



HCFC PHASE-OUT MANAGEMENT PLAN – HPMP

**2012-2013 PROGRESS  
REPORT  
(1° Tranche)**

**&**

**2013-2014 ACTION PLAN  
(2° Tranche)**

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Prepared by  
**MINISTRY OF ENVIRONMENT AND ENERGY  
COSTA RICA**

With assistance of  
**UNITED NATIONS DEVELOPMENT PROGRAMME -  
UNDP**

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*May, 2013*

**PROJECT COVER SHEET: TRANCHE REQUEST**

<b>COUNTRY NAME</b>	<b>Costa Rica</b>
<b>LEAD IMPLEMENTING AGENCY</b>	<b>UNDP</b>
<b>COOPERATING IMPLEMENTING AGENCY</b>	

<b>SUBMISSION OF COMPLETE DOCUMENTATION</b>		
<b>Document</b>	<b>Yes/No</b>	<b>Comments</b>
<b>Progress report for previous tranche</b>	Yes	
<b>Financial report</b>	Yes	
<b>Verification report (where applicable)</b>	NA	
<b>Plan of action</b>	Yes	
<b>MYA tables (on-line)</b>	Yes	
<b>Revised Agreement (where applicable)</b>	Yes	The agreement for Costa Rica needs to be revised because an error was made in the approved version. The Baseline will remain the same but the starting point will be different. UNDP would like to discuss with the MLFS how this information can be presented to the ExCom.

<b>DATES OF RATIFICATION OF AMENDMENTS TO THE PROTOCOL</b>			
<b>Copenhagen</b>	August 6, 1998, Law 7808	<b>Beijing</b>	October 9, 2008, Law 8670
<b>Comments:</b>			

<b>HCFC REGULATIONS IN PLACE</b>		
<b>Regulation</b>	<b>Yes/No</b>	<b>Comments</b>
<b>HCFC licensing system</b>	Yes	Executive Decree No. 35676 SH-MAG-MINAET Regulation Act No. 7223 (adoption of the Montreal Protocol. Concerning Substances that Deplete the Ozone Layer, signed on September 16, 1987) and its amendments.
<b>HCFC quota system</b>	Yes	Executive Decree No. 37614-MINAET Regulation to implement a mechanism IMPORTING fees for phasing out the use of HCFCs listed in Group I of Annex C of the Montreal Protocol.

<b>SUBMISSION OF ODS DATA REPORTS</b>			
<b>Report</b>	<b>Yes/No</b>	<b>Year of data</b>	<b>Comments</b>
<b>Country programme</b>	Yes	2012	
<b>Article 7 data (latest report)</b>	Yes	2011	
<b>ODS data for year of tranche</b>	Yes	2012	
<b>Explain any data discrepancies:</b>			

<b>HPMP DOCUMENT</b>				
<b>Phase-out commitment (%)</b>	Freeze, 10%, 35%	<b>Year of commitment</b>	2013, 2015, 2020	
<b>Servicing only</b>		<b>Manufacturing only</b>	<b>Servicing/manufacturing</b>	X

## PROJECT COVER SHEET

### I. PROGRESS REPORT

(maximum 10 pages)

#### I.1 Background

The HCFC Phase Out Management Plan (HPMP) for Costa Rica, which includes the elimination of HCFC polyurethane foams for the manufacture of domestic refrigerators in Costa Rica, was approved at the 64th meeting of the Executive Committee of the Multilateral Fund, in Montreal in July 2011. For the implementation of this Plan the country pledged to start controlling the consumption of HCFCs with the freezing of its imports starting in 2013, with reference to the baseline reported for the period 2009-2010 (14.1). The first reduction of 10% over the baseline level will be held in 2015 and the second from 35% in 2020. The total amount approved for the implementation of the project was U.S. \$ 1,240,037 (U.S. \$ \$ 1,153,523 for project costs and U.S. \$ 86,514 for support costs). For the project "Elimination of HCFC polyurethane foam for the manufacture of domestic refrigerators" the country's commitment was to eliminate the use of HCFC-141b as a blowing agent for good in the Domestic Refrigeration Sector, to the completion of the project, which is expected to be in June 2013. Additional projects in the foam sector will be presented in the future according to decision 63/15.

