

USAWC STRATEGY RESEARCH PROJECT

**RESTORING ESSENTIAL SERVICES IN BAGHDAD DURING OPERATION IRAQI
FREEDOM II**

by

Colonel L. Barrett Holmes
United States Army

Colonel Mike Moon
Project Adviser

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ABSTRACT

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Restoring essential services in Baghdad during Operation Iraqi Freedom II was one of the five lines of operation for Task Force Baghdad and the First Cavalry Division. Billions of dollars in grants, loans and reconstruction dollars were committed by the United States and its coalition partners. The reconstruction effort was a monumental task because of the years of neglect the infrastructure had suffered under Saddam Hussein. Task Force Baghdad's effort to restore Baghdad's crumbling infrastructure and essential services were key to achieving military and political objectives. This report provides information on: 1) Resourcing the Future Combat Systems Brigade Combat Team and training the Brigade Combat Teams for the reconstruction effort. 2) The sewer, water, electric and trash, (SWET) operations to restore essential services. 3) Co-locating the U.S. Army Corps of Engineers (USACE), Gulf Region Division (GRD) area offices with the Brigade Combat Teams; a break through in contracting and construction management. 4) Using Sadr City reconstruction efforts as a case study to illustrate how leveraging construction efforts helped persuade the Mahdi-Milita to stop fighting. 5) Working with the Iraqis, government and non-government organizations to restore essential services. 6) Recommendations to enhance reconstruction efforts in the future.

RESTORING ESSENTIAL SERVICES IN BAGHDAD DURING OPERATION IRAQI FREEDOM II

This report focuses on the essential services line of operations for the First Brigade Combat Team (1st BCT), First Cavalry Division and addresses the essential service and engineering efforts in the most volatile sector of Baghdad, Sadr City, during Operation Iraqi Freedom II (OIF II). During OIF II, the First Brigade Combat Team was commanded by Colonel Robert B. (Abe) Abrams, and had primary responsibility for the Sadr City and Nine Nissan Districts in eastern Baghdad. The First Cavalry Division led Task Force Baghdad during OIF II and on 15 April 2004, the First Team took control of Task Force Baghdad from the First Armored Division. Multi-National Division Baghdad (MND-B) – also known as Task Force Baghdad - was comprised of approximately 39,000 Soldiers that served in twelve brigade-sized elements comprised of a 62-battalion coalition task force focused primarily on Baghdad.¹ This relief in place occurred during a multiparty insurgency uprising. It is a difficult task to conduct a relief in place with any unit in a combat situation, further complicating the operation; the transition took place while in contact with the enemy. These conditions left Task Force Baghdad even more determined to achieve the campaign plan focused on Baghdad as the center of gravity in Iraq.

The population of Baghdad is estimated to be approximately 6-7 million people. The area of operations was approximately 25 kilometers by 26 kilometers. Geographically, about the size of Austin, Texas; the population density however, is comparable to Chicago, Illinois. Baghdad is an ancient city that was established in 762 and is divided by the Tigris River. The dense urban area is a mixture of skyscrapers in downtown Baghdad, one to two story buildings and mud brick huts in some of the surrounding areas.² The infrastructure of the city has suffered from years of decay and neglect under Saddam Hussein's regime. At the onset of OIF II, there were no functioning sewage treatment plants, sewage pump stations often operated at 25% capacity or not at all, and numerous sewer pipes were broken which allowed raw sewage to run into the streets. The water distribution network was likewise in very poor condition. To further complicate matters, many of the water distribution network pipes were broken and raw sewage often mixed with drinking water. It was a common sight in many areas of Baghdad to see raw sewage pooled in the streets. Needless to say, waterborne infections and disease were thriving in this environment.

Iraq's infrastructure was in much worse shape than the U.S. government believed. In an October 2003 interview with ABS News, Secretary of State Colin Powell acknowledged that the pre-war assessment of Iraq's infrastructure and economy was far too optimistic. Secretary

Powell stated that we underestimated the damage that had occurred to the infrastructure as a result of sanctions, but, more importantly, as a result of the manner Saddam Hussein ran the country in a brutal, dictatorial way for almost 30 years. Money was misused to buy weapons and to enrich the elite of the regime. It was not used to restore the infrastructure.³ The requirements for large-scale economic assistance were staggering. Iraq's war with Iran from 1980-88, the Gulf War in 1991, which was followed by ten years of sanctions, resulted in a badly battered economy and decaying infrastructure. Cost estimates to rebuild Iraq range from \$30 to \$100 billion, and these figures do not include the cost of deploying and operating coalition forces.⁴

To add to the staggering cost of rebuilding, the overall situation in Iraq is complex, uncertain, volatile and ambiguous. Britain's senior military representative in Iraq, Lt. Gen. Graene Lamb, Deputy Commander of Multinational Forces-Iraq, currently serving his fourth term, told reporters in the Pentagon via satellite from Iraq that the situation in Iraq is 'hard pounding' and as complex as anything he had ever done. "It is like playing three dimensional chess in a dark room."⁵ For all the members of Task Force Baghdad, the task ahead would require patience, persistence, and resilience.

