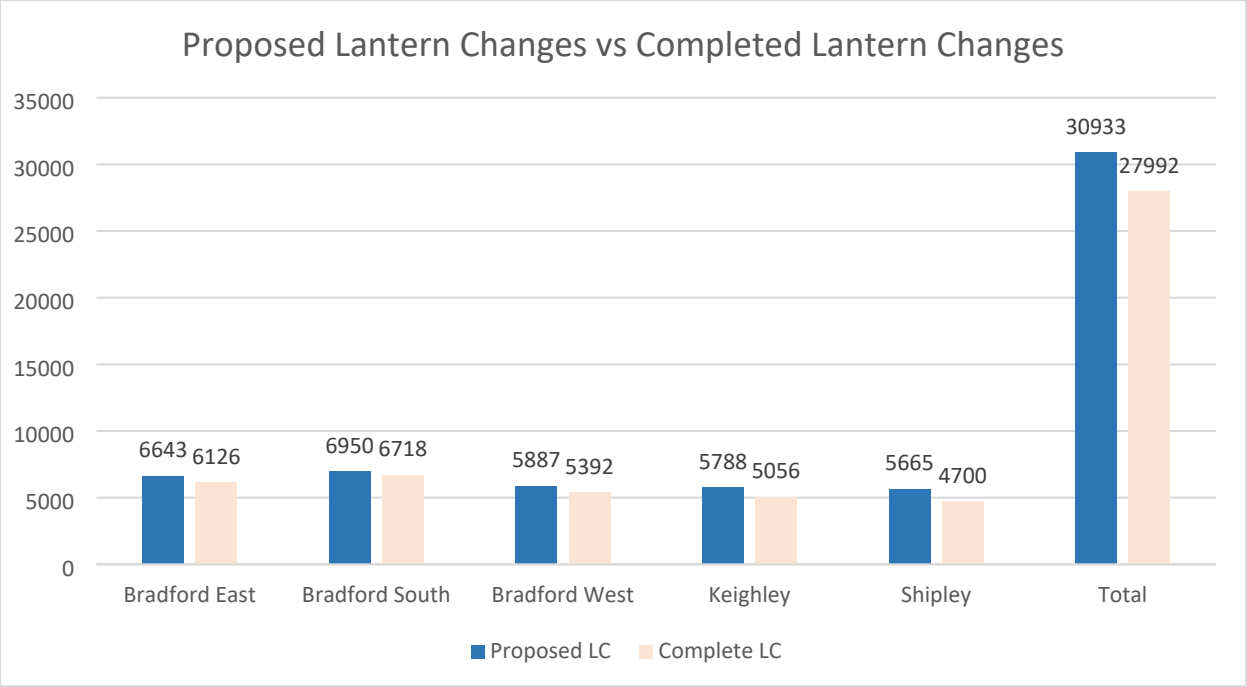
11.3 Appendix 3 – Graphs highlighting the reduction in load, energy consumption, energy costs and CO^2 emissions for a 12 month period before and after the installation of the Smart Street Lighting project (quantities based on completed work up to October 2023)

