Cycle Hire Scheme

Document 2
ST-PJ302C Cycle Hire Scheme – Business Case Submission

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0. DOCUMENT CONTROL

0.1 Author

James Hiett

0.2 Document Summary

This document is the full business case for the Cycle Hire Scheme.

0.3 Document History

Version	Date	Changes since previous issue
00a		First draft
01a	06/10/08	First Issue
01b	22/10/08	Re-issue with amendments to costings.
01c	29/10/08	Re-issue with amendments as per surface finance comments.
01d	21/11/08	Re-issue with further amendments.
02a	23/12/08	Up-dated to final business case submission
02b	06/01/09	Amended costings and scope details.

0.4 Reference Documents

- London Area Travel Survey (LATS) 2001
- SDG Cycle Hire Scheme Research (May 2008)
- Feasibility Study for a Central London Cycle Hire Scheme (Aug 2008)
- Project Plan Programme
- Organisation and Governance Structure
- Outline Procurement Strategy
- Business Case Development Manual (May 2008);
- Project Risk Allowance and Management Contingency Standard (June 2008)
- Construction Inflation Costs (September 2008 Update)
- The World Health Organisation's 'Methodological guidance on the economic appraisal of health effects related to walking and cycling'
- Highways Economics Note No. 1 ‘2005 Valuation of the Benefits of Prevention of Road Accidents and Casualties’

0.5 Supporting Documents

- Output of the Business Case Assistant (attached to this document)
- Risk Management Strategy
- Risk Register

0.6 Distribution

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0.7 Document Quality Assurance

Step	Step Description	Undertaken by	Date	Remarks
01	Initial Guidance	Arnold Cohen	29/08/08	Benefits Guidance
02	Quality Review	Dermot Keeley	11/09/08	Comments included
03	Quality Review	Dermot Keeley	22/09/08	Comments included
04	Strategy Team Review	Eric Assendelft	24/09/08	Comments included
05	Quality Review	Dermot Keeley	29/09/08	Comments included
06	Strategy Team Review	Eric Assendelft	30/09/08	Comments included
07	Team Review	Special Projects Team	30/09/08	Comments included
08	Quality Review	Dermot Keeley	03/10/08	Comments included
09	Finance Review	Dermot Keeley	08/10/08	Comments included

10	Finance Review	Dermot Keeley	22/10/08	Comments included
11	Finance Review	David Hendry	29/10/08	Comments included
12	Finance Review	David Hendry	19/11/08	Comments included
13	Team Review	Mick Hickford	05/01/08	Comments included

1. CYCLE HIRE SCHEME EXECUTIVE SUMMARY

1.1 Introduction

This document seeks Project and Commitment Authority to undertake the procurement, detailed design, construction and subsequent operation of the Cycle Hire Scheme.

1.2 Background

This project will deliver a new, sustainable mode of transport readily accessible to London residents and visitors by May 2010. It will fulfil a current Mayoral manifesto pledge and complement existing schemes such as the LCN+ network. The project will further integrate the transport modes of central London and act as a catalyst for behavioural change with the addition of up to 52,000[1] additional daily cycle trips in central London.

Cycling will, for the first time, become a revenue generating mode of transport for TfL. The project will install a network of 400 docking stations, 6,000 bicycles and supporting infrastructure across a defined central London zone of approximately 44 Km^2. In so doing it will remove a number of access barriers currently preventing potential users from cycling in London.

1.3 Alternatives

Two options for installation of 6,000 (Option A) or 10,000 bicycles (Option B) have been considered.

Option A, the preferred option, will meet estimated demand and balance the high maintenance costs of overuse with the cost implications of over-provision. It is expected that 6,000 bicycles can accommodate an excess of 40,000 trips per day providing flexibility within the system should demand be higher than anticipated (although higher maintenance costs would result). Land acquisition is feasible for the number of docking stations within the time scale and the scheme could be readily expanded to meet local strategic objectives in future.

Installation of Option B (the 10,000 bicycle option) will be in excess of the market currently within project scope and exceed the allocated project budget. Land identification would also be extremely difficult for a 10,000 bicycle scheme by May 2010.

1.4 Impact on funding

Table one below presents a summary of the headline project costs, benefits and resulting BCR. The full project cost is captured in the 09/10 Surface Transport Business Plan/Forecast (but the requirement to weight the funding towards the next three years should be noted). A change in Mayoral priorities has moved the delivery date of this project forward by a year. The £2m funding to date has been sourced from budget under-spend within Surface strategy.

[1] This figure represents estimation of peak usage of the system, if this is adjusted for seasonal and weekend use the average trip number is 40,000 per day.

Business Case Summary		
	Inflated prices £ms	PV prices £ms
Project Costs without risk & contingency	43.0	-
Risk & Contingency	9.5	-
Construction Inflation	1.6	
Total Project Cost	54.1	-
Operating and maintenance costs including assets renewal throughout contract period	109.3	-
Management Contingency for operation	4.4	-
Fares revenue	-119.4	-
Sponsorship revenue	-8.1	-
Net Financial Effect/PV Value	40.3	39.5
User Benefits:		
Infrastructure benefits		16.4
Journey time benefits		37.2
Health Benefits (included as a sensitivity test)		31.0
Total user benefits	Benefit Cost Ratio	1.36
(Sensitivity test including health benefits)	Benefit Cost Ratio	2.14

Table one: business case summary detailing BCR and high level project costs

1.5 Recommendations

The Cycle Hire Scheme currently has a Financial and Project Authority of £2m. Approval for an additional Project Authority of £52.1m is requested for the project to go live in May 2010. In addition to this a Commitment Authority of £144.4m for total operational project costs over 7 years (including asset renewal but not including £23.5m of TfL internal costs, and not including fare & sponsorship revenue) is also requested.

This will take total Project Authority approval to £54.1m and total Commitment Authority to £144.4 with a final approval level of TfL board.

2. BUSINESS CASE NARRATIVE

2.1 Project Description

The Cycle Hire Scheme (CHS) will provide London with a new sustainable mode of public transport through the introduction of a network of 400 cycle docking stations, 10,200 docking points, 6,000 bicycles and supporting infrastructure within a defined central London zone of approximately 44 Km^2.

This network will generate and support an estimated 52,000 trips per day with peak use and will be delivered by May 2010. A contractor will be engaged to design, build, operate and maintain the CHS on TfL's behalf.

2.2 Main Items of Scope and Project Objectives

- Identification of sufficient and suitable land to accommodate 400 cycle docking stations across 9 central London boroughs.
- Letting a single contract or multiple contracts for the:
    - Construction of docking station sites
    - Design, manufacture and installation of CHS on street assets (6,000 bicycles , 10,200 individual docking points, 420 registration terminals, signage and dedicated CCTV where required
    - Ongoing operation of the CHS to including user registrations, customer contact centre, revenue handling, IM solutions, fleet management and maintenance (6,000 bicycles will be available on street at all times)[2].
- Ensuring a smooth transition between project and business as usual phases.
- Maximising the opportunity to generate sponsorship revenues from CHS / letting a sponsorship contract.
- The target market for the scheme will be London residents and visitors.

Project Objectives

The project will address a number of Government, Mayoral and TfL objectives detailed below.

Manifesto Pledges - the Mayor is committed to making London a cycling-friendly city and has pledged to introduce a 'Paris Style' cycle hire scheme for London. The successful introduction of the CHS will realise this pledge. The scheme will be delivered in the spirit of the Mayor's City Charter with extensive partnership between TfL, the Mayor and the London Boroughs.

[2] This excludes some stations within the Royal Parks which will be locked at certain times.

Environmental - London is committed to reduce carbon emissions by 60% before 2025. TfL is seeking to reduce CO_2 emissions from public transport and to improve the energy efficiency of its operations.

