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SEMI-ANNUAL MONITORING REPORT OCTOBER 2009 – MARCH 2010



Clockwise from upper left: Steel girder erection on the Keshim-Faizabad Road; Paving of binder course on Gardez-Khost Road; Afghan and Turkmen energy ministers sign power delivery contract; the 105MW Tarakhil power plant outside Kabul.

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ABBREVIATIONS AND ACRONYMS

ACI	American Concrete Institute
AEIC	Afghanistan Energy Information Center
AIMS	Afghanistan Information Management Services
AISC	American Institute of Steel Construction
ACG	Armed Criminal Group
AOG	Armed Opposition Group
ANSO	Afghanistan NGO Safety Office
CDO	Community Development Organizer
DABM	Da Afghanistan Breshna Moassessa (Afghanistan Electricity Authority)
DABS	Da Afghanistan Breshna Sherkat (Afghanistan Electricity Enterprise)
FDI	Foreign Direct Investment
FTE	Full-Time Equivalent
G-G	Gardez-Ghazni
G-K	Gardez-Khost
GIRoA	Government of the Islamic Republic of Afghanistan
ICE	Inter-Ministerial Commission for Energy
IR	Intermediate Result
IRI	International Roughness Index
IRP	Infrastructure and Rehabilitation Program
K-F	Keshim–Faizabad
K-G	Khost-Gardez
K-K-H	Kabul-Kandahar-Herat
KV	Kilovolt
KVA	Kilovolt-Ampere
KW	Kilowatt
KWh	Kilowatt hour
M&E	Monitoring and Evaluation
MoFA	Ministry of Foreign Affairs
MPW	Ministry of Public Works
MW	Megawatt
MWh	Megawatt hour
NCTC	National Counterterrorism Center
NEPS	North East Power System
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PMP	Performance Management Plan
PPA	Purchase Power Agreement
REFS	Rehabilitation of Economic Facilities and Services
SEPS	South East Power System
SO	Strategic Objective
SSO	USAID’s State Statistical Office (Afghanistan)
TO	Task Order
USEA	United States Energy Association
VOC	Vehicle Operator Cost
WITS	Worldwide Incidents Tracking System
ZOI	Zone of Influence



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SYNOPSSES OF PERFORMANCE INDICATORS

Energy			
Indicator	Type of Indicator	Data Source	Reporting Frequency
IR 1.2: Increase Incomes through Economic Growth			
FTE Afghan jobs created	Output	TO Manager	Semi-annually
Household income	Outcome	AEIC	Annually
IR 1.3: Expand and Improve Access to Economic Infrastructure			
Number of people trained in technical energy fields	Output	TO Manager	Semi-annually
Number of people trained in management	Output	TO Manager	Semi-annually
Capacity constructed or rehabilitated (MW)	Output	AEIC	Semi-annually
Capacity maintained (MW)	Output	AEIC	Semi-annually
Number of people with increased access to modern energy services	Outcome	AEIC/DABS	Annually
Average hours of daily electricity service	Outcome	Household/Business Surveys	Post-Project
Weighted average cost of electric energy supplied to the grid	Outcome	AEIC/DABS	Semi-annually
Unique visits to AEIC website ¹	Outcome	AEIC	Not Applicable

Transport			
Indicator	Type of Indicator	Data Source	Reporting Frequency
IR 1.1: Rehabilitate the Rural Economy			
Cost of food staples	Outcome	Business surveys	Pre- and Post-Project
Markets where goods sold	Outcome	Household surveys	Pre- and Post-Project
IR 1.2: Increase Incomes Through Economic Growth			
FTE Afghan jobs created	Output	TO Managers	Semi-annually
Number of businesses	Outcome	Business surveys	Pre- and Post-Project
Shopkeeper monthly sales	Outcome	Business surveys	Pre- and Post-Project
Household income	Outcome	Household surveys	Pre- and Post-Project

¹ Reporting of the 'Unique visits to AEIC website' has been transferred to the AEIC as this agency is no longer part of the IRP as of August 2009.

Transport Cont.

Indicator	Type of Indicator	Data Source	Reporting Frequency
IR 1.3: Expand and Improve Access to Economic Infrastructure			
Effective kilometers of transportation infrastructure constructed or rehabilitated	Output	TO Managers	Semi-annually
Kilometers of transportation infrastructure maintained	Output	TO Managers	Semi-annually
Number of people benefitting from transportation infrastructure projects	Output	TO Managers	Semi-annually
Number of people trained in transportation technical fields	Output	TO Managers	Semi-annually
Number of people trained in management	Output	TO Managers	Semi-annually
Travel times	Outcome	Driver/passenger surveys	Pre- and Post-Project
Vehicle operator costs	Outcome	Driver/passenger surveys	Pre- and Post-Project
Annual average daily traffic count	Outcome	Traffic counts	Semi-annually
Passenger fare costs	Outcome	Driver/passenger surveys	Pre- and Post-Project
Cost of freight transport	Outcome	Freight company surveys	Pre- and Post-Project
Volume of freight	Outcome	Freight company surveys	Pre- and Post-Project
Cost of informal payments for road use	Outcome	Driver/passenger surveys	Pre- and Post-Project
Number of security incidents	Outcome	TO Managers	Semi-annually
Staff capability with technical equipment	Outcome	TO Managers	Semi-annually
Staff capability in report writing	Outcome	TO Managers	Semi-annually
Kilometers of effectively maintained roads	Outcome	TO Managers	Annually
Roughness of road	Outcome	TO Managers	Annually
IR 3.1: Increase Access of Women and Children to Basic Health Services			
Travel time to health clinics	Outcome	Household surveys	Pre- and Post-Project
Frequency of visits to health clinics	Outcome	Household surveys	Pre- and Post-Project
IR 3.2: Increase Access to Quality Teaching and Suitable Learning Environments			
Rates of school attendance	Outcome	Household surveys	Pre- and Post-Project

The indicators shaded in grey are those addressed in this monitoring report. The other indicators will be addressed in various socio-economic studies conducted by IRP.

I. INTRODUCTION

The USAID/Afghanistan 2005-2010 Strategic Plan² focuses on three primary Strategic Objectives (SO)³. The purpose of this plan is to encourage activities and programs to promote economic growth, inclusive governance, and improved social institutions.

SO1: Thriving economy led by the private sector

SO2: Democratic government with broad citizen participation

SO3: Better educated and healthier population

USAID is funding a variety of programs to support these objective; ranging from capacity-building in government ministries to infrastructure projects such as construction of power plants, schools, clinics, roads, and a national electric power system.

Afghanistan Infrastructure Rehabilitation Program (IRP) is a five-year infrastructure-based program. The primary mission of this program is to not only enhance and improve Afghanistan's backbone but also to undertake works that will expand this structure. To accomplish this, IRP has been tasked with energy, transportation, water, and capacity building. IRP's Energy sector is underpinned by the need to provide a sustainable national utility and is devoted to increasing power generation capacity, the enhancement of interregional energy trade, and the development of domestic energy resources, while improving general control and communications of Afghanistan's power transmission networks. The Transport sector is involved in the extension of roads, as well as the rehabilitation and maintenance operations that are directed toward Afghan ownership and sustainability. Furthermore, each Task Order brings an institutional element of capacity-building that will support each of USAID's SOs.

IRP seeks to directly benefit targeted populations through the generation of employment during the infrastructure construction / rehabilitation phase (e.g., road construction) as well as through maintenance works. Capacity building of Afghan nationals in these areas will create both direct and indirect sustainable employment opportunities. As the economic status of Afghans improves, the economy, in general, will grow. The supply of improved transport and energy infrastructure will reduce costs for farms and for businesses across multiple industries, bolster demand for affordable public transport thereby increasing access and mobility, and support the steady and robust development throughout all levels of the country's economy. These benefits will increase productivity, create new markets, and attract both private and Foreign Direct Investment (FDI) in Afghanistan.

The Performance Management Plan's (PMP) objective is to measure IRP's progress and, specifically, the outcomes of each task order and how it supports USAID's Strategic Objectives. As part of the PMP implementation, this report is IRP's third semi-annual monitoring report. The focus of this report is on measuring project outputs. Where possible, some outcome measurements are included in order to complement these outputs. It should be noted that while every effort was made to obtain the most accurate data, in some cases the data proved to be incomplete. In such cases, the problems in acquiring consistent data are explained. Additional data collection and analysis for outcome indicators will be provided over the course of the IRP as socio-economic surveys and studies are implemented, as required by USAID.

² USAID/Afghanistan Strategic Plan, May 2005.

³ These Strategic Objectives were submitted with the approved Performance Management Plan (Revision I) of March 2009. Strategic Objective 1 has been changed to Strategic Objective 5; however, for continuity sake, the original SOs have been maintained in this report.

Organization. The indicators covered in this report fall under two Intermediate Results (IRs) of Strategic Objective I:

- IR 1.2: Increase incomes through economic growth
- IR 1.3: Expand and improve access to economic infrastructure

The indicators are organized under these two IRs. IR 1.2 has one indicator, “Full-time Afghan Jobs Created,” which applies to both the energy and transport sector. The remaining indicators for both the energy and transport sectors are discussed under IR 1.3.



