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Logistic Vehicle System Replacement Cost Estimate

Cost Analysis Division
(AMSTA-RM-VC)

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14. ABSTRACT
The Logistics Vehicle System (LVS) was originally fielded from 1985-1989. Most of the LVS fleet will reach end-of-service life in 2005, therefore the goal of the Logistics Vehicle System Replacement (LVSR) program is to field a cost effective replacement for the LVS. The purpose of this study was to provide the costs associated with Research, Development, Test and Evaluation (RDT&E), procurement, and Operation and Maintenance (O&M) funded cost elements for the Marine Corps LVSR program. It compared High Technology (HT), Limited Technology (LT), Multi-Year Procurement (MYP) and Single-Year Procurement (SYP) for potential LVSR alternatives.

15. Subject Terms
Cost, HT, LT, MYP, and SYP.

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Logistics Vehicle System Replacement
Cost Estimate

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APPENDICES

LOGISTICS VEHICLE SYSTEM REPLACEMENT
COST ESTIMATE

1. PURPOSE:

The purpose of this study is to provide the costs associated with: RDT&E, procurement, and O&M funded cost elements for the Marine Corps' Logistic Vehicle System Replacement (LVSR) program.

2. BACKGROUND:

The LVS was originally fielded from 1985-1989. Most of the LVS fleet will reach end-of-service life in 2005, therefore the goal of the LVSR program is to field a cost effective replacement for the LVS. This study looks at remanufacturing the Marine Corps' current MK48 Series LVS fleet. The MK48 Series LVS consists of a front power unit and rear body unit, connected by a center articulation joint. The MK48 series is comprised of the following models: MK48/14 - logistics platform truck; MK48/15 – recovery vehicle; MK48/16 – truck tractor; MK48/17 - cargo truck w/ material handing crane; MK48/18 - load handling system vehicle.

3. ACQUISITION STRATEGY:

Specific and detailed ground rules and assumptions on which the estimate is based are contained in the cost data sheets, in appendices A, B and C. The following is a list of pertinent general program assumptions:

- This study omits the costs incurred during Concept Exploration.
- The cost estimate was developed according to the acquisition strategy presented in Table 1. MSI/II occurs in July 01. Engineering and Manufacturing Development (EMD) is from FY01-FY03.
- RDT&E effort will consist of two contractors through EMD, each building.:
  MK48/14 – 3 prototypes
  MK48/15 – 1 prototype
  MK48/16 - 1 prototype
  MK48/18 - 1 prototype
- There will be a Source Selection and Evaluation Board to down-select to one contractor for the production phase. The winning contractor will build one MK48/17 prototype during low rate initial production (LRIP), with R&D funds.
- A total production quantity of 3,950 vehicles will be produced from FY04-08. LRIP will begin in Oct 03 (FY04) and continue until MSIII decision in Nov 05 (FY06).
- In LRIP each type of variant will be built.
- The 3,950 production vehicles will be fielded from FY05-09. Full operational capability (FOC) occurs in the last quarter of FY08.
- Useful life of the LVSR is 22 years.

Logistics Vehicle System Replacement (LVSR)

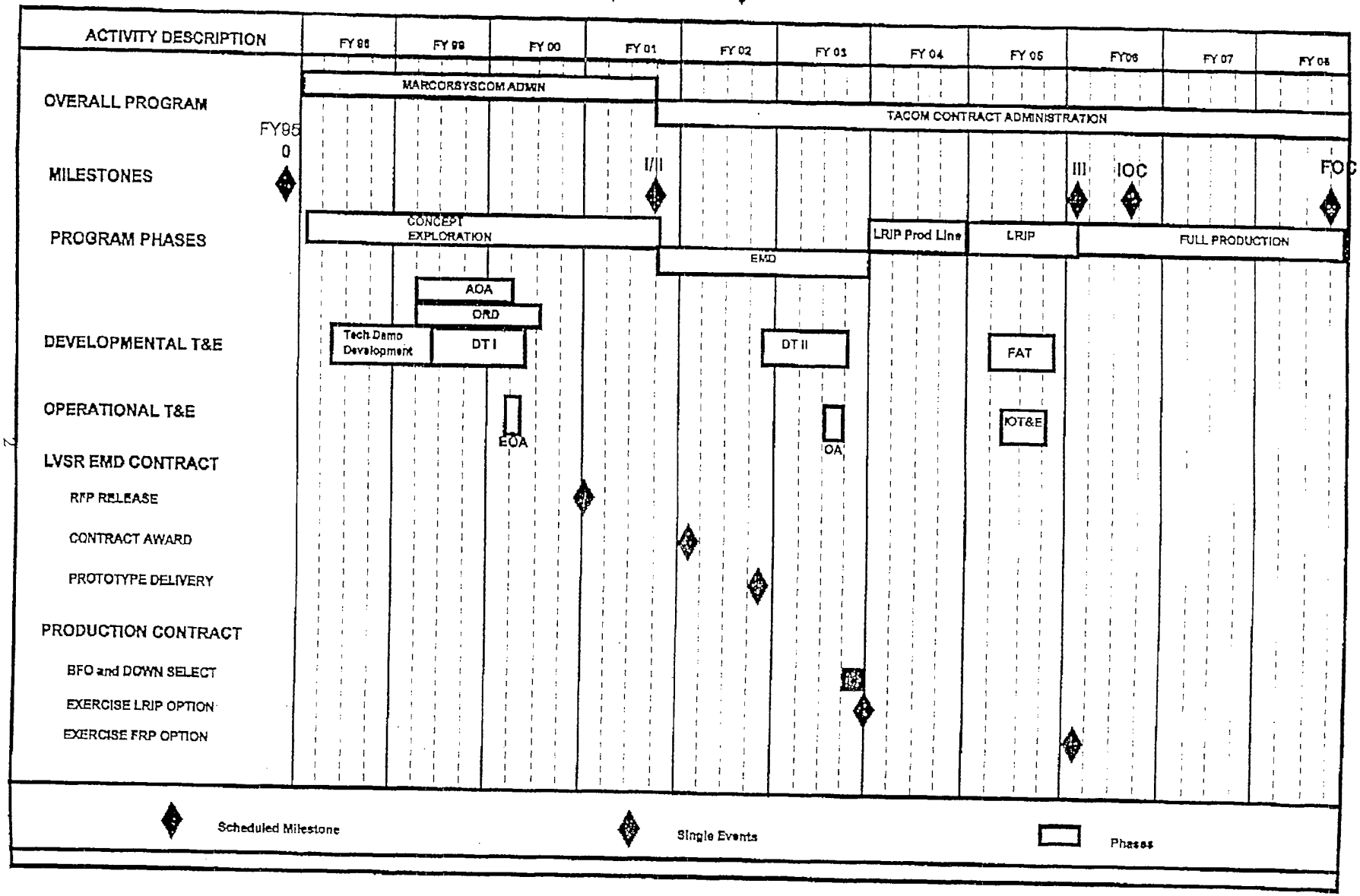

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Table 1

- The annual operating miles are:

  Mk48/14 – 5,000
  Mk48/15 – 3,000
  Mk48/16 – 6,000
  Mk48/17 – 2,500
  Mk48/18 – 6,000

4. COST APPROACH:

Two LVSR configurations were looked at in the study: a "limited technology" (LT) version; and a "high technology" (HT) version. Manufacturing costs were developed using a 5-single year procurement (SYP) approach and a 5 year multiyear procurement (MYP) approach. Each procurement approach was applied to the two LVSR configurations. Two rebuild options are presented in the Operations and Maintenance phase and applied to both LVSR configurations: 1) a rebuild effort after 10 years and; 2) no rebuild effort.