Training and Preparation

Prior to deployment, to help prepare the senior leadership of the division for the complexities of operating a major city, the First Cavalry Division partnered with the City of Austin, Texas. The City Manager of Austin, Toby Hammett Futrell, sponsored a seminar at the Austin Convention Center to discuss some of the problems and situations that might face the First Cavalry Division in Baghdad. The instruction provided by City of Austin officials and technicians was directly related to three of the five lines of operation that the First Cavalry Division would implement in Baghdad. Essential services, promoting governance and economic pluralism were areas of interest and were discussed in great detail. Essential services discussions concentrated on power, water, sewer, solid waste and project management. The promoting governance line of operations focused on public administration, law and order, public health management, and municipal elections. The economic pluralism presentation included information on how to start a new business and how to expand an existing business.

This program with the City of Austin was so successful that it was continued when the 4th Infantry Division redeployed to Iraq in 2005. The 4th Infantry Division and the City of Austin expanded the program to include monthly video teleconferences (VTCs) while the 4th Infantry Division was deployed in theater. These VTCs provided a significant reach back capability for technical expertise; a primary example of this is the teleconference concerning emergency

services personnel and administrators with the City of Austin discussing issues ranging from a flu pandemic to innovative foam applications for fire management in Baghdad. These video teleconferences provided a forum to discuss new ideas and emerging concepts that might arise in the complex environment in Baghdad. This reach back capability is a valuable tool to leverage when questions arise. Not only is the exchange of ideas and information at these seminars beneficial to the military, it also helps civilian organizations have a connection with the armed forces that they normally would not have.

When the First Cavalry Division was scheduled to return to Baghdad in support of their next Operation Iraqi Freedom deployment, The City of Austin graciously volunteered to host another seminar with The First Team. This First Cavalry Division – City of Austin Seminar was held from 8-10 May, 2006, at the Austin Convention Center. For this seminar, in addition to the division and brigade command leadership, selected division staff officers and battalion commanders were allowed to attend. The seminar followed an agenda very similar to the one presented to the First Cavalry Division leadership in 2003. Site visits to the University of Texas and to key infrastructure nodes around the city enabled subject matter experts to further enhance the understanding of city management.

In addition to the training in Austin, the First Cavalry Division Engineer Brigade coordinated with the City of Killeen, Texas, for officer and non-commissioned officer professional development classes. This level of training focused primarily on the three engineer battalions organic to the First Cavalry Division. The 8th, 20th and the 91st Engineer Battalions sent mainly company grade officers and mid-grade non-commissioned officers to the training. The instruction with the City of Killeen included training on operations and maintenance of sewer, water and electrical systems.

This training is very unique, and cannot be matched by military training or the Military Training and Doctrine Command. The positive experience of this training enhanced the First Cavalry Division's leadership's ability to operate in the complex and volatile city of Baghdad. The partnership that the City of Austin and the City of Killeen has developed with Fort Hood units should serve as a model for other communities near military installations to follow. Given the current emphasis on stability and reconstruction across the spectrum of conflict, and the obvious lack of experience in civil government, these exchanges with local government significantly aid in the preparation of combat forces where no other timely, feasible options exist.

Interaction with the Government Support Team and the Amanat

Upon the arrival in Baghdad of the First Team, it was imperative to gain situational awareness and develop a common operating picture of the infrastructure. It took several months of interaction with the Government Support Team (GST), the Amanat, which is Baghdad's city hall, and local officials to develop an understanding of the Baghdad infrastructure. In an efficient, functioning city there are city managers, planners and engineers that are responsible for planning, coordination and synchronization to keep essential services operating around the clock. In Baghdad, this daunting task was the responsibility of the Amanat. The Amanat tied together Baghdad governance and essential services. The Government Support Team (GST), led by COL Ken Cox, Commander of the Engineer Brigade for the First Cavalry Division, was the link to coordinate essential services, safety, and security and community services with the Amanat, Baghdad government officials and Task Force Baghdad units. The GST communicated with many agencies in order to synchronize construction and essential service efforts. At military levels, the GST facilitated coordination between Task Force Baghdad headquarters, the Gulf Region Division (GRD) of the U.S. Army Corps of Engineers, and the Brigade Combat Teams. On the civilian side of the house, the GST coordinated with the Coalition Provisional Authority (CPA) that later transitioned to the U.S. Embassy, the Iraqi Interim Government (IIG), Iraq Ministries, the Amanat and the Iraqi Reconstruction Management Office (IRMO).

In addition, the GST also helped foster relationships between military leaders and government officials to include Ambassadors, governors, provincial leaders, mayors and deputy mayors. The 1BCT's relationships were mainly focused at the district/neighborhood representative, tribal and religious leader levels. The GST held weekly coordination meetings with MG Chiarelli, Commander of Task Force Baghdad, GRD, civilian contractors; non-governmental organizations (NGOs) and brigade combat team representatives. The duties and responsibilities of the GST were later transferred to the Provincial Reconstruction Teams (PRTs).

