CABINET – 3 March 2015 EXECUTIVE SUMMARY OF AGENDA ITEM 8

Report title: Green Capital Hybrid Bus Trial
Wards affected: Citywide
Strategic Director: Barra Mac Ruairi, Place
Report Author: Alistair Cox, Strategic City Transport Manager

RECOMMENDATION for the Mayor's approval:

1. **To accept the award of £1.4m funding from DfT for the Green Capital Hybrid Bus Trial and to enter into a grant agreement in relation to this.**

2. **To delegate to the Strategic Director for Place to proceed with the procurement of and entering into a contract with a bus operator partner, to enable the implementation of this demonstration project as set out in this report.**

Key background / detail:

a. Purpose of report:

To accept the award of £1.4M from the Department for Transport (DfT) as announced on 9th January 2015 by The Minster of State for Transport, Baroness Kramer, to run a trial of using technology to get Hybrid Diesel/electric buses to run in zero-emissions mode in areas of worst air quality.

b. Key details:

1. Bristol City Council has been awarded £1.4m by DfT to allow it undertake a trial of hybrid electric/diesel buses commencing during Green Capital year. The trial will test in operation 'geo-fencing' technology, whereby a diesel-electric hybrid can run in electric mode in specified areas, such as a city centre low emission zone or air quality management area.

2. The following is a summary of the project outline:
   - Bristol City Council to lead a 2 year project to trial geo-fencing bus technology in the city.
   - DfT to provide a one-off grant of £1.4m to the council to cover the price premium of the relevant vehicles over the equivalent new conventional diesel vehicles.
   - The diesel-electric hybrid vehicles acquired for this project will be capable of switching automatically to zero emissions triggered by a "geo-fence" based on the GPS location of the bus.
   - The objective of the project is to test this new technology in a real operating environment for 2 years from delivery into service.
   - Geo-fences would be set to match as far as possible the areas of the city with the worst air quality.

- The council and its partner will collect and evaluate operating data about the performance of the vehicles, e.g. their reliability and environmental performance.
- The council will undertake to provide performance and other data (subject to any necessary data sharing requirements) to the Department for Transport with the intention of promulgating the information as widely as possible.
- The council will secure a bus operator partner to purchase and operate the vehicles. The council will ensure that its project partner is prepared to be bound by the terms of the project in terms of operating the buses in service and collecting/sharing data.
- The council will ensure that all legal requirements are met in securing their preferred partner and providing funding for the project.
- Recognising the challenging delivery timescale, the council will work with its operator partner to have the vehicles in service as early as possible in 2015.

AGENDA ITEM 8

BRISTOL CITY COUNCIL
CABINET
3 March 2015

REPORT TITLE: Green Capital Hybrid Bus Trial

Ward(s) affected by this report: Citywide

Strategic Director: **Barra Mac Ruairi, Place**

Report author: **Alistair Cox, Strategic City Transport Manager**

Contact telephone no. **0117 922 2357**
& e-mail address: **Alistair.cox@bristol.gov.uk**

Purpose of the report:
To accept the award of £1.4M from the Department for Transport (DfT) as announced on 9th January 2015 by The Minster of State for Transport, Baroness Kramer, to run a trial of using technology to get Hybrid Diesel/electric buses to run in zero-emissions mode in areas of worst air quality.

RECOMMENDATION for the Mayor's approval:

1. **To accept the award of £1.4m funding from DfT for the Green Capital Hybrid Bus Trial and to enter into a grant agreement in relation to this.**

2. **To delegate to the Strategic Director for Place to proceed with the procurement of and entering into a contract with a bus operator partner, to enable the implementation of this demonstration project as set out in this report.**

The proposal:

1. Bristol City Council has been awarded £1.4m by DfT to allow it undertake a trial of hybrid electric/diesel buses commencing during Green Capital year. The trial will test in operation 'geo-fencing' technology, whereby a diesel-electric hybrid can run in electric mode in specified areas, such as a city centre low emission zone or air quality management area.

2. The following is a summary of the project outline:
   - Bristol City Council to lead a 2 year project to trial geo-fencing bus technology in the city.
   - DfT to provide a one-off grant of £1.4m to the council to cover the price premium of the relevant vehicles over the equivalent new conventional diesel vehicles.
   - The diesel-electric hybrid vehicles acquired for this project will be capable of switching automatically to zero emissions triggered by a "geo-fence" based on the

GPS location of the bus.

