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SUPPLEMENTARY PAPERS

Committee	ENVIRONMENTAL SCRUTINY COMMITTEE
Date and Time of Meeting	TUESDAY, 15 JUNE 2021, 4.00 PM
Venue	REMOTE VIA MS TEAMS
Membership	Councillor Patel (Chair) Councillors Derbyshire, Owen Jones, Lancaster, Jackie Parry, Parkhill, Owen, Sandrey and Wong

The following papers were marked 'to follow' on the agenda circulated previously

8 City Centre Next Steps - Castle Street and City Centre East (Pages 3 - 58)
(to follow)

For Members to undertake pre-decision scrutiny of the report to Cabinet.

Appendix 7 of this report is not for publication as it contains exempt information of the description in paragraphs 14 and 21 of Schedule 12A of the Local Government Act 1972.

Davina Fiore
Director Governance & Legal Services
Date: Wednesday, 9 June 2021
Contact: Graham Porter, 02920 873401, g.porter@cardiff.gov.uk

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CYNGOR CAERDYDD
CARDIFF COUNCIL

ENVIRONMENTAL SCRUTINY COMMITTEE

15 JUNE 2021

**CITY CENTRE NEXT STEPS – CASTLE STREET AND CITY CENTRE EAST
(PHASE 1 + CANAL): PRE-DECISION SCRUTINY**

Appendix 6 of the Cabinet Report is not for publication as it contains exempt information of the description contained in paragraphs 14 and 21 of Schedule 12A of the Local Government Act 1972. It is viewed that, in all the circumstances of the case, the public interest in maintaining the exemption outweighs the public interest in disclosing the information

Purpose of the Report

1. To give Members background information to aid the scrutiny of the draft report to Cabinet, regarding the next steps in two city centre transport schemes, Castle Street and the City Centre East scheme, which is due to be considered by Cabinet at their meeting on 17 June 2021.
2. Members should note that **Appendix 6** of the Cabinet report is exempt from publication. Members are requested to keep this information confidential, in line with their responsibilities as set out in the Members Code of Conduct and the Cardiff Undertaking for Councillors.

Scope of Scrutiny

3. At their meeting on 17 June 2021, the Cabinet will consider a report that provides feedback on the public consultation and modelling work undertaken for Castle Street. The report seeks approval for modifications to the current road layout to achieve clean air compliance and to commission further modelling and analysis of the impact of these modifications on clean air, congestions and wider city recovery and renewal. The report also seeks delegated authority to award the tender and begin construction for the City Centre East Phase 1+ Canal Project.

4. During this scrutiny, Members have the opportunity to explore:
 - i) The possible transport option for Castle Street and its impact on:
 - i. Air quality;
 - ii. Transport and planning policy;
 - iii. Sustainability;
 - iv. Climate Emergency.
 - ii) Whether there are any risks to the Council, financial or otherwise;
 - iii) The timeline and next steps for delivering these proposals; and
 - iv) The recommendations to Cabinet.

5. Members are to note that the Economy & Culture Scrutiny Committee is also considering this report from its terms of reference and will focus on the proposals impact on businesses, visitors, tourism, culture and events.

Structure of the meeting

6. The Chair will move that this item be considered in two parts: an open session, where Members will be able to ask questions on the issues and papers that are in the public domain; and a closed session, where members of the public will be excluded, where Members can ask questions that pertain to **Appendix 6**.

7. Members will hear from Councillor Caro Wild (Cabinet Member – Strategic Planning and Transport), Andrew Gregory (Director of Planning, Transport and Environment) and Gethin Shields (Transportation Programme Manager) will be in attendance and the whole panel will be available to answer Members' questions.

8. Members will then be able to decide what comments, observations or recommendations they wish to pass on to the Cabinet for their consideration prior to making their decisions.

Background

9. In 2018, the Welsh Government issued a legal Direction requiring the Council to comply with the EU limit value for nitrogen dioxide ((NO₂) found in air. The

Council developed a Clean Air Plan to achieve NO₂ compliance and Cabinet approved this in June 2019.

10. The Clean Air Plan contains a scheme for Castle Street, which allows all traffic with restricted capacity and achieves air quality compliance re NO₂. The Clean Air Plan also contains the City Centre East scheme, aiming to achieve high quality, active travel infrastructure and connect key developments in a sustainable way. The scheme covers Dumfries Place, Station Terrace, Churchill Way, including the Canal reopening, and Bute Terrace.
11. The Covid-19 national lockdown led to the pausing of the above schemes. In Summer 2020 Castle Street was closed to all traffic to accommodate an outdoor dining area and Station Terrace was restricted to bus, taxi and limited access only. In autumn 2020 the outdoor dining area in Castle Street was removed, the south pavement extended to facilitate social distancing and Castle Street reopened to buses, taxis and access vehicles. Station Terrace reopened to all traffic. In addition, a series of Pop Up cycleways were installed in the city centre.
12. The draft report to Cabinet entitled '*City Centre Next Steps – Castle Street and City Centre East (Phase 1 + Canal)*' is attached at **Appendix A** and has **six** appendices:
 - **Appendix 1** - Project Area Map
 - **Appendix 2** - Traffic Modelling and Air Quality Technical Information
 - **Appendix 3** - Consultation Report – Castle Street
 - **Appendix 4** – Castle Street Option Design
 - **Appendix 5** - Detailed Design City Centre East
 - **Confidential Appendix 6** - Funding Makeup

Public Consultation

13. From March – May 2021 a public consultation took place on Castle Street, seeking views on the following two options:

- **Option 1:** This scheme is the previously approved design included in the Council's Clean Air Plan. The scheme allows general traffic to access the area under reduced capacity, whilst also providing segregated cycling facilities, bus priority and public realm improvements.
- **Option 2:** A variation on Option 1 where general traffic is restricted from using the street as a through-route at all times. The scheme provides a segregated cycle lane, bus and taxi access and improved public realm via an extension to the pavement on the south side.

14. The Cabinet report, at **points 15 and 16**, summarises the results of the public consultation. The Castle Street consultation received 6,250+ responses, split 53.8% thinking Option 1 had some considerable benefit and 33.8% thinking Option 2 had some considerable benefit. The full report on the consultation is at **Appendix 3 of Appendix A**.

Issues identified in the Cabinet Report

15. The report to Cabinet summarises the following issues:

- i) Castle Street:
 - i. Additional Considerations – **point 10**
 - ii. Traffic Modelling – **point 13**
 - iii. Air Quality – **point 14**
 - iv. Next Steps – **points 17-19**
- ii) City Centre East – **points 20 – 25**
- iii) Future Stakeholder & Public Engagement – **point 26**
- iv) Project Funding – **points 27 - 31**
- v) Future Maintenance Costs – **points 32 -33**.

16. The additional considerations include: maintaining improvements in air quality; supporting economic recovery; lifting of Covid-19 restrictions; roll out of cycling infrastructure; supporting bus priority; and key developments putting added pressure on the network.

17. Traffic modelling shows:

- i) Both Castle Street options cause some displacement to the west of the city centre
- ii) There are larger impacts on A48 and A4232. Due to rerouting to avoid the city centre
- iii) Full results are available in **Appendix 2 of Appendix A**.

18. Air quality modelling shows:

- i) Both Castle Street options ensure compliance re NO₂, with Option 2 reducing levels the furthest
- ii) Both options show improvements in air quality across the city
- iii) Both options show small increases re NO₂, compared to the baseline scenario but not to a level that exceeds legal limits.

19. The proposed next steps are:

- i) Modifications of current scheme to allow all vehicles to access Castle Street – *draft concept design at Appendix 4*
- ii) New tender process and contract award, with work onsite in summer and Castle Street open to all traffic in the autumn
- iii) Further analysis, monitoring and assessment re impact on network, air quality, wider city environment and economy
- iv) Work with public transport providers to address any emerging issues
- v) Permanent scheme to be developed and implemented in due course.

20. The report to Cabinet sets out that Cabinet has previously approved the City Centre East scheme for tender and seeks delegated authority to the Director of Planning, Transport and Environment in consultation with the Corporate Director of Resources to award the tender and begin construction, anticipated to begin in September 2021.

21. The report to Cabinet sets out the following measures to inform and assist stakeholders and the general public re Castle Street and City Centre East schemes:

- i. A dedicated project website containing all information associated with the project including: project background; maps; designs and operational plans.
- ii. A communication plan for each phase of works, including: newsletters for local residents and businesses; press releases and proactive media engagement.
- iii. Regular Stakeholder Meetings with Bus Operators and other key stakeholders.

22. The report to Cabinet sets out the following regarding funding:

- i) Castle Street – Welsh Government Clean Air funding
- ii) City Centre East – City Deal Grant funding, Air Quality funding and General Capital Fund
- iii) Opportunities for further Welsh Government grant funding and Council capital funding will be considered
- iv) Estimated fees will be £400,000 for both projects.

23. The report to Cabinet highlights that the new infrastructure will cause future maintenance costs, which will need consideration when developing the future Medium Term Financial Plan.

24. Financial Implications are at **Points 39-41** and state that the costs and funding of the schemes are set out in **Confidential Appendix 6 of Appendix A**. They also highlight that the Council has allocated £3 million from its capital programme towards exposing the dock feeder canal at Upper Churchill Way to provide new public space with seating and no budgets are available for further phases of the canal.

25. Legal Implications are at **points 42-53**, going through each recommendation to Cabinet in turn. Recommendations 1, 2 and 3 raise no direct legal implications. Recommendation 4 mentions legal implications regarding procurement but not within the remit of this report. The Legal Implications then detail the general responsibilities of the Council regarding public sector equality duty, Well- Being of Future Generations (Wales) Act 2015, Well Being and Welsh Language.

Proposed Recommendations to Cabinet

26. The report to Cabinet contains the following recommendations:

- i. Note the outcome of the public consultation and modelling work carried out on the future of Castle St.*
- ii. Approve the implementation of the adjustment to the current road layout on Castle Street to allow all traffic as outlined in Appendix 2.*
- iii. Note the intention to undertake further modelling and analysis of the impact of the scheme on clean air, congestions and wider city recovery and renewal.*
- iv. delegate authority to the Director of Planning, Transport & Environment in consultation with the Corporate Director of Resources to deal with all aspects of the procurement process (including approving the evaluation criteria to be used and authorising the award of the proposed contract) and all ancillary matters pertaining to the procurement for the construction of City Centre East + Canal Phase 1.*

Way Forward

27. Councillor Caro Wild (Cabinet Member – Strategic Planning & Transport) will be invited to make a statement, contribute to the discussion and answer questions. Andrew Gregory (Director of Planning, Transport and Environment) and Gethin Shields (Transportation Programme Manager) will attend to contribute to the discussion and respond to points raised.

28. All Members are reminded of the need to maintain confidentiality with regard to the information provided in **Appendix 6**. Members will be invited to agree the meeting go into closed session to enable discussion of this information.

Legal Implications

29. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters, there are no direct legal implications. However, legal implications may arise if and when the matters under review are

implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any legal implications arising from those recommendations. All decisions taken by or on behalf of the Council must (a) be within the legal powers of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. Scrutiny Procedure Rules; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.

Financial Implications

30. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters, there are no direct financial implications at this stage in relation to any of the work programme. However, financial implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any financial implications arising from those recommendations.

RECOMMENDATION

The Committee is recommended to:

- i) Consider the information in this report, its appendices and the information presented at the meeting;
- ii) Determine whether they would like to make any comments, observations or recommendations to the Cabinet on this matter in time for its meeting on 17 June 2021; and
- iii) Decide the way forward for any future scrutiny of the issues discussed.

DAVINA FIORE

Director of Governance & Legal Services

11 June 2021

CARDIFF COUNCIL CYNGOR CAERDYDD

CABINET MEETING: 17 JUNE 2021

CITY CENTRE NEXT STEPS: CASTLE STREET AND CITY CENTRE EAST (PHASE 1 + CANAL)

STRATEGIC PLANNING AND TRANSPORT (CLLR CARO WILD) AGENDA ITEM:

Appendix 6 of this report is not for publication as it contains exempt information of the description in paragraphs 14 and 21 of Schedule 12A of the Local Government Act 1972.

Reason for this Report

1. To report back on the outcome of the public consultation and modelling work, to approve modifications to the current road layout to Castle Street in order to achieve clean air compliance and commission further modelling and analysis of the impact of these modifications on clean air, congestion and wider city recovery and renewal
2. To seek delegated authority to award the tender and begin construction for the City Centre East Phase 1 + Canal Project.

Background

3. Capital Ambition, which sets out the administration's delivery priorities, makes clear the need to continue an ambitious regeneration programme for the city centre and for radically improving Cardiff's active and sustainable travel infrastructure, tackling the challenges of congestion, air pollution and the climate emergency.
4. In 2018 the Council received a legal direction from the Welsh Government to ensure that air pollution levels were below the EU limit value, specifically levels of nitrogen dioxide (NO₂). In response, the Council undertook a detailed analysis of air pollution levels across the city, which identified Castle Street as the sole non-compliant street.
5. In June 2019, the Cabinet approved a Clean Air Plan which set out the steps required to improve air quality in the city centre, and on Castle Street specifically. This included three major city centre schemes:
 - **City Centre West:** Central Square and Westgate Street
 - **City Centre North:** Boulevard de Nantes, Kingsway and Castle Street

- **City Centre East:** Dumfries Place, Station Terrace, Churchill Way / including the Canal reopening, and Bute Terrace
6. In addition the following supporting projects were included within the Clean Air Plan:
- **City Centre Enabling Works Package:** A series of supporting network enhancement that will improve connections to and from the city centre area
 - **SMART Corridors:** Three improvement corridors (North, East and West) aimed at improving bus journey time reliability into the city centre and alleviating congestion problems on key routes.
7. Following the approval of the Clean Air Plan, £15.2m has been secured from Welsh Government to progress these schemes, representing a significant contribution towards the total project cost.
8. Successful implementation will significantly improve air quality and ensure compliance with legal limits. It will also establish a high quality active travel infrastructure for the city and improve connectivity between key developments by strategically aligning bus routes and enhancing links with the new Transport Interchange. An overview of city centre project areas is included in Appendix 1 of this report.

Responding to the Covid-19 Pandemic

9. As set out in the recent 'Recovery and Renewal: Greener, Fairer, Stronger' report, approved by Cabinet in May 2021, the Covid-19 pandemic has had a unique impact on the city centre and on mobility patterns in the city. In order to create Covid-secure mobility options and environments a series of innovations and adaptations were introduced at pace in the city centre, including:
- Summer 2020: Castle Street was closed to all traffic to accommodate an outdoor dining area, with Station Terrace restricted to bus, taxi and limited access only.
 - Autumn 2020: The pavement was extended on Castle Street south, outdoor dining areas were removed and buses, taxis & access vehicles were allowed in. Station Terrace was opened to all traffic.
 - Autumn 2020 – Present: A series of Pop up Cycleway were installed in the city centre to replicate those included in the permanent programme, extensions to these cycleways continue to be on site today and will see over 2.5 miles of additional cycleway installed.
 - April 2021: Station Terrace closure re-implemented to support buses, the future City Centre East Transport Project and the delivery of the Churchill Way event space.

10. As Cardiff looks towards recovery and renewal, the existing proposals contained within the Clean Air Plan were revisited in the context of a number of additional considerations. These included:
- **Maintaining improvements in air quality:** The temporary measures established on Castle Street in response to COVID-19 led to a significant improvement in air quality and ensured that compliance with the EU Limit for NO₂ was achieved in advanced of the modelled forecast date within the Clean Air Plan. The Council needs to ensure that compliance is maintained and that the obligations as set out in the legal direction from Welsh Government are met.
 - **Supporting Economic Recovery:** To support economic recovery it is critical that any highway network and public transport disruption is kept to a minimum, and that access for all users and modes to the city centre is maintained.
 - **The Lifting of Covid-19 Restrictions:** As restrictions are lifted and people and businesses return to normal life, there will be increased pressure on the transport network.
 - **Roll out of Cycling Infrastructure:** Cardiff has an ambitious cycle infrastructure construction programme. The aim is to create the UKs most successful cycling city. Major enhancements to this network have been implemented during the pandemic, with new 'pop up' routes and facilities put in place, including the new link on Castle Street. These pop-up routes now need to be developed into a more mature routes and integrated with the existing and planned network roll-out.
 - **Supporting Bus Priority:** Public Transport and Bus operation is a key priority for the Council. The current bus priority around the city centre is provided primarily in the anti-clockwise direction and needs to be enhanced to add the flexibility needed to accommodate the new Transport Interchange in Central Square. Future improvements will also need to accommodate cross city routes, improved event day movement, quicker and shorter loops for local and regional buses and provide for future population growth. The option selected moving forward will need to include measures to ensure that public transport is fully supported. These measures may include short term mitigations as well as longer term proposals that can be identified in the soon to be consulted upon Cardiff Bus Strategy.
 - **Development:** Key developments, such as Central Square, Central Quay and development of key stations as part of the Metro will put added pressure on the network.
11. Taking the issues identified above into account, the following schemes on Castle Street and in City Centre East will now be progressed:

Castle Street

12. As noted above, a number of temporary adaptations were made to Castle Street in responding to the pandemic. As restrictions were lifted current arrangements were reviewed in light of the approved Clean Air Plan and the wider recovery context for the city. Consequently, two options for Castle Street were developed for consideration and for public consultation:
- **Option 1:** This scheme is the previously approved design included in the Council's Clean Air Plan. The scheme allows general traffic to access the area under reduced capacity, whilst also providing segregated cycling facilities, bus priority and public realm improvements.
 - **Option 2:** A variation on Option 1 where general traffic is restricted from using the street as a through-route at all times. The scheme provides a segregated cycle lane, bus and taxi access and improved public realm via an extension to the pavement on the south side.

