

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

<b>BUDGET ACTIVITY</b> <b>5 - System Development and Demonstration</b>		<b>PE NUMBER AND TITLE</b> <b>0604642A - LIGHT TACTICAL WHEELED VEHICLES</b>					<b>PROJECT</b> <b>E40</b>			
COST (In Thousands)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
E40	LTV PROTOTYPE	7900	18010	0	0	20512	13987	10169	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** The High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) is a lightweight, high performance, four-wheel drive, air transportable and air droppable, high mobility tactical wheeled vehicle. The HMMWV consists of a basic design with several variants including Cargo/Utility, Armament Carrier, Ambulance, Shelter Carrier and Armored Armament Carrier. Program is not funded in FY 2005 and FY 2006. FY 2004 completes the HMMWV Modernization effort, which leverages advancement in commercial and military truck technology for insertion into the HMMWV. The HMMWV Modernization Program complies with the Environmental Protection Agency (EPA) requirements for the engine and provides increased compliance with the Federal Motor Vehicle Safety Standards (FMVSS). New commercial technology, combined with greater achievement of user requirements, will result in an improved HMMWV. Testing for the HMMWV Modernization Program will include improvements to the vehicle's Reliability and Maintainability (RAM), environmental, transportability, and automotive. FY 2004 also funds Crew Protection Kit (CPK) Development, Hybrid Electric (HE) Development of additional prototypes used in User Evaluation and to support logistics improvements to the HMMWV Family of Vehicles through the use of more recent engine technologies and maintainability improvements, which will result in decreased operational support costs and product improvements. Technology advancements in both armor and ballistic glass materials have progressed to the point that improved ballistic protection is available that is lighter and less expensive. This effort will also address a removable armor package that could potentially be used on a portion of the HMMWV fleet to increase ballistic and blast protection on non-protected vehicles. HMMWV supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

<b>Accomplishments/Planned Program</b>	FY 2003	FY 2004	FY 2005
HMMWV Modernization Development Contract	2371	3100	0
Assemble and test up to ten prototype vehicles - HMMWV Modernization	3170	1500	0
Support Costs (Engineering/Quality/Matrix Support)	742	785	0
HE HMMWV Development	810	4000	0
Test/Validate and approve urgent solution to meet near-term armor requirement	807	0	0
HMMWV Crew Protection Kit Development Contract	0	4500	0
Assemble and test HMMWV Crew Protection Kits	0	2102	0
HMMWV Repower Testing and Logistical Improvements	0	1500	0
Small Business Innovative Research/Small Business Technology Transfer Programs	0	523	0
<b>Totals</b>	<b>7900</b>	<b>18010</b>	<b>0</b>

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

**BUDGET ACTIVITY**  
**5 - System Development and Demonstration**

**PE NUMBER AND TITLE**  
**0604642A - LIGHT TACTICAL WHEELED VEHICLES**

**PROJECT**  
**E40**

<u><b>B. Program Change Summary</b></u>	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	7531	15700	10022
Current Budget (FY 2005 PB)	7900	18010	0
<b>Total Adjustments</b>	<b>369</b>	<b>2310</b>	<b>-10022</b>
Congressional program reductions		-172	
Congressional rescissions			
Congressional increases		2500	
Reprogrammings	369	-18	
SBIR/STTR Transfer			
Adjustments to Budget Years			-10022

FY03 - + 500 Reprogrammed from PE 654804 D461  
 - 131 Congressional Program Reductions.

FY04 - + 2500 Congressional Plus-up for User Evaluation of Hybrid Electric Technology.  
 - 172 Congressional Program Reductions.  
 - 18 Realigned for higher Headquarters priority requirements.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY  
**5 - System Development and Demonstration**

PE NUMBER AND TITLE  
**0604642A - LIGHT TACTICAL WHEELED  
 VEHICLES**

PROJECT  
**E40**

**C. Other Program Funding Summary**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
OPA1 Hi Mob Multi-Purp Whld Veh (D15400)	344879	431350	303692	191837	254301	275704	395866	Continue	Continue

**D. Acquisition Strategy:** The Acquisition Strategy for the HMMWV Modernization Program is to award a block improvement engineering change proposal to the production contract.

The Acquisition Strategy for the Hybrid Electric (HE) HMMWV is to award a sole source vehicle integrator contract with a competitive Hybrid Electric design and integration portion.

The Acquisition Strategy for the HMMWV Crew Protection Kit (CPK) is to award an engineering change proposal to the production contract.

The Acquisition Strategy for the Repower Testing and Logistical Improvements is to partner with the Research and Development (R&D) Center in the development and testing of vehicle prototypes.

