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BY SUBMITTING THIS REPORT TO THE CABINET OFFICE, I, (ANDREW GREGORY) (DIRECTOR PLANNING, TRANSPORT AND ENVIRONMENT) AM CONFIRMING THAT THE RELEVANT CABINET MEMBER(S) ARE BRIEFED ON THIS REPORT

CARDIFF COUNCIL
CYNGOR CAERDYDD

CABINET MEETING: 10 MARCH 2022

THE CARDIFF INTELLIGENT TRANSPORT SYSTEMS STRATEGY

CABINET PORTFOLIO:
TRANSPORT & STRATEGIC PLANNING (Councillor Wild)
AGENDA ITEM: TBC

Reason for this Report

1. Subject to minor amendments made in accordance with recommendation 3 to seek approval of the Draft Cardiff ITS (Intelligent Transport Systems) Strategy as set out in Appendix 1 and approval to go out to full public consultation on the Draft Cardiff ITS Strategy.

2. To seek approval to proceed with an outline business case to explore options for modernising the Council's Urban Traffic Control systems.

3. To delegate authority to the Director of Planning, Transport and Environment, subject to consultation with the Cabinet Member for Strategic Planning and Transport; to make minor amendments to and determine the final form and content of the Draft ITS Strategy and consultation questionnaire.

Background

4. Transport systems around the world are being transformed by the systematic use of innovative digital technology to significantly enhance the user experience, convenience and transport efficiency by facilitating the integration of rail, bus, bike and car usage. Such systems can enable single cost-effective journeys and ticketing to be offered aiding more convenient and cost-effective travel decisions. By offering real-time information on apps and personal mobile devices this new technology will offer major benefits in terms of responsiveness

and accessibility for transport users. New systems on the market will soon enable more efficient management and operation of the network and integration with emerging vehicle technology and so-called 'Mobility as a Service' (MaaS) – fine-grained alignment of public transport services with user requirements.

5. By integrating information technology applications into transport infrastructure, vehicles and directly communicating with the travelling public, transportation safety, mobility and environmental sustainability can also be significantly improved. In addition, it provides the opportunity to influence travel behaviour further through targeted incentives that could be developed with key stakeholders and partner organisations.

6. A further key catalyst for the need to bring this strategy forward is the imminent opening of the new city centre Transport Interchange (Bus Station) in 2023. This will dramatically enhance the public transport infrastructure in the city as a whole. However, to take full advantage of this new facility we need to ensure that the wider network and public transport integration is effective and aligned with this technology and data driven approach.

7. Advanced comparator cities in UK and Europe are moving proactively forward with this new technology and Cardiff needs to be fully engaged to take advantage of these critical opportunities.

8. The first key step in this process is to map out and develop the future smart infrastructure network across the city. At the centre of the network is the UTC Control room. Currently located in Cardiff County Hall, outline work has already started to map out the potential functionality needed in a new or enhanced facility. There exists the potential for co-location and co-working with a range of internal and external services and partners. A considered outline business case is urgently needed to fully identify an ambitious, yet achievable, way forward that can be appropriately funded in a phased manner.

9. In addition, it is also important to understand how the development of this ITS Strategy underpins the effective delivery of a range of core Council policies. The Cardiff *Transport White Paper: Transport Vision to 2030* set out an ambitious vision for transport that commits to deliver a greener, healthier, less congested city, with an affordable public transport system that works for everyone over the next 10 years enabled by long-term investment to manage growth and the environment. The following targets have been set to be achieved by 2030 within the Transport White Paper and *One Planet Cardiff*:

    - Make **76%** of all journeys by sustainable travel modes
    - **Double** the numbers cycling
    - **Double** the numbers travelling by bus
    - Become a **Carbon Neutral City by 2030**

10. The Council will seek to work jointly with the Welsh Government and Transport for Wales on the integrated ticketing app and the provision of more reliable journey times through a smart corridor approach and better coordinated timetabling of bus services.

11. There are also wider opportunities to be explored within Cardiff's draft *SMART City Roadmap that was presented to Cabinet in December 2019* to help address the challenges in growth, public services, mobility, energy, economy and environment as the roadmap develops.

