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City of Westminster

Committee Agenda

Title:	**Climate Action, Environment and Highways Policy and Scrutiny Committee**
Meeting Date:	**Thursday 29th February, 2024**
Time:	**7.00 pm**
Venue:	**Rooms 18.06 & 18.07, 18th Floor Meeting Rooms, Westminster CIty Hall, 64 Victoria Street, SW1E 6QP**
Members:	**Councillors:** Jason Williams (Chair) Jim Glen Patrick Lilley Tim Mitchell Ed Pitt Ford Judith Southern Iman Less

Members of the public are welcome to attend the meeting and listen to the discussion Part 1 of the Agenda

Admission to the public gallery is by ticket, issued from the ground floor reception. If you have a disability and require any special assistance please contact the Committee Officer (details listed below) in advance of the meeting.

If you require any further information, please contact the Committee Officer, Francis Dwan.

fdwan@westminster.gov.uk
Corporate Website: www.westminster.gov.uk

Note for Members: Members are reminded that Officer contacts are shown at the end of each report and Members are welcome to raise questions in advance of the meeting. With regard to item 2, guidance on declarations of interests is included in the Code of

Governance; if Members and Officers have any particular questions they should contact the Head of Committee and Governance Services in advance of the meeting please.

AGENDA

PART 1 (IN PUBLIC)

1. MEMBERSHIP

To note any changes to membership.

2. DECLARATIONS OF INTEREST

To note any declarations of interest from Members or Officers present.

3. MINUTES **(Pages 3 - 8)**

To approve the minutes of the previous meeting held on the 16th January 2024.

4. WORK PROGRAMME **(Pages 9 - 16)**

To review and approve the committee work programme for forthcoming meetings.

5. SUSTAINABLE TRANSPORT STRATEGY **(Pages 17 - 54)**

To receive a report on WCC's first overarching Sustainable Transport Strategy with a view to providing comment on the strategic priorities set out, engagement approach and target setting.

6. PDHU - OUTLINE BUSINESS CASE APPROACH **(Pages 55 - 114)**

To review progress and consider options presented in relation to the future direction of the Pimlico District Heating Undertaking (PDHU).

Stuart Love
Chief Executive
21st February 2024

CITY OF WESTMINSTER

MINUTES

Climate Action, Environment and Highways Policy and Scrutiny Committee

MINUTES OF PROCEEDINGS

Minutes of a meeting of the **Climate Action, Environment and Highways Policy and Scrutiny Committee** held on **Tuesday 16th January, 2024**, 18th Floor Meeting Rooms, Westminster City Hall, 64 Victoria Street, SW1E 6QP.

Members Present: Councillors Jason Williams (Chair), Laila Cunningham, Patrick Lilley, Tim Mitchell, Ed Pitt Ford, James Small-Edwards and Judith Southern

Also Present: Councillors Paul Dimoldenberg (Cabinet Member for City Management and Air Quality), Adam Hug (Leader of the Council), Aicha Less (Cabinet Member for Communities and Public Safety). Officers: Michael Carson (Principal Solicitor - Employment, Criminal and Commercial Litigation), Mark Chalmers (Head of Community Safety and Specialist Services), Francis Dwan (Policy and Scrutiny Advisor), Frances Martin (Executive Director of Environment and City), Philip Robson (Interim Director of City Highways), Mark Wiltshire (Director of Public Protection and Licensing) and Fatima Zohra (Bi-Borough Data Protection Officer and SRO Westminster CCTV).

1 MEMBERSHIP

1.1 There were no changes to the membership.

2 DECLARATIONS OF INTEREST

2.1 Councillor Tim Mitchell declared that in respect to item 5, he was Chair of Trustees of the Safer Business Partnership.

2.2 There were no other declarations of interest.

3 MINUTES

3.1 The Committee approved the minutes of its previous meeting held on 6th December 2023.

3.2 RESOLVED

That the minutes of the meeting held on 6th December 2023 be agreed as a correct record of proceedings.

4 WORK PROGRAMME

4.1 The Chair of the Committee drew attention to the amended Committee Terms of Reference, thanked Members for participating in the work programming meeting on 3rd November 2023 and reminded Members that the Committee on 29th February 2024 will scrutinise the Sustainable Transport Strategy.

4.2 Members referenced the items for consideration and requested consideration be given to the Air Quality Action Plan and the Pimlico District Heating Undertaking (P.D.H.U). If not as items, then as updates provided to the membership.

4.3 Actions

1. To consider the Air Quality Action Plan and the Pimlico District Heating Undertaking (P.D.H.U) as items for future Committee meetings.

5 CCTV IN WESTMINSTER

5.1 The Leader of the Council, Councillor Adam Hug, introduced the report on the operation of CCTV in Westminster, thanking Members for their patience in receiving the report and the officers work in preparing it. The Committee heard a summary of the history of CCTV in Westminster and an outline on the context and existing capacity. The Cabinet Member for Communities and Public Protection, Councillor Aicha Less, added about the importance of CCTV as a deterrent tool in tackling anti-social behaviour (ASB), including issues such as fly-tipping and nuisance noise. The Leader and Cabinet Member, assisted by senior specialist officers then were asked questions on:

- Leaseholder charges: whether leaseholders could find themselves financially responsible for cameras placed outside their properties.

- Existing stock: the status of the existing stock of CCTV cameras in Westminster and whether there was any danger that any injection of new cameras would only replace older existing ones.

- Consultant report on CCTV in Westminster: whether a version of the report could be shared with the Committee.

- Partnership work: how the work might intersect with the work of partners such as the police and how this relationship will be managed. Members also requested clarity on ward budget funding being used for nomadic cameras.

- Legal advice: the considerations required for deployment of CCTV cameras and available locations in the public realm with consideration to the regulation of investigatory powers act (RIPA).

- Legislating balance: what procedures and frameworks would be required to balance the aim of public safety with concerns about public privacy and regulated surveillance.

- Camera types: what types of cameras might be available, whether they were nomadic, mobile, or re-deployable. Members also asked about the mobility and range of cameras once they are in place and the degree to which they might be able to pivot.

- Selecting locations: whether locations would be intel-led with opportunity for resident request. Clarity was also sought on appropriate locations in that these cameras could not be deployed on housing estates. Members asked whether high streets could be considered an appropriate location for cameras.

- CCTV in lifts: the output from CCTV cameras positioned in lifts in housing estates and whether these could be considered for redeployment.

- Housing estate CCTV: clarity on whether live-feed CCTV existed in any housing estates in Westminster and whether it would be possible in the future.

- Ease of redeployment: the frequency and ease associated with redeployment of proposed CCTV cameras. Members also enquired as to who would be the decision makers in terms of validating the legitimacy of potential requests.

- Value as a deterrent: the signage that would accompany CCTV and how effective this might be in acting as a deterrent.

- Ease of access: the process associated with providing the footage to residents, but particularly when requested by the police and how the Council can ensure this is not a burdensome process.

- Prevention of damage, what would be done to keep the cameras from being damaged or defaced and how the Council will ensure that they keep working.

- CCTV signage: the information that would be listed on any signage that accompanies CCTV cameras. Members also asked about the consideration of balancing signage acting as a deterrent with the potential implication that it could inadvertently highlight areas that are not covered.

- Contact points: if residents, councillors, or the authorities wanted access to footage whether they would have a clear point of contact to request access.

- Spread of cameras: what consideration is being given to the distribution of cameras across Westminster and whether this would be equally split across wards of Westminster.

- Data storage: how long footage would likely be held for.

- Feedback from CCTV pilots: how pilot CCTV programmes for fly-tipping and nuisance noise from vehicles had progressed to date. Clarity was sought on

whether public space protection orders (PSPOs) were required to extend these to any other areas of the city. There was also a question of whether noise cameras risk displacing nuisance onto other streets and areas of the city rather than solving the problem.

- Use of CCTV: whether cameras could be used for issues such as illegal parking and noisy deliveries or works outside of the permitted hours.

- Measuring success: how success would be measured considering the potential expenditure proposed.

- Ward panel involvement: Members asked whether ward panels might be involved in the process of identifying locations or re-deploying cameras.

- Tackling crime: Members suggested that crimes against the person should be seen as one of the main priorities of the scheme, particularly issues such as thefts and muggings.

- Location determining: Members suggested that resident intel should feed into locations being sought for CCTV, possibly through a bid system and quieter parts of Westminster be considered. This would identify and potentially combat issues such as drug-dealing and graffiti. Members identified how businesses historically have potentially under-reported crimes to the relevant authorities and this shouldn't mean they are prioritised for CCTV, hence the need for a resident led solution.

5.2 Actions

1. To provide Committee Members with a version of the Consultant Report on CCTV in Westminster.

2. For CCTV developments to be available to engage with the Policy and Scrutiny process again as details are being finalised and frameworks being drawn up.

5.3 Recommendations

1. The Committee recommended that the Council considers prioritising locations with high incidence of crimes against the person, particularly thefts and muggings.

2. The Committee recommended that the Council considers installing cameras on quieter streets, away from businesses, to combat issues faced by residents such as drug-dealing.

3. The Committee recommended that the Council consider permitting residents to feed into the locations being selected, possibly through a bid system.

4. The Committee recommended that the Council consider using cameras, in part, to monitor and try to reduce graffiti at hotspots.

5. The Committee recommended that the cameras be mobile and reactive to whenever issues might be flagged up.

6 HIGHWAYS SERVICES PROCUREMENT

6.1 The Cabinet Member for City Management and Air Quality, Councillor Paul Dimoldenberg, introduced the report on Highways Services Procurement, assisted by the Interim Director of City Highways, Phil Robson. The Cabinet Member thanked the work of officers and the Committee for shaping the future direction of travel. The Committee heard a summary of the assets owned and length of work that goes into the procurement process. The Cabinet Member, assisted by senior specialist officers then received questions on:

- Extreme weather preparedness: how the Highways Service could ensure any new contract would be better prepared to deal with extreme weather conditions that Westminster might face going forward.

- Start and end of contract: whether it was appropriate that all elements of the contract start and end at the same time as each other.

- Economies of scale: what the benefits of grouping so many aspects together were and whether Westminster benefits from economies of scale in terms of the size of services.

- Insourcing: how seriously insourcing of aspects of the contract was being considered and realistically the ability of the Council to do this.

- Improving drainage: how drainage and surface run-off could be streamlined to be more efficient and whether this is something that could specifically be sought in the contract.

- Electric vehicle (EV) infrastructure: whether the highways contract would include EV infrastructure across the City.

- Net-Zero carbon commitments: given the contract is set to run past the Council's 2030 target of being carbon neutral, Members asked and recommended the Council consider incorporating net-zero and emission reduction commitment into the award of contracts.

- Contract length: the advantage of the long contract length, whether it would be advantageous to shorten it and what the advantages and disadvantages of this would be.

- Response to inadequate service: the degree to which the Council could drop poorly performing contractors or even individuals within a service during the lifetime of the contract.

- Quality of choice: the confidence in a strong and financially reasonable set of options when the final bidding for the contract is done. Members also asked how the Council ensured value for money.

- Scrutiny of decision making: whether the service would be willing to return to the Committee at the point of offer or decision making.

6.2 Recommendations

1. The Committee recommended that the Council considers incorporating net-zero commitments to contracts.

There was no other business and the meeting ended at 20.01.

CHAIR: _____ **DATE** _____

City of Westminster

Climate Action, Environment & Highways Policy and Scrutiny Committee

Date:	29th February 2024
Classification:	General Release
Title:	**2024/2025 Work Programme**
Report of:	Head of Governance and Councillor Liaison
Wards Involved:	All
Policy Context:	All
Report Author and Contact Details:	**Francis Dwan, fdwan@westminster.gov.uk**

1. Executive Summary

1.1 This report asks the Climate Action, Environment & Highways Policy and Scrutiny Committee ("the Committee") to discuss topics for its work programme.

1.2 This report also considers the work of the Committee since its last meeting on Tuesday 16th January 2024.

2. Formal Meeting Dates for the 2023/2024 Municipal Year

2.1 The Committee is advised that this is the last scheduled meeting date for the 2023/2024 year.

3. Background

3.1 The Policy and Scrutiny team supports the Committee in creating the work programme and the Committee considers items on those areas where the Council is currently working to develop new policy, where policies previously implemented are ready for strategic review or where scrutiny plays an overall role in assurance. The overall emphasis is to provide scrutiny with maximum opportunity to have impact and influence Council policy.

3.4 When drawing up work programmes, the Committee considers the vision and purpose of scrutiny at Westminster.

Scrutiny is a vital function to promote transparency and accountability. On behalf of Westminster's communities and stakeholders, local non-Executive Councillors will endeavour to ensure services in the City not only meet people's needs but enhance lived experiences by:

1. *Championing the best possible outcomes for communities and stakeholders.*
2. *Holding the Council, its partner organisations and external bodies to account for decisions taken and the impacts on our communities.*
3. *Examining Council priorities, actively engaging in policy development and offering constructive challenge prior to decisions being taken.*
4. *Working strategically across the city to focus our efforts on policy and service areas where scrutiny can make the biggest impact.*
5. *Demonstrating integrity and commitment by adhering to the Nolan Principles of Public Life.*

4. Work Programme for 2024/25

4.1 The Committee is asked to discuss and propose topics of interest for the next municipal year's work programme in 2024/25.

4.2 The Committee's attention should be drawn to the Terms of Reference, set out in Appendix 2, which may assist the Committee in identifying issues to be included in the wok programme.

4.3 The Committee is due to meet on Monday 29th April 2024 to discuss items for its work programme after the Cabinet Member Annual Updates held between Monday 15 April to Thursday 25 April. The Committee will use the Updates to help identify possible issues for future investigation by scrutiny.

4.4 When considering the work programme, and agreeing an overall programme of scrutiny activity, the Committee should have regard to whether the work programme is achievable in terms of both Officer and Member time, taking into account that the Committee is scheduled to meet four times per year. Members are also reminded that it is advisable to hold some capacity in reserve for any urgent issues that might arise.

5. Task Groups and Single Member Studies

5.1 Each Committee has discretion to establish Task Groups and Single Member Studies to examine key issues in more detail. The Committee is asked to consider whether they would like to establish a Task Group or commission a Single Member Study. The Committee should be advised that both Members and Officers will only be able to successfully take part in and support a finite number of Task Groups at any one time.

6. Monitoring recommendations and actions

6.1 The recommendations and actions arising from each meeting are recorded in the Recommendation and Action Tracker attached as Appendix 3. Members are invited to review the work undertaken in response to those recommendations and actions.

7. Committee activity

7.1 Since the previous meeting of the Committee on, 16th of January 2024, the Committee has received a P.D.H.U strategic options and decarbonisation paper as well as an update on relevant items published on the forward plan.

If you have any queries about this report or wish to inspect any of the background papers, please contact Francis Dwan.

fdwan@westminster.gov.uk

Appendix 1: Terms of Reference
Appendix 2: Recommendation and Action Tracker

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CLIMATE ACTION, ENVIRONMENT AND HIGHWAYS POLICY AND SCRUTINY COMMITTEE TERMS OF REFERENCE

CONSTITUTION

7 Members of the Council (4 Majority Party Members and 3 Opposition Party Members).

TERMS OF REFERENCE

1. To undertake Policy and Scrutiny activity, in line with the functions set out in Section 1 of Chapter 4 of the Constitution, in respect of matters noted in this terms of reference.

2. To lead Policy and Scrutiny Activity for all matters relating to:
    - The climate action programme
    - Environmental enforcement
    - Waste and cleansing
    - Highways and parking
    - Parks and open spaces
    - Any other matter intended to achieve environmental improvement, tackle the climate emergency or otherwise improve the cleanliness of the City

3. Matters referred to in (2) above which are the responsibility of external agencies, and where the Committee may legitimately act to investigate.

4. Any other matter which the Overview and Scrutiny Committee has requested that this Committee investigates.

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Appendix 3: Climate Action, Environment & Highways Policy and Scrutiny Committee Tacker

This tracker enables the Committee to monitor progress against the recommendations it has made, requests for information and actions to be completed.

Item	Recommendation Information Action	Detail	Political Lead and Officer Lead	Status	Response
Work Programme **16.01.24**	Action	To consider the Air Quality Action Plan and the Pimlico District Heating Undertaking (P.D.H.U) as items for future Committee meetings.	*Policy and Scrutiny Advisor*	Done	P.D.H.U was added to the agenda for this Committee meeting (29.02.24). The Air Quality Action Plan will be considered for the next municipal year and discussed as part of the Work Programming session on Monday 29th April. Initial exploration has indicated that June's Committee could present a productive opportunity for it.
CCTV in Westminster **16.01.24**	Recommendation	To provide Committee Members with a version of the Consultant Report on CCTV in Westminster.	Cabinet Member for Communities and Public Protection Exec Director of Environment and City	In Progress	Response to recommendation is due two months after being formally issued. This was on 23rd January; therefore a response is expected by 23rd of March.
	Recommendation	The Committee recommended that the Council considers installing cameras on quieter streets, away from businesses, to combat issues faced by residents such as drug-dealing.	Cabinet Member for Communities and Public Protection Exec Director of Environment and City	In Progress	Response to recommendation is due two months after being formally issued. This was on 23rd January; therefore a response is expected by 23rd of March.
	Recommendation	The Committee recommended that the Council consider permitting residents to feed into the locations being selected, possibly through a bid system.	Cabinet Member for Communities and Public Protection Exec Director of Environment and City	In Progress	Response to recommendation is due two months after being formally issued. This was on 23rd January; therefore a response is expected by 23rd of March.
CCTV in Westminster **16.01.24**	Recommendation	The Committee recommended that the Council consider using cameras, in part, to monitor and try to reduce graffiti at hotspots.	Cabinet Member for Communities and Public Protection Exec Director of Environment and City	In Progress	Response to recommendation is due two months after being formally issued. This was on 23rd January; therefore a response is expected by 23rd of March.

Appendix 3: Climate Action, Environment & Highways Policy and Scrutiny Committee Tacker

CCTV in Westminster **16.01.24**	Recommendation	The Committee recommended that the cameras be mobile and reactive to whenever issues might be flagged up.	Cabinet Member for Communities and Public Protection Exec Director of Environment and City	In Progress	Response to recommendation is due two months after being formally issued. This was on 23rd January; therefore a response is expected by 23rd of March.
	Action	To provide Committee Members with a version of the Consultant Report.	Cabinet Member for Communities and Public Protection Exec Director of Environment and City	In Progress	Not yet received.
Highways Services Procurement **16.01.24**	Recommendation	The Committee recommended that the Council considers incorporating net-zero commitments to contracts.	Cabinet Member for City Management and Air Quality Exec Director of Environment and City	In Progress	Response to recommendation is due two months after being formally issued. This was on 23rd January; therefore a response is expected by 23rd of March.

City of Westminster

Climate Action, Environment & Highways Policy and Scrutiny Committee

Date of meeting:	Thursday 29 February 2024
Classification:	General Release
Title:	Sustainable Transport Strategy
Report of:	Frances Martin, Executive Director for Environment, Climate and Public Protection.
Cabinet Member Portfolio:	Cabinet Member for City Management and Air Quality
Wards Involved:	All
Policy Context:	Fairer Environment
Report Author and Contact Details:	Miss Daisy Gadd, Principal Policy Officer, Innovation and Change. Email: dgadd@westminster.gov.uk

Considerations

1. Executive Summary

1.1 Westminster City Council is in the process of creating its first overarching Sustainable Transport Strategy, following a clear direction from the Council's Fairer Westminster vision. Its aim is to bring together the Council's strategic priorities, targets, and deliverables on sustainable transport in one clear, evidence-led document.

1.2 The Sustainable Transport Strategy will guide future programmes of work and place-based improvements across the City Highways, Public Realm, Place Shaping, Communities, Public Health, Active Westminster, Environment, and other relevant teams. This is a new approach and will echo the ambitions of a Fairer Westminster, building a city that supports and celebrates all of its communities. It will also enable a partnership approach to sustainable transport in Westminster, collaborating with our many stakeholders, particularly Transport for London (TfL), to achieve a genuine shift in usage towards sustainable modes of transport.

1.3 The strategy will consolidate, and, where necessary, supersede previous strategies relating to sustainable transport, foregrounding the aims of a Fairer Westminster and a Fairer Environment at its heart.

1.4 It should be noted that the London Mayoral election is due to take place on 2 May 2024. Prior to the consultation of this strategy, the Council will engage with the Greater London Authority to understand any changes to transport initiatives in London as a result of the election or any other longer-term pledges that may emerge too.

2. Key Matters for the Committee's Consideration

2.1 The Committee is asked to review the proposals for the future Sustainable Transport Strategy, and to consider:

2.1.1 The suggested proposals regarding strategic priorities set out at section 4 of the report, supported by the evidence base provided;

2.1.2 The fast-growing nature of competing pressures on Westminster's transport network, including shifting trends, user behaviour and kerbside priorities;

2.1.3 The current engagement approach set out for the Sustainable Transport Strategy, including the needs of diverse stakeholders such as those who work, visit, live in, or commute through, Westminster; and

2.1.4 The potential opportunities of the Sustainable Transport Strategy in setting ambitious targets and supporting a long-term change in behavioural patterns, as well as opportunities to access funding.

3. Background and context

3.1 Westminster City Council does not currently have an overarching transport strategy. Previous Delivery Plans relating to walking, cycling, freight and servicing and road safety have been effective in setting deliverables for improvements in the transport network, but this has resulted in focussing on individual silo programmes. The Sustainable Transport Strategy will offer one clear strategic vision.

3.2 The driving force behind developing a sustainable transport strategy for Westminster sits both with the Fairer Westminster and Fairer Environment framework. In these pledges, the Council has committed to promoting active travel and sustainable transport to deliver greener neighbourhoods, cleaner air, and healthier lives. Through the Local Implementation Plan (LIP), which sets out how the Mayor of London's Transport Strategy will be supported by Westminster, the Council has also clearly identified road safety and transport improvements as key priorities. This embraces Vision Zero which is the road safety ambition to eliminate all Killed and Seriously Injury related collisions by 2041. It is anticipated that the Council will be tasked to submit a new LIP bid to the Mayor and TfL this Autumn, and this will need to establish a delivery programme bid to cover the next three years.

3.3 The current local and national political landscape surrounding sustainability and transport is complex. The Mayor of London's Transport Strategy 2018 sets out the plan to transform London's streets by improving public transport and creating opportunities for new homes and jobs over the next two decades. To achieve this, the Mayor wants to encourage more people to walk, cycle and use public transport with the aim for 80% of all trips in London to be by those means by 2041. To achieve this, there is a large emphasis on collaborative partnerships, as well as on shifting behaviours by fundamentally changing the way people choose to move around the city.

3.4 These are principles which will be strongly echoed in Westminster's sustainable transport strategy as well. Transport is integral to shaping the daily lives of our communities and how they go about their day-to-day, but it also plays a vital part in shaping the character and vibrancy of Westminster. It is more important than ever to understand the full range of resident, worker, student and visitor perspectives on transport in the borough so that we can create a future-proof strategy that is co-designed by our communities that enables sustainable change over the years to come for all user groups.

3.5 It's also important for the Council to understand what transport currently looks like in the borough and its impacts. Westminster, for many years, has faced the highest number of all types of collisions of any borough in London. Road safety is a huge discouraging factor impacting active and sustainable transport choices, particularly in those choosing to cycle, with only 2.7% of Westminster residents choosing cycling as their main mode of transport.

3.6 Car ownership is low in the borough with 66% of households not owning a car. This rises to 89% for residents under the age of 35. It is encouraging to see car dependency reducing in the borough, however it is also known that freight, servicing and delivery (FSD) vehicles are on the rise - particularly in respect of light goods vehicles and to a lesser extent delivery drivers on Power Two Wheelers. Convenience culture, fast deliveries and access needs for Westminster's many businesses mean that these types of vehicles are often the greatest cause of congestion, air pollution and collisions in the borough.

3.7 Whilst air quality has been improving in the borough over the past few years, our data shows that 14% of current CO2 emissions come from road transport. Poor air quality is associated with a range of health issues, with children and the elderly being particularly vulnerable to the effects of air pollution. Air quality is gradually improving, but 30% of NO2 is still caused by transport. This has huge impacts on lung health, propensity to travel actively, and liveability in the city. The Environmental Justice Measure, created by the Council as a data tool to help measure how people are differently impacted by their environment and climate change, also highlighted that the most affected communities in regard to poor air quality are also the most deprived, with less access to green space and lower incomes which limits investment to greener modal choices like electric vehicles or bikes. Understanding the challenges at a neighbourhood level is important when seeking to establish a sustainable transport strategy that will reflect the needs and aspirations of all our communities.

3.8 This Sustainable Transport Strategy for Westminster will prioritise accessibility, affordability and inclusivity and will aim to:

- Ensure that transportation services benefit everyone, regardless of background or economic status. Inclusive planning, environmental justice considerations, and ongoing community engagement are integral components of our approach, fostering fairness and continuous adaptation to the diverse needs of our population.

- Complete a consistent vision for a Fairer Environment which consolidates, showcases, and expands upon our many existing deliverables.

- Reflect our growing evidence base and shifting trends which will help navigate a complex and changing landscape.

- Set ambitious targets and methods to achieving our goals of a net zero city by 2040.

3.9 Westminster's sustainable transport strategy will also pull together a range of policies and plans at a local, regional and national level including the upcoming Air Quality Action Plan, our Climate Emergency Action Plan and City Plan.

3.10 The Transport Strategy will build upon some of the existing initiatives that have been implemented under the Fairer Westminster vision. Improving air quality in Westminster and reducing pollution and emissions is a key priority for the Council. Steps have been taken to reduce petrol and diesel car travel wherever possible. A micro-logistics hub in Pimlico was established in April 2023 to tackle the issue of high numbers of vehicles on Westminster's streets by delivering online purchases to residents and offices via electric cargo bikes. The cargo e-bikes deliver as many as 2,000 parcels a day which help to reduce congestion, pollution and fatalities. The strategy will set a clear vision on how the Council can encourage additional hubs like this in the borough and how it can influence convenience culture deliveries which have huge impacts on congestion and pollution.

3.11 The Council has also implemented nearly 2,500 on-street electric vehicle (EV) charge points in Westminster, with more to be added to provide even greater coverage for the growing number of EV owners in the city. With 90% of all car trips in London travelling less than 7 miles, EVs are an ideal choice for an emission free short trip. Initiatives like this show a dedication from the Council to greater transport sustainability in the city. However, with high population density and low levels of private off-road parking, more EV charging on-street will be a necessity.

3.12 In January 2024, the Council announced that it is introducing emissions-based charging for residents and visitors who drive into the city. The new emissions-based charging schemes will see vehicles being charged based on their levels of CO2 emissions. Vehicles that produce lower levels of CO2 will be charged less in comparison to those which produce more. This new scheme will support

the growth of EVs in the city while keeping charges fair, proportionate and as low as possible.

3.13 Alternatives to private car ownership, including other more sustainable alternatives such as cycle storage and car clubs, could reduce pressure on the use of road space in the long term if private ownership reduced. This is why the prioritisation of how the Council will repurpose kerbside space for sustainable uses will be a paramount consideration of the strategy.

