

# Fixing Iraq's Infrastructure

U.S. contractors restored power and bridges while repairing neglected water and sewage systems vital to Iraqi's health.

Courtesy of Bechtel National, Inc.



A massive dredge hired by USAID contractor Bechtel removes silt from the country's only deepwater port at Umm Qasr. This paved the way for large-scale deliveries of U.S. food and the return of commercial shipping.

April '03

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- 2 ▲ Emergency food grant to WFP
- 3 ▲ *Free Atlas* leaves US with 28,000 tons of food
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- 9 ▲ Coalition forces take Baghdad airport
- 10 ▲ Statue of Saddam toppled
- 11 ▲ Education contract, Creative Associates
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- 17 ▲ Infrastructure contract, Bechtel
- 18 ▲ WFP trucks arrive in Iraq
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- 30 ▲ *Free Atlas* unloads food for 2.3 million
- ▲ Health contract, Abt Associates

## Infrastructure

U.S. assistance began reconstruction of Iraq's electricity plants, bridges, water systems and other infrastructure within a few weeks of the collapse of the regime.

Congress passed the Supplemental Appropriation bill in April, 2003, and within a few weeks the Agency began work in several sectors. The biggest contract, worth \$600 million, went to Bechtel for rebuilding infrastructure.

Some criticism was reported in the press of the decision to limit bidding on the infrastructure contract to seven major firms capable of such large projects overseas. However, the process was entirely legal and necessary if

delays were to be avoided. Bechtel ended up performing exceptionally well under extremely difficult circumstances. When the second infrastructure contract, worth \$1.8 billion, was opened up to all bidders in 2004, fewer than seven companies applied. Bechtel won that one, as well, in a joint offer with Parsons of California.

Bechtel entered Iraq in late April 2003, within days of signing the contract. It began with a country-wide assessment of the critical economic infrastructure. Prioritizing easier repairs first, the company began ordering equipment for longer term projects and bringing in technical experts from around the world. The harbor at Umm Qasr was dredged; chemicals were bought for water treatment facilities, and work began on power stations, electric transmission lines and diesel generating sets throughout Iraq.



Thomas Hartwell



Courtesy of Bechtel National, Inc.

A damaged electric power pylon (above), one of hundreds attacked by vandals who often sold the copper wiring.

Iraqi engineers (left) monitor controls at a power plant repaired with USAID funding.

## Electricity

Restoring and improving Iraq's electricity supply has been the biggest and most costly challenge. Power plants had not been properly maintained for many years and, except for Baghdad, most of the country got power only a few hours a day. In addition, saboteurs and thieves have frequently destroyed pylons and stolen copper wiring from the power transmission lines that link Baghdad with the north and south of the country.

Nevertheless, repairs helped boost electricity output above the pre-war 4,000 megawatt level by October, 2003, and dependable power was distributed to many parts of the country for the first time in years. After all the repairs are made, USAID, the CPA and Bechtel expect electricity production to reach 6,000 MW by the summer of 2004.

In an effort to block the restoration of power, at-

tackers had tried to cut the pipelines supplying fuel to some power plants as well as the electric power cables sending power to the cities. Coalition forces have been able to train Iraqis to provide security for those vital fuel and power conduits.

While total electric power output continued to climb, it was distributed in a new way. Under the old regime, the outlying regions were required to send power to Baghdad which enjoyed electricity nearly 24 hours per day. But the smaller cities such as Basra had power only a couple of hours each day. Now power is more evenly shared, even if Baghdadis may feel they have less hours of power than they enjoyed in the past.

Power is also growing at a time when demand is spiking due to booming sales of electric appliances from refrigerators to air conditioners to satellite televisions since Iraq's central controls and trade isolation has ended.

## Water and Sanitation

An Iraqi engineer (near right) checks water flowing from a new treatment plant built with U.S. and CPA aid. It provides 40,000 people in south-east Iraq clean drinking water. The city's only source had been contaminated water from a branch of the Tigris River.



Ben Barber/USAID

"I used to get sick from the river water," said the engineer.

Untreated sewage flows directly into the Tigris and Euphrates. Many wastewater treatment facilities are inoperative due to vandalism, deliberate neglect, and a lack of parts, electricity and chemicals. To end this, the U.S. is spending \$217 million repairing water systems throughout Iraq, directly benefitting 14.5 million people. Contractors have already repaired hundreds of breaks in the water network, significantly increasing water flow.

In Baghdad, one water plant is being expanded and three sewage plants are being repaired, improving daily water flows to hundreds of thousands of people. We are installing back-up electrical generators at 41 Baghdad water facilities and pumping stations to ensure continuous water supply. Repairs to Baghdad's sewage treatment plants—Rustimiyah North, Rustimiyah South, and Kerkh—will benefit 3.8 million people by October 2004.

Other rehabilitation projects include two water plants and four sewage plants in Najaf, Karbala and Hillah; the entire Sweet Water Canal system near Basra; the Safwan water system; and water and sewage plants in Kirkuk and Mosul.

Since the early 1990s, Iraqi children died in very high numbers. Much of this is directly attributable to the deliberate neglect of the country's waste water facilities and the draining of the southern marshlands. The death rate has been so high—hundreds of thousands over the past 12 years—that in parts of the South it may be tantamount to infanticide.

### Results

- Generated 4,518 MW on October 6, 2003—surpassing the pre-war level of 4,400 MW.
- Installing power at Baghdad International Airport and Umm Qasr seaport.
- Repair thermal units, replace and repair turbines, rehabilitate the transmission network, and install and restore generators—expected to add 2,152 MW.
- Another 827 MW being added through maintenance, rehabilitation, and new generation projects.
- Rehabilitating units at Doura and Baiji power plants.
- Reconstruction of 400-kv transmission network
- Installing new generating capacity at power plants in the north and center.