12. *One Planet Cardiff* in October of 2020 includes an aspiration for Cardiff to become carbon neutral by 2030; the need for safe and healthy communities; establishing Cardiff as a 'city for everyone'; managing growth (in line with the *Local Development Plan*); tackling congestion and supporting business; and the need for a forward vision in transport to 2030 and beyond. Within this, Cardiff sets out the challenges ahead in responding to the emerging climate emergency and addressing poor air quality.

13. On a national policy level: *Llwybr Newydd: The Wales Transport Strategy 2021* includes a priority over the next five years to enhance the Intelligent Transport System to improve real-time and open-source information for users and developers. It is also identified as a priority needed to achieve the Well-being ambitions by 2040 in support of the economy and places in Wales.

14. *Digital Strategy for Wales, 2021* sets out a "…*national vision for jointly adopting a digital approach across Wales…to ensure people in Wales experience modern and efficient public services supported by good, ethical, use of data*". To support this vision, it sets out six missions, namely: Digital services; Digital inclusion; Digital skills; Digital economy; Digital connectivity; and Data and Collaboration.

15. Regarding the transition to smart transport, it is important to highlight that Cardiff has already made significant progress. It was a leading player in the early adoption and deployment of ITS, with the Urban Traffic Control (UTC) Room being a central component. The key functions managed by the UTC Control Room are:

- Traffic Signals (signalised junctions and crossings)
- CCTV Cameras
- Bus Real-Time Passenger Information (RTPI)
- Access Control (rising bollards)
- Variable Message Signs (VMS)
- Rotating Plank Signs (RPS)
- Network Incident Management
- Butetown Tunnels
- North Road Tidal Flow

16. Additional ITS functions that currently reside outside of the UTC Control Room but are embedded in Council services include:
- OVO Bikes (Nextbike) Cycle Hire
- Smart Parking
- Enforcement
- Air Quality Monitoring
- Active Travel Monitoring

- Interactive City LED Lighting

17. However, despite this progress, in recent years the city has fallen behind many of its key competitors with some of the UTC Control Room systems and assets becoming potentially outdated, increasingly inefficient and costly to maintain. From 2018 to 2020, the Council commissioned studies and published key documents supporting the need for investment in ITS:

- Network Management Review, July of 2018
- Engagement with and commissioning of industry experts in 2019.
- Cardiff Smart City Roadmap, Dec 2019.

18. The key conclusions of this study work identified that transformational improvements are needed to ensure that the ITS provision in Cardiff can effectively deliver its ambitions.

The Issues

19. The scale of the transport task facing Cardiff has already been presented in the ten-year vision of the Transport White Paper (2019). Furthermore, there is the need to mitigate the significant health, economic and social impacts of the preventable road safety and air quality implications of congested streets and the wider network. These detailed challenges include:

- **100,000** commuter trips travelling into Cardiff each day (*Annual Population Survey*)
- **300,000** vehicle movements crossing Cardiff's boundary (2-way) each day (*Southeast Wales Transport Commission*)
- **1 million** vehicle trips on Cardiff's network each day (*Southeast Wales Transport Model*)
- **138 hours** per driver in Cardiff was lost in congestion during rush hours in 2019, an increase of **8%** from 2018 (*TomTom Traffic Index*)
- **£109 million** annual cost of congestion to the Cardiff economy (*INRIX Traffic Scorecard*)
- **143** annual equivalent deaths from poor air quality (Cardiff and Vale University Health Board area).

20. As a result of these impacts, resident satisfaction with the Cardiff transport system is inevitably challenged in terms of bus journey times, cycling infrastructure and the overall quality and convenience of the transport experience.

21. In this context, ITS will enable better management of the transport network by providing a coordinating 'guiding mind' approach to transport movements of all modes around the city. Accurate measurements of network performance will enable the preparation of targeted strategies to improve journey times, safety and air quality and reduce congestion in cost effective ways. It will identify opportunities to remove congestion 'hot spots' and address 'stressed' areas of the network. It will provide a rich source of information for the development of business cases to improve transport and support funding bids.

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22. The co-ordinated, well-designed use of ITS will enable the saving of journey time, money and lives and deliver a safe, efficient transport environment. ITS is generally described as the integration of information and communications technology with transport infrastructure, vehicles and users. It uses an array of technologies together with real-time data from a multitude of sources to:

- Assess the current state of the transport network from real-time data.
- Inform decisions quickly and efficiently using accurate information.
- Provide innovative solutions to provide greater accessibility (e.g. MaaS).
- Help users to make effective decisions in planning their travel.
- Evaluate historical data, incidents and events to prepare network management strategies and improve transport performance.