Cycling is an emission free means of transport and as such users will be contributing less greenhouse gases than if they were using other forms of motorised transport. Mitigating measures will be in place to ensure that CO_2 emissions are minimised during CHS operation and maintenance activities.

Sites will only be placed on existing hard surfaces, with assistance from boroughs and conforming to design guidance. As such the net environmental impact will be positive.

Promote Sustainable Travel – the project is in line with the GLA Group budget guidance and TfL sustainability objectives. Cycling has defined health benefits, is user operated and is an emission free form of transport (a small level of emissions will result from operational activities). As such the CHS will support, provide and promote a healthy and sustainable lifestyle choice for Londoners.

Social Inclusion and Integrated Travel –the CHS will provide a low cost mode of public transport for Londoners, increasing access to cycling by removing key access barriers including access to a bicycle, storage, theft, perceived threat of theft and maintenance.

The project will complement cycling initiatives designed to improve cycling integration in London such as the LCN+ by increasing the number of people using the network. It will also provide an additional cost effective means by which local communities can access the employment, education and other opportunities that central London offers.

The CHS will add another mode of transport to London and could, for example, help to relieve loading on the transport system during the 2012 Games or at other times of peak usage. A contract option will involve temporary docking stations that are portable and can be sited to allow for major events and local demand fluctuations.

Safety - TfL is committed to operating a safe transport system. An effect commonly observed in a number of cities including London is that, as the number of cyclists on the road increases, the accident rate decreases. This scheme will increase the number of cyclists and so is likely to decrease accident rates hence making London's transport network safer (see appendix D for further details).

The project intends to introduce a code of best practice for CHS users and impose user sanctions (removal of right of use) on cyclists using the CHS in an inappropriate way. This will further increase the safety of cyclists and other road users.

Wider Government Objectives - cycling has defined health benefits, is emission free and provides the opportunity to create modal shift by reducing car use. As such the CHS is positioned to contribute to a number of Central Government Public Service Agreements which are listed below with the relevant department in brackets.

- Reduce mortality rates and health inequalities (DH)
- Reduce levels of obesity (DCFF, DCMS, DH)
- Reduce congestion in the largest urban areas (DfT)

- Reduce levels of childhood obesity (DH,DCMS,DES)
- Improve air quality by reducing transport emissions (DfT, DEFRA)
- Reduce greenhouse gas emissions (DfT, DEFRA,DTI)
- Increase levels of sporting activity (DCMS,DES)

2.3 Options

CHS Variations

The five potentially variable components of the scheme are discussed below.

Docking Station Density - the current docking station density of 9/Km^2 is based on the successful scheme in Paris (see appendix A for borough details). A decrease in this will present difficulties to operation of the network; an increase will mean more land is required per Km^2. Acquisition of sufficient land for the preferred option represents a current and key challenge to timely project delivery. Increasing the amount of land required would further increase this challenge and compromise delivery of the project.

Docking Point Ratio -the ratio of docking points to bicycles (1.7:1) is also based on the Paris scheme and other successful schemes such as Lyon and Barcelona. The provision of more docking points than bicycles allows for users to locate a space at their desired destination relatively easily. There is no justification at present for modifying this ratio.

Number of Bicycles - the feasibility study identified a minimum of 6,000 bicycles to cater for demand (see appendix B for demand analysis). Each bicycle is capable of a range of trips per day. Under provision of bicycles would mean a high trip number per bicycle with increased maintenance and redistribution costs. Over provision of bicycles would result in a low trip number but high operating costs with a lower value to TfL per bicycle. Bicycle numbers will be explored in option variation.

Scheme Area -if docking station density and docking point ratio to bicycles is to remain constant but bicycle numbers to increase, the scheme area must increase proportionally as bicycle numbers increase.

Tariff Structure - the scheme will be cashless with users required to register either on-line, at terminals or via the contact centre prior to initial use. Users will be required to provide details sufficient to allow a deposit of £150 to be processed if necessary.

Detailed demand analysis has been conducted through a stated preference study; possible tariff structures and revenue are detailed in appendix C.

Project Options

Two Options[3] have been considered for this project:

[3] A 'do nothing' base case was not developed given the Mayoral imperative for this project. Instead, options were built around two possible bicycle levels.

Option A (Base Case – 6,000 Bicycles) -installation of a 6000 bicycle CHS at a docking point ratio of 1.7 per bicycle and an average of 25.5 docking points per station will result in 400 docking stations over an area of approximately 44 Km^2 as the minimum course of action. This is identified in the feasibility study as the minimum requirement to support peak demand.

Option B (10,000 Bicycles) -installation of a 10,000 bicycle CHS at a docking point ratio of 1.7 per bicycle and an average of 25.5 docking points per station will result in 667 docking stations over an area of 66 Km^2.

Pilot Scheme - when introducing a new transport network, the returns and benefits of that network depend upon the size, the more of the network that is available the higher the returns. A small pilot scheme is not considered as an alternative option because it would not give an accurate representation of the likely success of the overall scheme.

Option Appraisal - Option A has been identified in the feasibility study as the most suitable option for the project to implement. This is on the basis that it will meet estimated demand and in addition, balance the high maintenance costs that would result from a high trip number per bicycle with the cost of over providing for demand. The bicycles can accommodate an excess of 40,000 trips providing flexibility within the system should demand be higher than anticipated. Land acquisition is feasible for this number of docking stations within the time scale and the scheme can be expanded at a later date if required.

Demand analysis has focused on Bus Fare Zone One; potential demand outside of this zone is currently unknown. The additional requirement to identify nearly twice the amount of docking station sites for Option B by 2010 means successful implementation of this option is highly unlikely. Available funding is not sufficient for Option B, economies of scale are likely to be limited and the benefits are directly scalable.

2.4 Explanation of Costs, Cost savings and Revenues for Preferred Option

Table Two describes the cost breakdown for the project by year. There is a discrepancy between the net cash flow of the project and the phasing of the business plan budget/forecast. The project has a large start-up cost and the business plan budget/forecast will need adjusting towards this expenditure. It should be noted that the current forecasts show a net saving on the surface transport business plan of £43.4m

Table Two - lifetime project spend, undiscounted and inflated. **[Redacted]**

A mid-level breakdown of these costs can be found in appendix I and a full cash flow in section 5. Due to the specialist nature of the project comparisons with companies external to TfL has not been possible for most costs. A range of internal TfL departments with relevant experience have been consulted.

Twelve additional FTEs are required in the project team and ten additional FTEs will be required to manage the operation of the scheme. On-costs have been calculated at 40% of base costs with rack rates of £20,000 p.a. per staff member in addition to this. Staffing has been costed for the entire project life with costs for the operational management team included. The project is a new area of work and will not create staff redundancy.

Staff inflation of 3% p.a. has been applied to staff costs and 40% of salary costs have been used for on-cost calculation. An inflation rate of 3%[4] has been applied to all costs including revenue and overhead costs. Construction inflation[5] has been applied to all construction and materials costs for project duration. Inflation has been calculated on a compound basis from the base year.

A management contingency **[Redacted]** of capital costs has been included. A Monte Carlo Analysis has been conducted by risk specialists within TfL; it is assumed that risks will be transferred where appropriate to the contractor. As a result of the probability distribution for the risk profile a P75 post-mitigation figure is used. A budget for risks that could occur within current financial year remains in the project budget.

The above figures and methodology have been agreed with Surface Finance and it should be noted that this project will need approval from the TfL board.

The project will seek a sponsorship deal for the bicycles (on-street advertising is not available). Pending a decision from the Mayor this is expected to contribute at least £1,000,000 p.a. Sponsorship could include: naming rights; discreet branding on bicycles, maintenance vehicles, engineers and website; merchandise and payment card branding; PR and co-branding opportunities.

