

**WATER MANAGEMENT ASSISTANCE PROGRAM  
FOR UZBEKISTAN AND TAJIKISTAN  
Special Initiatives Water Project (SIWP)**

**TASK C: INTEGRATED WATER MANAGEMENT ACTIVITIES**

**SUBTASK C-1: SURKHANDARYA WATER DISTRICT IMPROVEMENTS FINAL REPORT;  
AND REPORT ON SURKHANDARYA SHALLOW WELLS PILOT PROJECT**

**CENTRAL ASIA NATURAL RESOURCES MANAGEMENT PROGRAM**

**Special Initiatives Water Project  
Contract No. LAG-I-00-99-00019  
Task Order No. 812**

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## LIST OF ACRONYMS

|              |  |
|--------------|--|
| <b>ADB</b>   | Asian Development Bank   |
| <b>BISA</b>  | Basin Irrigation Systems Authority                             |
| <b>CAIP</b>  | Southern Uzbekistan Community Action Investment Program        |
| <b>CBO</b>   | Community-based organization                                   |
| <b>CEN</b>   | Community Improvement Network Project                          |
| <b>CHF</b>   | CHF International (an international NGO)                       |
| <b>GIS</b>   | Geographic Information System                                  |
| <b>GPS</b>   | Global Positioning System                                      |
| <b>LAN</b>   | Local Area Network   |
| <b>LoA</b>   | Letter of Appreciation   |
| <b>MAWR</b>  | Uzbekistan Ministry of Agriculture and Water Resources         |
| <b>NGO</b>   | Non-Governmental Organization                                  |
| <b>NRMP</b>  | Natural Resources Management Program                           |
| <b>PA</b>    | PA Government Services Inc.                                    |
| <b>PC</b>    | Personal Computer  |
| <b>PSA</b>   | Public Service Announcement                                    |
| <b>SAAWR</b> | Surkhandarya Administration of Agriculture and Water Resources |
| <b>SIWP</b>  | Special Initiatives Water Project                              |
| <b>TOR</b>   | Terms of Reference   |
| <b>UPS</b>   | Uninterruptible Power Supply                                   |
| <b>USAID</b> | United States Agency for International Development             |
| <b>WB</b>    | World Bank   |
| <b>WDSBP</b> | Water Demand and Supply Balance Program                        |

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## EXECUTIVE SUMMARY

The Water Management Assistance Program for Uzbekistan and Tajikistan, also referred to as the Special Initiatives Water Project or SIWP funded by the United States Agency for International Development (USAID) and implemented through its Prime Contractor, PA Government Services Inc. (PA) under Task Order 812 of Contract Number LAG-I-00-99-00019, provided technical assistance and substantial commodity support to the Governments of Uzbekistan and Tajikistan to improve the management of the countries' critical water resources. An important component of the SIWP, was water district improvements in the Zarafshan and Surkhandarya river basins. During the implementation of the project, the Ministry of Agriculture and Water Resources (MAWR) of the Republic of Uzbekistan embarked on a significant reform by reorganizing the management of river basin resources from a system based on political subdivisions to one based on hydrographic units. Accordingly, assistance on water district improvements was carried out in cooperation with the newly formed Basin Irrigation System Authorities (BISAs).

The purpose of the task that is the subject of this report was to increase the ability of water managers to measure, control, and allocate water resources in critical areas of the Amu-Surkhan Basin. Meetings were held with the head of the counterpart agency in Surkhandarya Oblast, the Surkhandarya Administration of Agriculture and Water Resources (later reorganized during 2003 into the Amu-Surkhan BISA). Field visits were also carried out and preliminary assessments were made, which revealed much of the infrastructure required was in far worse condition than originally assumed by USAID and required significant repair to restore it to a condition of good functionality.

After discussions with the MAWR and the Amu-Surkhan BISA, and consultation with USAID, the following activities were ultimately undertaken in implementation of the task:

1. Heavy equipment procurement to assist with the maintenance and rehabilitation of canals and canal structures;
2. Technical assistance and funding to restore and improve the operating capacity of critical water control structures;
3. Technical assistance and funding for improvements to communications for data transfer and command capability throughout the system;
4. Construction or rehabilitation of dispatch office facilities;
5. Development of a computerized water database;
6. Training of management and operations staff in improved water management technologies including computer applications;
7. Demonstration of shallow wells for supplemental irrigation water supply; and

Promotion of public awareness and conduct of public outreach on the importance of informed and responsible water resource management, and specifically the actions taken by USAID in cooperation with the Amu-Surkhan BISA

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## 1. INTRODUCTION

Since September 1, 2000, USAID has been providing assistance to the countries of Central Asia, including Uzbekistan, under Contract Number 284-C-00-00025-00, to improve integrated management of natural resources, including energy, with PA as the prime contractor. The Water Management Assistance Program for Uzbekistan and Tajikistan, also referred to as the Special Initiatives Water Project or SIWP, funded by USAID and commenced May 1, 2002, under Task 812 of Contract Number LAG-I-00-99-00019, was designed to build upon USAID's previous water sector work by providing technical assistance and substantial commodity support to the Governments of Uzbekistan and Tajikistan to improve the management of the countries' critical water resources. Work under the SIWP was carried out through the USAID-funded Central Asia Natural Resources Management Program (NRMP) managed by PA. An important component of the SIWP was water district improvements in the Zarafshan and Surkhandarya river basins. During the implementation of the project, the Ministry of Agriculture and Water Resources (MAWR) of the Republic of Uzbekistan embarked on a significant reform by reorganizing the management of river basin resources from a system based on political subdivisions to one based on hydrographic units. Accordingly, assistance on water district improvements was carried out in cooperation with the newly formed Basin Irrigation System Authorities (BISAs).

From the break-up of the Soviet Union, the effectiveness of the systems required to control and allocate the water resources of the Aral Sea basin has been reduced. This is largely due to a deterioration of regulating structures and migration of trained personnel. The systems are in need of improved flow measurement, control, and data/command transmission capability. Irrigation improvements are needed throughout Uzbekistan to ensure the stability of agricultural production systems and reduce the potential for conflict over water allocations. One area identified as particularly critical is the strategically sensitive Surkhandarya Oblast bordering Afghanistan, Tajikistan, and Turkmenistan, where the livelihood of 1.7 million persons depends heavily on irrigated agriculture. Figure 1 shows a map of Surkhandarya Oblast.

The irrigation system of Surkhandarya is large and complex, with over 1,500 km of main line canals crisscrossing nearly 10,000 square kilometers of gross area. The irrigation system of Surkhandarya serves over 300,000 hectares of irrigated area, and directly impacts the lives of the majority of the population of Surkhandarya Oblast.

Over 200 m<sup>3</sup>/s of water enters the system during the irrigation season. Approximately half enters the Amu-Zang portion of the system from the Amu Darya through a series of pumping stations. Typical lift is 60 meters or more although depending on the destination total lift may be over 100 m. The value of this pumped water is very high, on the order of \$40 to \$50 per thousand cubic meters (tcm) or more based on comparative international costs. This implies that the value of the pumped water is roughly \$50 million per year. It can be demonstrated that in Surkhandarya the cost of pumping water is equal to about 50% of the total value of the crop produced (assuming cotton). Although the subsidies to the agricultural sector are such that the payments for electrical power are far less than the actual cost of production, these costs are still incurred by the government of Uzbekistan. Figure 2 shows a schematic map of the main canal system of the Surkhandarya irrigation system.

Studies have indicated that overall delivery efficiencies throughout Central Asia typically range from 30% to 40%. Main canal losses are 20% or more depending on the system configuration. Losses are generally attributed to evaporation, seepage, infiltration, and

unauthorized abstractions. Although the majority of water is lost at farm and field levels, the reliability of the main canal system is fundamental to the efficiency and effectiveness of the entire system. On-farm and in-field methods used are in response to main system supplies (timing and quantity). Improvements to water use below the main canal turnout can generally only be effective if timing and quantities of water delivery are reliable.

It is within this context that the Surkhandarya Water District Improvements task under the SIWP began. Upon completion of preliminary assessments it was determined that the relevant infrastructure was degraded beyond USAID assumptions, severely impeding effective system management. The scope of work encompassed most of the irrigated areas of Surkhandarya, and after consultation with the counterpart and USAID the fundamentals of the task were agreed upon, including provision of heavy construction equipment and vehicles for system rehabilitation and maintenance, implementation of civil works to improve and rehabilitate canal water control structures, procurement and installation of an effective communication system, development of a database to enhance analytical capabilities, and a pilot project to demonstrate shallow wells for conjunctive water supply.

Figure 1: Map of Surkhandarya Oblast

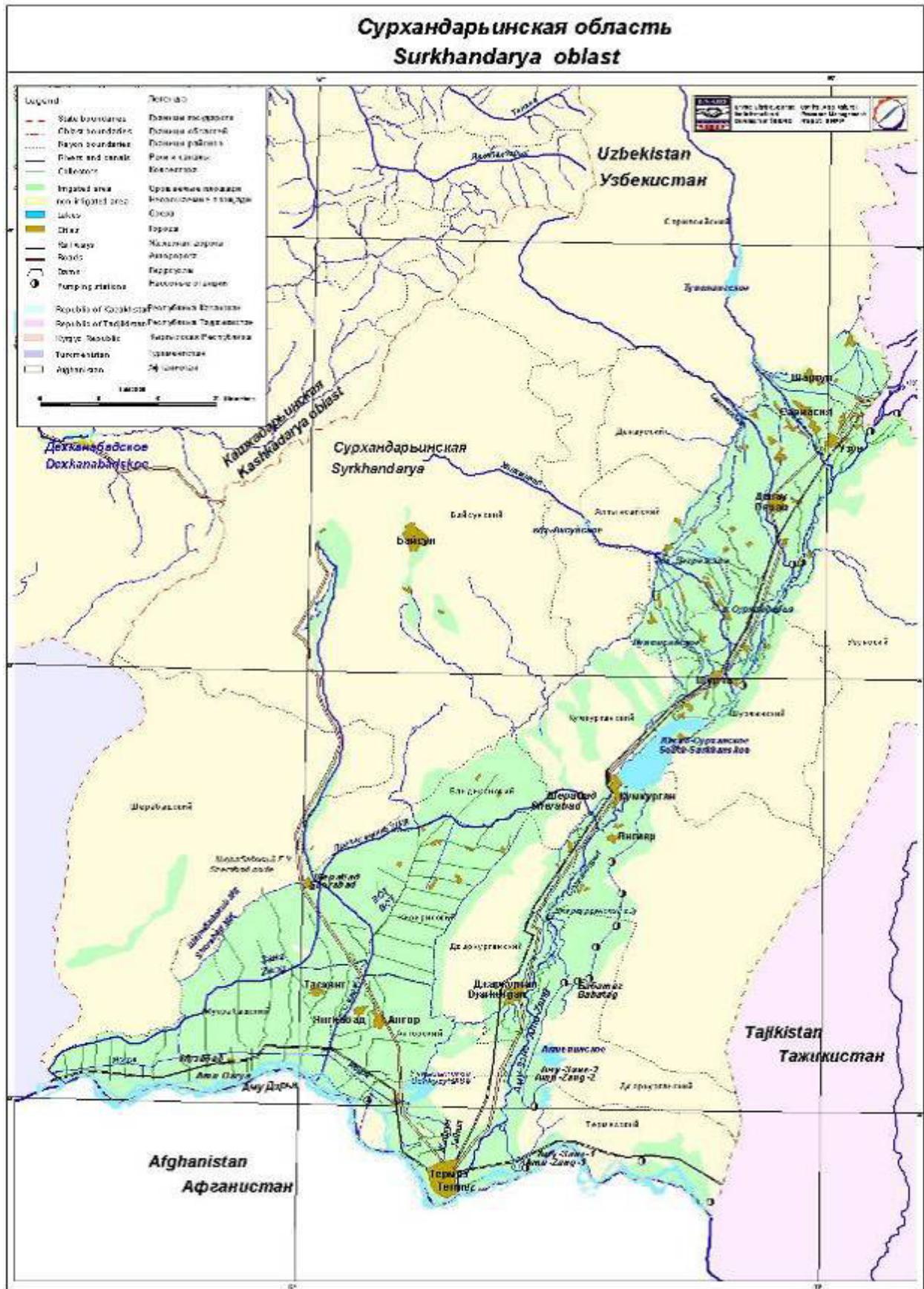
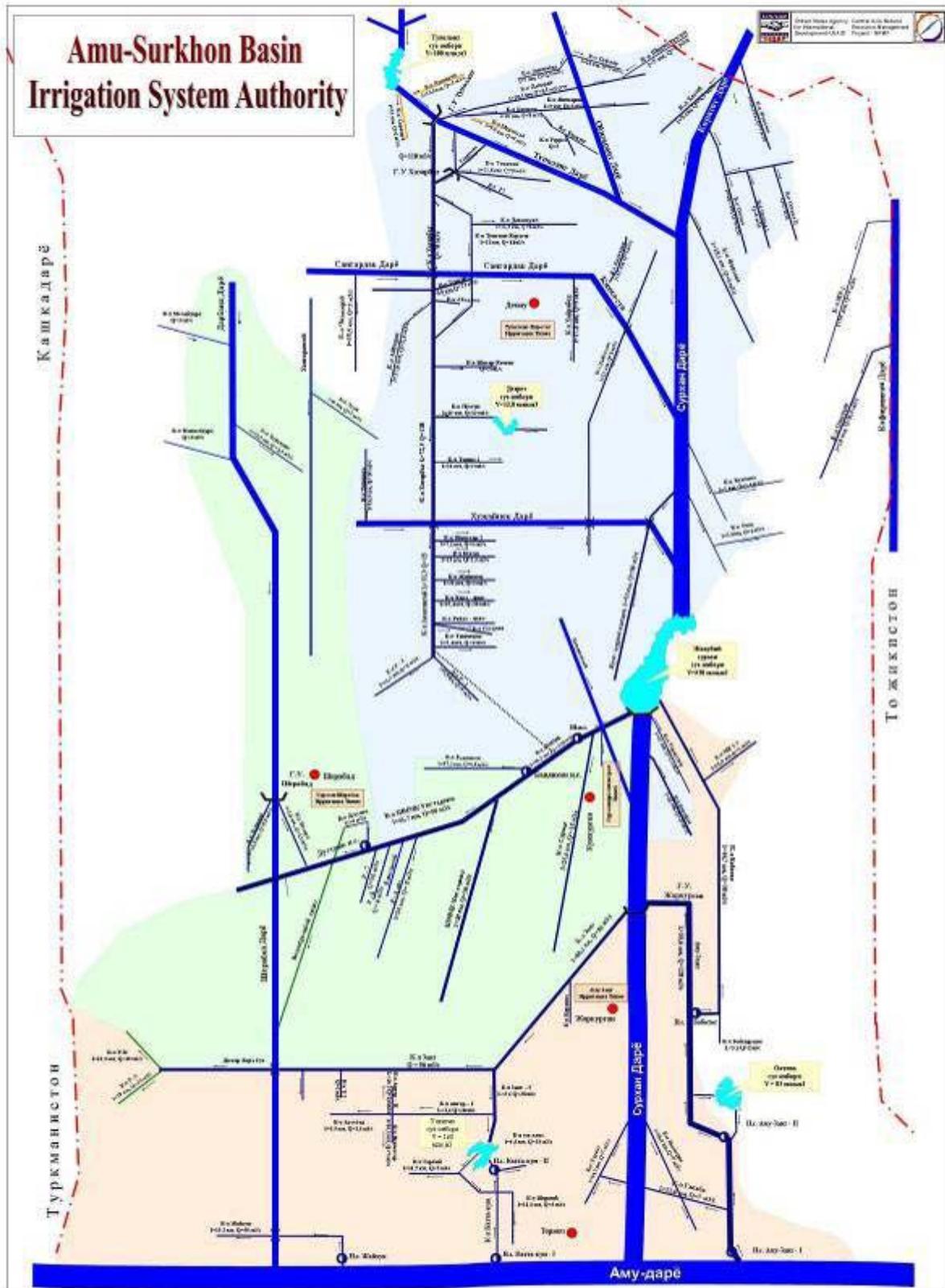


Figure 2: Schematic of Surkhandarya Irrigation System



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## **2. COOPERATIVE AGREEMENT BETWEEN THE MINISTRY OF WATER RESOURCES OF UZBEKISTAN AND NRMP**

A cooperative agreement (CA) was drawn up and signed between the Ministry of Water Resources of Uzbekistan and NRMP in November 2001 covering previous USAID-funded work in Surkhandarya Oblast.