12. BACKGROUND DOCUMENTS

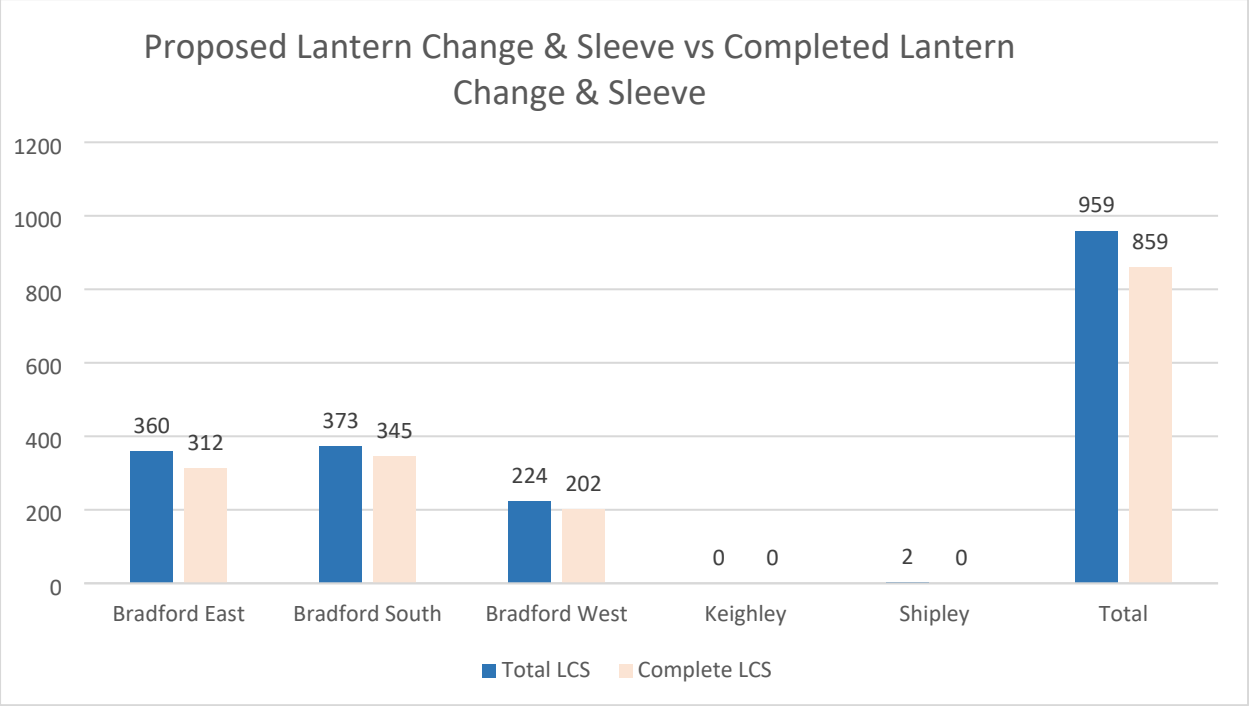
N/A

Appendix 1

Number of Lantern Changes proposed for completion by Amey and the number already completed as at the end of October 2023

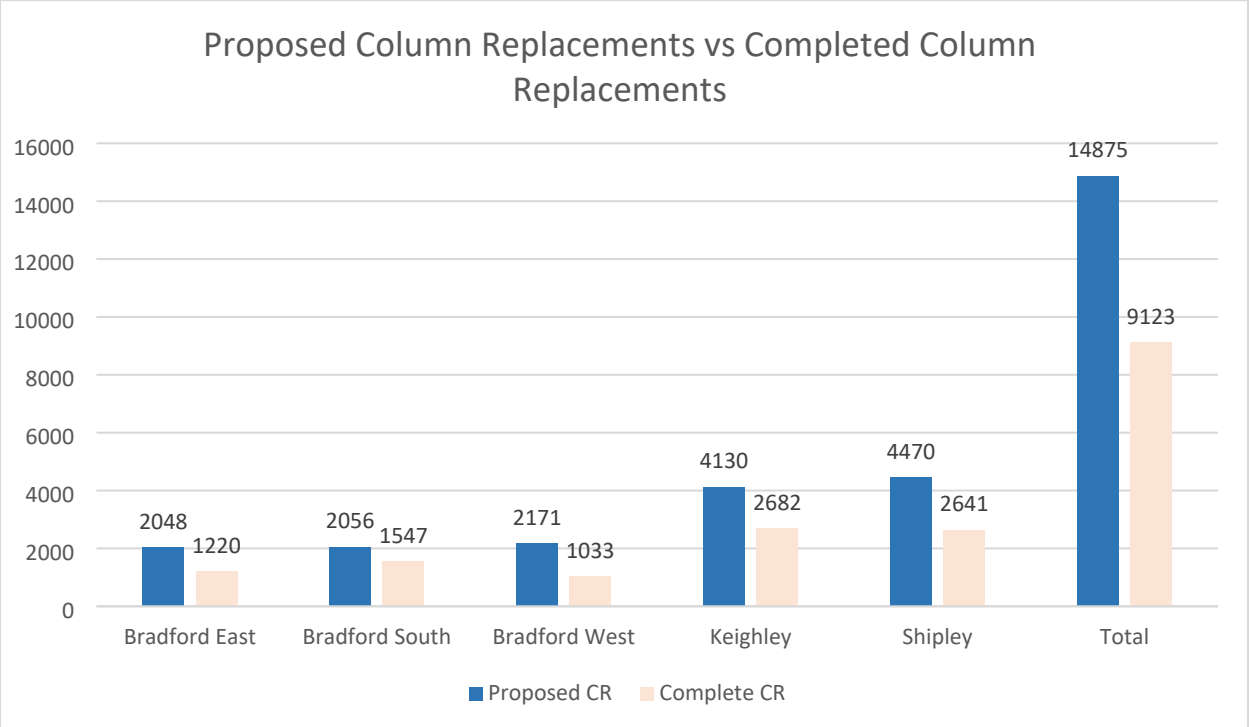


Number of Lantern Change and Sleeve proposed for completion by Amey and the number completed as at the end of October 2023 – these are where concrete columns have been retained and a steel sleeve fitted at the top to increase the height to 6 metres

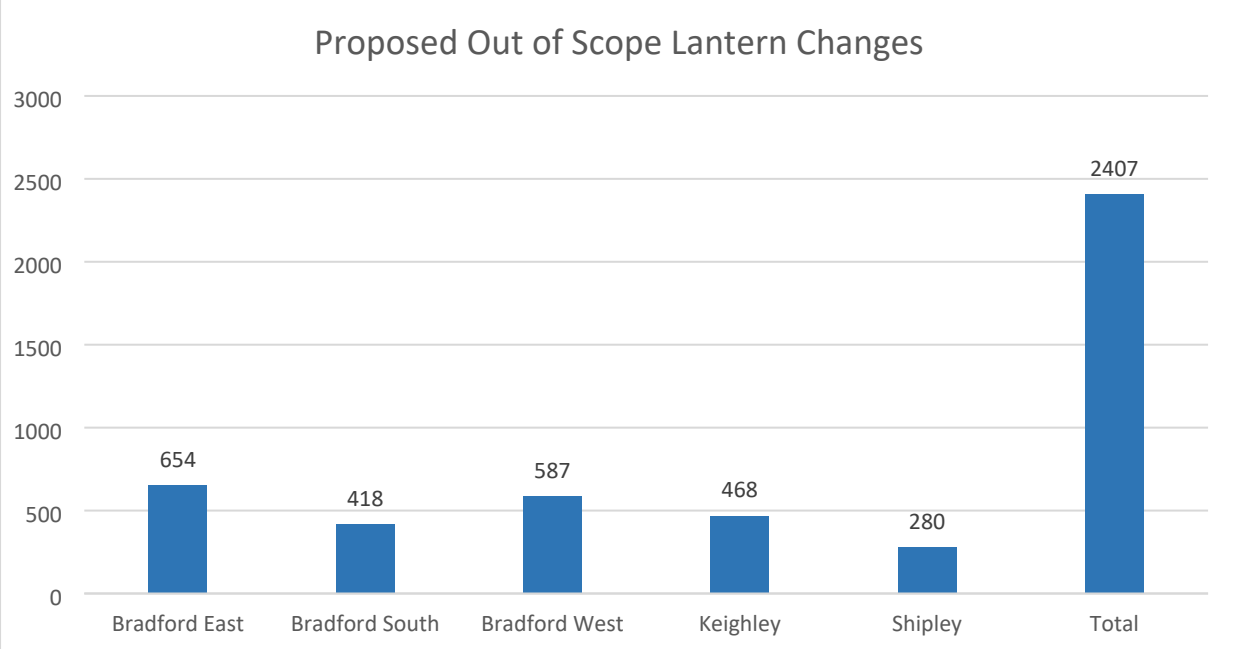


Appendix 1 cont.

Number of Column Replacements proposed for completion by Amey and the number already completed as at the end of October 2023

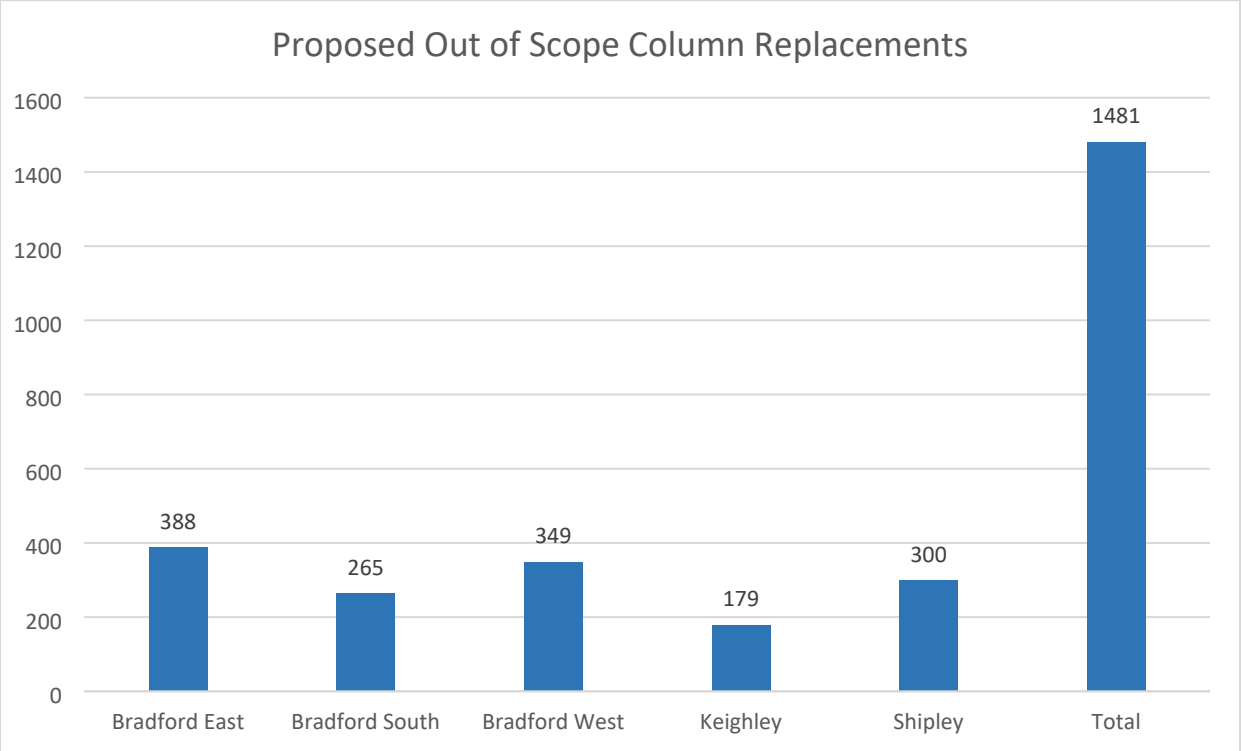


Number of proposed Out of Scope Lantern Changes – these will be completed by the Council's in house operational teams.



Appendix 1 cont.

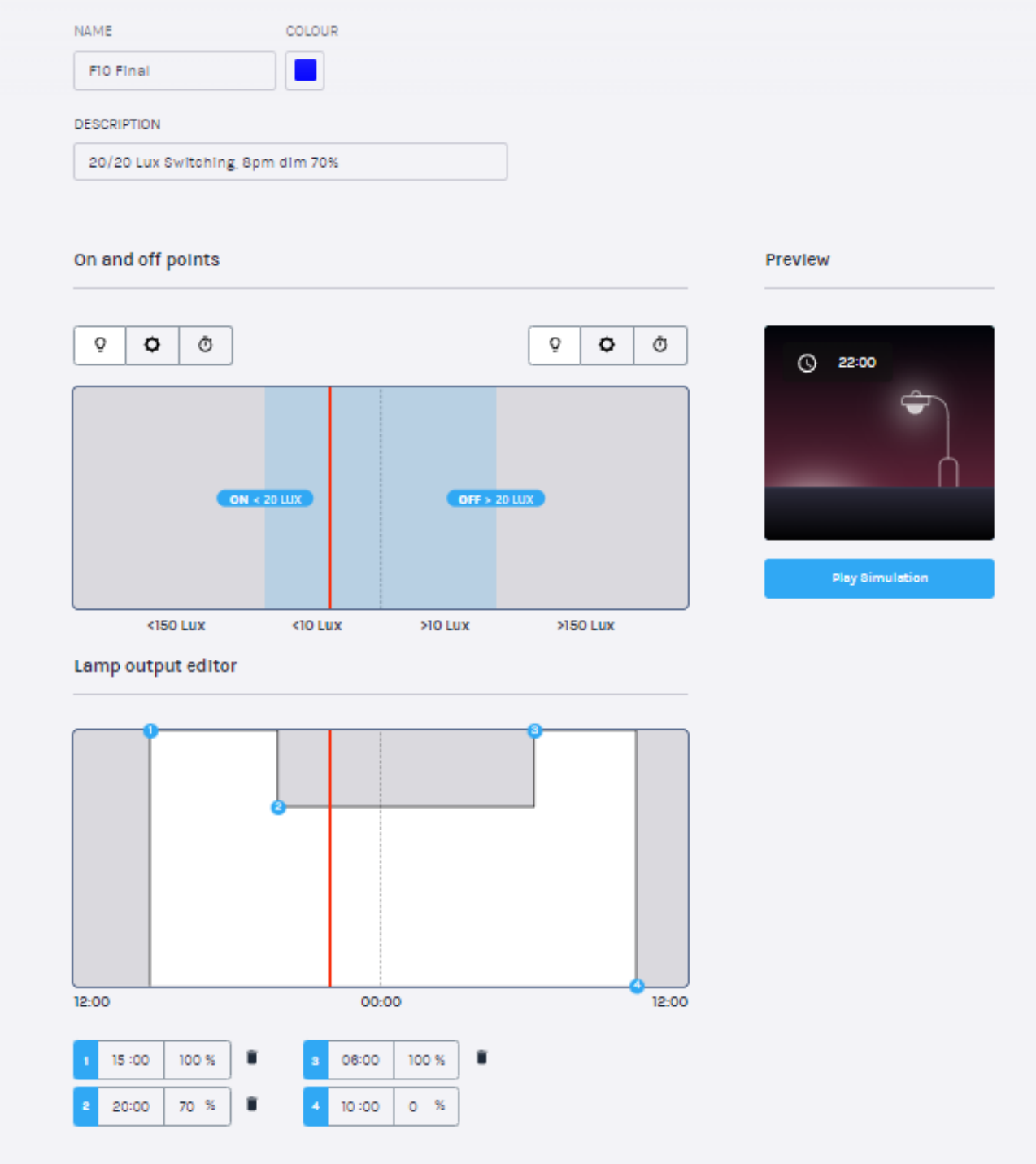
Number of proposed Out of Scope Column Replacements – these will be completed by the successful external contractor following the procurement exercise.



Appendix 2

Traffic Routes – F10 dimming profile
On at 10 lux (dusk), dim to 70% light output at 20:00hrs and back up to 100% at 08:00hrs if it is still dark and then off at 10 lux (dawn).
Figure 1 shows a screenshot of the Ki system showing the F10 dimming profile

Figure 1

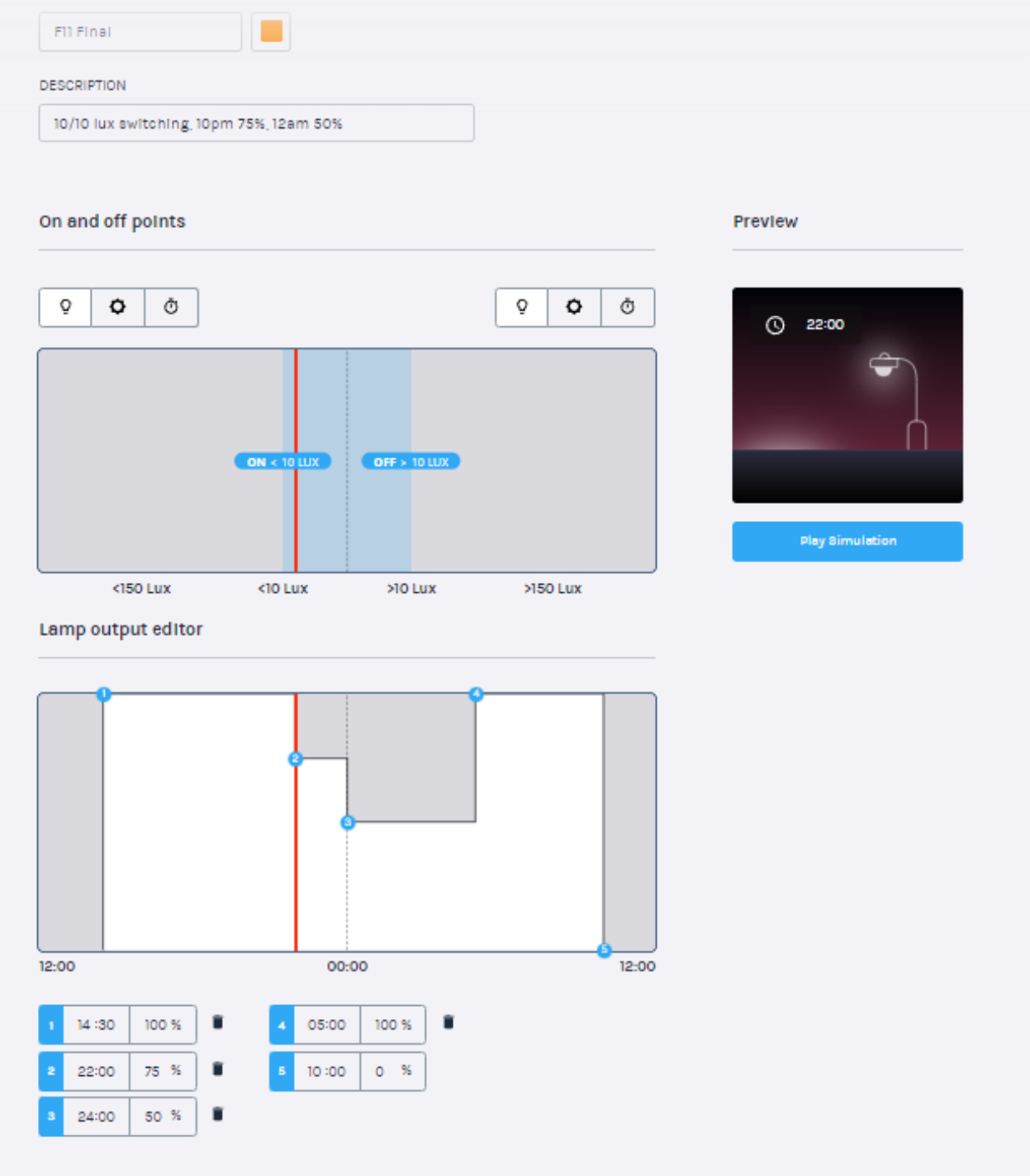


Appendix 2 cont.

Residential Roads – F11 dimming profile

On at 20 lux (dusk), dim to 75% light output at 22:00hrs, a further dim to 50% at midnight and back up to 100% at 05:00hrs if it is still dark and then off at 20 lux (dawn).
Figure 2 shows a screenshot of the Ki system showing the F11 dimming profile

Figure 2

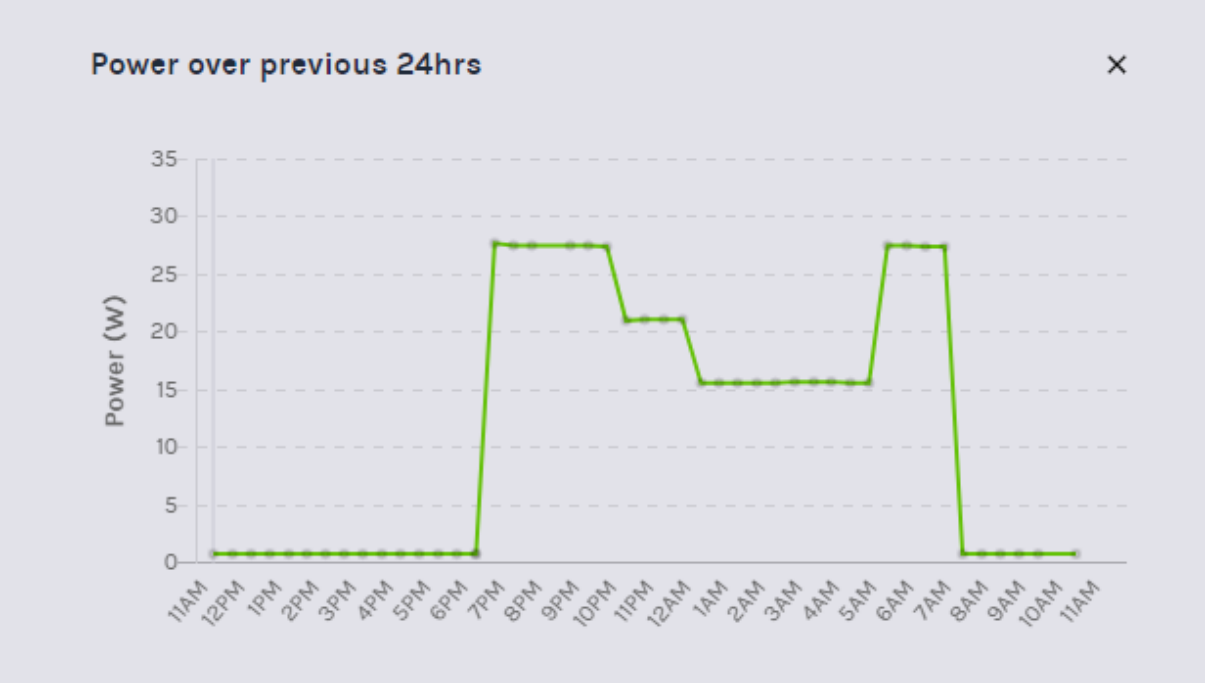


Appendix 2 cont.

Energy Consumption

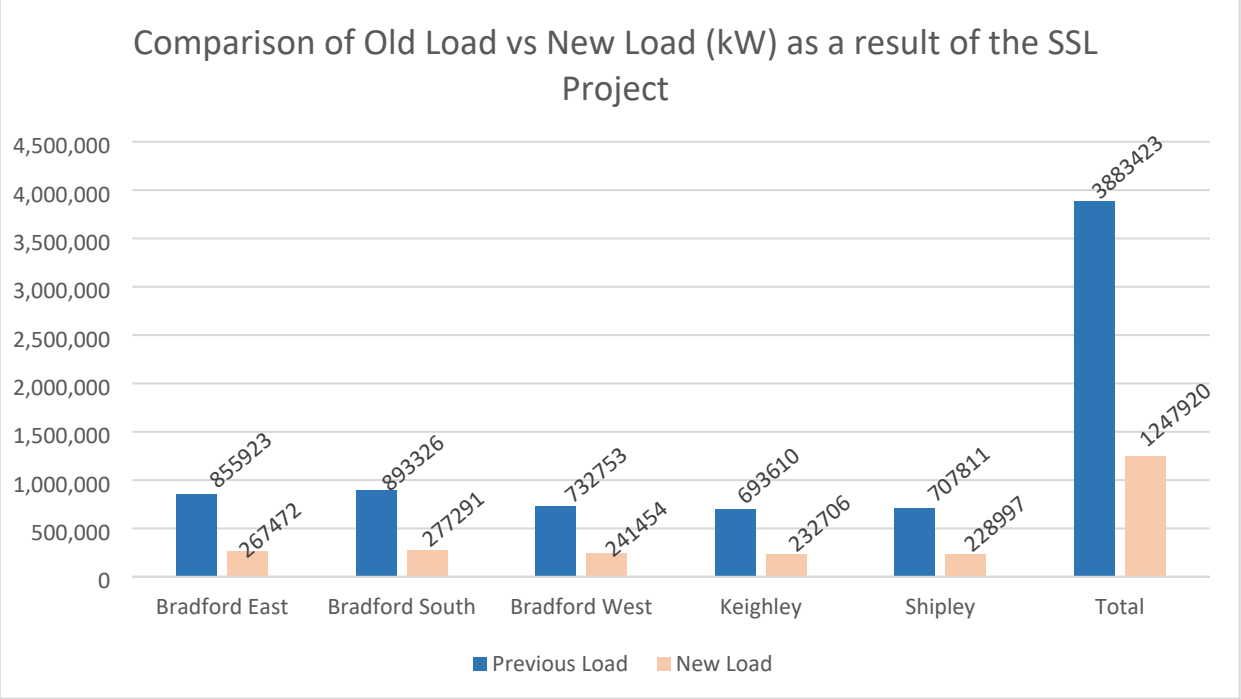
The graph below in Figure 3 shows the consumption in Watts of a typical residential street with the F11 dimming profile from the Ki system (the Central Management System -CMS) that controls the new street lighting.
At full power the consumption is 27.7w, at 75% light output the consumption is 21w and at 50% light output the consumption is 15.6w.

Figure 3

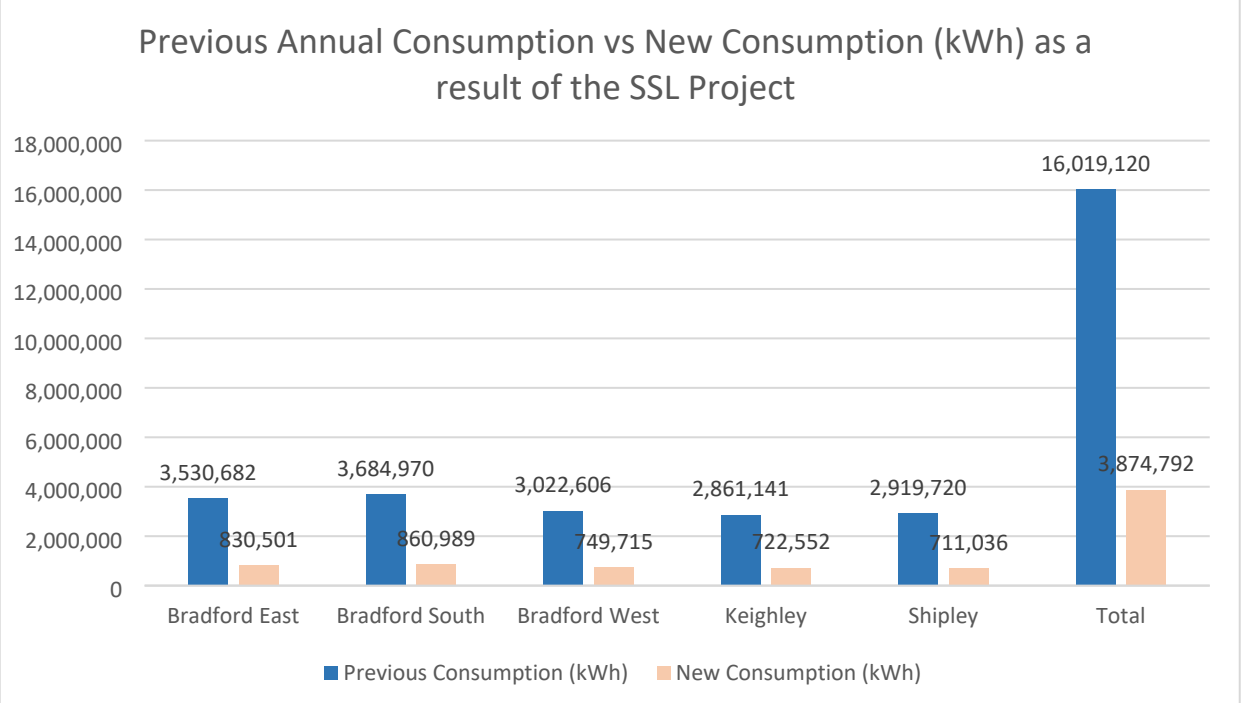


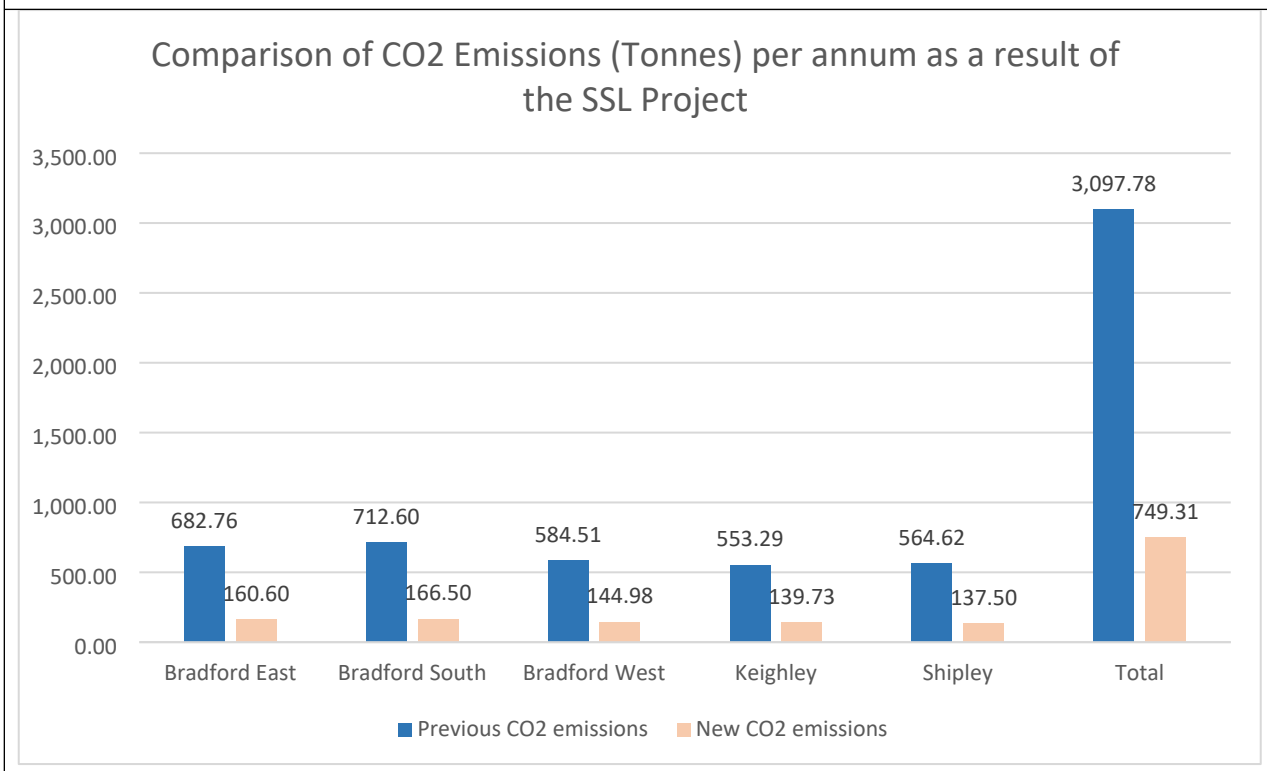
Appendix 3

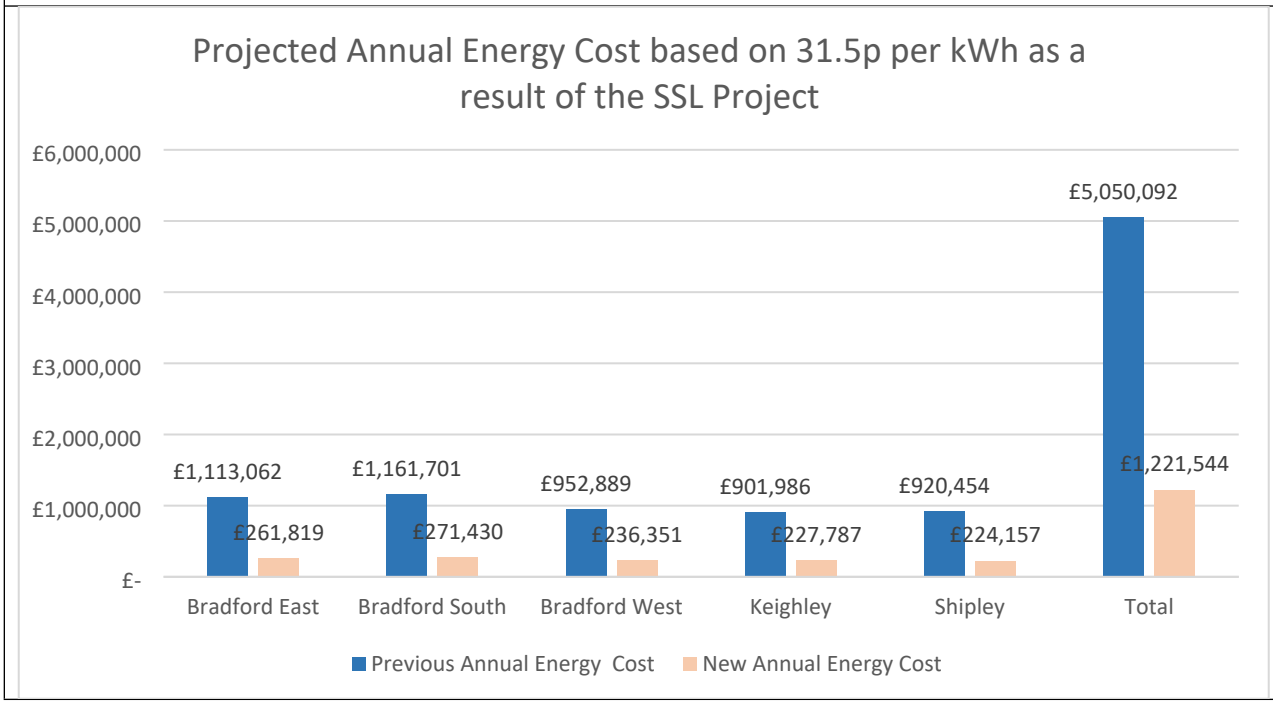
The chart below shows the load before the LED installation and the new load after LED installations – to equate this into more understandable terms, it is like replacing a 100w light bulb with a 35w light bulb.



The next chart shows the estimated annual energy consumed before the LED installations and after the




Comparison of CO2 Emissions (Tonnes) per annum as a result of the SSL Project
3,500.00
3,000.00
2,500.00
2,000.00
1,500.00
1,000.00
500.00
0.00
682.76
160.60
712.60
166.50
584.51
144.98
553.29
139.73
564.62
137.50
3,097.78
749.31
Bradford East
Bradford South
Bradford West
Keighley
Shipley
Total
Previous CO2 emissions
New CO2 emissions


Projected Annual Energy Cost based on 31.5p per kWh as a result of the SSL Project
£6,000,000
£5,000,000
£4,000,000
£3,000,000
£2,000,000
£1,000,000
£-
£1,113,062
£261,819
£1,161,701
£271,430
£952,889
£236,351
£901,986
£227,787
£920,454
£224,157
£5,050,092
£1,221,544
Bradford East
Bradford South
Bradford West
Keighley
Shipley
Total
Previous Annual Energy Cost
New Annual Energy Cost

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