2.5 Explanation of Non–Financial Benefits, Including Impacts on Strategies

Monetised Benefits

Ambience Improvements - the bicycle docking stations will be well maintained; covered by good lighting and by CCTV. There will be signs for users informing them of times to destinations and advice on cycling routes.

Health Benefits – users of the bicycles will benefit from positive effects upon their health. This is monetised using the World Health Organisation 'Health Economic Assessment Tool' (HEAT) for cycling (see appendix E and H for details). This is included as a sensitivity test as per current DfT guidelines.

Journey Time Savings –the average trip distance covered by a user of the CHS has been compared to a trip of the same distance by walking, Tube or bus. Significant journey time savings were found in comparison with walking and bus journey times (see appendix F and H for details).

Non-Quantified Benefits

Safety Improvements - an inverse relationship has recently been shown in research in London between the number of cyclists on the road and the corresponding accident rate. This effect has been observed in London over recent years and in Paris post-implementation of their scheme. This effect is likely to be observed in London and it is suggested that relevant data is collected throughout the project to analyse this effect.

[4] Agreed with Surface Finance
[5] As per Tender Inflation Forecasts V1 from Group Finance 09/08

Environmental –each trip completed on a bicycle that would have been completed by another carbon emitting mode will contribute to the reduction of harmful emissions, noise levels and to better comparative air quality.

Cultural Shift – the implementation of the CHS will increase the number of daily cycle trips in London by an average of 40,000 per day when adjusted to account for seasonality (though peak demand will be higher). This trip increase represents a step change on top of the 500'000 daily trips already completed in greater London and will increase the visibility of cyclists in central London. This would act as further encouragement for new users, increase the safety of cyclists and increase the demand for improved cycling infrastructure. As such the CHS will act as a catalyst for behavioural change, cycling will promote cycling both within the CHS and for individual cyclists. The observed effect could be trip number increasing above and beyond the forecast demand for the scheme.

Removal of access barriers – access to a bicycle and secure cycle parking, fear of theft, maintenance and storage have all been identified in research as barriers that prevent potential cyclists from cycling in London. This project will remove all of these barriers immediately upon implementation; transforming cycling in London to a transport mode accessible by a much larger market share of transport users than previously possible.

Modal shift – the largest modal shift is expected to occur from walking (33.5%) but some modal shift is expected from Buses (27.5%) and Tube (25%) with smaller modal shift from cars (5%), other (4%), taxi (3%) and Bicycle (2%)[6]. While this could result in lost revenue to these modes, the project will generate revenue for TfL and it should be noted that the largest shift results from a non-fare paying mode. Buses and Tube will also benefit from ambience improvements, specifically less crowding during peak times, as a result of the small shift and the near-market for these two modes may then begin to use the Tube and Bus. Revenue lost is not accounted for on this basis.

2.6 Key Assumptions

1. Boroughs will not be compensated for lost revenue from car parking spaces which become cycle hire sites.

2. Demand has been estimated at up to 52,709 trips per day (see appendix B) for peak usage, this figure is then adjusted to account for seasonal and weekend usage fluctuations (see appendix B. Averaged over the year the seasonally adjusted number of trips per day is 40,000.

3. Total bicycle number has been calculated on an optimum, cost efficient, trip number of between 7-8 trips per bicycle. This follows recommendations from current operating companies, who were consulted, on the best balance between high maintenance costs from overuse and poor value for money from underuse.

4. Demand estimation does not account for the after-rail market (see appendix B for details); this segment has been excluded from the analysis as the scheme is unable to cater for the very high demand from this market.

[6] Data collected by SDG during the feasibility study

5. A revenue adjustment of 75% uptake in the first year and 100% uptake in subsequent years is applied for the purposes of benefit and revenue calculation. This is appraised over the maximum contract life of seven years.

6. The average trip is assumed to be 3.2Km (LATS 2001) which will take 12 minutes.

7. Sponsorship revenue is assumed at £1,000,000 a year once the scheme is operational.

8. Bicycle replacement is assumed at **[Redacted]** per year, this includes theft, vandalism and asset refreshment.

9. The contractor will be asked to procure asset replacements in the most cost effective manner. This is assumed to be on a yearly basis but will not be known until the contract goes to tender.

10. TfL will recommend a tariff structure but the Mayor will set the final tariff, a number of different tariff options have been modelled these are presented in appendix C; it is assumed that revenue income will cover operational costs for the scheme hence tariff A is selected for project appraisal.

11. A number of more detailed assumptions have been necessary for the project budget (see appendix G) and benefits calculations (see appendix C,D,E and F)

2.7 Outcome of Quantified Analysis

Details of the benefit calculations can be found in the appendices. Appendix H details the breakdown of monetised benefits included in the BCR.

The rule of half is applied to the benefits whereby the total sum of benefits for the scheme is halved as recommended by Arnold Cohen (Business Case Development Manager). This averages between at one extreme the full improvements for those quickly finding Cycle Hire a better option, and at the other extreme no improvement for those for whom Cycle Hire is only marginally better than their previous choice.

A number of different tariff options have been modelled and these are presented in appendix C; it is assumed that revenue income will cover operational costs for the scheme hence tariff A is selected for project appraisal. The project however, will not become financially positive as the initial start-up costs of the project can not be recovered through scheme revenue over 7 years.

BCR (including sponsorship revenue)

Total Net Cost (NPV)	39,494,555
Total Sum of Benefits (NPV)	53,577,368
BCR	1.36:1

Sensitivity Test One - BCR excluding sponsorship revenue

Total Net Cost (NPV)	45,402,255
Total Sum of Benefits (NPV)	53,577,368
BCR	1.18:1

Sensitivity Test Two - BCR including health benefits and sponsorship revenue

Total Net Cost (NPV)	39,494,555
Total Sum of Benefits (NPV)	86,121,080
BCR	2.18:1

Sensitivity test two is believed to present the most accurate appraisal of the projects benefits to TfL. Users will benefit from health improvements through use of the scheme and these are fully accounted for in this sensitivity test (see appendix K for additional BCR calculations).

Please see appendix K for the Business Case Assistant data.

2.8 Feasibility and Risk

A feasibility study has been conducted by TfL in partnership with Clear Zones (TfL, City of London, Borough of Camden, City of Westminster and the Royal Parks). This constitutes a detailed review of all existing European schemes and the lessons learnt from these, the technical options available, a review of potential suppliers, demand analysis, land availability and other areas of investigation. The conclusion stated that there is demand in London for the scheme and that the minimum number of bicycles to be provided should be 6,000 in the central London zone.

High level risks are detailed below with a brief outline of proposed mitigation measures; a full and detailed risk and issues register is available on request.

- Boroughs will not be reimbursed for lost revenue from parking spaces used by the scheme. The Mayor has agreed that the boroughs will deliver the land required without the need for compensation and that he will ensure this is the case; detailed consultation with Boroughs is ongoing to allow early sight of issues.

- The project schedule is very tight and has no slack time to allow for delays. Should delays occur this may risk timely delivery and have cost implications. Detailed planning and management is in place to address this risk, with early engagement in all areas that could impact on delivery.

- As the project has not yet gone to tender, there is a risk that the bids will be higher than allowed for in the project budget. A detailed budget has been built to address all areas of cost for the project. Verification of these costs has been as full as is feasible at this stage of the project.