As of January 2007, Provincial Reconstruction Teams currently operate in 10 out of Iraq's 18 provinces. The PRTs work with local Iraqi leaders to build local capacity in governance, reconstruction and economic development with the ultimate goal of accelerating the transition to Iraqi self-reliance. The teams consist of 35 to 100 American and coalition personnel that are based upon the needs and size of the province. Team members come from the Department of State, the Department of Defense, the Department of Justice, the Department of Agriculture, the United States Agency for International Development (USAID) and the U.S. Army Corps of Engineers. Additionally, President Bush announced on 10 January, 2007, in the State of the

Union Address, that the United States will expand its PRT program to support U.S. strategic priorities in Iraq and help transition to Iraqi self-reliance.⁶

Full Spectrum Operations

During OIF II, Task Force Baghdad conducted full spectrum operations that focused on five lines of operation. These five lines of operation were employed simultaneously in a balanced manner. The lines of operation included combat operations; train and equip security forces; essential services; promote governance; and economic pluralism with information operations interconnected throughout. The end state of these full spectrum operations was a secure and stable environment for Iraqis, maintained by indigenous police and security forces under the direction of a legitimate, national government that is freely elected and accepts economic pluralism.⁷ Because the nature of warfare is dynamic and constantly changing, Task Force Baghdad's leaders quickly learned that OIF II was a different kind of fight and that our tactics must be adjusted. We no longer could rely solely on lethal operations to achieve a desirable end state. This quote by John F. Kennedy emphasizes this point. "You (military professionals) must know something about strategy and tactics and logistics, but also economics and politics and diplomacy and history. You must know everything about military power, and you must understand the limits of military power. You must understand that few of the important problems of our time have, in the final analysis, been solved by military power alone."⁸

Military victory in asymmetric warfare is virtually meaningless without successful nation building at the political, economic and security levels. Stabilization or Phase IV operations are much more challenging than defeating conventional military forces. The United States must be prepared for immediate action after the defeat of conventional forces. Both in Afghanistan and Iraq, the United States wasted critical days, weeks and months engaging in a security effort before opposition movements could regroup or reengage. It left a power vacuum, rather than exploited one, and we were not prepared for nation building or the escalation of an insurgency.⁹ "If you concentrate exclusively on victory, with no thought of the after effect, you may be too exhausted to profit by the peace, while it is almost certain that the peace will be a bad one, containing the germs of another war."¹⁰ In every conflict, it is imperative that all lines of operation are coordinated, synchronized, and executed simultaneously and not sequentially.

SWET Operations to Restore Essential Services

When the First Cavalry Division arrived in Baghdad; the sewer system throughout the city was in deplorable condition. Even though large long-term construction projects were on going to

improve the situation, completion of these large capital projects was years away. At the transfer of sovereignty in June of 2004, there were only 200 projects that had started throughout Iraq.¹¹ There were no fully functional sewage treatment facilities operational in the Baghdad area. It was a common sight in many neighborhoods to see untreated sewage flowing down the streets, and emptying directly into nearby drainage systems and rivers. Additionally, it was common place for sewage to pool in neighborhoods where drainage was poor. This environment greatly contributed to unacceptable health conditions where waterborne diseases and infections thrived.

In eastern Baghdad in the Sadr City and Nine Nissan Districts, the majority of the population was poor, working class Shiites that were deprived of essential services under Saddam Hussein's regime. These two districts alone comprised over one-half of the population of Baghdad and were the responsibility of the 1st BCT. Sewer, water, electrical and trash (SWET) services were either limited or non-existent in some areas. There were a few elite and wealthy families in Sunni and mixed neighborhoods that were able to pay for these services. However, the majority of the population struggled with the lack of essential services.

Sadr City, located in the northeast portion of Baghdad, had its own unique set of problems. Sadr City is approximately 6 KM by 8 KM and is home to an estimated population of 2 to 2.5 million people. Under Saddam Hussein, the infrastructure in this Shiite slum was allowed to deteriorate, creating intolerable conditions. Maintenance of the infrastructure was done mainly by the local population with very little help from Baghdad city officials. Because of this level of neglect, the sewer, water and electrical infrastructure had deteriorated to some of the worst conditions in Baghdad. Unemployment in the area was 60 to 70 percent and a large part of this group was fighting-age males between the ages of 15 to 45. This situation was an ideal breeding ground for militia and insurgent activity.

The First Mile of Essential Services

A critical component of the task force campaign plan was to repair or construct the first mile of city services through the use of local contractors and laborers. As the first among equal lines of operation, restoring and repairing essential services provided a visible and tangible sign of progress. The first mile concept was considered to be progress at the local level. The objective was to maximize the use of local contractors and workers, putting an Iraqi face on the work and security for the job site. Concentrating efforts at the local level produced many positive effects. These projects provided jobs to local contractors and laborers where unemployment rates in the fighting-age male population were 60-70%. These construction projects provided

visible signs of progress in the neighborhoods and throughout the districts. For the first time in many cases, local laborers were part of the reconstruction effort and they were able to earn a respectable wage of \$5-\$7 dollars per day to provide for their families.¹²

It was much better to put a pick and shovel into the hands of a worker by day and allow them to provide for their families as opposed to them firing rocket-propelled grenades, weapons and employing improvised explosive devices (IEDs) against coalition forces. Task Force Baghdad denied insurgent's influence and a base of support by improving the quality of life through deliberate targeting of neighborhoods where insurgent recruitment was high. Every dollar spent on reconstruction and restoring essential services was also a dollar spent on protecting the force. There was a direct correlation between the condition of the infrastructure and the number of attacks on coalition forces. Enemy activity was concentrated in areas where essential services were lacking and unemployment was high. Insurgent and militia cells thrived where sewer, water, and electrical systems were at their worst.