The Limited Technology and High Technology configurations of the LVSR were defined by the Nevada Automotive Test Center as follows:

System	LVSR- Limited Technology	LVSR – High Technology
Engine	Remanufacture existing engine w/ DDEC IIIa, 30 CFM air compressor, Jacobs Brake	New Series 60 w/ DDEC IV, 30 CFM air compressor, Jacobs Brake, cleanable filters
Transmission/T-Case	HD4070PR automatic transmission w/ integral retarder, twin disc single-speed T-Case	twin disc automatic transmission w/ integral retarder, No T-Case required
Suspension	Walking Beam Air Ride suspension, w/ added 3rd axle to RBU	Independent suspension, w/ added 3rd axle to RBU
Steering	Modify steering hydraulics. Add roll bump stop	Remove existing articulated joint. Add all wheel steering
Tires/Wheels	16.00R20 Tires, Titan wheels and beadlocks	16.00R20 Tires, Titan wheels and beadlocks
CTIS/ABS/Automatic Traction Control	Modify existing axles and wheel ends	Integrated into Oshkosh Truck Company, Independent axles and wheel ends
Other Components: Cooling, Prop shaft, Air dryer, Engine accessories, Fasteners, Mounting HW, Axle refurbish	Rebuild to original specifications or replace with new	Rebuild to original specifications or replace with new
New systems	Collision warning system	Collision warning system

5. RESULTS:

The remainder of this report presents the schedules and cost summaries for the LT and HT options of the LVSR.

The production and operating vehicle schedules are presented in Tables 2 and 3, respectively. Total costs are given in escalated and FY98 constant dollars in Tables 4 and 5. Table 6 provides a definition of what costs are included in each unit cost. The average unit costs for each LVSR variant are in Tables 7 - 12.

The appendices to this report are arranged by appropriation (RDT&E, procurement and O&M). Cost summaries are presented to their lowest level of detail and include all years in which costs are incurred. The summaries are followed by cost data sheets, which present the cost element description, assumptions and methodology.

LVSR - PRODUCTION SCHEDULE

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	Total
MK48	55	100	560	570	570	1855
MK14	22	50	224	200	216	712
MK15	17	5	55	25	8	110
MK16	20	35	120	110	159	444
MK17	13	15	90	100	107	325
MK18	23	40	130	175	136	504
	150	245	1179	1180	1196	3950

Table 2

Logistics Vehicle System Replacement (LVSR)
Operating Schedule

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Operating Schedule - Active - MK48	80	295	857	909	909	909	909	909	909	909
Operating Schedule - Reserve - MK48				35	167	167	167	167	167	167
Operating Schedule - Training - MK48				56	56	56	56	56	56	56

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Operating Schedule - Active - MK48	909	909	909	909	909	909	909	909	909	909
Operating Schedule - Reserve - MK48	167	167	167	167	167	167	167	167	167	167
Operating Schedule - Training - MK48	56	56	56	56	56	56	56	56	56	56

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Operating Schedule - Active - MK48	909	909	829	614	52	
Operating Schedule - Reserve - MK48	167	167	167	167	167	132
Operating Schedule - Training - MK48	56	56	56	56	56	

Table 3

Logistics Vehicle System Replacement (LVSR)
Cost Estimate Summary

Escalated Dollars in Millions

	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
1.0 EMD RDT&E Funded Elements									
Limited Tech	0.356	13.097	8.824	0.657					
High Tech	0.356	13.215	8.824	0.667					
2.0 Procurement Funded Elements									
Limited Tech (Single Year Procurement)				35.820	71.040	278.690	291.450	294.529	4.090
High Tech (Single Year Procurement)				37.317	73.190	286.499	299.097	302.733	4.090
Limited Tech (Multi-Year Procurement)				34.852	69.377	270.341	282.758	285.664	4.090
High Tech (Multi-Year Procurement)				36.266	71.409	277.718	289.981	293.414	4.090
5.0 Operations & Maintenance Funded Elements									
with Rebuild					1.865	6.110	16.662	19.224	22.216
without Rebuild					1.865	6.110	16.662	19.224	22.216

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	T/C	Total
1.0 EMD RDT&E Funded Elements									
Limited Tech									22.934
High Tech									23.062
2.0 Procurement Funded Elements									
Limited Tech (Single Year Procurement)	0.960	0.981	1.002	1.024	1.047	1.070	1.093	15.943	998.739
High Tech (Single Year Procurement)	0.988	1.010	1.032	1.055	1.078	1.102	1.126	16.413	1026.728
Limited Tech (Multi-Year Procurement)	0.960	0.981	1.002	1.024	1.047	1.070	1.093	15.943	970.203
High Tech (Multi-Year Procurement)	0.988	1.010	1.032	1.055	1.078	1.102	1.126	16.413	996.681
5.0 Operations & Maintenance Funded Elements									
with Rebuild	22.793	23.345	23.911	24.491	25.085	50.861	86.338	803.921	1126.820
without Rebuild	22.793	23.345	23.911	24.491	25.085	25.694	26.318	369.059	606.773

Table 4

Logistics Vehicle System Replacement (LVSR)
Cost Estimate Summary

FY98 Constant Dollars in Millions

	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09
1.0 EMD RDT&E Funded Elements									
Limited Tech	0.336	12.128	8.014	0.584					
High Tech	0.336	12.237	8.014	0.593					
2.0 Procurement Funded Elements									
Limited Tech (Single Year Procurement)				30.999	60.152	230.914	236.279	233.642	3.174
High Tech (Single Year Procurement)				32.295	61.973	237.385	242.478	240.150	3.174
Limited Tech (Multi-Year Procurement)				30.162	58.745	223.996	229.232	226.610	3.174
High Tech (Multi-Year Procurement)				31.386	60.464	230.109	235.088	232.757	3.174
5.0 Operations & Maintenance Funded Elements									
with Rebuild					1.596	5.106	13.597	15.317	17.282
without Rebuild					1.596	5.106	13.597	15.317	17.282

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	T/C	Total
1.0 EMD RDT&E Funded Elements									
Limited Tech									21.062
High Tech									21.180
2.0 Procurement Funded Elements									
Limited Tech (Single Year Procurement)	0.729	0.729	0.729	0.729	0.729	0.729	0.729	9.132	809.395
High Tech (Single Year Procurement)	0.750	0.750	0.750	0.750	0.750	0.750	0.750	9.401	832.109
Limited Tech (Multi-Year Procurement)	0.729	0.729	0.729	0.729	0.729	0.729	0.729	9.132	786.153
High Tech (Multi-Year Procurement)	0.750	0.750	0.750	0.750	0.750	0.750	0.750	9.401	807.633
5.0 Operations & Maintenance Funded Elements									
with Rebuild	17.312	17.312	17.312	17.312	17.312	34.268	56.794	479.979	710.497
without Rebuild	17.312	17.312	17.312	17.312	17.312	17.312	17.312	206.785	380.865

Table 5

LVSR
UNIT COST DEFINITIONS

Unit Cost	Cell Number/Name	
Manufacturing	2.021	Manufacturing
Rollaway	**Manufacturing**	
	+ 2.03	Engineering Changes
	+ 2.04	System Engineering/Program Management
	+ 2.05	System Test & Evaluation
	+ 2.104	Transportation
Weapon System	**Rollaway**	
	+ 2.105	New Equipment Training
Procurement	**Weapon System**	
	+ 2.101	Initial DLRs (spares)
Program Acquisition	**Procurement**	
	+ 1.0	RDT&E Funded Elements

Table 6

MK 48 Average Unit Costs

FY98 Constant Dollars (Millions)

	LVSR-LT SYP	LVSR-LT MYP	LVSR-HT SYP	LVSR-HT MYP
Manufacturing	0.214	0.207	0.205	0.199
Rollaway	0.244	0.237	0.235	0.228
Weapon System	0.244	0.237	0.236	0.229
Procurement	0.245	0.237	0.236	0.229
Program Acq	0.247	0.239	0.238	0.231

Table 7

MK 14 Average Unit Costs

FY98 Constant Dollars (Millions)

	LVSR-LT SYP	LVSR-LT MYP	LVSR-HT SYP	LVSR-HT MYP
Manufacturing	0.087	0.083	0.105	0.100
Rollaway	0.113	0.109	0.132	0.126
Weapon System	0.113	0.109	0.132	0.127
Procurement	0.114	0.110	0.132	0.127
Program Acq	0.116	0.112	0.134	0.129