II. INCREASES IN INCOMES THROUGH ECONOMIC GROWTH

The Infrastructure works undertaken by IRP have been creating both direct and indirect employment in Afghanistan – an initiative which has increased local incomes and is providing the skills and training for continued development. Exhibit I illustrates the number of Afghans that have been hired by IRP since its inception.⁴ While interesting, it is a poor indicator of economic impact. What is important is Full-Time Equivalents (FTE) created by IRP. The numbers below merely illustrate the effort that IRP has made to incorporate Afghan labor in carrying out the program’s mission. As seen below, a total of 1,218 Afghans have been employed by IRP. The next section discusses Afghan employment in terms of FTE.

Exhibit I:

Total AIRP Afghan Jobs Created by Task Order

Inception - 31 Mar 2010

Task Order	Total Jobs Created
TO 1	411
TO 2	43
TO 3	60
TO 4	132
TO 5	25
TO 6	20
TO 7	34
TO 8	151
TO 9	69
TO 10	1
TO 11	15
TO 12	11
TO 13	3
TO 14	87
TO 15	0
TO 17	1
TO 18	68
TO 19	29
TO 21	4
TO 22	5
TO 23	16
TO 24	27
TO 25	6
TO 26	0
Total Positions	1218

⁴ The total number of Afghans hired is tracked only for IRP direct hires because this data is not required of sub-contractors, who report in terms of LOE, which is useful in calculating FTE but not in identifying the total number of Afghans employed.



II.1 FULL-TIME EQUIVALENT AFGHAN JOBS CREATED

This indicator measures employment in terms of Full-Time Equivalent's (FTE) jobs. FTE is defined as one person employed for 260 days per year. This is a more meaningful measure of the economic impact of IRP. Exhibit 2 on the following page illustrates the number of Afghan FTE jobs created directly by IRP, by security sub-contractors, and by all other sub-contractors.⁵ It disaggregates this data by gender and task order. To date, the IRP has created a total of 1,276 FTE jobs. Security sub-contractors have created 4,864 FTE jobs, and an additional 10,116 FTEs have been created by all other first-tier sub-contractors.

Intermediate Result 1.2 is supported by the enhancement and rehabilitation of Afghanistan's infrastructure. The construction and rehabilitation of infrastructure requires both the direct employment of Afghans by IRP as well as the participation of local contractors to carry out much of the work. In the short-term, this will provide employment opportunities for many Afghans in regions where works are underway. Furthermore, it will also increase local contractor capabilities and expand the skill sets of those working on the projects. In addition, it can be inferred that the multiplier effect is at work in Afghanistan. While the exact multiplier effect cannot be known, Afghan incomes earned by IRP-created jobs enter into the Afghan economy.⁶ Therefore, IRP is increasing the amount of money in the general economy of Afghanistan. Some effects may be immediate, such as the increase in trade and consumption of goods or the increase in household expenditures on basic services (e.g., health care, education, etc.).

While the employment of women is not an indicator, it is worth noting that a total of 105 FTEs have been filled in IRP by Afghan women. This is important due to the relative lack of employment opportunities for women in Afghanistan.

⁵ The data is easily collected for first-tier sub-contractors; however, due to the informal nature of the Afghan labor force, it is very difficult to track second and third tier sub-contractor labor. Most of this labor is day labor or on-demand labor and many times controlled by village elders so that all households receive some direct monetary benefit from IRP's infrastructure projects. Sub-contractor staffing plans, which report LOE by position in monthly reports, were used as a proxy for employment created by second and third-tier subs.

⁶ Due to the endemic poverty affecting Afghanistan and its citizens, it is highly likely that the money earned is spent on consumer goods.

Exhibit 2:

Afghan Jobs Created by Task Order **Inception - 31 March 2010**

Full-Time Equivalent (FTE)

Task Order	AIRP Jobs Created			Security Jobs Created			Sub-Contractor Jobs Created		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
TO 1	517	73	590	903	0	903	585	0	585
TO 2	39	3	42	462	0	462	34	0	34
TO 3	18	2	20	140	0	140	0	0	0
TO 4	177	1	177	669	0	669	2,659	0	2,659
TO 5	28	1	29	188	0	188	37	0	37
TO 6	9	1	10	378	0	378	0	0	0
TO 7	17	1	18	62	0	62	0	0	0
TO 8	111	3	114	1,212	0	1,212	1,835	0	1,835
TO 9	73	3	76	201	0	201	946	0	946
TO 10	1	0	1	0	0	0	0	0	0
TO 11	16	5	21	0	0	0	0	0	0
TO 12	6	0	6	0	0	0	0	0	0
TO 13	4	2	6	0	0	0	7	1	8
TO 14	62	4	66	95	0	95	3,821	0	3,821
TO 15	0	0	0	33	0	33	4	0	4
TO 17	1	0	1	0	0	0	0	0	0
TO 18	46	0	46	361	0	361	111	0	111
TO 19	14	2	16	1	0	1	6	0	6
TO 21	1	1	1	88	0	88	1	0	1
TO 22	2	1	3	0	0	0	0	0	0
TO 23	11	2	13	45	0	45	13	0	13
TO 24	17	0	17	20	0	20	55	0	55
TO 25	2	1	3	5	0	5	0	0	0
TO 26	0	0	0	0	0	0	0	0	NA
Total	1,171	105	1,276	4,864	0	4,864	10,115	1	10,116



Exhibit 3:⁷

Full Time Equivalent (FTE) Afghan Jobs Created by Province

Inception - 31 March 2010

Province	IRP Jobs Created	Security Jobs Created	Sub-Contractor Jobs Created
Badakshan	175	670	2659
Baghlan	0	17	53
Farah	0	6	1614
Ghazni	0	0	132
Helmand	52	929	304
Herat	1	1	358
Jawzjan	0	34	12
Kabul	848	1260	1605
Kandahar	88	595	217
Khost	55	926	918
Kunar	0	0	14
Logar	0	0	13
Nangarhar	1	1	59
Paktika	0	0	79
Paktya	55	286	920
Pansjhir	0	0	39
Parwan	0	0	18
Puli-Alam	0	0	97
Sari Pul	0	0	1
Wardak	0	0	125
Uruzgan	0	2	0
Zabul	0	0	98
Total	1276	4725	9333

⁷ The Provincial Totals in Exhibit 3 do not match Task Order Totals in Exhibit 2 for security and subcontractor FTEs. This is due to two reasons: 1) TO3 is a Quick Release Task Order, so we could not accurately include the TO 3 data by province; and 2) TO 14 provincial data does not include any data previous to April 2009 as the only provincial records available for TO 14 were from April 2009 to September 2009. Additionally, we had to estimate the distribution of TO 14 Subcontractor FTE jobs by province by basing taking the percentage spread for the period of April 2009 to September 2009 and applying those percentage ratios to the cumulative numbers. This is because the TO 14 Subcontractor FTE data divided by province was not available prior to April 2009. To view total FTE jobs created by TO 3 and TO 14, see Exhibit 2. For the current six-month reporting period, however, all increases in FTEs match with those increases in Exhibit 2.

II.2 HOUSEHOLD INCOME

The energy produced by the capacity constructed, rehabilitated, operated, maintained, or enabled by USAID through the IRP results in a significant economic impact for Afghanistan. Over the six-month period from October 2009 to March 2010, IRP has significantly increased production and distribution capacity throughout Afghanistan. 70.0 MW of operational capacity has been added to the Tarakhil plant in the Kabul province, 18.5 MW of installed capacity has been added in Kajakai in the Helmand province, and an additional 37.0 MW has been supported for distribution from Uzbekistan through the NEPS import line. Thus, IRP has maintained a total of 299.6 MW of operational capacity that has produced 373,610 MWh for Afghanistan over the six-months reported. Exhibit 4 provides a breakdown of the capacity, actual production, estimated potential households served, and estimated economic impacts. According to the Afghan Energy Information Center (AEIC) and IRP energy economists, the energy produced is sufficient to supply energy to 218,000 households (1,300,000 – 1,700,000 people) and may have generated an estimated economic impact of over \$94.7 million.⁸ The figure for the number of households served was calculated by assuming that 80% of operational capacity is destined for households and that peak daily household energy usage is 1.1 KW.⁹ Estimated economic impact was determined under the assumption that 1 MWh produces \$3,043 of GDP over a six-year timeframe.¹⁰ While the initial impetus for these indicators was to identify the effect of increased production on household incomes, this report only provides an aggregate GDP impact figure. Extrapolating the effect on individual households is not a straightforward calculation at this time, since population data is inconsistent or unreliable.

The O&M activities are provided under Task Order 23, while the power imports are facilitated and enabled by several IRP activities, including the Inter-ministerial Commission for Energy (TO 13), supporting imported power agreements (TO 11), and reactive power compensation (TO 17). The construction and maintenance of the 105 MW Tarakhil Power Plant have been provided under TO 9. Also, TO 21.4 manages the life support of the Kajakai hydro-electric plant.

It is important to note that while IRP's role is to expand energy production capacity, IRP is not responsible for procuring fuel for these plants or for paying for the imports, which are necessary for the benefits of this increased capacity to be realized. In fact, since the GIRA has been unable to supply adequate fuel to the power plants, especially in the south, the output of these plants and the resulting economic impact has been significantly lower than it might otherwise have been.

⁸ The number of inhabitants in a household is assumed to be between 6 and 8 people.

⁹ DABS actual figures for 2009 show that 80% of power generations is used by households. The other 20% is consumed by businesses and government (April 2010).

¹⁰ According to statistical analysis of a cross-sample of 37 countries similar to Afghanistan in terms of energy usage and economic conditions.