Traffic Modelling and Impacts

13. Further variable demand modelling (VDM) has been undertaken by transportation consultants, to provide updated transport data to reflect potential mode shift changes/ cancelled journeys as a result of the schemes. This differs from the previous modelling which was fixed demand which meant the model didn't take account of any changes and assumed travel behaviours remained the same. The results of the traffic impact of the two schemes are shown in Appendix 4, showing the am and pm peak travel times (pre-Covid-19). Key points include:
- a. Comparative assessment shows that both options are modelled to cause some displacement impacts to the west of the city centre, due to the impact of removing some or all of the through traffic.
 - b. The larger impacts are modelled to occur on the arterial routes of the A48 and A4232 due to rerouting behaviour to avoid the city centre.

Air Quality Modelling

14. Using the updated VDM traffic data further air quality modelling has been undertaken. The key outcomes of the modelling to consider for both options on Castle Street are:
- a. Both options ensure compliance with legal limits is obtained on Castle Street.
 - b. Option 1 reduces levels on Castle Street to 28 $\mu\text{g}/\text{m}^3$ whilst Option 2 reduces levels to 20 $\mu\text{g}/\text{m}^3$.
 - c. Both options show improvements in air quality across the city. This is due to the restriction of traffic through the city centre and other elements of the clean air plan.
 - d. Both options do cause some minor increases in NO_2 concentrations when compared to the Baseline Scenario. However these

increases do not cause the absolute NO₂ concentrations to be at risk of exceedance of the limit value.

Results of Public Consultation

15. Between March 2021 and May 2021 an extensive public and stakeholder consultation and engagement exercise was undertaken on the future options for Castle Street, with over 6250 response received. The consultation report is included in Appendix 3 of this report. Key points include:
 - a. 53.8% thought option 1 had considerable benefit
 - b. 33.8% thought option 2 had considerable benefit
16. Overall, the public consultation therefore indicated that there were greater levels of support for Option 1, the reopening of Castle Street to general traffic, and inclusion of a segregated bus and cycle lane. It should also be noted that Cardiff Bus and Active Travel organisations put forward strong objection to Option 1 and support for Option 2.

Next Steps

17. As a result of traffic and air quality monitoring, the public consultation, and further analysis of the COVID-19 recovery period, it is proposed that modifications to the current scheme are put in place to allow all vehicles (including cars) to access two lanes of Castle Street, with a westbound bus lane and two-way segregated cycleway retained. A draft concept design of this arrangement is included in Appendix 2.
18. This adaptation to the current temporary arrangements will enable further analysis, monitoring and assessment to take place to fully understand the impacts of the scheme on the network, air quality, wider city environment and economy before a permanent scheme is implemented post-COVID-19 recovery. This will also provide the opportunity to work with public transport providers to address any issues that may emerge from this adjusted scheme.
19. It is proposed that a new tender process will now take place to award a contract due to the reduction in specification of the non-permanent scheme. A successful tender would allow the scheme to go onsite later this summer. This would allow only buses and taxis during construction period with Castle Street open to all traffic in the autumn.

City Centre East

20. Between December 2020 and February 2021 a public consultation took place on the final option for 'City Centre East' transport improvement schemes. This included permanent bus priority measures on Station Terrace & Churchill Way, a permanent cycleway a revised car park routing

system and the first phase of the Canal at the north end of Churchill Way. The full design is included in Appendix 5.

21. It is now proposed that this scheme be approved for delivery and that authority is delegated to the Director of Planning, Transport & Environment in consultation with the Corporate Director of Resources to award the tender and begin construction.
22. The Cabinet has previously given authority to send this scheme out to tender (June 2019). It is now proposed that a mini-competition tender will be undertaken in June 2021 via Lot 9 (£5m-£10m) of the South East Wales Highways Framework under an NEC4 Option C Target Cost Contract with Activity Schedule. The following contractors will be invited to tender over an 8 week period:
 - a. Alun Griffiths (Contractors) Ltd
 - b. Knights Brown
 - c. Centregreat
 - d. Walters
 - e. Jones Brothers (Ruthin)
23. A cost share percentage range, is associated with the contract that incentivises the contractor to remain on budget. Any overspend will be shared on a percentage basis. The share percentages have been set to best promote collaborative working and minimise the risk of overspend.
24. The nature of highway infrastructure works mean there remain risks of unforeseen issues with utilities and other underground items. However these risks including a review of lessons learnt on previous schemes have been mitigated with a comprehensive survey schedule undertaken and engagement process with utility companies in advance.
25. Subject to this approval and the successful completion of the procurement exercise, and any other necessary statutory processes being completed, work is targeted to begin in September 2021.

Future Public and Stakeholder Engagement

26. The following measures will be taken on the Castle Street and City Centre East transport schemes to inform and assist key stakeholders, as well as the wider public:
 - I. A dedicated project website containing all information associated with the project including: project background; maps; designs and operational plans.
 - II. A communication plan for each phase of works, including: newsletters for local residents and businesses; press releases and proactive media engagement.
 - III. Regular Stakeholder Meetings with Bus Operators and other key stakeholders.

Project Funding

27. A number of funding sources are available to meet the costs of the proposed works on both projects.
28. The Castle Street option will be funded from the Clean Air funding allocated by the Welsh Government. This scheme is estimated to cost in the region of £300,000.
29. City Centre East will be funded by City Deal Grant Funding, Air Quality Funding and General Capital Fund. The current cost estimate for this project is £7-9m, this includes the highway element and the first phase of the Canal Quarter.
30. Opportunities will be considered for further Welsh Government grant funding bids for Transport funding as well as utilising the Council's own capital programme funding for relevant projects to be undertaken as part of the city centre and wider enabling works.
31. It is estimated that the fees associated with delivering both projects (from April 2021 onwards) will be £400,000 for both projects.

Future Maintenance Costs

32. The contract for both projects will provide 2 years maintenance cover on hard infrastructure and 5 years cover on soft landscaping maintenance.
33. Following on from the construction period and the above maintenance periods, it is acknowledged that new infrastructure will cause future maintenance costs. The Project Team are working with all the relevant departments to identify costs and formulate plans for future maintenance and cleansing. This is to ensure that the level of investment proposed across the City Centre can be sustained and maintained. This will need to be a consideration in developing the future Medium Term Financial Plan, along with other Council priorities.

Local Member consultation (where appropriate)

34. Local Members have been able to comment on the proposals for the city centre as part of the Clean Air Consultation that ran from April-May 2019. Then again during the scheme consultations for City Centre East (December 2020-February 2021) and Castle Street (March – May 2021)
35. Local Members will also be consulted with as part of the Traffic Regulation (TRO) process for each project.

Reason for Recommendations

36. The delivery of these highway works are critical to the operation and future success of the Public Transport Network (including the Transport Interchange), the implementation of the Clean Air Plan to improve the air quality in the City Centre and the future development of the city centre's transport network as a whole.
37. These two transport projects deliver key commitments in the Transport White Paper and will greatly assist with meeting targets in that paper, and also the One Planet Strategy.
38. Tender awards must now take place to ensure a contractor can be on site in financial year 2021-22.

Financial Implications

39. The costs and funding of the projects are set out in the confidential appendix 6, including the delivery of the current chosen option for Castle Street. The Council will need to ensure that it secures the required skills to support the delivery and ongoing contract management to manage and mitigate risks during the construction period for the projects. As part of the procurement approach it should be ensured that any appointed contractors have the skills and also capacity to complete the works within agreed timescales having considered other commitments already in place.
40. In order to avoid the risk of additional costs and compensation claims, it is essential that there is a clear scope at the outset, with any changes being managed within the budget available. Where grant funding is used towards works, this should be in accordance with the award of that grant and in consultation with the grant provider. Changes which result in abortive costs will need to be charged to a revenue budget and require consultation with grant funding bodies where relevant.
41. Expenditure incurred on the projects will need to be in accordance with the terms and conditions including timescales identified in any external grants. The Council has allocated £3 million from its capital programme approved in March 2021 toward exposing the existing dock feeder canal at the upper end of Churchill Way to provide a new public space with seating areas. No budgets are available for further phases of the canal.

Legal Implications

42. The body of the report raises a number of points however these legal implications deal with the implications arising from the four recommendations.
43. Recommendation 1 – raises no direct legal implications. A public consultation gives rise to a legitimate expectation that the outcome of the consultation will be taken into account in determining the way forward and

it is noted that the proposals for Castle Street are in line with the preferred option of the consultees.

44. Recommendation 2 – raises no direct legal implications as legal services are instructed that no further road traffic regulation orders are required for the implementation the proposed alterations to the current road layout.
45. Recommendation 3 – raises no direct legal implications
46. Recommendation 4 – for the legal implications regarding the commencement of the procurement, please see the previous cabinet report referred in paragraph of 22 of this report. Further legal implications will be provided on the Officer Decision Report concerning the award of the contract.
47. Please note that any decisions must however be made in accordance with the Council's Scheme of Delegations and the general legal advice set out below
48. The above decisions have to be made in the context of the Council's public sector equality duties. The Council also has to satisfy its public sector duties under the Equality Act 2010 (including specific Welsh public sector duties). Pursuant to these legal duties, Councils must in making decisions have due regard to the need to (1) eliminate unlawful discrimination, (2) advance equality of opportunity and (3) foster good relations on the basis of protected characteristics. The Protected characteristics are: age, gender reassignment, sex, race – including ethnic or national origin, colour or nationality, disability, pregnancy and maternity, marriage and civil partnership, sexual orientation, religion or belief – including lack of belief.
49. The Well-Being of Future Generations (Wales) Act 2015 ("the Act") places a 'well-being duty' on public bodies aimed at achieving 7 national well-being goals for Wales – a Wales that is prosperous, resilient, healthier, more equal, has cohesive communities, a vibrant culture and thriving Welsh language, and is globally responsible.
50. In discharging its duties under the Act, the Council has set and published well being objectives designed to maximise its contribution to achieving the national well being goals. The well being objectives are set out in Cardiff's Corporate Plan 2021-24
51. The well being duty also requires the Council to act in accordance with 'sustainable development principle'. This principle requires the Council to act in a way which seeks to ensure that the needs of the present are met without comprising the ability of future generations to meet their own needs. Put simply, this means that Council decision makers must take account of the impact of their decisions on people living their lives in Wales in the future. In doing so, the Council must:
 - a. Look to the long term
 - b. Focus on prevention by understanding the root causes of problems
 - c. Deliver an integrates approach to achieving the 7 national well-being goals

- d. Work in collaboration with others to find shared sustainable solutions
 - e. Involve people from all sections of the community in the decisions which affect them
52. The decision maker must be satisfied that the proposed decision accords with the principles above; and due regard must be given to the Statutory Guidance issued by the Welsh Ministers, which is accessible using the link below: <http://gov.wales/topics/people-and-communities/people/future-generations-act/statutory-guidance/?lang=en>
53. The Council has to be mindful of the Welsh Language (Wales) Measure 2011 and the Welsh Language Standards when making any policy decisions and consider the impact upon the Welsh language, the report and Equality Impact Assessment deals with all these obligations. The Council has to consider the Well-being of Future Generations (Wales) Act 2015 and how this strategy may improve the social, economic, environmental and cultural well-being of Wales.

HR Implications

54. There are no HR Implications for this report.

Property Implications

55. There are no specific property implications in respect of this Castle Street and City Centre East report. Where there are any resultant land transactions, negotiations or valuations required to deliver any proposals, they should be done so in accordance with the Council's Asset Management process and in consultation with Strategic Estates and relevant service areas.

RECOMMENDATIONS

Cabinet is recommended to:

1. Note the outcome of the public consultation and modelling work carried out on the future of Castle St.
2. Approve the implementation of the adjustment to the current road layout on Castle Street to allow all traffic as outlined in Appendix 2.
3. Note the intention to undertake further modelling and analysis of the impact of the scheme on clean air, congestions and wider city recovery and renewal.
4. Delegate authority to the Director of Planning, Transport & Environment in consultation with the Corporate Director of Resources to deal with all aspects of the procurement process (including approving the evaluation criteria to be used and authorising the award of the proposed contract) and

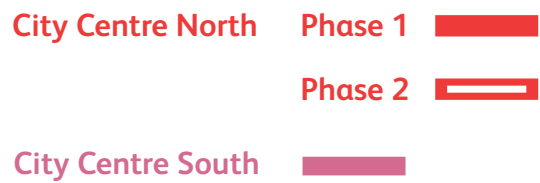
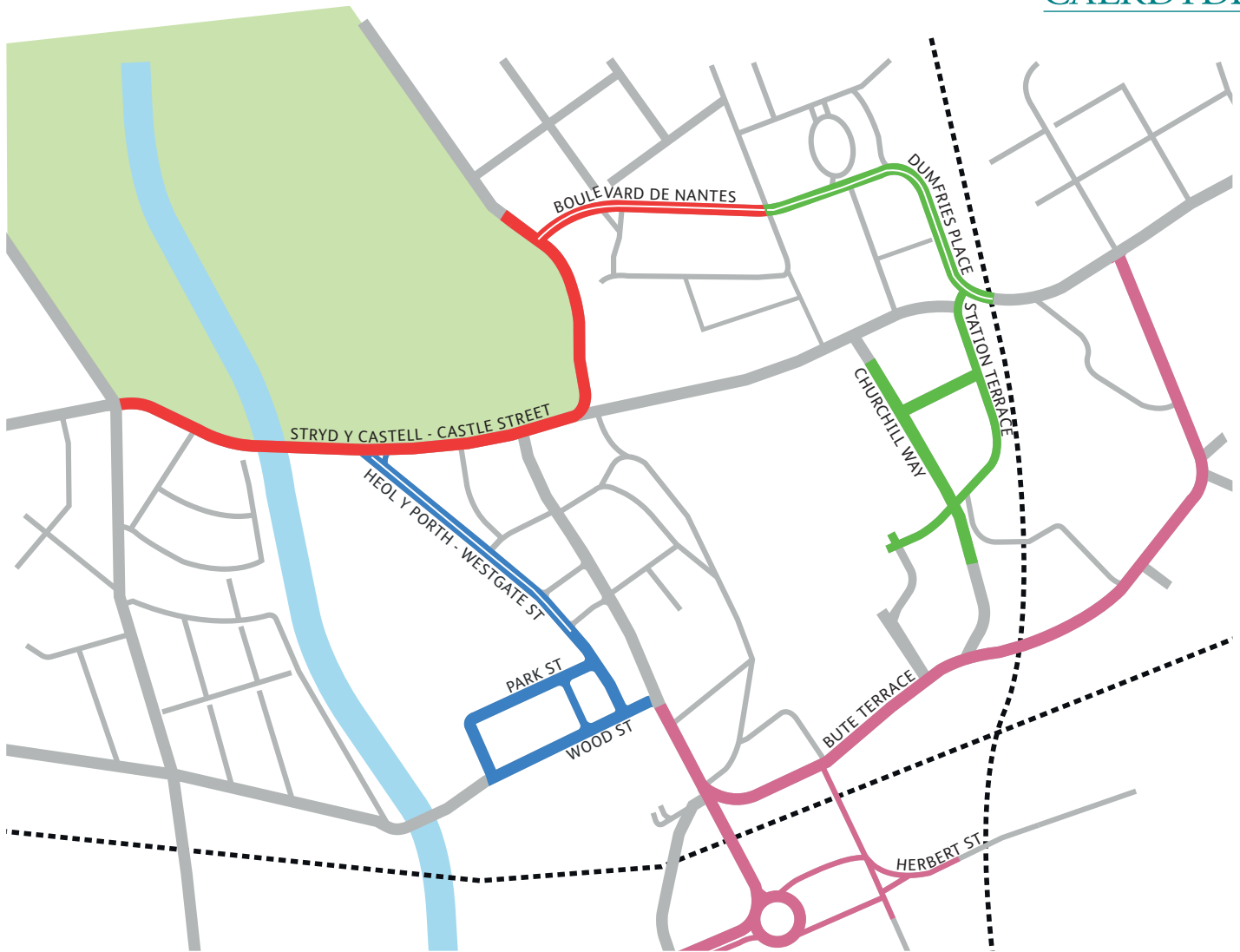
all ancillary matters pertaining to the procurement for the construction of City Centre East + Canal Phase 1.

