RAPID RESPONSE VEHICLES

2005/06 to 2007/08

BUSINESS CASE

Authorisation:

Proposed by:

Head of Operational Support **Date**

Concurrence:

Director of Finance **Date**

Medical Director **Date**

Approved By:

Chief Executive **Date**

1. EXECUTIVE SUMMARY

1.1. Introduction

1.1.1. The purpose of this Combined Business Case (CBC) is for internal LAS use only where combining the relevant sections of the Outline and & Full Business Cases requirements reduces duplication, saves time & reduces duplication. This business case confirms the strategic direction and business objectives of the Trust, reviews the current position, analyses the market and details the service requirements.

1.1.2. This Business Case has been written in response to the SIP Line item 39 and Primary Care Trust, Strategic Health Authority, Department of Health & LAS Board requirements for increasing the procurement of additional Emergency Care Practitioner units & replacing existing Rapid Response Units.

1.1.3. Through detailed analysis it has been determined that procurement of an additional 114 new ECP vehicles, and 58 replacement RRUs, are required to meet the Trusts strategic and & business objectives.

1.1.4. At the time of writing the Trust awaits an analysis of how many single responder units (ECP vehicles & RRUs) are required to meet the changed performance targets and response regime from 1 April 2007. this business case reflects the minimum number of single responder vehicles that will be required over the next three years.

1.2. Strategic Case

1.2.1. The LAS investment in ECP vehicles is reinforced by the three key investment objectives driving this business case:

1.2.1.1. Patient - To maximise patient care by having the correct increasing the number of ECP response unit's for responding to all categories of call. The ECP service has high patient satisfaction ratings in terms patient assessment, the information provided & outcomes. ECPs also maximise the usage of care pathways thus providing care appropriate to need for patients.

1.2.1.2. Consultants reviewed the current establishment against the calls.

1.2.1.3. Performance –Because the vehicles are people carriers they can transport patients so reducing the need for dual crewed vehicles unless necessary. The vehicles assist the LAS in delivering a service, which safely & appropriately reduces unnecessary A&E conveyance whilst supporting delivery of LAS core targets.

1.2.1.4. This case will also assist in maintaining an efficient, effective and sufficient fleet of ECP units with reduced vehicle downtime (servicing, peak day periods, winter pressures) by provision of a reserve establishment.

1.2.1.5. The consultants also established that performance is currently negatively affected due to the lack of spares when core vehicles were being serviced. A reserve of therefore at least 10% is required as a reserve spare to provide maintenance cover

1.2.1.6. **People** - The vehicles provide staff with high visibility, appropriate and safe vehicles and equipment.

1.3. **Economic Case**

1.3.1. From the four options reviewed and the benefits analysis, the preferred option is to procure and convert 172 Vauxhall Zafiras. The sensitivity analyses demonstrate that this is a robust choice.

1.3.2. As NHS capital is available, no alternative funding options were considered.

1.4. **Financial Case**

1.4.1. The preferred option generates additional revenue costs of £1.1million on average. This will be funded by a transfer from the centrally held depreciation reserve. The investment is on-balance sheet.

1.5. **Commercial Case**

1.5.1. The LAS have identified funding for this project as part of the capital allocation up to 2008. The LAS has previously assessed vehicles for this role and as a result, the Vauxhall Zafiras will be procured and converted using the current NHS framework agreements. This project will therefore not go to OJEU.

1.5.2. The project will use the NHS framework agreement as the basis to invite a single tender action on ATT Papworth for conversion. This is based on their similar conversions for LAS RRU and DSO vehicles and therefore design costs will be kept to the minimum.

1.6. **Management Case**

1.6.1. The Project Support Office using the PRINCE2 methodology standard will manage this project. The project will have an Executive & Senior Supplier and Senior User representation. The respective Project Manager will manage all configuration/change control through the PSO. At the end of the project, a Benefits Realisation plan will be set to monitor the progress of the benefits.

1.6.2. The timescale for the project is estimated to be 20 weeks from placement of orders. However, that timeframe cannot be specific until contracts are placed on the individual vehicle manufacturer, vehicle converter and equipment suppliers for their production schedules to be confirmed.

2. STRATEGIC CASE

2.1. LAS Organisational Overview

2.1.1. Summary of LAS Organisation

2.1.1.1. The London Ambulance Service NHS Trust provides services to the public across the Greater London area. Its services are purchased by the 32 London Primary Care Trusts (PCTs) for some 7.5 million residents, increasing by approximately by 700,000 per day with commuters and & visitors. The London Ambulance Service is the largest & busiest ambulance service in the world. The main functions of the Trust are to:

- Provide care appropriate to need for 999 callers.
- Convey patients, declared by a clinician to be urgent, on a scheduled basis to hospital and/or between hospitals.

- Provide transportation services to and & from hospitals for non-urgent patients.
- Provide both emergency planning and responses to major incidents, e.g. bombings, train crashes, and to plan and provide services for events such as Notting Hill carnival, anti globalisation marches.
- Provide the Emergency Bed Service.

2.1.1.2. The Trust works from 70 locations around across the London area. It has its main control facilities at are at its Waterloo HQ with fallback facilities in East London. There are 69 stations across the Metropolis from which paramedics, and technician and ECP crew staff are dispatched to calls, processed through its control centre.

2.1.2. **Business Goals**

2.1.2.1. The primary National target is to reach 75% of Category "A" (life-threatening) calls within eight minutes of the primary diagnosis of the call being identified. Other targets include reaching Category B (non-life threatening but urgent) calls within 14 minutes, Category C class (non-urgent) within 30 minutes and doctors urgent calls with 15 minutes of agreed times.

2.1.2.2. There is a new DH policy aim to reduce ambulance conveyance to A&E departments from its current level of 75% to 50%. ECPs will provide a key delivery mechanism for the LAS to achieve this aim through exploitation of alternative care pathways and increasing 'treat & leave' rates where safe and appropriate.

2.1.2.3. The business goals for the LAS are set out in its five-year Service Improvement Programme. This programme has the support of both commissioners and Strategic Health Authorities (SHAs). These goals encompass national performance targets, stakeholder requirements, LAS improvement and efficiency goals.

2.1.2.4. The LAS is achieving the national target for Category A calls by reaching 76%of those calls within 8 minutes in 2004/05. This was achieved through a combination of Rapid Response Unit (cars), ambulances, motor cycles, pedal cycles and other responders close to the scene such as ECPs. The exceeding of the 75% target does not change the need for this investment.

2.1.2.5. There are no other LAS performance improvement projects, either underway or in preparation, that will affect or have any impact on this investment initiative. This investment is seen as a crucial aspect towards the success of the overall LAS programme of improvements.

2.2. **Investment Overview**

2.2.1. **Current Facilities (ECP Vehicles)**

2.2.1.1. ECP cars currently operate in the following areas. The cars are between 1 & 2 years old.

Table 1

PCT	Number
Wandsworth	1
Havering	2
Hounslow	1
Croydon	1
Bromley	2
Total	**7**

2.2.1.2. This small number of vehicles does not allow expansion of the service to new Primary Care Trust areas across London. Additionally there are no spare vehicles to cover for routine maintenance or repair. Where ECP vehicles are off the road for accident repair this results in the use of a double-crewed ambulance so increasing staffing and vehicle costs.

2.2.1.3. Emergency Care Practitioners have now taken 15000 calls since commencement. ECPs have increased the use of care pathways and reduced A&E take rates for Patients seen by ECPs from 75% to 42%.

2.2.2. **Current Facilities (RRUs)**

2.2.2.1. RRUs are allocated to each main station to respond to Category A calls within their complex operational area plus one allocated to CAC.

2.2.2.2. There are 63 vehicles which are available for sector roster during any 24 hour period and 7 spare vehicles (1 per sector) to cover RRUs which are being serviced or repaired. The CAC vehicle is used by paramedics manning the single responder Desk in CAC

2.2.2.3. The age of the RRUs is as follows:

Table 2

Sector	5 Years of Age	4 Years of Age	3 Years of Age	Under 1 Year of Age
NE	2	3	4	3
SE	2	2	3	3
SW	2	2	3	2
W	2	3	4	1
NW	2	3	3	1
C	2	2	4	
EC	1	4	4	2
CAC				1
TOTALS	**13**	**19**	**25**	**13**

2.2.2.4. One 5 year old vehicle and one 4 year old vehicle were written off and both were replaced by the last RRU procurement (13 vehicles).

2.2.3. **Proposed Facilities (ECP Vehicles)**

2.2.3.1. The DH's Reforming Emergency & Urgent Care Project is proposing additional ECP staff across London over the next 5 years. In addition, the DoH Change Agent Team is actively promoting ECPs as best practice role re-design. The programme also fits with the direction and detail of the recommendations of the draft Bradley National Ambulance Review.

2.2.3.2. SHAs, commencing with the North West London & North East London, in collaboration with their Workforce Development Confederations, are developing sector-wide ECP rollout plans with their Primary Care Trusts.

2.2.3.3. The London Ambulance Service has committed to additional ECP staff over the next three years subject to financial support from PCTs.