Exhibit 4¹¹:

Estimated Economic Impact of Generation Enabled by IRP

October 2009 – March 2010

Plant	Operational Capacity (MW)	Energy Production (MWh)	Households Served*	Estimated Economic Impact (Million USD)**
O&M Support				
Kandahar	18.0	25,789	13,100	6.5
Lashkar Gah	2.3	1,233	1,700	0.3
Qalat	2.6	1,570	1,900	0.4
Subtotal	22.9	28,592	16,700	7.3
Imports				
Uzbekistan - NEPS	112.0	116,226	81,500	29.5
Turkmenistan	21.7	83,269	15,800	21.1
Tajikistan	8.0	36,322	5,800	9.2
Subtotal	141.7	235,816	103,100	59.8
Plant Construction				
Kajakai	30.0	89,583	21,800	22.7
Tarakhil	105.0	19,649	76,400	5.0
Subtotal	135.0	109,232	98,200	27.7
Total	299.6	373,640	218,000	94.7

Source: AEIC

*Based on operational plant capacity, average household peak load of 1.1 KW, and that households use 80% of sourced production.

**Impact over period indicated based on calculated energy/GDP ratio of \$3,043 per MWh phased in over six years.

III. ENERGY SECTOR INDICATORS

The IRP Energy Sector program centers on increasing power generation, expanding the transmission infrastructure, and building institutional capacity. The objectives of these IRP projects will continue to be an increase in the access, availability, quality, and reliability of electric power to the household, industrial, commercial, and agricultural sectors at reasonable prices.

IRP is accomplishing this through the rehabilitation of Afghanistan’s electricity generation and transmission infrastructure. Specifically, IRP provides operations and maintenance (O&M) support while building capacity for thermal power plants in Kabul, and rehabilitating diesel and hydropower plants in southern Afghanistan. It is also responsible for the upgrade of various substations in the northern part of the country while maintaining and assisting in the expansion of power imports from the country’s neighbors. The program increases the accessibility and reliability of electric power to large segments of the Afghan population, which, in turn, will spur both economic growth and human development.

¹¹ Note that significant changes have been made to this data displayed in this exhibit when compared to this exhibit from the previous PMP reports. First, the Tirin Kot, Aybak, and Musa Qala plants are no longer included in this exhibit as only minor on-going O&M has taken place and production has been negligible. Second, after further detailed review, the new calculated average household peak load is estimated at 1.1 KW instead of 1.5 KW, as was reported in the last monitoring report. Third, whereas only Uzbek imports were tabulated in past monitoring reports, this report includes Turkmen and Tajik imports.

IRP is also involved in advising a variety of government agencies on resolving technical issues and developing sustainable long-term strategies. It is working with the Inter-Ministerial Commission for Energy (ICE) to ensure the most effective implementation of NEPS and to support for Kabul's electric power supply. Furthermore, it is working with the Kabul Electricity Directorate on technical assistance and with the Kandahar Electricity Directorate and DABS on business planning and energy commercialization strategies. Over its five-year life cycle, the IRP program will continue to undertake a comprehensive approach to address the energy supply constraints on the country's economic growth while initiating training for Ministry and agency staff involved.

For the Semi-Annual Monitoring Report, IRP provides data for several output and outcome indicators. Every effort was made to use the best possible data, but, as previously noted, for some indicators IRP relies on data from other sources, including DABS, which do not always provide the most accurate and current data. The indicators included in this report measure project outputs and outcomes in the following areas:

- **Economic:** Household Income;¹²
- **Capacity Building:** Number of People Trained in Energy Technical Fields; Number of People Trained in Management Topics regarding Energy;
- **Generation Capacity:** Capacity Constructed or Rehabilitated (MW); Capacity Maintained (MW);
- **Cost:** Weighted Average Cost of Electricity Supplied to the Grid; and
- **Access:** Number of People with Increased Access to Electricity

These indicators will be supplemented over time with data that is gathered in a series of planned household and commercial energy use surveys that intend to robustly capture the outcomes of the significant increases in power generation that result from IRP's efforts. For example, the IRP is currently conducting an energy assessment for the southern provinces of Afghanistan including Zabul, Uruzgan, Kandahar, Helmand, Ghazni, and Logar. The goal of the assessment is to recommend potential energy projects (such as diesel, hydro, and solar) that will bring economic and living standard benefits to the people of the regions.

¹² Data on "FTE Afghan Jobs Created" by IRP is provided in the first section of this report.

III.1 ENERGY FIELD TRAINING HIGHLIGHTS

The sustainability of the energy supply expansion, which is one of IRP's tasks, depends on the presence of technically capable Afghans for the effective operation and maintenance of the power grid. This indicator measures the number of people that have received formal or on-the-job energy-specific training from IRP in technical and/or topics.

Training highlights from this past monitoring period (Oct. 2009 – Mar. 2010) include the following:

- *Power Plant Fundamentals Training and Weekly Safety Trainings held at the Tarakhil (105 MW Plant) outside Kabul under TO 9:* Throughout the winter months in early 2010, several trainings were offered to IRP local hires, subcontractors and DABS staff. Subcontractor trainings focused primarily on site safety, including fire safety, electrical, heat stress, hand safety, and toolmanship. Four week-long sessions covering twenty-one safety topics were held for as many as 20 subcontractor employees. Extensive 'Power Plant Fundamentals' Training was held at the Tarakhil plant on an almost continuous daily basis from January through early March. Management training included project controls, leadership, and teamwork courses while Technical training included topics such as control room operations, heavy equipment maintenance, advanced measurement systems, electric components operations for breakers and switches, and fluid power. Five IRP employees attended these trainings, depending on job specification, and 37 DABS employees participated as well.
- *Technical and Management Training under TO 17 and TO 19:* Throughout February and March of 2010, various Technical and Management trainings were undertaken as part of a joint effort between TO 17 and TO 19. Technical training consisted of technical specification writing, OSHA standards, voltage detection, ARC Flash and ARC Blast, basic relaying, and capacitor control trainings. Lectures were accompanied by site visits to substations in the Balkh and Kabul provinces where informal training also occurred. Management training included lectures on the general state of Afghan power generation and distribution and construction management courses. In total, one IRP employee received technical training, while a total of 15 subcontractors received both technical and management training. The objective for all trainings was to create a knowledgeable local base for substation operations and maintenance.
- *Solutions for Commercial Loss Reduction under TO 22:* Forty DABS employees participated in 2-day training in Kandahar on December 14th and 15th, 2009 to discuss technical and management solutions for commercial loss reduction. Attendees ranged from meter readers to department heads.
- *Network Survey Training under TO 22:* Training for 4 higher level DABS employees was conducted in Kandahar and covered topics related to the city's network survey. The attendees were director-level employees seeking guidance on a management approach for executing Kandahar's network survey.
- *Troubleshooting Symptoms and Fuel Systems under TO 23:* Eleven subcontractors were trained by senior IRP engineering staff in February and April 2010 on the fundamentals of troubleshooting symptoms and fuel systems at two power plants in the Kandahar province. Troubleshooting symptoms entailed procedures and techniques for resolving problems with equipment such as the alternator, coolant, crankcase gases, and intake manifold in the plant. Fuel system training involved inspection, installation, and servicing of various parts of the system.
- Continued on-the-job training of IRP staff took place under TO 22.



- 25 IRP Employees from TO 9, 11, 17, 19, 22, and 23 were provided training in basic skills such as Microsoft applications, Expedition, and report writing.

Exhibit 5:

Number of People Trained in Energy Fields by Province		
I October 2009 - 31 March 2010		
Training Type	Province	Trainings
Technical	Balkh	15
	Kabul	96
	Kandahar	11
Management	Balkh	15
	Kabul	97
	Kandahar	4
	Nangarhar	1
Total of Individuals Trained		146

Note: The Total of Individuals Trained is less than the sum of the Trainings column because many individuals received multiple trainings throughout the country.

Exhibit 5 above illustrates the Afghan provinces in which Technical and Management training has occurred in the last 6 months. During this period, IRP has had a total of 239 individual trainings taken by 146 individuals. While most individuals were trained in Kabul, on-site trainings were held at substations and offices in Balkh and Nangarhar. In Kandahar, four Ministry officials received management training on energy commercialization, and eleven subcontractors received formal technical training at the power plants.

III.2 NUMBER OF PEOPLE TRAINED IN ENERGY TECHNICAL FIELDS

Exhibit 6 provides data for the number of people trained in energy technical fields since the inception of IRP. It includes training of IRP staff as well as of sub-contractors and ministry management and staff. It shows both informal and formal training, and it disaggregates this data by gender and task order. Since October 1, 2009, 17 new IRP employees, 46 new subcontractors and 28 new Ministry staff have received technical training, whether informally, formally, or both. The cumulative technically trained staff since the inception of the program can be seen in the Grand Totals row.