The Joint Warfare Analysis Center of the Department of Defense, based in Dahlgren, Virginia, recently conducted a study that suggests that, when the quality of life improves for Iraqi citizens, the violence in Baghdad drops significantly. The study found that a two percent increase in job satisfaction among Iraqis in Baghdad correlated to a thirty percent decline in attacks on allied forces and a seventeen percent decrease in civilian deaths from sectarian violence. The study was based upon surveys and data taken from the local Iraqi people. This report also emphasized the importance of reconstruction and is being cited by Pentagon officials as more evidence that Congress and other governmental departments must devote more money and resources to nonmilitary efforts to improve the economy, industry, agriculture, financial oversight of government spending and the rule of law.¹³

Street by Street and Block by Block

In keeping with the first mile concept in the 1st BCT area of operation, the initial goal was to help the Iraqi people where the infrastructure conditions were the worst. With limited resources, the BCT focused essential service efforts where the Iraqi people would see an immediate impact. The effort to totally repair and construct modern day facilities was enormous. A street by street and block by block approach was determined to be the best way forward. After discussions with the local population and Amanat Baghdad Sewer Authority to determine the most critical needs, 1st BCT decided to begin a major infrastructure effort on the eastern side of Sadr City at the Hababiya sewage pumping station. The Hababiya sewage pumping station was one of fifteen sewage pumping stations in Sadr City. Of these fifteen sewage pumping

stations in Sadr City, the Hababiya pumping station was the best maintained and most critical. If this station failed, the raw sewage of over two million residents of Sadr City would flood the streets. The logic was to begin cleaning and repairing the sewage network at Hababiya where there was a functioning pumping station and work out from there.

This particular station was located on the downstream side of all the sewage pumping stations in Sadr City, along the Zebilin Line. The Zebilin line is a three meter sewage pipe that links the entire northeast Baghdad sewer system to the sewer treatment facilities at Rustamayah. The Baghdad Sewer Authority identified thirty-two mahalas as their stage I priorities for critical repairs; mahalas are the residential part of a town similar to a residential block in the U.S. Mahalas 555 and 557 were adjacent to the Hababiya sewage pumping station and were the top priority for repair according to the Baghdad Sewer Authority. Therefore, mahalas 555 and 557 was where the street by street and block by block sewage network repair would begin.¹⁴ From these two areas, contracts were put in place for cleaning trash from the streets, jetting and clearing the main sewer distribution lines, repairing point breaks and renovating the sewage pumping stations throughout Sadr City. This was the first large infrastructure contract organized by the BCT and it would take approximately 45 days for construction to begin.

In the interim, using the Commander's Emergency Response Program (CERP) funding for immediate impact, the BCT developed, planned, contracted and managed the repair of Sewage Pumping Stations 1, 2, 9 and 11 in Sadr City. Additionally, 1st BCT established contracts for the repair of two manholes and a major sewer line break known as the sinkhole. These initial projects allowed the BCT to establish rapport and credibility with the Baghdad Sewer authority and the local residents of Sadr City. The confidence and momentum gained from these efforts were instrumental, and would pay huge dividends throughout the deployment. These projects maximized the use of local contractors and workers; and put an Iraqi face on the work and security for the job site.

Using local contractors and workers clearly denied insurgents and militia their power base. From an engineering standpoint, it is much more efficient to use only heavy equipment during construction; however it is more effective to use a greater amount of laborers in the process to preclude unemployment. A perfect example of the effectiveness vs. efficiency model was repairing the 1.6 kilometer industrial line, along Al-Tahreer Street, in northwest Sadr City. The contract required hand excavation of the first 1.2 meters of earth. Approximately 450 workers were employed by a subcontractor from Sadr City for several weeks to excavate the sewer line by hand. These employees were all residents of Sadr City and were grateful to be part of

rebuilding their city. Although it may have been more efficient to allow a two-man crew operating a modern excavator to complete the task, it was tremendously more effective and had a positive impact on the community to employ large numbers of local laborers to dig the pipe trench. This was the beginning of working simultaneously across all lines of operations to deny the insurgents sanctuary, and to win the hearts and minds of the people. The people are the prize and their support is vital in order for the Iraqi government to succeed.

To further complicate matters, intermittent electrical power of only four to five hours per day to the sewage and water pumps only compounded the problems. Dedicated electrical power to the sewer and water pumps would enable these vital pump stations to operate 24 hours per day, everyday instead of being subject to load shedding and unreliable electrical power on the commercial electrical grid. After discussions with local officials and Baghdad Ministry of Electricity, 1st BCT, using CERP funding, immediately began contracts to install dedicated eleven kilovolt electrical lines to each of Sadr City's fifteen sewage pump stations. The effect of installing dedicated electrical lines was to provide continuous electrical power, allowing the pumps to operate when required to relieve standing sewage in the surrounding neighborhoods. Once again, local contractors and laborers were used to accomplish the task.