SENIOR RESPONSIBLE OFFICER	Andrew Gregory Director of Planning, Transport & Environment
	11 June 2021

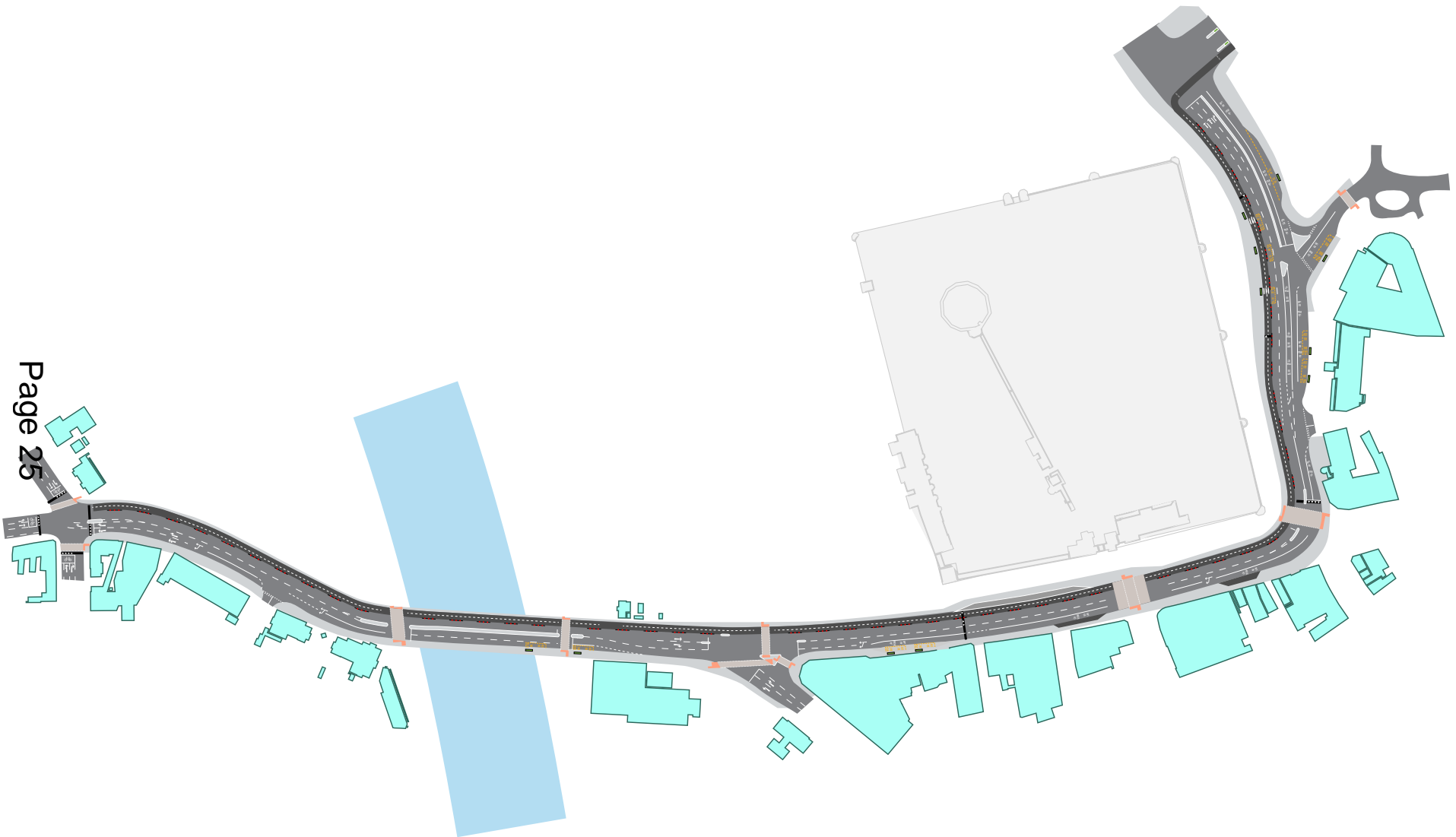
The following appendices are attached:

- Appendix 1 Project Area Map
- Appendix 2 Traffic Modelling and Air Quality Technical Information
- Appendix 3 Consultation Report – Castle Street
- Appendix 4 Castle Street Option Design
- Appendix 5 Detailed Design City Centre East
- Appendix 6 Funding Makeup

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APPENDIX 3: City Centre Transport Improvements: Castle Street

Context

In January 2018, a transport improvement scheme for Castle Street called the “Castle Street Clean Air Scheme” (Option 1) was considered and consulted on by Cardiff Council. A period of engagement with stakeholders followed in Summer 2019. Based upon this consultation and engagement, a Castle Street scheme was designed considering how the City Centre was used at the time.

In July 2020, the City’s Covid-19 recovery plan necessitated a full closure of Castle Street and the implementation of a temporary bus gate to prioritise public transport and active travel. This allowed a café area to be introduced.

With the experience of the Covid-19 closure, the council has reconsulted on this scheme and an additional scheme to gauge public opinion.

Engagement Activities

The consultation opened to the public on 12 March 2021 and stayed live for 8 weeks.

1480 businesses and residents received a letter, advising of information pack available for viewing online at Keeping Cardiff Moving, and a scheme plan. This included businesses and residents directly on the route and all properties within 100m of the project.

The information pack included scheme plans for both options and supplemental information to contextualise the proposals.

This was supplemented by social media promotion and a press release.

Respondents were given the option of responding via Snap Survey or via dedicated email inbox [citycentrenorth@cardiff.gov.uk]

Consultation Results

Via the email inbox for the scheme [citycentrenorth@cardiff.gov.uk], we received **29** emails.

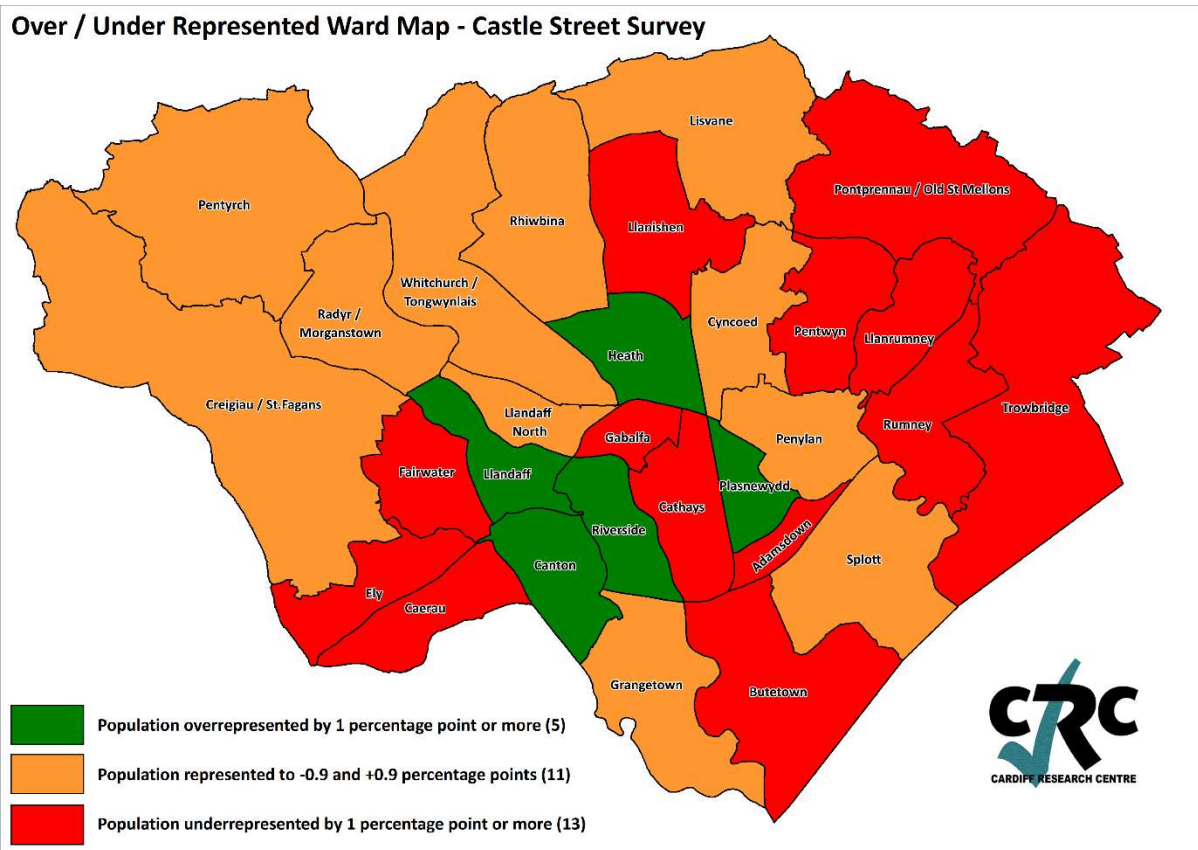
Of these 29 emails:

- **48%** expressed no preference but required further clarity or response on issues.
- **28%** were in support of Option 1
- **24%** were in support of Option 2

The online survey received 6066 responses.

The map below shows population representation at ward level for Cardiff residents.

- Five wards were over-represented (*Canton, Heath, Llandaff, Plasnewydd and Riverside*)
- 11 were representative (*Creigiau/St Fagans, Cyncoed, Grangetown, Lisvane, Llandaff North, Pentyrch, Penylan, Radyr/Morganstown, Rhiwbina, Splott, Whitchurch/Tongwynlais*)
- 13 were under-represented (*Adamsdown, Butetown, Caerau, Cathays, Ely, Fairwater, Gabalfa, Llanishen, Llanrumney, Pentwyn, Pontprennau/Old St Mellons Rumney, Trowbridge*)



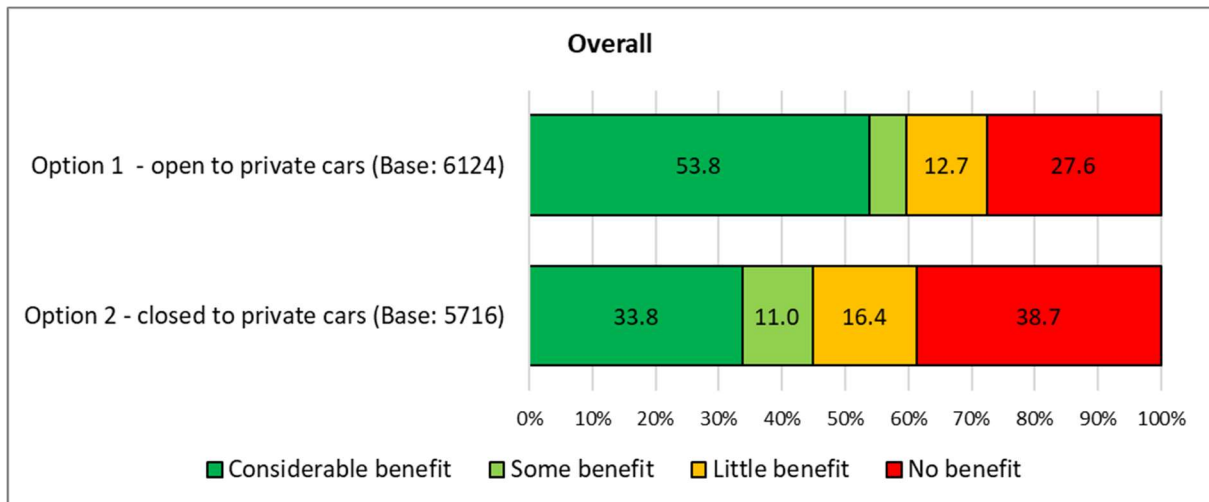
Please rate the scheme on the benefits the scheme will bring to the city of Cardiff:

For option 1: All traffic - 3 lanes - private cars permitted

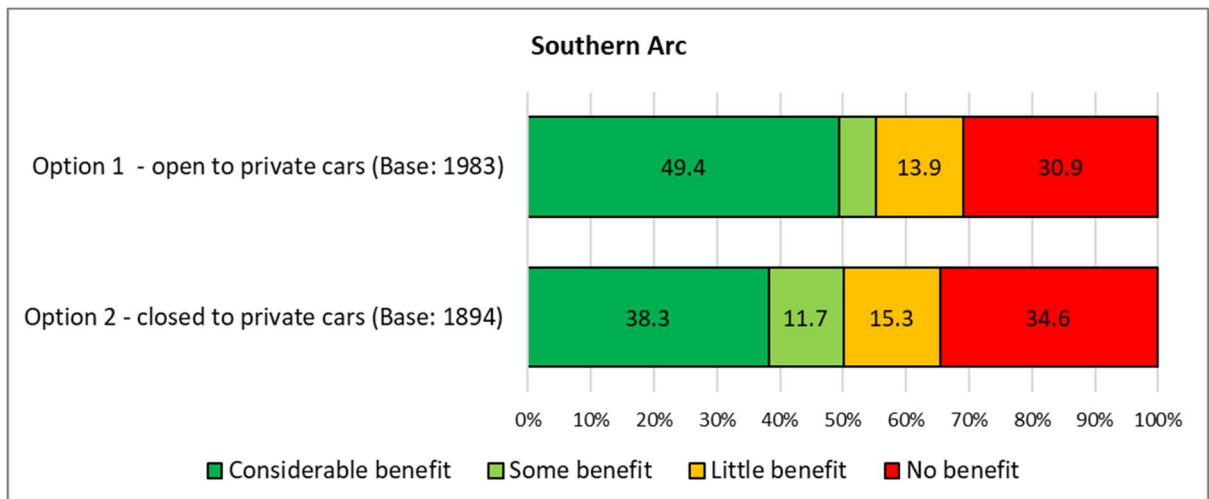
For option 2: Bus & Taxi Only - 2 lanes - no private cars permitted

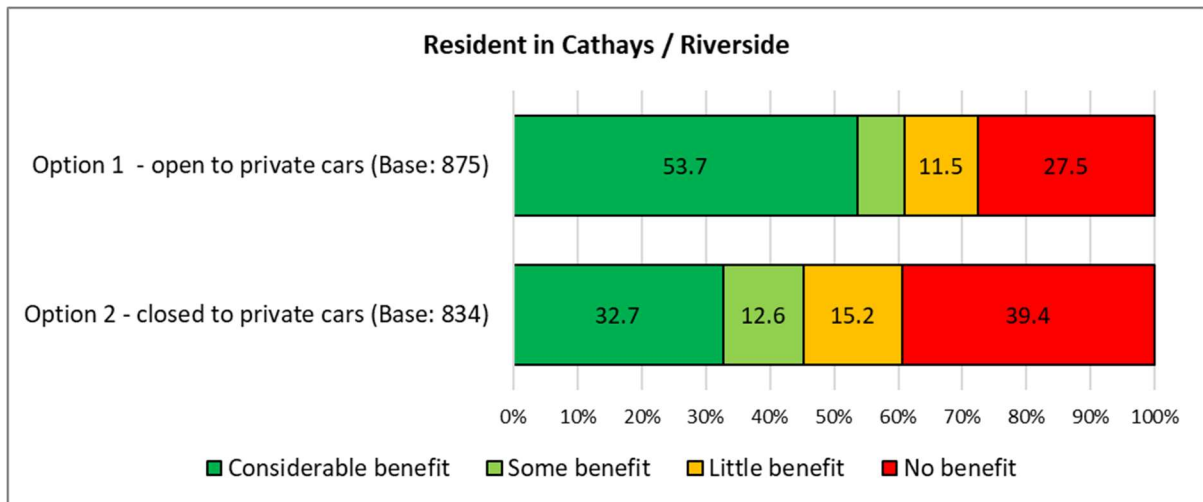
Respondents were invited to rate the benefits of permitting or prohibiting private cars from using Castle Street.