With the much expanded work program under the SIWP, it was decided to develop a new cooperative agreement between the parties. This agreement set out the responsibilities of both parties in implementation of the Surkhandarya Water Districts Improvement Project. Both parties have concurred on the contents of this agreement. The full agreement is available from the NRMP offices in Tashkent. Briefly, the components of the Task included in the CA are as follows:

1. Provision of vehicles and construction heavy equipment for irrigation system repairs, maintenance, and improvements;
2. Rehabilitation and/or construction and improvements to selected irrigation water control office facilities;
3. Improvements and upgrades to selected irrigation canal flow measurement structures and communications;
4. Improvements and upgrades to selected irrigation canal flow control structures and communications;
5. Provision of office space and security for computers, communications equipment, other electrical/electronic equipment, etc.;
6. Development of a computerized Water Database for improving irrigation water demand and supply forecasting and management;
7. Training of management and operations personnel;
8. Demonstration of shallow wells for conjunctive use of groundwater for supplemental irrigation water supply; and
9. Promoting public awareness and public relations related to water and natural resources management, the Surkhandarya Water Districts Improvements Task, SIWP, NRMP, USAID, etc.

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### 3. PROGRAM DEVELOPMENT AND JUSTIFICATION

Under the original terms of reference (TOR) for the Task (Subtask C-1: Surkhandarya Water District Improvements) technical assistance, communications and control equipment, computers, civil works, and training were all mentioned. The demonstration of shallow wells for conjunctive use was given somewhat more detailed coverage.

The Task was formally initiated on May 1, 2002. Technical staff arrived on site June 1, 2002. During the months of June through September 2002 a number of field surveys were conducted by Task technical personnel. Many discussions were also held with the head of the counterpart agency in Surkhandarya Oblast, the Surkhandarya Administration of Agriculture and Water Resources (SAAWR). This organization was responsible for the management, operations, and maintenance of the irrigation works of Surkhandarya at the time the Task was initiated. This organization was restructured during 2003, and renamed the Amu-Surkhan Basin Irrigation System Authority (BISA).

During initial field visits to Surkhandarya local counterpart staff indicated that assistance from the NRMP to rehabilitate canal control infrastructure was not required. However, based on several subsequent field visits and additional discussions with local staff, Task engineers felt that an independent assessment of the state of the base infrastructure was warranted. Qualified local irrigation infrastructure specialists were identified and contracted to provide preliminary assessments of the fundamental state of canal control structures and associated hydromechanical and electrical equipment. It was subsequently determined that much of the infrastructure required significant repair to be brought to a condition of good functionality, and as a definite prerequisite to any consideration of automation.

Individual reports (some in Russian only) on the preliminary assessments undertaken by local technical specialists are available at the NRMP office in Tashkent. The preliminary assessments include:

- Structural Works Preliminary Assessment (Canal Structures)
- Hydromechanical and Electrical Works Preliminary Assessment (Canal Structures)
- Reservoir Works Preliminary Assessment
- Pumping Station Works Preliminary Assessment
- Hydropost Location Preliminary Assessment

Task technical specialists conducted other preliminary assessments of communications and automation options. Several short reports on these topics are also available at the NRMP office in Tashkent.

As a result of these assessments, a summary list of infrastructure rehabilitation needs were identified. Appendix A presents this initial list, which was used to select specific sites and components for implementation under the Task. Some items, such as rehabilitation of pumping facilities within the system, were not implemented after further review of priority needs and the available budget. For example, since the Asian Development Bank (ADB) and the Government of Uzbekistan are developing a loan program for the rehabilitation of major pumping facilities within the Surkhandarya irrigation system, it was deemed best to

concentrate on other portions of the irrigation system. Flow measurement infrastructure was also eliminated later from the Task, as it was expected this may be implemented under the project being developed by the ADB and the Government of Uzbekistan.

The assessments by local specialists, Task technical staff, and local counterparts, clearly indicated that the lack of water control capability and canal flow information were major constraints to effective and efficient system management. The existing canal control infrastructure was found to be in a degraded condition well below the assumptions of the Task TOR. The need to improve flow monitoring and canal control infrastructure was seen to be of fundamental importance. Rehabilitation of a number of key flow control structures to provide basic operational function was identified as a critical priority. The need to improve flow measurement throughout the system, along with improvements to the 2-way communications and data management infrastructure were also identified as a top priority. Without adequate and timely knowledge of system inflows and distribution flows and the ability to effect basic system control, structural automation was deemed to be of questionable benefit. Therefore, the Task concept shifted somewhat from automation of canal control structures to structural rehabilitation and improvements to communications and automatic flow measurement. Discussions with Surkhandarya counterparts confirmed their agreement with this shift of focus. Preliminary budgets and work scoping followed this concept.

Based on the CA and the other considerations above, Task technical staff and local counterparts developed a suite of improvements to address the identified constraints (within the extent of available budget). The program of improvements addressed both structural and operational constraints.

Nine components formed the core of the improvement program as initially developed. These components closely follow the CA and identified priority needs for the system. They are listed below:

8. Heavy equipment procurement to assist with the maintenance and rehabilitation of canals and canal structures;
9. Technical assistance and funding to restore and improve the operating capacity of critical water control structures;
10. Technical assistance and funding for improvements to communications for data transfer and command capability throughout the system;
11. Construction or rehabilitation of dispatch office facilities;
12. Technical assistance and funding to restore and improve the function of flow monitoring stations at key locations throughout the system;
13. Development of a computerized water database;
14. Training of management and operations staff in improved water management technologies including computer applications;
15. Demonstration of shallow wells for supplemental irrigation water supply; and
16. Promoting public awareness and public relations related to water and natural resources management.

The justification for each of these components is summarized below:

## 1. Heavy Equipment Procurement

Heavy equipment and light vehicles for canal inspections and maintenance operations were identified as a top priority by national and local counterparts. The counterpart agency in Surkhandarya had almost no equipment in working condition for canal inspection and maintenance prior to USAID/NRMP assistance. As a result, cleaning of canals and drains could not be carried out and construction and maintenance of various structures could not be performed. Due to siltation, actual canal carrying capacities had become well below design capacities, resulting in reduced and unreliable water deliveries to downstream users.

## 2. Improvements to Canal Water Control Structures

As noted above, the operational capability and in some cases structural integrity of many important canal control structures was found to be poor. Many gates structures were only partially functional or could only be operated with difficulty. Without the ability to effectively control the flows through the various branches of the system, efficient and reliable delivery is impossible.

## 3. Improvements to Communications

The irrigation system extends more than 100 km from end to end and covers a gross area of nearly 10,000 square km. Communications throughout the system have become increasingly unreliable over the past 15 years. Telephone lines are in poor repair and an obsolete radio system is still functioning only in some locations. Without the ability to communicate critical flow information and operational directives in a timely manner the system cannot be operated efficiently and reliably. Modern communications technologies can convey both voice and data, greatly improving the speed and reliability of information flow and analysis.

## 4. Construction or Remodeling and Furnishing of Dispatch Office Facilities

There are many offices and operational stations throughout the Surkhandarya irrigation system. Most of the office and operations facilities are in poor condition, and in some cases non-existent. Rehabilitation of a number of existing offices, and the construction of additional facilities at key control points was required as preparation for communications and data management systems improvements.

## 5. Improvements to Flow Monitoring

Knowledge of inputs to, withdrawals from, and flows within the system is fundamental to effective operation and management. The irrigation system was equipped with a number of flow monitoring stations (hydroposts) at one time, but, similar to the canal control infrastructure, these have fallen into severe disrepair. In conjunction with the improvements to the communication system, modern instrumentation will allow reliable flow measurement at remote locations and rapid transmission of the information to a centralized location. Using a desktop PC, system administrators could quickly correlate system demand and supply, and implement operational adjustments.

## 6. Computer Program

The need for a Water Demand and Supply Balance Program (WDSBP) to correlate water demand and supply within the system was identified during the most preliminary assessment phases of the project, several years before the SIWP was formalized. In conjunction with the improvements to the communications and flow monitoring systems, this type of computer program would be of major value in improving overall water use efficiency.

## 7. Computer Training

The planned communications and flow monitoring improvements rely upon the use of computers for data recording, transmission, analysis and reporting. Improvements to system mapping were also seen as vital to improved system management. Training in modern PC applications was determined to be an important area of need for modernizing irrigation system management. Training in computer literacy is essential to increasing the use of computer databases and other modern management tools.

## 8. Shallow Wells Demonstration

In many irrigated regions around the world, including Surkhandarya, ground water levels are relatively high. In these areas, groundwater is easily accessible through the installation of low cost shallow wells. Shallow wells can be very beneficial to farmers, since despite the best efforts of the irrigation managers, canal deliveries to certain areas are sometimes irregular, especially in dry years. Groundwater from shallow wells can provide supplemental supply at the right place at the right time, and shallow wells have proven to be very popular in countries such as India, Pakistan, Bangladesh, the Philippines, and many others. Only simple manually operated equipment is required to install shallow wells in most locations. The use of shallow wells can also provide other benefits, such as lowering groundwater tables that are too high and reducing waterlogging problems. Lifting water a few meters for direct application is much more cost effective than delivering expensive pumped water long distances through a canal system (though the costs accrue to different agencies).

## 9. Public Awareness Activities

The dissemination of knowledge related to water as a limited resource is an important component of the NRMP. Public awareness of and input to the NRMP's activities is desirable to help assure sustainability of the water system improvements.

All of the nine components above were seen to compliment and reinforce each other, providing a synergistic effect and improving the total expected benefits of the program.

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## 4. IMPLEMENTATION

Narrative details on the implementation of the nine components forming the core of the improvement program are provided below:

### 1. Heavy Equipment Procurement

Through extensive dialogue with counterparts and research on available equipment a list of specifications and unit quantities was developed. Details were substantially complete by August 2002, and a request for procurement action was initiated at that time. Procurement of the requested units, with minor modifications, was completed between March and June 2003. Thirty-four units were supplied to the counterpart agency in Surkhandarya. A detailed list is included in Appendix B. Transfer of all of the equipment was completed at a ceremony in Termez on October 16, 2003. The equipment has been in nearly constant use since that time, and has provided major benefits to improving system maintenance and operations.

### 2. Improvements to Canal Water Control Structures

Improvements to the canal physical infrastructure proved to be one of the more challenging components of the overall improvement program. The most serious constraint was identified to be the short dry-canal construction window (typically from late November to late January). Certain critical and fundamental construction activities could only be conducted during this period. Only one dry season construction window (2002/3) was included under the Task implementation schedule as originally planned. The scope of work required during this period was large, but considered manageable from a construction standpoint under optimistic assumptions. The majority of the remaining work hinged on the construction of these items of base infrastructure. Risks and constraints to completing this phase under these optimistic assumptions were seen to be primarily in two areas: 1) preparation of technical design documents, and 2) the timeline requirements associated with procurement.

Local technical design specialists were identified who had particular knowledge and expertise related to the Surkhandarya irrigation system and were contracted to produce structural and hydromechanical design documentation as quickly as possible. The work was separated into several divisions and components so that construction activities could be initiated incrementally as the work was produced. Table 1 summarizes the initial design activities and illustrates the three work divisions.

Detailed designs and specifications were produced very quickly for all flow measurement sites (hydroposts) and all "Priority 1" structural rehabilitation sites. The list of work sites for "Priority 1" canal control structural rehabilitation and for hydropost construction is included in Appendix C.

The volume of design documentation associated with this work was considerable, totaling nearly 900 sheets, many of large-format size. Copies of the design documents are maintained and available at the NRMP offices in Tashkent. Design work was completed in stages between November 2002 and early January 2003.

**Table 1: Summary of Initial Design Activities**

|   | Work Division                        | Structural Component  | Hydromechanical Component   |
|---|--------------------------------------|---|---|
| 1 | Hydroposts (flow measurement sites)  | 42 sites evaluated and designs prepared   | none (to be linked with communications via automatic flow measurement instrumentation)          |
| 2 | Priority 1 Structural Rehabilitation | 30 structures evaluated and designs prepared  | 31 structures at 12 sites: designs prepared for gates, hoists and electrical works              |
| 3 | Priority 2 Structures                | 30 structures evaluated (design work to follow completion of Priority 1 structures) | 30 structures evaluated at 20 sites (design work to follow completion of Priority 1 structures) |

Contracting and procurement issues were addressed and the budget was evaluated, leading to the selection of eight structures for structural rehabilitation and 19 for hydromechanical and electrical rehabilitation. Because automatic flow measurement instruments were not considered practical until structural rehabilitation could be completed, the hydroposts (flow measurement sites) were eliminated from construction plans for the Task.

Structural rehabilitation work was initiated at the various work sites in March-July 2003. All structural remediation associated with canal control infrastructure was successfully completed by the end of April 2004. Replacement of the electrical control systems at 19 sites was also successfully completed.

Problems were encountered, however, with the replacement of hydromechanical equipment (gates and hoists). During March and May 2003, NRMP issued a number of separate contracts for the manufacture of approximately 100 units of hydromechanical equipment (gates and hoists) for 19 canal control structures. Contracts for the production of gates were given to production firms based in Tashkent and Andijan. Two of these firms were contracted for the production of hoists of local standard design. The production of the hoists became particularly problematic. Both production firms involved in hoist manufacture, although experienced in this type of work, had difficulty in producing various machine components to the required specifications. Many of the associated problems were not revealed until after the hoists were installed in the field and on-site testing was initiated. The recommendation was eventually made to terminate one of the firms, and to transfer their remaining scope of work to the other firm. In July 2003, several contracts for the installation of the gates and hoists and associated electrical work for these same 19 structures were awarded to the contractors engaged in the structural rehabilitation in Surkhandarya. The local contractors hired to perform the installation of the hoists could not complete their work during the lengthy period of identifying all latent hoist defects and negotiating with the hoist manufacturers for replacement parts or units. Remanufacture of a number of replacement hoist units was contracted to another contractor and the production and installation were implemented successfully.

Several photographs of structural rehabilitation work are included in Appendix G.