2.2.3.4. The number of ECP vehicles needs to be increased in line with the recruitment rate of ECP staff over the three year period. This will mean an additional 114 vehicles will need to be procured over an above the current 7 vehicles.

2.2.4. **Proposed Facilities (RRUs)**

2.2.4.1. 13 of the RRUs, which are 5 years of age and are showing signs of unreliability and requiring increased maintenance. One RRU was written off post approval of the Additional RRU Business case therefore year 1 requires the purchase of 14 RRUs. The other Vauxhall Astras are of the old design and will require to be replaced as they reach 5 years of age.

2.2.4.2. Additional ECP first single responder units to cover London will assist the Trust to sustain its 75%+ performance level and improve patient care.

2.2.4.3. Therefore, this business case also sets out the case for the replacement of the remaining Astra RRUs.

Table 3

	A	B	C	D	E	F
27	**Option 2 - Purchase 172**	2006/07	2007/08	2008/09	2009/10	2010/11
28	**Zaferas**	1	2	3	4	5
29						
30	Replacement RRUs	14	33	58	58	58
31	Additional ECP Vehicles	4	88	88	88	88
32	Further ECP Vehicles	11	22	26	26	26
33	**Total**	**29**	**143**	**172**	**172**	**172**

2.3. **Investment Objectives and Targets**

2.3.1. **The role of the ECP**

2.3.1.1. The mission statement for the new role is to develop a new community based role for ECPs integrated into local health services. They will provide rapid, high quality, treatment and referral for people in crisis situations.

Programme objectives are:

- Improved range of appropriate & defined care pathways available to ECPs.
- Reduced usage of double-crewed ambulances.
- Less A&E attendance.
- Improved patient care.
- Integration of the new role with primary & community care services.
- Development of a new role/career option for paramedical & other staff.

2.3.1.2. This mission and these objectives will support the delivery of core LAS targets, and the new aim of reduced A&E attendance through an intensified single response service. Increased density of ECP vehicle and replacement RRU vehicles being to the same design will allow increasing cross cover, which will assist with target delivery and cost containment.

2.3.1.3. Each investment objective closely aligns with each other and links strongly to the Category A response times target providing care appropriate to need

2.3.1.4. This initiative aligns with the SIP 39 ECP ISON 85.

2.3.2. **The role of the RRU**

2.3.2.1. RRUs are primarily for the first response to Category A calls. The equipment the vehicles carry is similar to that carried by the ECP vehicles and therefore the design of the equipment section is the same.

2.4. **Scope of Investment**

2.4.1. The vehicle procurement programme for both additional ECPs and replacement RRUs will be phased over three years and the combined purchased will be as follows:

Table 4

	A	B	C	D	E
8	**Option 2**	**YR1**	**YR2**	**YR3**	**Total**
9	RRUS	14	19	25	58
10	ECPS	4	84		88
11	ECPS	11	11	4	26
12	**Annual Total**	29	114	29	**172**
13	**Cumulative**	**29**	**143**	**172**	

2.4.2. This investment covers the scope of the capital costs, which includes purchasing 172 base vehicles over 3 years plus costs to convert and fit out the vehicles with standard LAS communications, livery, clinical equipment and diagnostic equipment where required.

2.4.3. The investment includes the scope of non-recurrent revenue such as on-road costs of the vehicle and procurement of vehicle and clinical equipment.

2.4.4. This investment does not include the purchase of any maintenance spare parts nor any minor or major changes to the current ECP/RRU vehicle specification.

2.4.5. It is imperative that the final product must be delivered as a whole, with

minimised delays caused by failure to deliver sub products. To demonstrate the success factors/achievement of investment objectives the final product must incorporate all sub products as each plays a role in determining the level of success of the investment objectives.

2.5. Constraints and Dependencies

2.5.1. Constraints

2.5.1.1. **Internal Constraints** – This project will be constrained by the resource ability and & capacity to provide services, time and information on a timely basis to enable the Project Manager to deliver the agreed number of vehicles each year. With the exception of clinical equipment procurement and the final fitting of technology equipment the majority of the vehicle conversion work will be completed at one of the NHS approved vehicle Converters.

2.5.1.2. External Constraints - This project will be constrained by:

- The Vauxhall 'order bank' periods, which determine when the next production dates start and require an 8-10 week vehicle build lead-time.
- The introduction of the New Zafira model on the production line
- The vehicle converter lead-time (at least 6-weeks from receipt of the order) to the first vehicle being available for acceptance.
- Production slots for the remaining vehicles, each taking approx three weeks from start to complete production.

2.5.2. Dependencies

2.5.2.1. There is an inherent reliance on third parties for vehicle projects and even more so on this project given the outsourcing of the conversion design work and delivery of components from a variety of suppliers including some LAS free issued items. Most of this work is outside of the LAS control and therefore the interdependency between the main suppliers and the LAS is inherently one of good communication.

2.5.2.2. Delays in ECP vehicle delivery could affect the timescales for training and recruitment of ECPs and negotiations with PCTs therefore a realistic implementation programme with indicative dates will be important.

2.5.2.3. There is no other SIP programme or other initiatives or dependencies that will affect this project.

3. ECONOMIC CASE

3.1. Objectives

3.1.1. The objectives defined below and the benefit criteria have been developed based on current ECP & RRU use. The objectives are scripted concentrating on requirements rather than the means for achieving the results.

3.1.2. The investment objectives are:

- Patient – Maximising patient care through ensuring the appropriate range of clinical equipment can be carried safely on the vehicle.
- Performance – The correct establishment of core ECP and RRU vehicles are available for responding to calls through provision of a dedicated

reserve establishment to cover vehicle unavailability (e.g. servicing and unscheduled maintenance).

- People – A vehicle, which is fit for purpose, can safely store all the clinical equipment and has the required communications.

3.2. **Benefits**

3.2.1. From the investment objectives and scope of the investment the following benefit criteria were developed:

- **Improved patient care** achieved through an increase of the core ECP vehicle establishment to meet the calculated demand, and replacement of aging RRU vehicles.
- **Vehicle equipment storage** is sufficient to carry safely the current defined first responder ECP and RRU equipment and has capacity for future equipment additions and changes during the vehicle life.
- **Transporting of ambulant patients** safely to the hospital or appropriate care centre thereby enabling double-crewed vehicles to be available for responding to other calls.
- **Improved performance** resulting through better vehicle reliability as a result of procuring modern vehicles.
- **Improved professional image** of the Trust through improved quality of vehicles suitable for London conditions.
- **No increase in the vehicle manufacturer range** thereby no additional training and tooling required for fleet to maintain the vehicles.

3.2.2. The reasoning behind the benefit weight calculation and option scores are included as Appendix A.

3.3. **Generating Options**

3.3.1. **Long List**

3.3.1.1. The investment scope requirement to procure vehicles to an existing LAS vehicle specification means that a long list of vehicle options is not required. Therefore, five options are considered**:**

- Do Nothing.
- Purchase 104 Vauxhall Astras
- Purchase 46 new design Vauxhall Zafiras for ECP use to the revised combined ECP/RRU base vehicle specification and original conversion specification.
- Purchase 58 new design Vauxhall Zafiras for RRU use to the revised combined ECP/RRU base vehicle specification and original conversion specification.
- Purchase 172 new design Vauxhall Zafiras for ECP and RRU use to the revised combined ECP/RRU base vehicle specification and original conversion specification

3.3.2. Short Listing Options

3.3.2.1. Each option included in the long list of options was reviewed against its ability to deliver the investment objectives, their practicality for current and future in-service use and ability to meet proposed timescales.

3.3.2.2. The option to purchase 104 Vauxhall Astras was rejected because:

- The reduced boot capacity does not provide sufficient space in the vehicle to carry the currently identified equipment for a first response vehicle.
- Reduced accessibility for patients due to vehicle height and door width.

3.3.2.3. The option to purchase 47 new design Vauxhall Zafiras for ECP use was rejected because of the LAS priority need to maintain current RRU establishment numbers to maintain Category A performance.

3.3.3. Short Listed Options

3.3.3.1. Therefore the options, which remained are:

3.3.3.2. **Do Nothing/Do Minimum** - This option fails to achieve any of the investment objectives, it does not align with the LAS strategic plan, and it fails to meet the consultant's recommendations to provide any reserve vehicle establishment. However, the LAS will continue to function and respond to category A calls. This option is only retained for comparison purposes.

3.3.3.3. **Option 1 - Purchase 104 Zaferas**

3.3.3.4 This involves replacing the RRUs as they reach 5 years of age. This will maintain patient care for category A patients and maintain the national performance targets. The specification will be to the agreed ECP/RRU specification thus maximising possible inter-changeability with ECP users and related cost containment.

3.3.3.5. **Option 2 - Purchase 172 Zaferas**

3.3.3.6. This involves procuring vehicles for the rollout of 41 new ECP teams and maintaining the RRU capacity through replacement of vehicles that are more than 5 years old. The specification will be the same for all vehicles thus maximising inter-changeability and related cost containment.

3.3.3.7. The specification for options 1 & 2 is the same as the recent ECP/RRU procurements with the exception of the clinical equipment storage rack, which has had minor changes.

3.3.3.8. The procurement and conversion risks for Option 1 & 2 are few as both the ECP and RRU vehicles already safely respond to Cat A calls.