Overall, 53.8% of respondents saw a considerable benefit to opening Castle Street to private cars, compared with 33.8% to closing the street to cars.



Residents in both the Southern Arc, and in Cathays and Riverside (the two closest wards to Castle Street) saw more benefits in keeping the street open to cars.



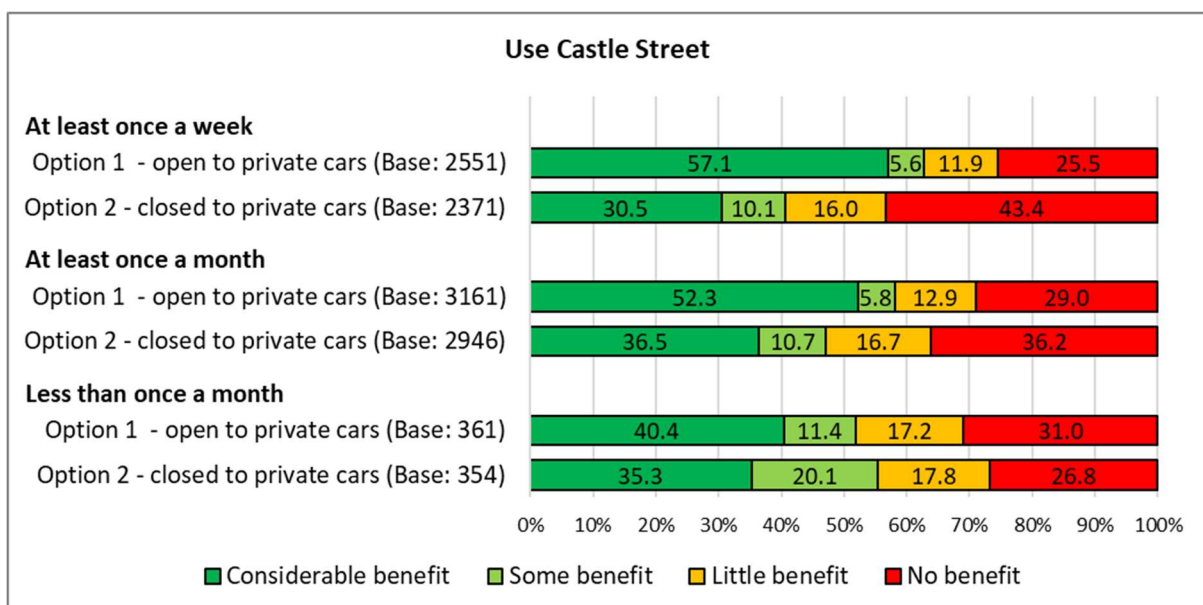


How often do you use Castle Street?

Two-fifths of respondents (41.9%) use Castle Street at least once a week, just over half use it less than once a week, but more than once a month (51.9%), whilst 6.1% use it less than once a month.

	No	%
At least once a day	1004	16.3
At least once a week	1571	25.6
Several times a week	2257	36.7
At least once a month	937	15.2
Less often	350	5.7
Never	26	0.4
Total	6145	100.0

The more frequently a respondent used Castle Street, the more likely they were to see considerable benefits in keeping it open to private cars.

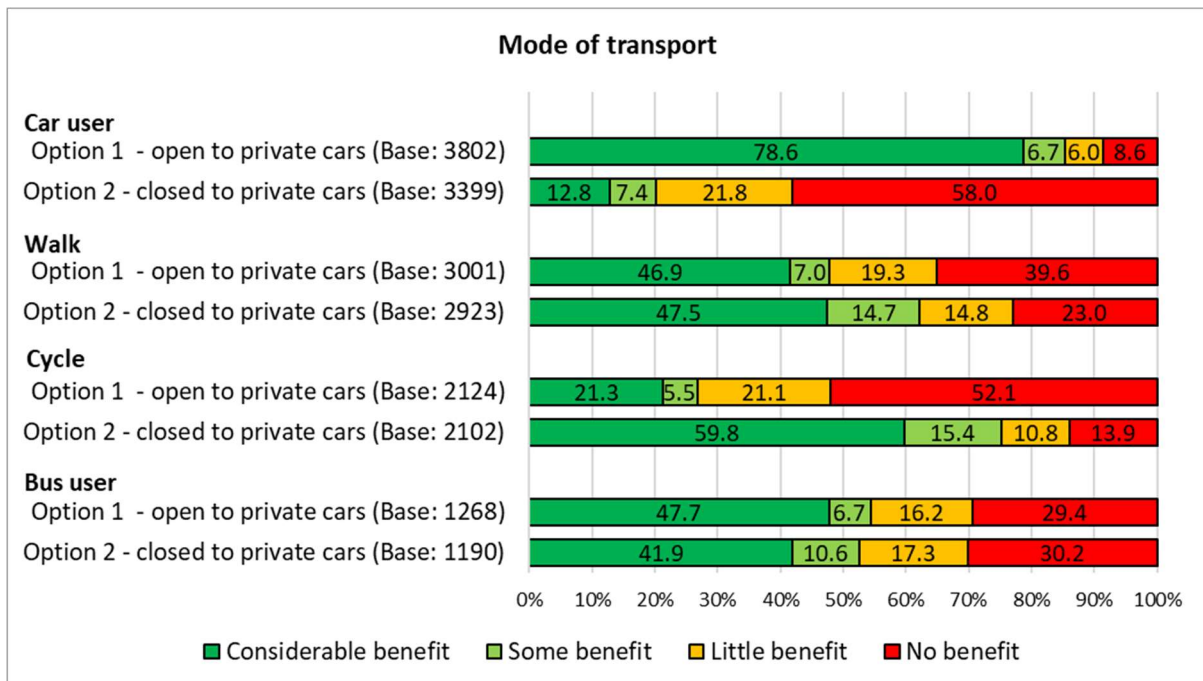


How do you normally travel on this route?

Almost two-thirds (62.3%) of respondents typically used their car to travel on Castle Street, followed by half (49.5%) who walked, 35.0% who cycled, and a fifth (21.0%) travelling by bus.

	No	%
Car	3827	62.3
Walk	3044	49.5
Cycle	2152	35.0
Bus	1291	21.0
Motorcycle	110	1.8
Other	144	2.3
Total	6147	100.0

Car users were notably more likely to see considerable benefits in keeping Castle Street open to cars; cyclists were more likely to see the benefits of closing the street to cars. Bus users and pedestrians were more evenly split in their opinion.



Why do you normally travel on this route?

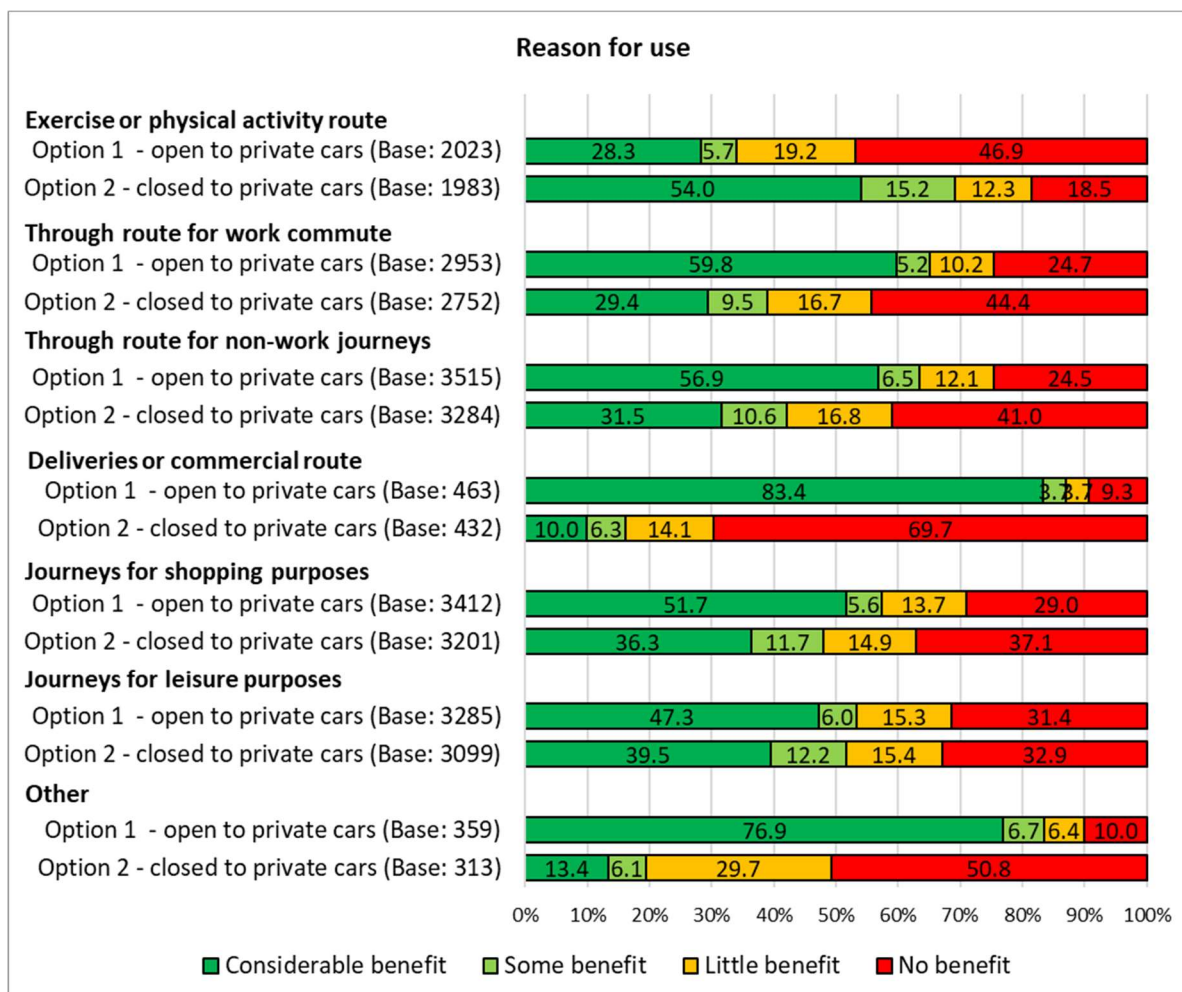
The most common reasons for using Castle Street were:

- As a through route for non-work journeys (58.1%)
- For shopping purposes (56.5%)
- For leisure purposes (54.3%)

	No	%
Exercise or physical activity route	2055	33.6
Through route for work commute	2973	48.6
Through route for non-work journeys	3554	58.1
Deliveries or commercial route	465	7.6
Journeys for shopping purposes	3456	56.5
Journeys for leisure purposes e.g. pub, restaurant, cinema	3325	54.3
Other	362	5.9
Total	6122	100.0

Those using Castle Street for deliveries or a commercial route (83.4%) were most likely to see a considerable benefit in keeping the street open to private cars, followed by those using the route for other purposes (76.9%), for a work commute (59.8%) or for non-work journeys (56.9%).

Those using the route for exercise were least likely to see the benefit in keeping to open to private cars (28.3%).



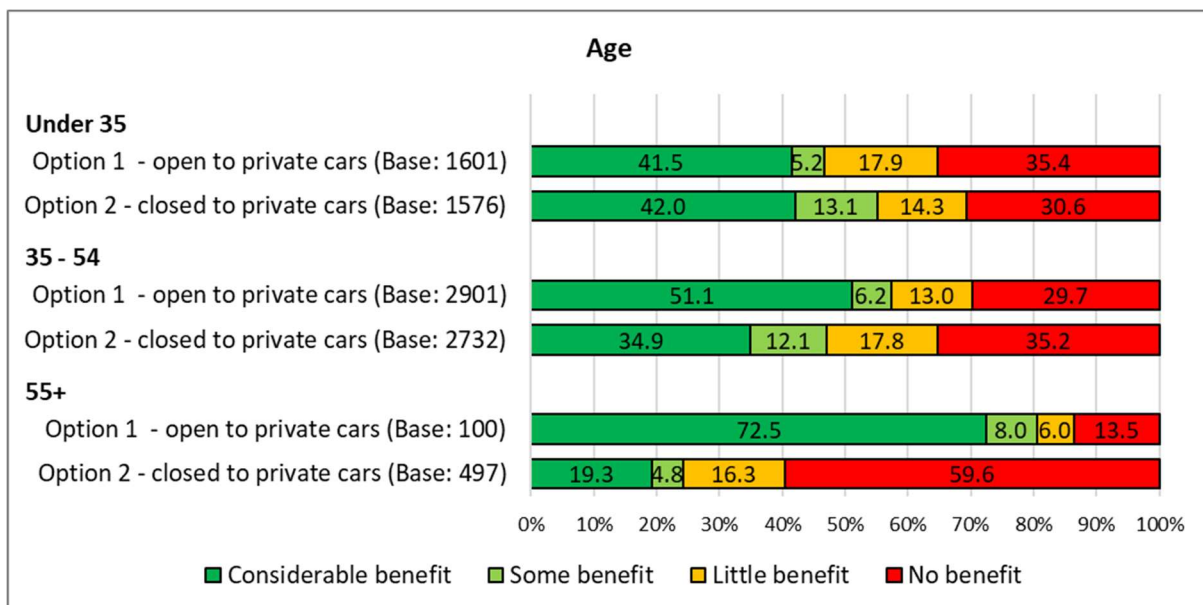
What was your age on your last birthday?

	No	%
Under 16	6	0.1
16-24	305	5.0
25-34	1298	21.2
35-44	1429	23.3
45-54	1501	24.5
55-64	890	14.5
65-74	381	6.2
75+	234	3.8
Prefer not to say	88	1.4
Total	6132	100.0

The proportion of 16-34 year olds and those aged 55 or over were under-represented amongst respondents to the survey compared to the proportion of residents of the city as a whole.

% Adult population	Castle St. Survey	2109 Mid-Year Estimate
16-34	26.1	39.8
35-54	47.8	28.4
55+	24.5	31.8

The older the respondent, the more likely they were to state there was a considerable benefit to keeping Castle Street open to private cars.



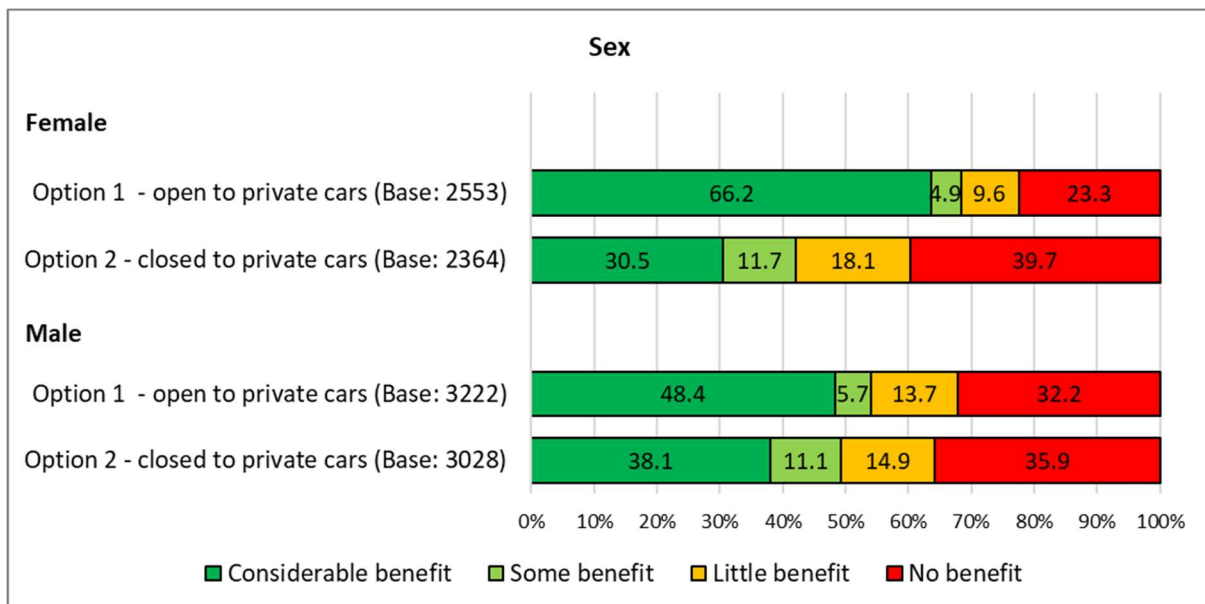
Are you...?