- The objective of the project is to test this new technology in a real operating environment for 2 years from delivery into service.
- Geo-fences would be set to match as far as possible the areas of the city with the worst air quality.
- The council and its partner will collect and evaluate operating data about the performance of the vehicles, e.g. their reliability and environmental performance.
- The council will undertake to provide performance and other data (subject to any necessary data sharing requirements) to the Department for Transport with the intention of promulgating the information as widely as possible.
- The council will secure a bus operator partner to purchase and operate the vehicles. The council will ensure that its project partner is prepared to be bound by the terms of the project in terms of operating the buses in service and collecting/sharing data.
- The council will ensure that all legal requirements are met in securing their preferred partner and providing funding for the project.
- Recognising the challenging delivery timescale, the council will work with its operator partner to have the vehicles in service as early as possible in 2015.

Consultation and scrutiny input:

a. Internal consultation:
Internal consultation has taken place with the Place Directorate.

b. External consultation:
No consultation has been possible in the timescale available.

Other options considered:

No other option has been considered – the offer from the Department for Transport has been assessed and considered a viable option to recommend the Mayor to accept.

Risk management / assessment:

FIGURE 1

The risks associated with the implementation of the *(subject) decision* :

No.	RISK Threat to achievement of the key objectives of the report	INHERENT RISK (Before controls)		RISK CONTROL MEASURES Mitigation (ie controls) and Evaluation (ie effectiveness of mitigation).	CURRENT RISK (After controls)		RISK OWNER
		Impact	Probability		Impact	Probability	
1	Procurement of a suitable operator	**High**	**Medium**	Operator grant process being progressed at risk to allow appointment to happen immediately should the Mayor approve this report.	**High**	**Low**	Peter Woodhouse
2	Operational issues with Hybrid electric operation	**High**	**Medium**	Market investigation have been undertaken to confirm that the trial is feasible.	**Medium**	**Low**	Peter Woodhouse

FIGURE 2

The risks associated with <u>not</u> implementing the *(subject) decision*:

No.	RISK Threat to achievement of the key objectives of the report	INHERENT RISK (Before controls)		RISK CONTROL MEASURES Mitigation (ie controls) and Evaluation (ie effectiveness of mitigation).	CURRENT RISK (After controls)		RISK OWNER
		Impact	Probability		Impact	Probability	
1	Missed opportunity to undertake technology trial that could inform wider roll out of such vehicles in the city to achieve more significant air quality benefits	**High**	**High**	None – funding would not be accepted from government	**High**	**High**	

Public sector equality duties:

Before making a decision, section 149 of the Equality Act 2010 requires that each decision-maker considers the need to promote equality for persons with the following "protected characteristics": age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation. Each decision-maker must, therefore, have due regard to the need to:

i) eliminate discrimination, harassment, victimisation and any other conduct prohibited under the Equality Act 2010.

ii) advance equality of opportunity between persons who share a relevant protected characteristic and those do not share it. This involves having due regard, in particular, to the need to:

- remove or minimise disadvantage suffered by persons who share a relevant protected characteristic.

- take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of people who do not share it (in relation to disabled people, this includes, in particular, steps to take account of disabled persons' disabilities);

- encourage persons who share a protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.

iii) foster good relations between persons who share a relevant protected characteristic and those who do not share it. This involves having due regard, in

particular, to the need to tackle prejudice and promote understanding.
Guidance:
**** Insert a note on how the public sector equality duties are relevant to the proposals and how these duties have been taken into account in developing the proposals. Where an equality impact assessment has been undertaken, summarise its findings here, and provide a link to the full document, or include the equality impact assessment as an appendix. Where no equality impact assessment has been undertaken, give the reasons why this has not been carried out.***

An equalities screening exercise has been undertaken and there are no new significant equalities issues that have come to light from this report. During and following the appointment of the operator we will review the screening report again whilst also taking into consideration information and consultation findings collected from previous projects with similar components in light of the proposed bus services for the trial and consider if there are any actions or opportunities that need to be taken.

Advice given by Jane Hamill, Equalities Advisor
Date 19th February 2015

Eco impact assessment

The significant impacts of this proposal are:

- This pilot provides the opportunity to test the technology that could have significant carbon and local air quality benefits if deployed at a wider scale. Consultation on the "geo-fence zone" will take place with Air Quality officers.
- Life-cycle studies consistently show that the biggest impact of a road vehicle occurs during its use, rather than manufacture and disposal. Therefore, initiatives to reduce fuel consumption during use are likely to outweigh the negative impact of additional manufacturing and disposal impacts, for example in relation to the need for batteries.
- Some negative impacts will occur through vehicle production, diesel-mode operation of the buses, production of electricity, and the need to dispose of the buses at the end of their service life.

The proposals include the following measures to mitigate the impacts:

- If a wider application of the electric or hybrid vehicles is to follow on from this project then the scope of the project should be widened to consider the generation of the electricity to ensure carbon benefits are maximised.
- Electric operation should be utilised as far as possible, to maximise air quality benefits
- Diesel engine specification should be Euro VI if possible, which will reduce tailpipe pollutants in comparison with previous Euro standards

The net effects of the proposals are positive

Advice given by Steve Ransom / Environmental Programme Manager
Date 28th January 2015

Resource and legal implications:

Finance

a. Financial (revenue) implications:

The forecast revenue costs of this project are expected to be absorbed within the existing Transport department Revenue budget.