Forward Engineer Support Team (FEST) Integration

In order to effectively and efficiently spend the millions of dollars available from the CERP funding, a Forward Engineer Support Team (FEST) from the U.S. Army Corps of Engineers (USACE) Gulf Region Division (GRD) was deployed to Iron Horse Base, later known as Forward Operating Base Loyalty, to support the 1st BCT. The FEST gave the brigade contracting warrant capability to originate, plan and develop both large and small construction projects. The USACE team that initially supported 1st BCT was comprised of a resident engineer with COR authority, Deputy Resident Engineer, project managers, quality control/assurance inspectors, estimators and administrative personnel. Over the next several months, this team would expand and include a work force comprised of many Iraqis. 1st BCT was the first brigade-sized unit to request a team to be attached to them in a forward operating base. It was a great source of frustration for the BCT to always have to reach back to the international/green zone for higher level contracting and engineering support.

To achieve the optimum utilization of these teams, the FEST was embedded at the Brigade level. The request to embed USACE teams and civilian construction contractors with the BCT was made by COL Abe Abrams, the Commander of 1st BCT in April of 2004. The request became a reality in July 2004: COL Dick Thompson, Commander of the UASCE Central

District Baghdad, sent the first FEST to support 1st BCT at Iron Horse Base. This capability soon spread to other brigade combat teams throughout Task Force Baghdad. With this embedded USACE capability, the Brigade Commander could now efficiently use all available assets to take advantage of the fleeting window of opportunity to make immediate improvements and gain the trust of the local community. The maneuver commander now had the ability to contract major infrastructure projects valued at over \$500 thousand. Because of this expertise, the BCT was able to take advantage of multi-award task order contracts (MATOC) and indefinite delivery indefinite quantity contracts. COL Abrams used CERP funding for projects to have an immediate impact on the local community and complement military tactical objectives.

This breakthrough of being able to use the MATOC was planned and coordinated by MAJ Pete Andrysiak, the operations officer of the 20th Engineer Battalion. MAJ Andrysiak had extensive contract experience in a previous assignment in the Baltimore District of the United States Army Corps of Engineers. Due mainly to his efforts, the MATOC was now in place with 1st BCT in eastern Baghdad. This type of contract made a profound difference and expedited the CERP funded projects throughout the brigade. The FEST also could also use the MATCO to established contracts for consequence management after decisive combat operations, raids, or cordon and searches.

By being embedded with the BCT, there was enhanced communication between the USACE Area Office located at Camp Victory and the 1st BCT in eastern Baghdad. Tele-engineering kits can also provide both secure and non-secure communications to reach back to the engineer centers of excellence in the United States. Additionally, representatives from USACE attended daily net calls of the 20th Engineer Battalion and 1st BCT to synchronize operations and to maintain situational awareness of operations throughout the area of operations. To further enhance communications, USACE representatives participated in weekly infrastructure updates at the Brigade and Division level. Attached USACE LNOs were most beneficial to advise the commander on the effective use of how to best utilize contracting and civilian construction techniques. Embedding a FEST with a BCT is even more valuable now that combat engineer battalion headquarters are no longer organic to the brigade combat team.

While there is no substitute for private-sector job generation, job creation is also an essential element in providing economic and reconstruction assistance. The Commander's Emergency Response Program is a necessary transitional mechanism needed until security and the economic environment improve. The CERP dollars provided immediate economic impact for sewer, water, electrical and trash collection and in conjunction with clear hold and build

operations should be funded generously. A total of only \$753 million was appropriated for this program in FY 2006.¹⁵

USACE Reconstruction Management

Not only is the USACE FEST a valuable asset at the BCT level, the U.S. Army Corps of Engineers is the only organization capable of managing a massive reconstruction effort in a non-permissive environment. In recent comments by General retired Barry Mcaffery he states the current reconstruction effort in Afghanistan has been badly organized, resourced and marked by U.S. government turf battles. The same comments apply to reconstruction efforts in Iraq. Reconstruction efforts are going to take decades. The U.S. government should consolidate all reconstruction activity (State, DOD, USAID, PRT) under a U.S. Army Engineer Major General with an adequate staff and contractor support. This turf issue of enormous sensitivity-but only the Army Corps can marshal the management expertise to work in a dangerous security environment.¹⁶ "At the same time, armed nation building is a challenge only the U.S. is currently equipped to meet. While allies, the U.N., and NGO's can help in many aspects of security and nation building operations, they often cannot operate on the scale required to deal with nation building in the midst of serious low intensity combat."¹⁷

There was an initial honeymoon period with the majority of the Iraqi people because they were elated that they had been liberated from the brutal dictator Saddam Hussein. However, long term gratitude is unlikely to last if the Iraqi people believe the United States intervened for selfish reasons. A force initially viewed as positive can rapidly be viewed as invaders should an unwelcome occupation continue for a prolonged period of time.¹⁸ There is a fleeting window of opportunity when the United States and coalition forces must be prepared to simultaneously execute stability and reconstruction operations while decisively employing all the elements of national power.