Table 8

MK 15 Average Unit Costs

FY98 Constant Dollars (Millions)

	LVSR-LT SYP	LVSR-LT MYP	LVSR-HT SYP	LVSR-HT MYP
Manufacturing	0.188	0.185	0.206	0.201
Rollaway	0.218	0.213	0.236	0.231
Weapon System	0.218	0.214	0.236	0.231
Procurement	0.218	0.214	0.236	0.231
Program Acq	0.220	0.216	0.238	0.233

Table 9

MK 16 Average Unit Costs

FY98 Constant Dollars (Millions)

	LVSR-LT SYP	LVSR-LT MYP	LVSR-HT SYP	LVSR-HT MYP
Manufacturing	0.110	0.106	0.128	0.123
Rollaway	0.137	0.133	0.155	0.150
Weapon System	0.137	0.133	0.156	0.150
Procurement	0.137	0.133	0.156	0.151
Program Acq	0.139	0.135	0.158	0.153

Table 10

MK 17 Average Unit Costs

FY98 Constant Dollars (Millions)

	LVSR-LT SYP	LVSR-LT MYP	LVSR-HT SYP	LVSR-HT MYP
Manufacturing	0.178	0.175	0.196	0.191
Rollaway	0.207	0.203	0.226	0.220
Weapon System	0.207	0.203	0.226	0.221
Procurement	0.208	0.203	0.226	0.221
Program Acq	0.209	0.205	0.228	0.222

Table 11

MK 18 Average Unit Costs

FY98 Constant Dollars (Millions)

	LVSR-LT SYP	LVSR-LT MYP	LVSR-HT SYP	LVSR-HT MYP
Manufacturing	0.187	0.181	0.204	0.198
Rollaway	0.216	0.210	0.234	0.227
Weapon System	0.216	0.210	0.235	0.227
Procurement	0.216	0.210	0.235	0.228
Program Acq	0.218	0.212	0.237	0.230

Table 12

APPENDIX A

LVSR (Limited Technology & High Technology)

Total R&D Costs by Year in Escalated Dollars

R&D – Cost Data Sheets

Logistics Vehicle System Replacement (LVSR) - LT
RDTE Funded Elements

Escalated Dollars in Millions

	FY01	FY02	FY03	FY04	Total
1.0 EMD RDT&E Funded Elements	**0.356**	**13.097**	**8.824**	**0.657**	**22.934**
1.01 Development Engineering		**3.439**	**1.806**		**5.245**
1.04 Prototype Manufacturing		**5.083**		**0.501**	**5.584**
MK48		3.353		0.291	3.644
MK14		0.619			0.619
MK15		0.440			0.440
MK16		0.250			0.250
MK17				0.210	0.210
MK18		0.421			0.421
1.05 System Engineering/Program Management	**0.356**	**2.937**	**2.271**		**5.564**
1.051 Government Engineering/Mgmt	0.356	1.266	1.502		3.125
Government Core PM	0.312	0.318	0.840		1.471
Government Matrix Support	0.021	0.092	0.085		0.197
Other Government	0.023	0.857	0.577		1.457
1.052 Contractor Engineering/Mgmt		1.671	0.769		2.439
Contractor PM		0.580	0.710		1.291
Contractor ILS		1.090	0.059		1.149
1.06 Systems Test & Evaluation		**1.639**	**4.746**	**0.156**	**6.540**
1.061 Government Testing		0.660	3.639		4.299
Development Test - Performance		0.245	1.137		1.382
Development Test - Endurance		0.275	1.275		1.550
Operational Assessment I			0.572		0.572
Government Test Support		0.141	0.655		0.796
1.062 Contractor Testing		0.978	1.107	0.156	2.241
Contractor Testing - (all variants)		0.864		0.156	1.020
ContractorTest Support - DT and OA		0.114	0.531		0.645
SSP			0.576		0.576

Logistics Vehicle System Replacement (LVSR) - HT
RDTE Funded Elements

Escalated Dollars in Millions

	FY01	FY02	FY03	FY04	Total
1.0 EMD RDT&E Funded Elements	**0.356**	**13.215**	**8.824**	**0.667**	**23.062**
1.01 Development Engineering		**3.439**	**1.806**		**5.245**
1.04 Prototype Manufacturing		**5.193**		**0.511**	**5.703**
MK48		3.240		0.281	3.521
MK14		0.730			0.730
MK15		0.477			0.477
MK16		0.287			0.287
MK17				0.229	0.229
MK18		0.458			0.458
1.05 System Engineering/Program Management	**0.356**	**2.945**	**2.271**		**5.572**
1.051 Government Engineering/Mgmt	0.356	1.274	1.502		3.133
Government Core PM	0.312	0.318	0.840		1.471
Government Matrix Support	0.021	0.092	0.085		0.197
Other Government	0.023	0.865	0.577		1.465
1.052 Contractor Engineering/Mgmt		1.671	0.769		2.439
Contractor PM		0.580	0.710		1.291
Contractor ILS		1.090	0.059		1.149
1.06 Systems Test & Evaluation		**1.639**	**4.746**	**0.156**	**6.540**
1.061 Government Testing		0.660	3.639		4.299
Development Test - Performance		0.245	1.137		1.382
Development Test - Endurance		0.275	1.275		1.550
Operational Assessment I			0.572		0.572
Government Test Support		0.141	0.655		0.796
1.062 Contractor Testing		0.978	1.107	0.156	2.241
Contractor Testing - (all variants)		0.864		0.156	1.020
ContractorTest Support - DT and OA		0.114	0.531		0.645
SSP			0.576		0.576

1.01 EMD Development Engineering

Description:

This element includes the engineering tasks associated with the study, analysis, and development of upgrading/redesigning an existing vehicle system. It includes upgrading existing components and incorporating new components/technologies. Also included in this element is the cost of ensuring the producibility of the system.

Assumptions:

Methodology:

Development engineering cost was computed by analogy to the MTVR program. MTVR costs were adjusted for the longer period of performance in the LVSR program.

1.04 EMD Prototype Manufacturing

Description:

This element includes the costs of material, labor and other expenses incurred with the tasks of teardown, rebuild, reassemble, and integration of the various subassemblies into the specified prototype.

Assumptions:

It was assumed that the various new components for the remanufactured vehicle will be commerically available nondevelopmental items. Therefore the prototype component costs will be equivalent to the production component costs.

Number of required prototypes:

MK48/14 - 3 prototypes
MK48/15 - 1 prototype
MK48/16 - 1 prototype
MK48/17 - 1 prototype (during LRIP, FY04)
MK48/18 - 1 prototype

Methodology: (per variant)

The derivation of the prototype cost was divided into three areas:
1) the component cost for the new/upgraded parts ; 2) the cost to rebuild/rework;
and 3) the cost to teardown and reassemble.

The component cost; cost to rebuild; and manufacturing labor rate are equivalent to the costs/rates used in developing the unit manufacturing cost.

Prototype manufacturing labor hours (cost to teardown and reassemble) were developed using the production manufacturing labor hours as a baseline and applying an in-house historical production-to-prototype ratio.

1.051 EMD System Engineering/Management - Government

Description:
This element includes the RDT&E funded costs of the government PM's office and the government's matrix support for system engineering and business management of the system/program.
This element also includes the cost of holding a SSEB to downselect for LRIP.

Assumptions:
PM positions are paid with RDT&E funds through FY03.
The PM is in existence one year prior to the signing of EMD contract.

Methodology:
Both the core PM and the matrix support costs were derived from the LSV program and adjusted to reflect the requirements of the LVSR program.
Resulting cost includes three manyears for the core PM and three manyears for matrix support.

The cost for a SSEB was developed by analogy to the AGS SSEB. The AGS SSEB cost was adjusted to reflect the period of performance required in the LVSR program.

1.052 EMD System Engineering/Management - Contractor

Description:

This element includes the RDT&E funded costs of the contractor's PM office; and the contractor's ILS effort.

It includes costs for data items such as supplements to existing manuals or new manuals, but excludes TDP costs.