3.14 Westminster's transport network has already greatly benefited from a vast amount of workstreams aiming to improve sustainable travel in the borough. Currently, Westminster benefits from:

- 32 Underground stations servicing some of the 1 million daily visitors/commuters a day;
- 3 Elizabeth Line stations at Tottenham Court Road, Bond Street and Paddington;
- 4 Mainline Rail Stations at Paddington, Charing Cross, Marylebone and Victoria;
- Around 495 bus stops and 73-day bus routes in Westminster (as of Spring 2023);
- 1 bus station;
- One coach station with routes that span much of the UK and destinations in Europe;
- 4 TfL Riverbus piers (Embankment, Millbank, Temple and Westminster Millenium);
- 2,500 electric vehicle charging points;
- 12,362 Westminster cycle stands and 946 TfL cycle stands;
- 3,741 TfL Santander cycle hire docking points;
- 330 micromobility bays for dockless bikes and e-scooters with approximately 80,000 trips per week taking place;
- 225 secure storage units including hangars, lockers, shelters and racks, with space for 1,386 bikes;
- 438 marked loading bays; and
- 11 school streets.

3.15 The figures above demonstrate some of the amazing work that has already gone in to ensuring a diverse sustainable transport network in Westminster, however there is still more to do.

4. Westminster's Strategic Priorities

4.1 Our vision for this sustainable transport strategy in Westminster is to ensure long-term sustainability across the transport network. To achieve this, the Council seeks to prioritise 6 crucial pillars that will enable all its communities to travel safely and sustainably, lead healthier lives in a less polluted environment, and benefit from increased economic and social growth at the local level. These 6 pillars are:

1. **Road Safety:** Understanding how road safety impacts user behaviours enables the Council to design appropriate improvements in the network that encourages active travel choices. A distinct focus on the continuation of the Council's road safety and School Travel Plan work with its schools, colleges and other institutions will be vital.

2. **Access and Inclusion:** The strategy proposes to improve accessibility to public spaces and venues, ensuring that all individuals can nagivate and participate fully in community life and access essential services. This leads to a more inclusive and accessible urban environment.

3. **Health and Exercise:** The strategy seeks to enhance the quality of life for residents by creating a more liveable, connected, and sustainable urban environment. This can lead to improved health, well-being, and overall satisfaction.

4. **Air Quality:** Westminster will meet World Health Organisation guideline levels for air pollution by 2040, with the help of cleaner transport. This strategy, alongside the Air Quality Action Plan, will set clear deliverables to achieve this.

5. **Climate Change:** One of the fundamental benefits lies in the strategy's contribution to environmental sustainability. By promoting sustainable modes of transportation such as walking, cycling, and eco-friendly public transport, the strategy aims to reduce carbon emissions and mitigate the environmental impact of transportation.

6. **Sustainable Economy:** The strategy aims to bolster the local economy by creating a sustainable transport network. This can lead to increased economic opportunities, especially for businesses that align with the pirinciples of the strategy, such as eco-friendly transport services. A focus on the encouragement and trial of more sustainable freight, servicing and deliveries of Westminster's 24/7 needs is imperitative.

4.2 This strategy will also seek to establish a hierarchy for sustainable transport uses in Westminster, which will help to prioritise the ways in which the Council repurposes or allocates kerbside uses over the next 10-20 years. Competing pressures on a valuable finite resource, such as the kerbside, creates challenges on how the Council should move forward with sustainable changes in the most effective way. There are currently 42 uses of kerbside space in the borough, all of which bring with them a wealth of benefits to our communities, such as cycle lanes, bus priority, widened footways, cycle hangers and electric vehicle charging. A full list of the current kerbside uses can be found at appendix 2. Whilst all those uses support a transition towards a more sustainable transport network, they all bring slightly different benefits to different user groups across the city.

4.3 Decision-making on the 'how' and 'why' to repurpose elements of the kerbside will be much better-informed moving forward with a strategy that enables the allocation of road and kerbside space in accordance with clear, evidence-led prioritisation towards sustainable transport and net zero.

5. Evidence base

5.1 It is vital to establish an evidence base that will help shape the initiatives and key deliverables that result from this strategy. The Council is undertaking a rigorous process of analysis into current kerbside initiatives in Westminster and their successes. It is also analysing transport related data, looking specifically at how mobility needs are served in Westminster and what pressures exist upon our transport network, both socially and environmentally.

5.2 It has been particularly important to compile our evidence base in the context of the 6 strategic priorities set out as part of this strategy. An executive summary of the key findings to date is attached as appendix 1.

5.3 The Council has also looked to establish a breadth of examples from other cities or London boroughs that have existing transport strategies. A list of some of the ambitious targets or strategies set by other local authorities can be found at appendix 2.

6. Economic Analysis

6.1 It is important to consider the wider benefits and challenges that the transport network produces in the context of the economy as part of this strategy. To further enhance the evidence base for this strategy, we are seeking to analyse the social and economic value of different uses of the kerbside in the borough. By completing this piece of work, we will be able to understand the holistic value of the current uses of Westminster's kerbside across different geographical areas of the borough, as well as how the value of kerbside uses may differ across geographical areas. The latter will be extremely useful when establishing a prioritisation hierarchy for kerbside use in the future at the local/neighbourhood level.

6.2 Understanding the economic and social value of our highways will also help inform decision-making on how best to balance the extent of revenue generated that supports the delivery of essential services, as well as prioritising sustainable uses. It is anticipated that this piece of work will have concluded by the summer and will therefore be able to influence the work of the strategy. A further update on this will be provide in due course.

7. Challenges

7.1 The world is being shaped by significant social and economic change brought about by the pandemic, more extreme weather conditions, evolving technology, and population growth, to name just a few. Each of these bring with them critical challenges for sustainable transport that will be considered as part of this strategy.

7.2 The continued growth of London has significantly increased the demand on the transport network, particularly in the many public transport hubs that Westminster is home to. Substantial modal shift is required to enable the meaningful changes necessary to improving sustainable travel in the borough.

7.3 Travel choices, particularly car usage, can be impacted by many factors outside of our control including fuel prices, insurance costs, TfL Congestion charges and Ultra Low Emission Zone charges. Whilst these factors influence users to choose other sustainable alternatives, the challenge is in creating a permanency in this modal shift so that users see walking, cycling or public transport as a first choice and preferred option. This is difficult to achieve, and it will take time. There are many complexities to behavioural change, such as balancing growth and economic sustainability at the same time as trying to reduce or alleviate the impacts of the movement of people, services and goods. Furthermore, encouraging individuals to choose walking or cycling as their main mode of transport when road safety is worsening for these users is a difficult task. This is why we need understand the desires and aspirations of our communities to aid the design of this strategy.

7.4 As previously identified, the political landscape surrounding sustainable travel is complex. Initiatives such as Segregated Cycle Lanes, Bus Lanes, Low Traffic Neighbourhoods, and Zero Emission Zones can divide individuals on the perceived 'right' way to move forward towards a more sustainable future. Understanding the previous and existing frustrations on transport capabilities in the borough will be integral to designing an effective strategy, and we will aim to gather this feedback through our proposed engagement approach.

7.5 Westminster is a major destination location, with London being the most searched-for global tourist destination in 2023. On an average year, Westminster sees approximately 25 million people visit the borough which puts significant pressure on our streets and transport network. This is exacerbated further by the influx of more than 1 million people who commute into or through the borough on an average weekday. Demand is only going to continue to increase, and any future strategy needs to be wide-reaching to influence the vast range, and significant numbers, of people travelling in Westminster.

7.6 Finally, it should be noted that there is a lack of appropriate legislation covering certain modes of transport. Whilst some Bills are in progress, such as the Automated Vehicle Bill and The Pedicabs (London) Bill, there is a notable absence of an overarching Transport Bill. At present, there is no confirmation whether the Transport Bill will be progressed or if Parliament will consider it in a future session. This presents challenges in the Council's ability to respond to new or emerging modes of transport, such as dockless bikes and e-scooters. It creates the need for effective collaboration and cooperation with external partners, such as TfL and the GLA, to ensure the continuity of workstreams outside of legislation or aside from any change in political steer.

8. Proposed engagement

8.1 The consultation will have a clear focus on the 6 strategic priorities set out in the report above. It will also delve deeper into understanding changing habits and shifting trends, particularly on the potential around future travel, travel after dark and potential transport barriers such as cost and accessibility.

8.2 In shaping the Sustainable Transport Strategy, it is crucial to understand the perspectives of residents, visitors, workers, businesses and partners on how

they want to see transport prioritised in the borough. No sustainable transport strategy for a Central London borough can be produced or delivered in isolation. Accordingly, the Council aims to develop a solid evidence base, community and stakeholder buy-in and a strong sense of co-design with those the strategy will impact in order to make it as effective as possible. The engagement strategy emphasises providing an inclusive platform for everyone to voice their opinions. Moreover, the Council seeks to inspire active participation, through a variety of methods, by conducting consultations on specific themes and focal areas.

8.3 The Council recognises the diverse needs of our communities, and that is why a one-size-fits-all approach to engagement is not being suggested. Employing a range of methods of engagement will enable the Council to gain insight on place-based differences that will inform the strategy, reflecting the different geographies, desires and aspirations of our communities. This will include online surveys via our digital engagement platform, community discussion groups, and workshops with influencers in the transport sector, such as the Department for Transport, TfL and across a range of stakeholder partners that represent transport operators and modes.

8.4 By conducting this engagement, the Council hopes to achieve:

- A better understanding of transport user behaviour, motivators and barriers from a diverse range of communities and protected groups;
- Consensus and common ground with partners and stakeholders – defining what the Council wants travel and transport to look like by 2040 that will inform the targets that are set to achieve that; and
- A strong case for sustainable change in Council programmes and practices that will help to achieve the level of ambition needed.

8.5 The Council is anticipating some barriers to communication that will be addressed through the engagement period. These barriers include:

Lack of awareness – This applies to many residents who do not receive our newsletters, or access our website etc, but also to visitors, workers and students who are key stakeholders and are transient in nature. The Council will be creative about how it reaches these people, including via the use of social media channels, links with universities, via Business Improvement Districts, workplaces and even using strategic advertising spaces near to Westminster's main line rail and underground stations.

Digital exclusion – Transport users struggling with access and affordability may also be more likely to experience digitally exclusion, impacting their ability to access our online surveys. The Council will offer engagement sessions via our community hubs such as our libraries, residents' associations and community centres to ensure good outreach.

Foreign language – A lot of environmental information is not available in other core languages. This leads to a lack of inclusion and awareness on campaigns,

initiatives and local issues. This will be overcome by translating information into different languages and providing interpretation where necessary.

Persons with mobility needs – Input from the less mobile will be incorporated into the engagement plan, especially those who have no sight or those with chronic mobility needs. This is in respect to the provision of clutter free footways, access to low floor buses, ramped taxis and disabled 'Blue Badge' parking.

8.6 Addressing these challenges involves understanding wider community issues to create a more equitable and inclusive engagement process.

9. Draft timelines

9.1 The timeline below is provided as a high-level overview for the implementation of the Sustainable Transport Strategy:

March/April	Continue compiling case studies, insights and project evaluations Design online surveys and workshops Commence internal engagement and external engagement with influencers via discussion groups (such as TfL, London Councils, SusTrans).
May	Launch Common Place platform and commence online surveys and community workshops
June	Review and analyse consultation responses and evidence base
July	Internal review of first draft of proposed strategy
August/September	Internal review of second draft of proposed strategy
September/October	Commence formal consultation process on strategy
November/December	Adopt strategy

10. Financial Implications

10.1 The Local Implementation Plan (LIP) sets out how the Mayor's Transport Strategy will be delivered by individual boroughs and is a statutory requirement under the Great London Authority Act 1999. TfL provides an annual LIP grant to boroughs, the value of which is confirmed each year once TfL's business plan is approved. This sets the overall level of funding London local authorities

will receive and it is distributed between each authority using an agreed formula.

10.2 The suggested outcomes and actions of Westminster's Sustainable Transport Strategy will influence the Council's LIP bid to the Mayor and TfL over the years to come and enable performance and outcomes to be measured and reported on. Other miscellaneous Mayoral and TfL funded programmes will also be influenced by the principles established in the upcoming Sustainable Transport Strategy. These include the Mayor's Air Quality Fund (MAQF), the TfL Cycle Training fund, and strategic road resurfacing fund etc.

10.3 There are also a wide variety of Revenue and Capital programmes that annually invest into the maintenance, design and modernisation of Westminster's Highways Network. These major programmes are delivered by the Public Realm, Place Shaping, Development Planning, Economic Development and Public Health Fund teams. Much of this output is delivered through the Westminster Capital Programme and Community Infrastructure Levy (CIL) funding programmes.

11. Legal and Governance Implications

11.1 Section 145 of the Greater London Authority Act 1999 (GLA Act 1999) requires London local authorities to prepare and maintain Local Implementation Plans (LIP) containing their proposals for the implementation of the Mayor's Transport Strategy within the area that they are responsible for.

11.2 TfL London allocates money to the London boroughs to spend on projects that support the Mayor's Transport Strategy through a Local Implementation Plan (LIP). The Council will be tasked to submit a new LIP bid to the Mayor and TfL this Autumn, and this will establish a delivery programme bid to cover the next three years.

11.3 It is anticipated that the Council will be tasked to submit a new LIP bid to the Mayor and TfL this Autumn, and this will need to establish a delivery programme bid to cover the next three years. In future years, the transport strategy will be an essential document in shaping the contents of our future LIP proposals, and for any action plans or bids for funding arising from this being approved by the relevant Cabinet Member.

12. Carbon Impact

12.1 A carbon impact assessment has not yet been completed. However, it is expected this strategy will set ambitious targets that reduces the current carbon impact of transport in the city.

12.2 The strategy will encourage mode shift to more sustainable methods of transport which will have a positive impact in improving air quality and reducing road congestion. The improvements to the transport network in Westminster will also support Westminster's #2035 programme, which aims to cut in half the eighteen-year gap in male life expectancy between the richest and most

deprived areas of Westminster. The strategy will also support the principles set out in Westminster's Climate Emergency Action Plan which sets our emissions target for the City to reach net zero by 2040. Therefore, it is expected the proposed scheme will be carbon positive.

13. Equalities Impact

13.1 An Equalities Impact assessment has been completed regarding the proposed communication, engagement and consultation plan.

13.2 As this strategy will influence residents, business, workers, contractors and other stakeholders in the city, a separate Equalities Impact Assessment for the strategy will be completed accordingly.

14. The Mayor of London election

14.1 The London Mayoral election is due to take place on 2 May 2024. Prior to the consultation of this strategy, the Council will engage with the Greater London Authority to understand any changes to long-term transport initiatives in London because of the election. This will be particularly pertinent for any planned improvements on the London Underground, bus network investment plans, expansion of the Cycleways network, and the Vision Zero ambition etc. Other longer-term pledges may emerge too.

If you have any queries about this Report or wish to inspect any of the Background Papers, please contact Report Author,
mailto:**dgadd@westminster.gov.uk**

APPENDICES:

Appendix 1 – Executive Summary of Evidence Base Slides

Appendix 2 – Transport Strategy Examples

Appendix 3 – Westminster's Kerbside Uses

Appendix 4 – Key Facts & Questions Slides

BACKGROUND PAPERS

Mayor of London's Transport Strategy 2018
A range of TfL 'daughter' strategies including Vision Zero (Road Safety)

Local Implementation Plan 2019

Cycling Strategy 2014

Walking Strategy 2017

Air Quality Action Plan 2019

Freight, Servicing and Deliveries – Strategy and Action Plan 2021

Climate Action Plan 2022

Westminster Parking Occupancy Survey 2022

Sustainable Modes of Transport (WCC Schools) 2022

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FAIRER WESTMINSTER

Sustainable Transport Strategy- Evidence Base

STRATEGY & INTELLIGENCE | City of Westminster

Introduction

This report provides a summary of the data and evidence that will underpin the Council's Sustainable Transport Strategy.

The Strategic Transport Strategy aligns with the Fairer Westminster ambitions and covers the following priorities:

- Road Safety
- Access and Inclusion
- Health and Exercise
- Air Quality
- Climate Change
- Sustainable Economy

This report will provide analysis on available data for each priority, highlighting the main challenges.

Presently there are gaps in our knowledge for certain aspects and research is underway to address these (e.g. freight deliverives, The Air Quality Action Plan 2024-2029, a statutory requirement that must be completed by the end of the year).

The process for writing the Sustainable Transport Strategy will be iterative, and we will access additional data and insights to ensure our Sustainable Transport Strategy and Delivery Plan are built on a sound evidence base.

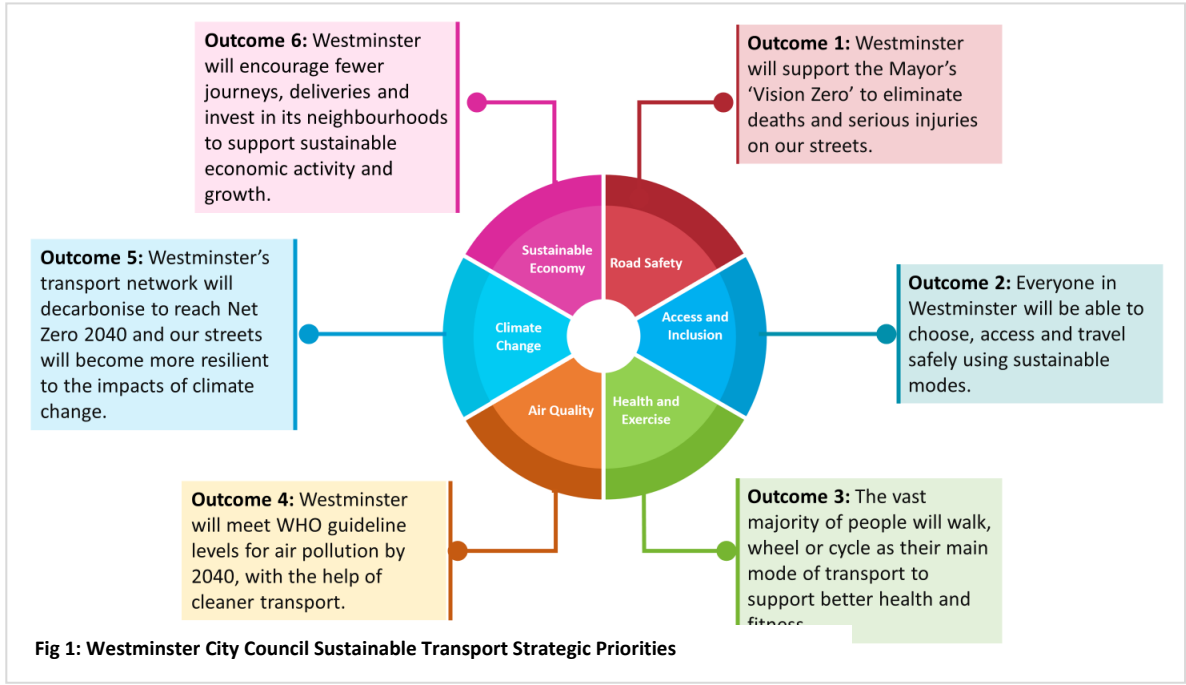
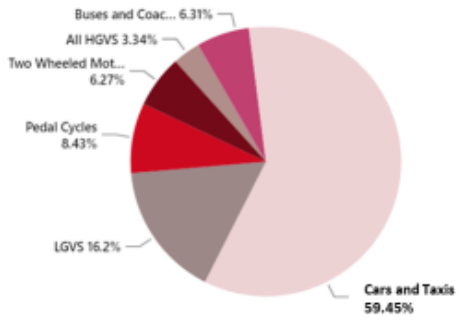
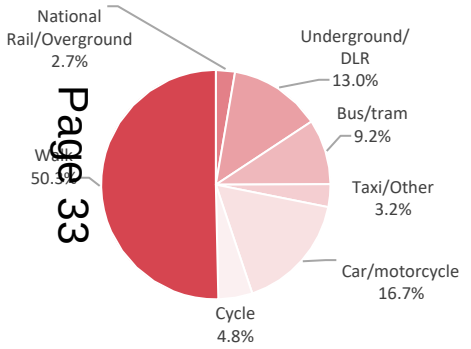


Fig 1: Westminster City Council Sustainable Transport Strategic Priorities

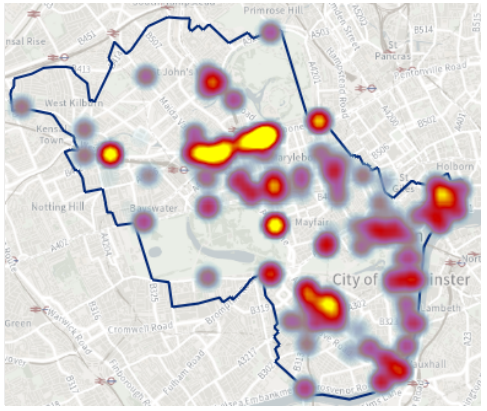
Annual average of traffic through Westminster: Vehicle type (%) 2022



Proportion of Westminster residents' trips per day by main travel mode (7-day week), 2022/23



Traffic through Westminster – 2022 Hotspots 2022



Overview

- **66%** of Westminster residents have stated they do not own a vehicle which indicates a significant proportion of vehicles on Westminster roads are workers, commuters and visitors.
- Westminster traffic hotspots include areas surrounding terminus underground and railway stations: e.g., Marylebone, Vauxhall, Victoria.
- Church Street, Little Venice are also traffic hotspots.
- Most trips made by Westminster residents in 2022/23 were either walking **(50.3%)** or cycling **(4.8%).** For Greater London, **3%** of trips were cycling and **39.8%**, walking.

Proportion of residents' trips per (7-day week), 2022/23		
	Cycle	**Walk**
Camden	6.7%	49.5%
Hammersmith & Fulham	4.3%	51.5%
Kensington & Chelsea	5.8%	48.5%
Westminster	**4.8%**	**50.3%**
Inner London	**4.9%**	**47.2%**
Greater London	**3.0%**	**39.8%**

Table 1: proportion of residents' cycling and walking trips for Westminster's neighbouring LAs

Key facts

66%
of Westminster residents
Do **NOT** own a vehicle

31%
of residents
feel heavy traffic is an issue

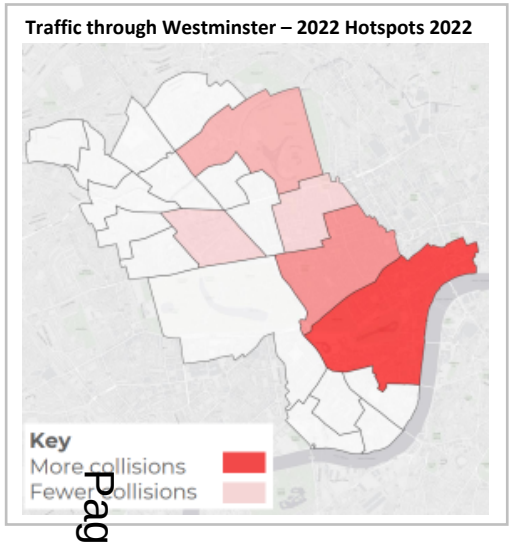
2.2m
Estimated vehicles
used Westminster major or minor roads in 2022

- Our evidence shows that between to meet our strategic priorities we should:
  - Develop and implement a plan to support the Mayor's 'Vision Zero' to eliminate deaths and serious injuries on Westminster streets.
  - Improve access to sustainable modes of transport and ensure that everyone in Westminster can choose, access, and travel safely.
  - Encourage walking, wheeling, and cycling as the main mode of transport to support better health and fitness.
  - Implement measures to meet WHO guideline levels for air pollution by 2040, with the help of cleaner transport.
  - Decarbonise Westminster's transport network to reach Net Zero 2040 and make streets more resilient to the impacts of climate change.
  - Encourage fewer journeys and deliveries and invest in neighbourhoods to support sustainable economic activity and growth.
  - Monitor progress towards achieving these outcomes and adjust the plan as needed to ensure success. -

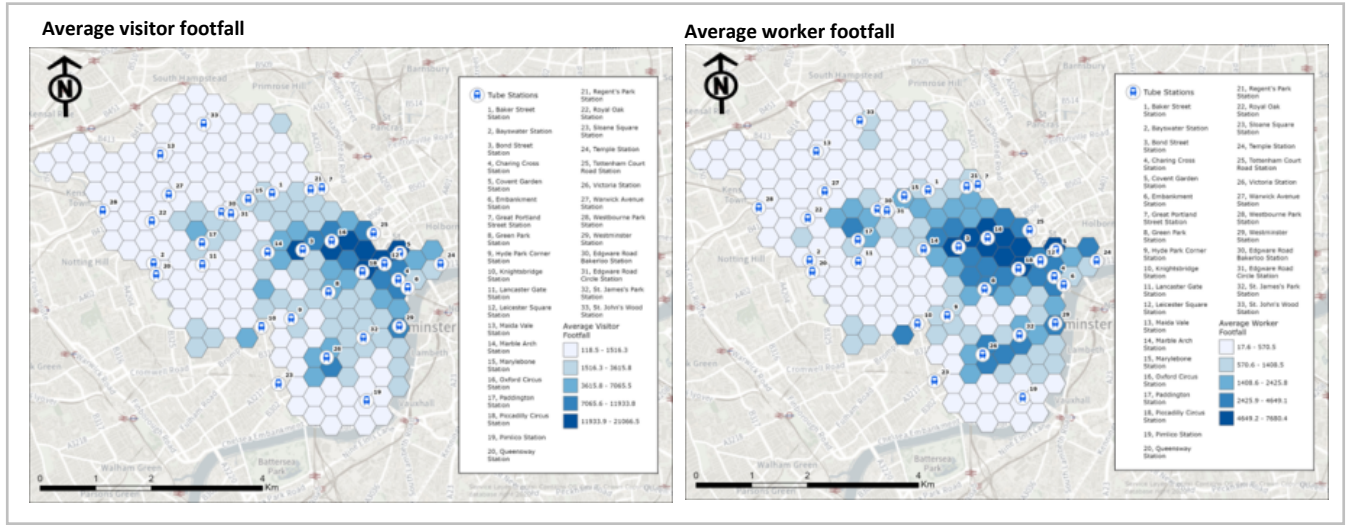
Challenges:

- Potential decongestion of traffic in identified hotspots
- Reducing the number of cars and taxis traffic, encouraging more people (residents, workers) to use public transport, especially buses and coaches
- Addressing challenges under each strategic priority

Road Safety



The footfall maps show average footfall May 22 – Dec 23



- Between 2013 – 2022 (excluding 2020 / 21 – pandemic years), Westminster had the highest number of road collisions and casualties each year, when compared to other London Local Authorities.
- During the same period Westminster has seen the proportion of our average pedal cycle traffic increase from **5.9%** to **8.4%**. This increase in pedal cycle traffic coincides with the introduction of the London-wide strategic cycle network.
- Paradoxically, the introduction of the London Strategic Cycle Network has seen a disproportionate increase in collisions and casualties involving cyclists in Westminster traffic from **24%** in 2013 to **32%** in 2022

Percentage reduction for all ages killed or seriously injured in road traffic accidents (2020-22)	
Camden	**6.9%**
Hammersmith & Fulham	-4%
Kensington & Chelsea	-0.7%
Westminster	-2.7%
Minimum for All London Boroughs (excl City)	**-0.89**
Maximum for All London Boroughs (excl City)	**12.3%**

Table 2: Percentage reduction for all ages killed or seriously injured in road traffic accidents (2020-22) for Westminster's neighbouring LAs

Westminster has seen an increase in the number of people seriously killed or injured (see table 2).

Table 2 is based on a 3-year (calendar) rolling average, up to the 2022, where a positive figure indicates improved performance (i.e. a reduction in the number of casualties compared with the previous 3-year rolling period).

- The top 5 wards where people have been killed or seriously injured between 2020 – 2022 were
  - St James
  - West End
  - Regents Park
  - Hyde Park
  - Marylebone
- Our average footfall data (May 22 – Dec 23), shows that the areas with the higher collisions, correlate to areas with high worker and visitor footfall.