### 3. Improvements to Communications

Preliminary design work and specifications for a new radio communications system were completed during late 2002 and early 2003. It was determined by detailed investigations that a trunk radio system operating in the 400 MHz range was the most suitable for the required application. Field surveys and additional consultations with counterparts were undertaken to develop and refine a list of sites throughout Surkhandarya for the installation of communications stations. This list is included in Appendix D.

A series of contracts were issued in late 2003 and early 2004 for the procurement and installation of the required equipment. NRMP procured equipment contractually through Connectel, a radio distributor with offices in North Carolina, United States and Prague, Czech Republic. The radio system design was centered on Zetron trunking controllers with Motorola radios and Cushcraft antennas. It was determined that a single base station would be required to meet the coverage requirements. The equipment order was a bundled order. Equipment for this project and the Zarafshan radio project were consolidated into one purchase order to Connectel.

For the Surkhandarya site, the following equipment was ordered and procured from Connectel:

One Base station consisting of the following:

- Zetron M827 trunking controller
- Motorola MTR2000 repeater (3 pieces)
- Two-stage cavity resonators
- 3 channel multicoupler
- 3 channel combiner
- 1500 VA Powerware UPS
- Pair of high gain four dipole antenna
- Miscellaneous cables, connectors, and other components

78 stationary radio stations consisting of the following:

- Motorola GM660 or GM1280 radio station
- Power supply
- Maintenance free battery, 12V
- Cushcraft antenna
- Miscellaneous cables and connectors
- Radio modem (at 22 designated radio sites)

14 mobile radio stations consisting of the following:

- Motorola GM660 radio station with mobile antenna.

Contracts were established between NRMP and Viol, Ltd., a local Tashkent radio systems integrator for a variety of work including:

- Electrical work including grounding,
- Mast fabrication and installation, and
- System installation and commissioning.

As part of the dispatch office rehabilitation and construction project, it was important to ensure that the power circuits available to the radio system would be properly protected against current overload and be properly grounded. The work consisted of installing new outlet receptacles coupled with a six amp circuit breaker and ground wire connected to a ground rod installed into the earth. This work was accomplished in a timely manner and within budget for all locations.

A formal contract for procurement of the radio equipment was concluded with Connectel as the low bidder compliant with sourcing requirements and proposed radio vendors that were the NRMP-specified suppliers (i.e., Motorola, Zetron).

Part of Connectel's equipment delivery was dependent upon the receipt of frequencies from the Uzbekistan Ministry of Communication. The paperwork to procure this license on behalf of the BISA began in September 2003. NRMP did not want to authorize procurement of the communications hardware until this was finalized as certain hardware was factory manufactured to the eventual licensed frequency. Due to bureaucratic inefficiencies and the inability to get commitments from the government, official frequency licensing for Surkhandarya was not received until mid-March 2004.

Once all required equipment (e.g., cables, antennas, batteries, and uninterruptible power supplies or UPSs) was in Tashkent and provided to Viol, the local company contracted to program and install the communication system, field activities in Surkhandarya began, and the radio project was completed on July 17, 2004.

During the process of installation and testing it was discovered that the ability to send data with this radio system was not achievable due to missing firmware in the Motorola radio. Motorola provided an approach that required the purchase of additional hardware and this hardware was delivered to Viol immediately for integration. This additional equipment was procured through Connectel with the design contractor (Viol) paying for this enhancement to the data communications implementation.

The base station site that was selected is located at Sopka, a high spot on the north-south ridge line that dissects Surkhandarya. At Sopka, a 50-meter tower already existed and the decision was made to mount the antennas on this structure. The transmit and receive antennas were mounted at the 30 and 40 meter height, respectively. Initial signal strength patterns did not show sufficient signal strength on the transmit side. Continued troubleshooting did not lead to an appreciable improvement in signal strength. Although not determined to a certainty, there was interference of some sort that was meddling with the signal with the antennas mounted on the tower.

The decision was made to remove the antennas from the tower and mount them at about 10 meters above the ground on an abandoned parabolic antenna structure with appropriate separation. Signal strength improved allowing all vehicles to communicate with Sopka and several sites that had marginal voice quality improved noticeably. Even better performance to the north could be expected if the antennas later could be mounted at the 30 to 40 meter height.

During the radio and power supply installation, there was a high failure rate of the power supply at certain sites. Further analysis showed that in those locations where the power supply had failed, there were abnormally high voltages. Typical voltages should be in the 220 volt range and instead some voltages were in the 250 to 260 volt range. Further discussions with BISA officials determined that this was due to over-voltages being supplied from the substations. This over-voltage condition is due to high losses caused by the poor condition of the power lines and to ensure that pump motors have the necessary voltage to run properly, they step up the voltage. Any equipment before the losses occur will see the effect of full voltage. Viol has repaired the power supplies under warranty but the BISA has been informed that this is a problem that they must address through the procurement of voltage regulators. The voltage regulator will plug into the wall outlet, regulating the incoming power to 220 volts. The radio power supply will then plug into the voltage regulator. Task specialists evaluated different sources for the BISA to select from for procurement.

Another issue that was resolved concerning the power supplies was the inability for the power supply to trickle charge the supplied backup battery. A power supply was opened and it was determined that a jumper that was required to complete the recharge circuit was missing. This was a manufacturing defect and Astron will repair all of the power supplies under factory warranty. Connectel, in conjunction with its Uzbekistan warranty provider, will field retrofit all power supplies to meet this system requirement.

To further improve communication and data management, plans and specifications for an automated telephone exchange and computer local area network (LAN) for the counterpart's office facilities in Termez were developed, finalized, and implemented. The installation was completed in January 2004. Task specialists assisted the vendors to develop, refine, and finalize the design and installation. With the completion of the radio communications system is complete it is expected that the telephone system, radio system and LAN will interface, greatly facilitating communications throughout the entire irrigation system.

Several photographs of communications improvements are included in Appendix G.

#### 4. Construction or Remodeling and Furnishing of Dispatch Office Facilities

Initial design efforts for the refurbishment of the dispatch office facilities were completed by mid-August 2002. To develop specifications for procurement, designs for each site were developed in greater detail. A local design professional was engaged to assist in this work, and detailed re-designs and revised cost estimates were prepared for each site. Design work for all sites was performed, contracts for the remodeling and construction of these sites were issued, and all work under construction and remodeling was completed at all sites, furniture was delivered to all sites, air conditioners were installed at sites with reliable power supply, and computers, printers, and accessories were delivered and set up at locations where data communications stations were planned, and also at important administrative office locations. A total of 38 computers were delivered to various sites throughout the irrigation system, and 22 of these sites will be equipped with radio modems for radio transmission of data.

A list of work dispatch office construction and remodel sites is presented in Appendix E. Several photographs of dispatch office rehabilitation work and communications improvements are included in Appendix G.

## 5. Improvements to Flow Monitoring

Designs for the construction or rehabilitation of 40 flow measurement structures were completed between November 2002 and January 2003 and several requests for contract action were developed and submitted, although none were implemented. This component was eliminated in May 2003. It was thought that some portions of this work might be implemented by the Amu-Zang Water Resources Management Project now being developed by the Asian Development Bank and the Government of Uzbekistan.

## 6. Irrigation System Database

Another important component related to improvements to data management and communications is the development of a computer database program. The original concept was to develop a computer program to correlate projected crop demands with system supplies as provided by automatic flow measurement stations throughout the irrigation system. It was later determined that the automated flow measurement stations were not appropriate until further system improvements were implemented beyond those planned by SIWP. After discussions with counterparts, it was agreed that a computer database for storing, managing, and analyzing system data was more useful and appropriate at this stage. This plan was executed with the development of a customized database with geographic information system (GIS) interface. This computer database program was developed by NRMP/SIWP specialists working closely with counterpart staff. The program allows the staff and management of the irrigation department to manage and analyze information related to the operation and management of the irrigation system much more efficiently. When the communications system is operational the program will allow data to be input from remote locations throughout the irrigation system via radio modem (and telephone modem from some locations). Data collection, analysis, reporting, and archiving will be greatly improved.

Several photographs of the Irrigation System Database are included in Appendix G.

## 7. Computer Training

The data communications system and irrigation database use IBM-compatible PC computers and software. Training of system managers and operations staff in the use of computers and various software applications was essential to allow the use of these powerful tools and to derive the anticipated benefits. Early in the SIWP, several groups of trainees were brought from Surkhandarya to Tashkent, and over 100 persons participated in basic computer training. It was subsequently determined that providing training to participants in Termez would be more effective, and in March 2003 a plan was developed to set up a temporary training facility in the central offices of the counterpart's headquarters building. After an appropriate room was identified and furniture and computers procured, actual training sessions commenced in December 2003. From December 2003 through April 2004 training sessions were conducted each week at the Termez training facility. A group of 10 participants was identified as those responsible for maintaining and upgrading the computers and database system after the completion of the Task. This group was given a series of intensive trainings in database, GIS, and Global Positioning System (GPS) survey referencing and related computer mapping. Sixty other staff persons were divided into groups, and each group was given training in both basic PC applications and in the use of the NRMP/SIWP-developed irrigation database for Surkhandarya.

The trainings were very well received by the participants and felt to be very successful overall. The computer skill level of the participants was clearly and significantly improved, and combined with the provision of computers by NRMP/SIWP, the participants found the trainings to be of great practical value in their work activities.

Several photographs of computer training activities are included in Appendix G.

## 8. Shallow Wells Demonstration

This relatively minor component of the workplan was included within the original TOR for the Surkhandarya Task. The concept was to explore the installation and replication of low-cost shallow wells for supplemental irrigation water supply. Shallow wells have been highly successful in areas such as India, Pakistan, Bangladesh, the Philippines, etc.

A review of potential technologies was conducted, and two USAID-funded Winrock Farmer-to-Farmer volunteers were brought to Surkhandarya in March 2003 to consult and advise on the feasibility of various low-cost methods. Several manual methods for boring shallow wells were identified as potentially feasible. Local specialists familiar with low-technology well boring methods were located and utilized to specify, source, and/or design and manufacture the necessary tools and equipment for preliminary trials. A series of tests were conducted to verify the feasibility and practicality of several methods.

An initial training/demonstration of the equipment and methods was successfully conducted in northern Surkhandarya in July 2003, with 10 participants representing several farmer groups and irrigation agencies. The demonstration was successful, and a number of requests for additional trainings and equipment kits were received by the NRMP. A series of five additional demonstration/training events was conducted in northern Surkhandarya during the fall of 2003. Over 60 participants were trained in the practical aspects of boring and installing shallow wells. The assembly and delivery of five additional shallow well boring toolkits was completed, and the kits were transferred to local subdivisions of the Amu-Surkhan BISA in January 2004. A training video to accompany the trainings and equipment kits was completed and used during the training events, and numerous copies have been distributed to participants and other interested parties. The equipment kits, training events and training videos allow local farmers to self-replicate virtually any number of shallow wells. Production of a three-minute promotional video with English subtitles was also completed and has been distributed to a number of interested parties.

NRMP/SIWP later began cooperating with CHF International, a non-governmental organization (NGO) working in a number of rural villages in Surkhandarya under the USAID-funded Southern Uzbekistan Community Action Investment Program (CAIP), to replicate and promote the demonstration of shallow wells in Surkhandarya. CHF has organized participants and the NRMP has provided training materials, tools, and experienced trainers. CHF intends to continue supporting replications independently as soon as their counterparts are sufficiently trained.

Several photographs of Shallow Wells demonstration/training events are included in Appendix G.

## 9. Public Awareness Activities

A number of very successful public awareness events were conducted during the course of the Task, and many other products and services for the dissemination of information were developed. Appendix F provides a complete listing of these public awareness events and services. Several photographs of public awareness events are included in Appendix G.

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## 5. CONCLUSIONS AND RECOMMENDATIONS

The work initiated under the Task has been successfully completed and is providing significant benefit to the counterpart agency and the Surkhandarya region as a whole. The results include:

- Provision of 34 units of heavy equipment and vehicles for canal maintenance;
- Rehabilitation of 19 critical structures for controlling canal flows;
- Rehabilitation and/or construction and furnishing of 40 irrigation control office facilities;
- Improvements to voice and data communications including a new telephone exchange, telephones, computer LAN, scanner, fax machine, and photocopy machine at the counterpart's main offices in Termez;
- Provision of 38 computers, 34 printers, and a large format plotter;
- Development of a customized database for irrigation system management;
- Provision of computer training for over 150 irrigation system staff;
- Successful demonstration of low technology shallow wells for supplemental irrigation, training of over 60 farmer participants, provision of six shallow well toolkits to the counterpart organization;
- Successful facilitation of ongoing replications by the NGO CHF; and
- A successful public awareness campaign promoting careful use of water as a scarce resource, public participation, and project sustainability.

In addition, it is highly recommended that, if funds become available, automatic flow monitoring stations be established at key locations throughout the irrigation system. The stations could link with the radio communications system, automatically transmitting data to the central irrigation management offices in Termez. The number of stations could range from as few as 10 up to 40 (or more) depending upon available funding. The average price of a station would be in the range of \$10,000 to \$20,000 including structural work, flow instrumentation, and automatic radio link equipment. If this work is accomplished the irrigation system database developed by NRMP/SIWP could be easily adapted to receive and process the incoming data, greatly assisting in short- and long-term irrigation system operations and planning.