3.3.3.9. Whichever option is chosen it is essentially a repeat procurement project of the latest 14 additional RRU vehicles. However, effective management of the users is required to ensure the specification does not suffer any unnecessary scope creep.

3.3.4. Option Ranking

3.3.4.1. The objectives have been ranked and then assigned percentage weights

through the pairing comparison techniques as shown in Table 5 below:

Table 5

Benefit Criteria	Rank	Pairings						Raw % Weights	% Weights
		1st	2nd	3rd	4th	5th	6th		
Improved patient care	1	100						100	26.5
Improved performance	2	90	100					90	23.9
No increase in vehicle range	3		80	100				72	19.1
Vehicle equipment storage	4			70	100			50	13.4
Transporting of ambulant patients	5				80	100		40	10.7
Improved professional image	6					60	100	24	6.4
								377	100

3.3.4.2. Each option was then scored out of 10 to demonstrate how close each came to achieving the benefits. The reason for each score is given in Table 6 and explained more fully in Appendix 1.

Table 6

Benefits	Weight	Options					
		Do Nothing		1		2	
		score	WxS	score	WxS	score	WxS
Improved patient care	26.5	0	0	5	133	8	212
Improved performance	23.9	0	0	7	167	8	191
No increase in vehicle range	19.1	10	191	10	191	10	191
Vehicle equipment storage	13.4	0	0	6	80	6	80
Transporting of ambulant patients	10.7	2	21	8	86	8	86
Improved professional image	6.4	0	0	6	39	6	39
Total	**100**		212		695		799

3.3.4.3. The Alternative Response Steering Group (ARSG) independently conducted a staff survey of the users for their opinions on the selection of a suitable replacement vehicle for the Vauxhall Astra cars. Eighty staff responded to the survey and they favoured an MPV. The ARSG agreed with that decision and had a preference for the Vauxhall Zafira over the Vauxhall Minerva due to the load carrying capacity. Both survey and ARSG decision supports the above options. A summary of the survey showing the average scores is attached as Appendix B.

3.4. Identification and Quantification of Option Costs

3.4.1. Opportunity Costs

3.4.1.1. There is no opportunity costs identified against either of the options.

3.4.2. Residual Value Costs

3.4.2.1. Currently, the Trust disposes of existing vehicles, by auction, at the end of their life. It is assumed that this would continue under all three options. In the 'do minimum' option it is assumed that the existing vehicles will have a

residual value of £100 when they are disposed of. This figure is net of auction fees.

3.4.3. Capital Costs

3.4.3.1. There are no capital costs associated with the 'Do Minimum' option.

3.4.3.2. The capital costs associated with Option 1 are set out in Table 7, Table 8 and Table 9 for each of the financial years 2005/06 to 2007/08.

Table 7

2005/06					
Option 1 - Purchase 104 Zaferas	**Number of Units 29**				
	Unit Cost			**Cost for GEM**	**Total Cost**
	Net Cost	**VAT**	**Gross**		
Initial Capital Costs					
Base Vehicles	13,114	2,295	15,409	380,306	446,860
Vehicle conversion	7,825	1,369	9,194	226,925	266,637
Technology purchase & Fit for 15 vehicles	6,473	1,133	7,606	97,102	0
Installation costs of MDT and phone for 14 vehicles	513	90	603	7,182	0
Improved Suspension		0	2,500	72,500	162,500
Other Capital Costs					
Clinical capital equiptment	3,165	554	3,719	55,783	
Total Capital Costs	**31,090**	**5,441**	**39,031**	**839,798**	**875,996**

Table 8

2006/07					
Option 1 - Purchase 104 Zaferas	**Number of Units 35**				
	Unit Cost			**Cost for GEM**	**Total Cost**
	Net Cost	**VAT**	**Gross**		
Initial Capital Costs					
Base Vehicles	13,114	2,295	15,409	458,990	539,313
Vehicle conversion	7,825	1,369	9,194	273,875	321,803
Technology purchase & Fit for 16 vehicles	6,473	1,133	7,606	103,575	266,221
Installation costs of MDT and phone for 19 vehicles	513	90	603	9,747	21,097
Improved Suspension		0	2,500	87,500	162,500
Other Capital Costs					
Clinical capital equiptment for 16 vehicles only	3,165	554	3,719	59,502	
Total Capital Costs	**31,090**	**5,441**	**39,031**	**993,189**	**1,310,935**

Table 9

2007/08					
Option 1 - Purchase 104 Zaferas	**Number of Units 40**				
	Unit Cost			**Cost for GEM**	**Total Cost**
	Net Cost	**VAT**	**Gross**		
Initial Capital Costs					
Base Vehicles	13,114	2,295	15,409	524,560	1,001,582
Vehicle conversion	7,825	1,369	9,194	313,000	597,634
Technology purchase & Fit for 15 vehicles	6,473	1,133	7,606	97,102	494,411
Installation costs of MDT and phone for 25 vehicles	513	90	603	7,695	39,180
Improved Suspension		0	2,500	100,000	162,500
Other Capital Costs					
Clinical capital equiptment for 15 vehicles only	3,165	554	3,719	55,783	
Total Capital Costs	**31,090**	**5,441**	**39,031**	**1,098,140**	**2,295,307**

3.4.3.3. The costs shown in Table 7, Table 8 and Table 9 have been derived using the following information:

• Base Vehicles - Costs are based on quotations from the relevant supplier.

• Technology Purchase and Fit - MDT and service equipment must be purchased for all vehicles.

• Clinical Capital Equipment – These will be purchased for all new vehicles.

3.4.3.4. The capital costs associated with Option 2 are set out in Table 10, Table 11 and Table 12 for each of the financial years 2005/06 to 2007/08.

Table 10

2005/06					
Option 2 - Purchase 172 Zaferas	**Number of Units 29**				
	Unit Cost			**Cost for GEM**	**Total Cost**
	Net Cost	**VAT**	**Gross**		
Initial Capital Costs					
Base Vehicles	13,114	2,295	15,409	380,306	446,860
Vehicle conversion	7,825	1,369	9,194	226,925	266,637
Technology purchase & Fit for 15 vehicles	6,473	1,133	7,606	97,102	114,095
Installation costs of MDT and phone for 14 vehicles	513	90	603	7,182	8,439
Improved Suspension		0	2,500	72,500	85,188
Other Capital Costs					
Clinical capital equiptment for 15 vehicles	3,165	554	3,719	55,783	65,545
Total Capital Costs	**31,090**	**5,441**	**39,031**	**839,798**	**986,763**

Table 11

2006/07					
Option 2 - Purchase 172 Zaferas	**Number of Units 114**				
	Unit Cost			**Cost for GEM**	**Total Cost**
	Net Cost	**VAT**	**Gross**		
Initial Capital Costs					
Base Vehicles	13,114	2,295	15,409	1,494,996	1,756,620
Vehicle conversion	7,825	1,369	9,194	892,050	1,048,159
Technology purchase & Fit for 95 vehicles	6,473	1,133	7,606	614,979	722,600
Installation costs of MDT and phone for 19 vehicles	513	90	603	9,747	11,453
Improved Suspension		0	2,500	285,000	334,875
Other Capital Costs					
Clinical capital equiptment for 95 vehicles	3,165	554	3,719	353,293	415,119
Total Capital Costs	**31,090**	**5,441**	**39,031**	**3,650,065**	**4,288,826**

Table 12

2007/08					
Option 2 - Purchase 172 Zaferas	**Number of Units 29**				
	Unit Cost			**Cost for GEM**	**Total Cost**
	Net Cost	**VAT**	**Gross**		
Initial Capital Costs					
Base Vehicles	13,114	2,295	15,409	380,306	446,860
Vehicle conversion	7,825	1,369	9,194	226,925	266,637
Technology purchase & Fit for 4 vehicles	6,473	1,133	7,606	25,894	30,425
Installation costs of MDT and phone for 25 vehicles	513	90	603	12,825	15,069
Improved Suspension		0	2,500	72,500	85,188
Other Capital Costs					
Clinical capital equiptment for 4 vehicles	3,165	554	3,719	14,876	17,479
Total Capital Costs	**31,090**	**5,441**	**39,031**	**733,325**	**861,657**

3.4.3.5. The costs shown in Table 10, Table 11 and Table 12 have been derived using the following information:

- Base Vehicles - Costs are based on quotations from the relevant supplier.
- Technology Purchase and Fit - MDT and service equipment must be purchased for all vehicles.
- Clinical Capital Equipment – These will be purchased for all new vehicles.

3.4.4. **Lifecycle Costs**

3.4.4.1. There are no lifecycle costs associated with this investment.

3.4.5. **Revenue Costs**

3.4.5.1. The DH guidance requires that all relevant costs are included in the economic analysis. For the purposes of this business case, the costs associated with running the vehicles have been included but crew & dispatch costs have not as they remain the same irrespective of which vehicles are used.

3.4.5.2. The costs for the 'Do Nothing' option reflect the costs built into existing (2005/06) budgets and are shown in Table 13, below.

