As of December 31, 2009, the United States had allocated $12.38 billion, obligated $11.90 billion, and expended $11.48 billion from the four major funds to rehabilitate Iraq’s infrastructure, including projects in the oil and gas, electricity, water and sanitation, and transportation and communications sectors. Obligations and expenditures for infrastructure projects have declined significantly since the beginning of FY 2007. This quarter, they accounted for just 1% of total new obligations and expenditures. As of December 31, 2009, $414 million in unexpended obligations remained. For the status of U.S. funding for infrastructure, see Figure 3.7 and Table 3.5.

All new reported obligations came from the ESF. Most were in the Infrastructure Security Program and focused on the oil sector. Expenditures were more balanced among funds. The CERP accounted for 60% of new expenditures this quarter, which were concentrated in Electricity and Water and Sanitation sectors. ESF-funded programs accounted for 26% of new expenditures, again focused in the Infrastructure Security Program for the oil sector.

Most large-scale infrastructure projects funded by U.S. appropriations or the DFI have been managed by the U.S. Army Corps of Engineers (USACE). To date, USACE has completed 2,056 infrastructure projects; 87 projects are ongoing. USACE has no ongoing U.S.-funded construction projects in the oil and gas sector, but it is still completing large projects in the electricity, water, and transportation and communications sectors.

Notwithstanding the progress made to increase energy supplies, improve access to potable water, and rehabilitate Iraq’s telecommunications and transportation infrastructure, the provision of essential services remains a top concern among Iraqi officials. In a meeting this quarter with SIGIR, Minister of Justice Nur al-Din stressed the importance of reliable electric power, paved roads, and clean water. Failure to provide these services, he emphasized, could lead to civil unrest.

**Energy**

Almost 60% of U.S. expenditures for infrastructure reconstruction have been directed toward increasing the production and availability of energy supplies—both to meet domestic energy needs and to provide revenue for the GOI. Despite its vast reserves of crude oil and natural gas, as well as increased output from refineries and power plants over the past two years, Iraq continues to import petroleum products and electricity. In 2009, the GOI initiated ambitious plans to increase crude oil and electricity production well beyond what has already been accomplished.

Revenues were dedicated to wars and weapons in the late-regime period, but today, they will be dedicated for peace, love, and services to Iraqis who are the real owners of this fortune, which is vital to revive other sectors.—Prime Minister Nouri al-Maliki, at the second oil bidding round, December 2009

---

**Figure 3.7**

**Infrastructure: Status of Funds**

<table>
<thead>
<tr>
<th>Category</th>
<th>Allocated</th>
<th>Obligated</th>
<th>Expended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>$0.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water and Sanitation</td>
<td>$0.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil and Gas</td>
<td>$0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>$0.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unexpended Obligations Total: $0.41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Data not audited. Numbers affected by rounding. OSD does not report CERP allocation, obligation, and expenditure data for project categories on a quarterly basis for all fiscal year appropriations; SIGIR pulls CERP allocation, obligation, and expenditure data from the IRMS, which lags in reporting by one quarter. Therefore, totals may not match top-line values found in the Funding Sources subsection of this Report. Sources: IRMS, MNC-I Quarterly Report, 1/15/2010; OSD, response to SIGIR data call, 4/10/2009; NEA-I, response to SIGIR data call, 1/6/2010; USAID, response to SIGIR data call, 1/2/2010; USAID, response to SIGIR data call, 4/13/2009.
Oil and Gas
As of December 31, 2009, the United States had allocated $2.06 billion, obligated $1.93 billion, and expended $1.91 billion from the four major funds to rehabilitate Iraq’s oil and gas infrastructure.  

Crude Oil Production and Exports
Iraq’s crude oil production averaged 2.42 million barrels per day (MBPD) this quarter, down almost 3% from last quarter’s 2.49 MBPD. Exports of crude oil averaged 1.91 MBPD, down 4% from 1.99 MBPD last quarter. After generally upward trends from the beginning of 2006 to the end of 2007, production and exports remained relatively flat over the past two years, probably reflecting the limitations of Iraq’s aging oil infrastructure. For crude oil production and export levels since 2003, see Figure 3.8.
Of the crude oil retained for domestic use, about 0.45 MBPD went to refineries for processing into petroleum products. Another 56,000 barrels per day were burned in electric power plants.