Challenges

- Our current cycle lanes are combined with our main roads - can we provide a safer cycle network away from main road traffic, preferably in cleaner, low emission areas?
- How do we encourage more of our residents to cycle or walk, influencing improved health outcomes in line with our Fairer Westminster and #2035 ambitions?
- Introduction of road-sharing and road safety education campaigns.
- Increase traffic lights crossing times in accident hotspot areas.

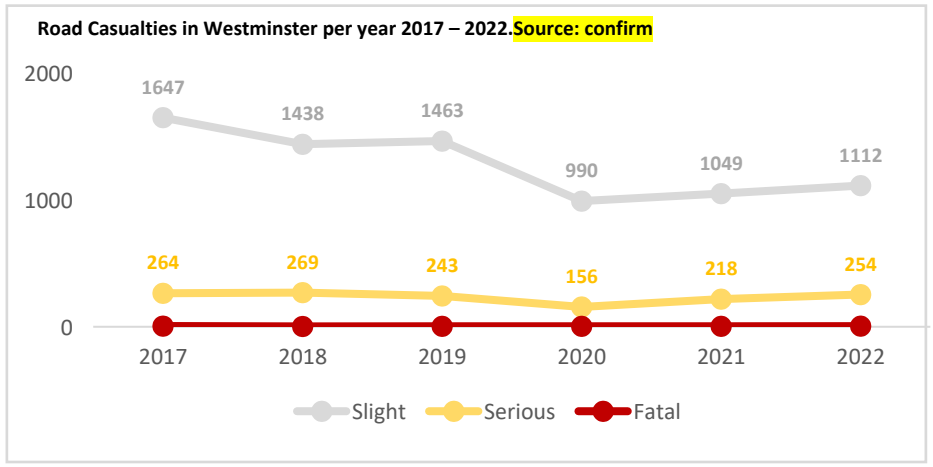
Key facts

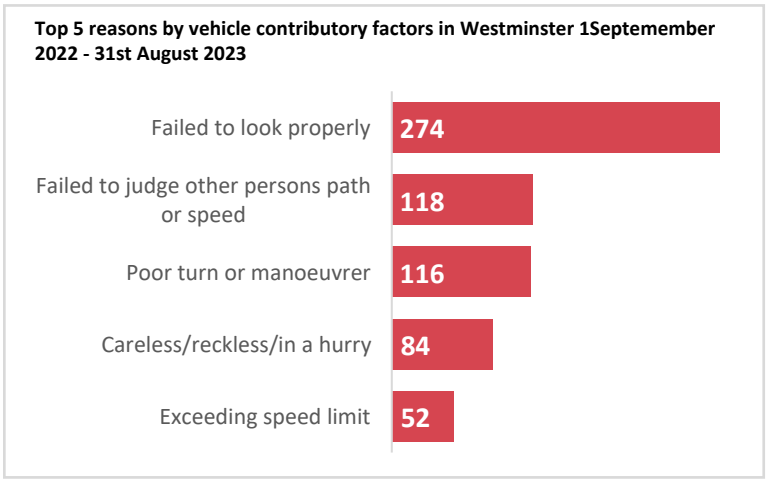
619 cyclist casualties (2022)

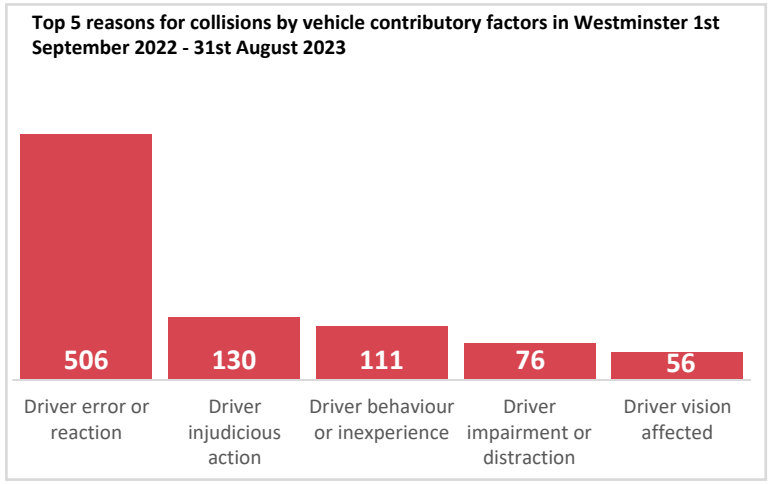
32% casualties in Westminster involve cyclists (2022)

1,794 **road collisions** in Westminster (2022)

1,935 **road casualties** in Westminster (2022)







In recent years Westminster has faced the highest number of all types of collision of any London Borough - collisions involving Cyclists and Pedestrians being the greatest in number.

In Westminster the total number of collisions between 2019 and 2023 has marginally reduced. But this near flatlining needs to be addressed if the City Council, its stakeholders and all other road users wish to see the elimination of all Killed and Serious Injuries (KSIs) by 2041, as per London's Vision Zero Commitment.

Post-pandemic, all road casualties have reduced from between 1,700-1,900 a year to 1,100-1,400. The number of people killed on our roads has remained stable, whilst there has been a slight rise in those seriously injured. The number of slight injuries has decreased. Casualties are involved in collisions. More collisions occur on Westminster roads compared with TfL roads.

Most collisions occur in daylight hours and have increased since 2020. Collisions increase throughout the day, peaking between 6pm and 7pm on Westminster roads and at 5pm on TfL road

Summary

The top 5 contributory factors are (in order):

- Failed to look properly (stable)
- Failed to judge another person's path or speed (stable)
- Poor turn or manoeuvre (stable)
- Failed to look properly (pedestrian) (increasing)
- Careless/reckless/ in a hurry (stable)

The top 5 overarching contributory factor categories are (in order)

- Driver error/ reaction (stable)
- Pedestrian (increasing)
- Driver behaviour/ inexperience (stable) - Driver injudicious action (stable)
- Driver impairment/ distraction (stable)

Access & inclusion

- Church Street has the highest proportion of disabled residents aged 65+ and disabled at **6.1%** followed by Pimlico South and Westbourne **(5%)**
- Potential isolation of disabled residents and residents aged 65+ who typically prefer to be close to home
- On average, those with disabilities do more of their shopping on their local high street than people without disabilities (58% vs 51%), and only do 20% of their shopping online.
- The City Survey shows that **28%** of residents surveyed aged 65+ and **32%** of disabled residents had not visited any of the following facilities in Westminster in the previous 12 months:
  - Parks + open spaces
  - Libraries
  - Leisure Centres

Number of bays on City Council kerbside

497
Disabled - Blue Badge

198
Disabled – White badge

£10,943,164
Cost of the pan-London Freedom Pass to Westminster City Council

Key facts

4%
aged 65+ and classified as disabled under the equality act (20th highest proportion across all London boroughs)

12%
aged 65+
(16th highest proportion across all London boroughs)

Challenges

- Improved accessibility to Council service for our more vulnerable residents e.g. better use of the Council bus fleet, including trips to community hubs and other Council services.
- Encourage a shift from public transport with the provision of walking and cycling routes away from the main road network including more street furniture for rest spots on longer walks and cycling.
- Improve access to sustainable modes of transport and ensure that everyone in Westminster can choose, access, and travel safely.

Night travel

- When asked what would make women feel safer in Westminster between 5pm and 6am, **63%** of respondents stated that well-lit areas would make them feel safer. This increased to **70%** amongst female respondents, compared to **43%** for males and **61%** of worker / volunteers
- **73%** of women perceived travelling by private car to be the safest transport option at night.
- Women mentioned Leicester Square and Victoria Coach Station as areas where they feel particularly unsafe
- Concentration of criminal incidents predominantly theft related between Piccadilly Circus and Leicester Square tube station. The key times for crimes occurring at locations of interest to the night-time economy are predominantly overnight Friday/Saturday and Saturday/Sunday. British Transport Police data also shows that there is a clear shift to West End stations at night.
- Insufficient signage is a challenge for residents, visitors and tourists which contributes to feeling unsafe and confused.

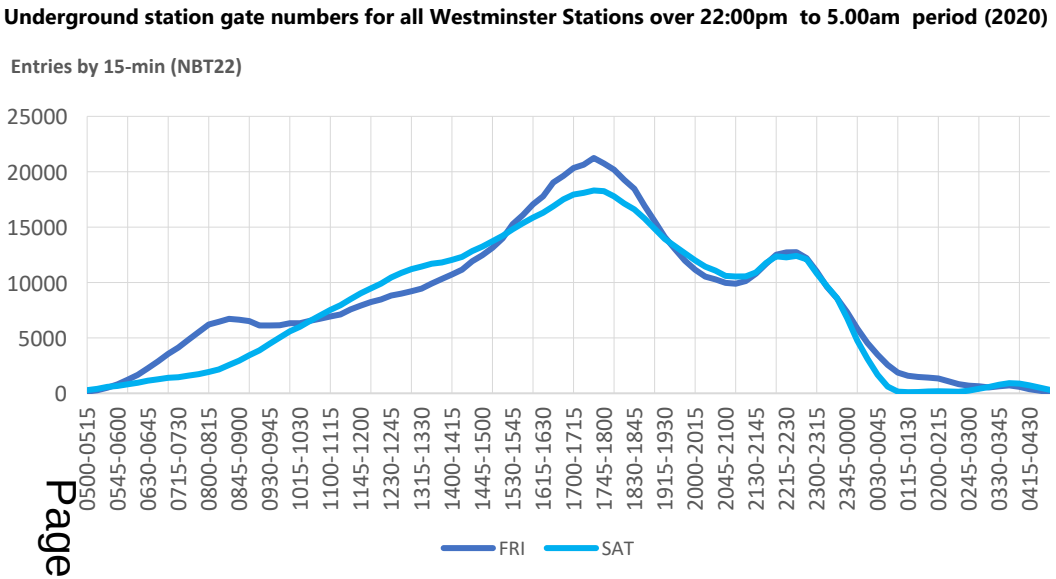
22%
Stated cheaper transport would encourage them to stay in Westminster after 6pm

36%
better availability of late-night transport would make people feel safer in Westminster

Challenges

- Need to create a safer and secure travelling infrastructure and environment especially for women.
- Investigate designated Westminster pickups / drop offs for taxis
- Additional safety measures at high crime areas
- Improved signage for walking routes

Night travel

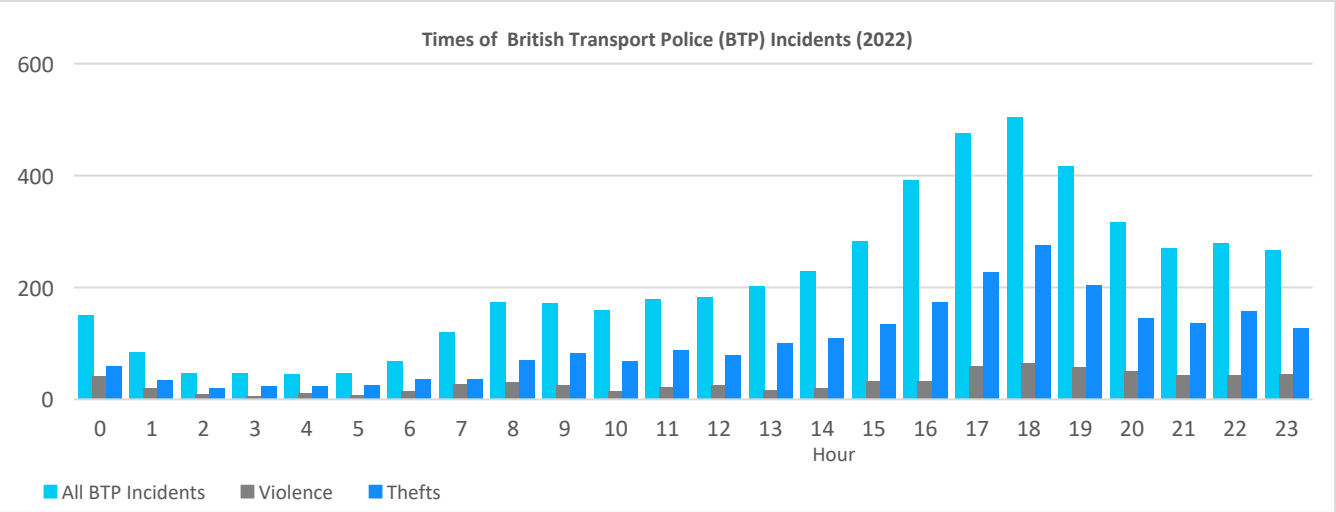


Night tubes (Friday and Saturdays) operate through on Central, Jubilee, Northern, Piccadilly and Victoria Lines.

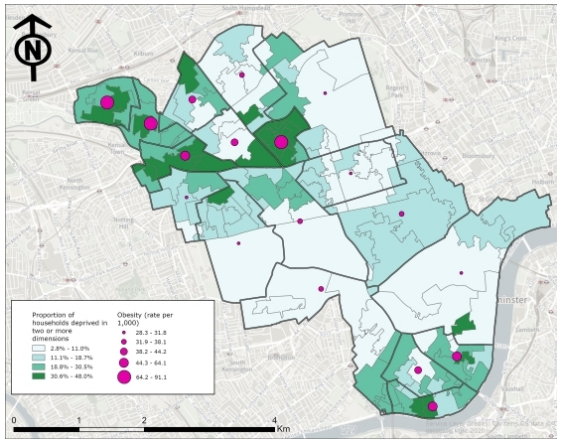
Our incident pattern analysis of crime in Westminster illustrates that there is a concentration of offending in the West End and near to transport hubs. Over 2022 there were **5,111** crimes recorded by British Transport Police (BTP) in Westminster. Theft accounted for nearly **48% (2,440)** of all of incidents, followed by violence **(14% 719),** public order **(14% 730)** and drugs **(5% 253).**

The key times for crimes occurring at locations of interest to the night-time economy are predominantly overnight Friday/Saturday and Saturday/Sunday. BTP data also shows that there is a clear shift to West End stations at night.

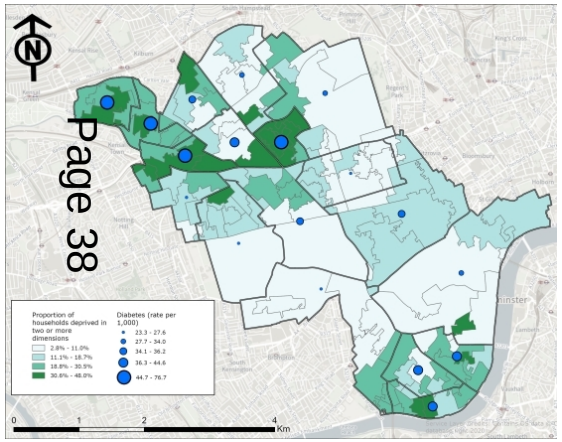
There is a concentration of criminal incidents predominantly theft related between Piccadilly Circus and Leicester Square tube station. There are further smaller concentrations crimes around Charing Cross train station and the Embankment area at the west end of the strand and close to Trafalgar Square.



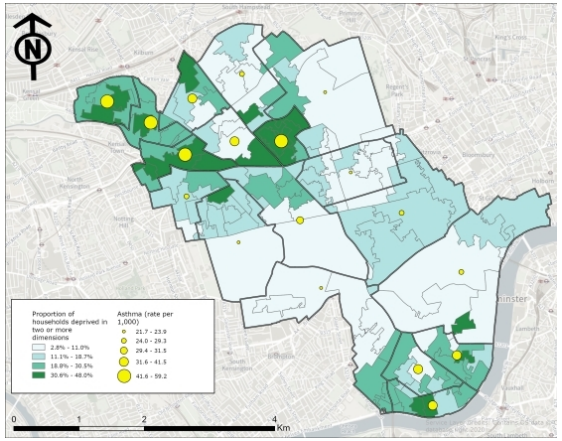
Obesity



Diabetes



Asthma



Health and exercise

- The proportion of households with asthma. diabetes or obesity tend to be highest in the Council's most deprived wards, Westbourne, Queens Park, Church Street, Pimlico.

- Westminster can encourage walking, wheeling, and cycling as the main mode of transport to support better health and fitness by providing healthy and inclusive environments and a safe and secure infrastructure especially for shorter journeys

- Other issues often acting as a deterrent to more active travel include high traffic volumes; parking on footways and in cycle lanes; fear of crime/collisions; and poorly maintained and cluttered footways.

Active Lives Survey –2021 / 2022			
	Physically Active (At least 150 mins per day)	Fairly active (30-149 mins per week)	Physically inactive (less than 30 mins per week)
Camden	71.1%	9.5%	19.4%
Hammersmith & Fulham	73.0%	7.1%	19.9%
Kensington & Chelsea	62.4%	13.3%	24.3%
Westminster	**70.4%**	**8.8%**	**20.9%**
Inner London	**68.5%**	**10.5%**	**21.0%**

Table 3: Active Lives Survey 2021 / 22 Activity levels of Westminster's neighbouring LAs

- The Active Lives Survey indicates that Westminster residents have become more active since 2015 /16 when **63.2%** stated that they were active for at least 150 minutes per day, to **70.4%** in 2021 / 2022.
- Table 3 below shows how we compared with neighbouring inner London LAs in 2021 . 2022

Challenges

- Securing the extension of the Mayor of London's and/or other Cycle Hire Schemes to the Council.
- Create healthy and inclusive environments that encourage Westminster residents, visitors and workers to choose walking or cycling within the Council.
- How can we encourage more cycling and walking all year round?
- Better lit streets, better parking for bikes.
- Need to develop an understanding of the impact transport has on the mental wellbeing of users.

Key facts

71%
physically active residents

21%
physically inactive residents

- Strava Metro is a free activity app that monitors the cycling and walking activity of its users
- 340.1K people using the app, walked and 86.8K cycled in / through Westminster in the last year.
- Strava Westminster data show seasonal trends with users being more active on both activities during the spring and summer months.
- Santander docked bikes do not have a great presence in the more deprived northern wards in the council.
- From an accessibility standpoint, it shows that 50% of London's dockless e-bikes are in areas with higher levels of deprivation. This demonstrates that the vehicles are available for the general population, not just in higher income areas, therefore improving access to transport services for a wide range of people. Over 1.25m dockless riders have taken more than 12m e-bike trips. Usage has increased on average by 10% each month.
- Dockless e-bikes also played a significant role in encouraging people to cycle again or for the first time in London, particularly among female users.
- In the spring/summer, weekly trips for dockless bikes and scooters in Westminster can exceed **100,000**. The average distance travelled on any given day by dockless bikes in Westminster is around **2.8km** which equates to roughly 14 minutes of cycling time.

Key facts

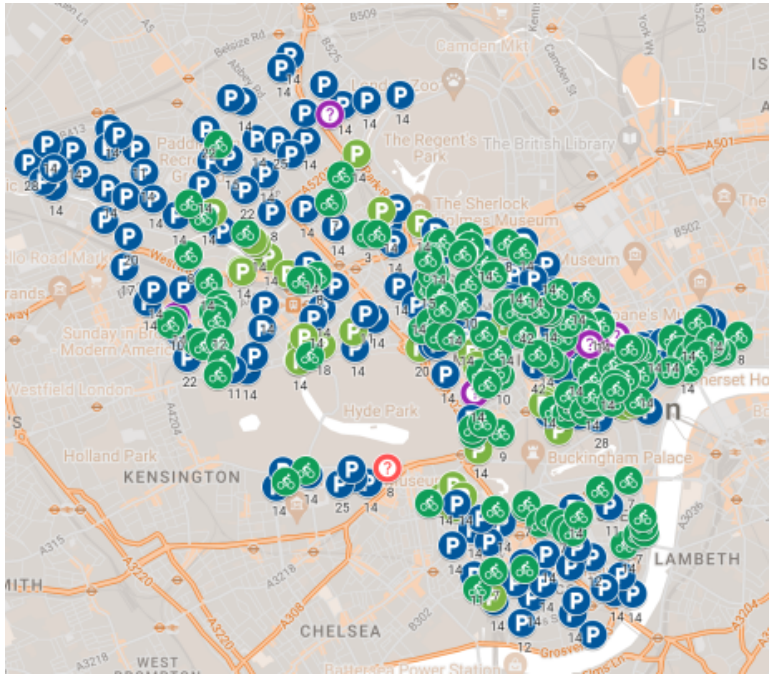
250,000

trips entering Westminster bays using dockless bikes and scooters
December 2023

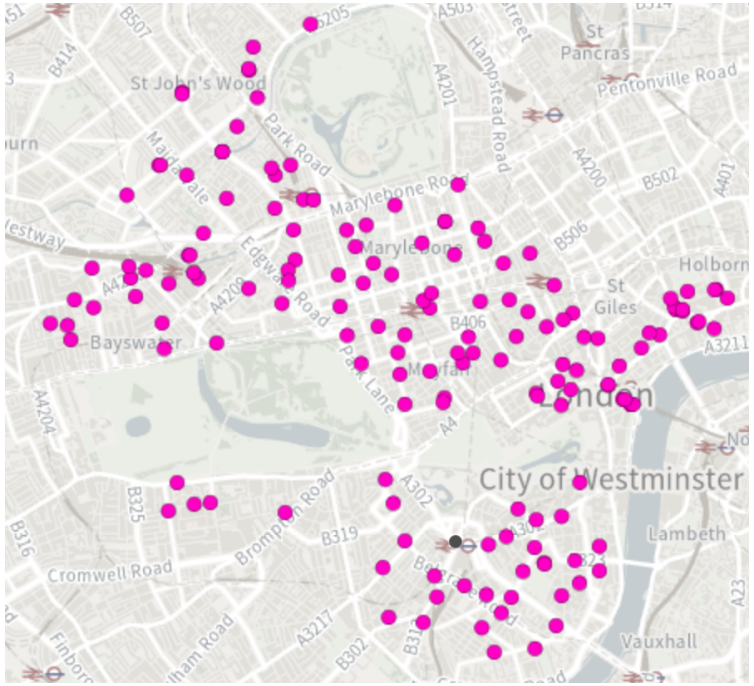
56%

dockless bikes and scooter trips in Westminster start and end in the borough
December 2023

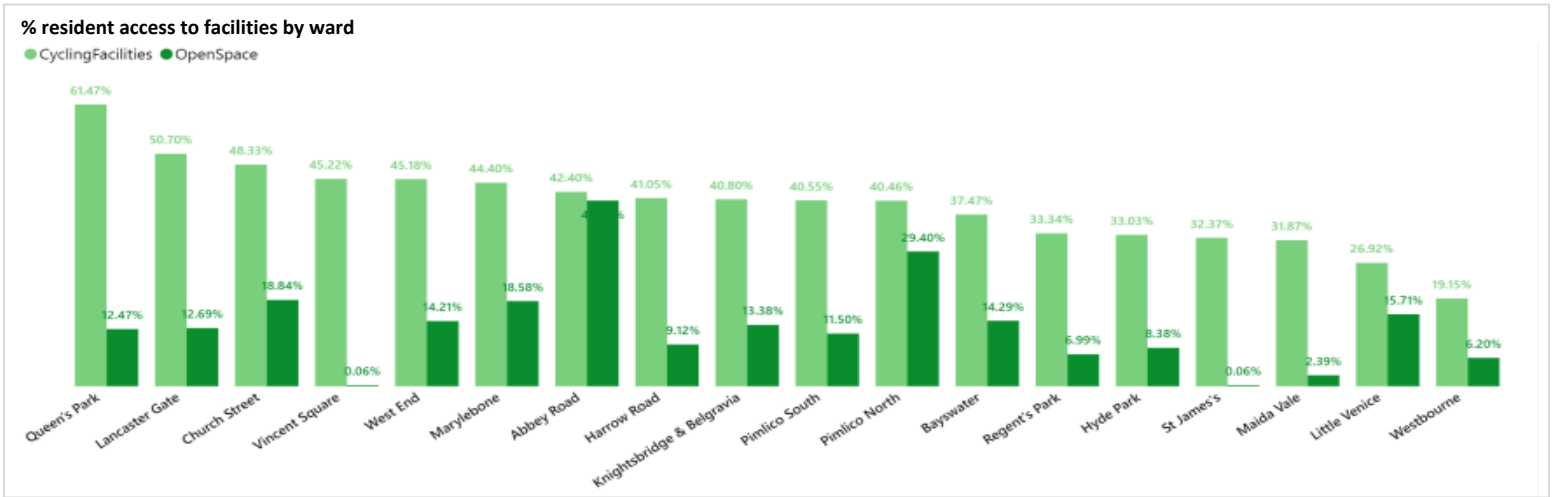
Dockless bicycles and scooter stations



Santander cycles docking stations in Westminster



Dockless e-bikes extend the reach of public transport – on a typical weekday morning 97% of the population within the operating zone are within two minutes' walk of a bike. Around 7% of Londoners live within the same distance to tube and rail stations."