The United Nations Development Program is the implementing agency of the Management Plan for the Elimination of HCFCs in Costa Rica.

#### I.2 ODS policy/legislative/regulatory and institutional framework

##### I.2.1 Status of ratification of amendments to the Montreal

Costa Rica has ratified the Montreal Protocol and all its amendments by the following summary:

- Ratified the Montreal Protocol in 1991 (Costa Rica 7223 Act)
- London Amendment in 1998 (Costa Rica 7808 Act)
- Copenhagen Amendment in 1998 (Costa Rica 7808 Act)
- Amendment of Montreal in 2005 (Costa Rica 8443 Act)
- 2008 Beijing Amendment Act (Costa Rica 8670)

##### I.2.2 ODS legislation/regulations

Environment care is one of Costa Rica's political pillars, so the country has established a complete legal framework aimed to protect the environment, counting with some norms and regulation to protect specifically the ozone layer.

1. Constitution of the Republic of Costa Rica: Articles 50, 140 clauses 3) and 18) and 146
2. Law No. 6227 of May 2, 1978, "General Law of Public Administration": Article 25 paragraph 1), 27 paragraph 1) and 28 paragraph 2).
3. Law No. 7554 of October 4, 1995, "Environmental Law": Items 1, 2, 3, 4, 5, 49, 59, 60 d), 62, 63 These and related.
4. Law No. 7228 of May 6, 1991, "Approval of Costa Rica's accession to the Vienna Convention for the Protection of the Ozone Layer".
5. Law No. 7223 of April 8, 1991, "Approval of the Montreal Protocol on Substances that Deplete the Ozone Layer".

6. Law No. 7808 of June 11, 1998 "Approval of Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer and its annexes adopted in the Second and Fourth Meeting of the Parties in London and Copenhagen, 1998".
7. Law No. 8443 of May 3, 2005, "Approval of the amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer and its annexes, 1997".
8. Act 8670 of October 9, 2008 "Approval of the amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (1999).
9. Act "Adoption of the Kyoto Protocol of the UN Framework Convention on Climate Change": Article 1.
10. Law No. 8219 of March 8, 2002: Articles 1, 2, 3, 4, 38 and 39 of Executive Decree No. 35669 of December 4, 2009.
11. "Organic Regulations of the Ministry of Environment, Energy and Telecommunications "and his reforms.
12. Executive Decree No. 35676-SH-MAG-MINAET of August 6, 2009 "Regulations for the control of substances that deplete the ozone layer according to law 7223, as amended": Sections 4, 6, 11, 12, following and related.
13. Executive Order 37614-MINAET "Regulations to implement an import quota mechanism for phasing out the use of HCFCs listed in Group I of Annex C of the Montreal Protocol"

Since 2010, Costa Rica applies a licensing system for the import of HCFC and HFC covered in regulation SH-35676-MAG-MINAET. This system is implemented by the National Ozone Unit (NOU), Bureau of Environmental Quality Management and Energy Ministry of Environment (MINAE), in coordination with the Directorate General of Customs, Ministry of Finance and Trade Office the Ministry of Foreign Trade. On average 1,852 license applications are reviewed a month, which includes bulk substances and equipment containing them. Since 2013 a quota system to check HCFC importation has been in place.

### I.3 HCFC consumption and production

Costa Rica does not produce HCFCs. In this sense, the national consumption is based on imports and exports. Table 1 demonstrates the official data reported. As mentioned before, a quota system is in place since January 1st 2013.

Table 1 for HCFC consumption level in Costa Rica

SUSTANCIA	2008	2009	2010	2011	2012
HCFC-124	3.20	5.94	1.95	0.00	2.31
HCFC- 22	137.28	192.81	171.77	338.62	309.53
HCFC- 141b	1.77	9.01	36.89	29.56	48.61
HCFC - 142b	1.29	0.00	7.15	0.00	9.36
HCFC - 123	0.00	0.71	0.00	0.06	0.54
HCFC- 141b in imported pre-blended polyols	-	-	161.56	170.00	--

Table 1 reflects an increase in the volume of imports of HCFCs for the years 2011 to 2012 compared to the baseline (2009-2010), this behavior was expected, because the HCFC importers were aware of the implementation of the import quota system in 2013. With the implementation of the regulation of import quotas for HCFC consumption of these substances will be substantially reduced in 2013 to the maximum permitted levels. Quotas were allocated to importers in the month of November 2012. The total import of

HCFCs by 2013 in Costa Rica may not exceed 14.1 ODP tonnes (Baseline), as set out in national legislation.