**Bidding for Service Contracts**

On December 11 and 12, 2009, the Ministry of Oil held its second petroleum licensing round, in which bids for service contracts for 10 large oil fields were solicited. The event concluded with bids for seven fields being received and tentatively accepted by the ministry.

In contrast, the first bidding round, held in June 2009, resulted in only one bid being accepted—an offer for the supergiant Rumaila oil field. Between the first and second rounds, the ministry reportedly accepted two additional bids—for the West Qurna 1 field, by ExxonMobil and Royal Dutch Shell, and for the Zubair field, by a consortium of Eni, Kogas, and Occidental Petroleum. The Rumaila deal, with a consortium of British Petroleum and China National Petroleum Company, has advanced the farthest, having been approved by the Council of Ministers in early November.

Figure 3.9 shows the fields offered at the two auctions, and Table 3.6 shows the outcome of the bid solicitation and award processes. According to the Ministry of Oil, if the plateau production targets are achieved, the latest service contracts potentially could raise daily levels of production by an additional 4.7 MBPD—on top of the 4.9 MBPD production increases that could result from the first round. With current daily crude production approaching 2.5 MBPD, such a substantial increase in capacity in the next 10 to 15 years would elevate

**TABLE 3.6**

**RESULTS OF OIL BIDDING ROUNDS**

<table>
<thead>
<tr>
<th>OIL FIELD</th>
<th>BIDDING CONSORTIUM</th>
<th>PROVED RESERVES (BILLION BARRELS)</th>
<th>CURRENT PRODUCTION (BARRELS/DAY)</th>
<th>REMUNERATION FEE ($/BARREL)</th>
<th>PLATEAU PRODUCTION COMMITMENT (BARRELS/DAY)</th>
<th>PRODUCTION PLATEAU PERIOD (YEARS)</th>
<th>SIGNATURE BONUS ($ MILLIONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Project Round 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rumaila</td>
<td>BP (51%), CNPC (49%)</td>
<td>17.8</td>
<td>1,000,000</td>
<td>2.00</td>
<td>2,850,000</td>
<td>7</td>
<td>500</td>
</tr>
<tr>
<td>West Qurna 1</td>
<td>ExxonMobil (80%), Shell (20%)</td>
<td>8.6</td>
<td>270,000</td>
<td>1.90</td>
<td>2,325,000</td>
<td>7</td>
<td>400</td>
</tr>
<tr>
<td>Zubair</td>
<td>Eni (44%), Oxy (31%), Kogas (25%)</td>
<td>4</td>
<td>205,000</td>
<td>2.00</td>
<td>1,200,000</td>
<td>7</td>
<td>300</td>
</tr>
<tr>
<td><strong>Project Round 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Majnoon</td>
<td>Shell (60%), Petronas (40%)</td>
<td>12.6</td>
<td>55,000</td>
<td>1.39</td>
<td>1,800,000</td>
<td>10</td>
<td>150</td>
</tr>
<tr>
<td>Halfaya</td>
<td>CNPC (50%), Petronas (25%), Total (25%)</td>
<td>4.1</td>
<td>3,000</td>
<td>1.40</td>
<td>535,000</td>
<td>13</td>
<td>150</td>
</tr>
<tr>
<td>Qaiyarah</td>
<td>Sonangol (100%)</td>
<td>0.8</td>
<td>2,000</td>
<td>5.00</td>
<td>120,000</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td>West Qurna 2</td>
<td>Lukoil (75%), Statoil (25%)</td>
<td>12.9</td>
<td>0</td>
<td>1.15</td>
<td>1,800,000</td>
<td>13</td>
<td>150</td>
</tr>
<tr>
<td>Badra</td>
<td>Gazprom (40%), Kogas (30%), Petronas (20%), TPAO (10%)</td>
<td>0.1</td>
<td>0</td>
<td>5.50</td>
<td>170,000</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>Garraf</td>
<td>Petronas (60%), Japex (40%)</td>
<td>0.9</td>
<td>0</td>
<td>1.49</td>
<td>230,000</td>
<td>13</td>
<td>100</td>
</tr>
<tr>
<td>Najma</td>
<td>Sonangol (100%)</td>
<td>0.9</td>
<td>0</td>
<td>6.00</td>
<td>110,000</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>62.7</td>
<td>1,535,000</td>
<td></td>
<td>11,140,000</td>
<td></td>
<td>2,050</td>
</tr>
</tbody>
</table>