Table 13

Continue with Existing Vehicles	Unit Cost	Cost Driver	Cost Driver Units	Annual Cost per Vehicle	Cost for GEM	VAT (or other taxes)	Total Cost
Recurrent							
Fuel	0.1723	per mile	20,000	3,445	199,813	34,967	234,780
Vehicle maintenance (including labour)				2,993	173,594	30,379	203,973
Communications equiptment maintenance				433	25,114	4,395	29,509
Vehicle Insurance				654	37,929	6,637	44,566
RAC recovery costs				458	26,536	4,644	31,180
Accident damage				1,789	103,762	18,158	121,920
3rd party accident damage				1,256	72,848	12,748	85,596

3.4.5.3. The costs of Options 1 and 2 are based on the same annual cost per vehicle as continuing with the existing vehicles. In calculating the revenue costs of each option the cumulative numbers of vehicles, shown in Table 14 and Table 15 have been used.

Table 14

	A	B	C	D	E	F	G	H
20	**Option 1 - Purchase 104**	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
21	**Zaferas**	1	2	3	4	5	6	7
22								
23	Replacement RRUs	14	33	58	58	58	44	25
24	Additional ECP Vehicles	15	31	46	46	46	31	15
25	**Total**	**29**	**64**	**104**	**104**	**104**	**75**	**40**

Table 15

	A	B	C	D	E	F	G	H
27	**Option 2 - Purchase 172**	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
28	**Zaferas**	1	2	3	4	5	6	7
29								
30	Replacement RRUs	14	33	58	58	58	44	25
31	Additional ECP Vehicles	4	88	88	88	88	84	0
32	Further ECP Vehicles	11	22	26	26	26	15	4
33	**Total**	**29**	**143**	**172**	**172**	**172**	**143**	**29**

3.4.5.4. In addition to the recurrent running costs, each new vehicle will incur non-recurrent costs associated with bringing these into service. Such costs for replacement RRUs are diminished as some equipment can be reused on the new vehicles.

3.4.5.5. The overall revenue costs of each option are shown in

Table 16

Option 1 - Purchase 104 Zaferas	**Annual Cost per Vehicle**	**2006/07 Year 1**	**2007/08 Year 2**	**2008/09 Year 3**	**2009/10 Year 4**	**2010/11 Year 5**	**2011/12 Year 6**	**2012/13 Year 7**
Non-Recurrent								
Initial Clinical Equiptment	4,920	73,800	78,720	73,800	0	0	0	0
Commissionning costs of vehicles	4,804	139,316	168,140	192,160	0	0	0	0
Recurrent								
Fuel	3,445	199,813	251,488	306,609	358,285	358,285	358,285	306,609
Vehicle maintenance (including labour)	2,993	173,594	218,489	266,377	311,272	311,272	311,272	266,377
Communications equiptment maintenance	433	25,114	31,609	38,537	45,032	45,032	45,032	38,537
Vehicle Insurance	654	37,929	47,738	58,201	68,010	68,010	68,010	58,201
RAC recovery costs	458	26,536	33,399	40,719	47,582	47,582	47,582	40,719
Accident damage	1,789	103,762	130,597	159,221	186,056	186,056	186,056	159,221
3rd party accident damage	1,256	72,848	91,688	111,784	130,624	130,624	130,624	111,784

Table 17

Option 1 - Purchase 172 Zaferas	Annual Cost per Vehicle	2006/07 Year 1	2007/08 Year 2	2008/09 Year 3	2009/10 Year 4	2010/11 Year 5	2011/12 Year 6	2012/13 Year 7
Initial Clinical Equiptment for 16 vehicles only	4,920	73,800	467,400	19,680	0	0	0	0
Commissionning costs of vehicles	4,805	139,316	686,972	826,288	0	0	0	0
Recurrent								
Fuel	3,445	199,813	251,488	540,872	540,872	540,872	540,872	527,092
Vehicle maintenance (including labour)	2,993	173,594	218,489	469,901	469,901	469,901	469,901	457,929
Communications equiptment maintenance	433	25,114	31,609	67,981	67,981	67,981	67,981	66,249
Vehicle Insurance	654	37,929	47,738	102,669	102,669	102,669	102,669	100,053
RAC recovery costs	458	26,536	33,399	71,830	71,830	71,830	71,830	70,000
Accident damage	1,789	103,762	130,597	280,873	280,873	280,873	280,873	273,717
3rd party accident damage	1,256	72,848	91,688	197,192	197,192	197,192	197,192	192,168

3.4.5.6. In developing the existing Recurrent Costs' shown in Table 16 and Table 17 the following assumptions have been made.

- Fuel – The fuel costs used are those pertaining in May 2005, i.e. 88.04p per litre. The fuel consumption is based on a sample of actual performance of the existing vehicles.
- Vehicle Maintenance – The costs of maintaining the existing vehicles with reference to existing Fleet records and the professional judgements of Fleet Managers.

3.4.5.7. Other Costs – The other revenue costs are based on 2005/06 budgets.

3.4.6. **Optimism Bias**

3.4.6.1. It is not appropriate to include any optimism bias in this business case.

3.4.7. **Lifecycle Costs**

3.4.7.1. There are no lifecycle costs associated with this investment.

3.4.8. **Transitional Costs**

3.4.8.1. There are no transitional costs associated with the 'Do Minimum' option.

3.4.8.2. Options D incur transitional costs associated with decommissioning the old vehicles (£150 each, excluding VAT)

3.4.9. **External Costs**

3.4.9.1. There are no external costs associated with any of the options.

3.5. **Discounted Cashflow Analysis of Options**

3.5.1. The costs identified in section have been entered into the DH's Generic Economic Model (GEM) and using the prevailing HM Treasury discount rate of 3.50% has generated the following analysis of the short listed options.

Table 18

SUMMARY	Appraisal Period	EAC
		£'000
OBC Do Minimum Continue with Existing Vehicles	3 Years	639.6
OPTION 1 Purchase 104 Zaferas	8 Years	1,446.6
OPTION 2 Purchase 172 Zaferas	8 Years	2,347.6

3.5.1.1. Table 18, above, indicates that the 'Do Nothing' option provides the lowest EAC.

3.6. **Option Cost Benefit Analysis**

3.6.1. **Cash Releasing Benefits**

3.6.1.1. The preferred option is unlikely to generate any revenue savings.

3.6.2. **Non-Cash Releasing Benefits**

3.6.2.1. There are no non-cash releasing benefits associated with any of the options

3.6.3. **Quantifiable Benefits**

3.6.3.1. There are no quantifiable benefits.

3.6.4. **Non-Quantifiable Benefits**

3.6.4.1. The expansion in the number of ECPs will generate benefits in patient care and a reduction in conveyances to hospital A&E departments. However, they must be listed as non-quantifiable benefits because it is not possible to identify the savings to be made by the LAS, London PCTs or acute hospitals. Certain estimates have been used elsewhere but they are subjective and not considered reliable.

3.6.5. **Summary of Option Cost Benefit Analysis**

3.6.5.1. At this point in the analysis, the EACs shown in Table 18 are divided by the weighted benefit score, shown in Table 6 and an EAC per weighted benefit point is calculated. These are shown in Table 19, below.

Table 19

SUMMARY	Appraisal Period	EAC	Weighted Benefit Score	EAC per Weighted Benefit Score
		£'000		£'000
OBC Do Minimum Continue with Existing Vehicles	3 Years	639.6	212.4	3.0110
OPTION 1 Purchase 104 Zaferas	8 Years	1,446.6	695.2	2.0810
OPTION 2 Purchase 172 Zaferas	8 Years	2,347.6	798.6	2.9396

3.6.5.2. The results in Table 19 indicate that Option 1 generates the lowest EAC per weighted benefit score. Option 2 also provides a better option than continuing with the existing vehicles.

3.7. **Assessing Risk**

3.7.1. **Risk Identification**

3.7.1.1. The generic risk register at the time of approval of this document are contained Appendix D**.**

3.7.2. **Risk Transfer**

3.7.2.1. There are no risks that can be transferred to the supplier.

3.7.2.2. The project finance is at a level where penalty clauses would be inappropriate to apply.

3.7.3. **Assessing the Impact of Risk on Option Ranking**

3.7.3.1. Using the identified generic risks the individual options were scored together with the assessed cost per risk resulted in the overall risk adjustment for each option. These tables are contained Appendix D.

3.7.3.2. The risks set out above have been quantified for each option and discounted to produce an EAC. The impact on the discounted cash flow of the risk analysis is:

Table 20

SUMMARY	Appraisal Period	EAC	Weighted Benefit Score	EAC per Weighted Benefit Score	Risk Adjustment	Risk Adjusted EAC	Risk Adjusted EAC per Weighted Benefit Score
		£'000		£'000	£'000	£'000	£'000
OBC Do Minimum Continue with Existing Vehicles	3 Years	639.6	212.4	3.0110	62.1	701.7	3.3034
OPTION 1 Purchase 104 Zaferas	8 Years	1,446.6	695.2	2.0810	295.8	1,742.4	2.5065
OPTION 2 Purchase 172 Zaferas	8 Years	2,347.6	798.6	2.9396	295.8	2,643.4	3.3100

3.8. **Preferred Option Analysis**

3.8.1. **Identifying the Preferred Option**

3.8.1.1. The results of the risk adjusted cost benefit analysis of the options shown in Table 20 indicate that Option 2 remains the preferred option. However, if a risk adjusted cost per weighted benefit score is calculated for each vehicle the preferred option changes to Option 2 with a cost per vehicle of £19.24 compared to £24.10 for Option 1.