The reduction in the consumption of HCFC 141b from fully formulated polyols will be reflected in national statistics after the end of the foam project in the month of June 2013.

#### **I.4 HCFC phase-out activities**

To implement the HPMP in a full manner, the NOU / MINAE formed an interagency Commission which involved all instances that are directly or indirectly linked to the issue of HCFCs. The commission is composed as follows:

- Ozone Technical Office DIGECA / MINAE
- DSE MINAE
- Address Climate Change MINAE
- General Directorate of Customs M. estate
- Chamber of Industries of Costa Rica
- Core Cooling Electrical Sector INA Area
- GIZ German Cooperation
- United Nations Development Programme UNDP
- University of Costa Rica UCR
- Technological Institute of Costa Rica ITCR

Part of the strategy for Costa Rica in the implementation of the HPMP is that all actors related to the use and / or HCFC control are involved to reach a consensuated decision, in order to have the support of stakeholders in the projects and programs implemented to fulfill the commitments on consumption and phase-out of HCFCs.

For the establishment of the system of import quotas for gases including HCFC refrigerants, the NOU conducted an assessment of the various legal instruments, both domestically and internationally, to establish their situation at the beginning of the project, this led to a discussion between importers and governments control agencies of the system of import quotas for HCFCs. Thanks to the coordinated efforts of all parties, the publication of the control instrument was achieved through Executive Order (37614-MINAET "Regulations to implement an import quota mechanism for phasing out the use of HCFCs listed in Group I of Annex C of the Montreal Protocol").

A mechanism was established to facilitate cross-checking of imports recorded by the office against the permits within the quota system which are provided by the NOU. The NOU, the Directorate General of Customs and Trade Office work closely together to control the import of HCFCs through the TICA online system.

In addition to the establishment of the quota system, trainings were conducted with importers and customs brokers on the new mechanism of import quotas for HCFCs. Since 2013 import quotas were established and assigned.

The NOU in coordination with the Directorate General of Customs is working on the revision of the tariff codes associated with HCFC described in Annex C Group I of the Montreal Protocol and its amendments, which will result in better implementation of the Technical Note 38 (controlling import and export of ODS and equipment containing), for all those items related to the import of ODS and equipment containing them.

It was performed an initial training for all users of the customs system (importers and customs brokers) on the appropriate use of databases for the registration of substances and equipment, and the approved tariff codes, 50 people were trained on the mechanism used by the NOU in conjunction with the Directorate General of Customs and Trade Office to implement the system of import quotas for HCFCs. As a result of working with the Directorate General of Customs the establishment of the Technical Note 73 (import prohibition for those substances that had never entered the country before 2010) was achieved.

In order to establish mechanisms for the recovery of refrigeration equipment and discarded air conditioning units, the Ministry of Health in coordination with the NOU / MINAE and other institutions in the country have submitted a General Regulations proposal to include refrigerant waste, obsolete industrial refrigeration equipment, air conditioning, refrigerators and refrigerated transport in the category of special management wastes.

MINAE through their Directorates of Environmental Quality and Energy Division, in coordination with the Costa Rican Electricity Institute (ICE) and domestic trade specializing in domestic refrigeration sector, are conducting a study to assess the feasibility of a massive replacement of the used domestic refrigerators park consumed nationwide, these would be replaced by equipment with a higher level of energy efficiency and with the use of more environmentally friendly refrigerants and blowing agents. NOU officials were trained by FIDE in Mexico, in the area of logistics for the recovery of these equipments.

#### I.4.1 Phase-out activities in the manufacturing sector

In Costa Rica, the company Atlas Industrial S. A. is the leading manufacturer of domestic refrigeration equipment, and the largest consumer of HCFC-141b. The implementation of the project "Elimination of HCFC polyurethane foam for the manufacture of domestic refrigerators" is important to the country's carbon neutral strategy for 2021, but will not affect the compliance with the freeze in consumption to the level of the baseline and the first reduction target set in the National Strategy on the phase out of HCFCs from 2013 to 2015 given that the imports of 141b in preblended polyols is not recorded as consumption in Costa Rica..