Assumptions:

Methodology:

The contractor PM cost was developed as a cost per month and applied to the EMD contract period of performance. The contractor PM cost per month and the contractor's ILS effort were based on analogy to the MTVR program.

1.061 EMD System Test and Evaluation - Government

Description:

EMD government testing includes:

- Development testing consisting of performance and endurance testing
- Operational Assessment 1 (OA1)
- Government test support

Assumptions:

- Performance testing will utilize 3 vehicles; 1 MK48/15, 1 MK48/16, and 1 MK48/18.
- Endurance testing will utilize 3 MK48/14 vehicles. Each vehicle will operate for 6,000 miles for a total of 18,000 miles.
- OA1 testing will utilize 6 EMD prototype vehicles; 3 MK48/14, 1 MK48/15, 1 MK48/16, and 1 MK48/18.

Methodology:

All government test cost were based on analogy to the MTVR program. The performance test cost was adjusted for the quantity of test vehicles and the endurance test cost was adjusted for the total number of endurance test miles.

1.062 EMD System Test and Evaluation - Contractor

Description:

EMD contractor testing includes:

- Contractor "break-in/run-in" of each prototype vehicle prior to official delivery
- Contractor support to government development testing and operational assessment
- System support package (SSP) for development testing and operational assessment

Assumptions:

The contractor will provide 14 months of test support for development testing and operational assessment.

Methodology:

Both the contractor "break-in/run-in" and SSP costs were based on analogy to the MTVR program. The contractor support cost was developed as a cost per month applied to the number of months of test support. The cost per month was based on analogy to the LSV program.

APPENDIX B

LVSR (Limited Technology & High Technology)

Total Procurement Costs by Year in Escalated Dollars

Procurement – Cost Data Sheets

Logistics Vehicle System Replacement (LVSR) - LT (SYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
2.0 Procurement Funded Elements	35.820	71.040	278.690	291.450	294.529	4.090	0.960	0.981	1.002	1.024	1.047
2.02 Recurring Production	**29.719**	**48.093**	**245.468**	**255.175**	**257.697**						
2.021 Manufacturing	29.719	48.093	245.468	255.175	257.697						
Mk48	13.612	25.295	144.758	150.590	153.899						
Mk14	2.216	5.147	23.565	21.504	23.734						
Mk15	3.702	1.113	12.510	5.812	1.901						
Mk16	2.546	4.555	15.958	14.951	22.086						
Mk17	2.679	3.159	19.370	21.996	24.053						
Mk18	4.964	8.824	29.307	40.322	32.024						
2.03 Engineering Changes	**0.892**	**1.443**	**7.364**	**7.655**	**7.731**						
2.04 System Engineering/MGMT	**4.434**	**6.485**	**20.110**	**20.986**	**21.230**	**0.979**					
2.041 Government Sys Engineering/Mgmt	2.990	5.299	18.898	19.748	19.964	0.979					
Government Core PM	0.340	0.348	0.355	0.363	0.371	0.379					
Government Matrix Support	0.307	0.304	0.311	0.318	0.325	0.332					
Other Government	2.343	4.647	18.232	19.067	19.268	0.268					
2.042 Contractor Sys Engineering/Mgmt	1.444	1.186	1.212	1.239	1.266						
Contractor PM	0.409	0.418	0.427	0.437	0.447						
Contractor ILS	1.035	0.768	0.784	0.802	0.819						
2.05 System Test and Evaluation		**13.129**	**0.307**	**0.313**	**0.320**						
2.051 Government Testing		10.028									
FPVI		0.079									
PVT		6.909									
Corrosion Testing		1.285									
IOT&E		1.754									
2.052 Contractor Testing		3.102	0.307	0.313	0.320						
Comparison Test		0.276	0.282	0.288	0.294						
PVT Refurb		1.291									
IOT&E Refurb		0.482									
ContractorTest Support - IOT&E		0.124									
Contractor Test Support		0.622	0.004	0.004	0.004						
SSP		0.306	0.021	0.021	0.022						
2.10 Fielding	**0.775**	**1.890**	**5.441**	**7.320**	**7.551**	**3.111**					
2.101 Initial Spares/Consumables	0.359	0.367	0.375								
2.104 Transportation	0.415	1.306	4.844	7.094	7.320	2.875					
2.105 New Equip Training (NET)		0.216	0.221	0.226	0.231	0.236					
2.13 Modifications							0.960	0.981	1.002	1.024	1.047

Logistics Vehicle System Replacement (LVSR) - LT (SYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
2.0 Procurement Funded Elements	1.070	1.093	1.118	1.142	1.167	1.193	1.219	1.246	1.273	1.301
2.02 Recurring Production										
2.021 Manufacturing										
Mk48										
Mk14										
Mk15										
Mk16										
Mk17										
Mk18										
2.03 Engineering Changes										
2.04 System Engineering/MGMT										
2.041 Government Sys Engineering/Mgmt										
Government Core PM										
Government Matrix Support										
Other Government										
2.042 Contractor Sys Engineering/Mgmt										
Contractor PM										
Contractor ILS										
2.05 System Test and Evaluation										
2.051 Government Testing										
FPVI										
PVT										
Corrosion Testing										
IOT&E										
2.052 Contractor Testing										
Comparison Test										
PVT Refurb										
IOT&E Refurb										
ContractorTest Support - IOT&E										
Contractor Test Support										
SSP										
2.10 Fielding										
2.101 Initial Spares/Consumables										
2.104 Transportation										
2.105 New Equip Training (NET)										
2.13 Modifications	1.070	1.093	1.118	1.142	1.167	1.193	1.219	1.246	1.273	1.301

Logistics Vehicle System Replacement (LVSR) - LT (SYP)

Procurement Funded Elements

Escalated Dollars in Millions

	FY25	FY26	FY27	FY28	FY29	FY30	TOTAL
2.0 Procurement Funded Elements	1.330	1.359	1.317	1.176	0.767	0.334	998.739
2.02 Recurring Production							**836.152**
2.021 Manufacturing							836.152
Mk48							488.153
Mk14							76.166
Mk15							25.037
Mk16							60.096
Mk17							71.257
Mk18							115.442
2.03 Engineering Changes							**25.085**
2.04 System Engineering/MGMT							**74.225**
2.041 Government Sys Engineering/Mgmt							67.878
Government Core PM							2.157
Government Matrix Support							1.896
Other Government							63.825
2.042 Contractor Sys Engineering/Mgmt							6.347
Contractor PM							2.138
Contractor ILS							4.208
2.05 System Test and Evaluation							**14.070**
2.051 Government Testing							10.028
FPVI							0.079
PVT							6.909
Corrosion Testing							1.285
IOT&E							1.754
2.052 Contractor Testing							4.042
Comparison Test							1.140
PVT Refurb							1.291
IOT&E Refurb							0.482
ContractorTest Support - IOT&E							0.124
Contractor Test Support							0.635
SSP							0.369
2.10 Fielding							**26.087**
2.101 Initial Spares/Consumables							1.102
2.104 Transportation							23.854
2.105 New Equip Training (NET)							1.131
2.13 Modifications	1.330	1.359	1.317	1.176	0.767	0.334	**23.119**

Logistics Vehicle System Replacement (LVSR) - HT (SYP)