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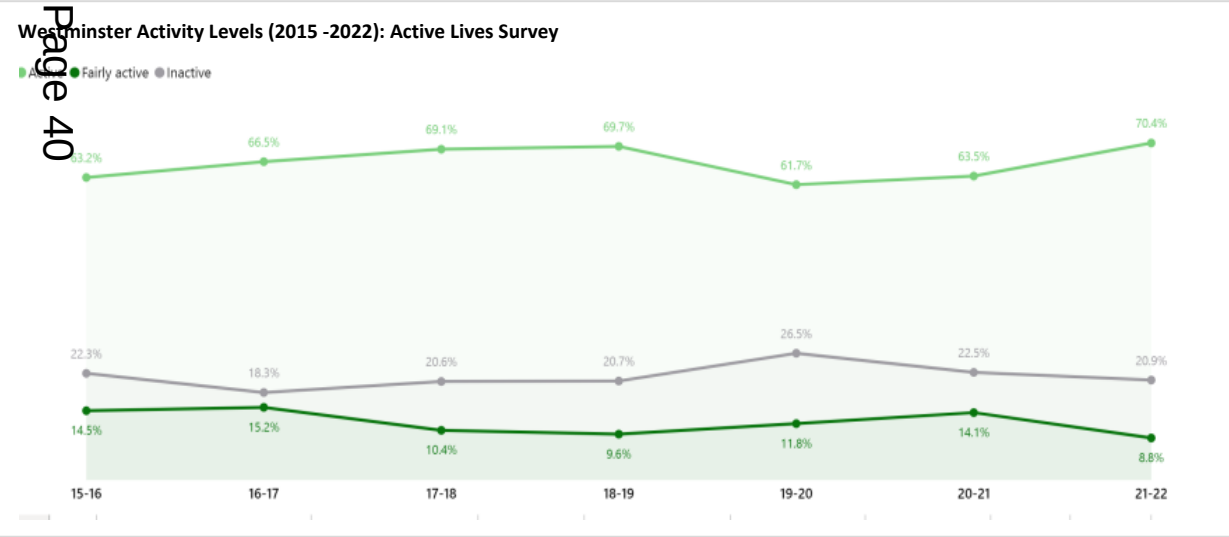

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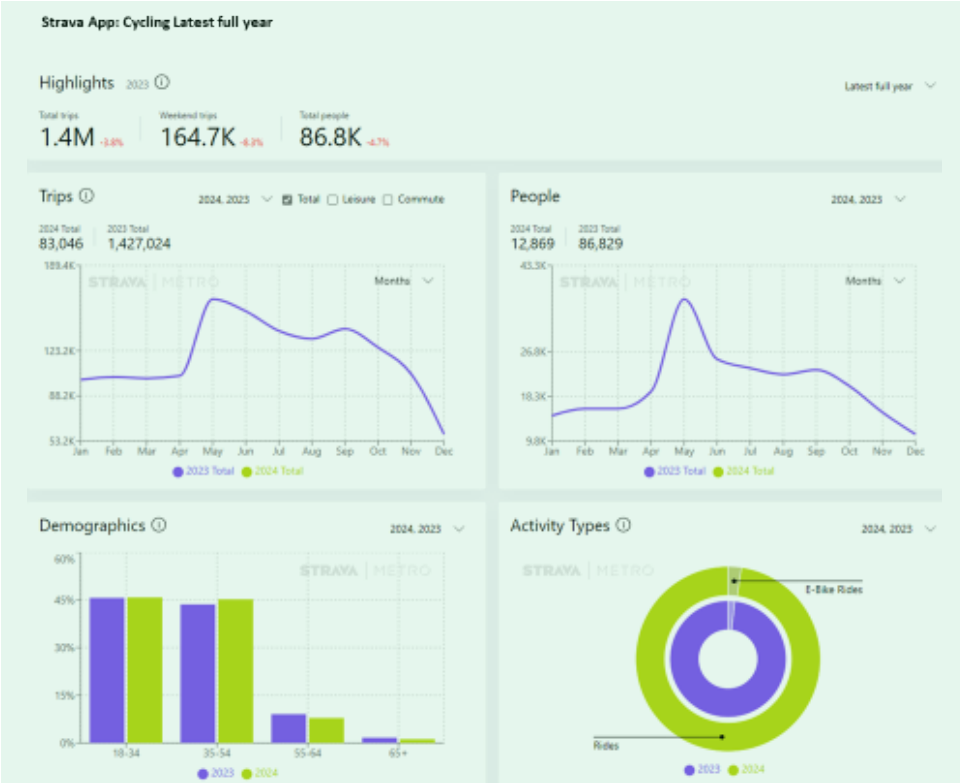
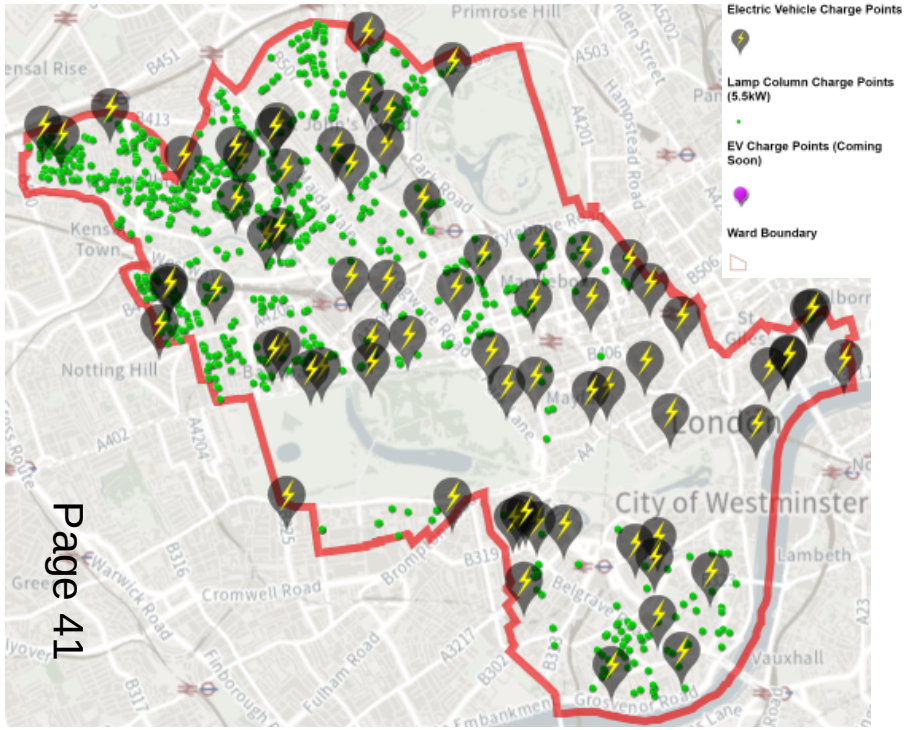


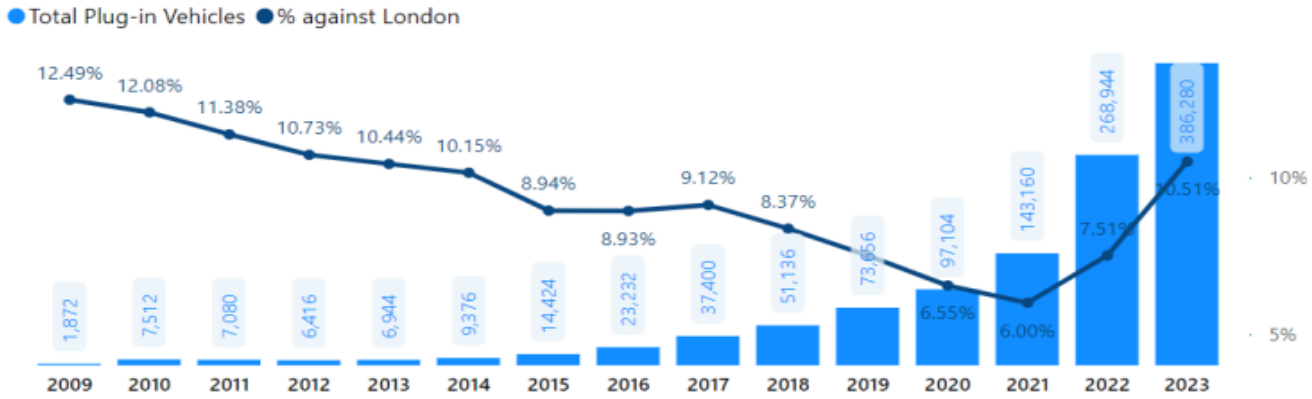
- Strava Metro is a free activity app that monitors the cycling and walking activity of its users
- These graphs show the activity through Westminster for all road users including visitors, workers and residents
- 340.1K people using the app, walked in Westminster in the last year
- Westminster show seasonal trends with users being more active on both activities during the spring and summer months
- The active user profile shows that the app is used more by people aged 18- 54

Climate change

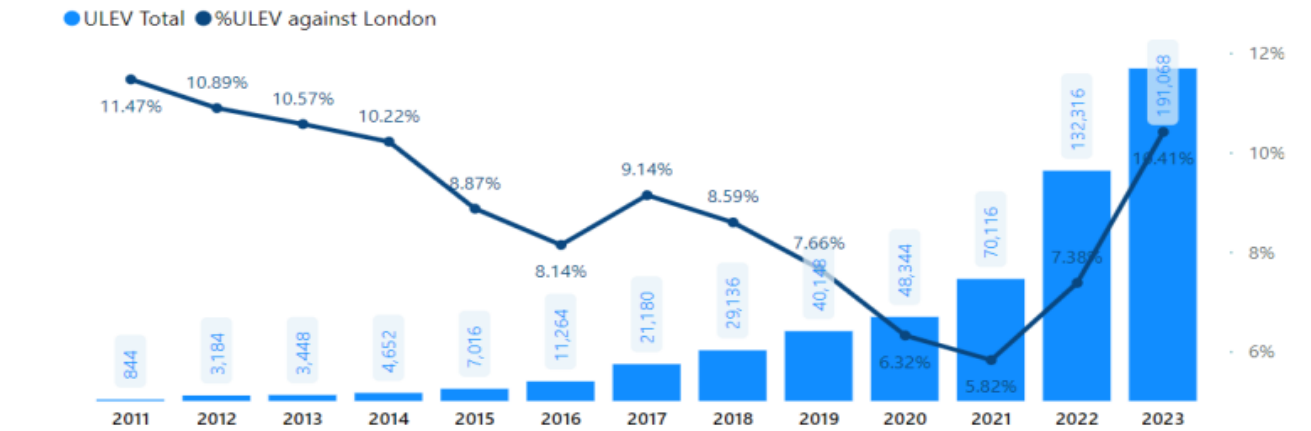
Electrical Vehicle Charge points in Westminster



No of Electrical vehicles in Westminster



No of Ultra Low vehicles in Westminster



Challenges

- Council will need to work closely with the London Mayor's office to meet a potential growing demand for charging points.
- By the end of March 2023 Westminster housed 10% of all electrical vehicles in London. This number has steadily been increasing.
- The impact of additional charging points in Westminster will need to consider other kerbside priorities.
- We will also need to ensure EV charge points are in locations where drivers feel safe.

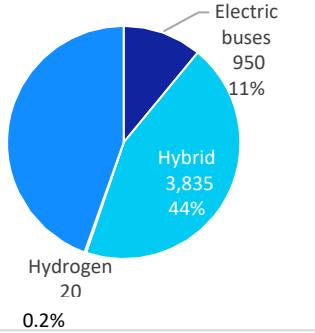
Key facts

386,280
registered electrical vehicles in Westminster

2,500
Electric vehicle charging points

88.5%
have chosen not to use a charge point because they felt unsafe at the location.
Source: HonestJohn.co.uk survey of 500 drivers Jan 23

TFL bus fleet March 2023; Proportions by bus type in a total fleet of 8,643 buses



Climate change

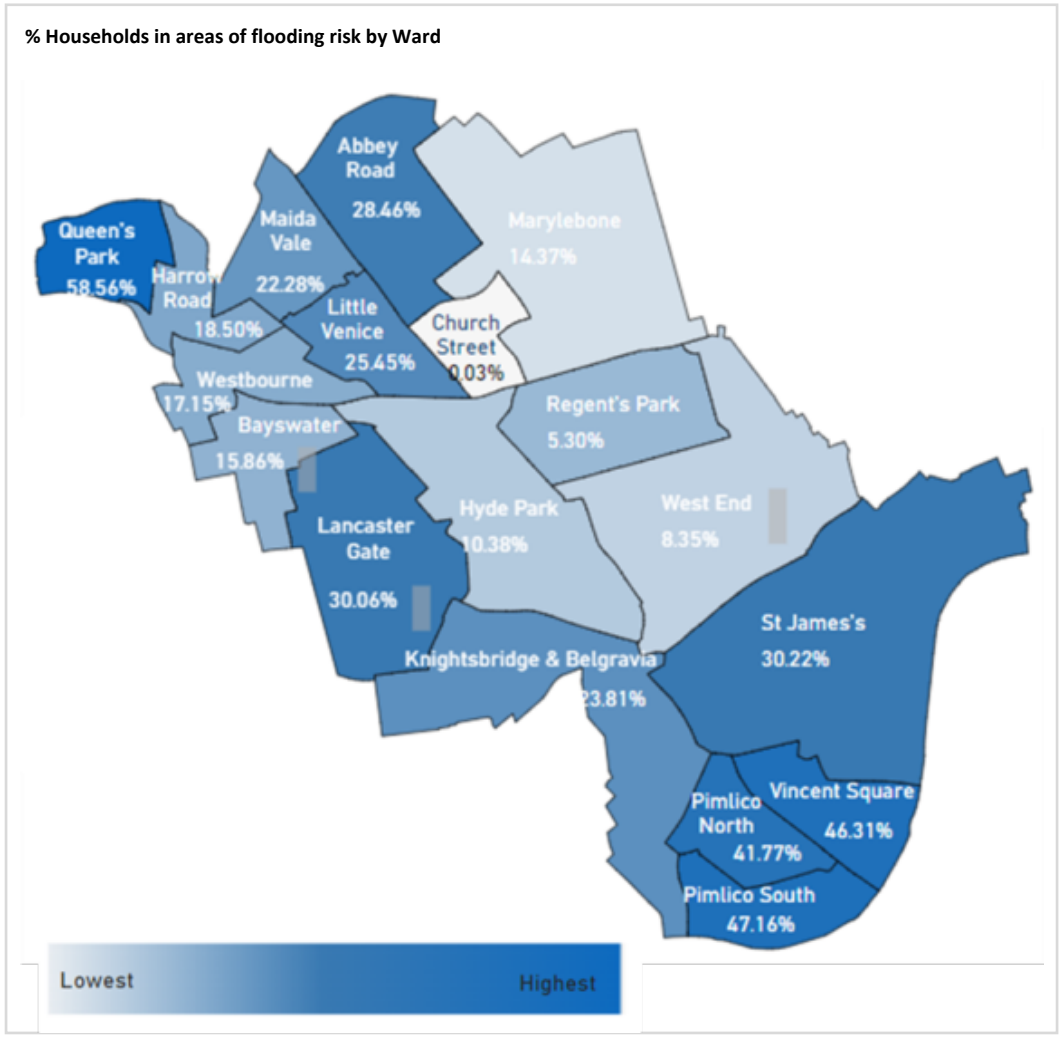
- Flooding affects both traffic flow and road safety.
- Many of the most severely affected flood risk properties are basement flats, which were badly affected in 2016 and 2021
- In 2021 – two major flood events occurred in Westminster (12th and 25th July) – around **1,000** properties were flooded.
  - **60** roads around Essendine (Maida Vale) and Shirland Road (Queen's Park) were flooded, including 1 primary school, 3 libraries and 3 community centres – in Flood Zone cat 1 lowest risk. (1 every 1000 years).
  - Victoria / St James – Flood zone 3, (1 every 200 years).

- Heatwave impacts on IT and communications services causing freight and travel delays, accidents and impacts on emergency services.
- Lightning strikes on railways damaging electronic equipment, line-side trees and buildings

High temperatures

- Heatwaves and high temperatures: Buckling of rail lines, line sag and rail speed restrictions, damage to bridges and pavements, deterioration of airport runways, road surfaces and disruption of communications and IT services leading to transport delays.

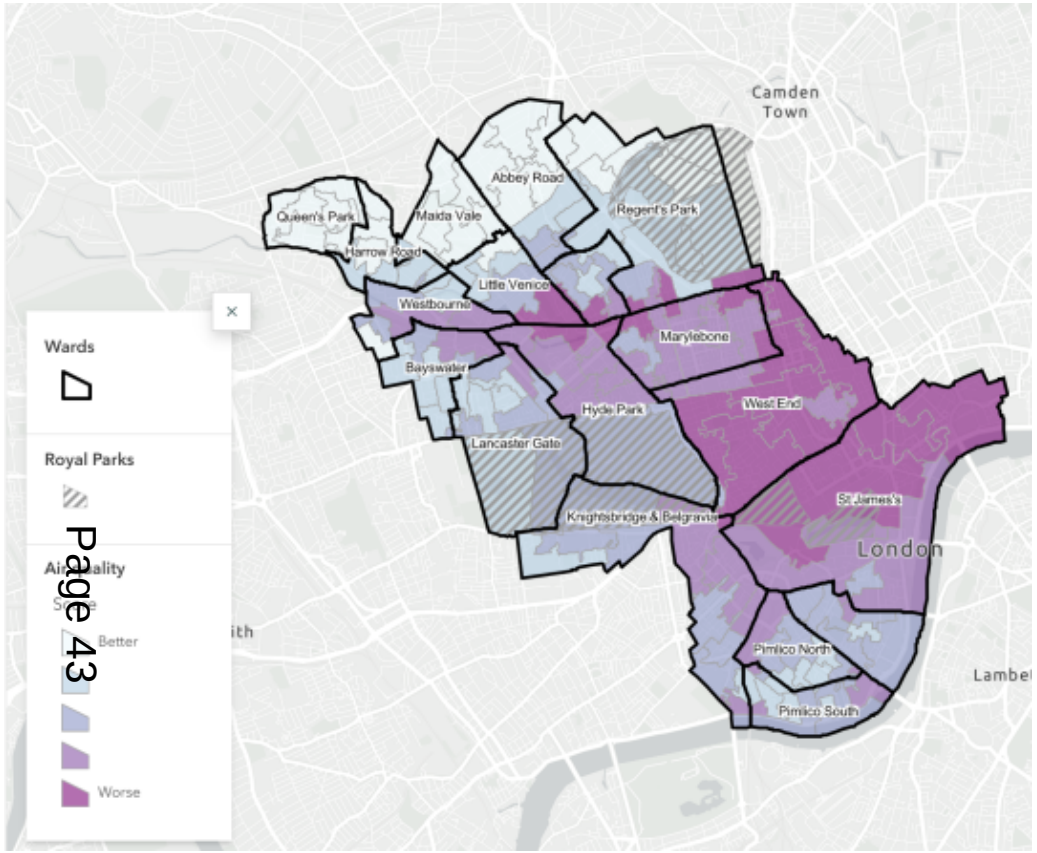
Source: UK Climate Change Risk Assessment (CCRA) Technical Report



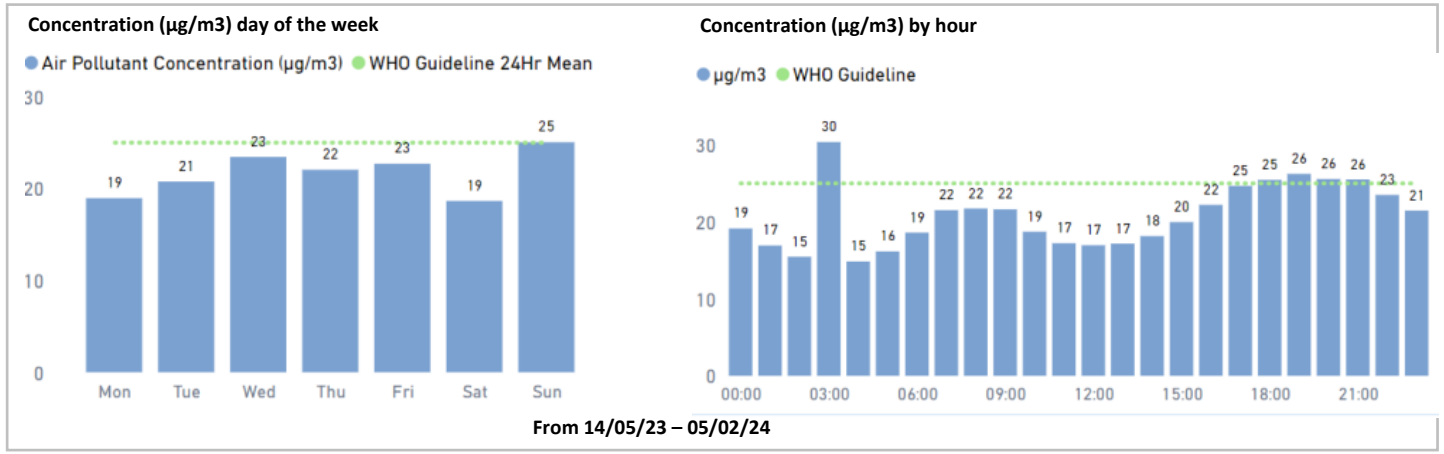
Challenges

- Additional information about where more flood defences may be needed.
- SuDs (Sustainable drainage systems) Masterplan to retrofit SuDs into our highways and public realm.
- Quick response to flooding events.

Air Quality



- Westminster's air quality has been improving in recent years and the Council continues to tackle pollution through school clean air zones, encouraging active travel, and expanding and sharing monitoring data to help communities take localised action.
- In 2019, Westminster's average NO2 emissions were **37.8 µg/m**, within the Government's healthy standard. Westminster's level is higher than London and the U.K. average, where NO2 levels were **26.7 µg/m3** and **15.8 µg/m3** in 2019.



The Air Quality Action Plan 2024-2029 is a statutory requirement that must be completed by the end of the year. This plan will aim to address air quality issues within our community and implement strategies to improve overall air quality. It represents our commitment to addressing air pollution and ensuring cleaner air for our community, with a strong focus on collaboration and data-driven decision-making, particularly in tandem with efforts to improve sustainable transportation

Collaboration with the Sustainable Transport Strategy is therefore essential as there are significant overlaps between the two . By aligning engagement and data collection efforts, we hope to ensure that our actions effectively target areas where air pollution from transportation contributes to poor air quality.

We are awaiting data for WHO baselining, which we anticipate receiving by mid to end February. This data, which will provide valuable insights for shaping both the Air Quality Action Plan and the Sustainable Transport Strategy.

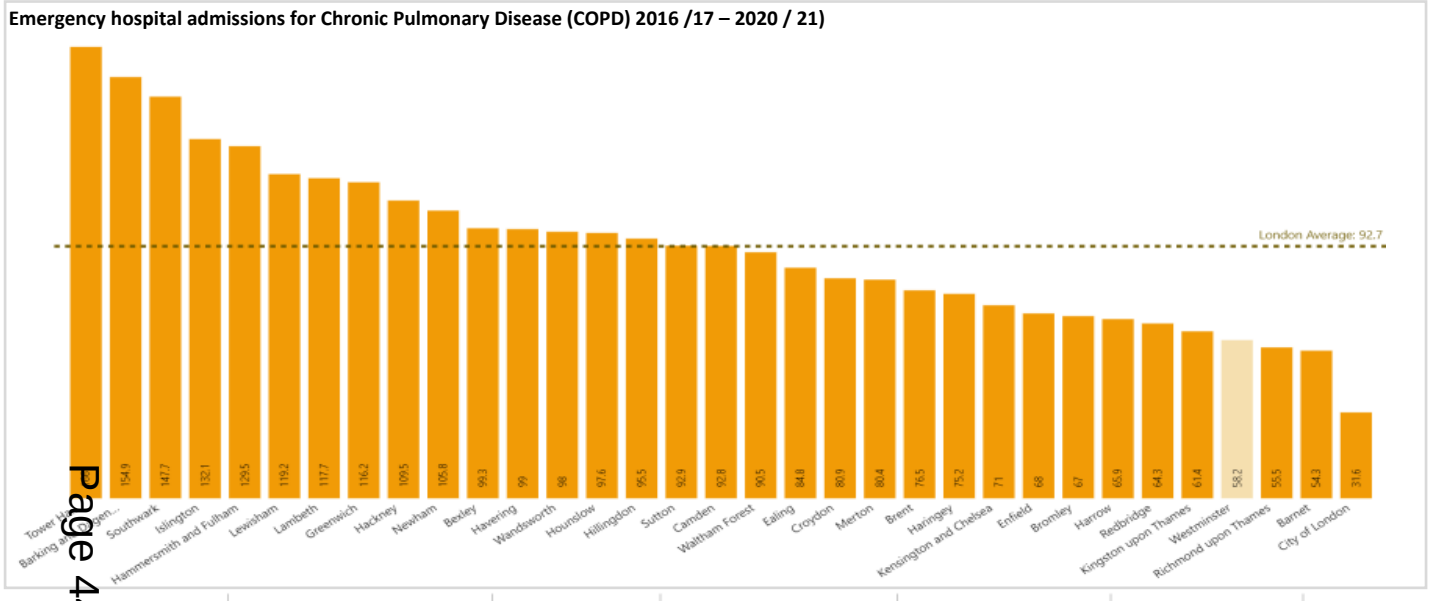
Key facts

37%

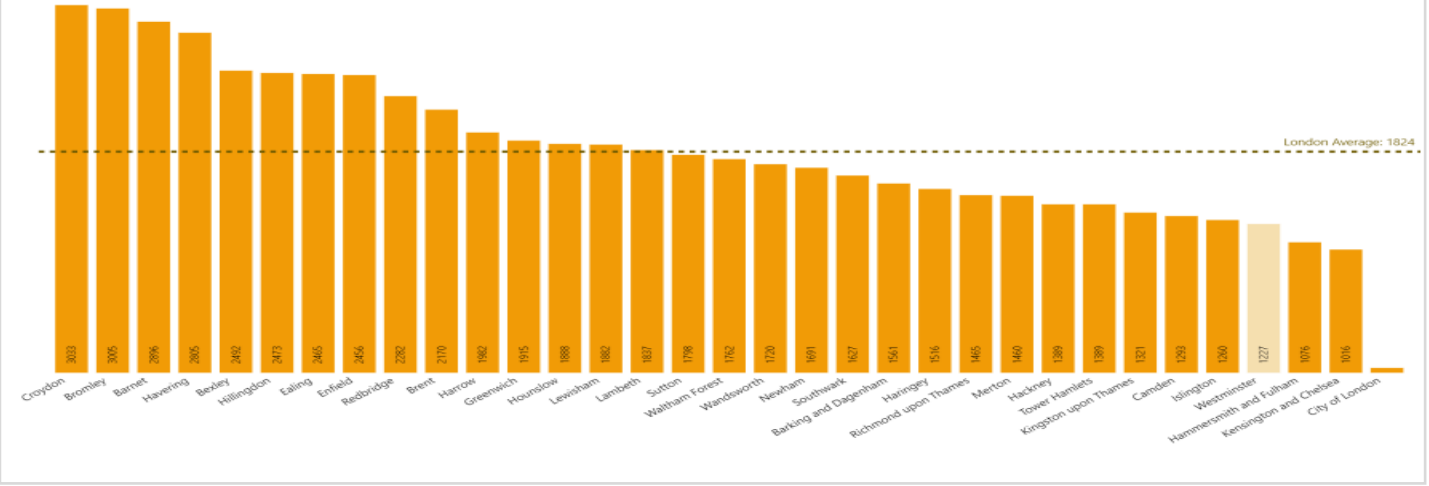
NO2 from transport

Air Quality

Emergency hospital admissions for Chronic Pulmonary Disease (COPD) 2016 /17 – 2020 / 21)



Mortality caused by respiratory disease (2013 – 2021)



Hospital admissions calculations: Geographic area Observed / Adjusted Geographic Expected admissions multiplied by 100

In London, pollution concentrations with a few metres of busy roads are normally 2 or 3 times those at background locations, defined as normally at least 50-100m away from busy roads. The most extreme conditions are found in narrow streets lined with tall buildings, which can trap pollution and lead to more elevated concentrations.

There is now strong evidence of a link between traffic-related pollution and a worsening of lung conditions such as asthma and chronic obstructive lung disease (COPD). In addition, research suggests a role for traffic-generated air pollutants in the development of asthma and COPD, particularly in those living close to busy roads.