3.8.2. **Funding Route Option**

3.8.2.1. NHS capital has been set aside in the Trust's next three years capital programmes to cover this investment.

3.8.2.2. Therefore, no other funding option has been considered.

3.8.3. **Public Sector Comparator (PSC)**

3.8.3.1. Not applicable, see paragraph 3.8.1.1 above.

3.8.4. **Preferred Funding Route**

3.8.4.1. See paragraph 3.8.2.2 above**.**

3.9. **Sensitivity Analysis**

3.9.1. A sensitivity analysis has been carried out to identify the robustness of the preferred option.

3.9.2. Only one scenario has been considered. The Switch Point has been calculated, which indicates that initial capital costs of Option 2 would have to increase by 60.3% before Option 1 would become the preferred option. This is unlikely as the costs used in the option appraisal are based on quoted prices from the supplier.

3.9.3. The sensitivity analysis indicates the preferred option is robust.

3.10. **Summary of the Economic Case**

3.10.1. The short listed options were subjected to the standard tests to establish the

one, which provided the best value for money. Table 20 summarised the cost benefit analysis and demonstrated that Option 2 gives the best value for money.

4. FINANCIAL CASE

4.1. Financial Position

4.1.1. The LAS has a track record of achieving all its statutory financial duties each year. It is likely that in the current year this position will be maintained. The proposed investment will be funded from additional income provided by London PCTs as they decide to introduce ECPs into the health economy. The capital costs will be funded from the Trust's CRL. The investment will only proceed if this income is forthcoming and, as such, it will not have a material impact on the Trust's financial standing.

4.2. Impact of Preferred Option

4.2.1. Table 21 below sets out the net impact of the proposed investment on the Trust's Income & Expenditure (I&E) Account and CRL positions. It should be noted that the figures used are those from the GEM but with non-recoverable VAT added, where appropriate.

Table 21

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
	£000	£000	£000	£000	£000	£000	£000	£000
Non Recurrent Costs								
Initial Clinical Equiptment	73.8	467.4	19.7					
Commissionning costs of vehicles	139.3	687.0	826.3					
Total Non Recurrent Costs	**213.1**	**1,154.4**	**846.0**					
Recurrent Recent Costs/(Savings)								
Fuel	199.8	251.5	540.9	540.9	540.9	540.9	527.1	237.7
Vehicle maintenance (including labour)	173.6	218.5	469.9	469.9	469.9	469.9	457.9	206.5
Communications equiptment maintenance	25.1	31.6	68.0	68.0	68.0	68.0	66.2	29.9
Vehicle Insurance	37.9	47.7	102.7	102.7	102.7	102.7	100.1	45.1
RAC recovery costs	26.5	33.4	71.8	71.8	71.8	71.8	70.0	31.6
Accident damage	103.8	130.6	280.9	280.9	280.9	280.9	273.7	123.4
3rd party accident damage	72.8	91.7	197.2	197.2	197.2	197.2	192.2	86.7
Total Recurrent Costs	**639.6**	**805.0**	**1,731.3**	**1,731.3**	**1,731.3**	**1,731.3**	**1,687.2**	**760.9**
Financing Costs								
Depreciation	168.0	898.0	1,044.6	1,044.6	1,044.6	1,044.6	1,044.6	1,044.6
Dividend Contribution	23.5	119.8	108.9	85.9	85.9	85.9	85.9	85.9
Total Financing Costs	**191.5**	**1,017.8**	**1,153.6**	**1,130.5**	**1,130.5**	**1,130.5**	**1,130.5**	**1,130.5**
Total Revenue Costs	**1,044.2**	**2,977.2**	**3,730.9**	**2,861.8**	**2,861.8**	**2,861.8**	**2,817.7**	**1,891.4**
Source of Funding								
Existing Budgets	639.6	639.6	639.6	639.6	639.6	639.6	639.6	639.6
Contribution from PCTs	196.8	2,013.1	3,387.6	1,506.8				
Total Source of Funds	**836.4**	**2,652.7**	**4,027.2**	**2,146.4**	**639.6**	**639.6**	**639.6**	**639.6**
Additional Costs / (Net Savings)	**207.8**	**324.5**	**- 296.4**	**715.5**	**2,222.2**	**2,222.2**	**2,178.1**	**1,251.8**

4.2.2. Within the preferred option, the revenue costs of the replacement RRUs are covered by existing budgets. The additional revenue costs incurred in the procurement of the ECP vehicles will be partially covered in the same way as other ECP costs. The funding regime for ECPs is that PCTs pay a minimum of 75% in the first year, 50% in the second year and nothing there after. This arrangement is to allow the LAS to integrate ECPs into the

normal operating regime of the Trust.

4.3. **Public Capital/PFI Funding**

4.3.1. As the preferred option is funded from NHS capital the Trust will incur capital charges on the investment. These rise to £1,044,638 for depreciation and £85,871 for dividend charges by the end of the third year.

4.4. **Benefits**

4.4.1. The preferred option does not generate any savings.

4.5. **Affordability Gap**

4.5.1. The affordability gap, shown in Table 21 has been created by the level of ECP costs which the Trust has agreed to absorb. SMG will need to decide, as part of its overall ECP strategy, how the Trust is to fund this.

4.6. **Sensitivity Analysis**

4.6.1. The sensitivity test performed does not affect the affordability.

4.7. **Links with Build**

4.7.1. Not applicable

4.8. **Commissioner Support**

4.8.1. This is not required as the preferred option is affordable within LAS resources.

4.9. **Balance Sheet**

4.9.1. There is no impact on the balance sheet.

5. **COMMERCIAL CASE**

5.1. **Assessment of the Market**

5.1.1. The LAS have assessed vehicles for emergency response roles in previous business cases. The existing NHS Framework Agreements will be used both to procure the base vehicle and convert them therefore this project will not be require to go to OJEU.

5.2. **Alternative Procurement Methods**

5.2.1. See paragraph 3.8.2.2 above.

5.3. **PFI/PPP/Public**

5.3.1. This project is not suitable for the PFI or PPP route. The contract to supply will follow the guidelines as set out in the framework agreement.

5.3.2. There will be a separate contract for conversion work on the vehicles; this will follow the contract to supply vehicles.

5.3.3. The vehicle conversion will be single tender action in accordance with the LAS Standing Financial Instructions on ATT Papworth who are familiar with the LAS emergency vehicle conversion requirements for a Vauxhall Zafira. The financial impact of this will be to save on design costs, as the majority of the conversion work will be the same as the DSO vehicles.

5.4. **Concurrent Contracts**

5.4.1. This project is not linked to or dependent upon any another vehicle procurement activity.

5.5. **Procurement Options/Strategy**

5.5.1. This is not appropriate, as the capital funding has already been allocated for the project.

5.6. **Bid Criteria**

5.6.1. This is not appropriate, as there are no tender bids for evaluation.

5.7. **Evaluation Model**

5.7.1. This is not appropriate, as there are no tender bids for evaluation.

5.8. **Procurement Process**

5.8.1. The Vauxhall Zafira Auto 5 door will be procured from Vauxhall public sector operations to the current Specification for the ECP/RRU vehicles**.**

5.8.2. The vehicle conversion will be allocated to ATT Papworth who are approved on the NHS framework agreement and have known capabilities as they have converted the previous DSO, ECP and RRU Zafiras following tendering.

5.9. **Key Principles for Contract Type**

5.9.1. As stated above this project covers 104 vehicles and are subject to break at 12 vehicle intervals clauses.

5.9.2. The LAS terms and conditions of contract for vehicle procurement are in accordance with the TTF principles.

5.9.3. For reasons stated in the Economic Case and 5.1.2 above an OJEU, notice is not required.

5.10. **Initial Assessment of the Transfer of Risk**

5.10.1. There are no risks identified for transfer from the LAS.

5.11. **TUPE**

5.11.1. There are no staff being transferred into or out of the LAS because of this project, therefore the Trust considers there are no TUPE implications.

5.12. **Procurement Timetable**

5.12.1. From approval of this business, case the delivery of the first vehicle for the project is expected to take 20 weeks in broad terms covering:

Table 22

	Complete	Week 1	Week 13	Week 18 to 20	Week 20 to completion
Conversion Specification Definition					
Procurement of Base vehicles					
Design confirmation with converter					
Delivery of base vehicles					
First RRU ECP vehicle build acceptance and delivery					
Delivery of remaining response units to LAS					
LAS PDI and CTS Technology fit					

5.13. **OJEU Advertisement**

5.13.1. This is not appropriate in this case see 5.1.2 above.

6. **MANAGEMENT CASE**

6.1. **Project Management**

6.1.1. The project will be managed by the Programme & Project Support Office (PSO) and follows the structures and controls of PRINCE 2.

6.1.2. The Trust Board has charged the Director of Finance with the responsibility of being the Executive of the Project Board to oversee the project management arrangements.