Procurement Funded Elements

Escalated Dollars in Millions

	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13
2.0 Procurement Funded Elements	37.317	73.190	286.499	299.097	302.733	4.090	0.988	1.010	1.032	1.055
2.02 Recurring Production	31.078	50.044	252.554	262.113	265.141					
2.021 Manufacturing	31.078	50.044	252.554	262.113	265.141					
Mk48	13.048	24.247	138.763	144.354	147.525					
Mk14	2.661	6.181	28.298	25.823	28.502					
Mk15	4.046	1.216	13.672	6.352	2.077					
Mk16	2.951	5.278	18.494	17.327	25.595					
Mk17	2.942	3.469	21.272	24.156	26.415					
Mk18	5.430	9.651	32.054	44.101	35.026					
2.03 Engineering Changes	0.932	1.501	7.577	7.863	7.954					
2.04 System Engineering/MGMT	4.532	6.626	20.621	21.487	21.767	0.979				
2.041 Government Sys Engineering/Mgmt	3.088	5.440	19.409	20.248	20.501	0.979				
Government Core PM	0.340	0.348	0.355	0.363	0.371	0.379				
Government Matrix Support	0.307	0.304	0.311	0.318	0.325	0.332				
Other Government	2.441	4.788	18.743	19.567	19.805	0.268				
2.042 Contractor Sys Engineering/Mgmt	1.444	1.186	1.212	1.239	1.266					
Contractor PM	0.409	0.418	0.427	0.437	0.447					
Contractor ILS	1.035	0.768	0.784	0.802	0.819					
2.05 System Test and Evaluation		13.129	0.307	0.313	0.320					
2.051 Government Testing		10.028								
FPVI		0.079								
PVT		6.909								
Corrosion Testing		1.285								
IOT&E		1.754								
2.052 Contractor Testing		3.102	0.307	0.313	0.320					
Comparison Test		0.276	0.282	0.288	0.294					
PVT Refurb		1.291								
IOT&E Refurb		0.482								
ContractorTest Support - IOT&E		0.124								
Contractor Test Support		0.622	0.004	0.004	0.004					
SSP		0.306	0.021	0.021	0.022					
2.10 Fielding	0.775	1.890	5.441	7.320	7.551	3.111				
2.101 Initial Spares/Consumables	0.359	0.367	0.375							
2.104 Transportation	0.415	1.306	4.844	7.094	7.320	2.875				
2.105 New Equip Training (NET)		0.216	0.221	0.226	0.231	0.236				
2.13 Modifications							0.988	1.010	1.032	1.055

Logistics Vehicle System Replacement (LVSR) - HT (SYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
2.0 Procurement Funded Elements	1.078	1.102	1.126	1.151	1.176	1.202	1.228	1.255	1.283	1.311	1.340
2.02 Recurring Production											
2.021 Manufacturing											
Mk48											
Mk14											
Mk15											
Mk16											
Mk17											
Mk18											
2.03 Engineering Changes											
2.04 System Engineering/MGMT											
2.041 Government Sys Engineering/Mgmt											
Government Core PM											
Government Matrix Support											
Other Government											
2.042 Contractor Sys Engineering/Mgmt											
Contractor PM											
Contractor ILS											
2.05 System Test and Evaluation											
2.051 Government Testing											
FPVI											
PVT											
Corrosion Testing											
IOT&E											
2.052 Contractor Testing											
Comparison Test											
PVT Refurb											
IOT&E Refurb											
ContractorTest Support - IOT&E											
Contractor Test Support											
SSP											
2.10 Fielding											
2.101 Initial Spares/Consumables											
2.104 Transportation											
2.105 New Equip Training (NET)											
2.13 Modifications	1.078	1.102	1.126	1.151	1.176	1.202	1.228	1.255	1.283	1.311	1.340

Logistics Vehicle System Replacement (LVSR) - HT (SYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY25	FY26	FY27	FY28	FY29	FY30	TOTAL
2.0 Procurement Funded Elements	**1.369**	**1.400**	**1.355**	**1.209**	**0.789**	**0.344**	**1026.728**
2.02 Recurring Production							**860.929**
2.021 Manufacturing							860.929
Mk48							467.938
Mk14							91.466
Mk15							27.363
Mk16							69.646
Mk17							78.254
Mk18							126.263
2.03 Engineering Changes							**25.828**
2.04 System Engineering/MGMT							**76.012**
2.041 Government Sys Engineering/Mgmt							69.665
Government Core PM							2.157
Government Matrix Support							1.896
Other Government							65.612
2.042 Contractor Sys Engineering/Mgmt							6.347
Contractor PM							2.138
Contractor ILS							4.208
2.05 System Test and Evaluation							**14.070**
2.051 Government Testing							10.028
FPVI							0.079
PVT							6.909
Corrosion Testing							1.285
IOT&E							1.754
2.052 Contractor Testing							4.042
Comparison Test							1.140
PVT Refurb							1.291
IOT&E Refurb							0.482
ContractorTest Support - IOT&E							0.124
Contractor Test Support							0.635
SSP							0.369
2.10 Fielding							**26.087**
2.101 Initial Spares/Consumables							1.102
2.104 Transportation							23.854
2.105 New Equip Training (NET)							1.131
2.13 Modifications	**1.369**	**1.400**	**1.355**	**1.209**	**0.789**	**0.344**	**23.803**

Logistics Vehicle System Replacement (LVSR) - LT (MYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
2.0 Procurement Funded Elements	**34.852**	**69.377**	**270.341**	**282.758**	**285.664**	**4.090**	**0.960**	**0.981**	**1.002**	**1.024**	**1.047**
2.02 Recurring Production	**28.815**	**46.539**	**237.666**	**247.051**	**249.412**						
2.021 Manufacturing	28.815	46.539	237.666	247.051	249.412						
Mk48	13.170	24.473	140.056	145.699	148.900						
Mk14	2.120	4.925	22.550	20.577	22.712						
Mk15	3.628	1.091	12.261	5.696	1.863						
Mk16	2.460	4.399	15.415	14.441	21.333						
Mk17	2.622	3.092	18.962	21.533	23.547						
Mk18	4.814	8.558	28.423	39.105	31.057						
2.03 Engineering Changes	**0.892**	**1.443**	**7.364**	**7.655**	**7.731**						
2.04 System Engineering/MGMT	**4.371**	**6.377**	**19.564**	**20.418**	**20.650**	**0.979**					
2.041 Government Sys Engineering/Mgmt	2.927	5.191	18.352	19.179	19.384	0.979					
Government Core PM	0.340	0.348	0.355	0.363	0.371	0.379					
Government Matrix Support	0.307	0.304	0.311	0.318	0.325	0.332					
Other Government	2.280	4.539	17.686	18.498	18.688	0.268					
2.042 Contractor Sys Engineering/Mgmt	1.444	1.186	1.212	1.239	1.266						
Contractor PM	0.409	0.418	0.427	0.437	0.447						
Contractor ILS	1.035	0.768	0.784	0.802	0.819						
2.05 System Test and Evaluation		**13.129**	**0.307**	**0.313**	**0.320**						
2.051 Government Testing		10.028									
FPVI		0.079									
PVT		6.909									
Corrosion Testing		1.285									
IOT&E		1.754									
2.052 Contractor Testing		3.102	0.307	0.313	0.320						
Comparison Test		0.276	0.282	0.288	0.294						
PVT Refurb		1.291									
IOT&E Refurb		0.482									
ContractorTest Support - IOT&E		0.124									
Contractor Test Support		0.622	0.004	0.004	0.004						
SSP		0.306	0.021	0.021	0.022						
2.10 Fielding	**0.775**	**1.890**	**5.441**	**7.320**	**7.551**	**3.111**					
2.101 Initial Spares/Consumables	0.359	0.367	0.375								
2.104 Transportation	0.415	1.306	4.844	7.094	7.320	2.875					
2.105 New Equip Training (NET)		0.216	0.221	0.226	0.231	0.236					
2.13 Modifications							**0.960**	**0.981**	**1.002**	**1.024**	**1.047**

Logistics Vehicle System Replacement (LVSR) - LT (MYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
2.0 Procurement Funded Elements	1.070	1.093	1.118	1.142	1.167	1.193	1.219	1.246	1.273	1.301	1.330
2.02 Recurring Production											
2.021 Manufacturing											
Mk48											
Mk14											
Mk15											
Mk16											
Mk17											
Mk18											
2.03 Engineering Changes											
2.04 System Engineering/MGMT											
2.041 Government Sys Engineering/Mgmt											
Government Core PM											
Government Matrix Support											
Other Government											
2.042 Contractor Sys Engineering/Mgmt											
Contractor PM											
Contractor ILS											
2.05 System Test and Evaluation											
2.051 Government Testing											
FPVI											
PVT											
Corrosion Testing											
IOT&E											
2.052 Contractor Testing											
Comparison Test											
PVT Refurb											
IOT&E Refurb											
ContractorTest Support - IOT&E											
Contractor Test Support											
SSP											
2.10 Fielding											
2.101 Initial Spares/Consumables											
2.104 Transportation											
2.105 New Equip Training (NET)											
2.13 Modifications	1.070	1.093	1.118	1.142	1.167	1.193	1.219	1.246	1.273	1.301	1.330