**APPENDIX A: SUMMARY LIST OF IDENTIFIED INFRASTRUCTURE REHABILITATION NEEDS, SURKHANDARYA IRRIGATION SYSTEM**

| № | Preliminary Infrastructure Needs Category                      |
|---|--|
| 1 | Dispatcher Facilities Rehabilitation, Construction, Furnishing |
| 2 | Water Control Structural Rehabilitation                        |
| 3 | Hydromechanical and Electrical Parts and Equipment             |
| 4 | Flow Measurement Infrastructure (Hydroposts)                   |
| 5 | Communications Improvements                                    |
| 6 | Reservoir Maintenance:   |
|   | Oktepa   |
|   | Degrez   |
|   | Uchkizil<br>South-Surhan                                       |
| 7 | Pump Station Rehabilitation:                                   |
|   | Amu-Zang-1   |
|   | Amu-Zang-2   |
|   | Babatag  |
|   | Jayhoon  |
|   | Sherabad   |
|   | Bandikhan-1<br>Kattakum  |

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**APPENDIX B: HEAVY EQUIPMENT AND VEHICLE PROCUREMENT FOR SURKHANDARYA**

| <b>No</b> | <b>Name of Equipment</b> | <b>Model</b> | <b>Brief Technical Characteristics</b> | <b>Quantity</b> |
|-----------|--------------------------|--------------|--|-----------------|
| 1         | Backhoe                  | Case 580-M   | 2 WD backhoe-loader                    | 3               |
| 2         | Backhoe                  | Case 580-SM  | 4 WD backhoe-loader                    | 1               |
| 3         | Excavator                | EO 3323      | wheel, 0.65 m <sup>3</sup> bucket      | 3               |
| 4         | Front-end Loader         | Case 521D    | wheel, 1.5 m <sup>3</sup> bucket       | 1               |
| 5         | Bulldozer                | Case 1150G   | 10 ton                                 | 3               |
| 6         | Motor Grader             | DZ 122B      | 12' blade                              | 1               |
| 7         | Crane Track              | KC-3577-3    | 14 T                                   | 2               |
| 8         | Crane Track              | KC-35715-2   | 17 T                                   | 2               |
| 9         | Dump Truck               | Kamaz 53215  | 10 T                                   | 2               |
| 10        | Lorry Truck              | Kamaz 55111  | 10 T                                   | 2               |
| 11        | Dump Truck               | Maz          | 10 T                                   | 2               |
| 12        | Trailer                  | Maz          | 20+ T                                  | 1               |
| 13        | Light Truck              | Yaz          | 4WD 1,300 kg capacity                  | 4               |
| 14        | Maint. Vehicles          | Yaz          | 4 WD Five seats, "jeep"                | 4               |
| 15        | Maint. Vehicles          | Niva         | 4 WD Five seats, wagon                 | 3               |
|           |                          |              | <b>Total Units:</b>                    | <b>34</b>       |

**APPENDIX C: “PRIORITY 1” CANAL CONTROL STRUCTURAL REHABILITATION WORKSITES AND HYDROPOST STRUCTURAL WORKSITES**

| <b>Site Code</b> | <b>Struct. No.</b> | <b>“PRIORITY 1” WORK SITES</b>   | <b>Structural Work Description</b>  | <b>Hydro-mechanical Work Description</b>   |
|------------------|--------------------|--|---|--|
| I                | 1                  | Cross regulator at PK102+88 of Amu-Zang canal (to control discharge to Oktepa reservoir) |   | 3 gates (5.0 x 4.0 m),<br>3 gate hoist sets,<br>Replace complete electrical and control works. |
|                  | 2                  | Outlet to Oktepa reservoir   |   | 3 gates (2.5 x 2.5 m),<br>3 gate hoist sets,<br>Replace complete electrical and control works. |
| II               | 3                  | Djarkurgan hydrosite, spillway   | Rebuild banks and provide 200 m of heavy rip-rap erosion protection of the right hand main channel bank downstream of the hydrostructure. | 8 gates (8.0 x 3.1m),<br>8 gate hoist sets,<br>Replace complete electrical and control works.  |
|                  | 4                  | Outlet   |   | 4 gates (3.0 x 3.0 m),<br>4 gate hoist sets,<br>Replace complete electrical and control works. |
|                  | 5                  | Stop logs at the dam   |   | 3 sets stop logs (8.0 x 3.0 m)   |
| III              | 6                  | Cross regulator at PK 215 of Zang canal  |   | 3 gates (4.0 x 3.1 m),<br>3 gate hoist sets,<br>Replace complete electrical and control works. |
| IV               | 8                  | Uchkizil reservoir   |   | 2 gates (3.0 x 1.5 m),<br>2 gate hoist sets,<br>Replace complete electrical and control works. |
|                  | 9                  | "Garbiy" outlet  | Rehabilitation of 80 m of concrete canal lining downstream of the structure.  | 1 gate (2.5 x 2.0 m),<br>1 gate hoist set,<br>Replace complete electrical and control works.   |
|                  | 10                 | "Sharkiy" outlet   | Rehabilitation of 80 m of concrete canal lining downstream of the structure.  | 1 gate (3.0 x 2.0 m),<br>1 gate hoist set,<br>Replace complete electrical and control works.   |
| <b>Site Code</b> | <b>Struct. No.</b> | <b>“PRIORITY 1” WORK SITES</b>   | <b>Structural Work Description</b>  | <b>Hydro-mechanical Work Description</b>   |

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|     |    |   |  |  |
|-----|----|---|--|--|
| IV  | 11 | Cross regulator at PK 323 of Zang canal   |  | 3 gates (3.0 x 3.0 m),<br>3 gate hoist sets,<br>Replace complete electrical and control works.               |
|     | 12 | Outlet to "Zang-9" canal  | Replace existing cross regulator, excavate and line 200 m of new canal downstream. | 2 gates (3.0 x 3.0 m),<br>2 gate hoist sets, 2 guide sets,<br>Replace complete electrical and control works. |
|     | 13 | Angor hydrosite at PK 56 of Zang canal, Uzhkizil reservoir supply canal               | New headwall to accommodate new gates.   | 2 gates (2.0 x 2.5 m), 2 gate hoist sets, 2 guide sets,<br>Replace complete electrical and control works.    |
|     | 14 | "Angor-1" outlet  |  | 2 gate hoist sets (existing gates OK).   |
| V   | 15 | Cross regulator at PK 442 of Zang canal   |  | 2 gates (3.0 x 3.0 m),<br>2 gate hoist sets,<br>Replace complete electrical and control works.               |
| VI  | 16 | Cross regulator at PK 244 of Amu-Zang canal to intake water by Babtag pumping station |  | 1 gate (5.5 x 3.5 m),<br>1 gate hoist set,<br>Replace complete electrical and control works.                 |
| VII | 17 | Inverted siphon at PK 576 of Zang canal (Karasu river crossing). Cross regulator      |  | 3 gates (6.0 x 3.5 m),<br>3 gate hoist sets,<br>Replace complete electrical and control works.               |
|     | 18 | Escape  | Rebuild and line 100 m of downstream canal.  | 3 gates (6.0 x 3.5 m),<br>3 gate hoist sets,<br>Replace complete electrical and control works.               |
| XII | 30 | "Aibarak" cross regulator at PK 235   | Construct new cross regulator.   | 2 gates (5.0 x 2.5 m),<br>2 gate hoist sets,<br>Replace complete electrical and control works.               |
|     | 31 | Khazarbag canal, "Aibarak" outlet, Ailama   | Construct new outlet structure and canal lining.                                   | New outlet; 1 gate (1.5 x 1.5 m),<br>1 gate hoist set,<br>Replace complete electrical and control works.     |

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## Hydropost Construction or Rehabilitation (Flow Measurement Infrastructure)

- 1 Cross regulator at PK 102-88 of Amu-Zang canal (2nd Lift)
- 2 Outlet to Oktepa reservoir
- 3 Djarkurgan hydrosite at inlet regulator of Zang canal
- 4 Cross regulator at PK 215 of Zang canal
- 5 Uchkizil reservoir. Hydrosite at PK 323
- 6 Uchkizil reservoir Inlet canal.
- 7 Uchkizil reservoir. Angor-1 Outlet.
- 8 Cross regulator at PK 442+00 of Zang canal. T-2 outlet
- 9 Cross regulator at PK 244+00 of Amu-Zang near Babtag pump station
- 10 Inverted siphon at PK 576 of Zang canal (Karasu river crossing)
- 11 Inverted siphon under Kanglisay at PK 202 of ShMMK canal.
- 12 Inverted siphon under Kanglisay at PK 202 of ShMMK canal. R-6 outlet
- 13 Inverted siphon under Sherabad at PK 427 of ShMMK canal. Escape
- 14 ShMMK canal right branch, R-4-A outlet
- 15 ShMMK canal PK89, Surkhan outlet
- 16 Water distribution structure at PK 138, Right branch
- 17 Water distribution structure at PK 138, Left branch
- 18 ShMMK, PK56, Bandikhan outlet
- 19 Cross regulator, PK 140 of ShMMK canal, Right branch
- 20 R-7 outlet, ShMMK canal, Right branch
- 21 Oktepa reservoir - discharge channel
- 22 Sherabad hydrosite - Istora outlet
- 23 Sherabad hydrosite - Khodjakia outlet
- 24 Amu-Zang canal, PK 29, Galaba outlet
- 25 Amu-Zang canal, Raise II, tail reach
- 26 Babatag canal, tail reach
- 27 Beshkutan hydropost of Zang canal
- 28 Amu-Zang canal 1st Lift, PK 20
- 29 Tupolang hydrosite right-bank regulator
- 30 Tupolang hydrosite left-bank regulator
- 31 PK 60+00 of Khazarbag canal distribution site
- 32 Cross regulator at PK 342 of Khazarbag canal
- 33 Cross regulator at PK 410+97 of Khazarbag canal
- 34 Cross regulator at PK 410+97 of Khazarbag canal, Puston outlet
- 35 Cross regulator at PK235 (175) of Khazarbag canal
- 36 Aibarak outlet, Hazarbag Canal PK 235
- 37 Tupolang-Karatag canal headworks, Cross regulator of TTK channel
- 38 Tupolang-Karatag canal headworks, downstream of new cross regulator
- 39 Degrez reservoir, supply canal
- 40 Degrez reservoir, discharge canal
- 41 Inverted siphon, Khazarbag channel PK 437
- 42 Surkhandarya river, Shurchi hydropost

## APPENDIX D: LIST OF RADIO COMMUNICATIONS STATION SITES

### Trunk Radio System of Surkhandarya, List of Locations

1. List of the base station location:

| No | Name                   | Address                 | Latitude      | Longitude     |
|----|------------------------|-------------------------|---------------|---------------|
| 1  | Base station 1 (Sopka) | Djarkurgan rayon, Sopka | 37° 30' 33.0" | 67° 17' 54.2" |

2. List of the stationary radio station locations:

| No | Name   | Address                      | Latitude        | Longitude       |
|----|--|------------------------------|-----------------|-----------------|
| 1  | Aiborak Khazarbag canal                                      | Denau rayon, Kobilov         | 38° 18' 33.358" | 67° 48' 53.201" |
| 2  | Shaiton Khazarbag canal                                      | Oltinsoy rayon, Shakarkamish | 38° 14' 00.521" | 67° 46' 53.069" |
| 3  | Pustun Khazarbag canal                                       | Oltinsoy rayon, Ulugbek      | 38° 11' 35.804" | 67° 43' 51.377" |
| 4  | Degrez reservoir   | Oltinsoy rayon, Ulugbek      | 38° 11' 14.276" | 67° 47' 0.805"  |
| 5  | Sherabad PK-0  | Kizirik rayon, Kunchikish    | 37° 45' 37.300" | 67° 24' 46.440" |
| 6  | Sherabad PK-140  | Kizirik rayon, Istara        | 37° 46' 39.943" | 67° 17' 23.219" |
| 7  | Sherabad PK-202  | Sherabod rayon, N. Murodov   | 37° 45' 47.495" | 67° 13' 15.686" |
| 8  | Uchkizil reservoir   | Termez rayon, Uchkizil       | 37° 20' 25.627" | 67° 12' 44.064" |
| 9  | Administration of Uchkizil reservoir                         | Termez rayon, Uchkizil       | 37° 25' 41.700" | 67° 15' 47.624" |
| 10 | Zang canal PK-323 (Zang-9)                                   | Angor rayon, K. Tulakov      | 37° 27' 47.588" | 67° 18' 11.300" |
| 11 | Zang canal PK-442  | Angor rayon, Tallimaron      | 37° 30' 58.565" | 67° 15' 16.060" |
| 12 | Zang canal Karasu duker                                      | Muzrabod rayon               | 37° 33' 05.357" | 67° 07' 31.850" |
| 13 | Denau UNSES  | Denau, Ogakhiy               | 38° 16' 15.082" | 67° 54' 56.898" |
| 14 | Tupolang hydrostructure                                      | Sariosio rayon, Okhunboboev  | 38° 28' 28.351" | 67° 51' 48.416" |
| 15 | Khazarbag canal PK-60+00                                     | Sariosio rayon, Okhunboboev  | 38° 26' 00.679" | 67° 54' 32.737" |
| 16 | Tupolang-Karatag irrigational admin. (Tupolang-Karatag UMRK) | Denau, N. Rakhimov st., 23   | 38° 16' 11.842" | 67° 53' 00.334" |
| 17 | South-Surkhan reservoir                                      | Kumkurgon rayon              | 37° 50' 01.385" | 67° 37' 00.322" |
| 18 | Amu-Zang canal PK-102+88                                     | Djarkurgan rayon, Okkurgon   | 37° 25' 04.976" | 67° 26' 50.658" |

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|    |  |                                       |                 |                 |
|----|--|---------------------------------------|-----------------|-----------------|
| 19 | Djarkurgan barrage   | Djarkurgan rayon, Okkurgon            | 37° 37' 41.750" | 67° 28' 00.253" |
| 20 | Surkhandarya oblvodkhoz  | Termez, Kokhor st. 18                 | 37° 13' 47.366" | 67° 16' 25.093" |
| 21 | Administration of Pump Stations Termez                         | Termez, Yoshlik st. 8                 | 37° 12' 45.558" | 67° 17' 44.110" |
| 22 | Amu-Zang-1 pumping station                                     | Termez rayon, Yangiarik               | 37° 14' 27.071" | 67° 26' 18.254" |
| 23 | Amu-Zang-2 pumping station                                     | Termez rayon, Yangiarik               | 37° 20' 16.624" | 67° 26' 59.834" |
| 24 | Babatog pumping station  | Djarkurgan rayon, Kh. Olimjon         | 37° 31' 44.170" | 67° 30' 31.086" |
| 25 | Surkhandarya magistral admin. 2nd floor (Bobotag UMRK)         | Kumkurgon, A. Timur st. 3             | 37° 50' 03.941" | 67° 36' 40.417" |
| 26 | Surkhan-Sheradad irrigational admin. 1st floor (Sherabad UMRK) | Kumkurgon, A. Timur st. 3             | 37° 50' 03.941" | 67° 36' 40.417" |
| 27 | Sherabad pump station  | Kumkurgon rayon, ShNS                 | 37° 48' 59.828" | 67° 31' 42.900" |
| 28 | Amu-Zang irrigational admin. (Amu-Zang UMRK)                   | Jarkurgon, Utanov st. 31              | 37° 29' 58.585" | 67° 24' 03.157" |
| 29 | Angon Rayselvodkhoz  | Angor rayon, Mukhtor st. 6            | 37° 27' 40.176" | 67° 08' 55.723" |
| 30 | Bandihon Rayselvodkhoz   | Bandikhon rayon, Center               | 37° 51' 11.336" | 67° 22' 40.159" |
| 31 | Boysun Rayselvodkhoz   | Boysun rayon, Center                  | 38° 10' 36.959" | 67° 12' 28.616" |
| 32 | Head of Chilmirob canal (Denou Rsvkh.)                         | Denau rayon                           | 38° 39607       | 67° 83340       |
| 33 | Sopka pump station (Djarkurgan Rsvkh.)                         | Djarkurgan rayon, Sopka               | 37° 30' 29.2"   | 67° 20' 15.7"   |
| 34 | Kirzirik Rayselvodkhoz   | Kizirik rayon, Center                 | 37° 40' 35.162" | 67° 14' 31.319" |
| 35 | Amu-Zang-Kumkurgan division (Kumkurgan Rsvkh.)                 | Kumkurgon rayon, Center               | 37° 49' 51.161" | 67° 36' 31.957" |
| 36 | Muzrabad Rayselvodkhoz   | Khalkobod kurgani                     | 37° 27' 17.755" | 66° 55' 38.485" |
| 37 | Oltinsoy Rayselvodkhoz   | Oltinsoy rayon, Karlyuk               | 38° 10' 40.040" | 67° 43' 40.109" |
| 38 | Sufien canal (Sariosiy Rsvkh.)                                 | Sariosio rayon                        | 38° 31' 24.6"   | 68° 02' 56.9"   |
| 39 | Termez Rayselvodkhoz   | Termez rayon, Uchkizil                | 37° 20' 29.947" | 67° 14' 10.928" |
| 40 | Ostona canal (Uzun Rsvkh.)                                     | Uzun rayon, Amir Timur                | 38° 21' 18.0"   | 68° 04' 10.0"   |
| 41 | Sherabad Rayselvodkhoz (Sherabad UMRK, new office)             | Sherabod rayon, U. Turapov, Galaguzar | 37° 41' 11.674" | 67° 00' 57.629" |
| 42 | Shurchi Rayselvodkhoz  | Shurchi, Mustakillik st. 74           | 38° 00' 15.419" | 67° 47' 30.642" |
| 43 | Administration of Tupolang reservoir                           | Sariosio rayon, Farkhod               | 38° 34' 14.880" | 67° 48' 16.132" |
| 44 | Khojamulki pump station  | Kumkurgon rayon, S. Boymatov          | 37° 54' 30.6"   | 67° 44' 40.6"   |