▲ End of major combat operations

▲ US lifts sanctions on Iraq

▲ Airport contract to SkyLink

▲ J. Paul Bremer named head of CPA

▲ Umm Qasr transferred to civilian authority

▲ Community project grants to five NGOs





Iraqi workmen cleaning a waste water plant, part of a massive USAID effort to provide clean water and improve health throughout the country.



Removing caked silt from Sweet Water Canal reservoirs. The Canal system supplies water to 1.75 million people in Basrah governorate.



Iraqi girl getting water from makeshift system

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Results

- Repaired and rehabilitated water systems throughout Iraq.
- Repaired hundreds of breaks in Iraq's neglected water network, significantly increasing water flow.
- Baghdad: Expanding one water plant and rehabilitating three sewage plants.
- South Central: Rehabilitating An Najaf and Karbala' water treatment plants.
- Basra: Work began on Basra's 14 water treatment plants in January. By summer 2004, water quality and volume will surpass prewar levels.
- North: Rehabilitating water plants in Kirkuk, Mosul and Al Dujayl, and the Al Dujayl sewage plant.

Telecommunications

USAID contractors have carried out some \$55 million in projects to repair Baghdad's switching network.

In 2002, approximately 1.2 million Iraqis subscribed to landline telephone service. Parts of the network's switching component were damaged during the war and service was disrupted. Since then, USAID has been restoring the national telecom fiber network, repairing the telephone switching system in Baghdad and restoring international telephone service.



Iraqi Telephone and Postal Company workers connect subscribers in a Baghdad area telephone exchange.

Courtesy of Bechtel National, Inc.

Results

- International calling service to Iraq was restored on December 30.
- The Al Mamoun Telecommunications site was handed over to the Ministry of Communications on February 26.
- New phone switches and an international satellite gateway were integrated with Iraqi Telephone and Postal Company switches.
- Tools, equipment, and parts were purchased to enable Iraqi engineers to restore the network.
- The national fiber optic network from Mosul to Umm Qasr was repaired, connecting 20 cities to Baghdad.
- Baghdad area phone service was reconstituted by installing new switches.

Ports

Umm Qasr, on the border with Kuwait, is the country's only deepwater ocean port and the first Iraqi city liberated from Saddam Hussein's forces. Work by USAID contractors began immediately to remove sunken ships left since the 1980-88 Iran-Iraq War as well as munitions and silt. With Bechtel and Stevedoring Services of America, the U.S. completed a \$45 million program to restore the port's ability to process food and handle commercial shipments.



Wreckage from Iran-Iraq War is removed from Umm Qasr

Courtesy of Bechtel National, Inc.

Results

- Reopening the port to commercial traffic June 17, 2003.
- Offloading 40 ships per month.
- Dredging to an average depth of 12.5 meters.
- Rehabilitating Iraqi ships to help maintain harbor.
- Renovating grain facility to process 600 metric tons an hour.
- Providing revenue for port operations by collecting new port tariffs.
- Installing generators and security fencing at the old and new ports and grain facility.
- Renovating administration, passenger terminal and customs hall buildings.
- Employing 500 Iraqi staff, mostly in the Marine Department of the Port Authority.

Bridges

USAID and Bechtel are doing \$34 million in work on bridges, roads, and railways. Major bridge projects are shown below.



USAID and Bechtel have repaired bridges in several key locations in Iraq.

Results

- Al Mat Bridge: A key link on Highway 10 that carries 3,000 trucks daily between Baghdad and Jordan. The four-lane bridge reopened to two-way traffic March 3, 2004.
- Khazir Bridge: Critical to the flow of fuel and agricultural products. South span repaired—two of the four lanes—and reopened for two-way traffic May 5, 2004.
- Tikrit Bridge: Important link for passengers and commerce over the Tigris River between Tikrit and Tuz Khurmatu. Work expected to finish in May 2004.
- Repaired a floating bridge on the Tigris River in Al Kut. This improves traffic for approximately 50,000 travelers a day.

Railroads

The Iraqi Republic Railways (IRR) system—although run down and badly in need of repair—had 2,200 km of track, repair shops, stations, and over 10,000 wagons.

“Our first task in the railway sector was to assess the capability of the railway to transport humanitarian aid arriving at the Port of Umm Qasr to cities throughout the country,” said David White, Bechtel's IRR manager.

The U.S. team soon established a long-lasting working relationship with the senior IRR management in Basra and Baghdad and jointly inspected 1100 km of the railway. They are constructing 72 km of new track. IRR contributes equipment and labor, while USAID contributes project management, material, and parts.

Workers perform a damage assessment at railroad bridge prior to preparing a repair plan.

Results

- Repairing 16 km of track at Umm Qasr and 56 km of track between the port and Shuiaba Junction near Basra to move cargo, including food, from the seaport to mills.
- Removed explosive ordinance at the rail line project near Shuiaba Junction.

Airports

USAID and partners SkyLink and Bechtel have spent \$47 million rehabilitating Baghdad and Basra airports, improving the transport of humanitarian, reconstruction, and commercial goods. About 20 non-military flights are processed daily at Baghdad International Airport. It has been prepared to accept commercial flights when they resume.

Projects at Basra International Airport include repairing the runway, taxiway, and apron striping, installing two baggage x-ray units, repairing passenger support facilities and installing communications systems. Other projects include installing the security fence and repairing airport water and sewage treatment plants.



Reconstructed terminal at Baghdad International Airport

Courtesy of Bechtel National, Inc.

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