6.1.3. The Project Manager will be supported by Team Managers who will control the concurrent stages of the project under the direction of the Project Manager. The Project Manager will ensure that Team Managers deliver their stages and components to the required cost, timescale and quality criteria. If necessary, the Project Manager will invoke project support from the PSO as required.

6.1.4. Project Assurance is the responsibility of each Project Board Member, and no formal external Quality Assurance function has been nominated. However, the Project Initiation Document (PID) draws to each Project Board Member's attention the facility to delegate this function to an appropriate person (not the Project Manager) in a case of need.

6.1.5. Roles and Responsibilities Descriptions of the project team are detailed in the PID.

6.1.6. The project will be managed at the three levels of Project Board, Project Management and Team Management through formal assessment controls as follows:

Management Monitoring	Responsibility	Triggering Event
Project Board Management		
Project Initiation	Project Board	Authorisation of Project by Chief Ambulance Officer.
Project Assessments	Project Board	Planned at mid project or when an exception plan is required.
Project Closure	Project Board	All products have been delivered.
Project Management		
Highlight Reports	Project Manager	Monthly, or as determined by the Project Board.
Checkpoint meetings	Project Manager/Team Manager	Weekly or as determined by the Project Manager.
Stage Quality Management		
Quality Reviews	Quality Chairman	A product has been completed.

6.2. **Resources**

6.2.1. The Trust Board has charged the Head of Operational Support with the responsibility of being the Executive of the Project Board to oversee the project management arrangements

6.2.2. The resources for the project will be confirmed when the project is initiated. As this is a straight procurement there is little involvement for the Project Board therefore the role of Executive is combined with the Senior Supplier role.

6.2.3. The project structure is shown in Appendix B and the Roles and Responsibilities of the Project Members are defined in Appendix C

Project Executive & Senior Supplier	Mike Boyne - Head of Operational Support
Senior User	John Pooley Assistant Chief Ambulance Officer/Bamber Postance – ECP Manager for Operations
Project Manager	Richard Bulmer/Roy Hopkinson –Project Manager PSO

6.3. **Change Management**

6.3.1. To control unplanned situations concerning the specification, performance, delivery of products etc. and the project will be subject to configuration and exception control.

6.3.2. The PRINCE 2 change-control approach will be used to ensure that all changes are properly managed during the project. All specification changes, queries and off specifications can be raised by anyone working on the project as a Project Issue with the author indicating their priority for the query. All Project Issues are passed to the Project Manager for assessment and progressing through the PRINCE 2 change-control approach.

6.4. **Project plan**

6.4.1. The detailed tasks of the project will be defined in the Project Plan, which forms part of the Project Initiation Document.

6.4.2. The procurement timescale of the project covers an estimated 20 X week period from placement of orders to delivery of the last vehicle into service.

6.5. **Risk management**

6.5.1. It is recommended that a low risk strategy be adopted for this project particularly given this is a repeat vehicle procurement project and the conversion will completed by the same converter ATT Papworth.

6.5.2. The low risk strategy means there is a low tolerance for the occurrence of risk or willingness not to accept losses or being prepared to change strategy/project.

6.5.3. As there are third party partners/suppliers involved, it will be essential to have a shared understanding of any risks and the agreed plans for managing them. The Project Manager and Head of Operational Support (Project Executive) will be responsible for the management of all risks identified in this business case or as the project progresses.

6.5.4. For the duration of the project, the Project Board will examine the Risk Log at each of its meetings to ensure any risk identified is under control and where necessary appropriate actions have been taken.

6.5.5. The Project Board will consider if any of the identified risks could arise post project and these will be handed over to the appropriate Senior Manager for monitoring post project closure and for inclusion in the LAS Risk Register.

6.6. **Security and Confidentiality**

6.6.1. There is no involvement of the patient before, during or post project and therefore there are no security or confidentiality issues regarding Caldicott or the Data protection Act.

6.7. **Benefits Realisation Plan**

6.7.1. To ensure that the envisaged benefits materialise to the greatest possible extent, the Trust has charged the Project Board with monitoring Benefits Realisation.

6.7.2. The Project Board will monitor the benefits as these vehicles are introduced into service. However, it is expected that none of the listed benefits will have a significant change during the project implementation. The Senior Users will be responsible for collating and analysing the information needed to carry out benefit realisation analysis. This information should relate directly to the benefits identified in this business case.

6.7.3. On Project Closure, the responsibility for monitoring and managing achievement of individual benefits will be transferred to the manager nominated in the Benefits Realisation table.

Benefit	Performance Indicator	Responsibility
		Who is responsible for monitoring achievement
Improved patient care	All agreed PCTs have ECP vehicles allocated. All rostered RRU vehicles are available for response. Staff do not use spares for station responding.	John Pooley / Paul Webster / Bamber Postance
Improved performance	Sectors use the reserve establishment vehicles correctly and not as another response vehicle	John Pooley and Bamber Postance
No increase in vehicle range	No retraining of fleet staff required for these vehicles	Roy Hopkinson
Vehicle equipment storage	Staff can fit all identified equipment in vehicle leaving space for additionally agreed equipment for the future.	John Pooley / Paul Webster / Roy Hopkinson
Transporting of ambulant patients	ECP RRU vehicles have allocated space for transporting patients. Staff not to use the space for storage of personal or other bags.	John Pooley and Bamber Postance
Improved professional image	Vehicle meets the staff expectations	Michael Boyne

6.8. Training

6.8.1. From previous experience, only minimal vehicle familiarisation is required for RRU and ECP crews covering vehicle controls and layout.

6.9. Contract Management

6.9.1. The main external delivery contracts are:

- Procurement of Vauxhall Zafira from Vauxhall and delivery to ATT Papworth
- Vehicle conversion by ATT Papworth and delivery of the converted vehicle to the LAS.
- Complete fitting of vehicle communications and MDT by CTS and

delivery to service.

6.9.2. These will all be managed by the LAS Project Manager.

6.9.3. The Technical and User Acceptance and delivery aspects of all the products are controlled by the LAS Project Manager who will advise the LAS Finance Department when financial payment can be made for full or part delivery of completed products

6.10. **Advisors**

6.10.1. External advisors will not be required on this project.

6.11. **Post Project Evaluation**

6.11.1. During the three months post vehicle delivery in have service the Project Manager will undertake a Post-Project Evaluation Review and present the report at the Project Closure Meeting.

6.11.2. In particular, it will look at:

- What went right?
- What went wrong?
- Lessons learnt.

6.11.3. The Project Closure Meeting will set dates for a Benefits Realisation Meeting described in Section 6.7. The Project manager will be responsible for co-ordinating those meetings with the managers nominated within section 6.7

APPENDICES

APPENDIX A BENEFIT WEIGHTS AND SCORES

Benefit Weighting

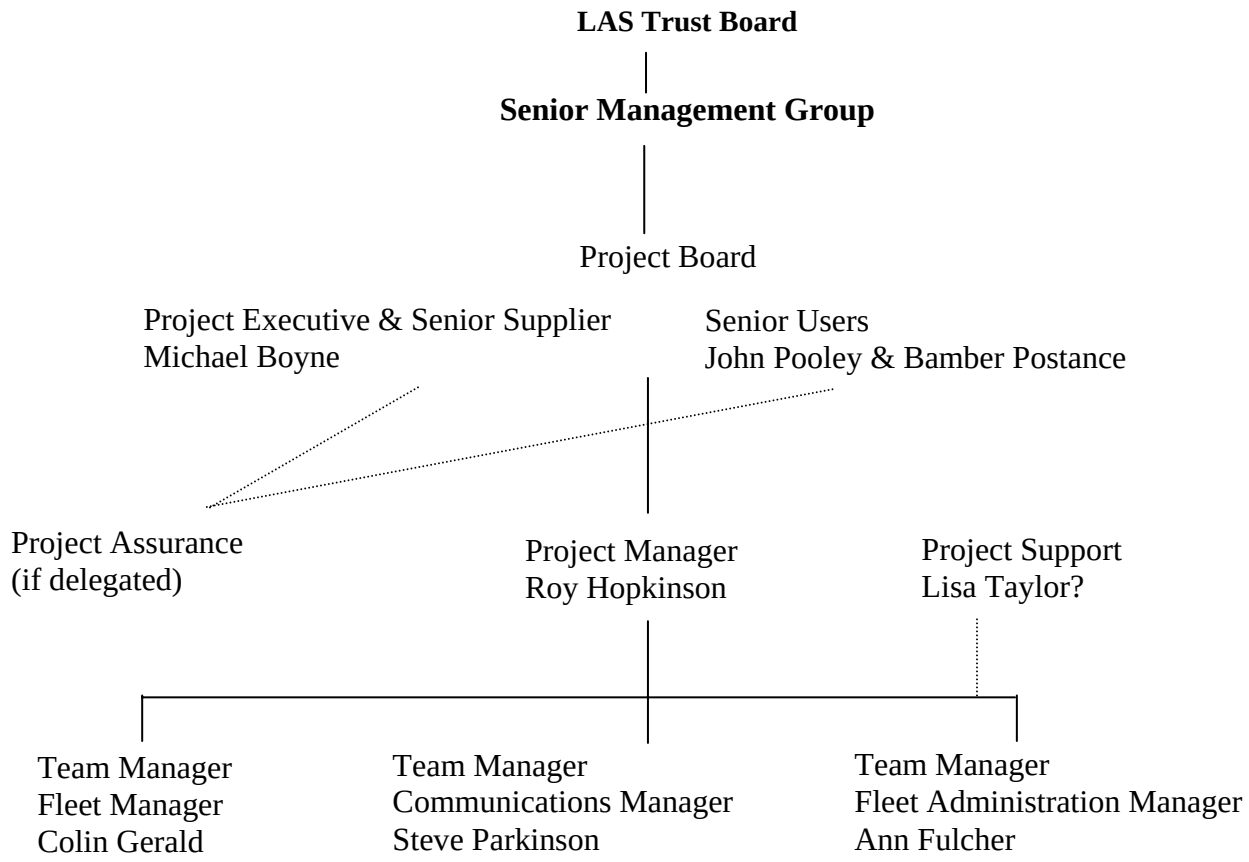
The Benefits were first ranked in importance to the project delivery.