2.9 Overall Assessment

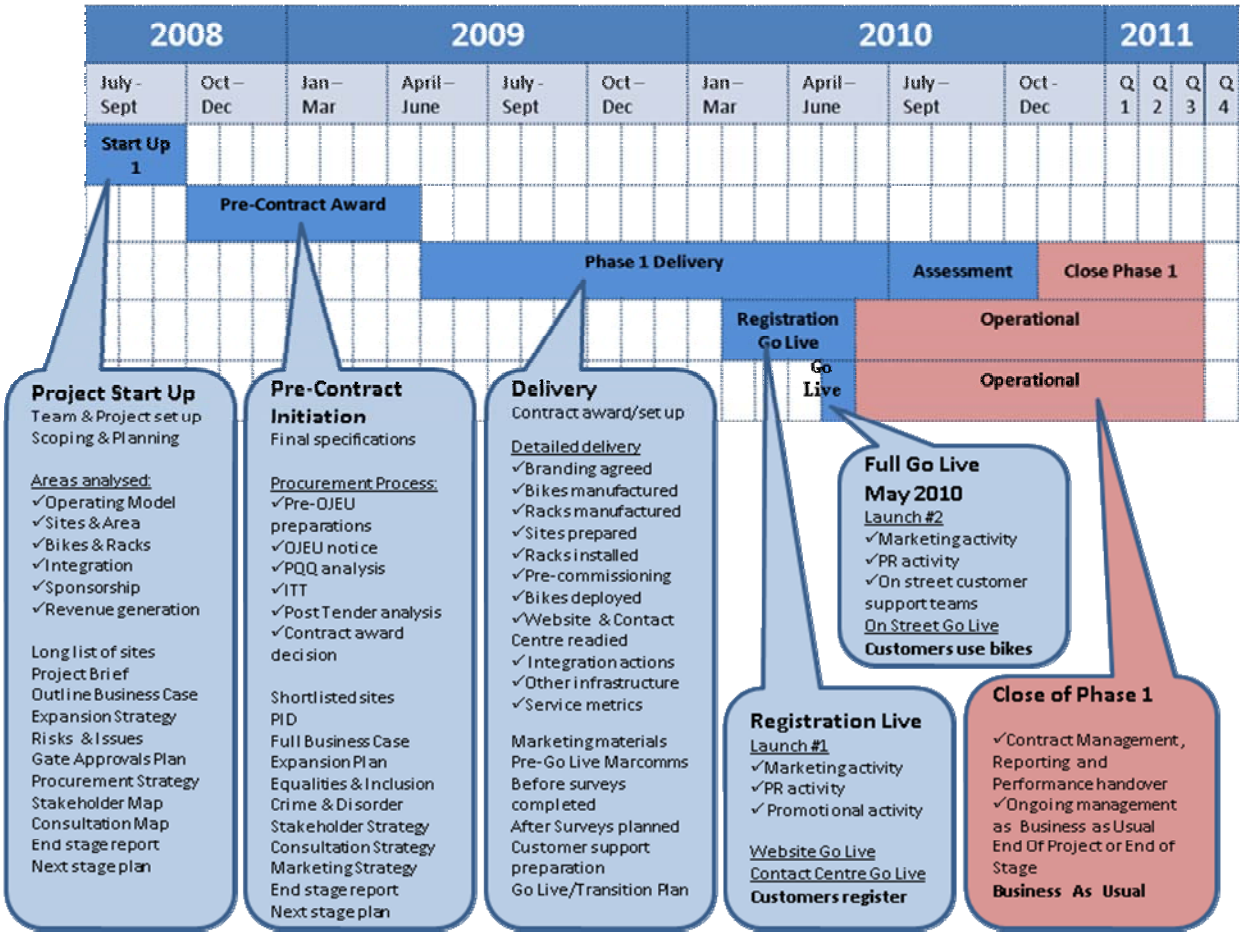
Key project risks centre on potential delays to programme schedule. A number of measures are in place to mitigate these risks.

This project will provide London with a new, sustainable mode of transport; in so doing it has the potential to effect great change in the travel behaviour, health and attitudes of London residents and visitors. It will remove access barriers currently preventing Londoners from cycling and create a new revenue generating mode of transport for TfL.

Appraisal of this project has calculated a maximum benefit: cost ratio of 2.18:1 this ratio is suggested as reflective of the benefits that the project will bring to users.

3. PROJECT PLAN SUMMARY

3.1 Project Schedule & Milestones



3.2 Resource Plan

Twenty FTE within the Special Projects Team will spend approximately 50% of their time on the cycle hire project between summer 2008 and autumn 2010. The cost of these non-operational core staff will be £1.9m including 'on' and 'rack' costs.

Twelve additional FTEs are required during the planning phase and immediately following implementation between autumn 2008 and autumn 2010. The cost of these non-operational project staff will be £1.6m including 'on' and 'rack' costs.

Ten additional FTEs will be required to manage the operation of the scheme from winter 2009. The cost of these permanent non-operational staff will be £6.7m including 'on' and 'rack' costs to the end of 2017/18.

An allowance of £20,000 has been made in the budget to cover recruitment costs for the project.

3.3 Procurement Strategy

EU Public Sector Procurement Directive and Public Contracts Regulations 2006 apply and due consideration has been given to the most appropriate procurement route to be adopted. The restricted procedure is being followed with advertisement in the Official Journal of the European Union (OJEU).

A pre-qualification questionnaire will be used in addition to a bidder's conference where TfL will outline details of the proposed business model, specification and contract and invite comment on this prior to the final ITT being issued.

The ITT structure allows for the contract to be split into three lots, design and build, operate and maintain, and sponsorship. It is TfL's clear preference that the first two lots are let to a single contractor.

A bespoke contract will be drafted to accommodate the unique nature of the project and the operational requirements. The contract is likely to be both incentivised and contain penalty clauses; these are currently being drafted. The Design and Build contract will run concurrently with the Operation and Maintenance Contract, this will allow expansion if desired.

Supplier selection will be based upon the most economically advantageous tender. The preference will be for a Design, Build and Operate contract which will motivate the supplier to develop a long term sustainable solution.

TfL's rights in the event of a walk-away or termination will be developed as part of the bespoke contract. It is the intention that once operational TfL will have the right to cancel the contract upon unsatisfactory operator performance.

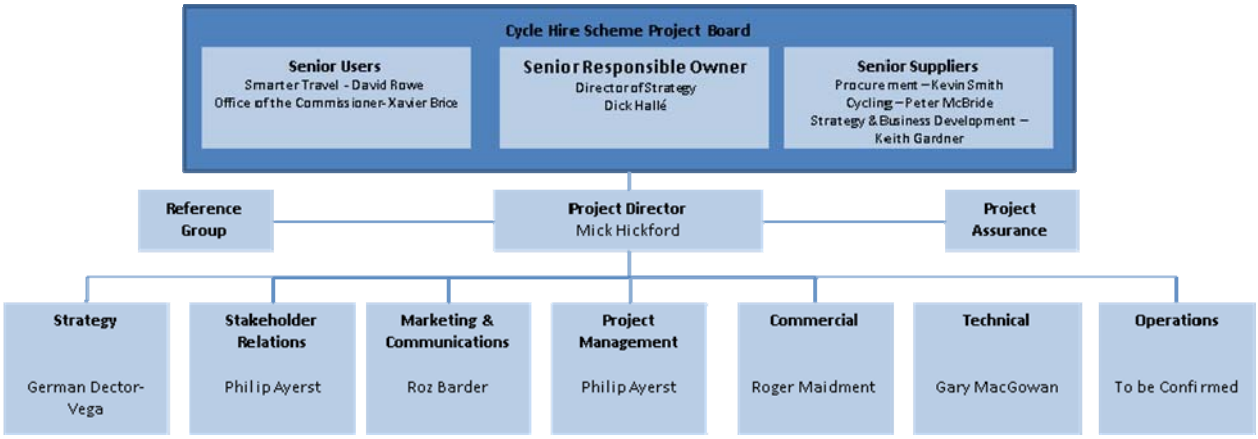
Consideration has also been given to the approach adopted in Paris whereby the scheme operator operates and funds the scheme in exchange for the rights to on street advertising assets. However, in London there are some barriers to this approach:

- TfL has a contract in place already which covers the maintenance and management of its existing on street advertising assets
- The London boroughs hosting the scheme have indicated that they would resist any attempt by TfL to install additional on-street advertising assets
- New on-street advertising would require planning consent
- Cycle Hire Scheme on street assets are being designed to have a minimal impact on the environment and streetscape, installing lots of highly visible advertising goes against this approach

No contract prices have yet been quoted; it is likely that the start up costs will be approximately **[Redacted]** (including management and risk contingency) with ongoing yearly costs of approximately **[Redacted]**.