Urban Traffic Control Room

23. A key first step of the Council's ITS vision involves the modernisation of the current Control Room both in terms of location and functionality. The UTC Control Room provides a critical oversight of transport movements on the main arterial routes and the city centre – enabling a rapid emergency response, for example, to accidents and incidents on the highway. More broadly, it provides a vital role in monitoring the City Centre using CCTV infrastructure providing an essential element in the management of the city particularly during major events.

24. The last wholesale upgrade of the Control Room took place more than a decade ago and enabled a transition from analogue to digital CCTV technologies. While the system has continued to function effectively, there is a need to consider whether a more fundamental upgrade is required utilising rapid advances in technology and in particular artificial intelligence and data analytics. The cost and technical issues related to ensuring fully digital/network connectivity and understanding the necessary technical capabilities of the Control Room in terms of the long-term need further consideration.

25. It is proposed that an outline business case should be commissioned to consider options for modernising the UTC systems and Control Room including *inter alia:*

a) Network communications connections and resilience
b) Space required to accommodate the expanding needs of the Control Room and scope for partnership working
c) Data storage requirements and security
d) Operational impact of the location of the Control Room
e) Provision of back-up/contingency facilities for emergencies
f) Transitional arrangements concerning relocation or redevelopment of the Control Room

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ITS Strategy Proposed Major Themes

26. Cardiff and the CCR (Cardiff Capital Region) requires a convenient, cost effective, fast and low carbon mass transit system enabled by ITS. The key objectives of the Strategy are:

- Ensuring sustainable transport is the most rapid, convenient cost-effective option for users and operators delivering the transport 10-year vision
- Tackle congestion and support business
- Fully address the Climate Emergency and Air Quality Agenda and deliver a low carbon network

27. Bringing together the scoping work that has been undertaken, as well as referencing UK best practice, the ITS Strategy proposes the following four stand-alone delivery themes:

THEME 1 (from 2022):
GROUNDWORK - Establish an Effective Infrastructure for Improved Management of the Network:

- Prepare a business case for a new UTC Control Room that will clearly define the costed programme to deliver the future UTC control room and wider smart network
- Roll out programme of upgrades to ITS Infrastructure and systems including the control room, signage, traffic signals, enforcement, parking and CCTV
- Establish working relationships and explore co-location opportunities with partner transport operators to better coordinate network operations, including event and incident management

THEME 2:
ENGAGING THE PUBLIC AND USERS - Implement City-wide transport communication and boost PUBLIC TRANSPORT Active Travel with ITS

- Develop a transport user (car/bus/cycle) app/website to better inform travel making decisions
- Improve transport provider access to user feedback and customer relations to engage with transport users to better inform sustainable travel interventions
- Use geographical and real-time data to understand the journey experience of users and where improvements are needed
- Explore opportunities to incentivise sustainable travel

THEME 3:
ESTABLISHING THE SMART TRANSPORT NETWORK - Implement Smart Corridors

- Identify ITS improvement opportunities to provide safer, more efficient journeys for walking, cycling and public transport

- Work with the Welsh Government and regional partners to improve the management of cross-boundary movements
- Develop and deliver a programme of network improvements that better utilise information technology to improve performance (e.g. prompt traffic signal response for pedestrians and cyclists, detectors for measuring queuing and journey times to inform drivers and improve network efficiency)

THEME 4 (2030):
FULLY INTEGRATED MASS TRANSIT SYSTEM – Enhanced use of Demand Management Technology

- Work in partnership with the Welsh Government and Transport for Wales to deliver integrated ticketing
- Explore opportunities to use existing and emerging demand management systems and technology to support an integrated mass transit network
- Expand Smart Parking to provide a fully integrated solution for efficient parking
- Explore Opportunities for Mobility as a Service (MAAS)

Consultation

28. Public consultation on the draft ITS Strategy in Appendix 1 is anticipated to be in the summer of 2022 and will be conducted online using the draft Consultation Questionnaire in Appendix 2. It will seek to consult widely and engage with difficult to reach groups.