*Note: Numbers affected by rounding.*

*Key to acronyms and national affiliation: BP = Royal British Petroleum (United Kingdom), CNPC = China National Petroleum Corporation (China), ExxonMobil (United States), Shell = Royal Dutch Shell (United Kingdom), Eni (Italy), Oxy = Occidental Petroleum (United States), Kogas = Korea Gas Corporation (Korea), Petronas (Malaysia), Total (France), Sonangol (Angola), Lukoil (Russia), Statoil (Norway), Gazprom (Russia), TPAO = Turkish Petroleum Corporation (Turkey), Japex = Japan Petroleum Exploration Company (Japan).*

*A signature bonus is a non-recoverable sum of money that the winning bidder agrees to pay to the GOI upon award of the contract.*

Iraq’s position as a global oil exporter and could significantly increase the GOI’s revenues. Although substantial production increases are possible, industry observers believe that the obstacles of providing adequate security, enhancing infrastructure, and navigating political uncertainty could inhibit rapid gains in output.\textsuperscript{196} Echoing these concerns, Oil Minister al-Shahristani said that “managing these new contracts, increasing production four-five times, is not a simple task.”\textsuperscript{196} Moreover, he said that increasing production would require more than field development and would include a wide range of work, such as the development of pipelines and export terminals, the building of

**FIGURE 3.9**

**LOCATIONS OF IRAQ’S OIL FIELDS IN FIRST AND SECOND BIDDING ROUNDS**

\[\text{Note: These second-round fields or projects received no bids: East Baghdad (north and central); Middle Furat (Kifl, West Kifl, Merjan); and Eastern Fields (Gilabat, Khashem Al-Ahmar, Nau Doman, Qumar).}\]

roads and bridges, and the training of thousands of Iraqis to operate and maintain the sector.¹⁹⁷

**Pipeline Security**
This quarter, three breaks occurred on the pipeline that carries Iraqi crude oil to the port of Ceyhan, on Turkey’s Mediterranean coast, halting the northern flow of oil for export for a total of about 11 days. In all, at least 4.5 million barrels of oil were delayed for export shipment, and 245,000 or more barrels were lost. The cause of the first break, on October 6, is unknown. The second break apparently was caused by an IED, which disrupted the flow of oil for six days at the end of October. The last break, on November 22, may have resulted from too much pressure in the pipeline; it was repaired after four days. None of these breaks occurred in sections protected by a Pipeline Exclusion Zone.¹⁹⁸

**Refineries and Petroleum Products**
This quarter, Iraq produced 46% of its total supply of liquefied petroleum gas (LPG), 67% of its gasoline, 95% of its diesel fuel, and 98% of its kerosene. The mix of fuels produced at refineries typically varies based on seasonal needs, but output from Iraq’s refineries during 2008 and 2009 was significantly higher than it was in the preceding two years, ranging from a 20% increase in gasoline production to a 74% increase in kerosene production. Compared with 2006–2007, average daily imports of LPG more than doubled during the past two years, while imports of diesel, kerosene, and gasoline all declined. As shown in Figure 3.10, the net effect was a slight (2.5%) decrease in the average supply of gasoline, and increased supplies of the other three fuels: diesel supply increased 32%; kerosene, 55%; and LPG, 94%.¹⁹⁹

**Electricity**
As of December 31, 2009, the United States had allocated $5.16 billion, obligated $5.00 billion, and expended $4.86 billion to help improve Iraq’s
generation, transmission, and distribution of electricity.\textsuperscript{200} Table 3.7 provides a breakdown of U.S.-funded projects by project type.

**Electricity Supply**

Electricity supply to the national grid this quarter averaged about 5,952 megawatts (MW), or 142,848 megawatt-hours (MWh) per day, a 19% increase from the same quarter in 2008. However, this was an almost 500 MW decrease from the previous quarter’s average, ending the steadily upward growth in supply that had been occurring since the beginning of 2008.\textsuperscript{201}

While average electricity supply decreased by 8% from the previous quarter, estimated demand dropped by more than that.\textsuperscript{202} Demand for electricity fluctuates with the seasons, typically peaking in the July-September period and then decreasing in the last quarter of the year.\textsuperscript{203} Thus, supply as a percentage of estimated demand actually increased slightly this quarter.