The procurement timelines are as detailed in full in appendix J, the OJEU notice was issued on 18 November, the ITT will be issued on 11 February and the contract awarded on 25 May.

3.4 Project Organisation and Governance



For full details of project governance please refer to the full organisation and governance document.

3.5 Health, Safety and Environment Statement

The CHS will be designed to be as safe as reasonably practicable for its users and those operating and maintaining it. All aspects of the system will be designed, operated and managed using appropriate processes and in accordance with the TfL Health, Safety and Environment Management System.

It is accepted however, that once a bicycle has been hired, its use is beyond the control of TfL. All efforts will be made however, to ensure that appropriate information and, as necessary, training is available to users of the system.

3.6 Resilience Statement

The CHS will play a small but important part in London's resilience. As a mode in itself, with 6,000 bicycles distributed evenly throughout central London, the Cycle Hire Scheme offers an alternative to London Underground and London Buses, should these public transport modes cease to be operational.

A portable function to the CHS further allows increased provision during emergencies, major events or at times of major disruption to other travel modes. This was demonstrated in Paris in 2007 during the Metro workers' strike, when the Paris cycle hire scheme played an important part in the movement of commuters.

At times of emergency, the CHS contributes to the provision for evacuation, assuming that other public transport modes have limited function. It also allows for the movement of practitioners (trained medical staff etc) during times of extreme emergency, when other modes have ceased to operate.

3.7 Statement Regarding Traffic Management Act 2004

The Traffic Management Act 2004 places a duty on the Highway Authority to manage the road network, requiring them 'to do all that is reasonably practicable to manage the road network efficiently to keep traffic moving'. The constraints on space in London do not permit the wholesale construction of additional road space, so ways of maximising the capacity of the existing network and its use are necessary.

The CHS seeks to offer an alternative method of making short journeys, typically less than 30 minutes cycling time, by providing a pool of bicycles for hire. The availability of these bicycles will offer capability not to use private cars for those short journeys. Further modal shift from bus or Tube would then free further capacity on those modes providing an additional reason not to use the private car.

3.8 Equality and Inclusion Statement

As part of the Cycle Hire Scheme an Equality Impact Assessment (EQIA) for the scheme has been prepared.

The purpose of an EQIA is to improve the work of TfL by making sure it does not discriminate and where possible, it promotes equality and fulfils our duties under the Race Relations (Amendment) Act 2000, Gender Equality and Disability.

The EQIA for the Cycle Hire Scheme has assessed and recorded the likely equalities impact of the project. To develop this, further work is taking place to engage with internal (TfL Equalities &Inclusion) and external stakeholders (including RNIB and London Access Forum) as the project develops to ensure all aspects of the EQIA are realised and addressed. Any recommendations for action as a result of the impact assessment of the Cycle Hire Scheme will form the Equality Impact Assessment Action Plan.

It is noted that carrying out an EQIA for the Cycle Hire Scheme does not replace the need to consider the minimum requirements concerning equalities outlined in the Business Planning Guidelines.

3.9 Section 17 of the Crime and Disorder Act 1998

An assessment in accordance with Section 17 of the Crime & Disorder Act has been undertaken. Advice has been given on the following items: CCTV coverage of racks and paying terminals; methods of payment; lighting levels to compliment CCTV and reduce the fear of crime; maintenance regimes; Counter Terrorism (CT) issues; data handling and general situational crime prevention advice. The full document can be made available on request.

A relationship will be maintained throughout the scheme to ensure the provision of a safe and secure environment for scheme users with more specific advice provided as design becomes more detailed.

4. C10/P-PROJECT AUTHORITY APPROVAL

This form is used to capture Project Authority decisions for all projects within Surface Transport. (This includes 'Capital' and 'Revenue' projects. Blue text to be overwritten by the Project Manager / DPMO.

1. Project Name	Cycle Hire Scheme
2. Project Code / Reference	ST-PJ302C
3. Entity Type	Discrete Project
4. Spearmint Approval Gate	Gate 0.2
5. Financial Authority (FA) Status	**FA obtained** (Budgeted)
6. Existing Project Authority (PA)	£ 2m
7. Additional Amount Requested	£ 52.1m
8. Proposed New PA Total	£ 54.1 m
9. Est Full Lifecycle Cost	£ 144.4 m Commitment Authority
10. Highest Authorisation Level	TfL Board

**Delete as appropriate*
***e.g. Team Leader, Head of, Directorate Approvals Board (Director), MD Surface (SAB), PRG, Commissioner, TfL Board*

11. Approval: To be completed in ALL cases

Project Manager	Mick Hickford	Date:		Signature:	
SRO	Dick Halle	Date:		Signature:	
Authoriser	Keith Gardner	Date:		Signature:	
Director	Dick Halle	Date:		Signature:	

12. Surface Approvals Board (SAB) Assurance:

Surface Finance	David Hendry	Date:		Signature:	
Surface BP&S	Eric Assendelft	Date:		Signature:	
SPMO	John Newham	Date:		Signature:	

13. Surface Approvals Board (SAB) Authorisation: *MD Office Use Only*

MD Surface	David Brown	Amount Authorise		Date:		Signature:

14. Project Review Group (PRG) Authorisation: *General Counsel Use Only*

MD Finance	Steve Allen	Amount Authorise		Date:		Signature:

15. Commissioner Authorisation: *General Counsel Use Only*

Commissioner	Peter Hendy	Amount Authorise		Date:		Signature:

5. CASH FLOW TEMPLATE [REDACTED]

6. APPENDICES

Appendix A – Site Allocation

Borough	Area – km^2	No. of sites
Westminster	13.6	148
Kensington & Chelsea	5.6	52
Camden	4.3	42
Southwark	4	36
City	3.1	28
Royal Parks	4.7	9
Lambeth	2.9	26
Islington	2.7	25
Tower Hamlets	1.8	16
Hackney	1.5	14
Total	**44.3**	**365**

Sites are based on the average size needed of 24m x 2m.

Note that these are approximate distributions of sites within the Boroughs.

Appendix B - Demand Context

A feasibility study has tested if a demand exists and established the minimum no of bicycles that would be required to cater for such a demand; a combination of existing data and commissioned research was used in this analysis.

		Zone 1 to Zone 1 daily trips over 1km	Uptake predicted by customer research	Estimated number of potential daily cycle hire trips
trips by residents of greater London (inside M25) excluding after rail (LATS 2001)	Usual workplace	70,400	8%	5,632
	Other work related	21,760	8%	1,741
	Education	11,776	12%	1,413
	Shopping and personal business	75,008	10%	7,501
	Leisure	67,328	10%	6,733
	Other (inc Escort)	9,728	9%	876
Total trips in zone 1 over 1 km[7]		256,000		23,896
Additional Business trips		146,160	8%	11,693
Visitor trips based on visitor numbers and length of stay data [8]		214,000	8%	17,120
Total Trips (excluding after Rail)		**616,160**		**52,709**

The users were split into 5 key market segments as detailed in the table below. An uptake from research conducted by SDG is then applied to each category to estimate demand.