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|    |                                       |                                  |               |               |
|----|---------------------------------------|----------------------------------|---------------|---------------|
| 45 | Ostana-1 pump station                 | Uzun rayon, A. Timur             | 38° 19' 32.8" | 68° 03' 36.8" |
| 46 | Kargali pump station                  | Uzun rayon, B. Ochildiev         | 38° 23' 30.4" | 68° 08' 35.2" |
| 47 | Dustlik pump station                  | Bandikhon rayon                  | 37° 46' 48.4" | 67° 14' 18.8" |
| 48 | Polvantosh pump station               | Shurchi rayon, Polvontosh        | 37° 59' 15.6" | 67° 50' 34.7" |
| 49 | Buston pump station                   | Djarkurgan rayon                 | 37° 46' 09.2" | 67° 25' 16.2" |
| 50 | Bandikhon pump station                | Bandikhon rayon, Toshkent        | 37° 49' 16.6" | 67° 28' 49.9" |
| 51 | R-1, Zang canal                       | Muzrabod rayon, Yangiobod        | 37° 32' 53.6" | 67° 04' 44.9" |
| 52 | R-5, Zang canal                       | Muzrabod rayon, Kodiriy          | 37° 31' 22.1" | 66° 56' 35.2" |
| 53 | R-10, Zang canal                      | Muzrabod rayon, Kh. Berdikobilov | 37° 27' 53.1" | 66° 46' 39.4" |
| 54 | Lotok, Zang canal                     | Muzrabod rayon, R. Buriev        | 37° 25' 08.7" | 66° 42' 06.5" |
| 55 | Tupolang-Karatag head                 | Sariosio rayon, Okhunboboev      | 38° 26' 00.6" | 67° 54' 32.6" |
| 56 | Akapchagay check post                 | Oltinsoy rayon, Alpomish         | 38° 06' 50.7" | 67° 39' 44.0" |
| 57 | Akapchagay-ShMMK supplying canal      | Boysun rayon, Tangumish          | 37° 57' 00.6" | 67° 27' 00.3" |
| 58 | R-1 & R-2 divider                     | Bandikhon rayon, Oybek           | 37° 54' 18.3" | 67° 23' 36.5" |
| 59 | Bobotag check post                    | Djarkurgan rayon, Shark Yulduz   | 37° 38' 24.6" | 67° 36' 33.5" |
| 60 | PK-89, ShMMK, outlet Surkhan          | Djarkurgan rayon, Surkhon        | 37° 47' 15.9" | 67° 32' 49.0" |
| 61 | Sherabad hydrostructure               | Djarkurgan rayon                 | 37° 43' 05.4" | 67° 00' 02.1" |
| 62 | R-19, ShMMK                           | Sherabod rayon                   | 37° 36' 50.3" | 66° 52' 05.7" |
| 63 | Jaykhun pump station                  | Muzrabod rayon, Beshkuton        | 37° 21' 43.7" | 67° 07' 34.0" |
| 64 | Navoi pump station                    | Muzrabod rayon, Navbakhor        | 37° 30' 01.0" | 66° 50' 05.5" |
| 65 | Oykul pump station                    | Termez rayon, Gulbakhor          | 37° 15' 49.8" | 67° 42' 41.8" |
| 66 | Darbant-2 pump station                | Boysun rayon, Rabot              | 38° 09' 37.2" | 67° 06' 26.6" |
| 67 | Gagarin pump station                  | Kumkurgon rayon                  | 37° 43' 05.6" | 67° 35' 53.1" |
| 68 | Khakim Eshanov-1 pump station         | Kizirik rayon, Kh. Eshonov       | 37° 31' 22.7" | 67° 14' 12.0" |
| 69 | Head of Bobotag canal                 | Djarkurgan rayon, Jarkurgon      | 37° 31' 35.9" | 67° 31' 30.5" |
| 70 | Ukrain-1 pump station (V.Kadirov p/s) | Sherabod rayon, Ukraine          | 37° 37' 11.7" | 67° 05' 56.1" |

SUBTASK C-1: SURKHANDARYA WATER DISTRICT IMPROVEMENTS FINAL REPORT :  
APPENDICES - 9

|    |                            |                            |               |               |
|----|----------------------------|----------------------------|---------------|---------------|
| 71 | Uzbekistan-1 pump station  | Sariosio rayon, G. Khidrov | 38° 27' 54.6" | 67° 36' 21.6" |
| 72 | Sigma pump station         | Denau rayon, Mustakillik   | 38° 25' 23.4" | 67° 51' 56.7" |
| 73 | Pirnazarov pump station    | Uzun rayon, Pirnazarov     | 38° 17' 42.6" | 68° 04' 00.4" |
| 74 | Serkharakat-3 pump station | Uzun rayon, Serkharakat    | 38° 17' 19.8" | 68° 03' 56.5" |
| 75 | Dazara-2 pump station      | Uzun rayon, Khursand       | 38° 07' 07.1" | 67° 55' 55.3" |
| 76 | Galasherek pump station    | Shurchi rayon, Sovjiron    | 38° 02' 34.1" | 67° 46' 13.4" |
| 77 | Chirishli-2 pump station   | Uzun rayon, K. Aliev       | 38° 14' 29.7" | 67° 59' 15.7" |
| 78 | Chayontepa pump station    | Shurchi rayon, T. Berdiev  | 38° 04' 21.3" | 67° 46' 22.0" |

3. Mobile radio stations:

14 mobile radios will be installed in vehicles (to be determined) of the Amu-Surkhan Basin Irrigation Systems Authority or other designated vehicles of the Surkhandarya Oblvodkhoz.

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## **APPENDIX E: LIST OF DISPATCH OFFICE FACILITY REMODEL AND CONSTRUCTION SITES**

Djarkurgan Hydrosite  
Uchkazil Reservoir  
Shashara  
Babatag Pump Station Dispatch Room  
Uzun RaySelVodKhoz  
Jarkurgan RaySelVodKhoz  
Muzrabat RaySelVodKhoz  
Shurchi RaySelVodKhoz  
Sherabad RaySelVodKhoz  
Termez RaySelVodKhoz  
Dispatch Room of Pump Station  
Dispatch Room of Sherabad Main Canal  
Dispatch Center of Babatag Canal  
Dispatch Room of Sherabad Pump Station  
Amu-Zang 1 Pump Station  
Amu-Zang 2 Pump Station  
Angor RaySelVodKhoz  
Kizirik RaySelVodKhoz  
Surkhandarya OblSelVodKhoz  
Dispatch Room in Amu-Zang Canal Administration  
South Surkhan Reservoir  
Kumkurgan RaySelVodKhoz  
Denau RaySelVodKhoz  
Hallway remodeling in OblSelVodKhoz building  
Uchkizil Reservoir  
Zang Canal PK 232 (Zang 9)  
Relocated to Babatag Control Point  
Zang Canal Inverted Siphon at Karasu  
Sherabad Main Canal PK 202  
Sherabad Main Canal PK 0  
Sherabad Main Canal PK 140  
Tupalang-Karatag canal administration  
Section 1 of Hazarbag canal  
Tupolang Hydrosite  
Hazarbag canal, Pustun section  
Hazarbag canal, Shaytan section  
Degrez reservoir  
Head of Babatag Canal  
Denau Pump Station Administration  
Temporary Training Facility room in OblSelVodKhoz building.

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## APPENDIX F: LIST OF PUBLIC AWARENESS ACTIVITIES AND PRODUCTS

### SUMMARY OF PUBLIC AWARENESS IN SURKHANDARYA

| PUBLIC AWARENESS                  | TOTAL |
|-----------------------------------|-------|
| <b>Events</b>                     |       |
| Ceremonies                        | 3     |
| Presentations                     | 6     |
| Conference Displays/Participation | 1     |
| <b>Informational Products</b>     |       |
| Press Releases                    | 5     |
| Brochure                          | 1     |
| Briefer                           | 1     |
| Fact Sheet                        | 1     |
| Video                             | 2     |
| Success Stories                   | 2     |
| <b>Media Coverage</b>             |       |
| Newspaper Articles                | 17    |
| TV News Stories                   | 18    |
| Radio Programs                    | 16    |
| Radio PSAs Broadcast              | 86    |
| Newsletter Articles               | 11    |
| Website Articles                  | 10    |
| Letters of Appreciation           | 3     |

### OVERVIEW OF PUBLIC AWARENESS ACTIVITIES AND MEDIA COVERAGE

#### May 2002: Public Awareness Activities

**Project Mobilization:** review of technical activities by public awareness team and initial development of communication plan.

*Media Coverage for May 2002: 0*

#### June 2002: Public Awareness Activities

NRMP Workplan Retreat: USAID and NRMP specialists gathered together from across the region to attend a three-day workshop at the Shodlik Hotel in Tashkent, Uzbekistan. Participants discussed a strategy to update the 2002 workplan and exchanged ideas for potential 2003 activities that would benefit Central Asian stakeholders that emphasized public awareness, partnerships and training activities.

*Media Coverage for June 2002: 0*

### **July 2002: Public Awareness Activities**

Communications Plan: development of initial ideas for public awareness activities at project retreat held in Tashkent, Uzbekistan.

*Media Coverage for July 2002: 0*

### **August 2002: Public Awareness Activities**

Preparations for Opening Ceremony: began making preparations for opening ceremony in Termez at the end of September 2002.

*Media Coverage for August 2002: 4*

**Journey with NRMP - on NRMP Summer Outreach Campaign part 3** 8/22/2002  
*Uzbek National Radio Dostlik* Radio Program  
Language -Russian 45 minutes

**Journey with NRMP - on NRMP Summer Outreach Campaign part 3** 8/22/2002  
*Uzbek National Radio Dostlik* Radio Program  
Language -Russian 45 minutes

**Journey with NRMP - Results of NRMP Summer Outreach Campaign, interview with J. Bardell** 8/29/2002  
*Uzbek National Radio Dostlik* Radio Program  
Language -Russian 45 minutes

**NRMP Summer Outreach Campaign Teaches 1200 Students and Teachers about Natural Resources Management** 8/31/2002  
*NRMP* Success Story  
Language -English 323 words

### **September 2002: Public Awareness Activities**

**Press Release and Opening Ceremony in Termez, Uzbekistan:** On September 30, 2002, U.S. Ambassador John Herbst attended an official ceremony to mark the opening of the pilot project in the Surkhandarya oblast. This project implemented near Termez demonstrates improved water management through better monitoring, data transmission and communication systems that meet international standards. The project highlights the importance of water savings, enhanced data collection mechanisms, upgrading of water control infrastructure, and training for canal operators.

*Media Coverage for September 2002: 2*

**U.S. Ambassador To Open A Pilot Project Aimed at Further Improvement of Water Management in Uzbekistan** 9/25/2002  
*NRMP* Press release

Language -Russian/English 383/425 words

**Opening Ceremony in Termez to mark the opening of the pilot project in the Surkhandarya oblast** 9/30/2002

*NRMP* Ceremony

Language - Trilingual

**October 2002: Public Awareness Activities**

Follow-up to Opening Ceremony: worked with media to distribute press release and increase event coverage of demonstration activities in Surkhandarya.

***Media Coverage for October 2002: 14***

**Visit of U.S. Ambassador to Surkhandarya Oblast - in News at 7 pm** 10/01/2002

*Davr TV News* TV News Announcement

Language - Uzbek

**American Project on Water Conservation** 10/02/2002

*Sitash.uz* Website Article

Language - Russian 156 words

**On U.S. Ambassador's Trip to Termez - special program at 7:30 pm** 10/02/2002

*Ishonch TV in Termez* TV News Announcement

Language - Uzbek 20 minutes

**On U.S. Ambassador's Trip to Termez part 1 - at 7:10 pm** 10/02/2002

*Ishonch TV in Termez* TV News Announcement

Language - Uzbek 12 minutes

**On U.S. Ambassador's Trip to Termez part 2 - at 7:30 pm** 10/02/2002

*Ishonch TV in Termez* TV News Announcement

Language -Uzbek 8 minutes

**U.S. Ambassador in Surkhandarya** 10/02/2002

*Surkhon Tongi* Newspaper Article

Language - Uzbek

**U.S. Ambassador Visits Surkhandarya** 10/02/2002

*Akhborot TV News in English* TV News Announcement

Language - Uzbek

**Drop By Drop - A Pilot Project in Surkhandarya** 10/03/2002

*Vremya I My* Newspaper Article

Language – Russian

**Improvement of Natural Resources Management** 10/03/2002

*BVV (Biznes Vestnik Vostoka)* Newspaper Article

Language - Russian

**It is Wise To Find Friends** 10/03/2002  
*Khalq Suzi* Newspaper Article  
Language - Uzbek

**News From The U.S. Embassy** 10/03/2002  
*Delovoy Partner Uzbekistana* Newspaper Article  
Language - Russian

**U.S. Ambassador Inspects U.S. Funded Projects in Surkhandarya** 10/03/2002  
*UzReport.com News Server* Website Article  
Language - English 908 words

**U.S. Ambassador Visited Projects of U.S. Government in Surkhandarya** 10/03/2002  
*UzReport.com News Server* Website Article  
Language - Russian 277 words

**Presentation of A Pilot Project** 10/10/2002  
*Novy Vek Weekly* Newspaper Article  
Language - Russian

**November 2002: Public Awareness Activities**

*Media Coverage for November 2002: 0*

**December 2002: Public Awareness Activities**

*Media Coverage for December 2002: 1*

**Program in Action - biweekly radio program on NRMP at 9:30 am** 12/30/2002  
*Uzbekistan National Radio Dostlik* Radio program  
Language - Russian 15 minutes

**January 2003: Public Awareness Activities**

**Outreach Campaign Promoting Water Conservation PSAs:** On February 11, 2003, NRMP will launch an outreach campaign to promote the water conservation public service announcements (PSAs). The key objectives of this campaign were to increase the public's awareness of the need for taking urgent measures toward rational use of water, advise them on how to access information on best practices for water use around the world, explain the benefits of NRMP demonstration projects, and discuss what kinds of public outreach campaigns can help improve water resources management in the region. The Task Leader for the SIWP Surkhandarya activity participated in this event and gave a brief presentation to participants.

*Media Coverage for January 2003: 2*

**Program in Action - biweekly radio program on NRMP at 9:30 am; interviews with NGOs** 1/06/2003

*Uzbekistan National Radio Dostlik* Radio Program  
Language - Russian 15 minutes

**Program in Action - biweekly radio program on NRMP at 9:30 am; interview with 1/13/2003  
NGOs collaborating with NRMP**

*Uzbekistan National Radio Dostlik* Radio Program  
Language - Russian 15 minutes

**February 2003: Public Awareness Activities**

**Outreach Campaign Promoting Water Conservation PSAs:** NRMP launched an outreach campaign to promote the water conservation public service announcements (PSAs). The key objectives of this campaign were to increase the public's awareness of the need for taking urgent measures toward rational use of water, advise them on how to access information on best practices for water use around the world, explain the benefits of NRMP demonstration projects, and discuss what kinds of public outreach campaigns can help improve water resources management in the region.