London Air Quality Network Guide

Challenges

- Providing cleaner air quality routes for pedestrians and cyclists, especially during rush hour, when air pollution levels are higher near busy roads
- A better understanding of health effects of air pollution.
- Understanding why and when we are likely to go above WHO guideline levels for NO2.
- Understanding the impact buildings have on air quality

Key facts

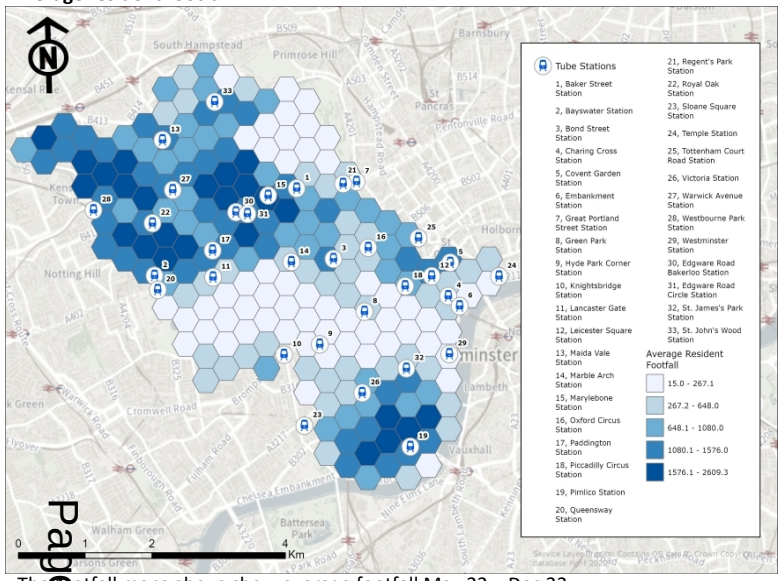
652
deaths from respiratory diseases (count) 2016-2020

58.2
emergency hospital admissions for Chronic Pulmonary Diseases (2016 / 17 – 2020/21)

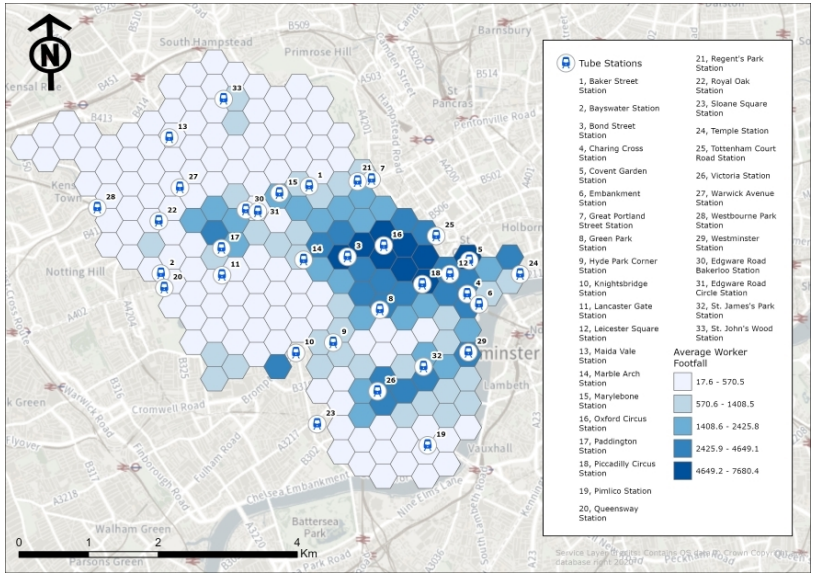
1227
mortality caused by respiratory disease in Westminster (2013 – 2021)

Sustainable Economy

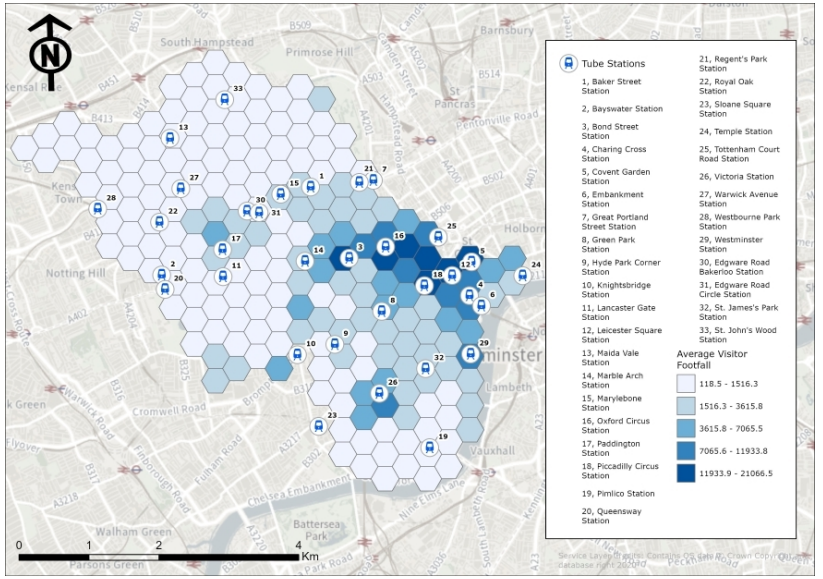
Average resident footfall



Average worker footfall

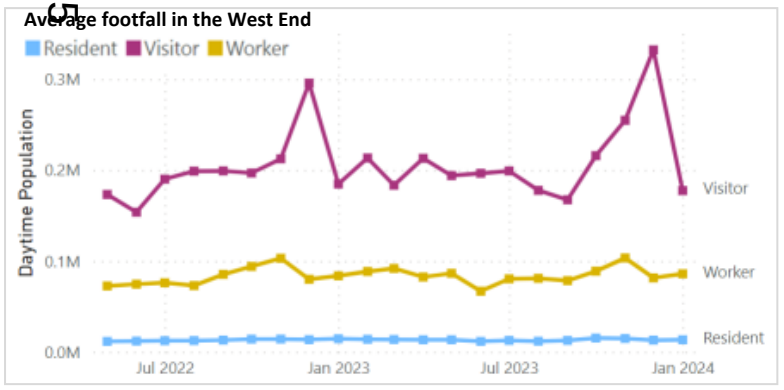


Average visitor footfall



The footfall maps above show average footfall May 22 – Dec 23

Average footfall in the West End



- *Note – visitor numbers exclude international visitors*

- Our High Street footfall data shows that our residents tend to stay close to home and not visit the West End
- Worker footfall and visitor footfall show that both visitors and workers are congregating at the collisions and casualties' hotspots (see Road Safety – page 5)
- Westminster jobs represent one-eighth of London's job market (Lightcast, 2022)

Challenges

- Encouraging residents to visit the West End
- Ensure the Transport Strategy is not detrimental to the economy
- Pedestrianised areas to encourage visitors and residents to spend time in the West End

Key facts

367K
Average daytime population Jan 2024

767,000
jobs hosted in Westminster (Lightcast, 2022)

Sources

Overview

- Travel in London 2023 - The travel behaviour of London residents based on the London Travel Demand Survey (tfl.gov.uk)
- Road traffic statistics - Download data (dft.gov.uk)

Road Safety

- Road traffic statistics - Download data (dft.gov.uk)
- Method used to travel to work Census 2021
- TFL road safety data reports
- Footfall data (internal) - BT Geolocated Mobile Network Data (GeoMND)

Health & Exercise

Active Lives | Sport England

Climate Change

- Technical-Report-The-Third-Climate-Change-Risk-Assessment.pdf (ukclimaterisk.org)
- HonestJohn.co.uk Electric Car Survey | Motoring News | Honest John
- Vehicle licensing statistics data tables - GOV.UK (www.gov.uk)

Access & Inclusion

Uber Green - Sustainable Rides in Electric Vehicles on Uber

Air Quality

- London Air Quality Network
- Environmental Justice Measure | Westminster City Council
- Air quality data | Westminster City Council
- Local Health - Office for Health Improvement and Disparities - Indicators: maps, data and charts

Sustainable Economy

Local Authorities—UK | Lightcast

Footfall data - BT Geolocated Mobile Network Data (GeoMND)

Transport Strategy examples

Many London boroughs and other major cities have already adopted, or are in the process of establishing, a transport strategy. Below are a few examples of some of the pledges and targets set as part of those strategies.

Southwark

In 2023, Southwark launched its 'Streets For People' strategy which seeks to prioritise cleaner air, healthier travel options and safer and quieter streets. The strategy aims to reduce car ownership by 10% by 2030, increase journeys made by walking, cycling, wheeling or by public transport to 87% of modal share and deliver a minimum of 1,000 cycle hangars by 2026.

Lambeth

Lambeth recently published its kerbside strategy which sets out its vision to reclaim the kerbside as a public space. It aims to transform 25% of its kerbside space away from parking use by 2030, turning those spaces into places for people as well as cars. The strategy suggests that future fees and charges for parking vehicles on the kerbside will subject those whose vehicles take up more space and produce more greenhouse gases to higher parking fees. To support this, active travel community uses are prioritised, with fossil fuel car owners being the least likely to receive future improvements in their transport network.

Camden

In 2019, Camden published its Transport Strategy which seeks to increase sustainable transport mode share to 93%, as well as to quadruple cycle mode share in the borough by 2041. The strategy also seeks to drastically reduce car ownership by 2041, which is supported by new initiatives such as the Camden High Line, which plans to turn a disused railway viaduct into a new park, connecting Camden Town to King's Cross.

Greater Manchester

Greater Manchester has committed to making the area 'one of the best places in the world to grow up, get on and grow old'. The strategy focuses on 4 key elements: supporting sustainable economic growth, protecting the environment, improving quality of life for all, and developing an innovative city. By 2040, they have committed to 50% of all journeys to be made by cycling, walking or public transport which equates to one million more sustainable journeys every day.

New South Wales, Australia

New South Wales has a Future Transport Strategy that sets the direction to 2056 for connecting their communities, supporting successful places and enabling economic activity. There is a focus on 'building back better' through better monitoring of the

network to allow for more informed decision making when prioritising highway/kerbside improvements. There is also a focus on last-mile deliveries, and the importance of connecting people by sustainable transport modes to employment opportunities, health and education facilities, as well as cultural and leisure destinations.

Appendix 3 **Kerbside Uses**

1	Pedestrian schemes
2	Traffic capacity needs
3	Road safety highway space prevention
4	Lane rental and utility works needs
5	Public realm scheme design
6	Road safety schemes
7	School Travel Plan / School schemes
8	Cycle routes, schemes/provision
9	Santander Cycle Hire docking stations
10	Powered Two Wheeler parking bays
11	Disabled Blue Badge Bay
12	Disabled White Badge Bay
13	Taxi rank
14	Taxi parking bay
15	Resident parking bay
16	Single and Double Yellow Line loading and waiting provision – all vehicles
17	Single and Double Yellow Line loading and waiting provision – additional concession
18	Paid for Visitor Parking Bay – Pay By Phone and PbP
19	London Bus Network – bus priority
20	London Bus Network – bus stop accessibility and Bus Stand

21	Express coach and London Tour Bus – terminal point
22	Tour coach – parking and waiting provision
23	Electric Vehicle Charing Bay
24	Electric Vehicle Charing Bay – LGV
25	Westminster Car Club Bay
26	Doctors Bay
27	Hospital Bay
28	Access and visibility splays for frontager servicing and deliveries
29	Access needs for kerbside services, e.g. refuse collection, emergency vehicle access etc.
30	Diplomatic Bay
31	Market Trader Bay
32	Metropolitan Police concessions
33	Whitehall Security Zone requirements
34	WCC Suspended Bay, Skips, removals etc
35	WCC Special Events needs
36	Pedicabs
37	Play Streets/Street Play Streets
38	Cycle Hangars (Residential)
39	Parklet units on c5m bays
40	TfL scheme Rental E-scooter bay (highway kerbside)
41	Planter/rain garden units (SUDs) kerbside
42	Temporary suspension of kerbside for Alfresco licensed dining

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FAIRER WESTMINSTER

Sustainable Transport Strategy- Key Facts & Questions

STRATEGY & INTELLIGENCE | City of Westminster

Key Facts

Transport Strategy Priority			Source
Overview	% of residents who do not own a car	66%	Census 2021
	% of residents who feel heavy traffic is an issue	31%	Internal survey
	Estimated number of vehicles that used WCC major or minor roads (2022)	2.2m	Department for Transport
Road Safety	Number of traffic cyclist casualties (2022)	619	TFL road safety reports
	% of traffic casualties that involved cyclists (2022)	32%	Department for Transport
	Number of road collisions (2022)	1,794	
	Number of road casualties (2022)	1,935	
	% of WCC residents aged 65+ and classified as disabled under the equality act	4%	Census 2021
	% of WCC residents aged 65+	12%	Census 2021
Access & Inclusion	% of respondents who stated better availability of late-night transport would make people feel safer in Westminster after 6pm	36%	Westminster after dark survey
	% of respondents that felt cheaper transport will keep them in Westminster after 6pm	22%	
	Number of WCC disabled (driver) blue badges	497	London Councils
	Number of WCC White badge permit holders	198	
Health and Exercise	% of residents who are physically active	71%	Active Lives survey 2021/22
	% of residents who are physically inactive	21%	

Key Facts

Transport Strategy Priority			Source
Climate Change	Number of Westminster properties flooded in 2021	1,000 (est)	Environment agency
	Number registered electrical vehicles in Westminster	386,280	Departments for Transport
Air Quality	Westminster's average NO2 emissions (2019)	37%	
	Number of deaths in Westminster from respiratory diseases (count) 2016-2020	652	NHS Digital
	Emergency hospital admissions in Westminster for Chronic Pulmonary Diseases (2016 / 17 – 2020/21)	58.2	
	Mortality caused by respiratory disease in Westminster (2013 – 2021)	1227	
Sustainable Economy	Average daytime population in Westminster Jan (2024)	367K	Footfall data - BT Geolocated Mobile Network Data (GeoMND)
	Number of jobs hosted in Westminster (2021)	767,000	Lightcast

Key Questions

How do we encourage more cycling and walking through Westminster when we have a high number of collisions and casualties?

- Can we provide a safer cycle network away from main road traffic, preferably in cleaner, low emission areas? Securing the extension of the Mayor of London's and/or other Cycle Hire Schemes to the Council.
- Can we create healthy and inclusive environments that encourage Westminster residents, visitors and workers to choose walking or cycling within the Council?
- Can we increase traffic lights crossing times in accident hotspot areas?

How do we ensure that our transport network is safe and inclusive for Westminster residents, visitors and workers alike?

- Better use of the Council bus fleet.
- Provide more street furniture for rest spots on longer walks and cycling.
- Improve access to sustainable modes of transport and ensure that everyone in Westminster can choose, access, and travel safely.
- Create a safer and secure travelling infrastructure and environment especially for women.
- Additional safety measures at high crime areas
- Ensure the Transport Strategy is not detrimental to the economy

How do we continue to decarbonise our traffic and meet our 2040 Net Zero, air pollution and climate change ambitions? i.e. how do we prioritise?

- Work closely with the London Mayor's office to meet a potential growing demand for charging points.
- The impact of additional charging points in Westminster will need to consider other kerbside priorities.
- Have a quick response to climate change events
- Providing cleaner air quality routes for pedestrians and cyclists, especially during rush hour, when air pollution levels are higher near busy roads
- A better understanding of health effects of air pollution.
- Understanding the impact buildings have on air quality.

City of Westminster

Climate Action, Environment & Highways Policy and Scrutiny Committee

Date of meeting:	29th February 2024
Classification:	General Release
Title:	PDHU – Outline Business Case Approach
Report of:	Debbie Jackson, Executive Director – Regeneration, Economy & Planning
Cabinet Member Portfolio	Cabinet Member for Housing Services Cabinet Member for Climate, Ecology and Culture
Wards Involved:	Pimlico South Pimlico North
Policy Context:	Fairer Housing Fairer Environment
Report Author and Contact Details:	Chris Spicer, cspicer@westminster.gov.uk

1. Executive Summary

1.1. This report provides a summary of progress with the Outline Business Case (OBC), overview of the heat sources being considered and pipework replacement options for the future of PDHU project. The report also provides an overview of the ongoing activities around resident engagement and key dates for 2024.

1.2. The project was last presented to Policy and Scrutiny Committee on 2nd March 2023. This was following approval of the Strategic Outline Case (SOC) and provided the Committee with a summary of the SOC and next steps for procuring consultancy support and advancing with the Outline Business Case.

1.3. A proposed approach to funding a future project was presented to the Budget Scrutiny Committee on 25th January 2024.

2. Key Matters for the Committee's Consideration

2.1. This report is coming to this Committee for pre-decision scrutiny to obtain input on the current approach to developing the Outlines Business Case and ultimately selecting a preferred option for the future of PDHU.

2.2. The Core questions Committee are asked to provide a response to are:

- Does the Committee agree with the current approach to identifying and selecting a preferred option?
- The OBC will consider a range of options (including innovative technology) that are showing potential to provide low carbon and affordable heat, such as SWAN and the thermal battery solution. Do you agree this is worthwhile considering the long time impact of any decisions made?
- Does the Committee agree with the proposed approach to financing the project outlined in Section 4?

3. Background, including policy context

3.1. Pimlico District Heat Undertaking (PDHU) is a district heating system which provides heating and hot water to 3,306 residential properties and more than 50 commercial properties ranging from schools, offices, a library and shops.

3.2. PDHU is supplied with heat from an Energy Centre which is located at the Pump House in Churchill Gardens Estate.

3.3. PDHU is the oldest heat network in the United Kingdom, dating back to the 1950s. The distribution pipework has significantly exceeded its design life, leaks are a persistent issue and it is critically important that the network is renewed to maintain a secure supply of heat to residents.

3.4. PDHU was developed and built in the post-war period to help address poor air quality in Central London, it has been supplying affordable energy to residents since 1950. Originally, the PDHU made use of waste heat from the nearby Battersea Power Station. The heat was pumped through a tunnel under the Thames and was distributed to the homes in Churchill Gardens.

3.5. The network has expanded over time, with connection to Lillington and Longmoore Gardens in 1983 and Abbots Manor 2004. There have also been a number of commercial connections including Pimlico Academy in 2009.

3.6. The network is currently powered by three 8MW natural gas boilers which emit 16k Tonnes of CO2 per annum, this equates to 39% of the Council's total carbon emissions in 2021/22. Two of these boilers were installed in 2005 and one was installed in 2021.

3.7. Energy expenditure for operating PDHU has increased from £1.3m in 21/22 to £3m in 23/24 due to rising global energy costs.

3.8. Due to the age of the pipework, 50 – 70 years old, leaks are a significant issue. The system design makes identifying and isolating leaks problematic resulting in significant disruption to residents through loss of heating and damage to property. In addition, the existing pipework is not energy efficient, resulting in high levels of energy loss, with a lack of control available for residents.

3.9. The Business Case will be exploring the potential options for replacement of the distribution pipework, this includes:

- Costed options for pipework routes across all the connected estates, including architectural and structural impact
- Assessment of requirement for in dwelling pipework upgrades including provision of dwelling level heating controls and metering
- Pre planning consultation with planning authorities, to determine feasibility of pipework replacement options

3.10. In addition, the UK Government have announced plans to appoint Ofgem as the new regulator for Heat Networks under the Energy Act. This is expected to bring in significant changes to the heat network sector. Operators of the heat networks will need to comply with enhanced performance requirements and consumer protections that are anticipated for existing and future customers, which will be enforced by Ofgem. WCC are reviewing the implications of this as the new legislation emerges.

Strategic Outline Case

3.11. In January 2023, a Strategic Outline Case (SOC) was presented to, and endorsed by, the Capital Review Group (CRG). This SOC outlined the rationale for significant investment in PDHU. A copy of the SOC has been included in the appendices for reference.

3.12. The SOC identified a range of potential options for the future of PDHU to include in the OBC and requested a budget of £1.2m to appoint a multi-disciplinary design team. The following options were shortlisted, with option 5 not considered viable due to high future energy tariffs for residents:

Option 1a
Installation of 7.5MW Centralized River Source Heat Pumps with Gas Boilers providing top up at the existing PDHU pump house
Option 1b
Installation of 7.5MW Centralized River Source Heat Pumps with Electric Boilers providing top up at the existing PDHU pump house
Option 3a
Install RSHP at existing energy centre with electric boilers for peak demand. Zone Lillington and Longmoore, to be supplied by electric boiler
Option 3b
Install RSHP at existing energy centre with electric boilers for peak demand. Zone Lillington and Longmoore, to be supplied by electric boiler and heat pump using TFL waste heat
Option 5
Decommission PDHU and install direct electric heating by storage heaters with hot water supplied by immersion coils

3.13. The intention for the OBC was to revisit the full long list of 'blue sky' options, to ensure there were no viable options missed in the SOC process. This includes revisiting the option for replacing the existing heat network with direct electric heating in dwellings.

3.14. The SOC also outlined a proposed governance structure for the OBC, which includes an operational project board to review progress and cabinet member steering group.

3.15. The SOC approved a budget of £1.2m, funded through a combination of the Community Infrastructure Levy (CIL) and grant funding from the Heat Network Delivery Unit (£180,000)

Outline Business Case

3.16. A tender process for appointing a multi-disciplinary design team concluded in August 2023 and production of the Outline Business Case is underway. The project team consists of:

- AECOM – Technical Lead – Responsible for mechanical and electrical engineering, structural engineering, architecture and fire consultancy
- Turner & Townsend – Development and authoring of the OBC (following the HM Treasury 5 Case Model) and project management services
- Amberside Advisors – Financial Modelling and heat tariff advice

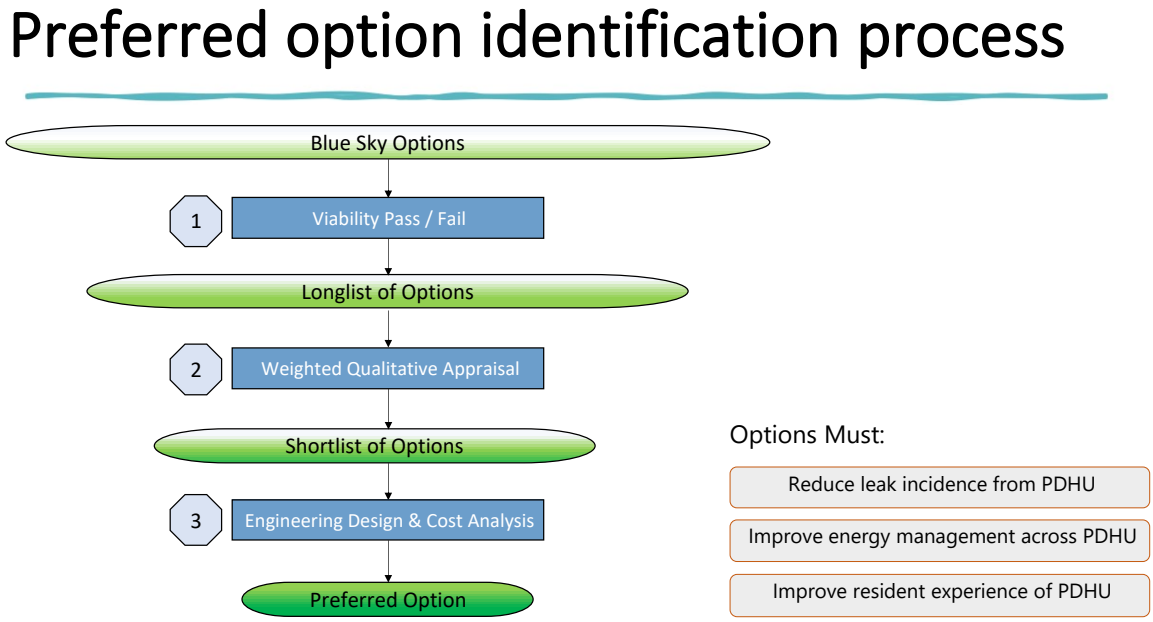
3.17. The project objectives for the OBC (and beyond) have been agreed as follows:

- Improve customer experience over design life of network through reduction of leaks and improvements in heat consistency and availability, in a cost effective way.
- Improve energy management in line with regulatory requirements by increasing network efficiency through reduction of energy loss and allowing improved control of energy by customers.

- Reduce PDHU's annual carbon emissions in line with WCC's Net Zero Strategy and WCC's strategic objectives, within 1 year of project completion.

Heat Source Options

3.18. A key first step for AECOM was to restart the options appraisal process completed during the Strategic Outline Case. The diagram below shows the process being followed to identify a preferred heat source option:



3.19. A total of 33 heat source options were identified in the 'blue sky' list of heating options and assessed for their technical viability. This included a number of variations across the following technology types:

- River Source Heat Pump
- Air Source Heat Pump
- Ground Source Heat Pump
- Heat Pumps using waste heat (TFL and sewer source)
- Direct heating in flats (gas boiler and electric heating)
- Hydrogen heating

3.20. A total of 11 options passed the technical viability assessment. These options were then scored across a range of criteria. Each of the criteria were weighted based on discussions with the project board and Cabinet Member steering group. These weightings were also influenced by resident feedback from the working group. The current criteria, critical success factors and weightings are shown in the table below (subject to change following further engagement):

Criteria	Critical success factor metrics	Total criteria weighting
Value for money	• Project Economic Performance • Operational Cost / Impact to Heat Tariffs • Capital Cost • Whole Life Cost of Heat Generation • Eligibility for Grant Funding Support	37%
Resident benefit	• Impact on Local Air Quality • Disruption to Residents During Works	11%
Deliverability	• Construction Risk • Planning Risk • Reputation Risk • Operational Risk • Space Requirement Availability	17%
Strategic fit	• Reduce maintenance costs • Futureproof / potential for expansion • Impact on Electrical Grid	5%
Market capability and capacity	• Technology Maturity • Commercial Delivery Risk • Reliance on Specialist Contractor Resource	15%
Carbon Reduction	• Lifetime Operational Carbon Emissions • Whole Life Cost per TCO2e Saved • Potential to achieve Net Zero Target	15%

3.21. Following application of the weightings a shortlist of options has been identified which will be subject to full techno-economic modelling. The table below shows the current options, alongside the current advantages and disadvantages of each:

No	Option	Advantages	Disadvantages
1	Do minimum – Replace pipework and retain gas boilers	Capital costs are expected to be lower due to retention of existing gas boilers. Pipework would be upgraded, resulting in reduced number of leaks and improved efficiency. Increased control for residents, paying only for what they use.	No grant funding available. Carbon savings are minimised due to retention of gas boilers. Increased exposure to future energy price changes due to efficiency of gas boilers. Local air quality impacts due to gas boiler flues. UK Government looking to phase out gas for heating.
2	Direct electric heating installed to dwellings (Option 5 SOC)	Carbon reduction potential due to removal of gas boilers. No leaks due to removal of heating through hot water.	Significantly increased energy bills due to efficiency of heating system, increasing fuel poverty. No grant funding available. Residents would pay for energy directly from energy companies. Reduced space in dwellings due to requirement for hot water cylinder.

3	Retain full network – Install River Source Heat Pump as new energy source and replace all network pipework. (Variations to include gas boilers and electric boilers as back up)	Carbon reduction due to heat pumps providing the main heat source. Increased efficiency of heat provision due to heat pump technology. Pipework would be upgraded, resulting in reduced number of leaks and improved efficiency. Increased control for residents, paying only for what they use.	Operational risk from use of the river as a heat source. The heat pump will be run on electricity which may impact on energy costs for residents. The existing pipework may need to be upgraded in advance to optimise heat pump performance.
4	Zoning option 1: Abbots Manor zoned off and powered by an Air Source Heat Pump, with the remaining properties on the network supplied by a River Source Heat Pump. All network pipework to be replaced.	Carbon reduction due to heat pumps providing the main heat source. Increased efficiency of heat provision due to heat pump technology. Pipework would be upgraded, resulting in reduced number of leaks and improved efficiency. Increased control for residents, paying only for what they use. Reduced disruption to local roads as part of the primary network would not need replacing.	Operational risk from use of the river as a heat source. The heat pump will be run on electricity which may impact on energy costs for residents. Reduced efficiency due to smaller network, with different energy tariffs for each estate. The existing pipework may need to be upgraded to optimise heat pump performance.

5	Zoning option 2 - Lillington and Longmoore Gardens zoned-off and powered from a Waste Heat source (TfL), with the remaining properties on the network supplied by a River Source Heat Pump. All network pipework to be replaced (Option 3b SOC)	Carbon reduction due to the removal of gas boilers. Increased efficiency of heat provision due to heat pump technology. Pipework would be upgraded, resulting in reduced number of leaks and improved efficiency. Increased control for residents, paying only for what they use. Reduced disruption to local roads as part of the primary network would not need replacing.	Operational risk from use of the river and TFL ventilation shaft as a source of heat. The heat pumps will be run on electricity which may impact on annual energy costs for residents. Reduced efficiency due to smaller network, with different energy tariffs for each estate. Contract and offtake agreement will need to be agreed with TFL. The existing pipework may need to be upgraded to optimise heat pump performance.
6	Each of the three large estates zoned-off and supplied with separate low carbon heat source. All network pipework to be replaced	Carbon reduction due to the removal of gas boilers. Increased efficiency of heat provision due to heat pump technology. Pipework would be upgraded, resulting in reduced number of leaks and improved efficiency. Increased control for residents, paying only for what they use.	Operational risk from use of the river and TFL ventilation shaft as a source of heat. The heat pumps will be run on electricity which may impact on annual energy costs for residents. Reduced efficiency due to smaller network, with different energy tariffs for each estate. Contract and offtake agreement will need to be agreed with TFL. Increased maintenance costs across 3 separate communal networks.