Exhibit 6:

Number of People Trained in Energy Technical Fields

Inception - 31 March 2010

Training Type	Task Order	IRP Staff			Sub-Contractors			Afghan Ministry Staff			Grand Total
		Male	Female	Total	Male	Female	Total	Male	Female	Total	
Formal	TO 2	0	0	0	0	0	0	0	0	0	0
	TO 5	1	0	1	8	0	8	0	0	0	9
	TO 9	30	1	31	19	1	20	37	0	37	88
	TO 11	0	0	0	0	0	0	0	1	1	1
	TO 13	2	0	2	0	0	0	2	0	2	4
	TO 17	2	0	2	9	0	9	12	0	12	23
	TO 19	0	0	0	6	0	6	120	0	120	126
	TO 22	2	0	2	0	0	0	0	0	0	2
	TO 23	0	0	0	11	0	11	0	0	0	11
	Total		37	1	38	53	1	54	171	1	172
Informal	TO 2	0	0	0	0	0	0	48	0	48	48
	TO 5	3	0	3	4	0	4	48	0	48	55
	TO 9	25	0	25	1	0	1	0	0	0	26
	TO 11	0	0	0	0	0	0	0	0	0	0
	TO 13	0	0	0	0	0	0	0	0	0	0
	TO 17	0	0	0	0	0	0	0	0	0	0
	TO 19	3	0	3	3	0	3	0	0	0	6
	TO 22	0	0	0	0	0	0	0	0	0	0
	TO 23	0	0	0	0	0	0	0	0	0	0
	Total		31	0	31	8	0	8	96	0	96
Grand Total		52	1	53	61	1	62	267	1	268	383

A trainee who has taken both formal and informal training is only counted once in the Grand Total row. Therefore, the Grand Total row might be less than the sum of the subtotal rows.

Exhibit 7:

Number of People Trained in Energy Management Fields **Inception - 31 March 2010**

Training Type	Task Order	IRP Staff			Sub-Contractors			Afghan Ministry Staff			Grand Total
		Male	Female	Total	Male	Female	Total	Male	Female	Total	
Formal	TO 2	0	0	0	0	0	0	0	0	0	0
	TO 3	0	0	0	1	0	1	3	0	3	4
	TO 5	0	0	0	0	0	0	0	0	0	0
	TO 9	5	0	5	0	0	0	37	0	37	42
	TO 11	0	0	0	0	0	0	9	1	10	10
	TO 13	0	0	0	0	0	0	2	0	2	2
	TO 17	1	0	1	9	0	9	0	0	0	10
	TO 19	0	0	0	6	0	6	3	0	3	9
	TO 22	0	1	1	0	0	0	64	2	66	67
	TO 23	0	0	0	0	0	0	0	0	0	0
	Total	6	1	7	16	0	16	118	3	121	144
Informal	TO 2	0	0	0	0	0	0	0	0	0	0
	TO 3	0	0	0	0	0	0	0	0	0	0
	TO 5	0	0	0	1	0	1	0	0	0	1
	TO 9	4	0	4	1	0	1	0	0	0	5
	TO 11	0	0	0	0	0	0	7	1	8	8
	TO 13	0	0	0	0	0	0	1	0	1	1
	TO 17	0	0	0	0	0	0	0	0	0	0
	TO 19	0	0	0	1	0	1	0	0	0	1
	TO 22	0	0	0	0	0	0	0	0	0	0
	TO 23	0	0	0	0	0	0	0	0	0	0
	Total	4	0	4	3	0	3	8	1	9	16
Grand Total		10	1	11	19	0	19	125	3	128	158

A trainee who has taken both formal and informal training is only counted once in the Grand Total row. Therefore, the Grand Total row might be less than the sum of the subtotal rows.



III.3 NUMBER OF PEOPLE TRAINED IN ENERGY MANAGEMENT FIELDS

The sustainability of the energy supply expansion and the potential for future expansion depend on a cadre of technically capable Afghans for the energy sector’s effective management. The last six months, ending March 31, 2010, have seen a noteworthy increase in the number of DABS employees and subcontractors trained in both technical as well as management topics. Eighty DABS employees in both Kandahar and Kabul were trained for the first time by IRP in professional subjects related to energy while 6 new IRP employees and 15 new subcontractors participated in extensive substation training at the Tarakhil plant. For a detailed list of the cumulative number of people trained since the inception of the training programs, see Exhibit 7 on the previous page. Further management training for DABS employees is currently underway for TO 22 and will assist in building a local knowledge base.

III.4 CAPACITY CONSTRUCTED OR REHABILITATED

In early October 2009, Unit 3 opened at the Kajakai hydroelectric power plant. This added 18.5 MW of capacity to enable a total of 34.5 MW of installed capacity (30.0 MW of operational capacity) at the plant. Also in late 2009, the Tarakhil plant outside Kabul completed its addition of 89.4 MW to bring the plant to its full installed capacity of 134.1 MW (105.0 MW of operational capacity). In addition, three alternators from Kandahar and one generator from Lashkar Gah are currently undergoing off-site rehabilitation, but are not completed as of yet. The capacity constructed or rehabilitated during the six-month reporting period is seen in Exhibit 8.

Exhibit 8:

Capacity Constructed or Rehabilitated (MW)

Oct. 2009 - Mar. 2010

Activity	Units Added	Installed Capacity Added	Total Installed Capacity
Opening of Unit 3 at Kajakai Hydroelectric Plant	1	18.5	34.5
Opening of Blocks B & C at the Kabul Tarakhil Power Plant	12	89.4	134.1
Total	13	107.9	168.6

III.5 CAPACITY MAINTAINED

During the reporting period, maintenance on Tarakhil’s initial 44.7 MW (under TO 9) of installed capacity (35.0 MW of operational capacity) took place without any major activities to report. Also within the period, and as mentioned above, 89.4 MW of installed capacity has been added to the Tarakhil plant, but is not as yet counted as maintained capacity. The IRP also provided direct operation and maintenance (O&M) support for two plants in Kandahar and for the plant in Lashkar Gah, while the plant in Qalat received as-needed operational support. The maintenance operations for these four plants are covered under TO 23.



In addition to specific repairs, direct O&M involves diesel technicians running continuous hands-on training with local staff. It also involved managing the daily operations of the plants and performing routine and preventative maintenance on the generating units. Technical support includes periodic trouble shooting, providing spares and consumables, and training operating staff. The total installed capacity supported by O&M activities was 70.8 MW with an operating capacity of 54.8 MW.¹³ Exhibit 9 highlights the O&M works over the last six months.¹⁴

Exhibit 9:

Summary of Generating Capacity Operated and Maintained

October 2009 – March 2010

Plant	IRP Role	Installed Capacity (MW)	Operating Capacity (MW)	Notes
Kandahar-KTA-50	Direct O&M	11.9	8.3	3 alternators are awaiting repair.
Kandahar-QSK-60	Direct O&M	8.8	7.5	
Lashkar Gah	Direct O&M	2.6	1.5	1 generator currently under repair; 2 others are required.
Qalat	As-Needed O&M	2.8	2.6	
Tarakhil	Direct O&M	44.7	35.0	89.4 MW recently constructed (See Exhibit 8)
Total		70.8	54.8	

III.6 WEIGHTED AVERAGE COST OF ELECTRIC ENERGY SUPPLIED TO THE GRID

The weighted average cost of power is an important indicator of DABS’s prospect for a sustainable and unsubsidized operation. DABS’s current cost of power is significantly greater than its average revenue collected per KWh. If DABS is to become a viable commercial entity, it must both increase its revenue collection and reduce its cost of power.

During the six-month period from October 1, 2009 to March 31, 2010, the IRP contributed significantly to lowering the average cost of power in Kabul by facilitating increased capacity through the NEPS imports from Uzbekistan and by maintaining operations at the Tarakhil (“105 MW”) Power Plant outside Kabul. During this period, bulk power sourced for Kabul and the region south of the Salang Pass totaled 627,004 MWh. This included 283,738 MWh from Uzbekistan through NEPS at a cost of \$60/MWh. The result was a weighted average cost of power of 3.38 cents/KWh (\$33.80/MWh). If NEPS had not been available, and if Tarakhil were to have substituted the NEPS’ production load, then the weighted average cost of power (at \$0.85/liter for distillate fuel oil delivered to Kabul) would have risen to 9.54 cents/KWh. If neither NEPS nor Tarakhil had been available, and if the entire requirement in excess of the available hydro generation could have been covered by the NW Kabul plants, then the weighted cost of power would have risen to 20.62 cents/KWh.¹⁵ As a measure of the impact of the NEPS imports, if NEPS’ production load were to be covered by Tarakhil and the NW Kabul plants, then generation costs would have increased by \$38.6 million for the six-month period.

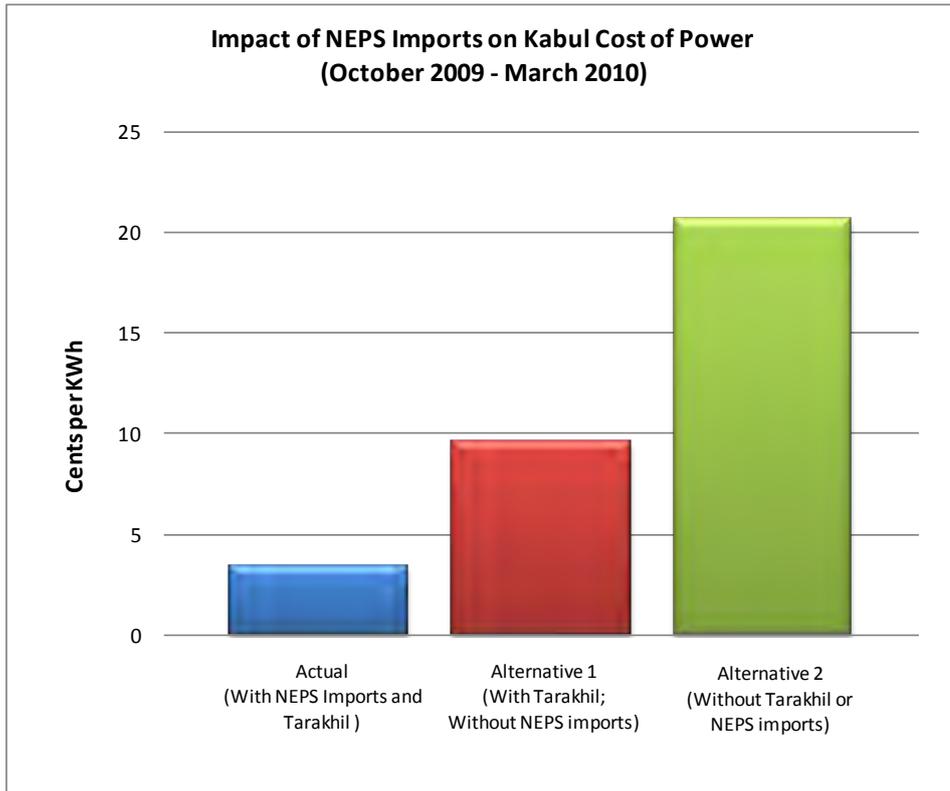
¹³ The operational capacity of 67.9 MW does not include an increase of 47 MW of NEPS capacity from Uzbekistan enabled by IRP in association with other organizations.