Then using the pairing technique (which is less subjective than just allocating a number), the following weights were calculated out of 100 for each of the ranked benefits.

- Improved patient care through increased establishment of vehicles to respond to current demand.
- Reduced impact on performance during RRU downtime (maintenance etc.) through vehicle reliability.
- Storage capacity is sufficient to safely carry the defined first responder equipment and have capability for future equipment additions and changes during the vehicle life.
- Better-quality vehicle standards suitable for London conditions leading to improving staff morale and the professional image of the Trust
- No increase in the type of vehicle range for fleet to maintain.

The two options were then scored for how completely they met the benefits.

APPENDIX B PROJECT STRUCTURE



APPENDIX C ROLES AND RESPONSIBILITIES

1 PROJECT BOARD RESPONSIBILITIES

1.1 Common Responsibilities

Prime Responsibility

Ensure project viability within the objectives and constraints handed down by the Senior Management Group (SMG) of the London Ambulance Service NHS Trust.

Common Tasks

The Project Board have joint responsibilities but each member also has individual ones, which reflect the respective interests from a Business, User and Technical viewpoint.

- Provide overall guidance and direction to the project.
- Authorise project initiation.
- Appoint Project Manager, Team Managers and Project Assurance Team members, define their responsibilities and set their objectives.
- Ensure that plans take account of the strategy and constraints set by the SMG, and that changes to these are reflected in the project.
- Review and sign-off Project Initiation Documents, Project Plans, Stage Plans and Exception Plans having ensured continued viability from their particular interest.
- Set stage tolerances and ensure they are consistent with the authorised project resources and time scale.
- Assign resources to the project.
- Assist in the resolution of pre-requisites and risks, which are outside the Project Manager's authority.
- Respond as required to problems notified in Highlight Reports.
- Review and recommend action for Project Issue Reports.
- Authorise or reject proposals for major changes to specifications, designs and other significant.
- Attend all Project Board Meetings.
- On behalf of their particular interest, sign-off each completed stage and authorise the start of the next stage or recommend the suspension or termination of the project.
- Brief project progress to relevant senior management.

1.2 Executive Role

Prime Responsibility

To ensure that the project continues to be a viable investment for the business; that it will achieve the expected benefits; and that it will be completed within the budget and schedule agreed with the SMG.

Specific Responsibilities

The Executive has responsibilities in common with other members of the Project Board but also has the following specific responsibilities.

- Agree the scope, budget, schedule and tolerances of the project with the SMG.
- Authorise expenditure.
- Chair Project Board meetings.
- Arbitrate in situations where there is a difference in opinion between other members of the Project Board.
- Act as final arbiter on important potential changes, which significantly affect the Business interest of the LAS.
- Sign-off completed stages having ensured continued project viability.
- Recommend future action on the project to the SMG if the project tolerance is forecast to be exceeded (e.g. terminate, allocate more funds or allow a longer time to complete).
- Complete the Business Acceptance Letter and other relevant Acceptance Letters upon completion of the project.
- Confirm successful completion of the project at the Project Closure meeting.
- Provide reports, as required, to the Board of Directors and brief senior management on all project matters.

Direction To:

All project personnel.

Direction From:

The SMG.

1.3 Senior User Role

Prime Responsibility

To represent their respective user interests affected by the project; and to provide agreed user resources for the project.

Specific Responsibilities

The Senior Users have responsibilities in common with other members of the Project Board but also has the following specific responsibilities.

- Approve on behalf of the users the User Specification and Acceptance Criteria.
- Assign respective user resources required by the project at the earliest point and are continued to be considered throughout the life of the project.
- Approve Product Descriptions for those products, which will be used by users, or will affect them directly.
- Agree quality criteria for those products, which will have a direct impact on users (for example the Specification of User Requirement) and agree objectives for installation and training.
- Resolve respective user requirements and priority conflicts.
- Attend Stage Assessments and Project Closure meetings and sign-off on

behalf of all user departments.
- Together with the other Senior Users, sign the User Acceptance Letter other relevant Acceptance Letters at the end of the appropriate stage and Project.
- Act as final arbiter for all users on important potential changes, which significantly affect all user interests.
- Review technical Exceptions for user impact.
- Brief User Management on all project matters.

Direction To:

All respective user interests.

Direction From:

Project Executive, when acting in Project Board capacity.

1.4 Senior Technical Role

Prime Responsibility

To represent all technical interests; to provide technical awareness at the Project Board level; and to assign the technical resources for the project.

Specific Responsibilities

The Senior Technical Member has responsibilities in common with other members of the Project Board but also has the following specific responsibilities.

- Approve Product Descriptions for technical products.
- Assign technical resources required by the project.
- Resolve technical priority or resource conflicts.
- Sign-off Project Technical Plan and Stage Technical Plans.
- Attend Stage Assessment and Project Closure meetings and sign-off on behalf of technical development.
- Write the Technical Acceptance Letter other relevant Acceptance Letters at the end of the appropriate stage.
- Act as final arbiter on important potential changes, which significantly affect the technical interests.

Brief management on the technical aspects of the project.

Direction To:

All affected technical interests.

Direction From:

Project Executive, when acting in a Project Board capacity.

2 Project Management

2.1 Project Manager

Prime Responsibility

To ensure that the project as a whole produces the required products, to the

required standard of quality and within the specified constraints of time and cost.

Main Activities

• Attend all Project Board Meetings
• Plan the project and agree the Plan with the Project Board.
• Liaise with related projects to ensure that work is neither overlooked nor duplicated.
• Prepare Stage Plans for the next stage before submission to the Project Board for approval.

- Define objectives and responsibilities for each Stage / Team Manager.
- Monitor overall progress and use of resources and initiate corrective action where necessary.
- Advise the Project Board of all deviations from plan at either stage or project level and of any corrective action taken.
- Where corrective action cannot be completely accommodated within stage tolerances, recommend appropriate action and submit appropriate Exception Plans to the Project Board.
- Present regular Highlight reports to the Project Board, collating the Checkpoint Reports of the Stage Managers.
- Monitor the results of all control meetings and liaise with the Project Assurance Team to assure the overall direction and integrity of the project.
- Monitor project Risks and bring to the attention of the Project Board any that require management attention.
- Prepare the End Project Evaluation Report.
- Attend all Stage Assessments and the Project Closure meeting.
- Agree technical and quality strategy with those in the department who have responsibility for departmental policy (e.g. Quality Assurance function).
- Create a Configuration Management structure and identification scheme for the products produced by the project.

Direction to:

Stage / Team Managers.

Direction from:

Project Board for matters related to the project.

2.2 Team / Stage Manager

Prime Responsibility

To ensure completion of user / technical products are of appropriate quality, in a time scale and at a cost acceptable to the Project Board.

Main Activities

- Define and agree objectives, responsibilities and work plans for Teams with the Project Manager.
- Manage and provide guidance to team members as necessary.

- Assist the Project Manager to prepare the User / Technical Plan and Resource Plan for the next stage.
- Prepare Detailed Plans as necessary.
- Monitor progress and resource utilisation of Teams and initiate corrective action where necessary.
- Advise the Project Manager of deviations from plan, recommend corrective action and help prepare appropriate Exception Plans.
- Attend Project Manager Checkpoint Meetings (the Team Manager need not attend every Checkpoint).
- Prepare and present regular Checkpoint Reports to the Project Manager.
- Attend all Stage Assessment meetings.
- Plan all stage control meetings.
- Liaise with the Project Assurance, if appointed by the Project Board, to ensure the business, technical and data integrity of the stage.
- Ensure all Exceptions are properly reported, evaluated and (if within tolerance) actioned.
- Ensure that Team Quality Reviews are held as planned.

Direction to:

Team Members.

Direction from:

Project Manager for matters related to the project.

3 Project Assurance and Support

3.1 Project Assurance

Requirement Outline

The Project Board members do not work full-time on the project; therefore, they place a great deal of reliance on the Project Manager. Although they receive regular reports from the Project Manager, there may always be the questions at the back of their minds:

- Are things really going as well as we are being told?
- Are any problems being hidden from us?
- Is the solution going to be what we want?
- Are we suddenly going to find that the project is over-budget or late?