Costa Rica began implementing this investment project in February 2012 and is scheduled for completion in June 2013, this project involves the conversion of production lines at Atlas Industrial Company, which will replace HCFC-141b, used as an agent blowing in producing rigid polyurethane foam for thermal insulation of domestic refrigerators, for hydrocarbons (cyclopentane or mixtures of cyclopentane and isopentane). Industrial Atlas's contribution to the project is estimated at US \$ 520,000.

The project is led by the NOU, with the support of a national consultant and an international expert. All activities have been implemented according to the work schedule established in PRODOCs and its scheduled project completion by June 2013.

Among the activities implemented include the preparation and signing of a Memorandum of Agreement (MOA) with the company to develop the project activities, the definition of the technical specifications for equipment and supplier selection, preparation of equipment supply agreements with the supplier (purchase Orders), development of civil works in the production plant, conversion to hydrocarbon of production lines while maintaining the same insulation capacity of the foam.

The new injection machines have already been installed and are expected to start operation in June 2013; starting the HCFC free production and achieving the technical completion of the project.

I.4.2 Phase-out activities in the refrigeration servicing sector

In order to improve the capacity of institutions, technicians and professionals in installation, maintenance of refrigeration and air conditioning equipment and in the adoption of alternative technologies to HCFCs with low climate impact, the NOU has managed, with training institutions and technicians in refrigeration and air conditioning nationwide, to evaluate their needs to update their study programs, as well as of their modules and laboratory equipment.

This coordination is done through regular meetings between the OTO, the National Training Institute (INA) and the aforementioned training institutions to assess their training needs based on domestic demand. To consolidate the progress and efforts made within this assessment of refrigeration training needs, a series of discussion workshops are scheduled with the actors involved, the first workshop will be held in mid-May 2013.

To achieve the goal of modifying the curricular offerings and update requirements of modules and laboratory equipment, a consulting firm was hired which is responsible for developing the new curricula, depending on technical and professional level of training users. This adaptation of the curriculum can be extended to technicians who specialize in the use of ammonia in order to promote the adoption of other low-GWP technologies.

The NOU works in coordination with the INA to define the TOR of the experts that are required in the country for the training sessions on design, operation and maintenance of refrigeration and air conditioning.

**Table 2. Summary of activities and expenditures - First tranche.**

Project	Activities/Achievements	Expenditure as May 2013
	(1st Tranche)	(US\$)
<b>FOAM SECTOR</b>		
Industrial reconversion to eliminate the use of HCFC-141b in polyols blends for rigid foam production	Preparation and signing of MOA with Atlas Industrial	\$ 312,987
	Preparation of TOR and bid analysis.	
	Purchase and installation of PU injection equipment	
	Modification of production line	
	Trials and evaluation of new blowing agent.	
<b>Total foam sector</b>		<b>\$ 312,987</b>
<b>REFRIGERATION SECTOR</b>		
Build capacity of service technicians and professionals	Meetings for revision and update of curricular contents of training courses for refrigeration technicians.	\$ 6,000
	Consultant firm hired to analyze and update refrigeration courses	

Project	Activities/Achievements	Expenditure as May 2013
	(1st Tranche)	(US\$)
	Preparation of TOR to hire the local consultant for train-the-trainers sessions.	
Establish a mechanisms that facilitate users' selection of efficient equipment, incentives system that promotes the commercialization of equipment with the eco-efficiency seal	A study is underway to evaluate the national market and current situation to design a nationwide used domestic refrigeration exchange programme.	\$ 2,000
Update the import and export control systems for reliable and easy to access for authorized users	Review and update of legal framework to include HCFC importation control.	\$ 2,317
	Establishment of information control mechanism on ODS import licenses between MINAE, Ministry of Commerce and Custom Office.	
	Establishment of quota system for HCFC imports.	
	Training session with Customs Authorities, customs brokers and importers on the correct tariff code classification of ODS and ODS containing equipment.	
	Training session with Customs Authorities, customs brokers and importers on new norms for HCFC import and quota system.	
	Banning of importation and use of ODS that did not have been imported before 2010.	
Strengthen capacity of HCFC recovery and use	Review of national R&R network.	\$ 3,847
	Meetings with beneficiary companies to evaluate use of R&R equipment.	
Establish a mechanism for storage of unwanted ODS including HCFCs	Meetings with the ministry of Health to include ODS waste in the national list of hazardous substances.	\$ 2,000
Programme management and monitoring	ProDoc discussed with national stakeholders and signed with the MINAE	\$ 5,000
	Establishment of implementation team.	
<b>Sub total Refrigeration</b>		<b>\$ 21,164</b>
<b>TOTAL TRANCHE I</b>		<b>\$ 334,151</b>