The after rail market refers specifically to non-London residents who use mainline trains to commute to London. It is not proposed that this scheme supports this market at present, to do so would require 50,000 bicycles. This market is excluded from all analysis and the scheme will be structured to allow management of this demand as far as is practicable.

Seasonally adjusted trip number:

1. Historical Met Office data was used to calculate the average monthly rainfall and snowfall for London over a 30 year period (http://www.metoffice.gov.uk/climate/uk/averages/19712000/sites/greenwich.html http://www.metoffice.gov.uk/climate/uk/location/england/snow.html)

[7] It is assumed that for a trip of less than 1 Km users will opt to walk, these trips are therefore removed from the analysis. Note that this represents 70% of Zone One Trips.
[8] Data provided by Visit London

2. SDG research revealed a 63% reduction in demand when rain occurs and 67% reduction when snow occurs.
3. This is applied to the trip number for the relevant number of days (107 and 6 respectively) and a further reduction of demand by 20% for weekends is applied.
4. This results in a yearly trip number of 14,631,782 or an average trip number per day of approximately 40,000

Appendix C – Tariff Modelling

Four different tariffs have been modelled with an annual subscription rate of £30 and a weekly subscription rate of £5, these are presented in table one. The gross revenue from user charges has been calculated from a model based on stated preference research data. It represents the most accurate and detailed modelling that can be performed at this stage of the project. Additional research is currently being conducted to further validate subscription levels and investigate demand for a monthly subscription period.

Tariff A

Hire Period	£
up to 30 minutes	£0.50
up to 60 minutes	£2.00
up to 90 minutes	£4.00
up to 120 minutes	£6.00
up to 150 minutes	£10.00
up to 180 minutes	£15.00
up to 210 minutes	£20.00
up to 240 minutes	£25.00

Tariff B

Hire Period	£
up to 30 minutes	£0.00
up to 60 minutes	£2.00
up to 90 minutes	£4.00
up to 120 minutes	£6.00
up to 150 minutes	£10.00
up to 180 minutes	£15.00
up to 210 minutes	£20.00
up to 240 minutes	£25.00

Tariff C

Hire Period	£
up to 30 minutes	£0.80
up to 60 minutes	£2.50
up to 90 minutes	£4.50
up to 120 minutes	£6.50
up to 150 minutes	£10.00
up to 180 minutes	£15.00
up to 210 minutes	£20.00
up to 240 minutes	£25.00

Tariff D

Hire Period	£
up to 30 minutes	£1.00
up to 60 minutes	£2.00
up to 90 minutes	£5.00
up to 120 minutes	£6.50
up to 150 minutes	£10.00
up to 180 minutes	£15.00
up to 210 minutes	£20.00
up to 240 minutes	£25.00

Table One: Details the four different tariffs modelled, the steep increase is to prevent extended use of the bikes

Table two details the revenue generated from tariff charges for each different model. This is split by revenue expected from short-term users and annual subscribers. The number of annual

subscribers is assumed at a rate proportional to both the tariff charged and demand generated, it is calculated separately to reflect infrequent users of the system who will subscribe but not use the system as often as the model predicts. When compared to observed numbers in Barcelona and Paris the estimate is considered conservative[9]. The revenue is factored by a split observed in Paris for annual and short-term users[10].

Table Two: gross annual revenue from user charges

Pending Mayoral approval tariff A is taken as the tariff used for the scheme. This tariff will deliver a revenue figure that exceeds the gross yearly operating costs for the scheme.

Appendix D- Safety Calculations

1. Both TfL and external research[11] has shown that there is an inverse relationship between the number of cyclists on the road and the accident rate.
2. The observed accident rate for fatal accidents in Paris was 0.011 this reduced to 0.009 after implementation of the Paris scheme, an 18% decrease in fatal accidents.
3. These benefits are not monetised for the purpose of the business case but it is suggested that data is collected for the scheme in order to analyse this benefit.

Appendix E – Health Benefit Calculations

1. The World Health Organisation 'Health Economic Assessment Tool' (HEAT) calculates the hours cycled per year by multiplying the number of trips per day and distance per trip (as entered by the user) by the total of the number of days cycled per year multiplied by the average speed of journey.
2. The HEAT then applies the relative risk of death among cyclists of 0.72 from the Copenhagen Centre for Prospective Population Studies (2000). This allows it to provide an estimate of the economic savings arising from increased cycling. The Copenhagen study was based on over 13,000 women and 17,000 men between 20 and 93 years of age, presenting comprehensive, cycling related health data.

[9] The number of annual subscribers in Barcelona for 6,000 cycles is 250,000 (this has been capped at this amount) and Paris has 750,000 annual subscribers, a conservative 150,000 is assumed for London. Tariff B generates 17% less demand, the number of annual subscribers is assumed to vary accordingly.

[10] The model calculates total revenue using the entire population predicted to use the scheme, in order to increase accuracy in the predictions the population must be factored to represent the expected division between annual and short-term users of the scheme. The number of annual and short-term subscribers in Paris represents a 56% and 44% split in the total amount of users respectively; these proportions are applied to the revenue predicted by the model.

11 (Injury Prevention 2003, 9:205-209. Safety in numbers: more walkers and bicyclists, safer walking and bicycling. Jacobsen P.)

3. The model assumes a linear-dose response, the more a user cycles the greater the reduction in risk of all cause mortality and hence the greater the economic benefits, the level of physical activity outside the scheme therefore has not impact on the benefit calculations.
4. The number of trips per day is taken as 27,056 (visitors are excluded from the analysis and the same analysis is then followed as in appendix C)
5. The mean trip length is taken as 3.2 Km as identified in LATS 2001 data.
6. Observed usage data for Paris indicates on average users use the scheme 3-4 times per week, an average usage per week of three is assumed for London leading to 159 trips per year.
7. The proportion of trips that are part of a return journey is taken as zero; the trip data does not relate to count data hence this adjustment is not necessary.
8. The model allows an adjustment to be made to account for those cyclists whose health directly benefits from the scheme. Users are assumed to use the scheme 3-4 times per week. All users that currently do not cycle or cycle less than this frequency are assumed to benefit directly from this scheme. This is 72% of the users[12].
9. The economic value of a life a cyclist is taken as £1.6m in agreement with the VPF identified for road casualties by TfL.
10. A discount rate of 3.5% is used.
11. The mean proportion of working age population who die each year is left at default value (WHO European Region average from the European Mortality Database)
12. Build up for uptake is changed to one year as this is the time predicted for full use of the system to occur with the benefits calculated over a period of seven years.
13. A mean annual benefit of £10,915,000 results from the model.

Appendix F – Journey Time Calculations

***** Based on observed uptake for other European cities demand is assumed to be 75% of predicted levels for year one and 100% for subsequent years with no increase in trips.
******The trip number used in these calculations is the seasonally adjusted figure averaged over the year (40,087 trips per day)

Cycling

1. The average distance cycled in London is 3.2 Km
2. Using a speed of 5 metres per second this would take 10 minutes 40 seconds to cycle plus 1 minute to access and return the cycle.
3. A 3.2 Km journey will therefore take a total of 12 minutes 40 seconds to complete by cycle.

Bus

1. The average waiting time for all city of London buses is 5.2 minutes (5 Mins 12 Secs) this is taken to be representative of waiting time across the CHS zone.

[12] Data obtained from recent market research conducted by MVA.