Reduced output from Iraq’s power plants accounted for virtually all of the decrease in supply, falling from 138,475 MWh per day in the previous quarter to 126,843 MWh per day this quarter.\textsuperscript{204} Planned maintenance outages at several thermal plants, the forced shutdown of a large generating unit at the Mussayib thermal plant because of severe boiler leaks, and inadequate supplies of fuel oil all contributed to this drop in production.\textsuperscript{205}

This quarter, Iraq’s power plants collectively operated at 34% of their nameplate capacity and 44% of their feasible capacity. As shown in Figure 3.11, combustion turbine plants were the most productive, operating with the greatest output relative to their capacity (47% of nameplate capacity and 59% of feasible capacity) and accounting for 60% of total

---

**Table 3.7**

**Value of U.S. Electricity Projects, by Project Type**

<table>
<thead>
<tr>
<th>Project Category</th>
<th>Completed</th>
<th>Ongoing</th>
<th>Not Started</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td>1,975.78</td>
<td>22.01</td>
<td>9.51</td>
<td>2,007.29</td>
</tr>
<tr>
<td>Distribution</td>
<td>1,235.64</td>
<td>5.99</td>
<td>25.41</td>
<td>1,267.04</td>
</tr>
<tr>
<td>Transmission</td>
<td>920.97</td>
<td>105.93</td>
<td>69.82</td>
<td>1,096.71</td>
</tr>
<tr>
<td>Sustainment and Spare Parts</td>
<td>300.87</td>
<td>2.84</td>
<td>0.70</td>
<td>304.41</td>
</tr>
<tr>
<td>General Infrastructure</td>
<td>278.59</td>
<td>11.37</td>
<td>11.34</td>
<td>301.30</td>
</tr>
<tr>
<td>Monitoring and Control</td>
<td>131.13</td>
<td>0.31</td>
<td>11.59</td>
<td>143.02</td>
</tr>
<tr>
<td>Other</td>
<td>26.31</td>
<td>4.51</td>
<td>3.68</td>
<td>34.50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4,869.28</td>
<td>152.96</td>
<td>132.05</td>
<td>5,154.28</td>
</tr>
</tbody>
</table>

Note: Numbers affected by rounding. This list of reconstruction projects is based on IRMS data, which is not fully accurate or complete. Project totals therefore do not reconcile with top-line obligations and expenditures provided by the agencies.


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**Figure 3.11**

**Power Plant Capacity and Production, by Plant Type**

10/1/2009–12/31/2009 Averages

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Note: Numbers affected by rounding.

power plant production. By comparison, output from hydroelectric plants continued to be depressed by the shortage of water in Iraq.\textsuperscript{206}

Of the total supply to the grid, electricity imports from Iran and Turkey averaged about 16,000 MWh per day, virtually the same as import levels in the previous quarter.\textsuperscript{207}

For domestic production and imports, relative to estimated demand, since January 2004, see Figure 3.12. For a comparison of Iraq’s per capita electricity supply with that of other countries, see Table 3.8.

\textbf{Reassessing the Supply-Demand Gap}

Like some of its neighboring countries, Iraq heavily subsidizes the electricity supplied from the national grid, a practice that can encourage consumption. Unlike most of its neighbors, however, Iraq has insufficient supplies on the grid to satisfy demand.\textsuperscript{208} Although Iraq’s supply-demand gap appears to have narrowed over the past two years, the Ministry of Electricity (MOE) still must allocate—in effect, ration—the limited supplies; and Iraqis who can afford to do so purchase supplemental electricity from distributed, privately run neighborhood generators. In Central Baghdad, for example, residential customers pay 10 to 15 times more for electricity on the open market than for subsidized electricity from the MOE.\textsuperscript{209}

According to a recent survey, just 18% of Iraqis are somewhat or very satisfied with the amount of electricity they receive.\textsuperscript{210} Such surveys, as well as the observations made to SIGIR at various times by Iraqi officials and ITAO staff, suggest that the supply-demand gap may be wider than previously reported (and wider than shown in Figure 3.12).