***Media Coverage for February 2003: 16***

**USAID Launched New Outreach Campaign Promoting Better Water Resources Management in Uzbekistan** 2/12/2003  
Press Release  
Language - Russian/English 300/361 words

**Public initiative to save water begins in Uzbekistan** 2/13/2003  
*UzReport.com News Server* Website Article  
Language - English 178 words

**They Will Become Decision Makers** 2/13/2003  
*Molodej Uzbekistana* Newspaper Article  
Language - Russian

**USAID Begins New Campaign on Water Resources Management** 2/13/2003  
*UzReport.com News Server* Website Article  
Language - Russian 116 words

**Presentation of PSAs to Children Members of Ecological NGOs - daytime broadcast** 2/13/2003  
*Uzbek National TV, Yoshlar Channel, Davr News* TV News Announcement  
Language - Uzbek 2 minutes

**Presentation of PSAs to Children Members of Ecological NGOs - evening broadcast** 2/14/2003  
*Uzbek National TV, Yoshlar Channel, Davr News* TV News Announcement  
Language - Uzbek 2 minutes

**Water Conservation PSAs Promotional Event** 2/14/2003  
*Uzbek State National Radio* Radio Program  
Language - Russian 3 minutes

**The NRMP Water Conservation PSA Presented to Children; interview with Jim Goggin** 2/15/2003  
- daytime broadcast  
*Uzbek National TV, 1st Channel, Akhborot News in Russian* TV News Announcement  
Language - Russian 3 minutes

**The NRMP Water Conservation PSA Presented to Children; interview with Jim Goggin** 2/15/2003  
- daytime broadcast  
*Uzbek National TV, 1st Channel, Akhborot News in Uzbek* TV News Announcement  
Language - Uzbek 3 minutes

**The NRMP Water Conservation PSA Presented to Children; interview with Jim Goggin** 2/15/2003  
- evening broadcast  
*Uzbek National TV, 1st Channel, Akhborot News in Uzbek* TV News Announcement  
Language - Uzbek 3 minutes

**The NRMP Water Conservation PSA Presented to Children; interview with Jim Goggin** 2/15/2003  
- evening broadcast  
*Uzbek National TV, 1st Channel, Akhborot News in Russian* TV News Announcement  
Language - Russian 3 minutes

**The NRMP Water Conservation PSA Presented to Children; interview with Jim Goggin** 2/16/2003  
- morning broadcast  
*Uzbek National TV, 1st Channel, Akhborot News in Uzbek* TV News Announcement  
Language - Uzbek 3 minutes

**USAID's Event Combines the Most Precious Values of Uzbekistan** 2/19/2003  
*Ferghana.ru* Website Article  
Language - Russian 192 words

**Another Project of USAID - "Water Conservation"** 2/20/2003  
*Novosti Uzbekistana* Newspaper Article  
Language - Russian

**The Future of Natural Resources in Uzbekistan** 2/20/2003  
*ECO* Newspaper Article  
Language - Russian 183 words

**We Will Succeed** 2/27/2003  
*Pravda Vostoka* Newspaper Article  
Language - Russian

**March 2003: Public Awareness Activities**

**Briefer:** prepared draft two-page briefer for USAID for review.

***Media Coverage for March 2003: 2***

**LoA - to M. Biddison on Irrigation Improvements in Oblast** 3/06/2003  
*Agriculture and Water Resources Administration of* Letter of appreciation  
*Surkhandarya Oblast*  
Language - Russian

**Program in Action - biweekly radio program on NRMP at 9:30 am; interview with** 3/17/2003  
**Jessica West and James Goggin**  
*Uzbekistan National Radio Dostlik* Radio program  
Language - Russian 30 minutes

**April 2003: Public Awareness Activities**

**Briefer:** prepared draft two-page briefer for USAID for review.

***Media Coverage for April 2003: 2***

**Solution of Environmental Problems on Behalf of Children** 4/24/2003  
*Turkiston Press News Agency* Newspaper Article  
Language - Russian

**Program in Action - biweekly radio program on NRMP at 9:30 am; interview with**  
**NGO Ecolandcape** 4/29/2003  
*Uzbekistan National Radio Dostlik* Radio Program  
Language - Russian 30 minutes

**May 2003: Public Awareness Activities**

**Briefer:** prepared final draft of two-page briefer for USAID for review.

***Media Coverage for May 2003: 8***

**Uzbek NGO and Students Celebrate Earth Day** 5/02/2003  
*NRMP Success story*  
Language - Russian/English 209/230 words

**NRMP Display Booth at UzExpoCenter Exhibition: devoted to EBRD Summit**  
**presentation of NRMP PSAs on Water Conservation**  
**and Pakhtaabad video** 5/03/2003  
*NRMP Conference display*  
Language - English

**USAID Continues Outreach Campaign to Promote Better Water Resources**  
**Management in Uzbekistan** 5/14/2003  
*NRMP Press release*  
Language - Russian/English 370 words

|  |                   |
|--|-------------------|
| <b>Program in Action - biweekly radio program on NRMP at 9:30 am; NRMP Public Outreach Event on Water Conservation at School 101</b> | 5/15/2003         |
| <i>Uzbekistan National Radio Dostlik</i>   | Radio program     |
| Language - Russian   | 30 minutes        |
| <b>NRMP Continues Water Conservation Outreach Campaign</b>   | 5/16/2003         |
| <i>Radio Tashkent</i>  | Radio program     |
| Language - Russian   |                   |
| <b>NRMP Takes Schoolchildren for a Study Tour to Upper Chirchik Barrage in the framework of Water Conservation Outreach Campaign</b> | 5/17/2003         |
| <i>Radio Tashkent</i>  | Radio program     |
| Language - Russian   |                   |
| <b>Let's Conserve Water</b>  | 5/19/2003         |
| <i>Vecherny Tashkent</i>   | Newspaper article |
| Language - Russian   |                   |
| <b>USAID Conducts Water Conservation Campaign</b>  | 5/29/2003         |
| <i>Uzreport (www.uzreport.uz)</i>  | Website article   |
| Language – Russian   |                   |

### **June 2003: Public Awareness Activities**

**Shallow Well Training Video:** NRMP began developing two videos to demonstrate the shallow-well training program for the Surkhandarya irrigation improvements project. Both a two-hour video and a five or ten minute video were planned to help replicate training as well as educate others on the importance of the pilot project.

#### ***Media Coverage for June 2003: 3***

|   |                   |
|---|-------------------|
| <b>To Save Every Water Drop</b>                   | 6/04/2003         |
| <i>Tashkentskaya Pravda</i>                       | Newspaper Article |
| Language - Russian                                | 254 words         |
| <b>Program on Protection of Natural Resources</b> | 6/05/2003         |
| <i>BVV (Biznes Vestnik Vostoka)</i>               | Newspaper Article |
| Language - Russian                                | 152 words         |
| <b>To Save Every Water Drop</b>                   | 6/06/2003         |
| <i>Qishloq Hayoti</i>                             | Newspaper Article |
| Language - Uzbek                                  | 203 words         |

### **July 2003: Public Awareness Activities**

**Press Release on Shallow Well Training:** Press release developed on the Shallow Wells Drilling Training provided in Termez to farmers with supplementary sources of irrigation water. On July 21 – 25 the first training program on drilling of shallow wells will be conducted for farmers of Uzun in northern Surkhandarya Oblast. NRMP organized the training within the framework of its Irrigation System Improvements Project in

Surkhandarya Oblast. Due to mountainous relief farming in Surkhandarya heavily depends on pumped irrigation and because of irregular deliveries, water sometimes does not reach farmer fields. In places that have been irrigated for years shallow ground water table is relatively high, which makes shallow well drilling feasible.

**Shallow Well Training Video Being Developed:** NRMP was in the process of developing a 60-minute video to demonstrate the shallow well training program for the Surkhandarya irrigation improvements project. Both a two-hour video and a five or ten minute video were being developed to help replicate training as well as educate others on the importance of the pilot project.

***Media Coverage for July 2003: 46***

|  |                                    |
|--|------------------------------------|
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/15/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/15/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/16/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/16/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian     | 7/16/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/17/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian     | 7/17/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian     | 7/18/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/18/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b>   | 7/18/2003                          |

|   |                                    |
|---|------------------------------------|
| <i>Uzbek National Radio Dostlik</i><br>Language -Russian  | Radio PSA<br>1 minute              |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian  | 7/19/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian  | 7/19/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian  | 7/20/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian  | 7/20/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian  | 7/20/2003<br>Radio PSA<br>1 minute |
| <b>USAID Organizes Shallow-Wells Drilling Training To Provide Farmers with<br/>Supplementary Sources of Irrigation Water</b><br><i>NRMP</i><br>Language - Russian/English | 7/20/2003<br>Press Release         |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian  | 7/21/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian  | 7/21/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian  | 7/21/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Oriat FM</i><br>Language -Russian   | 7/22/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian  | 7/22/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Oriat FM</i>  | 7/23/2003<br>Radio PSA             |

|  |   |
|--|---|
| Language -Russian  | 1 minute                                    |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/23/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/23/2003<br>Radio PSA<br>1 minute          |
| <b>Conserve the Water - It's Yet Remaining</b><br><i>Vecherniy Tashkent</i><br>Language -Russian       | 7/24/2003<br>Newspaper Article<br>346 words |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/24/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/24/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/24/2003<br>Radio PSA<br>1 minute          |
| <b>USAID Encourages Water Saving</b><br><i>O'zbekiston Ovozi</i><br>Language -Uzbek                    | 7/24/2003<br>Newspaper Article<br>197 words |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/25/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Oriat FM</i><br>Language -Russian    | 7/25/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian     | 7/25/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/25/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/25/2003<br>Radio PSA<br>1 minute          |
| <b>NRMP Water Conservation PSA (3)</b>   | 7/26/2003                                   |

|  |                                    |
|--|------------------------------------|
| <i>Uzbek National Radio Yoshlar</i><br>Language -Russian   | Radio PSA<br>1 minute              |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/26/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/26/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Yoshlar</i><br>Language -Russian     | 7/29/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Language -Russian | 7/29/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/29/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/29/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Oriat FM</i><br>Language -Russian    | 7/29/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Oriat FM</i><br>Language -Russian    | 7/30/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (3)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/30/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Oriat FM</i><br>Language -Russian    | 7/31/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Dostlik</i><br>Language -Russian     | 7/31/2003<br>Radio PSA<br>1 minute |

**August 2003: Public Awareness Activities**

**Shallow Well Training Video Being Developed:** NRMP was in the process of developing a 60-minute video to demonstrate the shallow well training program for the Surkhandarya irrigation improvements project. Both a two-hour video and a five or ten minute video were being developed to help replicate training as well as educate others on the importance of the pilot project.

***Media Coverage for August 2003: 44***

|  |                                    |
|--|------------------------------------|
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Yoshlar</i><br>Uzbekistan<br>Orig. language- Russian     | 8/01/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Uzbekistan<br>Orig. language- Russian | 8/01/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Uzbekistan<br>Orig. language- Russian     | 8/01/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Dostlik</i><br>Uzbekistan<br>Orig. language- Russian     | 8/01/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (2)</b><br><i>Uzbek National Radio Yoshlar</i><br>Uzbekistan<br>Orig. language- Russian     | 8/02/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Oriat FM</i><br>Uzbekistan<br>Orig. language- Russian    | 8/03/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Dostlik</i><br>Uzbekistan<br>Orig. language- Russian     | 8/03/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Dostlik</i><br>Uzbekistan<br>Orig. language- Russian     | 8/03/2003<br>Radio PSA<br>1 minute |
| <b>NRMP Water Conservation PSA (1)</b><br><i>Uzbek National Radio Echo Doliny</i><br>Uzbekistan                            | 8/03/2003<br>Radio PSA<br>1 minute |

Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/03/2003  
*Uzbek National Radio Yoshlar* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/04/2003  
*Uzbek National Radio Oriat FM* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/04/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/04/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/04/2003  
*Uzbek National Radio Yoshlar* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/04/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/06/2003  
*Uzbek National Radio Oriat FM* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/06/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/06/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/06/2003  
*Uzbek National Radio Yoshlar* Radio PSA  
Uzbekistan 1 minute

Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/06/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/07/2003  
*Uzbek National Radio Oriat FM* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/07/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/07/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/07/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/07/2003  
*Uzbek National Radio Yoshlar* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (3)** 8/08/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**USAID Conducts Water Saving Campaign in Children's Camps** 8/08/2003  
*UzReport.com News Server* Website Article  
Uzbekistan 140 words  
Orig. language - English

**NRMP Water Conservation PSA (3)** 8/08/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (3)** 8/08/2003  
*Uzbek National Radio Yoshlar* Radio PSA  
Uzbekistan 1 minute

Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/10/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language - Russian

**NRMP Water Conservation PSA (2)** 8/10/2003  
*Uzbek National Radio Oriat FM* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (3)** 8/11/2003  
*Uzbek National Radio Yoshlar* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (3)** 8/11/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (3)** 8/11/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/12/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/12/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/13/2003  
*Uzbek National Radio Oriat FM* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/13/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/13/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute

Orig. language- Russian

**NRMP Water Conservation PSA (2)** 8/13/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/15/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (1)** 8/15/2003  
*Uzbek National Radio Dostlik* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (3)** 8/15/2003  
*Uzbek National Radio Echo Doliny* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

**NRMP Water Conservation PSA (3)** 8/15/2003  
*Uzbek National Radio Oriat FM* Radio PSA  
Uzbekistan 1 minute  
Orig. language- Russian

### **September 2003: Public Awareness Activities**

**Shallow Well Training Video Being Developed:** NRMP was in the process of developing a 60-minute video to demonstrate the shallow well training program for the Surkhandarya irrigation improvements project. Both a two-hour video and a five-minute promo video were being developed to help replicate training as well as educate others on the importance of the demonstration and training project.

**Announcement on Shallow Well Demonstration Training Being Developed:** Shallow Well Demonstration Training was conducted for the farmers from Uzun region, Surkhandarya Oblast, on October 20 - 25, 2003. The aim of the training was to show effective methods and techniques of drilling shallow wells for irrigation purposes.

**Announcement on Map and Database Development for Uzbek Water Management Authorities:** NRMP specialists are developing information databases and water resource maps for water management authorities in Surkhandarya. The modern technology introduced by NRMP is of a particular significance due to the current government reforms in the agricultural sector that replace an administrative territory-based method in water resources management with a basin-based approach. The success of this new organizational structure in many respects depends on the use of new information databases, maps, and schematics to effectively manage the water resources on the additional territory.

### ***Media Coverage for September 2003: 1***

**LoA from NGO "Dilhush" to J. West on Assistance in Formation of Public Awareness** 09/22/2003

*Director of NGO "Dilhush" R. Tulyanova*  
Language - Russian

Letter of Appreciation

### **October 2003: Public Awareness Activities**

**Equipment Transfer Ceremony in Surkhandarya:** The following public awareness assistance was provided for the Transfer Ceremony held in Termez on October 16, 2003: organization of a display booth; translation services during the ceremony; development and distribution of press releases, brochures, and information on the project; facilitation of interviews of NRMP and USAID representatives with TV journalists, etc.