I.4.3 Other impacts on the environment including on the climate



Costa Rica, as part of its strategies to phase out HCFC, is promoting the adoption of low GWP, high energy efficient alternatives to the HCFC, as long as there is one technically and economically feasible; The conversion of Atlas Industrial is a clear example of this strategy, ATLAS selected Cyclopentane as blowing agent.

To date, a preliminary calculation on impacts on the environment can be done just with the estimated data from ATLAS, as it is the project closer to completion. It is not possible to evaluate the environmental impact of this tranche implementation of other activities, such as legal framework and technician training.

**Table 1. Calculation of environmental impact.**

<i>Based in approved project data.</i>	<b>HCFC-141b</b>	<b>Cyclopentane</b>
Before conversion (MT)	127	0
After conversion (MT)	0	84
ODP	0.11	0.00
GWP	713	25
Ton of ODS emitted per Atlas's annual production	14.01	0
Ton of equiv. CO2 emitted per Atlas's annual production	90,836	2,110
Emission of ODS saved (ODP Ton):	14.01	
Equiv. CO2 emission saved (CO <sub>2</sub> eq Ton):	88,726	

#### I.4.4 Co-financing

The government co-financing, via MINAE, has been provided *in-kind* through the provision of personnel, office and storage space, transportation, administration, etc.; additionally, support to all awareness activities has been given through MINAE communication office.

Atlas Industrial provided US\$ 650,000 as co-financing, in the project to phase out the use of HCFC in the manufacture of domestic refrigerator, these funds include expenditures related to infrastructure modifications, civil works and venting for foaming jigs. This co-financing shows the company's commitment to achieve its industrial conversion and phase out HCFC-141b in its process and the adoption of low GWP alternatives.

#### I.4.5 Project management unit

The HPMP, which includes the elimination of HCFC in polyurethane foams for the manufacture of domestic refrigerators in Costa Rica, is run by the NOU, with the support of an interagency Commission which also involved the DSE and the Department MINAE Climate Change, the Directorate General of Customs, Ministry of Finance, the Chamber of Industries of Costa Rica, the INA's Electrical Core Sector Cooling Area, GIZ, UNDP, the University of Costa Rica (UCR) and the Technological Institute of Costa Rica (ITCR).

The Commission discussed the prioritization of activities related for the implementation of the project. The participation of different actors has allowed the establishment a work schedule with the allocation of tasks and responsibilities.

Also the General Customs Directorate worked together with OTO on HCFC Control measures and legal framework.

## I.5 Financial report

**Table 4. First tranche total expenditures and commitments (2012-2013) in US\$.**

Component	I TrancheUS\$	Expenditures US\$	Comminment US\$	Balance US\$	Execution %
<b>FOAM SECTOR</b>					
HCFC phase-out project for foam in the manufacturing sector	\$ 593,523	\$ 312,987	\$ 280,536	\$ -	100.0%
<b>REFRIGERATION SECTOR</b>					
Build capacity of service technicians and professionals	\$ 43,000	\$ 6,000	\$ 24,000	\$ 13,000	69.8%
Establish mechanisms that facilitate users' selection of efficient equipment, incentives system that promotes the commercialization of equipment with the eco-efficiency seal	\$ 10,000	\$ 2,000	\$ 8,000	\$ -	100.0%
Update the import and export control systems for reliable and easy to access for authorized users.	\$ 29,000	\$ 2,317	\$ 5,000	\$ 21,683	25.2%
Strengthen capacity of HCFC recovery and use.	\$ 25,000	\$ 3,847	\$ 15,000	\$ 6,153	75.4%
Establish a mechanism for storage of unwanted ODS including HCFCs.	\$ 37,575	\$ 2,000	\$ -	\$ 35,575	5.3%
Programme management and monitoring	\$ 23,425	\$ 5,000	\$ 10,000	\$ 8,425	64.0%
<b>Refrigeration Sector Total</b>	<b>\$ 168,000</b>	<b>\$ 21,164</b>	<b>\$ 62,000</b>	<b>\$ 84,836</b>	<b>49.5%</b>
<b>TOTAL 1st TRANCHE</b>	<b>\$ 761,523</b>	<b>\$ 334,151</b>	<b>\$ 342,536</b>	<b>\$ 84,836</b>	<b>88.9%</b>