		Significantly reduced disruption to local roads as the main feeder network would not need replacing. Increased resilience as there are 3 energy centres.	The existing pipework may need to be upgraded to optimise heat pump performance.
7	Connection to larger South Westminster Area Network (SWAN) All network pipework to be replaced.	Existing energy centre (and potentially primary network) would be taken under control of SWAN, reducing operational and maintenance costs for WCC. Pipework would be upgraded, resulting in reduced number of leaks and improved efficiency. Opportunity to benefit from economies of scale from connection to a larger heat network.	WCC has less control over heat provision and heat tariff pricing. The Pump House site would require extensive redevelopment potentially impacting on heat provision to residents and the local area. The existing pipework may need to be upgraded in advance to optimise performance and heat consumed.
8	Thermal Batteries: Waste heat supplied by Thermal Batteries directly to PDHU	The technology can be rapidly integrated into PDHU to offer a decarbonised source of heat. The heat price being offered by the supplier is competitive when compared to alternatives. The technology can be integrated before significant pipework upgrades across the network.	It is a novel technology when compared to heat pumps or gas boilers. WCC would enter into a long term heat supply agreement (20 years) with a commercial JV.

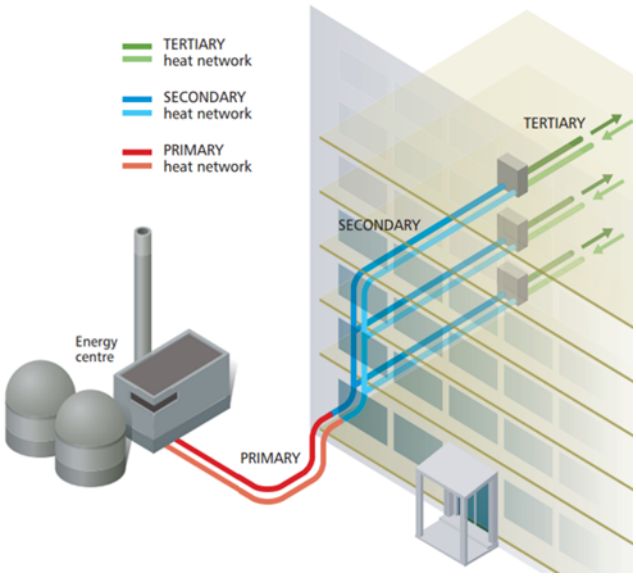
3.22. Option 2 has been re-introduced following a request from residents at the working group. It was initially discounted due the high impact on resident heating bills. The project team will be reviewing the technical and commercial viability for this option to ensure that residents are fully informed on the decision making process. Options 7&8 are potential alternative solutions which are described in further detail below.

Pipework Upgrades

3.23. The process for reviewing the options for upgrading the pipework is different the heat source as the number of options is limited. Nearly all of the current heat source options will require distribution pipework to take the heat from an energy centre into the residential dwellings. The only exception to this is the option to install direct electric heating.

3.24. The existing pipework is split into 3 main categories:

- Primary Network – These are the large diameter distribution pipes which run from the energy centre to the building, they are generally buried under roads and pavements.
- Secondary Network – This is the pipework within the communal spaces of a building, located within risers and taking the heat to the boundary of the property.
- Tertiary Network - The pipework within a dwelling connecting to radiators.



3.25. The OBC will investigate the options and impacts for upgrading all the pipework systems. Due to the scale of PDHU, and early stage of the project,

a representative selection of 13 building archteypes have been selected, which represent 80% of the buildings connected to PDHU.

3.26. A secondary and tertiary network design report will be developed for each of the 13 building archetypes covering the following:

- Options for installation of new secondary and tertiary pipework systems including architectural design.
- Technical requirements for provision of heating control systems including heat interface units (HIU's) and energy metering systems.
- Assessment of the options for provision of heating and hot water services, including 2 pipe and 4 pipe systems.

South Westminster Area Network (SWAN)

3.27. SWAN is a project being developed by the Department for Energy Security and Net Zero. SWAN is an area wide energy network supplying low carbon heat to over 350 customers (circa 1,000 buildings) from multiple energy centres, utilising a variety of heat sources.

3.28. There is potential for SWAN to provide heat to PDHU. Under this option PDHU would purchase heat from SWAN, with the existing energy centre taken over by the SWAN developer.

3.29. An OBC is currently being developed and is expected to be issued to WCC in March 2024. Once received, the SWAN option can be compared against the other shortlisted options.

3.30. It should be noted that the existing pipework will still require replacement under this option as outlined above. However, there may be scope for SWAN to 'adopt' the primary network.

Thermal Battery Option

3.31. WCC are also working with commercial parties to explore providing heat via a Mobile Heat Project. This would involve moving waste heat from an Energy from Waste facility on the River Thames to PDHU. The heat would be transported in mobile thermal batteries mounted on barges, travelling 28 km along the Thames. A summary of the option has been included in the appendices.

3.32. A thermal battery is like an electrical battery, but it stores heat. The thermal batteries use a non-toxic, non-flammable phase change material (PCM) based on salt, developed by Sunamp with the University of Edinburgh.

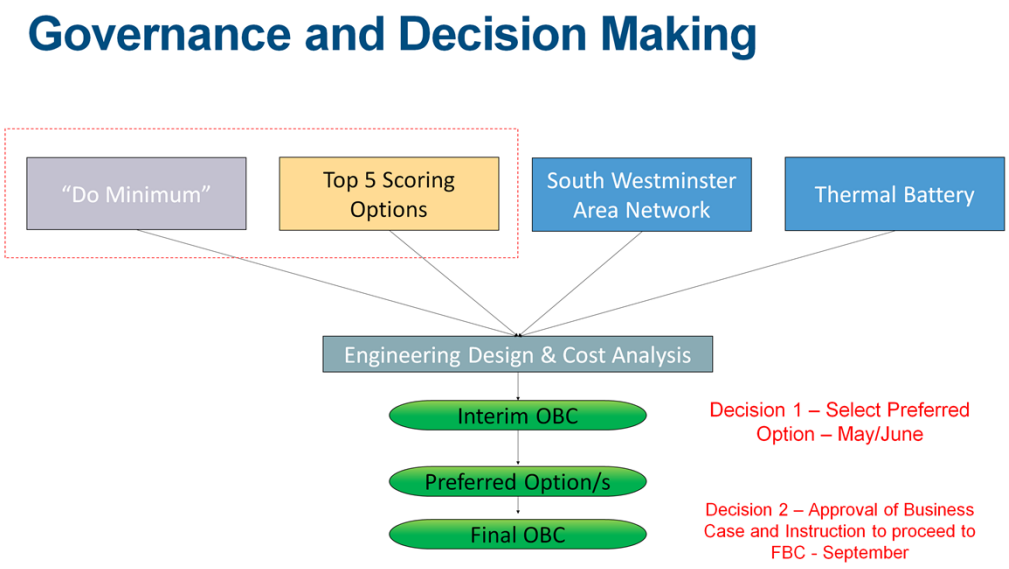
3.33. As well as supplying heat, Cory would manage barge logistics. Cory has the longest continued lighterage operation and largest barge fleet on the Thames, which transports residual waste to its EfW plant. Cory already operate a barge waste transfer station opposite PDHU on the south bank of the Thames.

3.34. An initial proposal was submitted by the supplier in December 23 which provided early positive results. A detailed proposal has been instructed which is expected to be issued to WCC by March 24. A demonstrator battery has also been installed at the Pump House to test how the technology integrates with the network. The results of this test will be assessed as part of the next stage of analysis.

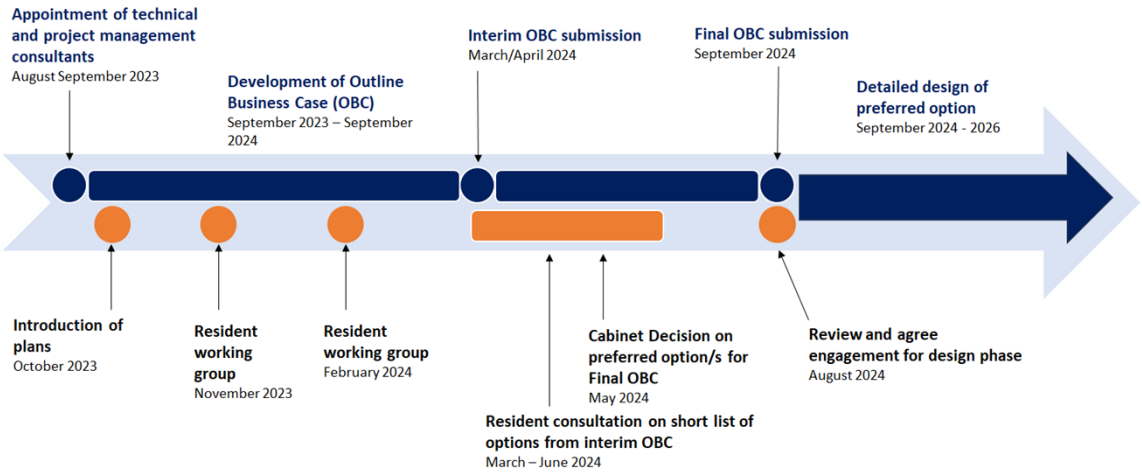
Next Steps

3.35. The diagram below outlines the current proposed approach to Governance and decision making on a preferred option. There are currently 8 options being considered by the project team. These options will be modelled and presented in an interim OBC to Cabinet in May 2024. A decision then be taken on which of the options will be taken forwards to full RIBA Stage 2 design and final OBC.

3.36. The final OBC is forecast to be completed in September 24, with decision on a final preferred option, followed by progression to the full business case stage. The dates shown on the timeline are subject to change and dependant on the outcomes from the governance and stakeholder engagement.



Timeline



Resident Engagement and Consultation

3.37. A programme of engagement and consultation is in progress, with further details provided in section 8.

4. Financial Implications

4.1. A proposed funding strategy for the PDHU project was presented to the Budget Scrutiny Task Group on Thursday 25th January 2024. Given that a preferred option has yet to be identified, the purpose of this was to identify an appropriate approach to funding the different components of the future project (regardless of the option chosen) and to ensure that adequate funds were allocated within the Council's capital strategy for elements that it might be required to fund directly.

4.2. Any future project can broadly be split into two elements:

- Investment in external network infrastructure (including the heat source and external pipework, known as the primary network)
- Internal upgrades to pipework within blocks and dwellings (known as the secondary and tertiary network)

4.3. The proposed funding strategy differentiates between the two. Any investment required for external network infrastructure will be structured as a commercial model. This means that the cost of required capital expenditure will be built into the tariff charged for energy consumption via the network. This approach is consistent with the models used across the energy sector.

4.4. Upgrades to internal communal pipework are considered to be a landlord responsibility and covered within obligations to maintain the condition of housing stock. It is therefore assumed that the HRA will be required to cover this investment on behalf of its tenants. This will therefore be treated in the same way as any Major Works programme within the HRA and an appropriate allowance has been allocated in the revised HRA Business Plan to ensure that the necessary funds have been earmarked in advance to allow the project to progress once a preferred option has been selected.

4.5. This assumption means that leaseholders will also be required to contribute to any works that upgrade the condition of their properties in the usual way. However, in order to mitigate the financial impact on network users, the Council is reviewing opportunities to cover this cost via an annual service charge spread over a much longer period of time (and also ensure that the charge follows the property rather than the leaseholder).

4.6. Given the potential impact of the above on residents, value for money and affordability have been identified as critical criteria within the methodology being developed for the options appraisal. The appraisal will take a holistic view of the expected cost impact for network users on annual basis, which will combine the cost of energy with any potential annual service charges.

5. Legal and Governance Implications

5.1. Any contracts associated with investment in the PDHU will potentially fall within the scope of the Public Contract Regulations 2015 or the Utilities Contracts Regulations 2016 (or the new Procurement Act 2023 when it comes into force). Application of the relevant procurement legislation will need to be considered as part of the OBC

6. Carbon Impact

6.1. The existing PDHU network accounts for nearly 40% of WCC's annual carbon emissions and this project could potentially have a significant impact on emissions from the network.

6.2. The modelling carried out during the SOC indicated a potential carbon reduction of between 55% and 75% by 2030.

7. Equalities Impact

7.1. An EQIA assessment will be undertaken following the interim OBC, once more clarity on the preferred option/s are confirmed.

8. Consultation and Engagement

8.1. A programme of stakeholder management, resident engagement and consultation is in progress to ensure resident views are taken onboard and fed into the business case process.

8.2. A resident advocate and independent consultant have been appointed to the project team who will act as the resident voice throughout the business case process.

8.3. A resident working group has been established, with the first meeting held in November 23 and a second meeting planned for 22nd February 2024. The role of the working group is:

- To support WCC in reviewing options for the future of PDHU
- To ensure resident priorities and concerns are fully considered and accounted for
- To assist WCC in communicating clearly and effectively with residents more widely

8.4. The first working group was attended by 30 residents, with some valuable feedback received on the approach being taken to develop the OBC

8.5. There are a range of other activities planned during the OBC, this includes:

- Launch of PDHU Common Place website (February 2024)
- Issue of PDHU newsletter (March 2024)
- Local events at each estate to provide further detail on the options as the design progresses. This will be held in conjunction with the project team managing the rollout of metering across PDHU (May 2024)

8.6. A ward Councillor briefing note will also be issued in the near future providing a summary or progress with the OBC.

If you have any queries about this Report or wish to inspect any of the Background Papers, please contact Report Author,
cspicer@westminster.gov.uk

APPENDICES:

Appendix A – Thames Mobile Heat Proposal – Summary
Appendix B – PDHU Strategic Outline Case

Thames Mobile Heat Option

How it works:

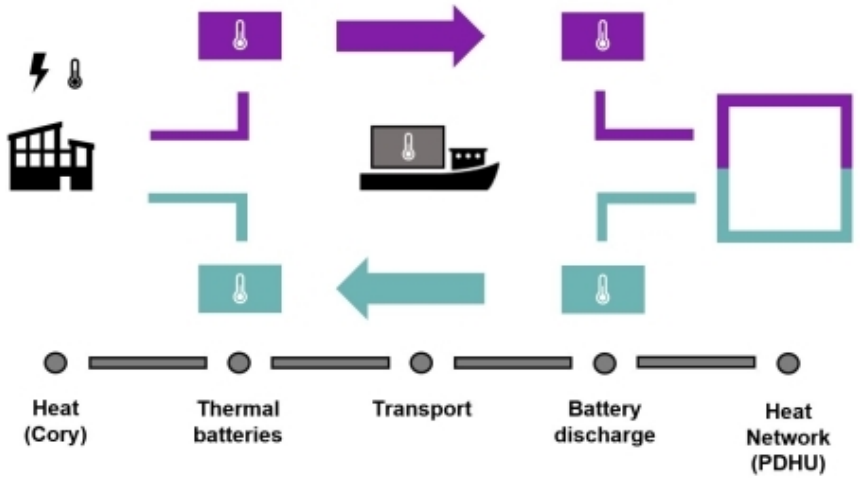
The concept uses a combination of very common activities to take waste heat, use it to charge thermal batteries and then move the batteries to where they are needed.

Two large barges, each holding 40x 20Ft shipping container batteries, would swap places regularly between a charging point at an energy from waste facility and a discharging point at PDHU. The batteries would remain on the barges, with a short pipe-run jetty to each barge mooring point enabling heat transfer.

During the winter peaks, these barges would swap with each tide, delivering c.240MWh of heat a day

The transport would be completed by Cory, who currently operate daily transport activities on the Thames.

It is currently assumed that the gas boilers are retained as back up source.



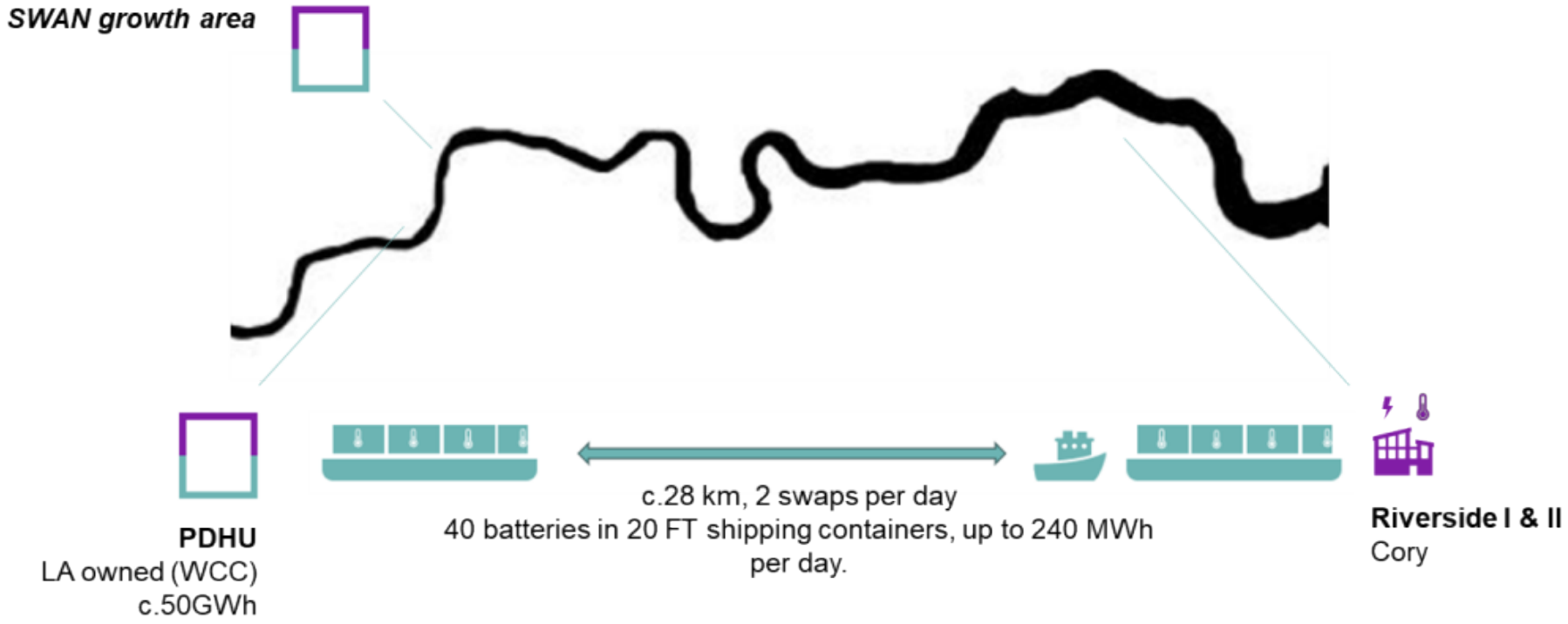
Heat Battery Trial – February/March 2024

A test of this concept is currently underway to evaluate heat recharge/discharge potential and integration with the existing network.

We will share the feedback / results of this trial when available.

Thames Mobile Heat Option

Thames Mobile Heat



Thames Mobile Heat Option

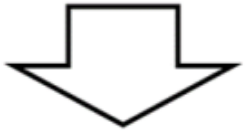
90%

immediate reduction in PDHU's carbon footprint

(lowest carbon option, modelled against heat pumps, direct electric and gas)

=

to the gas price if needed in the short term, including capex



lowest long term structural heat price

(modelled against heat pumps, direct electric & hydrogen heating)

2025

start date for low carbon heat to replace gas at PDHU

A detailed proposal is underway, which will be compared against the other options in the OBC

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Strategic Outline Case

Pimlico District Heat Undertaking (PDHU) – Decarbonisation Project

Version Control and Authorisation Sheet

Version Control

Version	Modification	Author	Date
0	Final Draft	Chris Spicer	11th January 2023
1	Final	Chris Spicer	13th January 2023

Reviewers

This document requires the following reviews.

Name	Title	Approved / Not Approved	Date	Version
Debbie Jackson	Exec Director – Growth, Planning and Housing	Approved	13th January 2023	1
Neil Wightman	Director of Housing	Approved	13th January 2023	1

Approvals

This document requires the following approvals

Name	Title	Signature	Date	Version
Andrew Ogalo	Internal Legal Team			
Ryan Giles	Procurement Team			
Luke Chiverton	Finance			

Internal Project Team

Project Name	**PDHU Decarbonisation**
Senior Responsible Officer	**Debbie Jackson**
Programme Manager	**Chris Spicer**
Internal Legal Team	**Andrew Ogalo**
Head of Commercial	**Ryan Giles**
Finance Team	**Luke Chiverton**

CONTENTS

Section

0. EXECUTIVE SUMMARY

Decisions Required

1. To approve the Strategic Outline Case for the decarbonisation and refurbishment of the Pimlico District Heat Undertaking (PDHU) on the basis that there is a strategic need for change.
2. Approve the following decarbonisation options to proceed to Outline Business Case (OBC):
    a. Option 1A – refurbish the existing PDHU network and install a 7.5MW River Source Heat Pump at the Churchill Gardens energy centre, with gas boilers for peak demand
    b. Option 1B - refurbish the existing PDHU network and install a 7.5MW River Source Heat Pump at the Churchill Gardens energy centre, with an electric boiler for peak demand
    c. Option 3A – Zone Lillington and Longmoore estate and install a separate electric boiler. Refurbish the remaining PDHU network and install a 5MW River Source Heat Pump at the Churchill Gardens energy centre, with an electric boiler for peak demand
    d. Options 3B – Zone Lillington and Longmoore estate and install an electric boiler supported by a waste heat pump from TFL ventilation shaft. Refurbish the remaining PDHU network and install a 5MW River Source Heat Pump at the Churchill Gardens energy centre, with an electric boiler for peak demand
3. Approve a budget of £1.2m for development of the Outline Business Case, to include technical, commercial, legal and procurement support. Grant funding to be applied for up to £500k of this expenditure

1. Strategic Case

1.1 Strategic Context

This Strategic Outline Case outlines the rationale for significant investment in the Pimlico District Heat Undertaking (PDHU). PDHU is a critically important asset for Westminster City Council. The heat network delivers heating and hot water to 3,300 homes, 50 commercial units and schools and has a significant economic, environment and political impact.

There are a number of strategic reasons for investing in PDHU:

- **Network condition** – the existing PDHU network is over 50 years old. Due to its age, maintenance costs are increasing and WCC spend £1.97m per annum maintaining and repairing the network, with a further £1.7m on in flat repairs related to PDHU. The number of leaks from the network is increasing every year, a growing problem as the pipework deteriorates. The potential for network failure will increase without investment.

- **Carbon emissions and net zero** – PDHU is currently powered by three 8MW natural gas boilers which emit 16k Tonnes of CO2 per annum, this equates to 39% of the Council's total carbon emissions in 2021/22. Investment in the network will significantly reduce emissions, a critical part of achieving the Council's net zero 2030 target.

- **Fuel costs and fuel poverty** – The recent energy price crisis has highlighted the importance of energy efficiency and energy security. Operating an efficient heat network will minimise the impact of energy price fluctuations and help to alleviate fuel poverty for vulnerable tenants

- **Improved network management** – The existing network currently has limited control, with a high level of losses due to its condition. This project will improve control through the installation of modern metering systems, resulting in users only being billed for the energy they use. Replacement of pipework will also lead to lower distribution losses, which are currently estimated at 30%.

1.1.1 Local Strategy

Westminster City Council

The new 'Fairer Westminster' strategy highlights the Council's ambition to take action on climate change with the aim of becoming a net zero Council by 2030. PDHU accounts for over a third of the Councils direct emissions making it a key focus area for emission reduction.

Greater London Authority

The Mayor of London (GLA) ambition is for London to be a zero-carbon city by 2050. Generating energy locally is more efficient and helps to cut London's carbon emissions. To drive this aim the GLA launched the Decentralised Energy Enabling Programme (DEEP) which provides public sector intervention and support to larger-scale decentralised energy (DE) projects in London

South Westminster Area Network (SWAN)

The SWAN project is an ambitious proposal which includes creating a large district heat network, linking up the existing heat networks at Whitehall and Pimlico and creating a low carbon network across Westminster. When complete, this would run from Aldwych, through Whitehall into PDHU.

As a key stakeholder in the project, WCC has been in discussions with BEIS regarding development of the project.

The main attributes are:

- Public-Public partnership providing a key contribution to National targets to achieve net zero commitments
- An area wide energy network supplying solely low carbon energy to 500+ customer buildings
- Harness energy from local waste and ambient sources that are inaccessible at a smaller scale
- Capable of producing zero carbon heat, with an estimated saving of 75,000 tonnes of CO2 per year
- Allow building owners and operators to meet their carbon reduction goals at a low cost
- Not a replacement for the investment required in PDHU but significantly funding part of that requirement
- Unlocks wider carbon targets across wider areas of the City, through future network expansion

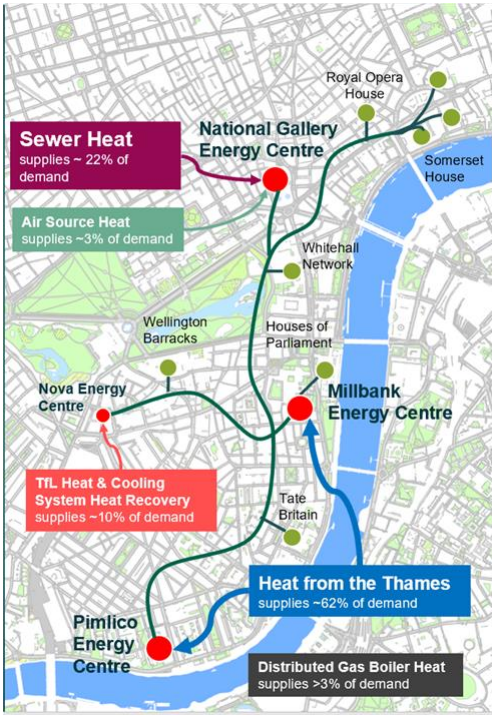


Figure 1 - Proposed Strategic SWAN Network Map

1.1.2 National Policy

Heat networks are a key feature in the UK Government's drive to net zero. The Government aims for heat networks to expand to serve 20% of UK households by 2050, up from around 2% in 2020, as part of its plans to bring heat and buildings to net-zero emissions. The Heat and Buildings Strategy aims to 'accelerate growth of the low-carbon heat network market' through a £338m Heat Network Transformation Programme which include initiatives such as the Green Heat Network Fund (GHNF) and the Heat Network Investment Project (HNIP).

Due to the increasing number of consumers connected to heat networks, OFGEM have recently been appointed by the UK Government 'to provide support and protection to consumers from volatile market changes through regulation'. The appointment of OFGEM is important for PDHU as it is expected that there will be a growing amount of regulation in the coming years.

In 2020, the Energy White Paper committed to implementing heat network zoning by 2025. This commitment was reiterated in October 2021 in both the Heat and Building Strategy and the Net Zero Strategy. Within a heat network zone, specific buildings will be required to connect to a heat network within a certain timeframe, unless exempt. A building may be exempt if low-carbon heating systems have already been installed or the costs of connection to the heat network are prohibitive.