In order to take advantage of this fleeting window of opportunity, the Department of Defense (DOD) must be in charge of reconstruction in a non-permissive environment. The United States Army Corps of Engineers (USACE) is already a DOD organization that has the capability and expertise to perform this function.

Essential Services Leveraged in Full-Spectrum Operations

On 5 August, 2004, after a month and a half of relative calm, the fighting intensified in and around Baghdad. Over the next 60 days, Task Force Baghdad and the 1st BCT would encounter some of the heaviest fighting of the year. As the fighting intensified, contractors working to rebuild the infrastructure had to stop work because they feared for their workers' safety. By

September 1st, 2004, the brigade had shifted all construction efforts in Sadr City to the south of Al-Qudis Street. The original street by street and block by block effort to restore essential services had begun in the northern part of Sadr City. However, due to the spike of enemy activity in that area, all sewer, water, electrical and trash projects were stopped north of Al-Qudis Street and shifted to the southern part of Sadr City. The area south of Al-Qudis Street was where 1st BCT maintained two battalions at all times. These battalions lived in the area around the clock to improve stability and security. This situation is identical to the joint security stations and the new doctrine of clear-hold-build in FM 3-24, Executing Counter Insurgency Operations, which is being implemented in the 2007 troop surge.

On October 3rd, 2004, in battalion level meetings with the Ministry of Electricity, the Baghdad Sewer Authority and the University of Baghdad confirmed that the shift in construction activity from the northern part of Sadr City to the southern part was having a positive effect on our operations. The residents in southern Sadr City were elated that work was being done in their neighborhoods. In contrast, the residents in the northern part of Sadr City began to complain because the reconstruction work had stopped and, along with the shift in effort, the jobs also shifted to the south. The power base of the militia and insurgents was being negatively impacted and they were beginning to lose the support of local Iraqis.

As events continued to unfold, construction was scheduled to restart north of Al-Qudis Street on 16 October, 2004; however, the militia did not remove all their improvised explosive devices from the streets and or turn in their heavy weapons as agreed upon. Therefore, the weapons buy back, initiated by Prime Minister Allawi and the Iraqi government, continued. On 25 October, 2004, MG Chairelli received an update on the construction projects in Sadr City and Nine Nissan to include the construction plan after favorable conditions were met in Sadr City. We now had a total of \$355 million of construction funding committed in the 1st BCT's area of operations and had requested an additional \$78 million for Sadr City road repair, sewer network repair, and a new water distribution network. To expedite these projects, COL Abrams and COL Thompson signed the first ever Multi-Award Task Order Contract (MATOC) between a brigade commander and the United States Army Corps of Engineer Central District Baghdad.

MG Chairelli gave authorization for construction to restart in the northern half of Sadr City on 3 November, 2004. The brigade continued to employ two battalions in Sadr City at all times with the intent to prevent intimidation of the Sadr City residents, contractors, and local national workers by the militias and insurgents. These joint security stations were used very effectively in 2004, just as joint security stations were implemented during the troop surge of early 2007. Because of the application of full-spectrum operations, the streets of Sadr City became the

safest in Baghdad. Construction projects were progressing at a steady pace and the local economy was beginning to prosper. As stated in FM 3-24, security and influence spread out of these areas like an oil spot. The patterns of this approach are to clear, hold and build in one area and then expand to other areas to reinforce success.¹⁹

It took over 10 weeks of intense fighting to bring the militia to the concession table in Sadr City. Task Force Baghdad and 1st BCT had already prepared and coordinated local level infrastructure projects with the Iraqi government and contractors to leverage the reduced enemy contact. Because the essential service efforts were coordinated simultaneously, the infrastructure projects were able to begin immediately, rather than waiting months for construction to begin. Within 72 hours of a cease-fire being implemented, over 22,000 jobs oriented on Sadr City's infrastructure were focused on repairing the most lacking areas of the city. The rapid execution and visible infrastructure projects were immediately recognized by the local population, and in turn, took away from the power base of the insurgents. During the 10 week period of fighting from early August to mid-October 2004, attacks against coalition forces topped out at 160 a week. From the week following the cease-fire until the Iraqi elections, attacks averaged fewer than 10.²⁰

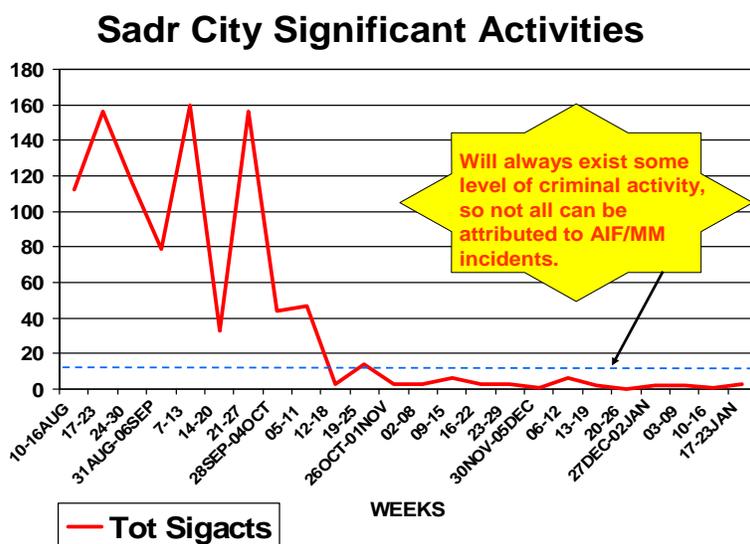


Figure 1: Some level of criminal activity will always exist, so not all can be attributed to Anti-Iraqi Forces/Militia incidents²¹