¹⁴ TO 5’s works were transferred to TO 23 in May 2009.

¹⁵ In reality, the NW Kabul plant could not have generated this much power due to capacity constraints; the system would have been sent back to an operational regime in which extensive load shedding occurs.



Exhibit 10:



NEPS imports provided significant benefits and were facilitated and enabled by several IRP activities, including IRP’s support of the Inter-Ministerial Commission for Energy (TO 13), as well as its role with the imported power agreements (TO 11), and reactive power compensation (TO 17).

III.7 NUMBER OF PEOPLE WITH INCREASED ACCESS TO MODERN ENERGY SERVICES

The IRP does not directly affect the number of people with increased access to electricity, since it is not currently building distribution systems or connecting customers. However, the IRP supports and enables increased access to electricity by maintaining and increasing available generation capacity through its O&M, construction, and rehabilitation projects. While DABS has shown a propensity for adding new customers without any increase in the capacity available to serve them, the recent significant increase in residential customers in Kabul and Kandahar may be seen as at least partly enabled by:

- Increases in capacity of the Tarakhil plant to full operational capacity (105 MW)
- Increased power imports sourced through NEPS (total capacity of 112 MW)
- Completion of Kajakai’s Unit 3 and the resulting total operational capacity (30 MW)



Exhibit 11:

DABS Customers in Selected Provinces

Afghan Years 1386 - 1388
(March 2007 - March 2010)

Province	1386	1387	1388
Kabul	172,297	221,028	245,770
Kandahar	33,533	36,852	38,523
Helmand	14,602	19,927	TBD

Source: DABS. Data for 2009 (year ending March 21, 2010) is provisional and is still in the process of verification. Totals for customers outside Kabul and Kandahar provinces are not complete for 2009.

It should be noted that the augmentation in operational capacity by IRP projects has contributed to an increase of almost 25,000 residential household customers in the Kabul province from 1387 to 1388 (year-ending March 21, 2009 to year-ending March 21, 2010). This represents an increase of an estimated 150,000 to 200,000 people.¹⁶ In Kandahar, while the number of customers has grown only slightly over the same period, according to DABS, significant decreases in load-shedding have occurred, resulting in more daily hours of power for existing residential customers.

¹⁶ It is assumed that 1 household has 6 to 8 inhabitants.

IV. TRANSPORT SECTOR INDICATORS

Under the IRP, USAID selected roads for reconstruction, completion of reconstruction works, maintenance, and rehabilitation. These road projects were selected based on various criteria including the projects' roles in meeting the country's needs for increased physical access to markets, improved import and export of goods, enhanced access to education and health facilities, improved security, and better connectivity between districts. In addition, the IRP has a capacity-building component tasked with strengthening Afghanistan's capabilities to carry out future operations and maintenance works.

Basic project outputs and selected outcomes for each road are reported in this section. These outputs are:

1. Equivalent Kilometers of Transportation Infrastructure Constructed or Rehabilitated;
2. Kilometers of Transportation Infrastructure Maintained;
3. Kilometers of Road Effectively Maintained;
4. Roughness of Road;
5. Number of People Trained in Transport Technical Fields;
6. Number of People Trained in Transport Management Fields;
7. Staff Capability with Technical Equipment;
8. Staff Capability on Report Writing;
9. Number of People Benefitting from Transportation Infrastructure Projects;
10. Security Incidents; and
11. Annual Average Daily Traffic Count.

Indicators 1-4 above directly relate to the completion of constructed roads and to the O&M of completed or existing roads. Indicators 5-8 directly measure IRP's capacity-building efforts in the transport sector. While indicators 5-8 are a primary component of TO 14, each TO engages in capacity-building.¹⁷ The number of people benefitting from transportation Infrastructure Projects identifies the number of people in the ZOI for the segments of road completed. The last two indicators measure the effects of transport infrastructure projects as outcomes within the Zones of Influence (ZOI) for each road segment completed. Security Incidents are given at the district level as reported by the USAID State Statistical Office (SSO) and at the provincial level as reported by the National Counter Terrorism Center's Worldwide Incidents Tracking System (WITS). Annual Average Daily Traffic Count measures how improvements to roads will affect traffic volume over time, while serving as a proxy for the road's economic and social impact.

While the indicators presented in the Semi-Annual Monitoring Reports provide a broad understanding of project outputs and performance indicators, a deeper understanding of IRP's economic and social impacts is necessary. To further assess such impacts, IRP is conducting socio-economic studies over the course of the program's life-cycle. In December 2009 and January 2010, IRP managed the process of extensive data collection along the Gardez–Khost (TO 8) and Keshim–Faizabad (TO 4) roads for the purpose of more fully measuring the social and economic impact of these roads over time. Due to inclement weather, the data collection for the Keshim–Faizabad Road was only partially collected and will be completed in May 2010. Nevertheless, 351 household surveys, 204 vehicle operator surveys, 184 small business surveys, and 30 market overview surveys were conducted throughout the Keshim–Faizabad road's zone of influence.

¹⁷ Where possible, we report trainings at a provincial level.



Along the Gardez–Khost Road, 311 household surveys, 172 vehicle operator surveys, 193 small business surveys, and 31 market overview surveys were conducted. Once the data collection and analyses are completed, IRP will submit a report to USAID on current conditions along the road that will serve as the basis for comparison with post-project conditions.

IV.1 EQUIVALENT KILOMETERS OF TRANSPORTATION INFRASTRUCTURE CONSTRUCTED OR REHABILITATED

This indicator measures the equivalent kilometers of road that have been rehabilitated or constructed for each task order involved. It is calculated by multiplying the percentage of the road that is physically complete by the total length of the road project. Exhibit 12 provides cumulative data which is broken down by task order.

Exhibit 12:

EQUIVALENT KMs of TRANSPORTATION INFRASTRUCTURE CONSTRUCTED OR REHABILITATED

Task Order	Percent Physically Complete	Equivalent KMs Constructed or Rehabilitated
3.15	100%	10.0
4	81.0%	83.4
8	48.5%	49.0
18	100.0%	21.0
Total		163.4

TO 3.15 and TO 18 are completed as of September 2009.

IV.2 KILOMETERS OF TRANSPORTATION INFRASTRUCTURE MAINTAINED

This indicator is a basic output measure designed to track the kilometers of road that IRP is responsible to maintain. Exhibit 13 provides data for this period (Oct. 2009 – Mar. 2010) disaggregated by task order.

Exhibit 13:

KILOMETERS OF TRANSPORTATION INFRASTRUCTURE MAINTAINED	
1 October 2009 - 31 March 2010	
Task Order	KMs
TO 4	103
TO 8	101
TO 14	1523
TO 24	178
Total	1905

TO 14 is currently devoted to managing the maintenance of the 1,523 kilometers of roads built under REFS. This has recently been expanded to 3,841 kilometers as 2,318 kilometers were awarded to TO 14 in February 2010. These newly acquired kilometers of road are in the beginning stages of tendering, inventory, conditions assessment, and staff hiring. Once the maintenance contracts are in force, IRP will report this increased figure. For those TOs focusing on road construction (TO 4 and TO 8), IRP is also responsible for maintaining bypasses and diversions and for activities such as conducting snow removal, debris removal, and bridge repair. This is to ensure that the flow of traffic is uninterrupted during the course of the project. TO 24 engaged in winter maintenance and was responsible for an additional fourteen kilometers, bringing the total roadway under its maintenance operations to 178 kilometers.

IV.3 KILOMETERS OF EFFECTIVELY MAINTAINED ROADS

Applying its performance-based management system, TO 14 (Road O&M/Capacity Building Program) regularly monitors the roads under its supervision in order to measure the ability of provincial MPW staff and local sub-contractors to maintain the roads. As defined in the PMP (March 2009), this indicator will measure how many kilometers of road are being effectively maintained by applying the criteria established by the TO 14 management team. These criteria serve as the basis for sub-contractor compensation.