\begin{table}[h]
\centering
\caption{Average Iraqi Electricity Supply and Estimated Demand, by Month, 1/2004–12/2009}  
\begin{tabular}{|c|c|c|c|c|c|c|}
\hline
Month & Power Plant Production & Imports & Total Supply & Estimated Demand \\
\hline
\hline
\end{tabular}
\end{table}

\begin{table}[h]
\centering
\caption{Electricity Supply in Selected Countries, per 100,000 People}  
\begin{tabular}{|c|c|}
\hline
Country & MWh/Day \\
\hline
Kuwait & 4,094 \\
UAE & 4,085 \\
United States & 3,454 \\
Saudi Arabia & 1,577 \\
Iran & 634 \\
Turkey & 548 \\
Jordan & 449 \\
Iraq & 377 \\
Syria & 371 \\
Pakistan & 112 \\
Afghanistan & 10 \\
\hline
\end{tabular}
\end{table}

To improve the precision of the demand estimates, including the contribution from "suppressed demand," ITAO in 2009 commissioned Parsons Brinckerhoff to undertake a load-forecasting study. The statistical analysis resulted in estimates of demand that were higher than what was previously reported by MOE to ITAO. For example, estimates of average daily peak demand nationwide throughout 2009, as presented in the ITAO/ESD Electric Daily Performance Reports, averaged about 10,000 MW. In comparison, the Parsons Brinckerhoff study estimated demand during the same period to have been roughly 13,100 MW—about 30% higher.

**Plans To Expand Generating Capacity**

In an effort to close the supply-demand gap, and with substantial assistance from the United States and other countries, Iraq has increased its feasible generating capacity by 40% over the past three years—from about 8,500 MW at the end of 2006 to about 12,000 MW at the end of 2009. The MOE’s plans to expand capacity, primarily through the installation of new combustion turbines purchased from GE and Siemens, could more than double current feasible capacity in the next five years.

Based on power-plant performance over the past few years, however, it seems unlikely that actual production will reach feasible capacity levels. Furthermore, even if the planned generating units are constructed and become operational on schedule, it is unclear if the resulting production increases would be sufficient to close the supply-demand gap.

**Ongoing U.S. Projects**

As of December 31, 2009, there were 137 ongoing U.S.-funded electricity projects in Iraq, with a total value of $192 million. USACE is managing 14 of those projects, which are funded by the IRRF and ESF and collectively valued at more than $140 million. The largest USACE project, construction of the Farabi and Jamila 132-kV substations in Sadr City, has fallen behind schedule; this $50 million project is now expected to be completed by the end of January 2010. USACE expects to complete the next two largest projects, construction of the $30 million substation in Ramadi and the $16 million rehabilitation of the substation in Falluja, in February 2010.

Almost 90% of the ongoing electricity projects reported in IRMS are funded through the CERP and have an average value of about $420,000. This quarter, USF-I approved six new CERP electricity projects costing between $500,000 and $1 million. Four of these projects, with values ranging from $535,000 to $745,000, are for the installation of power distribution lines in Qadissiya.

**Water and Sanitation**

As of December 31, 2009, the United States had allocated $2.75 billion, obligated $2.64 billion, and expended $2.48 billion to rehabilitate Iraq’s water and sanitation infrastructure and improve the delivery of services. In addition to the large construction projects managed by USACE, numerous CERP-funded projects have provided water purification kits for potable water, drip irrigation systems, sanitation cleanup, water trucks, canal cleanup, repair of generators, water supply pipelines, and removal of illegal water taps. For an overview of ongoing and completed water projects in Iraq since 2003, see Figure 3.13.

By mid-2009, according to a DoS estimate cited by USACE, more than 21.2 million Iraqis had access to potable water, up from 5.5 million in 2003. As of September 2009, the Baghdad Water Authority was providing 2.5 million cubic meters of water per day, satisfying 89% of demand. According to an August 2009 survey, about 70% of Iraqis reported being able to get safe and clean drinking water at least some of the time, and 28% were satisfied with the availability of drinking
Figure 3.13
U.S.-funded Water Projects
Value of Completed Projects and Location of Large Ongoing Projects