2. The average speed for buses within the congestion charging zone is 10 Km/Hr and within the ring road 12 Km/Hr, the vast majority of the CHS zone is within the CC zone hence this average speed of 10 KM/Hr is taken.
3. A dwell time of 10 seconds is added for boarding and alighting.
4. Time taken to complete an equivalent 3.2 Km journey in central London will be calculated including wait time + dwell time + ride time (to cover 3.2 Km) + dwell time.
5. Thus it takes 5.12 + 0.10 + 19.24 + 0.10 = 24 minutes 56 seconds
6. A time saving per trip of 12 minutes 16 Seconds if completed by cycle.
7. Using a time value of £6.61/hr each trip brings £1.35 of benefits
8. SDG research shows a modal shift of 27.5% from bus trips or 11,024 trips per day - £14,882 per day.
9. Multiplying this by 365 (demand has already been adjusted for fluctuations) results in £5,432,076 of benefits p.a.

Tube

1. Average access time for Zone one stations is 2 mins 24 secs and average egress time is 2 mins 34 secs (current data supplied by LUL)
2. Assuming an average speed of 14 metres per second a 3.2 Km journey will take 3 mins 48 secs.
3. Average dwell time is assumed to be 10 seconds.
4. Average platform wait time for zone one stations is 3 mins 48 secs
5. Time taken to complete an equivalent 3.2 Km journey in central London will be calculated including access time + wait time + dwell time + ride time (to cover 3.2 Km) + dwell time + egress time
6. Thus it takes 2.24 + 3.48 + 0.1 + 3.48 + 0.1 + 2.34 = 12 mins 54 seconds
7. A time saving per trip of 14 seconds.
8. Using a time value of £8.38/hr each trip brings 3.3p per trip of benefits
9. SDG research shows a modal shift of 25% or 10,022 trips per day - £331 per day
10. Multiplying this by 365 (demand has already been adjusted for fluctuations) results in £120,714 of benefits p.a.

Walking

1. To calculate the average time savings for walkers a different methodology is required.
2. There are 91,093 walking trips within central London over 1km per year (LATS 2001). The average distance of these trips was 1.63kms.
3. The uptake from the London population is 9% or 8’198 trips.
4. It should be noted that this does not account for the walking trips completed by visitors but only of London residents.
5. For these calculations the walking population is calculated from LATS data providing the population of total walkers who would potentially use the scheme, a known uptake from SDG research is then applied to the population to give the number of actual trips.
6. The average walking speed is 1.33 metres per second resulting in a journey time of 20 mins 25.

7. The equivalent journey using the cycle hire scheme would take 7mins 26 (Access/return time of 2 mins + journey time 5 mins 26)
8. A time saving per trip of 12mins 59 seconds
9. Using a time value of £12.86/hr each trip brings £2.78 of benefits.
10. This equates to £22'790 per day (trips x benefits)
11. Using an annualisation figure of 332 (figure stated in BC Assistant) leads to £7,566,426 of benefits p.a.
12. Note that seasonality is not included in the demand analysis as the original data set already reflects this effect.

Appendix G – Budget assumptions

1. [Redacted]

Appendix H – Monetised Benefits[13]

Infrastructure Benefits	Value £
Cycle racks in a convenient location, with some spare capacity and no vandalised bikes	6,657,461
Dedicated Surveillance Cameras covering the cycle parking	3,943,265
Good, bright, even lighting after dark	5,223,546
Cycle parking area in excellent condition (in good repair, clean and litter free) and near to cycle servicing shop	2,816,618
Signs to public transport and major attractions	1,536,337

Sub - total	**20,177,227**
First Year Demand Adjustment	19,456,612
NPV	**16,356,020**

Health Benefits	
Value due to reduced mortality	38,202,500
Sub - total	**38,202,500**
First Year Demand Adjustment	36,838,125
NPV	**30,967,629**

Journey Time Savings	
Bus Journey Time Savings	19,012,266
Tube Journey Time Savings	422,499
Walking Journey Time Savings	26,482,491
Sub - total	**45,917,256**
First Year Demand Adjustment	44,277,354
NPV	**37,221,348**

Totals	
Total Benefits excluding Health (NPV - demand adj.)	**53,577,368**
Total Benefits including Health (NPV - demand adj.)	**84,544,997**

[13] Note that these figures have been halved for the BCR calculations.

Appendix I – Mid–level Cost Breakdown [Redacted]

Costs for the project have been estimated by the relevant work stream leads within the project team (engineering, commercial and marketing and communications) and the views of other internal stakeholders have been sought where appropriate. Internal stakeholders consulted to date include IM, Group Property, RNP Quantity Surveyor, Bus Infrastructure and Customer Services.

Based on information available in the public domain with regard to the development costs associated with the Velib scheme in Paris, the costs for both projects appear to be broadly in line.

Bar a small number of exceptions the project team has not consulted outside of TfL on project costs. This is due to the specialist nature of the project and the fact that any relevant company consulted might wish to be involved or is currently involved in the tendering process.

Appendix J – Proposed Procurement Timeline

Task	Start	Finish
Issue PQQ	05/12/2008	05/12/2008
PQQ return	05/01/2009	05/01/2009
Evaluate PQQs	06/01/2009	17/01/2009
Bidders Conference	22/01/2009	22/01/2009
Feedback Discussion from Bidders Conference	23/01/2009	23/01/2009
Finalise ITT + Evaluation Methodology	26/01/2009	09/02/2009
Board Approval	10/02/2009	10/02/2009
Issue ITT	11/02/2009	13/02/2009
ITT Period	16/02/2009	23/03/2009
Bidders Clarification Meetings	19/02/2009	20/02/2009
Tenders Received	23/03/2009	23/03/2009
Tender Evaluation & Clarification	24/03/2009	09/04/2009
Bidders Tender Presentations	26/03/2009	26/03/2009
Feedback Discussion from Bidders Presentations	27/03/2009	27/03/2009
BAFO Process	14/04/2009	27/04/2009
Evaluation of Final Offers	27/04/2009	08/05/2009
Award Approval *	11/05/2009	14/05/2009
Standstill Period	15/05/2009	25/05/2009
Contract Award	25/05/2009	25/05/2009
Build Period	25/05/2009	20/05/2010
Scheme Opens	21/05/2010	21/05/2010

* Assumes Commissioner has delegated authority from TfL Board

Appendix K – BCA Output Form

Maximum size = 80 characters

Cycle Hire Scheme (CHS)

Main items of scope, and Objectives

Maximum size = 1000 characters

- 400 docking station sites in central London.
- Letting a single contract for the design, build (6,000 cycles, 10,200 individual docking points, 420 registration terminals, and dedicated CCTV and signage) and operation of the CHS.
- Smooth transition between project and business as usual.
- Sponsorship contract.

Objectives
Project is a mayoral manifesto pledge.
Environmental - users will be contributing less greenhouse gases than when using other forms of motorised transport.
Promote Sustainable Travel –health benefits and emission free form of transport.
Social Inclusion and Integrated Travel –low cost, removal of access barriers, complimentary to other cycle projects, relieve loading of transport system during Olympics.
Safety – increase in cyclists on road, accident rate decrease - increase in the overall safety of cyclists. Transport network of London safer.
Wider Government Objectives – the project fulfils a number of government objectives.

