

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

February 2003

<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 2002 Actual	FY 2003 Estimate	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	1920	7531	15700	10022	1961	1959	5121	10272	0	61417

**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. 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 and FY 2005 fund the Up-Armored HMMWV Modernization effort and continuation of the Hybrid Electric (HE) HMMWV. 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 has the potential to decrease the M1114 Up-Armored HMMWV's overall vehicle weight by up to 1000 lbs. thereby increasing user payload. An additional benefit is a potential reduction in vehicle Operation and Sustainment (O&S) costs related to the reduction in overall vehicle weight. 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. The HE HMMWV is an Army initiative to reduce vehicle Operation and Sustainment costs, fuel consumption, and the logistical footprint while providing the opportunity for enhanced electric power and silent watch operation. The HE HMMWV Program has a potential savings of 30% in O&S costs alone. The HE HMMWV has been identified as a possible Objective Force platform in the Unit of Action and the Modernized HMMWV may be considered as the interim platform for the Future Tactical Truck System (FTTS) Utility. HMMWV supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP), and the HE HMMWV supports the Objective Force.

<b><u>Accomplishments/Planned Program</u></b>	<b><u>FY 2002</u></b>	<b><u>FY 2003</u></b>	<b><u>FY 2004</u></b>	<b><u>FY 2005</u></b>
HMMWV Modernization Development Contract	1682	1275	0	0
Assemble and test up to ten prototype vehicles - HMMWV Modernization	34	773	2000	0
HE HMMWV Development Contract	0	4420	7500	2780
Test up to eight HE HMMWV's	0	500	1800	2750
Support Costs (Engineering/Quality/Matrix Support)	204	563	691	707
Develop up to eight Up-Armored HMMWV LRIP vehicles with removable armor package	0	0	3709	1600
Test up to eight Up-Armored HMMWV's including Ballistic and Blast Test	0	0	0	2185
<b>Totals</b>	<b>1920</b>	<b>7531</b>	<b>15700</b>	<b>10022</b>

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<u><b>B. Program Change Summary</b></u>	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	2501	7877	5049	4109
Current Budget (FY 2004/2005 PB)	1920	7531	15700	10022
Total Adjustments	-581	-346	10651	5913
Congressional program reductions		-86		
Congressional rescissions				
Congressional increases				
Reprogrammings	-511	-43		
SBIR/STTR Transfer	-70	-217		
Adjustments to Budget Years			10651	5913

FY 2002 - \$500K reprogrammed to 654804.46112 for TSV Support and \$11K DA billpayer.  
 FY 2003 - Less \$86K Congressional program reductions, \$217K SBIR/STTR Transfer and \$43K DA Reprogramming.  
 FY 2004 - FY 2005 - funding added to support Hybrid Electric (HE) HMMWV development.

<u><b>C. Other Program Funding Summary</b></u>	FY 2002	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)	146349	234270	137847	205760	288362	317694	484922	720200	Continue	Continue

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

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

Strategy for the Up-Armored HMMWV Modernization is to award an engineering change proposal to the production contract.

# ARMY RDT&E COST ANALYSIS(R-3)

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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	1275	2Q	0		0		0	15668	15668
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	563	1-4Q	691	1-4Q	707	1-4Q	0	2491	2491
e . Development Contract - HE HMMWV	SS/CPFF	AM General, Mishawaka, IN	0	4420	2Q	7500	2Q	2780	2Q	0	14700	14700
f . Development Contract M1114 armor package	SS/CPFF	O'Gara Hess & Eisenhardt, Fairfield, OH	0	0		3709	2Q	1600	2Q	0	5309	5309
Subtotal:			15107	6258		11900		5087		0	38352	38352

ARMY RDT&E COST ANALYSIS(R-3)								February 2003				
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	362	2Q	891	2Q	0		0	1508	1508
b . Developmental Testing - HMMWV Modernization	MIPR	Yuma Proving Ground, AZ	10	411	3Q	1109	2Q	0		0	1530	1530
c . Transportability Testing - HMMWV Modernization	MIPR	Defense Ammunition Center, OK	19	0		0		0		0	19	19
d . Developmental Testing - HE HMMWV	MIPR	ATC, Aberdeen, MD	0	500	2Q	700	1Q	1500	1Q	0	2700	2700
e . Developmental Testing - HE HMMWV	MIPR	Yuma, Proving Ground, AZ	0	0		700	2Q	675	2Q	0	1375	1375
f . Cold Regions Testing - HE HMMWV	MIPR	CRTC, Alaska	0	0		400	2Q	575	2Q	0	975	975

<b>ARMY RDT&amp;E COST ANALYSIS(R-3)</b>	<b>February 2003</b>
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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
g . Developmental Testing - UA HMMWV Armor	MIPR	ATC, Aberdeen, MD	0	0		0		2185	2Q	Continue	Continue	Continue
Subtotal:			284	1273		3800		4935		Continue	Continue	Continue

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	7531		15700		10022		Continue	Continue	Continue
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**Schedule Profile Detail (R-4a Exhibit)**

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<u>Schedule Detail</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
Test & Evaluation - HMMWV Modernization		2Q						
Award Production Contract - HMMWV Modernization				3Q				
Development Contract - HE HMMWV		3Q						
Test & Evaluation - HE HMMWV		3Q	2Q					
Award Production Contract - HE HMMWV					1Q			
Award Development Contract - M1114 Armor Package			2Q					
Developmental Test & Evaluation - M1114 Armor Package				2Q				
Award Production Contract - M1114 Armor Package					2Q			