More than half of those responding to the survey were male (53.1), compared with 42.3% of females. This shows a slight over-representation of males compared with the population of the city overall (49.2% males, 50.8% females).

	No	%
Female	2595	42.3
Male	3253	53.1
Prefer not to say	262	4.3
Other	19	0.3
Total	6129	100.0

Women were more likely than men to see a considerable benefit in keeping Castle Street open to private cars (66.2% compared with 48.4% respectively).

Men were more evenly split between the level of benefit for each option.



Do you identify as Trans?

	No	%
Yes	42	0.7
No	5473	91.7
Prefer to self-describe	18	0.3
Prefer not to say	436	7.3
Total	5969	100.0

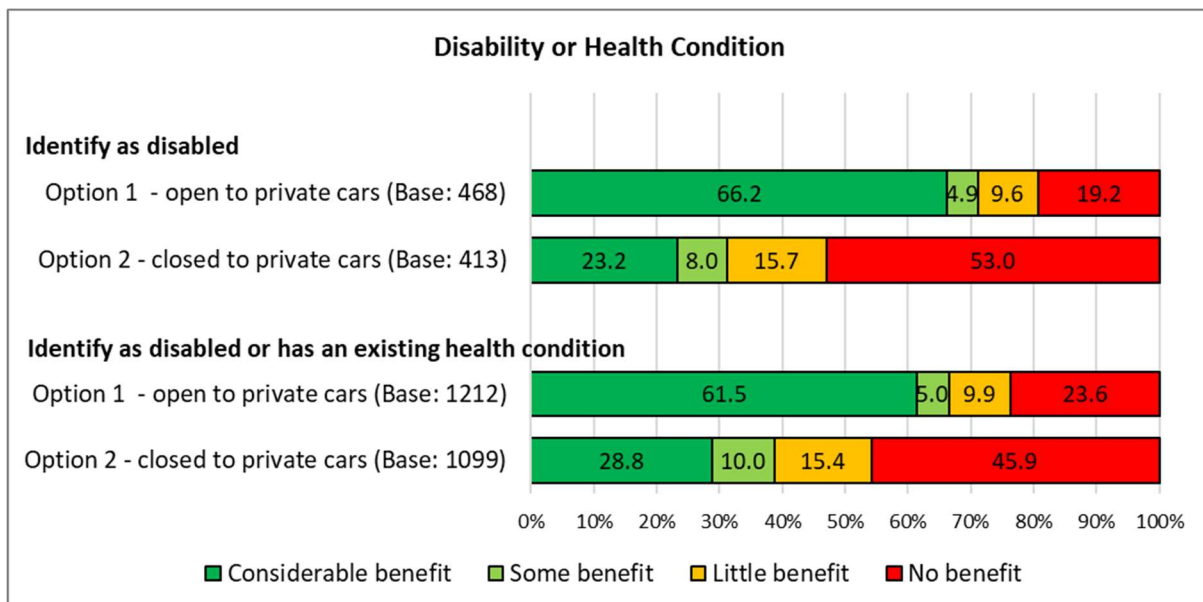
Do you identify as a disabled person?

	No	%
Yes	474	7.8
No	5215	86.2
Prefer not to say	358	5.9
Total	6047	100.0

Please tick any of these following that apply to you

	No	%
Deaf/ Deafened/ Hard of hearing	191	3.2
Mental health difficulties	273	4.5
Learning impairment/ difficulties	45	0.7
Visual impairment	46	0.8
Wheelchair user	26	0.4
Mobility impairment	328	5.4
Long-standing illness or health condition (e.g. cancer, diabetes, or asthma)	612	10.1
Prefer not to say	752	12.4
Other	83	1.4
Total	6047	

Respondents identifying as disabled, or with a health condition were more likely than average to report considerable benefits in keeping Castle Street open to private cars.

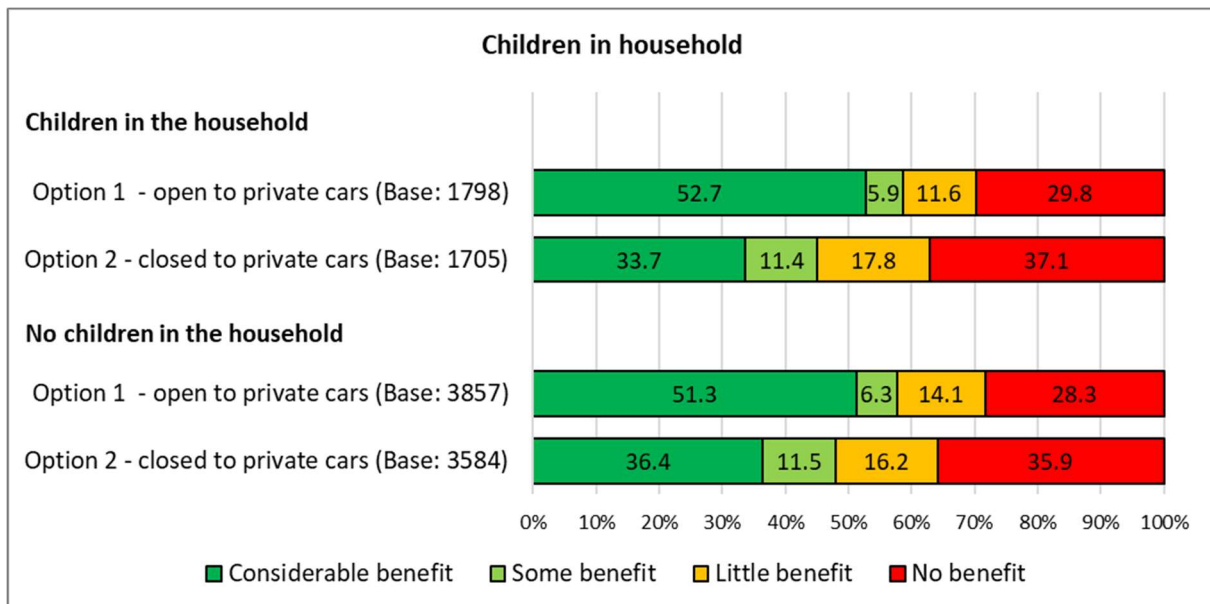


How many under 16 year olds are in your household?

Around two-thirds of those responding to the survey did not have children in their household, compared with 30.0% with at least one child under the age of 16.

	No	%
None	3917	64.9
1	805	13.3
2	779	12.9
3	174	2.9
More than 3	54	0.9
Prefer not to say	311	5.1
Total	6040	100.0

There was little difference in the patten of responses for these two groups of respondents, with both seeing more benefit in keeping the street open to private cars.



General Comments

In the Snap Survey, respondents were able to comment on their choices. From the 6066 responses, some key points were raised. These are outlined below:

Issues raised by respondents in support of Option 1:

Businesses will lose trade if private cars aren't allowed
Summary of Issue
<ul style="list-style-type: none">• This route is used heavily for delivery vehicles• People would like to park near to the retail and businesses they intend to visit• Employees at businesses on the route may experience difficulty accessing their premises
Sample comments:
"The route needs to exist for business, deliveries and commuting between east and west of the city."
"East / west routes across the city are essential for all types of business to deliver goods and commuting people in a timely manner."

Blue badge and vulnerable users should be able to access city centre in their cars
Key points raised
<ul style="list-style-type: none">• Blue badge users need routes that serve all areas of the city• The city centre has many medical businesses or businesses serving vulnerable users
Sample comments:
"Cutting through traffic will really help to keep the city traffic reduced, but what about allowing drivers with blue badges through?"
"Private car access needed for residents to the east of Castle Street to have accessible access St David's hospital"

Closing the road to private traffic creates pockets of congestion in surrounding areas
Key points raised
<ul style="list-style-type: none">• Longer diversion routes places traffic into residential areas• Displaced traffic could create pockets of poor air quality elsewhere in the city
Sample comments:
"The air pollution would just worsen along north road and other alternative route. You would just be moving the issue."
"Travel through Castle Street offers an exceptional benefit for my family for a number. It will also help reduce traffic in the residential areas around Cathedral Road."

Castle Street is the simplest and quickest way of crossing from East to West of the City

Key points raised

- Castle Street is a main thoroughfare through the city
- Longer journeys caused by closing Castle Street creates more pollution

Sample comments:

“It will benefit car drivers, avoiding longer routes to travel east-west across the city and vice versa.”

“This is a main thoroughfare through the city and should be opened to the public to allow movement across town.”

*Issues raised by respondents in support of Option 2:***Improved air quality****Key points raised**

- Removing the traffic in Castle Street improves air quality
- Noise and congestion is unpleasant
- More pleasant environment to walk, cycle and visit

Sample comments:

“Considerably reducing pollution in the city centre, encouraging active travel. Whole area improved and becomes attractive tourism area.”

“Emphasis is shifted to public transport and active travel; greater improvements in air quality.”

Allowing private cars back through Castle Street would be a backward step**Key points raised**

- The Covid-19 arrangement has been enjoyable
- Noise and congestion is unpleasant
- More pleasant environment to walk, cycle and visit

Sample comments:

“Castle street with all the previous traffic was awful - the change has been so much for the better. Putting it back and allowing the traffic back is bad for everybody.”

“The decision to ban cars from Castle Street was progressive, brave and absolutely the right one. The City Centre will have to change post-Covid, Bringing cars back to one of the finest Castle fronted streets in Europe would be a hugely retrograde step.”

Safe access to the city for pedestrians, bus users and cyclists is compromised by private cars

Key points raised

- The area has been dominated by cars
- The pavements are not wide enough
- Pre Covid, there was heavy congestion on the route
- Safer environment would encourage modal shift

Sample comments:

“Improved bus network. Wider pavements and cycle lanes facilitate active travel. These in combination provide good alternatives to driving into the city centre for many people.”

“This route has long been congested, and encouraged reckless and aggressive driving towards other road users (particularly vulnerable road users such as cyclists). Since this route has no longer been open to public traffic, it has become a safer, calmer route for cyclists and has really opened up for pedestrians too. It has made the city feel more welcoming and accessible.”

Option 2 supports the City’s Active and Sustainable travel ambitions and Clean Air mandate

Key points raised

- The council has committed to improving bus facilities, cycling infrastructure and pedestrian safety to encourage modal shift
- Clean Air in Castle Street is a legal requirement
- Option 2 is better for facilitating active or sustainable travel

Sample comments:

“As per the pack, this would result in a greatly improved bus service and would support Cardiff's clean air commitments.”

“Improved bus network. Wider pavements and cycle lanes facilitate active travel. These in combination provide good alternatives to driving into the city centre for many people.”

Tourism and city centre visitorship benefits from a traffic free environment

Key points raised

- The area has been more quiet and pleasant since closure
- A modern city should have traffic free tourist area
- Removing traffic would make the Castle more appealing to visit

Sample comments:

“Removing this route as an option will make the city safer, cleaner and a better place to visit for locals and tourists alike.”

“I have cycled along the new cycle lane many times including with my children which we would not have felt safe to do. It is a much more welcoming experience outside the castle as one of the major tourist attractions not to be full of traffic jams.”

Specific issues/queries

In addition to the general comments, the email inbox received more specific enquiries about the logistics of the plan. These are listed below:

Query

Option 2: I assume this would allow buses to enter Westgate Street for access to the new Bus Station. What would be the proposed route for the return journey?

Option 2: Do you have documentation showing this cross-city design:

- a) is safe and
- b) has passed an Equality Impact assessment in relation to protected groups of disabled and elderly persons?

Option 2: From the pack, it looks like the central reservation is being removed and access would be possible by turning right into Green Street, if you were coming from Cathedral road/Riverside. Is this the plan?

Next Steps

- Continue Engagement with Key Stakeholders
- The final decision on which option to proceed with will be put to the Council’s Cabinet.

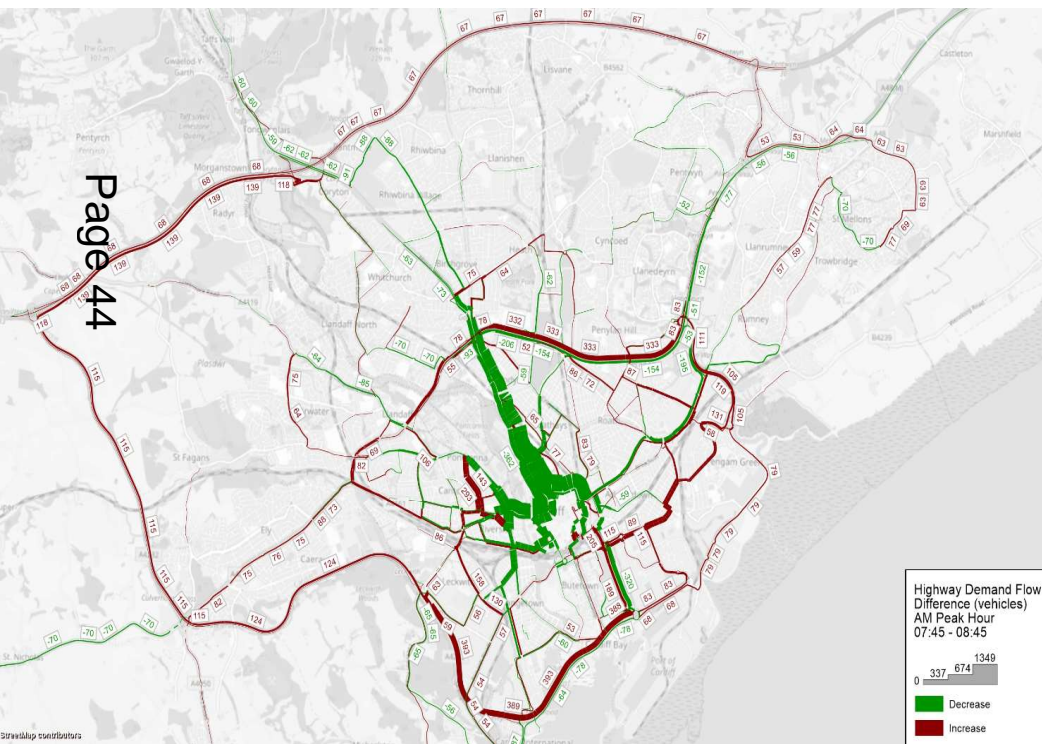
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Appendix 4 – Transportation and Air Quality Data

The following information provides updated Transport and Air Quality Data on the Two Castle Street Schemes