1.1.3 Project Objectives

Investment in PDHU has the following objectives:

- Reduction of carbon emissions – PDHU currently accounts for 39% of WCC's scope 1 and 2 emissions therefore is a priority for improvement
- Reduce maintenance costs – The existing PDHU network is reaching the end of its useful life and maintenance costs are increasing, upgrading the network will lower annual opex costs for WCC
- Improve customer experience – Due to its condition, there is an increasing number of leaks across the network which impact on residents. Upgrading the network will improve its condition and significantly reduce the number of leaks
- Improve energy control and management – the project will seek to install a modern energy system with improved control. This will reduce energy waste and minimise ongoing energy costs
- Modernise PDHU for the 21st century – the project will include the installation of regulatory compliant metering which will allow comprehensive monitoring of the system in real time

1.1.4 Project Scope

The scope of the project is wide reaching and ambitious. It is expected to cover the following headline areas:

- **Removal of fossil fuel boilers** – to be replaced by electric heat pumps, electric boilers or direct electric heating, depending on the preferred option. This is considered critical in reducing carbon emissions from the network and a key component of the WCC net zero strategy

- **Repurposing of existing Churchill Gardens energy centre and thermal storage overhaul** - only applies to options where the PDHU network is retained

- **Upgrade to the network pipework** – Replacement or decommissioning of the PDHU pipework which currently transfers hot water from the energy centre to the properties. In many areas the existing pipework has reached the end of its useful life and the incidence rate for leaks is increasing

- **Installation of river source heat pump** – Construction of a new river offtake structure on the River Thames to house a pump – options 1 & 3 only

- **Electrical upgrades** – Upgrades to the electrical infrastructure to accommodate the increased electricity demand from heat pumps, electric boilers or direct electric heating

- **Metering** – Installation of energy metering across the network to comply with the Metering and Billing regulations. This will allow improved energy management and PDHU users will only pay for energy they use

1.2 Spending Objectives

Spending Objective	Strategic Objective	Output	Measurement	Deadline / Timing
Reduce carbon emissions from PDHU	Fairer Environment, Fairer Housing	Reduced carbon emissions	PDHU CO2 Emissions per annum	2030
Reduce leak incidence from PDHU	Fairer Housing	Reduced rate of leak incidence within housing	No of leaks per annum	2026
Improvement energy management across PDHU	Fairer Environment, Fairer Housing	Reduced energy losses and residents only pay for the energy they use	No of meters installed % energy losses across the network	2030
Improved resident experience of PDHU	Fairer Housing	Improved survey results for resident satisfaction	% of residents with a good experience of PDHU	2030

1.3 Existing Arrangements

The PDHU is the UK's oldest heat network and was designed to connect and utilise the excess heat created from Battersea Power Station as part of the Abercrombie Plan for Churchill Gardens estate design by architects Powell and Moya in 1946. The building is Grade II Listed and situated within Churchill Gardens Estate conservation area.

Figure 2 - Aerial view of PDHU Pump House and accumulator tower

PDHU currently supplies 3,306 residential properties and more than 50 commercial properties ranging from schools, offices, a library and shops. The majority of demand is from 3 main housing estates:

Estates	No of Dwellings	Detail
Abbots Manor	411	
Churchill Gardens	1619	• Conservation area • Includes grade 2 listed buildings
Lillington and Longmoore	1156	• Constructed 1960 – 1970 • Conservation area • Includes grade 2 listed buildings

The PDHU is supplied with heat from an Energy Centre which is located at the Pump House at Churchill Gardens Estate. The Energy Centre has 3 gas fired hot water boilers each rated at 8 MWth, together with 2 No. gas fired combined heat & power (CHP) engines each of which has an output of 1.55 MWe and 1.5 MWth, these CHP engines are not currently operational. Heat from the Energy Centre is pumped via a series of circulating pumps located within the Energy Centre.

The site's electrical grid connections are via a UKPN ring main unit housed within a secure roofed enclosure within the PDHU demise. A high voltage radial connects the site services 500kW HV/LV transformer (import use) and 2 further 2000kW HV/LV transformers (export from each of the CHP units). These three transformers are located in adjacent open-air compounds at the southern end of the PDHU site.

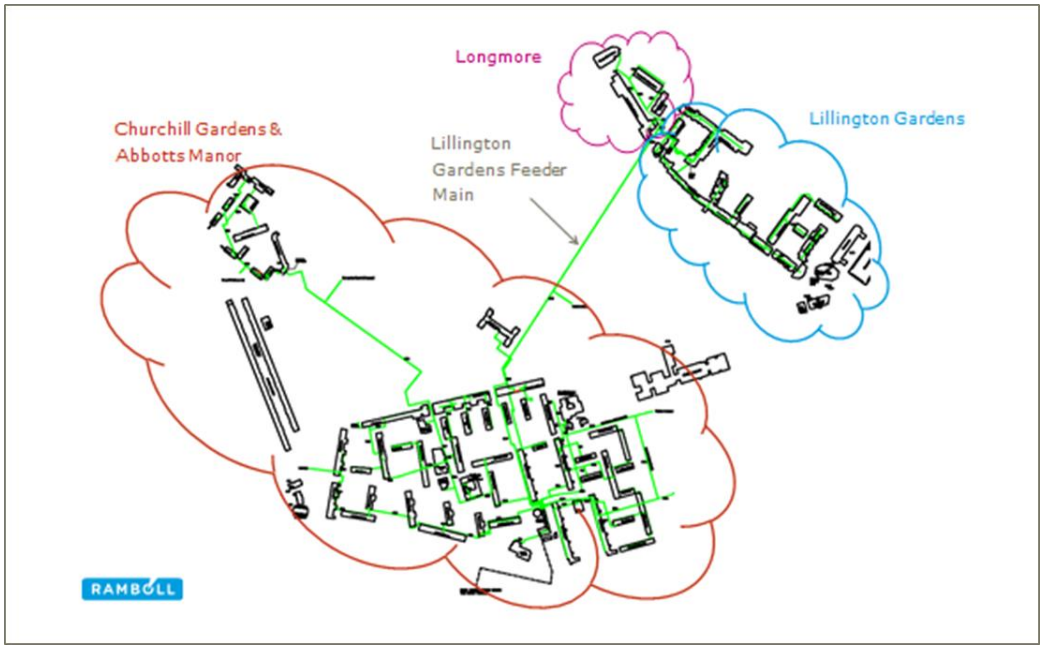


Figure 3 - PDHU Network Diagram

1.4 Benefits

Renewal of PDHU will provide a number of benefits to WCC and users of the network:

- **Carbon emission savings** – PDHU currently accounts for 39% of WCC's scope 1 and 2 emissions. Replacing the existing gas boilers with the options presented in this paper is expected to reduce carbon emission 55% - 80% by 2030, with the achieved % reduction dependent on the final solution and decarbonisation of the electricity grid
- **Reduce maintenance costs** – The existing PDHU network is reaching the end of its useful life and maintenance costs are increasing, upgrading the network will lower annual operational and maintenance costs for WCC.
- **Improve resident experience** – Due to its condition, there is an increasing number of leaks across the network impacting on residents. Upgrading the network will improve its condition and significantly reduce the number of leaks. It also significantly reduces the risk of major network failure in the future
- **Improve energy control and management** – the project will install a modern energy system with improved control. This will reduce energy waste and minimise ongoing energy costs
- **Modernise PDHU for the 21st century** – the project will include the installation of regulatory compliant metering which will allow comprehensive monitoring of the system in real time

1.5 Risks

The table below shows the top red rated risks for the project at this stage, a full risk register is provided in the appendices. Proposed mitigation measures are also provided, following a risk workshop with the project team.

Risk Items	RAG	Mitigation	Post Mitigation RAG
Delays due to requirement for consultation with tenants/leaseholders		1. Start consultation process as early as possible 2. Obtain legal advice on consultation process 3. Stakeholder engagement manager appointed - consultation started early 2023	
Planning permission for work at Churchill/Lillington is not granted e.g external risers, fabric improvements		1. Engineering study to identify pipework routing options has been completed with support from Architect 2. Early engagement with planners to gain feedback on proposed routing 3. Develop planning strategy - including making pre-apps during OBC process	
External factors i.e Potential benefits from joining SWAN cause delay on decision making for PDHU		1. Early engagement with SWAN partners 2. Prioritise discussions with BEIS to determine preferred route as early as possible	
Building safety act and building control - fire safety - secondary legislation approaching which could increase cost through required upgrades to the connected buildings		1. Appoint health and safety lead during OBC stage 2. Appoint specialist fire engineering consultants to review impact	
Community liason - delay to the decarbonisation project due to impact on residents e.g decanting		1. Appoint a stakeholder engagement lead	
Construction programme risk associated with electrical infrastructure upgrade.		1. Early application to UKPN has been made to identify estimate upgrade costs 2. Plan upgrades required during OBC stage	
Decant of residents and risk to programme		1. Development of robust decant strategy 2. Consultation and engagement strategy to be developed	
Cost of construction - uncertainty due to number of uncertainties across the different options and early stage of current design		1. A risk premium of 20% has been included in the cost estimates 2. Consultants have reviewed the areas of high risk to manage the level of cost risk where possible e.g electrical surveys 3. OBC to develop level of design further to	

		manage risk 4. Use 2 stage design and build contract to design out risk	
Energy prices change significantly impacting on techno economic model e.g electricity prices increase more than gas prices		1. Undertake sensitivity analysis during techno- economic modelling	
Difficulty and cost of replacement underground pipework - 100% replacement is likely required due to condition		1. Condition surveys of pipework where possible 2. Prioritise replacement where most urgent	
Cost of electrical infrastructure upgrade - uncertainty due to early stage of design		1. Initial applications with UKPN to understand grid capacity and constraints 2. Survey existing electrical infrastructure to identify areas of concern and requirement for upgrades	
Replacement of existing distribution pipework in buildings and in flats is not possible due to accessibility		1. Undertake significant survey work to identify existing routing and options for upgrade 2. Design risk/cost passed to contractor	
Service continuity to residents during construction e.g temporary heating		1. Identify temporary heating options as part of OBC	
Impact of lowering building heating system temperatures on thermal comfort levels impacts ability to run scheme efficiently or with sufficiently decarbonised heat levels. This risk particularly important for sheltered blocks or for elderly/vulnerable residents.		1. Increase thermal insulation programme 2. Model impact of higher flow temperatures as part of OBC Techno Economic analysis 3. Legal discussion - obligation on leaseholders to improve insulation	
Heat Pump Scheme does not achieve the modelled COP / SEER leading to high electricity consumption		1. Undertaken sensitivity analysis of different COP levels and impact on techno economic performance 2. Pass performance risk to contractor/operator as part of tender process	

Asbestos - presence of asbestos within buildings delays installation programme		1. Review asbestos register 2. Instruct R&D surveys to identify areas of risk 3. Build asbestos removal costs into programme and cost estimates	
Decant - residents will need to be decanted to deliver upgrade work potentially leading to construction delays		1. Develop decant strategy as part of design stage	
Offtake structure - uncertainty on what is underground		1. Carry out ground radar surveys	
Issues with delivery of building insulation programme, leading to lower u values and higher flow temperatures		1. Accelerate insulation programme where possible 2. Model impact of lower U values on performance of network	

1.6 Site Constraints

The PDHU upgrade project faces a number of significant constraints. Overcoming these will require extensive planning and consultation along with innovative engineering solutions. The main constraints for the project are outlined below:

Network pipework replacement (applies to all options where heat network is retained)

To transfer heat from the energy centre to the end user, heat networks require extensive pipework and associated services. These are commonly placed into three categories:

- primary heat network systems – these are the large diameter distribution pipes which run from the energy centre to the building
- secondary heat network systems – the pipework within the communal spaces of a building.
- tertiary systems – the pipework within a dwelling connecting to radiators

Replacing and upgrading the pipework across the network is a significant constraint due to the disruption it will cause both to residents and local road users, the secondary and tertiary pipework in particular is often located in areas with restricted access e.g within concrete screed or behind in flat bathrooms. The key considerations are summarised below:

Pipework type	Constraint
Primary pipework (underground from energy centre to blocks)	Requirement for road closures Parking suspensions Disruption to heat provision Disruption to local residents
Secondary pipework (pipework within communal areas)	Requirement to decant residents Asbestos within buildings Lack of detail on pipework routes Grade 2 listed buildings

Tertiary pipework (pipework within dwellings)	Requirement to decant residents Impact on internal fixtures and fittings e.g kitchens, radiators Asbestos within buildings

An analysis of the options for routing the secondary and tertiary pipework has been developed as part of the feasibility study. This identifies potential pipework solutions for each building archetype. The proposed next steps for to develop the proposed solution are:

- Identify the lowest risk approach to upgrading and installing external risers (Planning Consultant/Architect).
- Develop outline design proposals for external risers accordingly, sequentially or simultaneously. This workstream should combine Building Services and Planning Consultant/Architect disciplines.
- Carry out an options appraisal to determine the most appropriate hydraulic arrangement for replacement of distribution pipework, risers and laterals. This should consider the identified opportunities and constraints on an archetype-by-archetype basis as well as the impact to the distribution network as a whole. Included in this should be consideration of the impact on heat pump efficiency and possible future connection to SWAN.

Electrical Grid Capacity

Movement away from natural gas for heating will significantly increase electrical consumption, this applies to all options. There are expected to be significant upgrades required to electricity supply infrastructure to increase the electrical capacity. The project team have made initial enquiries with the network operator UKPN to assess the likely work required, the output of which is summarised below:

Option	Location	Import Cap	Budget costs (£)	Residual Risk	Remarks
1a	Churchill Gardens	3.6 MVA	1,010,000	Low	Replaces existing CHP supply
5	Abbot's Manor	3.206 MVA	1,030,000	High	Requires additional space in car park
3 a/b	Morgan House (Lillington & Longmoore)	9.6 MVA	5,400,000	Medium	Requires additional space in car parks
5	Lillington & Longmoore Gardens	8.249 MVA	5,400,000	Medium	Requires additional space in car parks
3 a/b	Churchill Gardens	12.167 MVA	8,600,000	High	Requires additional space for substation
1b	Churchill Gardens	13.2 MVA	8,600,000	High	Requires additional space for substation
5	Churchill Gardens	16.616 MVA	8,600,000	Medium	Utilising existing space for substation

In summary, the greater the electrical demand for each option the higher the capital costs and complexity. The highest capital costs are associated with option 5 (direct electric heating) as upgrades will be required at all estates. Option 1a has the lowest capital costs as only a small upgrade to the existing supply is required, with peak demand picked up by gas boilers.

These constraints will be reviewed in further detail in the OBC.

Heat Pump Installation

The option to install a River Source Heat Pump will require extensive consultation with the Port of London Authority and Environment Agency. A specialist maritime engineering consultant with experience in delivery of heat pumps has undertaken some initial investigations and feasibility (report included in the appendix), with the following key next steps at the Outline Business Case Stage:

- Modelling of thermal plume from the River Source Heat Pump offtake structure
- Review of historical tidal data
- Initial discussions with planning authorities, Port of London Authority and Environment Agency
- Additional dispersion modelling to show temperature impact on Rivers

1.7 Project Dependencies

Dependency	Detail
Port of London Authority permission	Any option taken forwards requiring installation of a heat pump in the River Thames will require approval from PLA. A programme of consultation with appropriate evidence will need to be developed during the Outline Business Case.
Planning permission	All solutions are expected to require planning permission due to the impact on the building fabric of the estate. The solution is likely to require new external risers and architectural advice has been taken to assess the risk along with potential solutions.
Building fabric improvement	To operate effective and efficiently, the current programme of building insulation should be accelerated. This will minimise energy demand within the dwellings leading to lower energy costs. It is particularly important if the heat pump option is selected due to the lower water temperatures.
Resident consultation	The project may require residents to decant dwellings to replace pipework or install new radiators. This will require a full decant strategy to be developed and extensive consultation with the residents in advance.
Electrical grid capacity	Switching to an electric solution will increase demand on the local power grid, this may require significant upgrades to allow installation of the new technology. Initial enquiries have been made with the National Grid to assess what upgrades will be required and are summarised above.
Funding and affordability	A significant level of investment is required in all options. Potential sources of funding have been reviewed and will need to be confirmed during the Outline Business Case (OBC) and Final Business Case (FBC). This will include consideration of the impact on the Housing Revenue Account and charges to lessees.

1.8 Strategic Case Conclusion

PDHU is an important asset for the Council but requires significant investment to improve its condition, maximise efficiency and reduce carbon emissions. Without investment across the network, it is anticipated that the condition will continue to deteriorate, resulting in a requirement for increasing capital investment and a negative impact on residents due to leaks, major network outages and high levels of reactive maintenance.

In addition, the existing network is currently supplied by natural gas boilers, which produce over a third of WCC's annual carbon emissions. Without investment, it will not be possible to reduce carbon emissions and reach the 2030 net zero target.

Investment in the network provides a number of strategic benefits:

- **Carbon emission savings –** Replacing the existing gas boilers with an electric alternative is expected to deliver significant carbon emission savings by 2030
- **Reduce maintenance costs –** The existing PDHU network is reaching the end of its useful life and maintenance costs are increasing, upgrading the network will lower annual opex costs for WCC.
- **Improve resident experience –** Due to its condition, there is an increasing amount of leaks across the network which impact on residents. Upgrading the network will improve its condition and significantly reduce the number of leaks. It also significantly reduces the risk of major network failure in the future
- **Improve energy control and management –** the project will install a modern energy system with improved control. This will reduce energy waste and minimise ongoing energy costs
- **Modernise PDHU for the 21st century –** the project will include the installation of regulatory compliant metering which will allow comprehensive monitoring of the system in real time
- **Future proof the network for SWAN –** The SWAN project is a significant infrastructure project planned by Central Government. If this option is pursued in future, the existing secondary and tertiary network will need to be upgraded to maximise the benefits from connecting to a low carbon heat network

A range of potential decarbonisation options have been considered, each of which faces a number of constraints and dependencies. The aim of this analysis was to compare how the options deliver against WCC's strategic objectives and identify which ones to take forwards to Outline Business Case. The results of this analysis are presented below.

2. Economic Case

2.1 Critical Success Factors

Strategic Fit	Does the project meet with the defined strategic and spending objectives, and does it fit with wider Council Strategies?
Net zero targets	Does the project achieve a significant carbon emission reduction in line with the Councils net zero target?
Deliverable	Is the project likely to be deliverable either through existing resources or supplier arrangements or through new mechanisms created by the project?
Affordable	Is the project affordable in terms of either the funding streams currently available to the Council or proposed funding streams accessed through the project?
Market Capability / Capacity	Does the project match with the capability of known and available suppliers and are they likely to be interested in delivering the project?
Value for money	Does the project maximise return on the required spend in terms of economy, efficiency and effectiveness?

2.2 Options Appraisal

2.2.1 Scoping Options

The table below compares the different scope options for delivering the project. These options are focused on delivering a decarbonised solution. The technical options are covered in the options appraisal summarised below:

Option	Business as Usual	Option 1	Option 2	Option 4
Description	Retain gas boiler	Decarbonise heat supply only	Decarbonise heat supply and upgrade the network	Decommission heat network
Spending Objective				
Reduce carbon emissions from PDHU				
Improved resident experience of PDHU				

Reduce leak incidence from PDHU				
Improve energy management across PDHU				
Critical Success Factors				
Strategic Fit				
Net zero targets				
Deliverability				
Affordability				
Supply Side Capacity / Capability				
Value for money				
Conclusions	**Discounted**	**Discounted**	**Include in OBC**	**Discounted**

2.2.2 Delivery Options

The potential delivery options for the project are covered in section 4 of this business case. The early stage of the project means that these options have not been compared in detail, although a full review will be carried out during the Outline Business Case.

2.2.3 Long List of Options

There have been a number of options considered during the scoping exercise. A full options presentation is provided in the appendices which was presented to Councillors for discussion and steer. A full list of options considered is as follows:

Options	Shortlisted	Rationale
Option 1a – River Source Heat Pump with gas boiler back up	Yes	Provides high carbon savings and lower impact on fuel bills for PDHU users
Option 1b – River Source Heat Pump with electric boiler back up	Yes	Provides high carbon savings and lower impact on fuel bills for PDHU users. Electric boiler for back up offers the potential for fully decarbonised solution
Option 2 – Electric Boiler	No	Discounted due to high impact on energy bills due to lower efficiency
Option 3a – Zone Lillington and Longmoore with electric boiler. Retain the remaining PDHU and install a RSHP with electric boiler.	Yes	As per options 1A/1B but with reduced requirement for disruption to local roads from underground pipework replacement. Offers the potential to fast track pipework upgrades to Lillington and Longmoore.

Option 3b – Zone Lillington and Longmoore with electric boiler and heat pump using waste heat. Retain the remaining PDHU and install a RSHP with electric boiler.	Yes	As per options 1A/1B but with reduced requirement for disruption to local roads from underground pipework replacement. Offers the potential to fast track pipework upgrades to Lillington and Longmoore and also explore a heat pump to increase efficiency.
Option 4 – Zone Lillington and Longmoore with direct electric heating. Retain the remaining PDHU and install a RSHP with electric boiler	No	Discounted due to high impact on fuels for Lillington and Longmoore residents.
Option 5 – Decommission PDHU and install direct electric heating	Yes	Included in shortlist as an alternative option to a heat pump solution
Option 6 – River Source Heat Pump with distributed Air Source Heat Pump	No	Discounted due to planning risk from installing roof mounted Air Source Heat Pumps across the network
Option 7 – Centralised ASHP	No	Discounted to space requirements at Pump House and potential noise impact on nearby residents
Option 8 – Decommission PDHU and install direct electric heating with ASHP for hot water	No	Discounted due to impact on fuel bills and planning impact for roof mounted ASHP.

2.3 Shortlisted Options

Option 1a
Installation of 7.5MW Centralized River Source Heat Pumps with Gas Boilers providing top up at the existing PDHU pump house
Option 1b
Installation of 7.5MW Centralized River Source Heat Pumps with Electric Boilers providing top up at the existing PDHU pump house
Option 3a
Install RSHP at existing energy centre with electric boilers for peak demand. Zone Lillington and Longmoore, to be supplied by electric boiler
Option 3b
Install RSHP at existing energy centre with electric boilers for peak demand. Zone Lillington and Longmoore, to be supplied by electric boiler and heat pump using TFL waste heat
Option 5
Decommission PDHU and install direct electric heating by storage heaters with hot water supplied by immersion coils

2.4 Feasibility Study of Shortlisted Options

See below

Option	Estimated Capital Cost	Energy costs (40 year)	Opex/Repex cost (40 year)	2030 Carbon emission reduction (%)	Construction Risk	Operational Risk	Reputation Risk	Net Zero Target	Disruption to residents	Timescale	
Business As Usual	£133m	£140m	£95m	0%							Discounted due to lack of emissions savings
1A – Retain PDHU and power by a river source heat pump (gas boiler back up)	£175m	£126m	£112m	74%							Take forwards to OBC
1B Retain PDHU and power by a river source heat pump (electric boiler back up)	£186m	£144m	£110m	76%							Take forwards to OBC
3A - Zone L&L and install electric boiler at Morgan House. Power PDHU by river source heat pump	£210m	£190m	£106m	68%							Take forwards to OBC
3B – Zone L&L and install electric boiler with heat pump using waste heat. Power PDHU by river source heat pump	£212m	£164m	£106m	72%							Take forwards to OBC
5 - Close down PDHU and install individual electric heating and immersion heated communal hot water	£182m	£351m	£34m	54%							Discounted to high energy costs and low carbon savings

The capital costs and scope for Options 1A, 1B, 3A and 3B presented above include for the upgrade of network distribution pipework, which is considered vital in delivering a decarbonised solution. This includes installation of new heating infrastructure within buildings and dwellings to replace the existing.

Option 5 would include decommissioning the existing pipework and installing new electrical infrastructure.

Capital cost estimates include the following where applicable:

- Installation of river source heat pump at Churchill Gardens Pump House
- Construction of new river offtake structure with pumping station
- Upgrade to electrical infrastructure to accommodate heat pump installation or direct electric heating
- Replacement of boiler #1 and #2 and flues
- Overhaul of thermal storage
- Phased replacement of primary distribution network (25% replacement allowance) with remaining 75% replacement over the next 25 years
- Replacement of block and dwelling level heating systems with new CP1 2020 compliant systems in Churchill Gardens, Lillington Gardens and Abbots Manor
- Installation of Metering and Billing Regulations compliant energy metering (heat meters for space heating and flow meters for domestic hot water)
- Installation of indirect block level substations in Churchill Gardens, Lillington Gardens and Abbots Manor (not required at Longmoore Gardens)
- Replacement of block and dwelling level domestic hot water systems with new CP1 2020 compliant systems in Churchill Gardens, Lillington Gardens and Abbots Manor
- Replacement with new of CP1 2020 compliant block and dwelling level combined domestic hot water systems and space heating systems in Longmoore Gardens, including upgrading HIUs
- 20% risk premium, client direct items 10% (including decant costs), fees 15%, inflation to 2026 15%, prelims 15%

Modelling assumptions

- BAU assumes that the network is upgraded under normal business due to life expiry of network
- Proposals set out in this document are broadly in line with RIBA stage 0/1 and associated CAPEX do not reflect developed designs based on detailed site investigations for each of the strategic options. Prior knowledge of the site is incorporated where available, and specifically for centralized options, where RIBA stage 2 design services are ongoing
- All strategic options investigated require compliance under the Metering and Billing Regulations
- All strategic options investigated are assumed to undergo fabric upgrades to improve thermal efficiency to dwellings in Churchill Gardens and Lillington Gardens (assumed not to be implemented at Longmoore Gardens and Abbots Manor). These costs are not accounted for in the modelling since these have been allocated under separate budgets within WCC. However, the reduction in customer demand is accounted for during energy modelling

- Building fabric improvements are assumed to be carried out from 2023 until 2030 for 70% of tenanted and 10% leaseholder units, as applicable. Similarly, primary and secondary network improvements are assumed to be carried out in the same period. These improvements will reduce space heating demand and heat losses for all strategies. These projected loads are used in techno-economic modelling
- Operation & maintenance costs are modelled for main heating equipment in the following way:
    - 5% of capital cost for heat pumps
    - 2% of capital cost for gas boilers, Electric/Electrode boilers, electric immersion heaters and electric storage heaters
- Other operations & maintenance costs are modelled annually based on 2018/19 fixed costs for PDHU
- Replacement costs are modelled for the main heating equipment assuming 100% of the capital cost and design lifetimes in line with CIBSE Guide M
- Primary heat network replacement allowance has been made as 25% of the capital value in year 1 and the remaining 75% during the project lifecycle
- Commercial electricity and gas tariffs are modelled based on April 2022 data. Residential electricity tariffs are modelled based on the current energy price cap applicable since October 2022. Energy price escalation has been accounted for using BEIS energy pricing forecasts
- Modelling of carbon emissions assumes long-run marginal consumption-based for commercial and public sector from BEIS Green Book Supplementary Guidance for centralized options and long run marginal consumption-based residential for electric only options (option 5)

2.5 Economic Case Conclusion

The techno economic options appraisal has identified that a significant investment will be required to deliver the Councils strategic objectives. A heat pump led solution is the only option which will deliver a significant carbon reduction but would need to be delivered alongside a widespread renewal of the existing heat distribution pipework and upgrade to the connected buildings thermal performance.

The appraisal identifies two main strategic options to take forwards into the Outline Business Case, with variations of each:

- Option 1A and 1B – Retain the existing PDHU network and install a 7.5MW River Source Heat Pump
- Option 3A and 3B – Remove Lillington and Longmoore from PDHU and install a separate electric boiler and heat pump. Retain the remaining PDHU and install a 5MW River Source Heat Pump

Investment in these options is forecast to range between £175m and £212m which would be spread over a number of years. These costs are strategic estimates only and subject to further analysis and technical development.

The efficiency of a heat pump means that, along with carbon emissions, operational energy costs are significantly lower. Achieving the necessary efficiency will be dependent on a separate programme of fabric insulation upgrades, which is being delivered separately.