Facing a deteriorating security situation in March 2004 and again in August 2004, the 1st Cavalry Division, Iraqi officials, USACE and USAID initiated collaborative efforts in Sadr City and surrounding districts. The joint program was overwhelmingly successful, later contributing to stabilizing Sadr City in November of 2004. Reconstruction benefits, delivered in conjunction with

political negotiations, helped to restore the peace and strengthen the position of the new Iraqi Provisional Government.

Engineer Capabilities in the Future Combat Systems Brigade Combat Team

Currently, there are no engineer battalion headquarters or engineer forces that are organic to the Future Combat Systems Brigade Combat Team (FCS BCT). Unfortunately, engineers have been the bill payers for additional Soldiers in other military occupational specialties throughout the Army. In the FCS BCT, the negative impacts of the ARFORGEN model continue to be perpetuated. Modular BCTs no longer include combat engineer battalions. Only two engineer companies are organic to the modular BCT and no engineer forces are organic to the FCS BCT. The flawed assumption in the FCS BCT planning relies too heavily on providing enablers such as engineers either through reach back or mission tailoring to provide engineer capabilities when required. Current operations in Iraq and Afghanistan validate mobility requirements for engineer route clearance and mobility assets for each BCT.

The FCS BCT can not be dominated by technology alone. The Army is focusing way too much on technology, and not looking to organizational and doctrinal changes within the FCS BCT to enhance full spectrum operations. Engineer manpower skills, not technology, are the key to mission success in full spectrum operations. Recent experience has shown that nation building, civic action, stability operations and interaction with interagency organizations require high levels of skill, training and expertise. The Current FCS BCT organization replaces engineer manpower with technology only. If we continue down this path, we are destined to repeat the mistakes of the past.

Military victory in asymmetric and conventional warfare is meaningless without successful national building at the political, economic and security levels. Creating the proper blend of skill sets and capabilities for asymmetric warfare, low-intensity conflict, security and Phase IV operations, and nation building requires large numbers of skilled and experienced personnel. It is manpower intensive and technology is at best an aid and not a substitute for skilled personnel. ²² Stability operations/ Phase IV operations can be just as challenging as defeating a conventional force. The FCS BCT Engineer Battalion can function to coordinate all nation building requirements simultaneously with combat operations to ensure immediate action once the enemy is defeated. This is a big lesson learned in Iraq and Afghanistan. Armed nation building is a challenge only the United States is currently equipped to meet. While allies, the UN and NGOs can help with some aspects of security and nation building, they often can not

operate on a scale required to deal with nation building in the midst of serious low intensity conflict.²³

In the President's 2007 State of the Union Address, he asked Congress to increase the size of our active duty Army and Marine Corps by 92,000 over the next five years.²⁴ The Army can use this opportunity to include engineer personnel and force structure in the FSC BCT. The Chief of Staff of the Army should reassess manning requirements and force structure to include an organic combat engineer battalion in each FCS BCT. This would enhance movement and maneuver, survivability, stability operations that include restoring essential services, support to governance, economic and infrastructure development. The risk associated with not incorporating this change is that the FCS BCT becomes too focused on lethal operations, and is not capable of planning and conducting simultaneous engineering operations that enhance the capability of conducting full spectrum operations.

Recommendations

The following recommendations are designed to provide the maneuver commander with capabilities to simultaneously employ engineer and essential services assets during full spectrum operations:

- Empower Commanders by aggressively funding and reprogramming the Commander's Emergency Response Program for immediate impact on the local population. Every dollar spent on reconstruction is a dollar spent to protect the force.
- Incorporate Forward Engineer Support Teams with the Brigade Combat Team to immediately begin to plan, design, contract, manage and execute for immediate positive impact as well as a balance of long range/large capital projects.
- Place the military in charge of reconstruction in a non-permissive environment. The United States Army Corps of Engineers is a Department of Defense organization, and has the capability and expertise to perform this function. As the security situation improves, the State Department, United States Agency for International Development and other agencies can take the lead.
- Prior to deployment, continue to foster relationships with local communities, and exchange ideas on reconstruction, governance, economic development and public administration. City administrators and planners can provide a wealth of knowledge and information that is not readily available in military channels or as part of the Army education system.

- Reassign an Engineer Battalion to each Brigade Combat Team to manage the engineering and reconstruction efforts. This will enable the brigade commander to plan, coordinate, synchronize and execute reconstruction, engineering and civil operations in a non-permissive environment, and facilitate transition to stability operations.

Conclusion

The security environment of the 21st century is very dangerous and complex. Failed states and areas not governed by any form of civilized law are becoming more numerous.