Figure 1 am Peak Flow Changes

Option 1 Clean Air Scheme am Peak Flows



Option 2– Bus Gate am Peak Flows

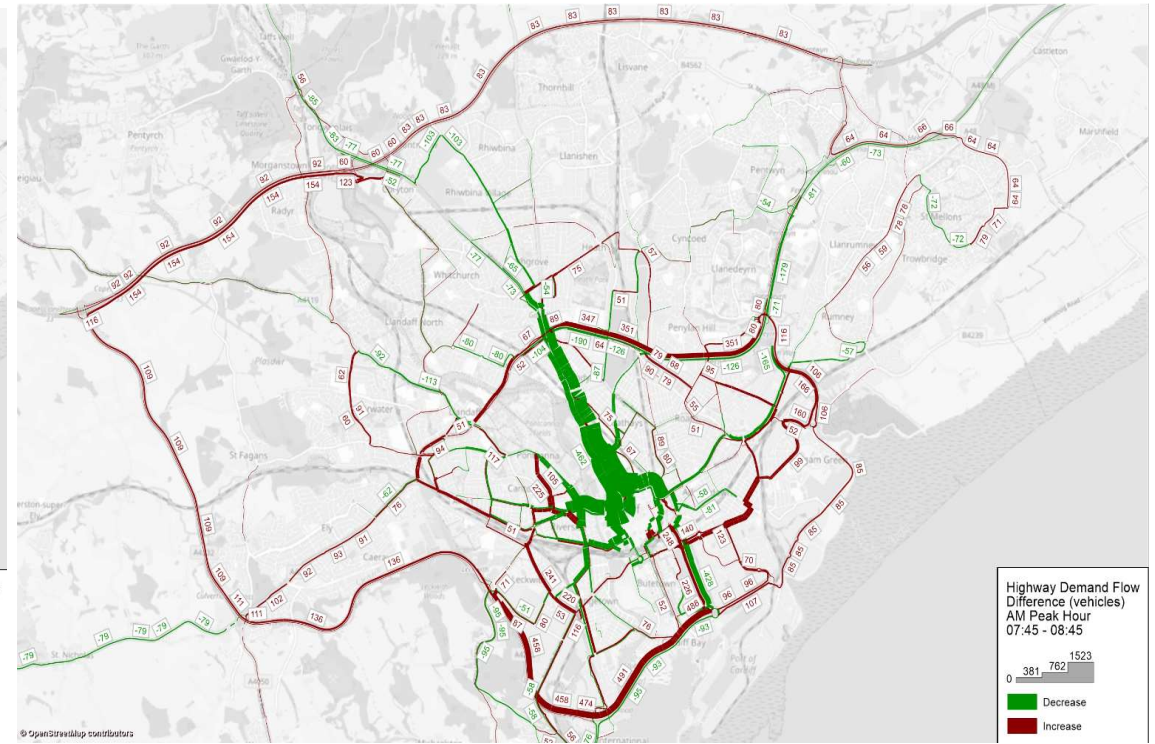
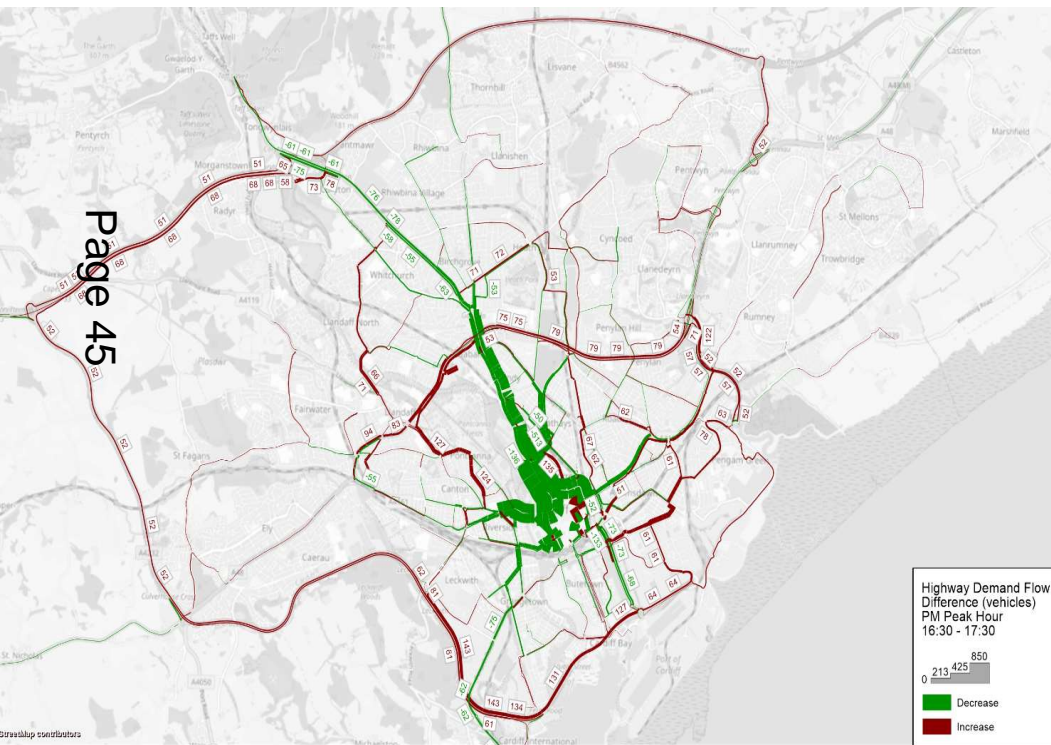
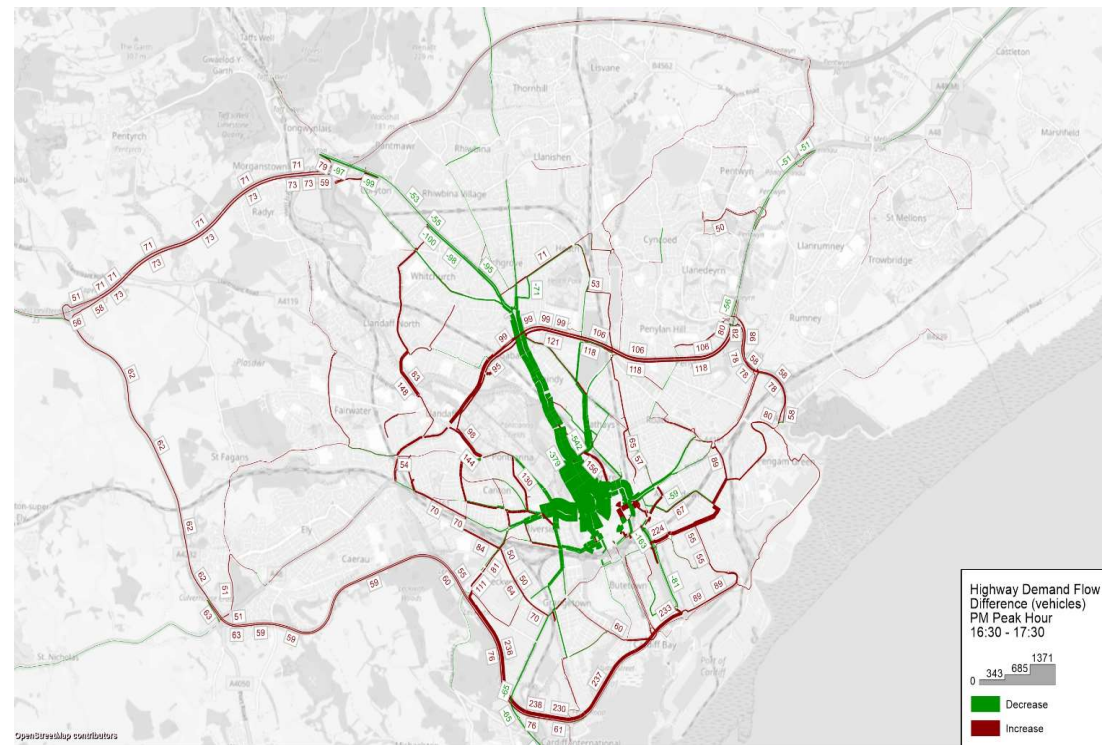


Figure 2 pm Peak Flow Changes

Option 1 Clean Air Scheme pm Peak Flows



Option 2- Bus Gate pm Peak Flows



Peak Flow Changes on Key Road Links

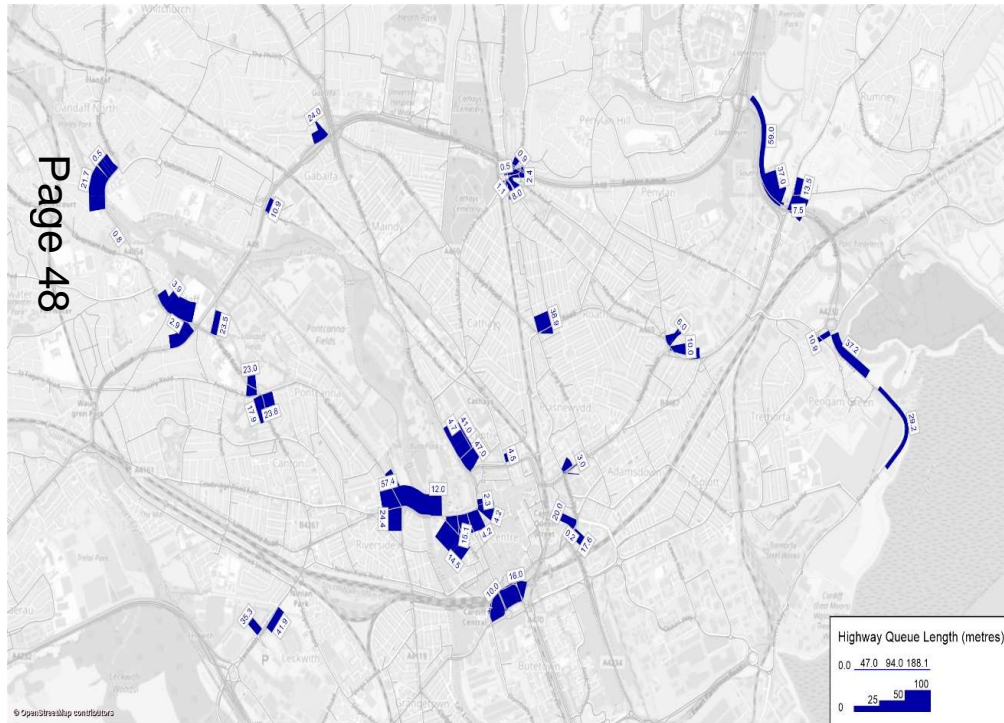
Time Period	Location	Volume (With Blocking Back)									Absolute Change									Percentage Change									
		DM			DS1			DS2			DS1 vs DM			DS2 vs DM			DS2 vs DS1			DS1 vs DM			DS2 vs DM			DS2 vs DS1			
		Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car
AM	A4232 Leckwith Northbound	626	130	26	632	127	31	647	118	32	6	-3	5	21	-12	6	15	-9	1	1%	-2%	19%	3%	-9%	23%	2%	-7%	3%	
	A4232 Leckwith Southbound	2327	218	19	2626	273	29	2657	299	32	299	55	10	330	81	13	31	26	3	13%	25%	53%	14%	37%	68%	1%	10%	10%	
	A48 Taff Crossing Eastbound	2061	199	86	2154	217	111	2164	204	116	93	18	25	103	5	30	10	-13	5	5%	9%	29%	5%	3%	35%	0%	-6%	5%	
	A48 Taff Crossing Westbound	1878	252	106	1899	270	109	1917	252	105	21	18	3	39	0	-1	18	-18	-4	1%	7%	3%	2%	0%	-1%	1%	-7%	-4%	
	Boulevard De Nantes Eastbound	1079	67	35	117	22	3	33	0	0	-962	-45	-32	-1046	-67	-35	-84	-22	-3	-89%	-67%	-91%	-97%	-100%	-100%	-72%	-100%	-100%	
	Boulevard De Nantes Westbound	649	73	22	468	61	32	321	150	52	-181	-12	10	-328	77	30	-147	89	20	-28%	-16%	45%	-51%	105%	136%	-31%	146%	63%	
	Bute Terrace (West of Mary Ann St) Eastbound	366	26	18	340	19	9	345	25	11	-26	-7	-9	-21	-1	-7	5	6	2	-7%	-27%	-50%	-6%	-4%	-39%	1%	32%	22%	
	Bute Terrace (West of Mary Ann St) Westbound	632	68	47	425	63	45	424	58	43	-207	-5	-2	-208	-10	-4	-1	-5	-2	-33%	-7%	-4%	-33%	-15%	-9%	0%	-8%	-4%	
	Caste St (Cathedral St to Westgate St) Eastbound	1117	101	57	322	42	4	172	5	0	-795	-59	-53	-945	-96	-57	-150	-37	-4	-71%	-58%	-93%	-85%	-95%	-100%	-47%	-88%	-100%	
	Caste St (Cathedral St to Westgate St) Westbound	299	63	16	156	28	9	194	79	33	-143	-35	-7	-105	16	17	38	51	24	-48%	-56%	-44%	-35%	25%	106%	24%	182%	267%	
	Castle St Eastbound	1259	100	73	288	32	15	0	0	0	-971	-68	-58	-1259	-100	-73	-288	-32	-15	-77%	-68%	-79%	-100%	-100%	-100%	-100%	-100%	-100%	
	Castle St Westbound	849	98	26	365	45	10	0	132	30	-484	-53	-16	-849	34	4	-365	87	20	-57%	-54%	-62%	-100%	35%	15%	-100%	193%	200%	
	Cathedral Road Northbound	379	47	27	41	10	3	77	21	18	-338	-37	-24	-302	-26	-9	36	11	15	-89%	-79%	-89%	-80%	-55%	-33%	88%	110%	500%	
	Cathedral Road Southbound	374	37	9	51	11	1	92	3	0	-323	-26	-8	-282	-34	-9	41	-8	-1	-86%	-70%	-89%	-75%	-92%	-100%	80%	-73%	-100%	
	Lower Cathedral Road Northbound	486	61	48	39	16	1	53	2	0	-447	-45	-47	-433	-59	-48	14	-14	-1	-92%	-74%	-98%	-89%	-97%	-100%	36%	-88%	-100%	
	Lower Cathedral Road Southbound	241	54	11	53	12	2	68	45	6	-188	-42	-9	-173	-9	-5	15	33	4	-78%	-78%	-82%	-72%	-17%	-45%	28%	275%	200%	
	North Road Northbound	710	75	85	173	32	50	93	40	30	-537	-43	-35	-617	-35	-55	-80	8	-20	-76%	-57%	-41%	-87%	-47%	-65%	-46%	25%	-40%	
	North Road Southbound	1505	121	52	337	29	6	203	40	7	-1168	-92	-46	-1302	-81	-45	-134	11	1	-78%	-76%	-88%	-87%	-67%	-87%	-40%	38%	17%	
	St Mary St (adj to Wood St) Northbound	447	20	8	332	20	6	347	17	8	-115	0	-2	-100	-3	0	15	-3	2	-26%	0%	-25%	-22%	-15%	0%	5%	-15%	33%	
	St Mary St (adj to Wood St) Southbound	275	16	3	207	11	4	147	19	5	-68	-5	1	-128	3	2	-60	8	1	-25%	-31%	33%	-47%	19%	67%	-29%	73%	25%	
Westgate St Northbound	560	38	15	133	16	9	95	18	10	-427	-22	-6	-465	-20	-5	-38	2	1	-76%	-58%	-40%	-83%	-53%	-33%	-29%	13%	11%		
Westgate St Southbound	289	17	5	206	29	5	101	44	7	-83	12	0	-188	27	2	-105	15	2	-29%	71%	0%	-65%	159%	40%	-51%	52%	40%		

Time Period	Location	Volume (With Blocking Back)									Absolute Change									Percentage Change									
		DM			DS1			DS2			DS1 vs DM			DS2 vs DM			DS2 vs DS1			DS1 vs DM			DS2 vs DM			DS2 vs DS1			
		Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car
IP	A4232 Leckwith Northbound	728	168	32	739	196	35	769	191	36	11	28	3	41	23	4	30	-5	1	2%	17%	9%	6%	14%	13%	4%	-3%	3%	
	A4232 Leckwith Southbound	918	204	28	981	218	29	1026	237	32	63	14	1	108	33	4	45	19	3	7%	7%	4%	12%	16%	14%	5%	9%	10%	
	A48 Taff Crossing Eastbound	1453	186	76	1587	197	81	1726	223	89	134	11	5	273	37	13	139	26	8	9%	6%	7%	19%	20%	17%	9%	13%	10%	
	A48 Taff Crossing Westbound	1443	173	70	1449	181	72	1604	213	80	6	8	2	161	40	10	155	32	8	0%	5%	3%	11%	23%	14%	11%	18%	11%	
	Boulevard De Nantes Eastbound	572	86	23	323	67	21	210	41	19	-249	-19	-2	-362	-45	-4	-113	-26	-2	-44%	-22%	-9%	-63%	-52%	-17%	-35%	-39%	-10%	
	Boulevard De Nantes Westbound	683	101	24	346	69	19	244	41	19	-337	-32	-5	-439	-60	-5	-102	-28	0	-49%	-32%	-21%	-64%	-59%	-21%	-29%	-41%	0%	
	Bute Terrace (West of Mary Ann St) Eastbound	458	48	17	346	35	11	370	45	11	-112	-13	-6	-88	-3	-6	24	10	0	-24%	-27%	-35%	-19%	-6%	-35%	7%	29%	0%	
	Bute Terrace (West of Mary Ann St) Westbound	500	98	35	476	97	35	515	112	39	-24	-1	0	15	14	4	39	15	4	-5%	-1%	0%	3%	14%	11%	8%	15%	11%	
	Caste St (Cathedral St to Westgate St) Eastbound	724	86	28	567	72	19	303	38	13	-157	-14	-9	-421	-48	-15	-264	-34	-6	-22%	-16%	-32%	-58%	-56%	-54%	-47%	-47%	-32%	
	Caste St (Cathedral St to Westgate St) Westbound	515	83	16	527	82	15	406	55	15	12	-1	-1	-109	-28	-1	-121	-27	0	2%	-1%	-6%	-21%	-34%	-6%	-23%	-33%	0%	
	Castle St Eastbound	823	96	33	585	83	23	0	0	0	-238	-13	-10	-823	-96	-33	-585	-83	-23	-29%	-14%	-30%	-100%	-100%	-100%	-100%	-100%	-100%	
	Castle St Westbound	845	108	26	672	99	22	0	0	0	-173	-9	-4	-845	-108	-26	-672	-99	-22	-20%	-8%	-15%	-100%	-100%	-100%	-100%	-100%	-100%	
	Cathedral Road Northbound	414	63	23	460	68	28	458	76	36	46	5	5	44	13	13	-2	8	8	11%	8%	22%	11%	21%	57%	0%	12%	29%	
	Cathedral Road Southbound	267	44	12	247	45	13	223	47	21	-20	1	1	-44	3	9	-24	2	8	-7%	2%	8%	-16%	7%	75%	-10%	4%	62%	
	Lower Cathedral Road Northbound	404	78	31	476	79	35	340	68	28	72	1	4	-64	-10	-3	-136	-11	-7	18%	1%	13%	-16%	-13%	-10%	-29%	-14%	-20%	
	Lower Cathedral Road Southbound	235	70	17	344	75	17	242	54	14	109	5	0	7	-16	-3	-102	-21	-3	46%	7%	0%	3%	-23%	-18%	-30%	-28%	-18%	
	North Road Northbound	784	90	52	657	83	41	219	37	19	-127	-7	-11	-565	-53	-33	-438	-46	-22	-16%	-8%	-21%	-72%	-59%	-63%	-67%	-55%	-54%	
	North Road Southbound	814	92	38	800	91	37	392	57	24	-14	-1	-1	-422	-35	-14	-408	-34	-13	-2%	-1%	-3%	-52%	-38%	-37%	-51%	-37%	-35%	
	St Mary St (adj to Wood St) Northbound	266	41	5	230	36	3	226	44	4	-36	-5	-2	-40	3	-1	-4	8	1	-14%	-12%	-40%	-15%	7%	-20%	-2%	22%	33%	
	St Mary St (adj to Wood St) Southbound	259	26	1	211	21	1	181	36	2	-48	-5	0	-78	10	1	-30	15	1	-19%	-19%	0%	-30%	38%	100%	-14%	71%	100%	
Westgate St Northbound	431	31	10	200	28	7	133	30	7	-231	-3	-3	-298	-1	-3	-67	2	0	-54%	-10%	-30%	-69%	-3%	-30%	-34%	7%	0%		
Westgate St Southbound	291	16	6	203	27	8	113	24	7	-88	11	2	-178	8	1	-90	-3	-1	-30%	69%	33%	-61%	50%	17%	-44%	-11%	-13%		