<table>
<thead>
<tr>
<th>U.S.-funded Water Projects, by Type</th>
<th>Completed</th>
<th>Ongoing</th>
<th>Not Started</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Treatment</td>
<td>1,246.05</td>
<td>75.63</td>
<td>14.05</td>
<td>1,335.73</td>
</tr>
<tr>
<td>Water Distribution</td>
<td>369.69</td>
<td>33.39</td>
<td>8.57</td>
<td>411.65</td>
</tr>
<tr>
<td>Sustainment (O&amp;M)</td>
<td>352.50</td>
<td>8.09</td>
<td>3.70</td>
<td>364.28</td>
</tr>
<tr>
<td>Misc. Facilities</td>
<td>248.30</td>
<td>11.40</td>
<td>9.89</td>
<td>269.59</td>
</tr>
<tr>
<td>Sewage Collection</td>
<td>165.66</td>
<td>47.60</td>
<td>22.21</td>
<td>235.47</td>
</tr>
<tr>
<td>Water Resource</td>
<td>211.52</td>
<td>3.92</td>
<td>0.79</td>
<td>216.23</td>
</tr>
<tr>
<td>Misc. Procurement</td>
<td>166.69</td>
<td>0.57</td>
<td>0.80</td>
<td>168.06</td>
</tr>
<tr>
<td>Sewage Treatment</td>
<td>88.29</td>
<td>32.24</td>
<td>0.27</td>
<td>120.80</td>
</tr>
<tr>
<td>Irrigation</td>
<td>44.06</td>
<td>39.18</td>
<td>0.18</td>
<td>83.42</td>
</tr>
<tr>
<td>Capacity Building</td>
<td>29.62</td>
<td>9.37</td>
<td>3.82</td>
<td>42.81</td>
</tr>
<tr>
<td>Spare-part Replenishment</td>
<td>6.17</td>
<td>0.07</td>
<td>0.00</td>
<td>6.24</td>
</tr>
<tr>
<td>Total</td>
<td>2,928.54</td>
<td>261.46</td>
<td>64.27</td>
<td>3,254.28</td>
</tr>
</tbody>
</table>

Note: Data not audited. Numbers affected by rounding. This list of reconstruction projects is based on IRMS data, which is not fully accurate or complete. Project totals therefore do not reconcile with top-line obligations and expenditures provided by the agencies.


U.S.-funded Water Projects, by Fund

<table>
<thead>
<tr>
<th>Fund</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERP</td>
<td>$852.12</td>
<td>26.2%</td>
</tr>
<tr>
<td>ESF</td>
<td>$222.43</td>
<td>6.8%</td>
</tr>
<tr>
<td>ISFF</td>
<td>$16.07</td>
<td>0.5%</td>
</tr>
<tr>
<td>IRRF</td>
<td>$2,163.65</td>
<td>66.5%</td>
</tr>
</tbody>
</table>

The U.S. Director of National Intelligence’s last annual threat assessment cited a lack of clean drinking water nationwide as a factor that undermines the GOI’s credibility with the Iraqi public.225 This quarter, brigade commanders in Basrah province pointed to Iraqi mismanagement of water resources as a reason for lack of access to adequate amounts of water for drinking and irrigation.226 For instance, the 17th Fires Brigade reported that Basrah province has sufficient water for drinking and irrigation, but poor maintenance, training, and illegal tapping has led to poor distribution.227 PRT Basrah reported working with the provincial government and various ministries to improve management of water resources and train ministry employees.228 A November water scarcity workshop in Basrah, however, did not go well: U.S. Embassy-Baghdad reported that the provincial government’s planning of the conference was poor and the event was not well attended.229

**U.S.-funded Water Projects Completed This Quarter**

This quarter, USACE completed nine water and sanitation projects, at a collective cost of $11.3 million, including two $4.2 million projects funded by the IRRF: construction of a sludge lagoon system associated with the Sadr City R3 Water Treatment Plant and electrical upgrades for the Sweet Water Canal Pump Station No. 2, which supplies potable water in Basrah.230

**Ongoing Water Projects**

As of December 31, 2009, USACE was continuing work on 44 water projects, valued at $170 million.231 Additionally, there were about 300 CERP-funded water projects ongoing this quarter, totaling almost $73 million.232