29. The results of the consultation will be used as a framework against which to refine the draft strategy. The request for approval of the final ITS Strategy will be reported to Cabinet in the autumn of 2022.

30. Engagement with key internal stakeholders will be undertaken including Local Members.

31. Engagement with key external stakeholders will include (but will not be limited to): Welsh Government, South Wales Trunk Road Agency (SWTRA) / Traffic Wales, Transport for Wales (TfW), Cardiff Capital Region, Local Authorities, Bus Operators; South Wales Police, Freight Transport Association, Sustrans, FOR Cardiff, ITS and Innovation specialists, Active Travel User Groups, Public Transport User Groups, and Accessibility Groups.

Delivery

32. This report recommends undertaking a full public consultation in order to develop the Cardiff ITS Strategy, the costs for which will be funded from the PTE Directorate budget.

33. This report does not seek approval for funding at this time. Further business cases and approvals for funding will need to be developed in detail in support of funding bids.

34. Funding for ITS will be sought by considering a wide range of different delivery options, and by working closely with Welsh Government and other stakeholders and partners. In addition, the opportunity to establish working partnerships and commercialisation or licensing of data and services will be explored to realise further potential sources of revenue.

35. The ITS Strategy will involve a phased delivery to 2030. The phasing will complement currently on-going work-streams including provision of real-time information at bus stops and bus station integration; Smart Corridor pilots; Control Room system upgrades; enhanced enforcement activities utilising smart technologies; and working in partnership with Welsh Government and TfW to deliver integrated ticketing and Mobility-as-a-Service (e.g. Fflecsi passenger transport service, open data and phone apps).

Reasons for Recommendations

36. To prepare an ITS Strategy informed by public, local member and key stakeholder consultation. The role of an ITS Strategy will be crucial in Cardiff's ability to meet its Transport White Paper aspirations and the One Planet Cardiff target for decarbonisation by 2030.

37. The first step in the Strategy will be to initiate the development of an outline business case for the effective long-term upgrade of the UTC Control Room.

38. The ITS Strategy will underpin – better public transport, an improved network, the Metro and more sustainable modes (e.g., e-Bikes and e-Scooters); which in turn support more development, more jobs and more opportunities.

39. Furthermore, ITS delivers the following top 5 policy benefits – shift to sustainable transport, improved air quality, more fluid traffic flow, increased network capacity and focused event management, which in turn, will boost economic growth, wellbeing and social environment.

40. Using ITS delivers better citizen experiences; better air quality; community improvements; and business benefits. These are already being realised by other similar cities such as (but not in any way limited to): Nottingham, Greater Manchester, Bristol and Coventry; against which Cardiff needs to compete and cannot afford to miss out.

Financial Implications

41. The costs of funding the consultation will be met from within existing resources. The costs of implementing the projects contained within the ITS Strategy could be significant for the Council and at this stage no funding has been identified to support the delivery of these projects. As a consequence, there is a risk that

following the public consultation stakeholders' expectations on the delivery of the ITS strategy could be raised but without funding being identified these projects may not be affordable for the Council, with the consequential reputational risk for the Council. It is recommended that further work is undertaken to develop the cost of the projects included in the ITS strategy and how these projects could be funded. The early identification of expected costs and potential funding would also apply to the options being considered in the business case for the redevelopment or relocation of the Control Room.

Legal Implications

42. Legal Services have not considered the Strategy document in detail but understand from the body of this report that it contains a number of potential schemes and initiatives. Legal advice should be obtained on each such scheme and initiative prior to being implemented to ensure the same can be achieved within legal constraints.

43. To the extent that any proposed scheme and initiative involves the procurement of works, goods or services then the Council must comply with its Contract Standing Orders and Procurement Rules and procurement legislation.

44. In addition, to the extent that any of the proposed schemes and initiatives are dependent on the making of any orders or the obtaining of any consents or the like then it will be necessary to follow the appropriate statutory processes. By way of example only if a scheme is dependent on the making of a traffic regulation order (TRO) then the outcome cannot be guaranteed as individuals have the right to object. Due and proper consideration would need to be given to any such objections in determining how to proceed.

45. The report recommends approval of an outline business case for a new UTC control room with the potential of possibly working with external partners. These arrangements must also be made in compliance with the Council's Contract Standing Orders and Procurement Rules together with procurement legislation.