Time Period	Location	Volume (With Blocking Back)									Absolute Change									Percentage Change								
		DM			DS1			DS2			DS1 vs DM			DS2 vs DM			DS2 vs DS1			DS1 vs DM			DS2 vs DM			DS2 vs DS1		
		Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV	Car	LGV	HGV
PM	A4232 Leckwith Northbound	2217	244	12	2269	252	13	2279	256	13	52	8	1	62	12	1	10	4	0	2%	3%	8%	3%	5%	8%	0%	2%	0%
	A4232 Leckwith Southbound	966	96	12	1093	109	15	1180	116	15	127	13	3	214	20	3	87	7	0	13%	14%	25%	22%	21%	25%	8%	6%	0%
	A48 Taff Crossing Eastbound	1891	235	47	1974	228	55	2021	220	59	83	-7	8	130	-15	12	47	-8	4	4%	-3%	17%	7%	-6%	26%	2%	-4%	7%
	A48 Taff Crossing Westbound	1952	186	42	2042	205	44	2018	212	47	90	19	2	66	26	5	-24	7	3	5%	10%	5%	3%	14%	12%	-1%	3%	7%
	Boulevard De Nantes Eastbound	581	51	18	187	13	2	33	0	0	-394	-38	-16	-548	-51	-18	-154	-13	-2	-68%	-75%	-89%	-94%	-100%	-100%	-82%	-100%	-100%
	Boulevard De Nantes Westbound	900	81	8	609	44	4	507	60	17	-291	-37	-4	-393	-21	9	-102	16	13	-32%	-46%	-50%	-44%	-26%	113%	-17%	36%	325%
	Bute Terrace (West of Mary Ann St) Eastbound	541	52	27	448	56	12	457	61	13	-93	4	-15	-84	9	-14	9	5	1	-17%	8%	-56%	-16%	17%	-52%	2%	9%	8%
	Bute Terrace (West of Mary Ann St) Westbound	689	68	32	677	64	32	653	74	33	-12	-4	0	-36	6	1	-24	10	1	-2%	-6%	0%	-5%	9%	3%	-4%	16%	3%
	Caste St (Cathedral St to Westgate St) Eastbound	956	73	24	570	40	8	159	12	5	-386	-33	-16	-797	-61	-19	-411	-28	-3	-40%	-45%	-67%	-83%	-84%	-79%	-72%	-70%	-38%
	Caste St (Cathedral St to Westgate St) Westbound	801	66	9	432	34	5	375	39	9	-369	-32	-4	-426	-27	0	-57	5	4	-46%	-48%	-44%	-53%	-41%	0%	-13%	15%	80%
	Castle St Eastbound	1151	91	29	533	48	9	0	0	0	-618	-43	-20	-1151	-91	-29	-533	-48	-9	-54%	-47%	-69%	-100%	-100%	-100%	-100%	-100%	-100%
	Castle St Westbound	1038	79	14	514	44	7	0	0	0	0	-35	-7	-1038	-79	-14	-514	-44	-7	-50%	-44%	-50%	-100%	-100%	-100%	-100%	-100%	-100%
	Cathedral Road Northbound	439	24	9	406	24	8	303	30	7	-33	0	-1	-136	6	-2	-103	6	-1	-8%	0%	-11%	-31%	25%	-22%	-25%	25%	-13%
	Cathedral Road Southbound	298	23	6	303	31	7	123	28	8	5	8	1	-175	5	2	-180	-3	1	2%	35%	17%	-59%	22%	33%	-59%	-10%	14%
	Lower Cathedral Road Northbound	430	56	23	431	38	11	190	19	3	1	-18	-12	-240	-37	-20	-241	-19	-8	0%	-32%	-52%	-56%	-66%	-87%	-56%	-50%	-73%
	Lower Cathedral Road Southbound	401	46	8	259	39	7	203	35	7	-142	-7	-1	-198	-11	-1	-56	-4	0	-35%	-15%	-13%	-49%	-24%	-13%	-22%	-10%	0%
	North Road Northbound	1510	133	35	942	71	12	466	57	17	-568	-62	-23	-1044	-76	-18	-476	-14	5	-38%	-47%	-66%	-69%	-57%	-51%	-51%	-20%	42%
	North Road Southbound	878	67	26	153	5	4	121	3	2	-725	-62	-22	-757	-64	-24	-32	-2	-2	-83%	-93%	-85%	-86%	-96%	-92%	-21%	-40%	-50%
	St Mary St (adj to Wood St) Northbound	370	12	3	308	4	1	285	21	3	-62	-8	-2	-85	9	0	-23	17	2	-17%	-67%	-67%	-23%	75%	0%	-7%	425%	200%
	St Mary St (adj to Wood St) Southbound	316	7	1	259	3	3	253	7	3	-57	-4	2	-63	0	2	-6	4	0	-18%	-57%	200%	-20%	0%	200%	-2%	133%	0%
Westgate St Northbound	401	21	6	162	17	4	155	21	5	-239	-4	-2	-246	0	-1	-7	4	1	-60%	-19%	-33%	-61%	0%	-17%	-4%	24%	25%	
Westgate St Southbound	254	11	4	140	15	3	73	12	3	-114	4	-1	-181	1	-1	-67	-3	0	-45%	36%	-25%	-71%	9%	-25%	-48%	-20%	0%	
OP	A4232 Leckwith Northbound	196	48	7	210	49	7	215	50	7	14	1	0	19	2	0	5	1	0	7%	2%	0%	10%	4%	0%	2%	2%	0%
	A4232 Leckwith Southbound	266	47	6	278	48	7	286	52	7	12	1	1	20	5	1	8	4	0	5%	2%	17%	8%	11%	17%	3%	8%	0%
	A48 Taff Crossing Eastbound	436	61	25	497	65	29	565	80	32	61	4	4	129	19	7	68	15	3	14%	7%	16%	30%	31%	28%	14%	23%	10%
	A48 Taff Crossing Westbound	423	51	22	458	57	22	541	69	26	35	6	0	118	18	4	83	12	4	8%	12%	0%	28%	35%	18%	18%	21%	18%
	Boulevard De Nantes Eastbound	211	39	10	121	21	7	70	10	6	-90	-18	-3	-141	-29	-4	-51	-11	-1	-43%	-46%	-30%	-67%	-74%	-40%	-42%	-52%	-14%
	Boulevard De Nantes Westbound	252	29	7	139	22	5	105	13	5	-113	-7	-2	-147	-16	-2	-34	-9	0	-45%	-24%	-29%	-58%	-55%	-29%	-24%	-41%	0%
	Bute Terrace (West of Mary Ann St) Eastbound	112	11	5	131	16	6	142	18	6	19	5	1	30	7	1	11	2	0	17%	45%	20%	27%	64%	20%	8%	13%	0%
	Bute Terrace (West of Mary Ann St) Westbound	182	44	16	144	34	15	171	41	16	-38	-10	-1	-11	-3	0	27	7	1	-21%	-23%	-6%	-6%	-7%	0%	19%	21%	7%
	Caste St (Cathedral St to Westgate St) Eastbound	195	25	11	164	24	9	136	15	5	-31	-1	-2	-59	-10	-6	-28	-9	-4	-16%	-4%	-18%	-30%	-40%	-55%	-17%	-38%	-44%
	Caste St (Cathedral St to Westgate St) Westbound	279	41	10	200	27	7	123	16	5	-79	-14	-3	-156	-25	-5	-77	-11	-2	-28%	-34%	-30%	-56%	-61%	-50%	-39%	-41%	-29%
	Castle St Eastbound	341	47	20	194	30	12	0	0	0	-147	-17	-8	-341	-47	-20	-194	-30	-12	-43%	-36%	-40%	-100%	-100%	-100%	-100%	-100%	-100%
	Castle St Westbound	329	38	13	247	31	11	0	0	0	-82	-7	-2	-329	-38	-13	-247	-31	-11	-25%	-18%	-15%	-100%	-100%	-100%	-100%	-100%	-100%
	Cathedral Road Northbound	127	18	4	145	19	5	170	27	10	18	1	1	43	9	6	25	8	5	14%	6%	25%	34%	50%	150%	17%	42%	100%
	Cathedral Road Southbound	87	11	3	76	12	3	130	18	7	-11	1	0	43	7	4	54	6	4	-13%	9%	0%	49%	64%	133%	71%	50%	133%
	Lower Cathedral Road Northbound	110	19	10	161	26	10	145	26	8	51	7	0	35	7	-2	-16	0	-2	46%	37%	0%	32%	37%	-20%	-10%	0%	-20%
	Lower Cathedral Road Southbound	128	23	7	140	23	6	103	19	5	12	0	-1	-25	-4	-2	-37	-4	-1	9%	0%	-14%	-20%	-17%	-29%	-26%	-17%	-17%
	North Road Northbound	335	39	23	202	29	17	61	10	5	-133	-10	-6	-274	-29	-18	-141	-19	-12	-40%	-26%	-26%	-82%	-74%	-78%	-70%	-66%	-71%
	North Road Southbound	339	42	18	288	30	17	133	14	9	-51	-12	-1	-206	-28	-9	-155	-16	-8	-15%	-29%	-6%	-61%	-67%	-50%	-54%	-53%	-47%
	St Mary St (adj to Wood St) Northbound	169	29	6	79	14	1	98	20	2	-90	-15	-5	-71	-9	-4	-19	6	1	-53%	-52%	-83%	-42%	-31%	-67%	-24%	43%	100%
	St Mary St (adj to Wood St) Southbound	82	9	0	67	9	0	77	13	1	-15	0	0	-5	4	1	10	4	1	-18%	0%	-	-6%	44%	-	15%	44%	-
Westgate St Northbound	206	31	8	61	9	2	43	9	2	-145	-22	-6	-163	-22	-6	-18	0	0	-70%	-71%	-75%	-79%	-71%	-75%	-30%	0%	0%	
Westgate St Southbound	96	8	2	64	8	2	48	8	2	-32	0	0	-48	0	0	-16	0	0	-33%	0%	0%	-50%	0%	0%	-25%	0%	0%	

Figure 3 am Queue Lengths

Option 1 Clean Air Scheme am Queue Lengths



Option 2– Bus Gate am Queue Lengths

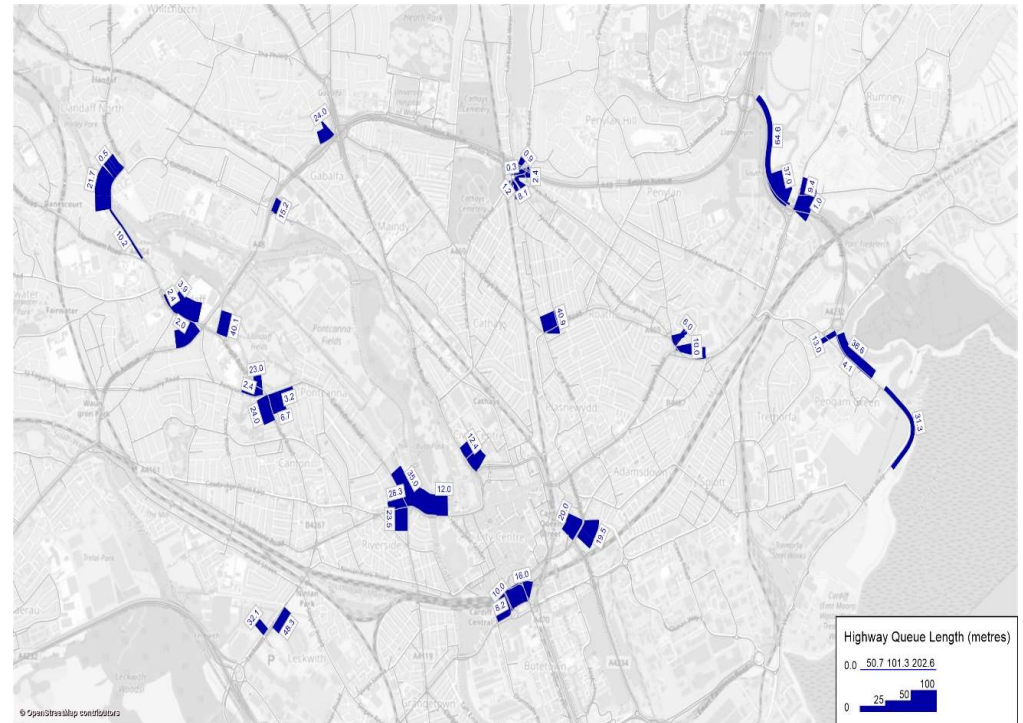
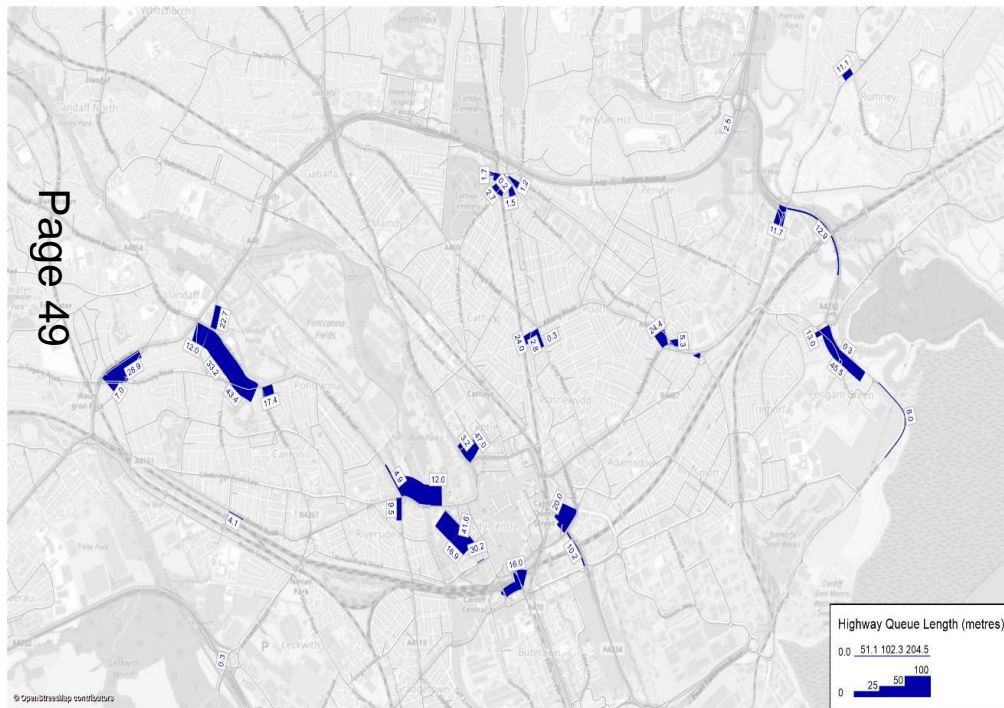


Figure 4 pm Queue Lengths

Option 1 Clean Air Scheme pm Queue Lengths



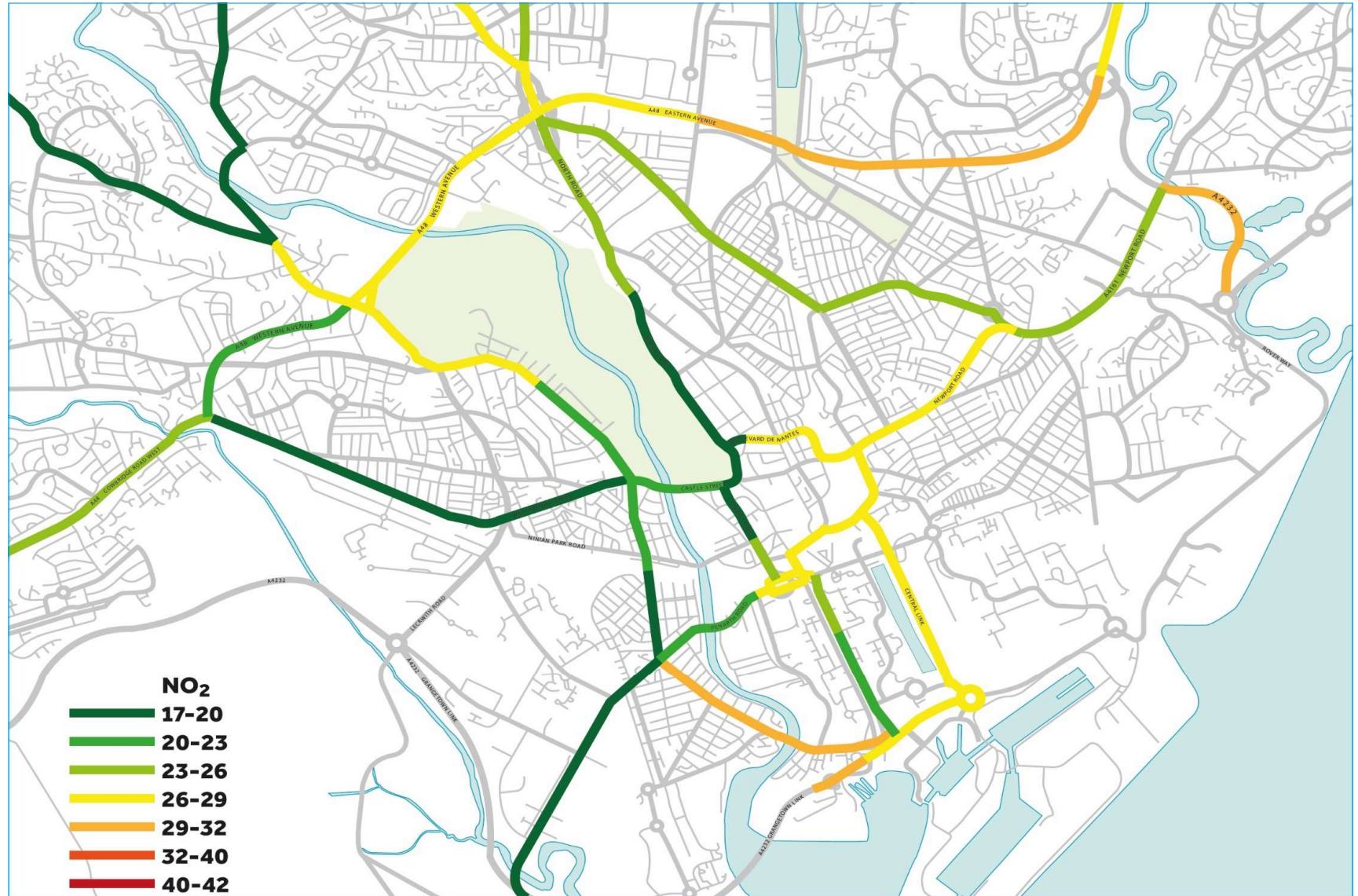
Option 2– Bus Gate pm Queue Lengths



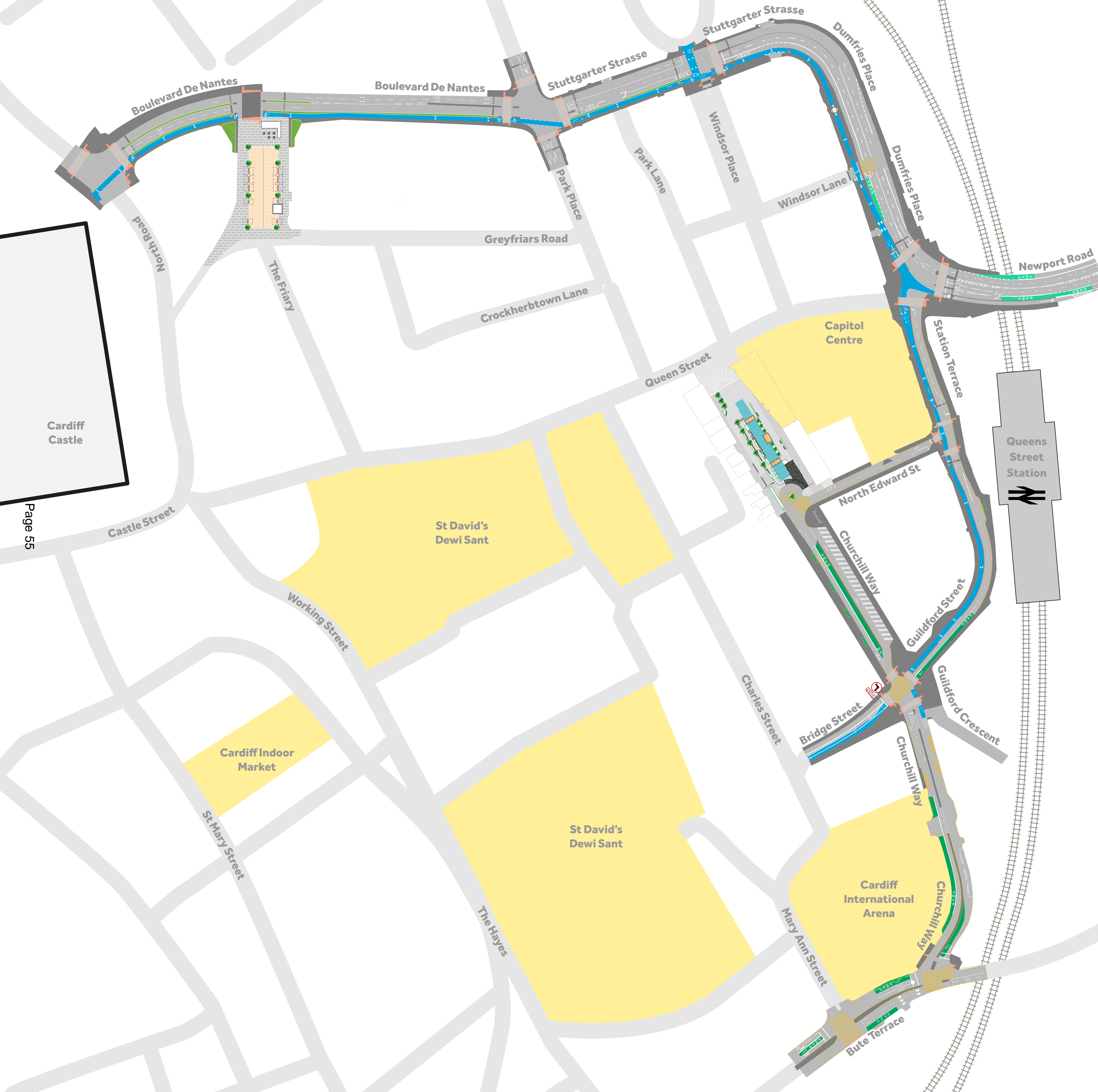
Air Quality Data

CensusID	Zone code	Reportin g Zone Name	Road Name	LA Name	Local Baseline							VDM	
					2015	2016	2017	2018	2019	2020	2021	Option 1	Option 2
30660	26	Cardiff Urt A4119	Cardiff City Council	Cardiff City Council	37.1	36.0	34.9	33.9	32.8	31.8	30.7	30.9	31.2
10629	26	Cardiff Urt A4054	Cardiff City Council	Cardiff City Council	25.3	24.3	23.4	22.4	21.4	20.5	19.5	18.1	18.3
50647	26	Cardiff Urt A4119	Cardiff City Council	Cardiff City Council	34.4	32.7	31.0	29.4	27.7	26.0	24.4	22.5	22.5
10660	26	Cardiff Urt A4161	Cardiff City Council	Cardiff City Council	34.9	33.4	32.0	30.5	29.1	27.6	26.2	25.8	26.0
522	26	Cardiff Urt A48	Cardiff City Council	Cardiff City Council	32.9	31.6	30.4	29.2	27.9	26.7	25.4	25.0	25.3
30659	41	South Wa A4119	Cardiff City Council	Cardiff City Council	23.8	23.0	22.2	21.3	20.5	19.6	18.8	18.0	18.2
77018	26	Cardiff Urt A470	Cardiff City Council	Cardiff City Council	45.4	42.9	40.5	38.0	35.5	33.0	30.6	24.1	24.8
99955	26	Cardiff Urt A4160	Cardiff City Council	Cardiff City Council	36.7	35.1	33.5	31.8	30.2	28.5	26.9	26.9	27.2
50660	26	Cardiff Urt A4161	Cardiff City Council	Cardiff City Council	42.2	40.3	38.4	36.5	34.6	32.7	30.8	22.6	18.9
70055	26	Cardiff Urt A4161	Cardiff City Council	Cardiff City Council	43.9	41.7	39.4	37.1	34.9	32.6	30.4	26.4	26.4
99671	26	Cardiff Urt A469	Cardiff City Council	Cardiff City Council	27.2	26.2	25.3	24.4	23.4	22.5	21.5	20.3	20.4
10659	26	Cardiff Urt A4160	Cardiff City Council	Cardiff City Council	30.4	29.3	28.2	27.0	25.9	24.8	23.7	22.3	23.0
10655	26	Cardiff Urt A4119	Cardiff City Council	Cardiff City Council	36.6	35.4	34.1	32.8	31.6	30.3	29.0	27.0	27.5
80898	26	Cardiff Urt A4232	Cardiff City Council	Cardiff City Council	34.3	33.5	32.7	31.9	31.1	30.3	29.5	29.5	30.0
20527	26	Cardiff Urt A48	Cardiff City Council	Cardiff City Council	40.0	38.4	36.9	35.3	33.7	32.2	30.6	31.7	31.8
40655	26	Cardiff Urt A4160	Cardiff City Council	Cardiff City Council	24.2	23.4	22.6	21.7	20.9	20.1	19.3	18.4	19.1
50580	26	Cardiff Urt A469	Cardiff City Council	Cardiff City Council	33.0	31.8	30.6	29.4	28.2	27.0	25.8	24.9	25.3
50657	26	Cardiff Urt A4161	Cardiff City Council	Cardiff City Council	26.5	25.5	24.4	23.4	22.4	21.4	20.3	19.4	19.5
10661	26	Cardiff Urt A4161	Cardiff City Council	Cardiff City Council	26.6	25.6	24.5	23.4	22.3	21.3	20.2	19.5	19.7
10527	26	Cardiff Urt A48	Cardiff City Council	Cardiff City Council	29.4	28.3	27.2	26.1	24.9	23.8	22.7	22.1	22.4
40582	26	Cardiff Urt A469	Cardiff City Council	Cardiff City Council	32.2	30.9	29.7	28.4	27.2	25.9	24.7	25.2	25.2
50651	41	South Wa A4119	Cardiff City Council	Cardiff City Council	31.6	30.4	29.2	28.0	26.9	25.7	24.5	25.3	26.5
40656	26	Cardiff Urt A4161	Cardiff City Council	Cardiff City Council	43.7	41.4	39.0	36.6	34.3	31.9	29.6	27.8	27.9
40549	26	Cardiff Urt A470	Cardiff City Council	Cardiff City Council	38.1	36.3	34.6	32.8	31.1	29.3	27.6	24.2	23.9
50527	26	Cardiff Urt A48	Cardiff City Council	Cardiff City Council	37.1	35.7	34.3	32.9	31.5	30.2	28.8	28.0	28.6
642	26	Cardiff Urt A4160	Cardiff City Council	Cardiff City Council	40.0	38.1	36.2	34.4	32.5	30.7	28.8	27.9	28.8
80899	26	Cardiff Urt A4232	Cardiff City Council	Cardiff City Council	32.1	31.3	30.6	29.8	29.0	28.3	27.5	27.6	27.9
99960	41	South Wa A4055	Cardiff City Council	Cardiff City Council	31.4	30.4	29.5	28.5	27.5	26.5	25.5	24.7	25.0
50541	26	Cardiff Urt A470	Cardiff City Council	Cardiff City Council	37.3	35.9	34.5	33.2	31.8	30.5	29.1	27.7	27.8
20548	26	Cardiff Urt A470	Cardiff City Council	Cardiff City Council	41.3	39.4	37.6	35.7	33.8	31.9	30.0	22.1	18.5
50524	41	South Wa A48	Cardiff City Council	Cardiff City Council	36.4	35.0	33.6	32.1	30.7	29.3	27.9	27.3	27.5
74101	26	Cardiff Urt A4232	Cardiff City Council	Cardiff City Council	30.1	29.2	28.3	27.4	26.5	25.6	24.8	24.1	24.4
638	26	Cardiff Urt A4119	Cardiff City Council	Cardiff City Council	28.8	27.7	26.6	25.6	24.5	23.4	22.3	19.9	19.6
30665	41	South Wa A4161	Cardiff City Council	Cardiff City Council	55.7	53.2	50.8	48.4	46.0	43.5	41.1	28.4	20.2
73233	41	South Wa A4055	Cardiff City Council	Cardiff City Council	31.6	30.4	29.3	28.1	26.9	25.7	24.5	23.4	23.7
99956	26	Cardiff Urt A4234	Cardiff City Council	Cardiff City Council	38.2	36.2	34.2	32.3	30.3	28.3	26.3	27.3	27.7
78439	26	Cardiff Urt A4232	Cardiff City Council	Cardiff City Council	21.7	21.0	20.3	19.6	18.9	18.2	17.5	17.2	17.3
70056	41	South Wa A4232	Cardiff City Council	Cardiff City Council	35.3	34.2	33.2	32.1	31.0	30.0	28.9	29.0	29.4
73232	26	Cardiff Urt A4160	Cardiff City Council	Cardiff City Council	21.0	20.6	20.1	19.6	19.1	18.6	18.1	18.0	18.2
80896	26	Cardiff Urt A470	Cardiff City Council	Cardiff City Council	26.9	26.0	25.2	24.3	23.5	22.6	21.8	22.1	22.4
80726	26	Cardiff Urt A470	Cardiff City Council	Cardiff City Council	34.8	33.2	31.6	30.0	28.4	26.8	25.2	19.5	19.9
78435	41	South Wa A4050	Cardiff City Council	Cardiff City Council	32.5	31.2	30.0	28.7	27.5	26.3	25.0	24.8	25.0

Option 1 – Modelled Air Quality Concentrations for NO₂



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Boulevard De Nantes

Boulevard De Nantes

Stuttgarter Strasse

Stuttgarter Strasse

Dumfries Place

North Road

The Friary

Greyfriars Road

Crockherbtown Lane

Park Lane

Windsor Place

Windsor Lane

Dumfries Place

Newport Road

Cardiff Castle

Page 55

Castle Street

St David's Dewi Sant

Queen Street

Capitol Centre

Queens Street Station

Working Street

North Edward St

Churchill Way

Guildford Street

Cardiff Indoor Market

St Mary Street

St David's Dewi Sant

Charles Street

Bridge Street

Churchill Way

Guildford Crescent

The Hayes

Cardiff International Arena

Mary Ann Street

Churchill Way

Bute Terrace

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By virtue of paragraph(s) 14, 21 of Part(s) 4 and 5 of Schedule 12A of the Local Government Act 1972.

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