**Water Treatment**

USACE expects to complete construction of the $70 million Meshkab Water Treatment Plant in Najaf by the end of March 2010. The United States funded one-third of this project ($23.1 million) through the IRRF, and the GOI funded the remainder.233 According to USACE, work on the $10.1 million, ESF-funded Garma Water Reverse Feeding facility was scheduled for completion by the end of January 2010.234 Work to repair generators at the Kharkh Water Treatment Plant in Baghdad, previously scheduled for completion in April 2008, is behind schedule. USACE expects this $8.3 million project to be completed by February, 2010.235

According to USACE, a $4.7 million operations and management project at the Dokan Water Network was 36% complete as of December 31, 2009. This project to provide safe drinking water to the city of Sulaymaniya was originally scheduled for completion in April 2010; it is now slated to be complete in September 2010.236

This quarter, USF-I approved two new CERP water-treatment projects valued at slightly less than $1 million each—one to complete construction of the Az Zubayar Water Treatment Plant at a cost of $995,000, and the other to renovate the Diwaniyah Water Treatment Facility Pump Station at a cost of $988,000. According to USF-I, the Az Zubayar project will provide 30 million liters of potable drinking water to about 150,000 residents in Basrah province, while the Diwaniyah project will provide potable water to more than 500,000 residents.
Completion of the project, however, will require the GOI to accomplish the following:

- Complete the collection network in the remaining areas of the city.
- Operate the two remaining pump stations that will be idle at the completion of the USACE project.
- Connect the roughly 20,300 remaining Falluja households to the collection system and the collection system to the trunk lines.
- Provide enough fuel to run power generators until the electrical grid, to which the system is also connected, becomes more dependable.

As of January 2010, local contractors had either been paid or were pursuing claims, an issue of concern in SIGIR’s 2008 inspection report. The contractor hired to build the trunk lines was terminated for substandard work. USACE reported that the activated sludge system can be operated in a manner that minimizes the odor caused by overloading, another concern mentioned in SIGIR’s report.241

Elsewhere in Iraq, installation of Sanitation Network Alabbas, a 26-km sewage network collection system in Basrah, remains ongoing. USACE expects this $11.2 million project to be completed in July 2010.242 A $1.8 million sewer project in Baghdad’s Adhamiya neighborhood, scheduled for completion this quarter, aims to reconstruct the existing sewer system, replacing sewer lines,

Iraqi workers on the site of the $1.8 million USACE-managed sewer project in the Adhamiya neighborhood of Baghdad. (USACE photo)
manholes, and manhole covers to provide a sewer network to more than 600 homes. In Wasit province, the Numaniyah Water Treatment Plant will provide support to a pump station, water compact unit, water network, wastewater pump stations, and a sewer line.

Irrigation
The Eastern Euphrates Drain project in Muthanna province, funded by $38.5 million of the IRRF, was scheduled for completion by the end of this quarter. According to USACE, the project aimed to reclaim more than 58,000 hectares of agricultural land and remove excess saline water from more than 400,000 hectares of irrigated land.

Transportation and Communications

As of December 31, 2009, the United States had allocated $1.16 billion, obligated $1.10 billion, and expended $0.99 billion to improve Iraq’s transportation and communications systems.

Transportation

Ports
USACE reported that as of December 31, 2009, it had completed eight port projects in Iraq and had no ongoing U.S.-funded port projects. USACE continued to build its first foreign military sales project with Iraq, the GOI-funded $53 million Umm Qasr Pier and Seawall in Basra. The project, begun in October 2008, is designed to provide a berthing facility for the Iraqi Navy.

Roads and Bridges
USACE reported this quarter that as of December 31, 2009, it had completed 278 village road projects and expressways; 31 projects remain ongoing, including a $130 million highway extension to connect the Sulaymaniya road interchange to the Taza road interchange in the Kurdistan Region. The three-phase project is funded by oil revenues from the provincial government in Sulaymaniya. USACE provided $4.3 million of the ESF for the engineering design, which includes five highway interchanges and four bridges on a six-lane road.

Construction also continued this quarter to resurface more than 81 kilometers of roads in 17 different locations in northeastern Iraq, including Tameem province. The $2.76 million project, funded by the CERP, aims to provide a network of rural roadways to give local residents access to local and regional markets in an effort to stimulate agricultural and economic growth.