**Press Release on Equipment Transfer Ceremony in Surkhandarya:** On October 16, a ceremony to celebrate the transfer of heavy equipment was held by the Ministry of Agriculture and Water Resources (MAWR) of the Republic of Uzbekistan and NRMP. The equipment was procured as part of the USAID Water District Improvement Project to support the MAWR's Amu-Surkhan Basin Irrigation Systems Authority. Thirty-four units of equipment, including excavators, bulldozers, backhoes, dump trucks, lorries, cars, cranes, and a motor grader have been purchased specifically for irrigation system repairs, maintenance, and improvements. The ceremony was opened by Craig Anderson, Director of USAID/CAR Office of Energy and Water; Khodjimurod Gapparov, Head of Department of Water Balance and Water Conservation Technologies of the MAWR; and local authorities.

**Shallow Well Training Video Being Developed:** NRMP was in the process of developing a 60-minute video to demonstrate the shallow well training program for the Surkhandarya irrigation improvements project. Both a two-hour video and a five-minute promo video were being developed to help replicate training as well as educate others on the importance of the demonstration and training project.

**Announcement on Shallow Well Demonstration Training:** Shallow Well Demonstration Training was conducted for the farmers from Uzun region, Surkhandarya Oblast, on October 20 - 25, 2003. The aim of the training was to show effective methods and techniques of drilling shallow wells for irrigation purposes.

### ***Media Coverage for October 2003: 13***

|  |               |
|--|---------------|
| <b>NRMP Program in Action Radio Show</b> | 10/11/2003    |
| <i>National Uzbek Radio Yoshlar</i>      | Radio Program |
| Language - Russian                       | 30 minutes    |

|  |              |
|--|--------------|
| <b>Heavy Equipment Transfer Ceremony in Termez</b> | 10/16/2003   |
| <i>NRMP</i>  | Presentation |
| Language - En/Ru/Uz                                |              |

|  |            |
|--|------------|
| <b>Heavy Equipment Transfer Ceremony in Termez</b> | 10/16/2003 |
| <i>NRMP</i>  | Ceremony   |
| Language - En/Ru/Uz                                |            |

**USAID Provides Vehicles and Heavy Construction Equipment to Support Water** 10/16/2003

**District Improvements in Surkhandarya**

NRMP

Press Release

Language - Russian/English

**Heavy Equipment Transfer Ceremony for Surkhandarya**

10/17/2003

*Surkhandarya Regional TV channel*

TV Program

Language - Uzbek

3 minutes

**NRMP Program in Action Radio Show**

10/18/2003

*Uzbekistan National Radio Yoshlar*

Radio Program

Language - Russian

30 minutes

**Heavy Equipment Transfer Ceremony for Surkhandarya**

10/20/2003

*Uzbek National TV News Program Akhborot*

TV Program

Language - Uzbek

3 minutes

**Heavy Equipment Transfer Ceremony for Surkhandarya**

10/20/2003

*Uzbek National TV News Program Akhborot*

TV Program

Language - Russian/Uzbek

3 minutes

**Heavy Equipment Transfer Ceremony for Surkhandarya**

10/20/2003

*Uzbek National TV News Program Akhborot*

TV Program

Language - Russian

3 minutes

**Heavy Equipment Transfer Ceremony for Surkhandarya**

10/21/2003

*First Channel News*

TV Program

Language – Russian/Uzbek

3 minutes

**Heavy Equipment Transfer Ceremony for Surkhandarya**

10/21/2003

*First Channel News*

TV Program

Language - Uzbek

3 minutes

**USAID Provides Vehicles And Heavy Construction Equipment To Support Water 10/26/2003**

**District Improvements In Surkhandarya**

NRMP

Newsletter Article

Language - Russian/English

460/512 words

**Shallow Wells Training Continue in Surkhandarya**

10/30/2003

NRMP

Newsletter Announcement

Language - Russian/English

**November 2003: Public Awareness Activities**

**Announcement on USAID's Help in Conducting Children's Water Festival to Promote**

**Water Conservation in Uzbekistan:** On November 5-6, 2003, NRMP co-organized a

Children and Water Ecological Festival initiated by the Bioecosan Education

Methodological Center under the Ministry of Public Education and NGO Eco-school.

During the two-day program issues relating to water pollution and conservation and role of

the public in helping to improve the situation were emphasized to the participants including

children, teachers and mass media. The event was designed to promote thoughtful water

management to the youth and leaders of various children-oriented ecological clubs throughout the country. During the activity sessions, the 80 schoolchildren (ages 10 to 17) split into several discussion groups to focus their attention on ecological issues relating to journalism, theater, informational products such as newsletters and posters, photography, and decision-making activities such as debate and presentation skills. The NRMP Water Conservation TV and radio PSA were discussed. The Festival participants had an opportunity to visit a USAID-funded demonstration project at the Upper Chirchik Barrage where they were introduced to water efficiency activities being implemented by USAID in the region. Participants also received NRMP developed Water Conservation manuals with popular and interesting information on the ecological and economic significance of water.

***Media Coverage for November 2003: 5***

**NRMP Program in Action Radio Show**  
*Uzbekistan National Radio Yoshlar*  
Language - Russian

11/01/2003  
Radio Program

**NRMP Program in Action Radio Show**  
*Uzbek National Radio Yoshlar*  
Language - Russian

11/15/2003  
Radio Program

**NRMP Program in Action Radio Show**  
*Uzbek National Radio Yoshlar*  
Language - Russian

11/15/2003  
Radio Program

**LoA - from Gymnasia #3 to J.West re: Provision of Training Materials on Water Conservation** 11/15/2003

*Director of Gymnasia #3 E. Pak*  
Language - Russian

Letter of Appreciation

**Children's Festival Promotes Water Conservation**  
*NRMP*  
Language - Russian/English

11/21/2003  
Newsletter Article

**December 2003: Public Awareness Activities**

**Announcement on New Database GIS based Systems Being Introduced by NRMP for Amu-Surkhan and Zarafshan Basins Irrigation Systems Authorities (BISA) to Improve Water Management:** On Dec 1-5, 2003, NRMP specialists introduced water experts of the Amu-Surkhan Basin Irrigation Systems Authority to a new database system that would help improve water regulation for their basin administrations. The program is being developed by NRMP to replace the current database version, which is not capable of coping with recent reforms in Uzbekistan's water management system. The new system will be able to accommodate present and future changes by taking, as points of reference, data coming from a single object (e.g., pump stations and gates) as opposed to aggregate, rayon based data. The program will furthermore collect, elaborate and compare data in a visual form to allow for clear and objective data analysis. NRMP specialists are also working on an interface that will render GIS and the database compatible. This development software will allow the user to click on a specific object on a GIS map sequence and instantly the data

relating to that specific object will appear on the screen for analysis. A follow up training was provided for BISA specialists in December.

**Announcement on USAID's Fifth Shallow Well Training in Surkhandarya Oblast:** On December 1-5, 2003, NRMP conducted its fifth training program on shallow well drilling in the Djarkurgan area of the Surkhandarya Oblast. Similar to previous trainings the aim was to demonstrate the cost-effective basic technologies required to completely install a shallow well capable of producing enough water for supplemental irrigation supply to several hectares of land. Other potential benefits from the use of shallow wells are the lowering of groundwater tables that are too high, and reducing water logging and soil salinity problems. Before initiating practical drilling work, trainees listen to an introductory session, which includes a 20-minute video that was developed by NRMP. The aim is to provide better understanding of the entire drilling process as well as briefly introduce farmers to differences among variety of soil layers, which impact the choice of drilling site and various drilling techniques. This is followed by six days of practical experience until full completion of the shallow well. A typical training involves about 12 trainees, and three or four farmers from previous demonstrations are usually invited to repeat the course. This reinforces their existing skill as well as facilitating the training process for new recruits who can share problems and find solutions among more experienced peers. NRMP is also donating several full sets of drilling equipment to local water authorities. Farmers are then able to use the well drilling tools for a small fee, which helps to offset equipment maintenance costs.

***Media Coverage for December 2003: 3***

|  |                                      |
|--|--------------------------------------|
| <b>New Database and GIS Systems for Amu-Surkhan Basin Authority and Zerdolvodkhoz</b><br>NRMP<br>Language - Russian/English                | 12/20/2003<br>Newsletter Article     |
| <b>Final Shallow Wells Demonstration Training in the Surkhandarya</b><br>NRMP<br>Language - Russian/English                                | 12/20/2003<br>Newsletter Article     |
| <b>LoA - from Amu-Surkhan Irrigation System Authority to Mr. Bruton</b><br><i>MAWR of the Republic of Uzbekistan</i><br>Language - Russian | 12/30/2003<br>Letter of Appreciation |

**January 2004: Public Awareness Activities**

**Announcement on Completion of the Shallow Wells Drilling Promotional Video:** In January 2004 the NRMP completed a promotional video on the Shallow Wells Drilling Demonstration Project, which is a brief version of the 20-minute training video developed earlier. This shortened promotional version aiming at the general public avoids specific technical terms and details. It describes the basic technology used to install a shallow well capable to produce sufficient amount of water for irrigation of several hectares of land and indicates additional benefits of shallow wells drilling such as reducing water logging problems and soil salinity. The video is 2.5 minutes in length and developed in Russian language with English subtitles. This video will be distributed to the local counterparts, NGOs, media and other interested parties in an effort to increase the awareness and promote further replication of the NRMP shallow wells drilling training program.

**Announcement on Update on Water District Improvements in Surkhandarya:** The main components of the project include (a) improvements in water control through rehabilitation of water control structures and Basin Authority offices; (b) improvements to communications through installation of a new voice and data radio system, telephone exchange, and computer LAN network; (c) improvements in system management through development of computer database and computer training; (d) improved canal maintenance through provision of heavy equipment and vehicles; and (e) demonstration of shallow wells for supplementary irrigation. Work was nearing completion at several large irrigation control structures. Construction or rehabilitation work at 40 dispatch offices was also complete or nearing completion. Equipment was ordered and construction was scheduled to begin for the new radio communication system, including 78 stationary and 14 mobile stations. Construction of a computer training facility in the Basin Authority was completed and training programs on database use, database development and maintenance, GPS and GIS (global positioning system and geographic information systems) and PC service and maintenance for the Basin Authority staff and specialists began in December 2003. In December 2003 NRMP completed a series of training programs on shallow wells drilling.

**Brochure on Shallow Well Demonstration:** brochure was being developed on the significance of the shallow well demonstration activity. This brochure will be distributed along with the promotional and training videos to prospective organizations interested in replication.

***Media Coverage for January 2004: 5***

|   |                                 |
|---|---------------------------------|
| <b>NRMP PSA on Water Conservation ( 1 )</b><br><i>National Uzbek Radio Yoshlar</i><br>Orig. language - Russian  | 1/19/2004<br>Radio Program      |
| <b>NRMP PSA on Water Conservation ( 2 )</b><br><i>National Uzbek Radio Yoshlar</i><br>Orig. language - Russian  | 1/19/2004<br>Radio Program      |
| <b>NRMP PSA on Water Conservation ( 1 )</b><br><i>National Uzbek Radio Yoshlar</i><br>Orig. language - Russian  | 1/21/2004<br>Radio Program      |
| <b>NRMP PSA on Water Conservation ( 2 )</b><br><i>National Uzbek Radio Yoshlar</i><br>Orig. language - Russian  | 1/21/2004<br>Radio Program      |
| <b>Update on Water District Improvements in Surkhandarya</b><br><i>NRMP</i><br>Orig. language - Russian/English | 1/24/2004<br>Newsletter Article |

**February 2004: Public Awareness Activities**

**Announcement in NRMP Newsletter (Feb Issue) on Computer Training For Irrigation Professionals in Surkhandarya:** On February 23- 27, 2004, NRMP conducted a Basic Computer Training Course in the training facility of the Amu-Surkhan Basin Irrigation Systems Authority in Termez. Participants learned the basics of computer operational systems and covered commonly used software such as MS Word, MS Excel, general concepts of MS Access, Internet and Email. Twelve training participants represented

various rayons of the Surkhandarya Oblast. In the near future NRMP will provide computer, radio and data transmission equipment to a number of water authorities and related administrations in the Surkhandarya Oblast, including the Pump Stations Administration, to improve water data communication and, therefore, increase water use efficiency.

**Brochure on Shallow Well Demonstration:** brochure was being developed on the significance of the shallow well demonstration activity. This brochure will be distributed along with the promotional and training videos to prospective organizations interested in replication.

**Press Release and NRMP Newsletter Article (Feb Issue) on USAID and World Bank Institute Projects' Joint Activity on Community Involvement in the Donor**

**Organizations Projects Held in Termez:** From February 21-23, 2004, the NRMP and the World Bank Institute-financed Community Empowerment Network Project (CEN) organized a joint field visit and roundtable on Community Involvement into Donor Organizations Projects for 22 community-based organization members, local authorities and journalists. The representatives traveled from Djizzak, Kashkadarya, Khorezm, Navoi, Samarkand Regions and the Republic of Karakalpakstan to exchange information about USAID's development project and determine together "how local NGOs, initiative groups and mass media can contribute to make these projects sustainable in the future". During the event, participants learned about the NRMP Water District Improvements Project in the Zarafshan River Basin, evaluated the impact and importance of its implementation and developed a dialogue with local community members, authorities and public organizations. The participants had an opportunity to look at NRMP's irrigation rehabilitation activities currently underway. This site visit gave the stakeholders a better understanding of the project's benefits including more efficient water monitoring and allocation that will result in improved water management and increased agricultural yields. The officials from the Uzbek Ministry of Agriculture and Water Resources, Amu-Surkhan River Basin Authority and Zerdolvodkhoz took an active part in the discussion.

**Media Coverage for February 2004: 11**

**LoA - to Mrs. J. West from Director of "BIOEKOSAN" on Joint Actions, Measures** 2/5/2004  
*Administration of "BIOEKOSAN"* Letter of appreciation

**Shallow Wells Demonstration Project Promotional Video** 2/5/2004  
*NRMP* Promotional Video  
Orig. language - Russian/English

**USAID and World Bank Institute Projects Conduct a Joint Activity in Termez** 2/23/2004  
**on the Importance of Community Involvement in Donor Organization Projects**  
*NRMP* Press Release  
Orig. language - Russian/English

**USAID and WB Conduct a Joint Field Visit and Roundtable in Termez** 2/25/2004  
*NRMP* Newsletter Article  
Orig. language - Russian/English

**GIS Training in Surkhandarya** 2/25/2004  
*NRMP* Newsletter Announcement  
Language - Russian/English

**Presentation on NRMP Surkhandarya Water District Improvement Project by Max 2/25/2004  
McGowan at Roundtable Discussion in Termez**

*NRMP* Presentation  
Language - Russian/English

**Shallow Wells Demonstration Project Brochure (Draft)** 2/25/2004  
*NRMP* Brochure  
Orig. language - Russian/English

**Roundtable on Community Involvement in the Donor Organizations Projects** 2/25/2004  
*UNDP Central Asian Gateway Website (www.cagateway.org)* Website Article  
Orig. language - Russian

**Roundtable on Community Involvement in the Donor Organizations Projects** 2/25/2004  
*UNDP Central Asian Gateway Website (www.cagateway.org)* Website Article  
Orig. language - English

**Computer Training Helps Irrigation Professionals in Surkhandarya** 2/25/2004  
*NRMP* Newsletter Article  
Orig. language - Russian/English

**Save Time and Improve Overall Effort of Managing Water Resources** 2/25/2004  
*NRMP* Newsletter Article  
Orig. language - Russian/English

**Presentation on NRMP Activities at Children's Water Conservation Event by 2/26/2004  
Maxim Fazlitidinov and Max McGowan at School #6 in Termez**  
*NRMP* Presentation  
Language - Russian/English

**March 2004: Public Awareness Activities**

**Final Public Awareness Report:** Being developed for SIWP Water District Improvements in Surkhandarya.

**Brochure on Shallow Well Demonstration Project:** brochure was being developed on the significance of the shallow well demonstration activity. This brochure will be distributed along with the promotional and training videos to prospective organizations interested in replication.