There are other questions. The Supplier may have a quality assurance function charged with the responsibility to check that all projects are adhering to the Quality System.

All these points mean that there is a need within the project organisation for independent monitoring of all aspects of the project's performance and products. This is the Project Assurance function.

Project Assurance is a function of each Project Board member. According to the needs and desires of the Project Board, any of these assurance responsibilities can be delegated, as long as they are independent of the Project Manager and all members of the Project Management Team. Any appointed assurance role can

give surety of the project on behalf of one or more members of the Project Board.

It is not mandatory that all assurance roles are delegated. Each of the assurance roles, which are delegated, may be assigned to one individual or shared. The Project Board decides when an assurance role needs to be delegated. It may be for the entire project or only part of it. The person or persons filling an assurance role may be changed during the project at the request of the Project Board. Any use of assurance roles needs to be planned at Initiation Stage, otherwise resource usage and costs for assurance could easily get out of control.

Each Project Board member retains accountability for his or her role in the project and the overall project. Any delegation should be documented. The assurance role could include verification by an external party that the Project Board is also performing its functions correctly.

Project Assurance covers all Business, User and Supplier interests of a project.

Specific Responsibilities

Each project is different therefore prior to the execution of introducing Project Assurance the Project Board need to be clear on `What is to be assured?`

A list of assurance tasks could include:

- Ensure maintenance of ‘thorough’ liaison throughout the project life between the Supplier and the User.
- User needs and expectations are being met or managed.
- Risks are being controlled.
- Adherence to the objectives of the Business Case.
- Constant reassessment of the value-for-money solution.
- Project continues to fit within the overall programme strategy.
- The right people are being involved.
- An acceptable and viable solution is continued to be developed.
- The Project remains viable.
- The scope of the project is not ‘creeping up’ unnoticed.
- A focus on the business need is being maintained.
- Internal and external communications are working.
- Applicable documentation standards are being used.
- Any legislative constraints are being observed.
- The needs of specialist interests, e.g. security, are being observed.
- Adherence to applicable quality assurance standards.

Direction from:

Project Board for matters related to the project.

3.2 Project Support

The provision of any project support on a formal basis is optional. It is driven by the needs of the individual project and Project Manager. Project Support could be in the form of advice on project management tools, guidance and administrative services such as filing, and the collection of actuals, to one or more related projects. Where set up as an official position (e.g. Project Support office), project support can act as the repository for lessons learned, and a central source of expertise in specialist support tools.

One support function, which must be considered by all projects, is that of Configuration Management. Depending on the project size and environment, there may be a need to formalise this, as it could quickly become a role on which the Project Manager relies heavily on its support.

Specific responsibilities

The following is a suggested list of Project Support tasks:

- Administration
- administer change control
- set up and maintain project files
- establish document control procedures
- compile, copy and distribute all project management products
- collect actuals data and forecasts
- update plans
- administer the Quality Review process
- administer Project Board meetings
- assist with the compilation of Reports
- Advice
- specialist knowledge (e.g. estimating, risk management)
- specialist tool expertise, e.g. planning and control tools, risk analysis
- specialist techniques
- Standards.

Direction from:

Project Manager for matters related to the project.

APPENDIX D RISK LOG

The Generic Risks below are assessed using the LAS Risk management Framework TP/005

Unique Risk Identifier	Date Raised	Business or Project Risk?	Description	Impact	Probability	Risk Level	Risk Status	Risk Owner	Action
ECP1	April 10th 2005	B	PCTs not supplying revenue or capital on time	Delays to programme at phased intervals	Possible chance of occurring	Medium	O	RH	Gain firm commitment on delivery date from the outset Monitor progress closely with supplier senior management.
ECP2	April 10th 2005	P	3rd party workload may impact ability to complete work on schedule	Minor Quality single failure to meet internal standard	Unlikely to occur more than once	Very Low	O	RH	Gain firm commitment on delivery date from the outset Monitor progress closely with supplier senior management.
ECP3	April 10th 2005	P	Risk of scope increase as vehicle is more adaptable for change	Moderate failure to meet internal standard	Possible chance of occurring more than once	Medium	O	RH/MB	Manage any proposed change through strict configuration control.
ECP4	April 10th 2005	B	The vehicle storage is not large enough to cope with additional equipment required to treat patients	Moderate repeated failure to meet standards of care	Possible chance of occurring more than once	Medium	O	RHJP/ MB	Ensure additional equipment proposed is suitable for vehicle use and there is sufficient space for it to be fitted.
ECP5	April 10th 2005	B	Users absorb reserve establishment vehicles into core roster and therefore downtime problems continue	Moderate Repeated failure to meet internal standards and national coverage	Certain as it is more likely to occur frequently	Medium	O	JP/MB BP	Senior Managers agree not to pressurise sector staff to use vehicles as an additional core resource. Sector Managers control use of spare vehicles as reserve establishment
ECP7	April 10th 2005	P	Agreement of users to define equipment racks takes too long and project over runs	Moderate Finance for conversion will be spent in wrong financial year	Possible chance of occurring	Medium	O	JP/MB BP	FRU team control discussion with users and limit timescale for design

Generic Risk reassessed for Cost Impact per vehicle on the vehicle Options

Risk Description	Probability	Impact	Risk Score	Estimated Cost	Risk Adjustment Cost per vehicle
				£000	£000
Continue with Existing Vehicles					
3rd party workload may impact ability to complete work on schedule	4	4	16	5.0	0.8
Risk of scope increase as vehicle is more adaptable for change	0	0	0	0.0	0.0
The vehicle storage is not large enough to cope with additional equipment required to treat patients	10	6	60	4.9	3.0
Users absorb reserve establishment vehicles into core roster and therefore downtime problems continue	10	6	60	4.9	3.0
Agreement of users to define equipment racks takes too long and project over runs into next financial year	0	0	0	0.0	0.0
Total adjusted Risk cost for Option					**6.8**
Option 1 - Purchase 104 Zaferas					
3rd party workload may impact ability to complete work on schedule	4	4	16	5	0.8
Risk of scope increase as vehicle is more adaptable for change	6	6	36	4.9	1.8
The vehicle storage is not large enough to cope with additional equipment required to treat patients	8	6	36	4.9	2.4
Users absorb reserve establishment vehicles into core roster and therefore downtime problems continue	6	10	60	4.9	3.0
Agreement of users to define equipment racks takes too long and project over runs into next financial year	6	6	36	6	2.2
Total adjusted Risk cost for Option					**10.2**
Option 2 - Purchase 172 Zaferas					
3rd party workload may impact ability to complete work on schedule	4	4	16	5	0.8
Risk of scope increase as vehicle is more adaptable for change	6	6	36	4.9	1.8
The vehicle storage is not large enough to cope with additional equipment required to treat patients	8	6	36	4.9	2.4
Users absorb reserve establishment vehicles into core roster and therefore downtime problems continue	6	10	60	4.9	3.0
Agreement of users to define equipment racks takes too long and project over runs into next financial year	6	6	36	6	2.2
Total adjusted Risk cost for Option					**10.2**

APPENDIX E STAFF SURVEY RESULTS

LONDON AMBULANCE SERVICE NHS TRUST

SERVICE EVALUATION RECORD

RAPID RESPONSE UNIT

Name_____ Station/Sector_____

Date_____

The purpose of this exercise is to create the vehicle pre-selection criteria in preparation for future RRU purchases.

There were 80 replies to this survey from staff across the Service
The individual scores were averaged as indicated below:
1 = poor 2 = moderate 3 = acceptable 4 = good 5 = excellent

	Average Score
Driver Perspective	
1. Range of driver seat adjustment	
a) height	**4.35**
b) backwards/forwards	**4.13**
c) lumber support adjustment	**4.46**
d) arm rest	**1.91**
2. Relationship between steering wheel, gear lever, pedals and h/brake	**4.58**
3. Safety features	
a) Driver and front passenger air bags only	**3.95**
b) Driver and front passenger air bags and side impact air bags	**4.2**
4. Visibility from driver's seat	
a) front screen and front side windows only	**3.28**
b) all round vision	**4.9**
5. Door mirrors	
a) heated	**2.92**
b) split view	**4.01**
6. Brakes – ABS/ESP	**4.72**

7. Ride in vehicle / comfort	**4.33**
8. Steering – feel	**4.72**
9. Steering – manoeuvrability	**4.77**
10. Gear change – auto	**4.3**
11. Gear change – "manual"	**3.12**
12. Acceleration	**3.45**

Equipment Access

13. Tailgate	
a) access to rear storage area	**4.27**
b) door height when open allows access without risk of head injury	**4.75**
14. Space for storage of approved equipment list items only	**4.25**

Comfort

15. Number of available passenger seats	
a) front passenger only (provision for equipment to be fastened on both rear seats)	**3.98**
b) up to two passengers (provision for equipment to be fastened on only one rear seat)	**3.68**
c) up to three passengers (no provision for equipment on any seat)	**1.41**
16. Air conditioning	**4.68**
17. In-car entertainment	**4.37**