**II. PLAN OF ACTION**

Table 5. Plan of action second tranche.

Agency	Project	Remaining activities from Tranche 1	Balance 2012 to be transferred to 2013 - 2014 (US\$)	Activities for 2013-2014 (Tranche 2)	Requested funds (US\$)	Total Budget 2013 - 2014 (US\$)
<b>FOAM SECTOR</b>						
UNDP	HCFC phase out in the production of domestic refrigerators	Production of first batch of HCFC free equipment. Communication and dissemination of project results.	\$ -	Follow up to HCFC phase out in the manufacture of domestic refrigerators.	\$ -	\$ -
<b>REFRIGERATION SERVICING SECTOR</b>						
UNDP	Build capacity of service technicians and professionals.	Curricular plans updated for technicians and professional on refrigeration and air conditioning equipment.	\$ 13,000	3 validation workshops for the new curricular courses with related stakeholders on design, operation and maintenance of refrigeration equipment.	\$ 18,000	\$ 31,000
		Training and educational institutions strengthened through technical experts visits.		Incorporation of international experts in the training of technicians to adopt ammonia and other natural refrigerants.		
				Promote the association of certified technicians in refrigeration and air conditioning, including ammonia.		

Agency	Project	Remaining activities from Tranche 1	Balance 2012 to be transferred to 2013 - 2014 (US\$)	Activities for 2013-2014 (Tranche 2)	Requested funds (US\$)	Total Budget 2013 - 2014 (US\$)
		Design train-the-trainers courses for different levels and applications.		Carry out 1 train-the-trainers course for different levels and applications.		
UNDP	Establish mechanisms that facilitate users' selection of efficient equipment, incentives system that promotes the commercialization of equipment with the eco-efficiency	Definition of basic eco-efficiency regulatory criteria to be used for choosing equipment.	\$ -	Elaboration of manual for eco-efficient refrigeration equipment.	\$ 30,000	\$ 30,000
				4 consultation workshops for manual reviewing and correction with the sectors involved.		
				Publication of Technical Regulations that defines the basic and upper requirements used to give the eco-efficiency label.		
UNDP	Update the import and export control systems for reliable and easy to access for authorized users.	To continue with training sessions to users (customs brokers) about the online customs system and data bases on ODS and ODS-based equipment tariff codes.	\$ 21,683	12 regional training workshops for customs officers on HCFC regulation, quota system and illegal trade prevention.	\$ 20,000	\$ 41,683
UNDP	Strengthen capacity of HCFC recovery and use.	To finish review of national R&R network.	\$ 6,153	Distribution of R&R equipment and recovery cylinders within the existing national R&R system.	\$ 50,000	\$ 56,153
		Purchase of R&R equipment to strength the national R&R network.		Technical assistance and orientation for end-users on the proper use and correct disposal of HCFC.		
				Promotion and strengthening of the national R&R network.		

Agency	Project	Remaining activities from Tranche 1	Balance 2012 to be transferred to 2013 - 2014 (US\$)	Activities for 2013-2014 (Tranche 2)	Requested funds (US\$)	Total Budget 2013 - 2014 (US\$)
UNDP	Establish a mechanism for storage and destruction of unwanted ODS including HCFCs.		\$ 35,575	Laboratory trials for the destruction of ODS in cement kiln.	\$ 10,000	\$ 45,575
UNDP	Implementation of a Monitoring Unit	Technical and managerial assistance to project activities.	\$ 8,425	Hiring of consultants for technical and managerial assistance to HPMP activities.	\$ 40,000	\$ 48,425
<b>TOTAL</b>			<b>\$ 84,836</b>		<b>\$ 168,000</b>	<b>\$ 252,836</b>