Logistics Vehicle System Replacement (LVSR) - LT (MYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY26	FY27	FY28	FY29	FY30	TOTAL
2.0 Procurement Funded Elements	1.359	1.317	1.176	0.767	0.334	970.203
2.02 Recurring Production						**809.482**
2.021 Manufacturing						809.482
Mk48						472.298
Mk14						72.885
Mk15						24.538
Mk16						58.048
Mk17						69.756
Mk18						111.957
2.03 Engineering Changes						**25.085**
2.04 System Engineering/MGMT						**72.359**
2.041 Government Sys Engineering/Mgmt						66.012
Government Core PM						2.157
Government Matrix Support						1.896
Other Government						61.959
2.042 Contractor Sys Engineering/Mgmt						6.347
Contractor PM						2.138
Contractor ILS						4.208
2.05 System Test and Evaluation						**14.070**
2.051 Government Testing						10.028
FPVI						0.079
PVT						6.909
Corrosion Testing						1.285
IOT&E						1.754
2.052 Contractor Testing						4.042
Comparison Test						1.140
PVT Refurb						1.291
IOT&E Refurb						0.482
ContractorTest Support - IOT&E						0.124
Contractor Test Support						0.635
SSP						0.369
2.10 Fielding						**26.087**
2.101 Initial Spares/Consumables						1.102
2.104 Transportation						23.854
2.105 New Equip Training (NET)						1.131
2.13 Modifications	1.359	1.317	1.176	0.767	0.334	**23.119**

Logistics Vehicle System Replacement (LVSR) - HT (MYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13
2.0 Procurement Funded Elements	36.266	71.409	277.718	289.981	293.414	4.090	0.988	1.010	1.032	1.055
2.02 Recurring Production	**30.096**	**48.379**	**244.347**	**253.594**	**256.431**					
2.021 Manufacturing	30.096	48.379	244.347	253.594	256.431					
Mk48	12.638	23.485	134.403	139.818	142.890					
Mk14	2.540	5.900	27.013	24.651	27.208					
Mk15	3.953	1.188	13.357	6.205	2.029					
Mk16	2.841	5.082	17.806	16.682	24.642					
Mk17	2.870	3.385	20.755	23.570	25.774					
Mk18	5.253	9.338	31.013	42.669	33.888					
2.03 Engineering Changes	**0.932**	**1.501**	**7.577**	**7.863**	**7.954**					
2.04 System Engineering/MGMT	**4.463**	**6.510**	**20.047**	**20.890**	**21.157**	**0.979**				
2.041 Government Sys Engineering/Mgmt	3.019	5.324	18.835	19.652	19.891	0.979				
Government Core PM	0.340	0.348	0.355	0.363	0.371	0.379				
Government Matrix Support	0.307	0.304	0.311	0.318	0.325	0.332				
Other Government	2.373	4.672	18.168	18.971	19.195	0.268				
2.042 Contractor Sys Engineering/Mgmt	1.444	1.186	1.212	1.239	1.266					
Contractor PM	0.409	0.418	0.427	0.437	0.447					
Contractor ILS	1.035	0.768	0.784	0.802	0.819					
2.05 System Test and Evaluation		**13.129**	**0.307**	**0.313**	**0.320**					
2.051 Government Testing		10.028								
FPVI		0.079								
PVT		6.909								
Corrosion Testing		1.285								
IOT&E		1.754								
2.052 Contractor Testing		3.102	0.307	0.313	0.320					
Comparison Test		0.276	0.282	0.288	0.294					
PVT Refurb		1.291								
IOT&E Refurb		0.482								
ContractorTest Support - IOT&E		0.124								
Contractor Test Support		0.622	0.004	0.004	0.004					
SSP		0.306	0.021	0.021	0.022					
2.10 Fielding	**0.775**	**1.890**	**5.441**	**7.320**	**7.551**	**3.111**				
2.101 Initial Spares/Consumables	0.359	0.367	0.375							
2.104 Transportation	0.415	1.306	4.844	7.094	7.320	2.875				
2.105 New Equip Training (NET)		0.216	0.221	0.226	0.231	0.236				
2.13 Modifications							0.988	1.010	1.032	1.055

Logistics Vehicle System Replacement (LVSR) - HT (MYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
2.0 Procurement Funded Elements	1.078	1.102	1.126	1.151	1.176	1.202	1.228	1.255	1.283	1.311	1.340
2.02 Recurring Production											
2.021 Manufacturing											
Mk48											
Mk14											
Mk15											
Mk16											
Mk17											
Mk18											
2.03 Engineering Changes											
2.04 System Engineering/MGMT											
2.041 Government Sys Engineering/Mgmt											
Government Core PM											
Government Matrix Support											
Other Government											
2.042 Contractor Sys Engineering/Mgmt											
Contractor PM											
Contractor ILS											
2.05 System Test and Evaluation											
2.051 Government Testing											
FPVI											
PVT											
Corrosion Testing											
IOT&E											
2.052 Contractor Testing											
Comparison Test											
PVT Refurb											
IOT&E Refurb											
ContractorTest Support - IOT&E											
Contractor Test Support											
SSP											
2.10 Fielding											
2.101 Initial Spares/Consumables											
2.104 Transportation											
2.105 New Equip Training (NET)											
2.13 Modifications	1.078	1.102	1.126	1.151	1.176	1.202	1.228	1.255	1.283	1.311	1.340

Logistics Vehicle System Replacement (LVSR) - HT (MYP)
Procurement Funded Elements

Escalated Dollars in Millions

	FY25	FY26	FY27	FY28	FY29	FY30	TOTAL
2.0 Procurement Funded Elements	1.369	1.400	1.355	1.209	0.789	0.344	996.681
2.02 Recurring Production							
2.021 Manufacturing							**832.847**
Mk48							832.847
Mk14							453.235
Mk15							87.312
Mk16							26.732
Mk17							67.053
Mk18							76.354
							122.161
2.03 Engineering Changes							**25.828**
2.04 System Engineering/MGMT							
2.041 Government Sys Engineering/Mgmt							**74.046**
Government Core PM							67.700
Government Matrix Support							2.157
Other Government							1.896
2.042 Contractor Sys Engineering/Mgmt							63.647
Contractor PM							6.347
Contractor ILS							2.138
							4.208
2.05 System Test and Evaluation							
2.051 Government Testing							**14.070**
FPVI							10.028
PVT							0.079
Corrosion Testing							6.909
IOT&E							1.285
2.052 Contractor Testing							1.754
Comparison Test							4.042
PVT Refurb							1.140
IOT&E Refurb							1.291
ContractorTest Support - IOT&E							0.482
Contractor Test Support							0.124
SSP							0.635
							0.369
2.10 Fielding							
2.101 Initial Spares/Consumables							**26.087**
2.104 Transportation							1.102
2.105 New Equip Training (NET)							23.854
							1.131
2.13 Modifications	1.369	1.400	1.355	1.209	0.789	0.344	**23.803**

2.021 Recurring Production - Manufacturing

Description:

This element includes the costs of material, labor and other expenses incurred with the tasks of teardown, rebuild, reassemble, and integration of the various subassemblies into a working vehicle system.

Assumptions:

There will be no new production facilities.

Methodology:

Manufacturing costs were developed using a 5-single year procurement (SYP) approach and a multiyear procurement (MYP) approach. Each procurement approach was applied to the "limited tech" (LT) version of the LVSR and the "high tech" (HT) version of the LVSR.

The derivation of the manufacturing cost (for both procurement approaches) was divided into three areas: 1) the component cost for the new/upgraded parts ; 2) the cost to rebuild/rework; and 3) the cost to teardown and reassemble.