# ARMY RDT&E COST ANALYSIS(R3)

February 2004

**BUDGET ACTIVITY**  
**5 - System Development and Demonstration**

**PE NUMBER AND TITLE**  
**0604642A - LIGHT TACTICAL WHEELED VEHICLES**      **PROJECT E40**

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Development Contract - HMMWV Modernization	SS/CPFF	AM General, Mishawaka, IN	14393	2371	2Q	3100	2Q	0		0	19864	19864
b . Engineering Support - HMMWV Modernization	N/A	AMSAA, APG, MD	67	0		0		0		0	67	67
c . Engineering Support - HMMWV Modernization	N/A	WES, Vicksburg, MS	117	0		0		0		0	117	117
d . In-House Engineering (TACOM)	N/A	TACOM, Warren, MI	530	742	1-4Q	785	1-4Q	0		0	2057	2057
e . Development Contract - HE HMMWV	SS/CPFF	AM General, Mishawaka, IN	0	779	2Q	3000	3Q	0		0	3779	3779
f . Development Contract HMMWV CPK	C/CPFF	TBD	0	0		5023	3Q	0		0	5023	4500
g . Repower Testing & Logistical Improvement	N/A	NAC, Warren, MI	0	0		1500	3Q	0		0	1500	1500
Subtotal:			15107	3892		13408		0		0	32407	31884

# ARMY RDT&E COST ANALYSIS(R3)

February 2004

**BUDGET ACTIVITY**  
**5 - System Development and Demonstration**

**PE NUMBER AND TITLE**  
**0604642A - LIGHT TACTICAL WHEELED VEHICLES**      **PROJECT E40**

II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Developmental Testing - HMMWV Modernization	MIPR	ATC, Aberdeen, MD	255	1856	2-4Q	1500	2-4Q	0		0	3611	3611
b . Developmental Testing - HMMWV Modernization	MIPR	Yuma Proving Ground, AZ	10	938	2-4Q	0		0		0	948	948
c . Transportability Testing - HMMWV Modernization	MIPR	Defense Ammunition Center, OK	19	17	4Q	0		0		0	36	36
d . EMI Testing - HMMWV Modernization	MIPR	White Sands Missile Range, NM	0	278	2-4Q	0		0		0	278	242
e . LVAD & HSL Certification	MIPR	NATICK	0	81	3Q	0		0		0	81	81
f . Experimentation Testing - HE HMMWV	MIPR	Ft Benning, GA	0	31	2-4Q	0		0		0	31	31
g . Developmental Testing - HE HMMWV	MIPR	ATC, Aberdeen, MD	0	0		1000	4Q	0		0	1000	1000

# ARMY RDT&E COST ANALYSIS(R3)

February 2004

**BUDGET ACTIVITY**  
**5 - System Development and Demonstration**

**PE NUMBER AND TITLE**  
**0604642A - LIGHT TACTICAL WHEELED VEHICLES**      **PROJECT E40**

III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
h . Test/Validate Near Term Armor Protection	MIPR	ATC, Aberdeen, MD	0	807		0		0		0	807	807
i . Developmental Testing - HMMWV CPK	MIPR	ATC, Aberdeen, MD	0	0		2102	4Q	0		0	2102	2102
Subtotal:			284	4008		4602		0		0	8894	8858

Remarks: Testing will include Reliability and Maintainability (RAM), environmental, transportability, and automotive testing.

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0

Remarks: Not applicable

Project Total Cost:			15391	7900		18010		0		0	41301	40742
---------------------	--	--	-------	------	--	-------	--	---	--	---	-------	-------

# Schedule Profile (R4 Exhibit)

February 2004

BUDGET ACTIVITY  
**5 - System Development and Demonstration**

PE NUMBER AND TITLE  
**0604642A - LIGHT TACTICAL WHEELED VEHICLES** PROJECT  
**E40**

Event Name	FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09				FY 10			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Vehicle Development/Build - A3	[Red Bar]				[Red Bar]																											
Contractor Testing - A3	[Red Bar]																															
(1) Major Design Review - A3			▲1																													
(2) Prototype Build - A3			▲2																													
PQT - A3	[Red Bar]																															
(3) MS C Full Rate Production - A3									▲3																							
(4) Contract Award									▲4																							
(5) Material Release/TC Std - A3													▲5																			

## Schedule Detail (R4a Exhibit)

**February 2004**

**BUDGET ACTIVITY**  
**5 - System Development and Demonstration**

**PE NUMBER AND TITLE**  
**0604642A - LIGHT TACTICAL WHEELED VEHICLES**

**PROJECT**  
**E40**

<u>Schedule Detail</u>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Test & Evaluation - HMMWV Modernization (A3)	4Q	1-3Q					
Milestone C - Full Rate Production (A3)			2Q				
Award Production Contract - HMMWV Mod (A3)			3Q				
Material Release/TC Standard (A3)				3Q			
Award Development Contract - Crew Protection Kit		3Q					
Developmental Test & Evaluation - HMMWV CPK		4Q					
Hybrid Electric Development Contract		3Q					
Hybrid Electric Testing		4Q					
Repower Test and Logistical Improvements Contract		3Q					
Repower Testing		4Q					