Advice given by Tian Ze Hao Finance Business Partner
Date 29/01/2015

b. Financial (capital) implications:

There will be no capital cost implications.

Advice given by Tian Ze Hao Finance Business Partner

Date 29/01/2015

Comments from the Corporate Capital Programme Board:

Not Applicable

c. Legal implications:

When procuring goods, works or services over a certain value, the Council must comply with the Public Contracts Regulations 2006. Provided these are complied with, and a full compliant procurement process is carried out, the risk of a successful procurement challenge will be low.

It is proposed that the Council will accept a grant from the Department for Transport. Whenever the state (e.g. DfT) gives resources (such as a grant) to another organisation (including the Council), it needs to be considered whether that grant may give that organisation (i.e. the Council) an unfair advantage. If the grant does give an unfair advantage, it may constitute State aid, which is not permitted.

An unfair advantage will only be conferred if the Council is an “economic entity” (i.e. offering goods and services on a given market). In some circumstances, the Council is defined as an economic entity, however it is unlikely to be defined as an economic entity in these circumstances as its activities in connection with this project are not commercial in nature. Accordingly, the risk the grant will constitute State aid is low.

Advice given by Sinead Willis/Solicitor
Date 29 January 2015

d. Land / property implications:
N/A

e. Human resources implications:
N/A

Appendices:
Appendix A – Eco-Assessment

Access to information (background papers):
None

Appendix A - Eco Impact Checklist

Title of report: Green Capital Hybrid Bus trial				
Report author: Alistair Cox, Strategic City Transport Manager				
Anticipated date of key decision 3rd March 2015				
Summary of proposals: To accept the award of £1.4M from the Department for Transport (DfT) as announced on 9th January 2015 by The Minster of State for Transport, Baroness Kramer, to run a trial of using technology to get Hybrid Diesel/electric buses to run in zero-emissions mode in areas of worst air quality.				
Will the proposal impact on...	Yes/ No	+ive or -ive	If Yes…	
			Briefly describe impact	Briefly describe Mitigation measures
Emission of Climate Changing Gases?	Yes	+ve -ve	Hybrid buses have lower emissions overall than conventional diesel buses. Production of electricity results in emissions	Overall emissions are lower; source of electricity to be considered in any future expansion of the project
Bristol's resilience to the effects of climate change?	No			
Consumption of non-renewable resources?	Yes	+ve -ve	Hybrid buses will consume less fossil fuel than conventional buses Manufacture of the buses will consume resources, but resources would also be required for new conventional buses	Any extra resources (e.g. batteries) are mitigated through reduced operational emissions, and recycling at End of Life
Production, recycling or disposal of waste	Yes	-ve	Buses will need to be disposed at the end of their service life	Majority of materials are recyclable
The appearance of the city?	No			
Pollution to land, water, or air?	Yes	+ve	Operation in electric mode produces zero tailpipe emissions, which are detrimental	

		-ve	to local air quality Operation in diesel mode produces emissions detrimental to local air quality	Buses should utilise electric capacity as far as possible; diesel engine specification should be Euro VI if possible
Wildlife and habitats?	No			

Consulted with: Steve Ransom, Environmental Programme Manager
Andrew Edwards, Project Manager – Air Quality

Summary of impacts and Mitigation - <u>to go into the main Cabinet/ Council Report</u>

The significant impacts of this proposal are....

- This pilot provides the opportunity to test the technology that could have significant carbon and local air quality benefits if deployed at a wider scale. Consultation on the "geo-fence zone" will take place with Air Quality officers.
- Life-cycle studies consistently show that the biggest impact of a road vehicle occurs during its use, rather than manufacture and disposal. Therefore, initiatives to reduce fuel consumption during use are likely to outweigh the negative impact of additional manufacturing and disposal impacts, for example in relation to the need for batteries.
- Some negative impacts will occur through vehicle production, diesel-mode operation of the buses, production of electricity, and the need to dispose of the buses at the end of their service life.

The proposals include the following measures to mitigate the impacts ...

- If a wider application of the electric or hybrid vehicles is to follow on from this project then the scope of the project should be widened to consider the generation of the electricity to ensure carbon benefits are maximised.
- Electric operation should be utilised as far as possible, to maximise air quality benefits
- Diesel engine specification should be Euro VI if possible, which will reduce tailpipe pollutants in comparison with previous Euro standards

The net effects of the proposals are positive

Checklist completed by: Alistair Cox

Name:	Alistair Cox
Dept.:	Transport Service, Place Directorate
Extension:	22357
Date:	28th January 2015
Verified by Energy Service	Steve Ransom