**NRMP Radio Show "Program in Action" Highlights Roundtable on Importance of Community Involvement in Donor Organization Projects Held in Termez:** The NRMP weekly radio show broadcast on March 12, 2004 highlighted the Community Roundtable held in Termez on the NRMP Surkhandarya Irrigation Improvements Project. Discussion was based on joint activities initiated between NRMP and CEN project beginning in November 2003. Interview focused on key results achieved from both the public awareness trainings held in December 2003 in Tashkent and roundtable discussion held in November 2003 in Fergana. Participants were members of Community-Based Organizations (CBOs) that work closely with the CEN project through the Business Women's Association of

Uzbekistan. In addition, CEN promotes improved collaborative efforts between donor projects, the government, the local community (NGOs, CBOs and muhalla leaders) and mass media in an effort to further sustain a variety of donor organization projects in the country.

**Potential Ceremony on Completion of Works on Rehabilitation of Dispatch Facilities and Canals in Surkhandarya Oblast:** The completion of works was scheduled for the end of April 2004. Arrangements for the ceremony were being discussed with the NRMP management and counterparts.

**Potential Graduation Ceremony for Computer Training Participants:** Employees of Amu-Surkhan Basin Irrigation Systems Authority are completing a series of training programs on PC Maintenance, Access, GIS, GPS, NRMP database, etc. A ceremony celebrating the graduation of the participants was scheduled for April 2004. Ceremony arrangements were being discussed with the NRMP management and counterparts.

**Potential Field Trip for Donor Organizations to Surkhandarya Pilot Sites:** The field trip promoting replication of the NRMP demonstration projects by other donor organizations was scheduled for April 2004. Arrangements for the event were being discussed with the NRMP management.

***Media Coverage for March 2004: 4***

**They Have Seen with their Own Eyes** 3/2/2004  
*Pravda Vostoka Newspaper* Newspaper Article  
Language – Russian

**The Amu-Surkhan Basin Problems Discussed in Termez** 3/3/2004  
*Tribune-Uz Website (www.tribune.uz)* Website Article  
Language – Russian

**USAID/NRMP and the World Bank Institute-financed CEN Project Conduct Joint Roundtable and Field Visit in Surkhandarya** 3/12/2004  
*NRMP Program in Action Radio Show* Radio Program  
Language - Russian

**Summary of Recommendations Developed During the Roundtables** 3/31/2004  
*NRMP Newsletter* Newsletter Article  
Language - Russian/English

**April 2004: Public Awareness Activities**

**Updated Briefer:** updated two-page briefer on irrigation improvements in Surkhandarya. Posted to website and submitted to USAID for review.

**Brochure on Shallow Well Demonstration Project:** finalized brochure on the significance of the shallow well demonstration activity. This brochure will be distributed along with the promotional and training videos to prospective organizations interested in replication.

**Potential Ceremony on Completion of Works on Rehabilitation of Dispatch Facilities and Canals in Surkhandarya Oblast:** The completion of works was scheduled for the end

of April 2004. Arrangements for the ceremony are being discussed with the NRMP management and counterparts.

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**Potential Field Trip for Donor Organizations to Surkhandarya Pilot Sites:** The field trip promoting replication of the NRMP demonstration projects by other donor organizations was scheduled for April 2004. Arrangements for the event were being discussed with the NRMP management.

**Final Public Awareness Report:** Being developed for the SIWP Water District Improvements in Surkhandarya.

**NRMP Radio Show “Program in Action” Highlights Collaboration with CAIP Program in Southern Uzbekistan:** The NRMP weekly radio show broadcast on April 9, 2004 highlighted replication of the NRMP Shallow Demonstration by the farmers in Denau with support of USAID-funded Southern Uzbekistan Community Action Investment Program (CAIP).

**Announcement for NRMP Newsletter (May Issue) on Shallow Wells Demonstration Replicated by Farmers in Denau:** Farmers working with the USAID-funded Southern Uzbekistan Community Action Investment Program (CAIP) learned of the NRMP demonstration project and requested their own training course. NRMP specialists worked with CAIP to conduct a special course from April 19-24, 2004 in the Denau Rayon for over 18 community representatives. NRMP provided the trainers and materials for the course and CAIP supported the trainees’ attendance. CAIP plans to replicate the NRMP training in the other communities they work with in Surkhandarya.

**Presentation on Trunk Communication System for Surkhandarya Irrigation Systems Specialists:** This presentation was delivered by NRMP specialists on April 29, 2004.

**Announcement for NRMP Newsletter (May Issue) on NRMP Presentation on Trunk Communication System for Surkhandarya Irrigation System Specialists Being Developed.**

*Media Coverage for April 2004: 7*

**On Collaboration with CAIP Program in Southern Uzbekistan: Shallow Wells Demonstration Project** 4/9/2004

*NRMP Program in Action Radio Show* Radio Program  
Language - Russian

**On Collaboration with CAIP Program in Southern Uzbekistan: Shallow Wells Demonstration Project** 4/9/2004

*NRMP Program in Action Radio Show* Radio Program  
Language - Russian

**USAID and World Bank Projects Conduct Joint Roundtable on Community** 4/16/2004

**Involvement in Surkhandarya**

*Ecoforum Bulletin*

Newspaper Article

Language – Russian

**Update on Irrigation Improvements in Surkhandarya**

4/30/2004

*NRMP*

Briefer

Language - Russian/English

**Update on Irrigation Improvements in Surkhandarya**

4/30/2004

*NRMP Newsletter*

Newsletter Article

Language - Russian/English

**The Elixir of Life Also Has Its Measure**

4/30/2004

*Mulkdor Newspaper*

Newspaper Article

Language – Uzbek

**If We Do Not Think of Tomorrow...**

4/30/2004

*Khalk Yoli Newspaper*

Newspaper Article

Language – Uzbek

**May 2004: Public Awareness Activities**

**Brochure on Water District Improvements Project in Surkhandarya:** brochure was being developed on implementation of the demonstration water district improvements project in Surkhandarya. This brochure will be distributed along with the promotional and training videos to prospective organizations interested in replication.

**Announcement for NRMP Newsletter (May Issue) on Replication of NRMP Shallow Wells Demonstration Project by Farmers in Surkhandarya:** NRMP specialists worked with CAIP to conduct a special course from April 19-24, 2004 in the Denau Rayon for over 18 community representatives. NRMP provided the trainers and materials for the course and CAIP supported the trainees' attendance. This activity can serve as an excellent example of collaboration between USAID-funded projects that brings not only practical results, such as supplemental irrigation water, but also helps community members work together to solve their own problems in managing their natural resources.

***Media Coverage for May 2004: 1***

**NRMP Shallow Wells Demonstration Project Replicated by Farmers in Surkhandarya**

5/30/2004

*NRMP*

Newsletter article

Language - Russian/English

**June 2004: Public Awareness Activities**

**Brochure on Water District Improvements Project in Surkhandarya:** brochure was being developed on implementation of the demonstration water district improvements

project in Surkhandarya. This brochure will be distributed along with the promotional and training videos to prospective organizations interested in replication.

***Media Coverage for June 2004: 0***

**July 2004: Public Awareness Activities**

**Final Public Awareness Report:** developed finalized report on public awareness activities on SIWP Water District Improvements for NRMP management.

**Brochure on Water District Improvements Project in Surkhandarya:** the design was finalized and 500 copies of the brochure in each language (Uzbek, Russian, and English) were printed. This brochure will be distributed along with the promotional and training videos to prospective organizations interested in replication.

**Database Transfer Ceremony:** On July 6, 2004 a ceremony to celebrate transfer of the Database developed by NRMP specialists for the Amu-Surkhan Basin Irrigation System Authority (BISA) was held at the Amu-Surkhan BISA premises. During the ceremony NRMP specialists delivered a presentation on the use of the Database.

**Presentation on Database Use During the Database Transfer Ceremony:** The NRMP specialists Timur Kobilov and Larissa Inyakina delivered a presentation on *Data Transfer and Analysis* for the ceremony participants.

**Announcement on Database Transfer Ceremony:** On July 6, 2004 a database developed by NRMP Specialists was transferred to the Amu-Surkhan BISA. The database will significantly improve data collection, storage, analysis, and transfer. The database is installed in 10 locations and covers more than 550 parameters.

***Media Coverage for July 2004: 1***

**NRMP Database Assists Irrigation Specialists in Surkhandarya**  
*NRMP*  
Language - Russian/English

7/29/2004  
Newsletter article

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**APPENDIX G: PHOTOGRAPHS OF WORK UNDER THE SURKHANDARYA WATER DISTRICTS IMPROVEMENTS TASK**



Hazarbag PK 235 (Aibarak), before.



Hazarbag PK 235 (Aibarak), during construction.



Hazarbag PK 235 (Aibarak), nearing completion.



Hazarbag PK 235 (Aibarak), complete.



Zang 9 Outlet Regulator, under construction.



Zang 9 Outlet Regulator, complete, from above.



Zang 9 Outlet Regulator, from below.



Zang 9 Canal Lining, downstream of regulator.



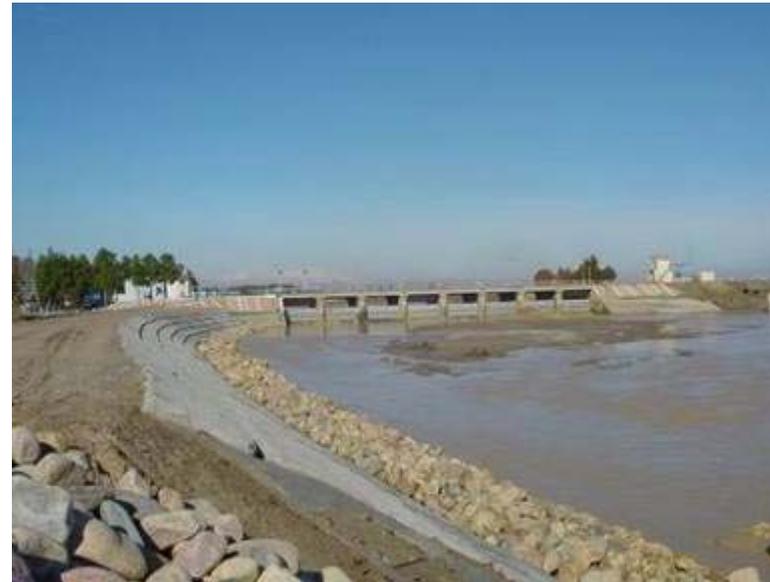
River Bank Downstream of Djarkurgan Barrage (before).



Djarkurgan Embankment, repairs underway.



Djarkurgan Embankment, repairs complete.



Djarkurgan Embankment, repairs complete, opposite view.



New Gates and Hoists Being Produced for Irrigation Districts Improvements in Surkhandarya.



New Gates Ready for Shipment.



New Gates Being Installed at Djarkurgan Barrage.



New Dispatch Office under Construction at Angor PK 56.



New Dispatch Office Completed at Angor PK 56.



New Dispatch Office Under Construction at Zang PK 323.



New Dispatch Office Completed at Zang PK 323.



New Dispatch Office at Uchkizil Reservoir Outlet.



New Dispatch Office at Karasu Regulator.



New Dispatch Office at Babatag Canal Control Point.



New Dispatch Office at Degrez Reservoir Outlet.



Computer Training Sessions in Termez, Surkhandarya.

WsmUnit TechI form

Наименование: Чугайраб боза

Сохранить

**Общие сведения**

Проектный вариант:

Счет водопользователя:

Вол. эксплуатация:

Поддержка СИР:

Сложность:

**Технически-экономические СИР**

Собственно СИР:

Средства напорная:

Средства перепада:

Материал трубопровода:

Кратчайший бычок:

Рез. и отбор отводов:

Автоматизация:

Величина потерь:

Дата проверки:  Составщик:  След. проверка:

**Гидравлические элементы водопровода на канале**

Максимальный расход:  м<sup>3</sup>/с

Нормальный расход:  м<sup>3</sup>/с

Строительная глубина:  м

Ширина канала:  м

Ширина по скосу:  м

Заложение откосов:  град

Максимальная длина:  м

**Абсолютные и относительные отметки и высоты в метрах**

Рефер (абс.):

Радиус (отн.):

Высота канала (абс.):

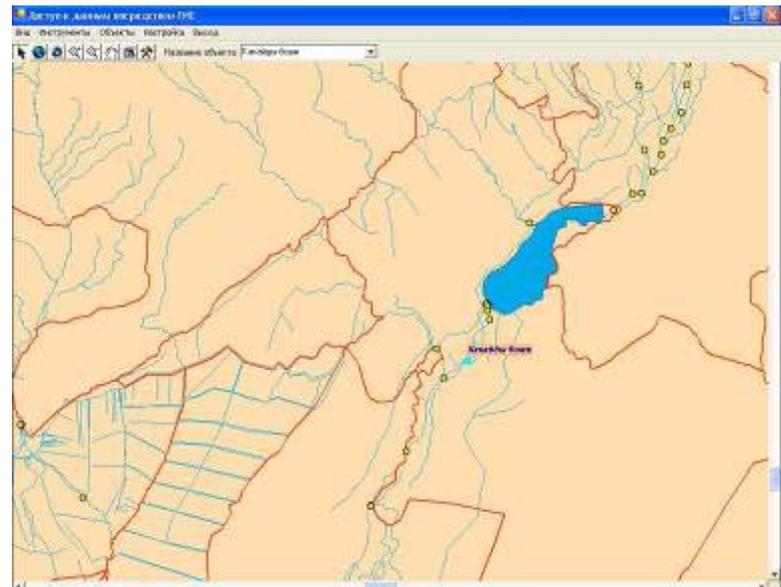
Высота канала (отн.):

Длина канала (абс.):

Длина канала (отн.):

Нижняя отметка (абс.):

Нижняя отметка (отн.):



A Custom Database Program Was Developed for Surkhandarya, with Tabular and GIS Interfaces.



USAID NRMP supplied 34 units of construction equipment, cranes, vehicles, etc. to the Amu-Surkhan Basin Irrigation Authority.



The equipment was transferred in October, 2003, and has been in constant use since that time.



Six Shallow Wells Demonstration/Training Events were held in Surkhandarya.



Over 60 local farmers were trained in low-technology self-replicable methods.



Heavy Equipment Transfer Ceremony. October 16, 2003, Termez, Surkhandarya



Environmental Awareness Outreach, Tashkent.



Environmental Awareness Outreach, Termez.