Consultation

46. The report refers to a public consultation exercise being undertaking in relation to the draft ITS Strategy. It should be noted that any consultation and engagement must (a) be carried out when the proposal is at a formative stage (b) consultees must be given sufficient information to understand the project and to respond (c) consultees must be given sufficient time to respond and (d) responses must be conscientiously taken into account when finalising the relevant decision as a consultation exercise gives rise to the legitimate expectation that due regard will be given to the outcome of the consultation in determining the way forward .

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<u>Equality Duty</u>

47. In considering this matter, the Council must have regard to its public sector equality duties under the Equality Act 2010 (including specific Welsh public sector duties). This means the Council must give 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.

48. When taking strategic decisions, the Council also has a statutory duty to have due regard to the need to reduce inequalities of outcome resulting from socio-economic disadvantage ('the Socio-Economic Duty' imposed under section 1 of the Equality Act 2010). In considering this, the Council must take into account the statutory guidance issued by the Welsh Ministers (WG42004 A More Equal Wales The Socio-economic Duty Equality Act 2010 (gov.Wales) and must be able to demonstrate how it has discharged its duty.

49. An Equalities Impact Assessment aims to identify the equalities implications of the proposed decision, including inequalities arising from socio-economic disadvantage, and due regard should be given to the outcomes of the Equalities Impact Assessment.

<u>Well-Being of Future Generations (Wales) Act 2015</u>

50. 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.

51. 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. When exercising its functions, the Council is required to take all reasonable steps to meet its well-being objectives. This means that the decision makers should consider how the proposed decision will contribute towards meeting the well-being objectives and must be satisfied that all reasonable steps have been taken to meet those objectives.

52. The well-being duty also requires the Council to act in accordance with a '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 compromising 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:
    - Look to the long term

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- Focus on prevention by understanding the root causes of problems
- Deliver an integrated approach to achieving the 7 national well-being goals
- Work in collaboration with others to find shared sustainable solutions
- Involve people from all sections of the community in the decisions which affect them
- 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

General

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 Guidance (Wales) Act 2015 and how this strategy may improve the social, economic, environmental and cultural well-being of Wales.

54. All decisions taken by or on behalf 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 of behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. Council 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

HR Implications

55. There are no HR implications in the main for this report. However, both the Trade Unions and affected staff have been consulted on the intention to prepare an outline business case for a new UTC Control Room. Consultation will continue as the business case develops.

Property Implications

56. There are no direct property implications arising from this report. However, implementation of the ITS may require land and property transactions to be undertaken. It will be important for the ITS delivery team to involve Strategic Estates at an early stage to ensure professional property advice is provided. Any resulting property transactions should be undertaken in accordance with the agreed asset management processes.

57. It is noted that opportunities for a new UTC Control Room and associated facilities are being explored, including potential for co-location and partnership working with internal and external partners. Any property transactions or

valuations required to deliver any proposals 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. Subject to recommendation 3, approve the undertaking of public consultation and engagement on the Draft ITS Strategy.

2. Approve the preparation of an outline business case to explore options for modernising the Council's Urban Traffic Control systems.

3. Delegate authority to the Director of Planning, Transport and Environment, subject to consultation with the Cabinet Member for Strategic Planning and Transport, to make minor amendments to, to determine and approve the final form and content of the Draft ITS Strategy and consultation questionnaire.

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

The following appendices are attached:

Appendix 1: Draft ITS (Intelligent Transport Systems) Strategy, January 2021
Appendix 2: Draft ITS Consultation Questionnaire

The following background papers have been taken into account:

- Cardiff's Transport White Paper: Transport Vision to 2030
- One Planet Cardiff: Our Vision for a Carbon Neutral City by 2030
- SMART Cardiff Roadmap (Draft) 2019
- Cardiff Local Development Plan (LDP) 2006-2026
- Cardiff ITS Network Management Review, July 2018
- Llwybr Newydd: The Wales Transport Strategy 2021
- Report to Cabinet 13th June 2019 - Air Quality Feasibility Study (RE: 'SMART Corridors')
- Report to Cabinet 15th July 2021 - Cardiff's Bus Strategy (RE: 'Big Move 2: Create New Priority SMART Bus Corridors')
- Equality Impact Assessment
- Digital Strategy for Wales, 2021