Globalization and modern communications intertwine the international community together to form an inseparable bond. Ideologies where genuine hatred motivates misguided individuals to take their own lives to try and destroy other people and their way of life is becoming more common place. The enemy is envious of our success and will do anything to destroy it. Warfare takes on an asymmetric form where our enemies understand they can not defeat us militarily by attacking our strengths.

At a time when the Army needs to counter these asymmetric threats, we are reducing our engineer and essential services capability at the 'tip of the spear' with the brigade combat teams. Every mission cannot and should not focus solely on lethal operations. With the increased emphasis on stability operations, it is critical to keep engineer capability with the BCTs in the modular force and with the FCS BCT to achieve a more balanced application of power. The Army cannot afford to mortgage the future forces that enable stability operations. The Army should be adding engineer expertise and resources to the BCT; however, these capabilities are being reduced and technology is expected to make up for the shortfall. As with the efforts of Task Force Baghdad, essential service and engineer efforts are extremely manpower and resource intensive. Technology alone did not achieve the desired effects in Sadr City and throughout Baghdad.

Engineers and stability operations enablers must be embedded with the BCTs in order to simultaneously plan, coordinate, design and manage projects that enhance the maneuver commander's ability to execute full spectrum operations. It is time we acknowledge the fact that "true long-term security does not come from the end of a gun in this culture; it comes from a balanced application of all five lines of operation."²⁵

Endnotes

¹ Figures taken from briefing slides compiled by the 1 CD Engineer Brigade and briefed by COL Ken Cox during OIF II.

² Ibid

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⁴ Conrad C. Crane and W. Andrew Terrill, *RECONSTRUCTING IRAQ: Insights, challenges, and Missions for Military Forces in a Post-Conflict Scenario*, (Strategic Studies Institute, US Army War College, February 2003), 39-40.

⁵ John J. Kruzal, *British General Discusses Realities of Iraq*, American Forces Press Service, Washington, 19 Jan 2007.

⁶ U.S. Department of State Fact Sheet, *What are PRTs and What Do They Do? Provincial Reconstruction Teams Focus*, Washington, D.C., January, 2007.

⁷ Concept for full spectrum operations was taken from briefing slides compiled by the 1 CD Engineer Brigade and briefed by COL Ken Cox during OIF II.

⁸ John F. Kennedy, Address to the US Naval Academy, Annapolis, Maryland, 7, June 1961, on line at www.jfklink.com/speeches/jfk/publicpapers/1961/jfk232_61.html, accessed 18 Jan 2007.

⁹ Anthony H. Cordesman, *The "Post Conflict" Lessons of Iraq and Afghanistan, Testimony to the Senate Foreign Relations Committee*, (Center for Strategic and International Studies, Washington, D.C., 19 May 2004), 4.

¹⁰ B.H. Liddell Hart, *Strategy* (New York: Praeger, 1967), 366.

¹¹ Gulf Region Division news release, *Construction Rollup: Project Starts, Completions*, U.S. Army Corps of Engineers, Baghdad, Iraq, 30 January, 2007.

¹² MG Peter W. Chiarelli, U.S. Army and MAJ Patrick R. Michaelis, *U.S. Army, Winning the Peace: The Requirement for Full-Spectrum Operations*, Military Review, Combined Arms Center Fort Leavenworth, Kansas, July-August 2005, 11.

¹³ Thom Shanker and David S. Cloud, *Military Wants More Civilians To Help In Iraq*, (New York Times, Washington, D.C., 7 February 2007), 3.

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¹⁶ General Barry R. McCaffrey USA (Ret), *After Action Report-Visit Afghanistan and Pakistan*, Adjunct Professor of International Affairs, USMA, West Point, New York, 16-23 February 2007, 7.

¹⁷ Anthony H. Cordesman, *The "Post Conflict" Lessons of Iraq and Afghanistan, Testimony to the Senate Foreign Relations Committee*, (Center for Strategic and International Studies, Washington, D.C., 19 May 2004), 5.

¹⁸ Conrad C. Crane and W. Andrew Terrill, *RECONSTRUCTING IRAQ: Insights, challenges, and Missions for Military Forces in a Post-Conflict Scenario*, (Strategic Studies Institute, US Army War College, February 2003), 18-19.

¹⁹ FM 3-24 Executing Counterinsurgency Operations, 5-17.

²⁰ MG Peter W. Chiarelli, U.S. Army and MAJ Patrick R. Michaelis, *U.S. Army, Winning the Peace: The Requirement for Full-Spectrum Operations*, Military Review, Combined Arms Center Fort Leavenworth, Kansas, July-August 2005, 12.

²¹ Ibid.

²² Ibid, 5.

²³ Anthony H. Cordesman, *The "Post Conflict" Lessons of Iraq and Afghanistan, Testimony to the Senate Foreign Relations Committee*, (Center for Strategic and International Studies, Washington, D.C., 19 May 2004), 3.

²⁴ George W. Bush, *President Bush Delivers State of the Union Address*, (Office of the Press Secretary, Washington, D.C. January 23, 2007), 7.

²⁵ Ibid, Chiarelli, 17.