Railroads
As of December 31, 2009, USACE had completed all 112 railroad renovation projects that it had undertaken. The Iraqi Ministry of Transportation signed a memorandum of understanding with Turkey this quarter to open a direct railroad line between Turkey and Iraq. The ministry also reported that the State Company for Iraqi Railways had started to renovate passenger platforms at train stations, and that a Turkish delegation visited Baghdad to discuss plans to rehabilitate railway cars.
Rehabilitation and expansion of Iraqi railroad track and station infrastructure continued this quarter. The U.S. government continued to build a $40.3 million digital microwave radio communication network to enhance the Iraqi railway communications system. Total expenditures for 2009 reached $7.2 million. The 33 microwave radio construction sites have been completed, and the U.S. government expects next quarter to begin operation and maintenance training programs. The project is managed by the Transportation Attaché.254

Aviation
This quarter, two international airports in the Kurdistan Region—Erbil International Airport and Sulaymaniyah International Airport—grew in size and capacity, paving the way for increased air travel options and linkages from the Kurdistan Region to the rest of the world. A new terminal at the Erbil airport with 16 gates is scheduled to open in March 2010. The terminal is expected to process about a million passengers annually, while the runways, one of which is among the longest in the world, are projected to handle up to 10 million passengers annually.255

The KRG envisions building the Erbil airport into a regional hub and has hired a Korean management consulting team to oversee operations and management as flights from the new terminal begin service. The number of flights has expanded to 80 weekly to accommodate the Kurdish diaspora and is a reflection of the growth in trade between the Kurdistan Region and surrounding countries. The smaller international airport in Sulaymaniyah now supports almost 60 passenger flights per week, but its management envisions expanding routes to China and other East Asian nations.256 For an overview of international and national flights from the Kurdistan Region, see Figure 3.14.

Elsewhere in Iraq, a French firm, Aeroports de Paris, won a contract for approximately $42.5 million from the GOI in November 2009 to build a new airport between the cities of Kerbala, Najaf, and Hilla in southern Iraq.257

FIGURE 3.14
INTERNATIONAL AND DOMESTIC FLIGHTS FROM THE KURDISTAN REGION

Telecommunications

Following the issuance of three telecommunications licenses in 2007, the Ministry of Communications again proposed this quarter a fourth mobile license that would be controlled by a new state-owned company in partnership with an international telecommunications provider. The first three licenses went to private companies using 2G Global System for Mobile (GSM) technology. The proposed state-owned license would use higher frequency bandwidth, commonly known as 3G.261

The United States is continuing to construct the $23.8 million al-Mamoon Exchange and Telecommunications Center in Baghdad. In July, the project was awarded to a new contractor and is currently 7% complete. The contractor is experiencing delays with submittals and the delivery of materials. Two training programs—an $800,000 project on e-governance and a $600,000 project on regulatory training with the U.S. Federal Communications Commission—have yet to be executed.262

Phone and Internet Service

Iraqis continued to use mobile phones more than any other form of telecommunication, with the total number of mobile phone subscribers at nearly 19.5 million, or 68% of the population. Zain, Asia Cell, and Korek remain the three main cell phone providers. There were 1.25 million landline subscriptions, accounting for 4.3% of the population, and 1.6 million Internet subscribers, accounting for 5.1% of the population.263

Airways announced this quarter that it planned to resume direct flights between Baghdad and Paris following an expected agreement between Iraq and France.256

As part of the Security Agreement between the United States and GOI, Iraq has assumed control of all its sovereign airspace, but has requested assistance from the United States to monitor and control airspace below 24,000 feet until the GOI has the infrastructure and capability to assume control of all of its airspace. The U.S. military provides air traffic services to flights, including approach, at airports in Baghdad, Mosul, Erbil, Najaf, Sualymaniyah, and Basrah. The Iraq Civil Aviation Authority (ICAA) is developing a plan with help from the U.S. government to incrementally transition air traffic control to the Iraqis, but the ICAA is behind in its preparation to take over air traffic control primarily due to a lack of licensed air traffic controllers and an absence of infrastructure. The Baghdad Area Control Center (BACC), for instance, needs 200 to 250 licensed air traffic controllers to continue to provide current services and assume services currently provided by the U.S. military, but currently has none.259

Based on current training, the BACC is expected to have 10 to 20 licensed controllers by 2011. The Washington Consulting Group currently provides controller training to the ICAA and provides an expatriate controller workforce for day-to-day air traffic operations. No additional transfer of airspace control is expected until the fall of 2010.260