The success of sub-contractors and MPW staff in effectively maintaining the road is a function of both their internal capacity as well as external factors (e.g., weather, insurgent activities) affecting the condition of the road. Phase II of TO 14 began in November 2008. During the first monitoring report period (October 2008 – March 2009), the percentage of roads effectively maintained averaged 83.0%. In the second monitoring report period (April 2009 – September 2009), this percentage averaged 89.6%. Poor security conditions during those periods were the principal reasons for the inability to consistently execute maintenance operations. During the current reporting period, subcontractors were able to perform maintenance on all 1,523 kilometers at least once per month. Based on the TO 14 standards for effective maintenance, 90.8% of the maintained roads were deemed effectively maintained.

Exhibit 14:

KILOMETERS OF EFFECTIVELY MAINTAINED ROADS

TO 14 Oct 2009 – Mar 2010

Year	Month	Kilometers of Road Maintained	Kilometers of Road Effectively Maintained	Percentage of Road Effectively Maintained
2009	Oct	1523	1410	92.6%
	Nov	1523	1372	90.1%
	Dec	1523	1361	89.4%
2010	Jan	1523	1403	92.1%
	Feb	1523	1387	91.1%
	Mar	1523	1365	89.6%
Average		1523	1383	90.8%

Note: A kilometer is not considered effectively maintained if it does not meet TO 14's minimum maintenance standards.

IV.4 ROUGHNESS OF ROAD

TO 14 focuses on both maintaining rehabilitated roads and developing the local capacity to maintain these roads. Successful O&M of rehabilitated roads will ensure that roads are maintained to a specific level of quality over time. This indicator is designed to provide an objective measure to test whether maintenance efforts are resulting in well-maintained roads. To report this indicator, TO 14 uses the International Roughness Index (IRI) to measure riding conditions. Eventually, a calculation for vehicle operating costs will be an indicator derived from the IRI. From September 2009 through January 2010, 1,150 kilometers-lanes throughout Afghanistan were measured for road roughness.¹⁸ The indicator is qualitatively expressed as one of three road condition types. A poor condition is when the IRI is above 5.0; a fair condition is granted if the IRI of the selected road is between 3.0 and 5.0, inclusively; and a good condition is awarded if the IRI is below 3.0. Exhibit 15 below displays the number of kilometers-lanes attributed to each road condition type.

Exhibit 15:

ROAD ROUGHNESS RESULTS OF REHABILITATED TRANSPORTATION INFRASTRUCTURE

Condition	KM-Lanes Analyzed	Percentage of Total
Poor	87	7.6%
Fair	540	46.9%
Good	524	45.5%
Total	1151	

IV.5 NUMBER OF PEOPLE TRAINED IN TRANSPORTATION TECHNICAL FIELDS

A sustainable transport sector depends on a cadre of effective technical staff. In order to build capacity, the IRP Transport Sector Program provides various formal and informal training opportunities. Since its inception IRP has trained a total of 568 people in transport technical fields, including 222 of its own staff, 115 sub-contractors, and 231 Afghan MPW staff. Additionally, an impressive 304 subcontractors and 625 MPW staff have been formally trained in management topics since the inception of the program.

Of the 222 IRP staff who have been trained since the inception of the program, 90 were Afghan university students who have participated in and successfully completed IRP's 4 to 6-month internship program. The students come primarily from four universities—Kabul, Jalalabad, Kandahar, and Herat. There are two internship tracks within IRP—the first has a focus on design and lab work in Kabul, and the second involves on-site formal training. Twenty-eight interns have participated in both internship tracks either simultaneously or consecutively. Of these 90 total students who have completed their internship, thirteen have joined IRP as full-time employees.

¹⁸ Kilometer-lanes is a unit referring to the number of kilometers measured per each lane or a roadway. This is an important distinction from regular kilometers of roadway as two lanes on the same stretch of road might have different levels or roughness.

Since TO 14 has a specific requirement directed towards capacity-building, a more in-depth look at the kinds of training it provides will be discussed later in the report along with indicators that are being used to measure the effectiveness of its capacity-building program. Highlights during the past monitoring period (Oct. 2009 – Mar. 2010) include the following:

- **On-Site Informal Training:** Under TO 4 and TO 8, informal trainings for on-site engineers have taken place. Within TO 8, 28 engineers consisting of four full-time field engineers, seven interns, and 17 subcontractors participated in training focusing primarily on QA/QC and safety issues. In TO 4, informal trainings were focused on eight interns with one existing IRP engineer attending. TO 24 trained three interns. While all trainees were introduced to topics such as design engineering, QA/QC, and roadway operations and maintenance, the 18 interns received additional specialized training in three fields: Earthworks, Structures, and Pavement. Earthworks included basic survey alignment, embankment, and cutting/filling skills; Structures probed the design and construction of bridges, causeways, and culverts along the road; and, Pavement involved asphalt and condition repair. The interns also received on-the-job training in CAD and other computer software.
- **Laboratory Training:** In this reporting period six university student interns completed the IRP Laboratory internship program and six more are now beginning their training. Each training group attended lectures related to materials testing procedures and QA/QC implementation, as well as performed actual laboratory testing on different materials such as soil, aggregate, asphaltic concrete, mortar, and Portland cement concrete. Their practical training also included developing actual mix-designs and conducting trials on asphaltic concrete, mortar, and Portland cement concrete. Lab Interns also participated in field assignments to gain experience in on-site technical investigations, such as geotechnical investigations, pavement investigations, in-situ concrete testing, and pavement investigations. A new addition to the Laboratory Training has been the addition of a Design Shop in which two interns pursued their trainings and were eventually hired full-time by IRP in January 2010.

Exhibit 16 provides data for the number of people trained in transportation technical fields since the inception of IRP. It shows both informal and formal training, and it disaggregates this data by gender and task order.

Exhibit 16:¹⁹

Number of People Trained in Transport Technical Fields **Inception - 31 Mar 2010**

		IRP Staff			Sub-Contractors			Afghan Ministry Staff			
Training Type	Task Order	Male	Female	Total	Male	Female	Total	Male	Female	Total	Grand Total
Formal	TO 1	40	5	45	0	0	0	0	0	0	45
	TO 3	6	0	6	0	0	0	0	0	0	6
	TO 4	30	0	30	3	0	3	3	0	3	36
	TO 7	8	1	9	0	0	0	0	0	0	9
	TO 8	35	0	35	0	0	0	0	0	0	35
	TO 14	50	2	52	95	0	95	216	0	216	363
	TO 18	7	0	7	0	0	0	0	0	0	7
	TO 24	3	0	3	0	0	0	0	0	0	3
	TO 25	0	0	0	0	0	0	0	0	0	0
	Total		179	8	187	98	0	98	219	0	219
Informal	TO 1	12	1	13	0	0	0	0	0	0	13
	TO 3	3	0	3	0	0	0	0	0	0	3
	TO 4	40	0	40	0	0	0	0	0	0	40
	TO 7	6	1	7	0	0	0	0	0	0	7
	TO 8	44	0	44	17	0	17	0	0	0	61
	TO 14	23	0	23	2	0	2	50	0	50	75
	TO 18	1	0	1	0	0	0	0	0	0	1
	TO 24	15	0	15	0	0	0	0	0	0	15
	TO 25	2	0	2	0	0	0	0	0	0	2
	Total		146	2	148	19	0	19	50	0	50
Grand Total		214	8	222	115	0	115	231	0	231	568

¹⁹ In the previous IRP report, the “Semi-Annual Monitoring Report: April 2009 – September 2009,” the exhibit reported higher numbers in a couple of cases due to the double-counting of a number of subcontractors who underwent training. Also, some Afghan Ministry officials and staff were wrongly counted as subcontractors. In addition, the number of IRP staff reported as informally trained in TO 8 in the last report should have been 33 instead of 39. These errors have been corrected in the table provided. They were discovered as IRP has been strengthening its training reporting systems in order to increase the rigor of the numbers it reports. Also note that the Grand Total data may be less than the sum of the subtotal data. This is because many trainees received both formal and informal training and thus were tallied in both the informal and formal trainee category data. However, the Grand Total numbers account for double-counting such trainees and will thus be lower than the sum of the subtotals.



Exhibit 17:

Number of People Trained in Transport

Technical Fields by Province

1 October 2009 - 31 March 2010

Training Type	Province	Total Trainings
Formal	Badakshan	4
	Kabul	150
	Khost	17
Informal	Badakshan	20
	Balkh	2
	Baghlan	1
	Bamyan	13
	Farah	4
	Ghazni	6
	Herat	3
	Helmand	6
	Jawzjan	8
	Kabul	32
	Kandahar	6
	Khost	11
Zabul	7	
Grand Total of Individuals Trained		138

Note: The rows show the number of people trained per province; some trainees received multiple trainings in the same or multiple provinces and are thus reported in each instance in order to demonstrate the full extent of IRP training efforts. The Grand Total row, however, presents total individuals trained, eliminating any double counting.

As can be seen in Exhibit 17 above, 290 technical trainings were taken by 138 individuals throughout Afghanistan over the six-month reporting period. Some of these individuals, particularly IRP staff in TO 14, participated in informal trainings in multiple provinces. This was intended to provide multiple case studies for the employees.

IV.6 NUMBER OF PEOPLE TRAINED IN TRANSPORT MANAGEMENT

A sustainable transport sector depends on an effective and skilled workforce that can effectively manage it. To help build capacity, the IRP Transport Sector Program provides various formal and informal training opportunities. TO 14 (Road O&M/Capacity Building Program) has been the primary vehicle through which IRP has offered management training in the transport sector. Since its inception, IRP has provided training for a total of 998 Afghans, including 69 IRP staff, 304 sub-contractors, and 625 Afghan ministry staff. Highlights of management training that are specific to TO 14 will be covered in the next section.