			Project life, i.e. number of years over which discounted (max = 30)			7
COSTS AND REVENUES		Optimism bias is already included (Incl.) or to be added (Add) when calculating		Undiscounted (£000s)		Discounted (£000s PV)
		Maximum size for fields below = 160 characters	OB			
Capital costs (total)			0%	-72,956		-69,230
Sub-category 1	Project Capital Expenditure (including risk and managment contingency)			-51,683		
Sub-category 2	On-going Capital Expenditure (including managment contingency)			-21,273		
Sub-category 3						
Sub-category 4						
One-off cost savings (e.g. scheduled asset replacements)						
Residual value (if significant after 30 yrs)						
Operating costs	Operating Expenditure from 2010/11 to 2016/17				pa	-63,675
Ongoing cost savings					pa	
Revenue from increased demand					pa	
Secondary income (advertising, etc)	Fares Revenue 10/11-17/18 + Sponsorship Revenue (7 years 10/11 - 17/18)				pa	92,113
Revenue loss avoided					pa	
				Net Financial Effect (NFE)		-40,792
Third party contributions (total)						
Sub-category 1						
Sub-category 2						
Sub-category 3						
SOCIAL BENEFITS						
Journey time (total)					pa	37,224
Sub-category 1	See BC for details.				pa	
Sub-category 2					pa	
Sub-category 3					pa	
Sub-category 4					pa	
Ambience	See BC for details.			2,780	pa	16,359
Safety improvements					pa	
Environmental and other External (total)					pa	
Sub-category 1	Health benefits - see BC for details.				pa	
Sub-category 2					pa	
Sub-category 3					pa	
Sub-category 4					pa	
Sub-category 5					pa	
Sub-category 6					pa	
Sub-category 7					pa	
Sub-category 8					pa	
Sub-category 9					pa	
Sub-category 10					pa	
				Total Social Benefit		53,583

OUTCOME OF QUANTIFIED ANALYSIS

	XX.X : 1 (or Fin Pos)	NFE (£000s PV)
Net Financial Effect (NFE) from above		-40,792
Benefit : cost ratio	1.3 : 1	
Number of years until project becomes financially positive to TfL	Years	

	XX.X : 1 (or Fin Pos)	NFE (£000s PV)
Sensitivity to subtracting any third party contributions from full cost	1.3 : 1	-40,792

Sensitivity to assumptions associated with the most uncertainty — **Maximum size = 160 characters**

		XX.X : 1 (or Fin Pos)	NFE (£000s PV)
Sensitivity test 1	Capital costs increase by 25%	0.9 : 1	-58,099
Sensitivity test 2	Journey time and ambience benefits reduce by 30%	0.9 : 1	-40,792
Sensitivity test 3	Health benefits of (£30,967,629) are included	2.1 : 1	-40,792

IMPACT ON STRATEGIES

Extent and explanation of contribution to TfL Objectives, where relevant:

Maximum size for all impact fields below = 500 characters

Improve door-to-door journey times and reliability across our transport system

When compared with an equivalent journey: by bus a journey on the CHS will be 9 minutes and 32 seconds quicker; by tube 34 seconds and by walking 12 minutes and 59 seconds quicker. The CHS will deliver significant journey time savings to users in comparison with other modes.
Reliability will be increased as a new mode of transport is introduced which will increase network resilience.

Engage people in the effective use of our system, with high standards of customer care and information

The public will be provided with information through a targeted marketing campaign and website. A dedicated customer service and drop in area will operate to resolve customer issues when using the scheme.

Reduce CO_2 emissions from ground transport and improve the energy efficiency of operations

The CHS will only emit minimal emissions from maintenance activities, it will contribute to a reduction in emissions as a result of modal shift from other emission emitting transport.

Operate a safe and secure transport system

An increase in cycling numbers has been observed to reduce the accident rate for cyclists as awareness by other road users increases. The docking stations will be well lit, covered by CCTV and well maintained which will reduce the perception of and occurrence of crime.

Deliver value for money

Influence a shift towards more sustainable modes of transport

By completing the project the number of daily cycle trips is expected to increase by up to 52000 a day, representing a large increase in the number of trips completed by a sustainable transport mode.

Support sustainable growth and regeneration

Provide accessible, affordable and inclusive links between communities and the employment, education and other opportunities London offers

The CHS will provide a low cost mode of public transport for Londoners, increasing access to cycling by removing key access barriers including access to a bike, storage and theft. The project will compliment a number of additional cycling initiatives designed to improve cycling integration in London such as the LCN+ and cycle ways.

Improve the local environment in and around our transport system and enhance the urban realm

The CHS will be noiseless, virtually emission free and requires limited infrastructure, as such the environmental impact will be minor.

Ensure that the movement of freight and services within London is efficient and reliable

Extent and explanation of contribution to key NATA objectives, where relevant:

Integration (including Interchange)

The CHS will remove access barriers related to cycle theft, storage and access to a bike which currently prevent potential users from choosing to cycle. A new mode of transport will increase users choice of transportation and provide a fast and efficient short trip alternative.

Noise

Local Air Quality

Physical Fitness

Cycling as a form of physical activity has a significant beneficial impact on health. This affects a number of aspects of health and is specifically linked to improvements in the following:all-cause mortality; cardiovascular disease; stroke;cancer; and type 2 diabetes .

Journey Ambience

The CHS will install secure, well lit and maintained areas for the cycles to be stored in.

Extent and explanation of contribution from any project with a key objective of producing financial savings: — **Maximum size = 500 characters**

Extent and explanation of contribution to other Mayoral strategies or NATA objectives, etc, where relevant: — **Maximum size = 1000 characters**

This project is a Mayoral manifesto pledge.

Assumptions

Any non-standard assumptions used in the cost-benefit analysis — **Maximum size = 150 characters**

Assumption 1	Boroughs will not be compensated for lost revenue from car parking spaces used for docking stations.
Assumption 2	Demand is estimated at 52'709 trips per day for peak usage, adjusted for seasonal/weekend fluctuations 40,087.
Assumption 3	Demand estimation does not account for the after-rail market, the scheme is unable to cater for demand from this market.
Assumption 4	A number of other assumptions have been made, please see the BC for full details.

Risks (Technical risks, procedural barriers, dependence on other projects, etc) — **Maximum size = 500 characters**

- The project schedule is very tight and has no slack time to allow for delays, should delays occur this may risk timely delivery and have cost implications.
- The project has not yet gone to tender, there is a risk that the bids will be higher than allowed for in the project budget.
- Some operational risks are present regarding predicted levels of redistribution, theft and bike maintenance.

Other options considered — **Maximum size = 500 characters**

A pilot scheme has been discarded as an inefficient way to test demand, a full network would be required. The option of installing 10'000 bikes has been considered but discarded due to limitations of time and budget.

OVERALL ASSESSMENT

Overall assessment, given quantified analysis, sensitivity tests, any benefits not included in quantified analysis, and project risks — **Maximum size = 1000 characters**

Key project risks centre on potential delays to programme schedule. A number of measures are in place to mitigate these risks.
This project will provide London with a new, sustainable mode of transport; in so doing it has the potential to effect great change in the travel behaviour, health and attitudes of London residents and visitors. It will remove access barriers currently preventing Londoners from cycling and create a new revenue generating mode of transport for TfL.
Appraisal of this project has calculated a maximum benefit: cost ratio of 2.18:1 this ratio is suggested as reflective of the benefits that the project will bring to

Impact of scope reduction or deferral — **Maximum size = 500 characters**

The project is scalable and docking stations, bike number can be adjusted, a reduction would affect the capacity of the network and an increase would require further land identification.

MEASURES OF SUCCESS (At least one, but preferably two or three)

	Description of measure — **Maximum size = 140 characters**
Measure 1	Improve access to a bicycle for Londoners: Increase in all Londoners agreeing that they have access to a hire bicycle for trips in Central London of 5% by 2015 and 10% by 2020
Measure 2 (Optional)	Increase take up of cycling in Central London: 10m trips annually by 2012 and 14m by 2013
Measure 3 (Optional)	

Person responsible for reporting back on Measures of Success

Name	Mick Hickford
Contact details (tel no. / email)	020 3054 0714/ mickhickford@tfl.gov.uk
Date to report back	01-May-12
Date report received	
Person responsible for Business Case	James Hiett
Date submitted	23-Dec-08
Endorsed by TfL Business Case Development	
Date submitted	