1) New component costs for each version/alternative were obtained from the Nevada Automotive Test Center (NATC).

2) All parts that are not being upgraded or replaced will be rebuilt during the manufacturing process. Rebuild costs were developed using the Army Master Data File (AMDF) price (with the surcharge removed) for each component and applying a 65% rebuild factor.

3) Teardown hours were developed from an analogy to the MTVR program, and adjusted to reflect the estimated effort required for the LVSR program.
Reassembly hours were developed from the direct labor hours associated with the LVS/HEMTT Family Contract.

For the MYP approach a multiyear procurement savings of 5.7% was developed from a Naval Center for Cost Analysis white paper reviewing multiyear proposals.
The multiyear procurement savings was applied against the new component costs only.

2.03 Engineering Changes

Description:

This element includes the costs of official alterations made to a system while it is still in the manufacturing process. Modifications which change the performance of the system are done after the system is accepted by the Marine Corps will be costed in modifications.

Assumptions:

Methodology:

The total engineering changes were computed as a percentage of the total manufacturing cost (less MYP %). This factor is an engineering estimate based on previous experience with other programs.

2.041 System Engineering/Program Management - Government

Description:

This element includes the procurement-funded costs of the government PM office and the government matrix support for system engineering and business management of the system/program. The government matrix support includes: engineering support, quality assurance, ILS, maintenance, material management, acquisition and readiness.

Assumptions:

Methodology:

Both the core PM and the matrix support costs were derived from the LSV program and adjusted to reflect the requirements of the LVSR program.

Resulting cost includes three manyears in the core PM and six manyears for support.

2.042 System Engineering/Program Management - Contractor

Description:

This element includes the procurement-funded costs of the contractor PM office for system engineering and technical control, as well as the business management of the system/program. It also includes the contractor ILS effort during procurement.

Assumptions:

Methodology:

The contractor PM cost was developed as a cost per month and applied to the procurement contract period of performance. The contractor PM cost per month was based on analogy to the MTVR program.

Contractor ILS cost based on an analogy to the HEMTT
Cost for Initial key personnel training is included in cost.

2.051 System Test and Evaluation - Government

Description:

Government testing includes:

- First Production Vehicle Inspection (FPVI)
- Production Verification Test (PVT)
- Corrosion testing
- Initial Operational Test and Evaluation (IOT&E)

Assumptions:

- FPVI will utilize 3 vehicles.
- PVT includes performance and RAM testing and will utilize 3 vehicles of each variant. One vehicle of each variant will undergo performance testing and two vehicles of each variant will undergo endurance testing.
- Corrosion testing will utilize 1 vehicle.
- IOT&E will utilize 15 vehicles; 3 MK48/14, 2 MK48/15, 5 MK48/16, and 5 MK48/18.

Methodology:

- FPVI and corrosion test costs were derived from the FMTV program and adjusted for the quantity of test vehicles.
- PVT performance test cost was derived from the 5T ESP program. PVT endurance test cost was based on a per vehicle average test cost for the 5T ESP, SLEP 2-1/2T and PLS programs.
- IOT&E test cost was based on analogy to the MTVR program.

2.052 System Test and Evaluation - Contractor

Description:

Contractor testing includes:

- Comparison testing
- Production Verification Test (PVT) refurbishment
- Initial Operational Test and Evaluation (IOT&E) refurbishment
- Contractor test support for IOT&E, comparison testing, and First Article Testing (FAT)
- System support package for comparison testing and FAT.

Assumptions:

- Comparison testing will start the second year of production and one test will be performed for each subsequent production buy.
- PVT includes performance and RAM testing and will utilize 3 vehicles of each variant.
- IOT&E will utilize 15 vehicles; 3 MK48/14, 2 MK48/15, 5 MK48/16, and 5 MK48/18.

Methodology:

- Contractor comparison test cost was based on analogy to the 5T ESP and LSV programs.
- PVT and IOT&E refurbishment costs were computed by applying a refurbishment factor to the current LVSA1 manufacturing cost.
- Contractor test support for IOT&E was developed as a cost per month based on analogy to the LSV program. Contractor test support cost for FAT and comparison test were based on analogy to the 5T ESP and LSV programs.
- The SSP cost was based on a SSP factor applied to the FAT and comparison test costs.
- The SSP cost related to both the PVT and IOT&E was included in testing (cell 2.051).

2.101 Initial Depot Level Reparables

Description:
This element includes the cost for initial spare components necessary to fill initial ASL stockage to support end-item fielding throughout the system life cycle.

Assumptions:
- One ASL package will be fielded to each of three sites.
- Only those new components not available in the supply system will be included in the ASL package.
- Two of each component will be required per ASL package.
- The ASL package will be funded one year prior to fielding.

Methodology:
The cost of the ASL package is based on component costs provided by the Nevada Automotive Test Center (NATC).

2.104 Transportation

Description:

This element includes the procurement-funded costs of moving the vehicles to the contractor for remanufacturing and fielding the vehicles to the units.

Assumptions:

Methodology:

An average transportation cost per year was applied against the production and fielding schedules.
The cost of transporting vehicles to the contractor for remanufacturing will occur from FY04 through FY08.
The cost of transporting vehicles to the unit for fielding will occur from FY05 through FY09.

2.105 New Equipment Training (NET)

Description:
This element includes the system-specific, procurement-funded costs of training services for new equipment training through which personnel will acquire sufficient concepts, skills, and aptitudes to maintain the remanufactured vehicle system with maximum efficiency.

Assumptions:
Only contractor personnel were included in NET.
NET will be required at each of the three training sites.

Methodology:
Total new equipment training cost includes contractor maintenance training and trainer's travel.
Number of trips; duration of trips; and travel cost per trip based on analogy to the MTVR program.
Contractor's salary per trip derived from PLS and FMTV contract data.

2.13 Modifications

Description:

This element includes the procurement-funded costs of the labor and material associated with any approved alteration made to a system by accomplishing a Modification Work Order (MWO), retrofit, conversion, remanufacture, or engineering change after fielding by the Marine Corps.

Assumptions:

Methodology:

The modification cost was computed as a percentage of the total manufacturing cost (less MYP %). The modification factor is based on historical data from a range of vehicles (5T to 10 T trucks) .

APPENDIX C

LVSR

Total OMMC Costs by Year in Escalated Dollars

OMMC – Cost Data Sheets

Logistics Vehicle System Replacement (LVSR)
Operations and Maintenance Funded Elements

Escalated Dollars in Millions

	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13
5.0 O&M Funded Elements									
with Rebuild	1.865	6.110	16.662	19.224	22.216	22.793	23.345	23.911	24.491
without Rebuild	1.865	6.110	16.662	19.224	22.216	22.793	23.345	23.911	24.491
5.03 Repl Spares (Repairables)	0.183	0.562	1.426	1.683	1.923	1.969	2.017	2.066	2.116
Mk48/14	0.052	0.199	0.551	0.630	0.725	0.743	0.761	0.779	0.798
Mk48/15	0.032	0.064	0.109	0.129	0.132	0.135	0.138	0.142	0.145
Mk48/16	0.026	0.079	0.193	0.218	0.272	0.278	0.285	0.292	0.299
Mk48/17	0.013	0.042	0.122	0.148	0.178	0.182	0.187	0.191	0.196
Mk48/18	0.060	0.177	0.451	0.558	0.616	0.631	0.646	0.661	0.678
5.04 Repl Repair Parts (Consumables)	0.858	2.459	6.065	7.196	8.218	8.417	8.621	8.830	9.044
Mk48/14	0.157	0.605	1.675	1.914	2.204	2.257	2.312	2.368	2.425
Mk48/15	0.278	0.554	0.940	1.113	1.139	1.167	1.195	1.224	1.254
Mk48/16	0.090	0.281	0.683	0.772	0.962	0.985	1.009	1.033	1.058
Mk48/17	0.150	0.480	1.396	1.702	2.043	2.092	2.143	2.195	2.248
Mk48/18	0.183	0.539	1.371	1.696	1.871	1.916	1.962	2.010	2.059
5.05 Petro, Oil and Lub (POL)	0.815	3.078	9.159	10.333	12.063	12.355	12.654	12.961	13.275
5.06 End Item Sup & Maint - Rebuild									
Mk48									
Mk14									
Mk15									
Mk16									
Mk17									
Mk18									
5.07 Transportation - Rebuild									
5.10 Systems Engineering/Mgmt	0.009	0.011	0.012	0.012	0.012	0.052	0.053	0.055	0.056