Exhibit 18:

Number of People Trained in Transport Management Fields

Inception - 31 Mar 2010

Training Type	Task Order	IRP Staff			Sub-Contractors			Afghan Ministry Staff			Grand Total
		Male	Female	Total	Male	Female	Total	Male	Female	Total	
Formal	TO 1	28	2	30	0	0	0	0	0	0	30
	TO 7	0	1	1	0	0	0	0	0	0	1
	TO 8	3	0	3	0	0	0	0	0	0	3
	TO 14	32	3	35	304	0	304	625	0	625	964
	Total		63	6	69	304	0	304	625	0	625
Informal	TO 14	11	0	11	0	0	0	2	0	2	13
	Total		11	0	11	0	0	2	0	2	13
Grand Total		63	6	69	304	0	304	625	0	625	998

Note: In the previous monitoring report, "Semi-Annual Monitoring Report: April 2009 – September 2009," some sub-contractors and Ministry staff management training figures were mistakenly interchanged and/or double-counted. These figures have been corrected in this report.



IV.7 OUTCOME INDICATORS FOR TASK ORDER 14

As stated earlier, Task Order 14 has a special focus on capacity building, and this section provides more detail as to the types of training that have taken place with this task order. IRP, under TO 14, conducts training specifically measured by three output indicators, Number of People Trained in Transport Management; Staff Capability with Technical Equipment; and Staff Capability in Report Writing. As the program continues to expand, further measures will be employed to test the trainings' effectiveness. Training highlights under TO 14 during the past monitoring period (Oct. 2009 – Mar. 2010) include the following:

- **Preparation of a Bid Proposal:** In an effort to strengthen local contractor capacity, in four provinces across Afghanistan—Balkh, Herat, Kabul, and Kandahar—246 subcontractors participated in training designed to help contractors prepare a competitive bid package. Topics included the following: the project scope of services, how to submit a bid price proposal, what information to include in a technical proposal, and what additional certifications and forms are required for a proposal submission.
- **GPS Device Training:** Sixty-one ministry staff and subcontractors were trained on the use of GPS devices, which are used as a tool for recording and reporting accurate location coordinates.
- **Road Planning:** Trainings took place in nine provinces and accommodated 96 IRP staff as well as ministry staff. The formal presentations and on-the-job training included how to do the following: collect axle load data using weigh scales, collect pavement deflection data using a Falling Weight Deflectometer (FWD), collect road roughness data using a roughometer, collect pavement core samples using a core drill, and collect manual and windshield traffic count data. All of this data collection will be used to prepare a Multi-Year Investment Plan for periodic and routine maintenance and rehabilitation using the World Bank's Road Economic Development Model (RED) and Highway Development Model (HDM-4) to create goals and estimate budget requirements.
- **Road Monitoring:** Road monitoring is a critical quality assurance requirement of operations and maintenance of a completed roadway. Forty-eight IRP staff, ministry staff, and subcontractors participated in routine roadway monitoring on-the-job training which entailed conducting site visits and producing field mission reports, strip maps, and photo documentation required for determining whether subcontractors were meeting the level of service required by their performance-based O&M contracts. Additional training included emergency event reporting, estimating, and processing necessary for acting on emergency maintenance needs.
- **Road Maintenance:** Formal trainings were held in Kabul for a variety of road maintenance topics. The trainings were technical in nature and included base and sub-base repair, cleaning ditches and basins, pothole repair, depression repair, road surface treatments and drainage, and replenishment of earth and gravel shoulders. In all, 56 Ministry staff and 23 subcontractors attended these formal classroom trainings. An in-depth course on routine versus emergency maintenance also took place where 4 IRP staff and 45 ministry staff attended.
- **Planning and Scheduling Processes:** Formal training for 47 IRP staff and subcontractors was conducted on planning and scheduling processes, which included content on how to create a

project activities list, estimate activity duration, create a Gantt Chart, create a logic diagram, create a Critical Path Method diagram, calculate float, and create an Early Start Schedule.

IV.7.1 STAFF CAPABILITY WITH TECHNICAL EQUIPMENT

Successful O&M of rehabilitated roads depends on the existence of effective technical professionals. Because one of the components of the Road O&M / Capacity Building Program is to train personnel in the use of various kinds of technical equipment (laptops, GPS devices, digital cameras, etc.), this performance indicator measures the degree to which this formal training component has been effective by monitoring the success rate of equipment use in the field by IRP staff, MPW personnel, and local contractors. In this reporting period, GPS usage was tested, and 100 percent of both Ministry staff and local contractors demonstrated effective usage of the GPS devices. Eleven IRP staff were trained on the usage of the deflectometer and also the roughometer and have proven themselves to be proficient in both. While success rates and results were focused on IRP staff achievement during this reporting period, steps are underway to ensure future record-keeping of success rates for Ministry staff and subcontractors. Exhibit 19 displays the staff capability results of TO 14 trainings over the six-month reporting period in Technical Equipment, Staff Capability, and Data Collection and Analysis.

IV.7.2 STAFF CAPABILITY IN REPORT WRITING

For this reporting period, 17 IRP staff, 29 Ministry staff, and 250 subcontractors received training in report writing topics. Records regarding success rates of the trainings were not maintained, and this is a metric that will receive IRP's attention for the next reporting period.

IV.7.3 STAFF CAPABILITY IN DATA COLLECTION AND ANALYSIS

The emphasis of Data Collection & Analysis training is on learning the proper methods and theories for data gathering. Success rates were tabulated primarily for IRP staff, and a passing rate was required before an individual was allowed to perform data collection in the field. IRP staff trained in axle load surveying, collecting axle load weight data, collecting falling weight deflection data, and collecting roughness data all passed their respective examinations. In addition, 14 Ministry staff successfully completed axle load weight data collection training. Steps are underway to ensure the record-keeping of success rates for Ministry staff and subcontractors as well.

Exhibit 19:

AFGHAN CAPABILITIES ACROSS VARIOUS FIELDS				October 2009 - March 2010			
Training Type	IRP Staff		MPW Staff		Local Contractors		Total Trained
	Number Trained	Success Rate	Number Trained	Success Rate	Number Trained	Success Rate	
Technical Equipment							
GPS devices			45	100%	16	100%	61
Faststone Software			44	N/A			44
Falling Weight Deflectometer	11	100%					11
Roughometer	11	100%					11
Total	11		45		16		72
Report Writing							
Emergency event reporting, estimation and processing	17	N/A			16	N/A	33
Field Mission Report for Information Gathering	16	N/A	39	N/A	10	N/A	65
Prepare a request for proposal (RFP)					246	N/A	246
Total	17		39		250		306
Data Collection & Analysis							
Axle Load Survey	11	100%					11
Collect Axle Load Weight Data	7	100%	14	100%	10	N/A	31
Collect Falling Weight Deflection Data	7	100%					7
Collect Manual Traffic Count Data	11	N/A	43	N/A			54
Collect Roughness Data	7	100%					7
Pavement Core Sampling	6	N/A					6
Total	11		45		10		66
Grand Total	17		84		266		367

Note: While detail rows show the total number of trainings, the totals and grand totals rows show individuals trained. Given that many individuals attended multiple types of trainings, the totals and grand total rows are not the direct sum of the detail rows. "N/A" signifies trainings where testing was not conducted.



IV.8 NUMBER OF PEOPLE BENEFITTING FROM TRANSPORTATION INFRASTRUCTURE PROJECTS

The purpose of expanding transport infrastructure is to increase access to markets and social services for the population within the road’s so-called “zone of influence” (ZOI). This indicator measures the number of people most directly benefitting from the road’s rehabilitation or construction.

For reporting purposes, IRP begins including the percentage of the road’s ZOI population in the calculation of this indicator once an initial layer of asphalt has been laid. Since the last reporting period, the extent of the Keshim–Faizabad Road (TO 4) that has been paved in the intervening time is not appreciably different, so the estimate of 173,000 people benefitting remains the same as that reported from the last period.

The Gardez–Khost Road (TO 8), however, now has 49 km of road that is paved with 27 km on the Gardez side and 22 km on the Khost side. The ZOI is 15 km on either side of the center line of the road. The IRP Team calculated the population benefitting from the road by using the 2008-09 CSO data²⁰ combined with a map that the AEIC produced using a USDMA topographic map and AIMS district boundary data, which outlined the road’s ZOI. IRP estimates the number of people benefitting from the Gardez–Khost Road as 395,000 people. Given that Gardez and Khost are the most densely populated areas on the road, it has already reached the vast majority of potential beneficiaries. In addition, surveyors and managers have already noticed commercial establishments and residential construction taking place along the road. Unofficially, it is assumed that trade with neighboring towns in Pakistan has been a positive consequence of the completion of the road. As mentioned earlier, upcoming socioeconomic surveys are planned for the corridor, and qualified detailed results will highlight the impacts of the road’s construction. Exhibit 20 below provides cumulative beneficiary estimates for the roads IRP has worked on since its inception.

Exhibit 20:

Number of People Benefitting from Transportation Infrastructure Projects Inception - 31 Mar 2010	
Task Order	Estimated Beneficiaries
TO 4	173,000
TO 8	395,000
TO 18	16,000
Total	584,000

Note: The estimated beneficiaries reported for TO 18 is as of September 2009.