It should be noted that there is a risk that the River Source Heat Pump solution could be deemed technically unviable during the OBC. All other low carbon solutions have been discounted at this stage due to high modelled running costs or concerns over technical viability. Therefore, there is not currently a viable back up decarbonisation option being taken forwards to the OBC. Further technical analysis will be carried out at an early stage to reduce this risk and increase certainty on the preferred solution.

3. Financial Case

3.1 Capital Cost

3.1.1 The total estimated capital cost for the options that the business case proposes to develop is in the range of £175-212m. It is anticipated that this capital outlay would be spread over a period of 6-8 years, depending on the final option and scope of the project.

This is summarised as follows:

Ref	Option	Estimated Capital Cost	Delta to "Do Nothing"
1A	Retain PDHU and power by a river source heat pump (gas boiler back up)	£175m	+ £42m
1B	Retain PDHU and power by a river source heat pump (electric boiler back up)	£186m	+ £53m
3A	Zone L&L and install electric boiler at Morgan House. Power PDHU by river source heat pump	£210m	+ £77m
3B	Zone L&L and install electric boiler with heat pump using waste heat. Power PDHU by river source heat pump	£212m	+ £79m

3.1.2 Clearly these figures are based on high level cost estimates at this stage and will be subject to detailed development as part of the progress towards an Outline Business Case (OBC) in December 2023.

3.1.3 For the purposes of the business case, the investment consideration is centred on the additional funding required to achieve other strategic objectives (such as decarbonisation). Given the imperative to keep the PDHU operational, the options appraisal demonstrates that it would cost a minimum of £133m to achieve this (i.e. the "Do Nothing" option), which excludes the potential future carbon offsetting costs for carbon if a gas boiler is retained. This is assumed to be a voluntary cost and there is uncertainty on the future £/Tonne rate therefore it has not been included at this stage. The right-hand column on the table therefore identifies the supplementary investment required under each option to deliver additional benefits.

3.2 Capital Funding

3.2.1 There are a number of identified funding sources that are available to support the project, but the bulk of the funding is still expected to fall on borrowing.

3.2.2 The carbon saving measures that form a prominent part of the project are expected to attract several grant funding opportunities. At this stage, the most likely source of grant funding is the Green Heat Networks Fund (GHNF). GHNF funding is currently limited to a cap of 4.5p per kWh in terms of the carbon saving (with a 50:50 match funding expectation). It is also understood that GHNF grant would not be able to fund works to address pre-existing performance issues (e.g., faulty pipework). There may be flexibility on these terms (which will be explored) but the current projection is that GHNF grant would be available to fund 50% of the river-source heat pumps (**worth £10m, equivalent to c.5% of the total investment**).

3.2.3 The PDHU serves approximately 3,300 homes, of which an estimated 45% are leaseholders. Network upgrades constitute roughly 55% of total capital expenditure, which includes in-dwelling pipework. This expenditure is likely to qualify as being rechargeable under the terms of those leases. Qualifying expenditure is **equivalent to c.25% of the total capital investment**. Consideration will be made about what costs are reasonable to recharge to leaseholders as part of the development of the outline business case (as well as the terms that might be applied to any potential recharges).

3.2.3 The Westminster Infrastructure Delivery Plan provides a definition of the types of infrastructure works that would qualify for CIL funding. One of these categories is "Utilities and Waste" which includes energy infrastructure projects. It is reasonable to assume that some of the network upgrades that are external to residential buildings may qualify for a level of CIL funding. A prudent estimate of **£15m (equivalent to c.7.5% of total capital investment)** has been made at this early stage. As with all prospective funding sources, this will be explored further as part of the development of the outline business case.

3.2.4 Based on the estimates for external funding opportunities, the residual expenditure that would need to be funded from borrowing is **equivalent to c.62.5% of the total investment**. There are two key considerations in relation to applying borrowing to support the scheme:

- **Servicing** – legal advice is required to ascertain how debt might be shared between the General Fund and the HRA (with the current assumption being that only in-dwelling works on tenant properties would qualify to be funded through the HRA as a landlord duty). The other potential opportunity to be explored is for a sinking fund type charge to be added to the PDHU service charge in order to service some of the debt.

- **Source** – the nature of the scheme and its strategic intention to reduce carbon emissions means it is likely to qualify for favourable borrowing rates from lenders such as the UK Infrastructure Bank (UKIB) or the Mayor's Energy Efficiency Fund (MEEF). Early engagement with both lenders has been met with enthusiasm and this would allow the Council to access debt at a rate lower than PWLB.

3.3 Financial Implications

3.3.1 Whilst financial benefit is not the primary driver for the decision to upgrade the PDHU, a complete renewal of all pipework across the network is expected to drive some revenue savings. The HRA is currently spending an estimated £1.7m per annum on in-flat repairs relating to the PDHU. Clearly a renewed network can be expected to reduce failure rates and drive a substantial saving in this area if the number of leaks is reduced. The modelling to be undertaken as part of the next phase of work will seek to assess this potential, although it is broadly expected to be very similar across each of the four options being progressed. A saving on the repairs budget would also generate some potential headroom in the HRA needed to fund borrowing for the project, if required (see above).

3.3.2 The potential benefit of lower carbon offset costs should also be considered, if this is a strategy the Council adopts to achieve net zero in 2030. There is still uncertainty on the future cost impact from off-setting, but it will be higher if gas boilers are retained.

3.3.3 Given the proportion of borrowing needed to support the PDHU upgrade, the other key financial implication is the revenue cost generated by the additional debt. The assessment above indicates that borrowing is expected to be in the range of £109-133m. Based on the Council's current forward borrowing arrangements, this would result in an interest cost of £2.8 to £3.5m. Clearly there are important caveats in terms of whether the debt burden falls on the General Fund or the HRA, which is still subject to advice. Any borrowing done via the General Fund would also attract an MRP charge (adding further cost to the revenue budget), while the HRA Business Plan currently has little or no borrowing headroom (and only savings on the repairs budget would create space to fund interest costs). Nonetheless, this is an important consideration in terms of the affordability of the scheme.

3.4 Financial Case Conclusion

3.4.1 The HRA has been spending at least £2m a year on PDHU upgrades and this figure is expected to rise sharply as the network gets closer and closer to the end of its operating life. The "Do Nothing" option included in the strategic options appraisal is still expected to cost the Council more than £130m over the next 10 years.

3.4.2 This is an important consideration in the context of the financial case for the project, as it means that the delta to the other options being put forward is relatively small given some of the additional benefits that are generated. The extra investment allows for both de-carbonisation and the ability to deliver a holistic upgrade of the network (as opposed to an ad hoc patching up as elements start to fail).

3.4.3 Consideration should also be given to the potential cost of offsetting carbon emissions in the future. There is still a high level of uncertainty around the cost of taking this approach (£/Tonne) but it is likely that the financial impact per annum will be significantly higher if gas boilers are retained. It is proposed that this is explored in further detail during the financial modelling for the OBC.

3.4.4 Whilst this represents a significant level of capital outlay, the additional benefits generated by this investment and the extra repair savings that are anticipated (which will be modelled in detail) are considered to justify the investment. Furthermore, the risk of the PDHU failing and what this would mean in terms of having to decant up to 3,300 households is such a substantial financial risk to the Council that the proposed investment can be considered essential.

4. Commercial Case

4.1 Procurement Strategy

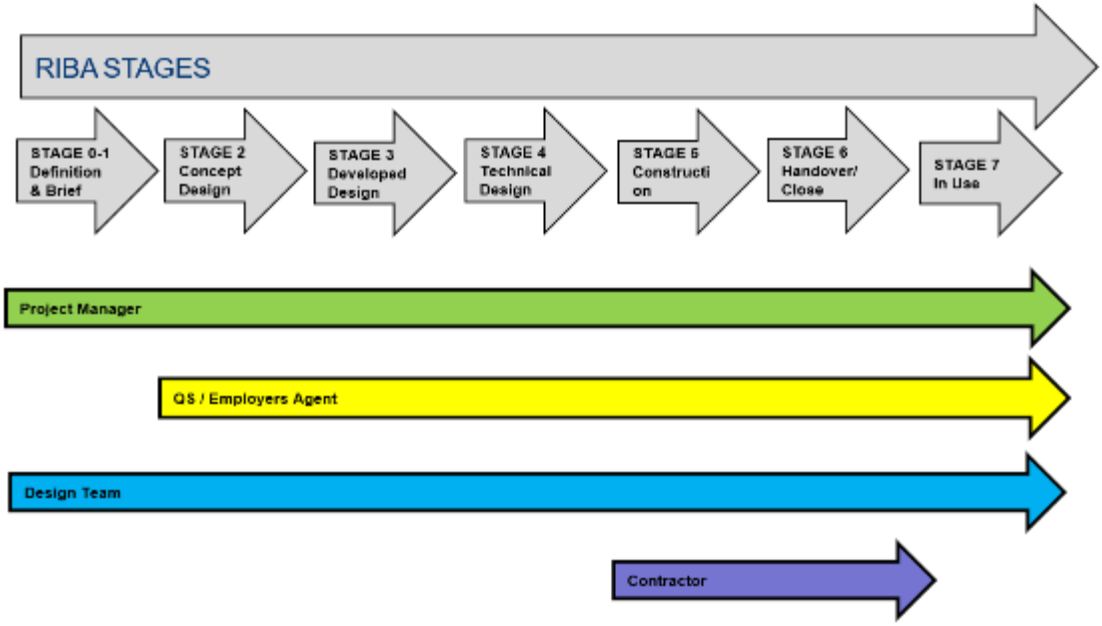
4.1.1 Contracting Structure:

There are early decisions to be made around the contracting strategy and delivery model for this project. This is vital to set the project and procurement off positively.

The main strategies to consider are:

- Traditional contracting
- Single stage design & build contracting
- Two stage design & build contracting
- Construction Management (not recommended)

A traditional route may resemble the graphic below (each line and colour representing a contract with a supplier and the council directly):



Traditional procurement routes mean that all suppliers have a direct link to the council. This does require more coordination, but the Council will have greater control. This is the classic contracting structure.

Advantages:

- Normally attractive to the main contractor market
- Fixed price agreed prior to entering contract
- Single point of responsibility for construction
- Transfer of programme risk
- Client retains high degree of control over design until completion
- Simple warranty provision for client, funders, tenants etc
- Easy to manage cashflow & payments

Disadvantages:

- Relatively slow start, as design needs to be complete prior to tendering
- Client retains risk for completion of design
- Client retains responsibility for any defects in the design
- Client changes post-contract will result in claims under the contract

The more modern structure is via a design & build route:

- A Single stage D&B would involve a designer designing to a point and then a Contractor being appointed to take over designing and building from that point through to completion.
- The difference from single-stage D&B to two stage D&B is that the main contractor is initially engaged on a consultancy basis, via a Pre-construction Services Agreement (PCSA), to sit alongside the Project Team during the completion of pre-contract design and preparation of the Employer's Requirements. This allows the contractor to provide advice, particularly in regard to buildability, which can be incorporated into the design during RIBA Stage 3/4.

The Government's construction playbook recommends a two stage D&B procurement route. This increases collaboration between the supply chain and allows the contractor to remedy any constructability concerns before the design is finalised (removing re-work). It also allows for sensible risk transfer as the Contractor can mitigate risk during the first stage – so the client is not paying for it. The Contractor will develop the detailed detail under a PCSA (Pre-Construction Services Agreement), then build under a build contract. An overview of the sequence is below:

- Client appoints a Designer
- Designer produces a RIBA 3 design
- Client appoints a Contractor at RIBA 3 for a PCSA to:
    - Produce a RIBA 4 (detailed) design
    - Develop a programme to build and a cost to build
    - There may also be site set up, surveys, and some early works included (to help better the overall programme and also mitigate risk pricing)
- The Client will then appoint the Contractor to build (if they are satisfied with the design, programme, and price offered).

Advantages:

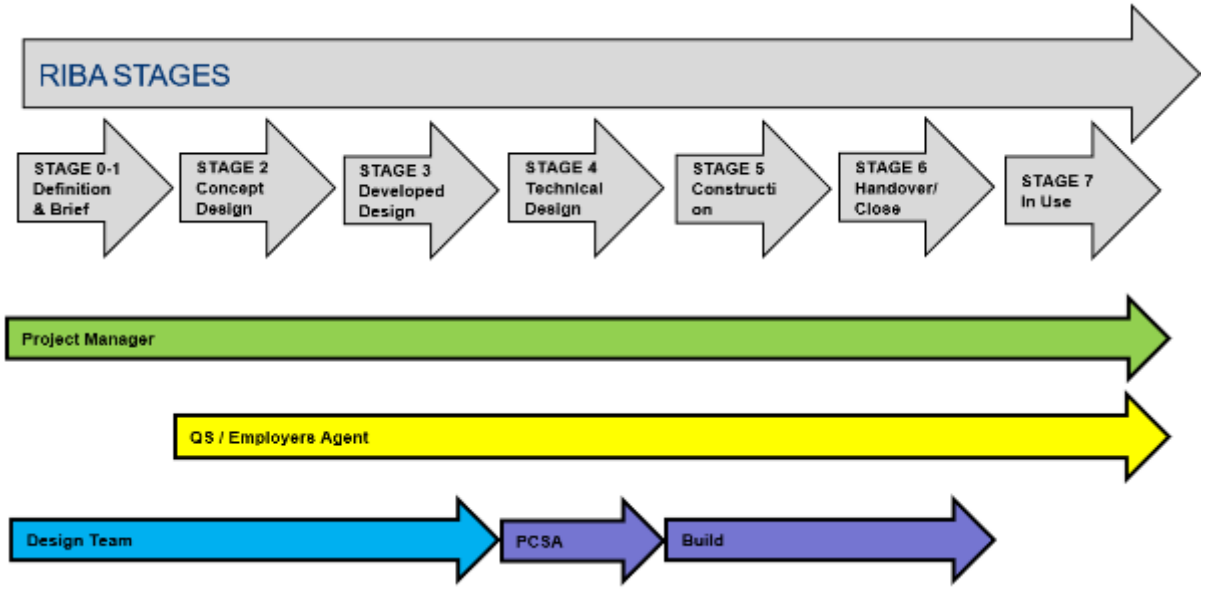
- Attractive to the main contractor market
- Fixed price agreed prior to entering contract (for build)
- Single point of responsibility for design and construction
- Maximum transfer of programme risk
- Maximum transfer of design coordination risk
- Simple warranty provision for client, funders, tenants etc
- Easy to manage cashflow and payments

Disadvantages:

- Post contract design change can be complex costly if Client changes their mind
- Need to produce comprehensive coordinated Employer's Requirements

- Early engagement of the contractor requires commitment from client, under a PCSA (but less thereafter)
- RIBA 4 design programme requires higher degree of coordination between design and procurement activities

Two stage D&B will resemble a different structure traditional, as below (client not retaining the designer post RIBA 3 as the design is the responsibility of the Contractor as a D&B:



Irrespective of the above (traditional vs D&B), the main contracts to consider at this stage are:

- Project Manager
- Quantity Surveyor / Employer's Agent
- Designer (Architect)
- Contractor

4.1.2 Designer Procurement:

It is expected that the design services will cost in the region of circa £200,000 and therefore the procurement will be above the OJEU/FAT limit. Procuring design services will need to comply with both the Council's Procurement Code and the Public Contract Regulations.

There are several procurement routes available to the Council when procuring a multi-disciplinary designer to develop the scheme through the early RIBA stages. However, if time is of the essence, procuring via an established complaint framework is likely to be the preferred route. There are numerous frameworks in the market for this; for example, the NHS SBS and CCS (both of which the Council has used many times).

It is best practice to procure design services for the full project lifecycle (possibly RIBA 0-7) if using a traditional route (separate design and build contracts). However, this would be RIBA 0-3 if the Council intends to then procure a Design & Build Contractor thereafter (who would develop the design from RIBA 3 and build through to RIBA 7. Either way, the designer should be procured for the full intended term with break clauses after each RIBA stage where the Council can terminate through no fault (for example, if the scheme was to majorly shrink or not move forward).

4.1.3 Project Management & Quantity Surveyor / Employer's Agent

Procuring a Project Manager, QS and Employer's agent may be very similar to the above (Designer procurement). Ultimately, they are people rate contracts for professional services.

These are key consultants in delivering the project, likely with a similar recommended procurement route. It is recommended to have separate consultants, but it is also possible to have one consultant deliver all disciplines.

4.1.4 Contractor Procurement:

The Contractor procurement will be very different to the professional services as above. This is where most of the project cost will sit – in the build. This is also much more complex to procure as it is not based solely upon people rates and time.

Recommendation: Two Stage design and build

Procurement route vehicle: To be discussed, compliant framework or OJEU/FAT process. The council has undertaken very similar analysis of procurement routes for large construction projects and have many lessons learned to share and discuss in regard to this.

4.2 Delivery Strategy

It is undetermined what will be the delivery model for this project will be. A strategic decision on whether a single of two stage build contract will be pursued will be made post SOC, following professional analysis of the options.

4.3 Legal Strategy

The council has powers under Section 1 of the Localism Act 2011 gives the Council the 'general power of competence'. It gives local authorities the legal capacity to do anything that an individual can do that is not specifically prohibited by law

The main powers in relation to local authority functions regarding heat and electricity are set out in Section 11 of the Local Government (Miscellaneous Provisions) Act 1976. These permit the council:

- to produce heat or electricity or both.
- establish and operate generating stations or installations for such
- production; buy or otherwise acquire heat.
- use, sell or otherwise dispose of heat produced or acquired or electricity
- produced by the council.
- and enter into and carry out agreements for the supply of such heat to
- premises within or outside of the council's area.

In developing the plan, the council is under a duty to consult with various stakeholders on the options to inform the report recommendations. This should include residents where the district heating work will impact. Officers should ensure that such consultation is updated on a regular basis for the purpose of monitoring the effectiveness of the plan and to assist future decision making in this area.

Legal due diligence will need to be undertaken as to the land and any take into consideration all parties who will be affected by the programme bearing in mind the terms of such leases and agreements which are in place. Which will also assist with regards s.20 consultations. Officers from

legal services will provide legal advice, when required, on the models for service provision considered, some of which may have procurement implications

There must be a continued regard to take into account the public sector equality duty (PSED) general duty under the Equality Act 2010 and when making decisions, to have regard to the need to (a) eliminate discrimination, harassment, victimisation or other prohibited conduct, (b) to advance equality of opportunity and (c) foster good relations between persons who share a relevant protected characteristic and those who do not share it. The relevant characteristics are age, disability, gender reassignment, pregnancy and maternity, race, relation, religion or belief, sex and sexual orientation. The PSED general duty also applies to marriage and civil partnership but only in relation to (a). The PSED general duty is a continuing duty and potential equality considerations should be considered at the different stages of the programme.

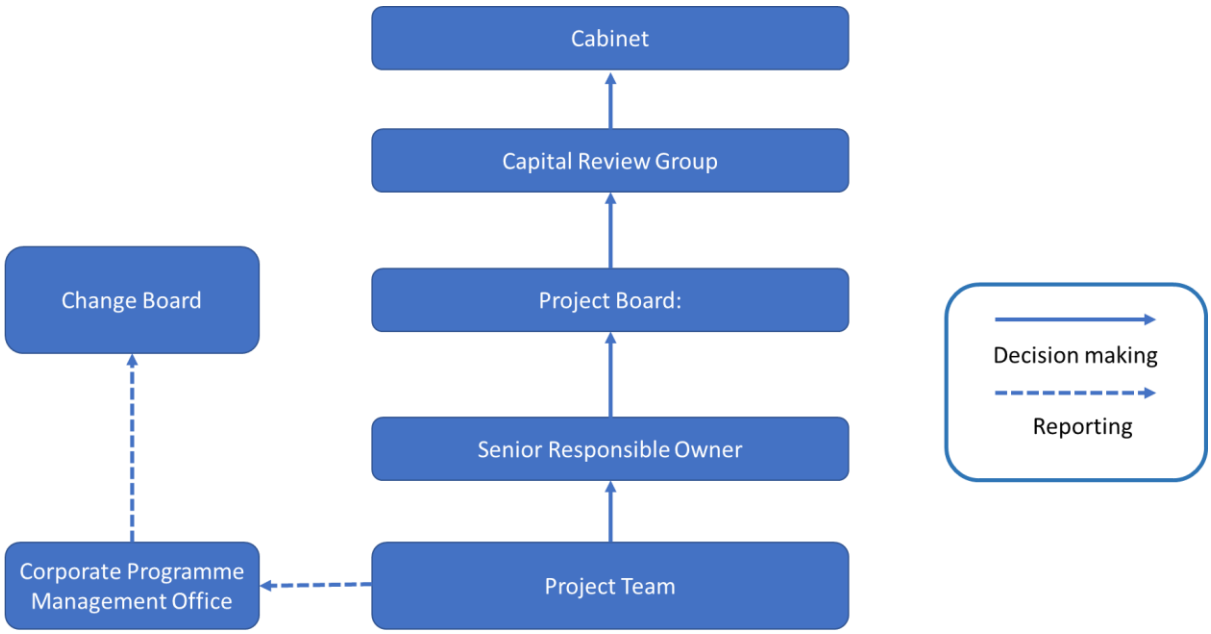
Good governance will be a key requirement throughout the process and officers will need to ensure that good decision making process is undertaken throughout any programme and time built in to ensure that all stakeholders have been involved in any decision making process.

Procurement of works or services will be undertaken in full compliance with Public Contracts Regulations 2015 and the Council's Contract Procedure Rules. Expenditure decisions will be subject to outline and full business case and further reports.

5. Management Case

5.1 Project Approach

It is proposed that the project will be managed following the following structure for decision making and oversight:



Project Board		
Name	**Directorate**	**Board Role**
Neil Wightman	GPH	Director of Housing
Jim Paterson	GPH	Divisional Head of Major Works and Sustainability
Chris Spicer	GPH	Programme Manager -PDHU Decarbonisation
Anthony Jones	GPH	Head of Housing Sustainability
Jason Killeen	GPH	PDHU Operations Manager
John Hayden	GPH	Divisional Head of Repairs and Planned Maintenance
Chris Shoubridge	GPH	Divisional Head of Housing Neighbourhood
Paul Halpin	GPH	Head of Leasehold Income and Engagement

Matthew Alexander	Corporate PMO	Project Delivery Business Partner
Iain Emmerson	Development	Senior Development Delivery Manager
Brendon Harper	Development	Climate Emergency Project Manager
Paul Foster	GPH	Mechanical Project Manager
PDHU Pump House	GPH	Technical Input
Luke Chiverton	Corporate Finance	Financial Consultant
Jake Bacchus	Corporate Finance	Director of Finance
Ryan Giles	Procurement	Head of Commercial
TBC	Procurement	Commercial Manager
Matt Curran	GPH	Health and Safety Lead
Sarah McCarthy	GPH	Engagement Lead (Stakeholder/Resident)
TBC		Project Manager/Officer
Amy Jones	Environment	Director of Environment

- Project Team: The project team will be led by the programme manager. The team will be responsible for the daily management and progress of the project up to the point of approval of the full business case and start of works by the selected contractor.

- The project team will report directly into the senior responsible owner (SRO) on a monthly basis, with urgent risks or actions escalated to the SRO when needed.

- Senior Responsible Owner (SRO): The SRO for the PDHU project is Debbie Jackson as executive director for Growth, Planning and Housing. The SRO is accountable for the successful delivery of the project and its benefits. The SRO will be supported by the project board.

- Project Board: The project board will support the SRO by ensuring that cross-council actions and dependencies are identified to enable the successful delivery of the project. The board will also represent the internal stakeholders to ensure that these views are captured in the design and planning of the project.

5.2 Project Resources

5.2.1 Internal Project Team

A project of this scale will require an experienced team. It is proposed that the majority of this resource is procured through a range of professional services, with oversight provided by a programme manager and a project officer/manager. Procurement of these activities will commence immediately after approval of the SOC.

5.2.2 Resources to be procured

It is proposed that a range of project resource is appointed as outlined in the table below. The costs provided are budget only and subject to a proposal:

Role	Budget Cost	Comment
Mechanical/Electrical engineering	£150,000	Eligible for grant funding
Principal Designer	£20,000	
Maritime Engineering	£30,000	Eligible for grant funding
Civil/Structural Engineering	£50,000	
Architectural	£60,000	
Commercialisation (incl Procurement, QS and financial modelling)	£160,000	Eligible for grant funding
Planning consultant	£40,000	
Legal services	£60,000	Eligible for grant funding
Project Management	£150,000	Eligible for grant funding
Business Case Writer	£55,000	
Comms/Engagement	£30,000	
Funding application support (GHNF and HNES)	£130,000	
Searches and surveys	£55,875	
Health and safety	£10,000	
Contingency @ 20%	£200,175	
TOTAL	**£1,201,050**	

A contingency of 20% has been added to cover any additional costs and services identified during the development of the OBC.

Resource Funding

It is proposed that funding for the Outline Business Case is provided by a combination of WCC funding and grant funding from the BEIS Heat Network Delivery Unit (HNDU). HNDU provides grant funding and guidance to local authorities in England and Wales for heat network project development.

Since its inception, HNDU has run 11 funding rounds – awarding £30 million in total and provides support through the early stages of heat network development.

HNDU grant funding can provide up to 67% of the estimated eligible external costs of heat network development studies (where 'eligible external costs' means the money paid by the Applicant to third parties to deliver the heat network development stages). **WCC will need to demonstrate in their application that it has secured at least the balance of funding required in match funding**.

HNDU grant funding can also provide up to 100% of the cost of estimated externally procured project management support. Discussions will commence with HNDU to identify the level of funding it could provide to the project in the next stage of the project.

It is estimated that HNDU could provide up to £500k of grant funding for development of the OBC. An application will be made in the early stages of the OBC to confirm the exact amount.

5.3 Key Stakeholders

The wide-reaching nature of this project means that stakeholder engagement and consultation will be vital for delivering a successful project. The table below outlines the key stakeholders for the project, this list is not exhaustive and it is proposed that an engagement lead is appointed to manage the process, once the project moves into the OBC stage.

Residential	Residents Associations: • Churchill Gardens • Lillington and Longmoore • Abbots Manor 20th Century Society Historic England
Political	• Cllr Matt Noble • Cllr Liza Begum • Cllr David Boothroyd • Cllr Ryan Jude
Commercial	Pimlico Academy WCC Planning Highways Utility Providers UKPN Port of London Authority Environment Agency Leaseholders

5.5 Communication Strategy

Due to the future impact on residents, road users and those connected to PDHU, the project will need to include an effective communication strategy. It is proposed that this is developed as a priority during the OBC.

5.6 Consultation Strategy

Consultation will be a vital part of delivering a successful project, there a number of stakeholders which will need to be engaged with throughout the project. It is proposed that consultation is a priority activity once the Outline Business Case commences, with a specialist lead appointed in the early stages.

5.7 Management Case Conclusion

An upgrade to PDHU is complex project which will impact a wide range of stakeholders. Successful delivery will require a strong and experienced project team and thorough programme of consultation. Oversight of the project will be provided by project board, with regular reporting back to the relevant boards on progress.

Funding of the OBC will be required, with a budget cost of £1.2m - it is expected that a grant from HNDU could cover up to £500k of these costs, subject to a successful application.

6. Programme

6.1 High level / Key milestones programme

Please note, the dates below are estimates and subject to change. It is proposed that regular reporting is provided throughout using the reporting structure in section 5.

Activity	Date
Strategic Outline Case Approval	**January 2022**
Outline Business Case complete	**December 2023**
Final Business Case complete	**December 2024**

7. Appendices

A	Risk register
B	Options Appraisal
C	Heat pump feasibility technical note - Draft
D	Strategic Options Appraisal – Technical Note
E	

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