Logistics Vehicle System Replacement (LVSR)
Operations and Maintenance Funded Elements

Escalated Dollars in Millions

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
5.0 O&M Funded Elements									
with Rebuild	**25.085**	**50.861**	**86.338**	**181.332**	**187.070**	**149.311**	**28.973**	**29.678**	**30.401**
without Rebuild	**25.085**	**25.694**	**26.318**	**26.956**	**27.612**	**28.284**	**28.973**	**29.678**	**30.401**
5.03 Repl Spares (Repairables)	**2.167**	**2.220**	**2.274**	**2.329**	**2.385**	**2.444**	**2.503**	**2.564**	**2.626**
Mk48/14	0.818	0.837	0.858	0.879	0.900	0.922	0.944	0.967	0.991
Mk48/15	0.149	0.152	0.156	0.160	0.164	0.167	0.172	0.176	0.180
Mk48/16	0.306	0.314	0.321	0.329	0.337	0.345	0.354	0.362	0.371
Mk48/17	0.201	0.206	0.211	0.216	0.221	0.226	0.232	0.238	0.243
Mk48/18	0.694	0.711	0.728	0.746	0.764	0.782	0.802	0.821	0.841
5.04 Repl Repair Parts (Consumables)	**9.263**	**9.488**	**9.718**	**9.954**	**10.197**	**10.445**	**10.699**	**10.959**	**11.226**
Mk48/14	2.484	2.544	2.606	2.669	2.734	2.801	2.869	2.939	3.010
Mk48/15	1.284	1.316	1.348	1.380	1.414	1.448	1.483	1.520	1.557
Mk48/16	1.084	1.110	1.137	1.165	1.193	1.222	1.252	1.282	1.313
Mk48/17	2.302	2.358	2.416	2.474	2.534	2.596	2.659	2.724	2.790
Mk48/18	2.109	2.160	2.212	2.266	2.321	2.377	2.435	2.495	2.555
5.05 Petro, Oil and Lub (POL)	**13.597**	**13.927**	**14.265**	**14.612**	**14.967**	**15.331**	**15.705**	**16.087**	**16.479**
5.06 End Item Sup & Maint - Rebuild		**24.017**	**57.321**	**147.576**	**152.505**	**117.441**			
Mk48		12.371	34.054	91.177	94.726	72.858			
Mk14		2.185	6.188	14.700	14.091	11.462			
Mk15		2.072	2.005	5.798	2.598	0.760			
Mk16		2.287	4.768	10.025	10.707	10.788			
Mk17		1.944	4.230	11.724	13.315	10.831			
Mk18		3.157	6.076	14.153	17.068	10.742			
5.07 Transportation - Rebuild		**1.150**	**2.699**	**6.800**	**6.953**	**3.585**			
5.10 Systems Engineering/Mgmt	**0.057**	**0.059**	**0.060**	**0.062**	**0.063**	**0.065**	**0.066**	**0.068**	**0.069**

Logistics Vehicle System Replacement (LVSR)
Operations and Maintenance Funded Elements

Escalated Dollars in Millions

	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	TOTAL
5.0 O&M Funded Elements									
with Rebuild	31.142	31.902	32.681	33.478	31.149	24.790	7.744	4.269	1126.820
without Rebuild	31.142	31.902	32.681	33.478	31.149	24.790	7.744	4.269	606.773
5.03 Repl Spares (Repairables)	2.690	2.756	2.823	2.892	2.653	2.083	0.690	0.329	52.373
Mk48/14	1.015	1.040	1.065	1.091	1.030	0.807	0.238	0.133	19.772
Mk48/15	0.184	0.189	0.194	0.198	0.149	0.099	0.029		3.541
Mk48/16	0.380	0.390	0.399	0.409	0.375	0.294	0.112	0.080	7.422
Mk48/17	0.249	0.255	0.262	0.268	0.252	0.210	0.082	0.043	4.876
Mk48/18	0.862	0.883	0.904	0.926	0.847	0.671	0.230	0.073	16.762
5.04 Repl Repair Parts (Consumables)	11.500	11.781	12.068	12.362	11.210	8.804	3.000	1.404	223.786
Mk48/14	3.084	3.159	3.236	3.315	3.130	2.453	0.723	0.404	60.077
Mk48/15	1.595	1.633	1.673	1.714	1.284	0.859	0.248		30.621
Mk48/16	1.346	1.378	1.412	1.446	1.329	1.042	0.396	0.282	26.262
Mk48/17	2.858	2.928	3.000	3.073	2.893	2.410	0.934	0.496	55.896
Mk48/18	2.618	2.682	2.747	2.814	2.573	2.039	0.700	0.222	50.930
5.05 Petro, Oil and Lub (POL)	16.881	17.292	17.715	18.146	17.208	13.823	3.971	2.452	329.151
5.06 End Item Sup & Maint - Rebuild									
Mk48									498.860
Mk14									305.186
Mk15									48.626
Mk16									13.234
Mk17									38.575
Mk18									42.044
									51.195
5.07 Transportation - Rebuild									21.188
5.10 Systems Engineering/Mgmt	0.071	0.073	0.075	0.077	0.078	0.080	0.082	0.084	1.462

5.03 Replenishment Spares (Reparables)

Description:

This element includes the O&M costs of purchasing the reparables required to resupply initial stockage and the reparables required on a recurring basis for the repair of major end items.

Assumptions:

Methodology:

Replenishment spares total cost was computed as a reparables cost per mile applied against each variant's OPTEMPO and operating schedule, as represented on pages 3 and 6, respectively.
The reparables cost per mile was based on actuals for the LVS.
There was no significant difference in the two LVSR configurations: LT and HT.

5.04 Replenishment Repair Parts (Consumables)

Description:

This element includes the O&M costs of purchasing the consumables required to resupply initial stockage and the consumables required on a recurring basis for the repair of major end items.

Assumptions:

Methodology:

Replenishment repair parts total cost was computed as a consumables cost per mile applied against each variant's OPTEMPO and operating schedule, as represented on pages 3 and 6, respectively.
The consumables cost per mile was based on actuals for the LVS.
There was no significant difference in the two LVSR configurations: LT and HT.

5.05 PETROLEUM, OILS AND LUBRICANTS (POL)

Description:
This element includes the costs of fuel, oil and lubricants for the system.

Assumptions:
The USMC will use a DF-2 diesel fuel.

Methodology:
Fuel capacity and range based on original LVS.
POL cost per mile was applied against each variants OPTEMPO and number of operating vehicles.

5.06 End Item Supply & Maintenance - Rebuild

Description:

This element includes the costs of material, labor, and overhead for the rebuild of the basic end item and associated components.

Assumptions:

Each variant wil be rebuilt after 10 years of service.

Methodology:

The rebuild cost for each variant was based on analogy to the current rebuild cost for the LVS. There was no significant difference in the two LVSR configurations: LT and HT.

5.07 Transportation - Rebuild

Description:
This element includes the cost of transporting the vehicles for rebuild.

Assumptions:
The Reserve Stores vehicles will not incur any cost for transportation because these vehicles reside at the rebuild site.

Methodology:
An average transportation cost per year was applied against the rebuild schedule.

5.10 Systems Engineering Management

Description:

Systems Engineering Management includes the O&M-funded costs of continuing support to the weapon system. Included in systems engineering are the offices of readiness and material management.

Assumptions:

Methodology:

The system engineering management cost was derived from the LSV program and adjusted to reflect the requirements of the LVSR program.