²⁰ Afghan CSO population data is notoriously inaccurate since it is merely an extrapolation based on census data from the 1970s. Consequently, the data we provide for the number of people benefitting from the road must be taken as rough estimates based on the best data available.

IV.9 NUMBER OF SECURITY INCIDENTS

The number of security incidents during a task order implementation is an indicator which allows USAID to determine the security situation and the perceived and actual threats to civilians along a task order's physical zone of influence (ZOI). IRP has made every effort to obtain security incident data from as many sources as possible. Requests for data retrieval were made from multiple organizations. Information was successfully obtained from the USAID SSO (through a database compiled by IRD), the National Counter Terrorism Center's (NCTC) Worldwide Incidents Tracking System (WITS), and the Afghan NGO Safety Office (ANSO).

The WITS output slightly differs in form and definition from the SSO output, and ANSO output was used strictly to gauge national security trends. The WITS data tracks "terrorist incidents," defined as occurring when "groups or individuals acting on political motivation deliberately or recklessly attack civilians/non-combatants or their property and the attack does not fall into another special category of political violence, such as crime, rioting, or tribal violence." Since it only tracks incidents at the provincial level, the data is of limited usefulness for this indicator, given that each IRP road only transects one part of the province it is in. While the SSO data tracks "security incidents" at a district level, it only tracks incidents occurring in the districts where USAID-sponsored infrastructure projects are taking place. Additionally, its focus is on incidents that affect USAID projects. This limits the usefulness of the data for this indicator, since the SSO data will naturally show a decrease in incidents once the project is completed. Ideally, for this indicator a broader set of data could be acquired that tracks all types of security incidents at the district level. Unfortunately, good security data is very difficult to obtain. Noting these limitations, the data still provides some useful insights into security situation in the areas where IRP road projects are being carried out.

There are a few additional general provisos to make with respect to the data. IRP cautions against placing too much emphasis on such statistical data when analyzing security situations because it may not give the whole story. The NCTC warns that such data "may tell us little about the international community's effectiveness either for preventing...or for reducing" terrorism for several reasons.²¹ The data collection process relies upon incomplete, ambiguous information that is difficult to obtain and highly subjective in nature. Also, the data may not capture how various factors are weighted differently. For example, though an attack that kills 100 people may be more severe than an attack that merely damages a pipeline, both are given equal statistical weight as one incident. Additionally, tallied statistics do not account for motives. Thus they do not account for whether attacks were motivated by opposition to a project itself or for other reasons. Nonetheless, the data can still help to shed light on the security situation. In the case of SSO data, while the available data from its initial set of sources is accurate, IRD clarifies that the first version of its database output is as of April 2010, and a few more weeks or months will be needed to ensure that incident data is received from all available sources. Due to the differing sources of data used by these two reporting organizations as well as to the varying definitions that these organizations use for counting security incidents, the information from NCTC-WITS and SSO do not necessarily converge to offer one synchronized picture of the security situation on the constructed roads. Therefore, precise comparisons between the two sets of data should not be drawn.

The following two exhibits display security incidents data as provided by NCTC-WITS and SSO, respectively. It should be noted that the NCTC-WITS data is cumulative from the inception of the individual task orders while the SSO data is only available for the six-month timeframe corresponding to

²¹ National Counterterrorism Center, "2008 Report on Terrorism," 30 April 2009, <http://wits.nctc.gov/Reports.do?f=crt2008nctcannexfinal.pdf> [accessed on April 21, 2010]

the current reporting period. Full historical data should be available from the SSO by the next reporting period, whereby an understanding of the security incidents throughout the task orders' lifetime will be available.

As the figures in the exhibits indicate, security continues to be a vital issue across the country. In addition to observing a 35 percent growth in Armed Opposition Group (AOG) attacks for the first three months of 2010 over the same period in 2009, ANSO has reported that the overall number of security incidents remains at heightened levels compared to previous periods.²² For the medium term, ANSO adds that as international military forces draw-down personnel and equipment from Afghanistan, there is "concern that the intense devolution of authority occurring during (the draw-down period) could seed new rounds of factional conflict after the withdrawal." Therefore, while current security incidents hinder the construction and safety of the roads, factional strife is predicted as the most serious threat to the continued and effective O&M of the constructed roads.

Exhibit 21: Security Incidents and Victims by TO Province during TO Implementation (Inception – 31 March 2010)

Province & Task Order	Province	Commencement	TO Status	Incidents	Dead	Wounded	Hostages	Total
TO4 Keshim-Faizabad Road	Badakshshan	Feb-07	Ongoing	24	27	53	10	90
TO3.15 Southern Strategy Road	Kandahar	Jun-08	Completed 08/2008	37	100	73	9	182
TO8 Gardez-Khost Road	Paktya and Khost	May-07	Ongoing	424	549	857	149	1555
TO18 Southern Strategy Road	Kandahar	Sep-08	Completed 06/2009	127	310	396	12	818
Total				612	986	1379	180	2645

Source: NCTC Worldwide Incidents Tracking System, as of 31 March 2010.

²² ANSO, "ANSO Quarterly Data Report Q.1 2010," April 2010, p.11
<http://www.afgnso.org/2010/ANSO%20Q.1%202010.pdf>, [accessed on 16 October 2009]



**Exhibit 22: Security Incidents and Victims by Task Order and District – USAID SSO
(1 Oct. 2009 – 31 Mar. 2010)**

Security Incidents and Victims by TO and District - USAID SSO					
Oct 2009 - Mar 2010					
Province & Task Order	District	Incidents	Dead	Wounded	Total Casualties
Badakshan - TO 4					
	Arghanj Khwa	0	0	0	0
	Argo	0	0	0	0
	Darayim	0	0	0	0
	Faizabad	0	0	0	0
	Keshim	0	0	0	0
	Khash	0	0	0	0
	Shahri Buzurg	0	0	0	0
	Tishkan	0	0	0	0
	Yaftali Sufla	0	0	0	0
Khost - TO 8					
	Gurbuz	1	0	0	0
	Khost	10	1	5	6
	Manduzay (Esmayel Khel)	12	2	4	6
	Musa Khel	6	0	2	2
	Nadir Shah Kot	0	0	0	0
	Qalandar	4	0	0	0
	Sabari (Yaqobi)	0	0	0	0
	Shamul	2	3	1	4
	Spera	0	0	0	0
	Tanay	0	0	0	0
	Trayzayee (Ali Sher)	0	0	0	0
Paktia - TO 8					
	Ahmadaba	0	0	0	0
	Gardez	13	10	14	24
	Jani Khel	2	0	2	2
	Sayyid Karam	0	0	0	0
	Shwak	0	0	0	0
	Wuza Jadram	0	0	0	0
	Zurmat	2	0	0	0
Total		52	16	28	44

Source: USAID SSO

Note: Hostage data is not currently available by the USAID SSO.



IV.10 ANNUAL AVERAGE DAILY TRAFFIC COUNTS

The number of vehicles travelling on IRP project roads over the course of seven days is being measured each quarter. Exhibit 23 displays the results of the traffic count on the Keshim–Faizabad road. The road is 81 percent complete and is already experiencing large increases in traffic volumes. Since there is substantial seasonal variation in traffic volumes, the full magnitude of the changes in traffic volume will be seen more clearly in the next two quarterly traffic counts, which will allow for comparisons between similar seasons. One concern in terms of the long-term sustainability of these roads is that traffic counters noted that trucks travelling towards Faizabad appeared overloaded.

Exhibit 24 illustrates the traffic counts for the Gardez–Khost Road. It is too early to draw conclusions regarding the impact of this road on traffic volume. As mentioned above, comparisons are best done between traffic counts conducted during similar seasons of the year. As with the Keshim–Faizabad Road, a more complete analysis will only be possible after having conducted more traffic counts.

Exhibit 23: Keshim–Faizabad Road Traffic Count (Oct. 2009 – Mar. 2010)

Vehicle Type	Passenger Vehicles						Freight Vehicles					
	Motorcycle		Car		Minibus		Large Bus		2-Axle Truck		3+ -Axle Truck	
Count Location	Keshim	Faizabad	Keshim	Faizabad	Keshim	Faizabad	Keshim	Faizabad	Keshim	Faizabad	Keshim	Faizabad
Traffic Counts (Two Way)												
April 2009 (12 hr)	17	81	198	426	NA	NA	0	1	5	34	89	100
July 2009 (24 hr)	29	24	158	196	65	82	1	0	26	17	112	163
October 2009 (24 hr)	70	83	293	380	70	121	0	9	26	35	169	266
January 2010 (24 hr)	52	105	319	662	54	156	1	4	38	52	101	166

Exhibit 24: Gardez–Khost Road Traffic Counts (Oct. 2009 – Mar. 2010)

Vehicle Type	Passenger Vehicles						Freight Vehicles					
	Motorcycle		Car		Minibus		Large Bus		2-Axle Truck		3+ -Axle Truck	
Count Location	Gardez	Khost	Gardez	Khost	Gardez	Khost	Gardez	Khost	Gardez	Khost	Gardez	Khost
Traffic Counts (Two Way)												
October 2007 (12 hr)	137	77	748	917	N/A	N/A	21	19	394	242	145	117
July 2009 (24 hr)	160	N/A	738	N/A	122	N/A	22	N/A	402	N/A	228	N/A
February 2010 (24 hr)	16	61	405	559	77	69	9	51	168	117	105	199

Note: February totals are markedly lower due to inclement winter weather.

Exhibit 25:

