



Beyond SWEAT: Developing Infrastructure in Stability and COIN Operations

by Chad Livingston

The revised FM 3-24, Counterinsurgency, defines a role for “restoring essential services” as one of five key lines of effort in counterinsurgency (COIN) operations. Further, FM 3-24 describes the “clear, hold, build” framework and notes the potential role infrastructure development plays in this conception of COIN operations. This doctrinal foundation and the work of experts on guerilla and insurgent warfare elevated the role of infrastructure development as the tool to win the “hearts and minds” of the Iraqi and Afghan People.¹

By mid-2008, the United States Government had spent over \$50 billion in the reconstruction of Iraq, “the largest relief and reconstruction effort for one country in U.S. history”.² Since 2004, Congress authorized \$2.64 billion for Afghanistan.³ This large expenditure of money enabled the completion of infrastructure development projects such as water treatment plants, sewage treatment facilities, electrical grid improvements, and landfills throughout Iraq and Afghanistan in an attempt to restore essential services, build upon security gains, and “win” the population. Yet, the completion of these projects remains only loosely correlated to a reduction in insurgent activity.⁴

This paper offers an explanation for infrastructure development’s inability to meet the expectations of its role in counterinsurgency operations in Iraq and Afghanistan. In many instances, the infrastructure development program in Iraq and Afghanistan demonstrates an apparent misunderstanding of the definition of winning hearts and minds and a narrow application of the revised COIN doctrine. Specifically, this infrastructure development program, built on SWEAT analysis and CERP funding, often attempted to win the gratitude of the population, not their allegiance to the elected government. The amount of money spent and projects completed then became the measures of performance, to the exclusion of more appropriate, population-centric measures of effectiveness. Concurrently, units developed an emphasis on large and often complex infrastructure projects that did not often achieve their intended effect. Although based on a few limited doctrinal definitions, this approach missed the more comprehensive fight for the population described in counterinsurgency doctrine.

¹ Peter W. Chiarelli, “Winning the Peace: The Requirement for Full-Spectrum Operations,” *Military Review* 85 (July-August 2005): 5, 10.

² Special Inspector General for Iraq Reconstruction (SIGIR), *Hard Lessons: The Iraq Reconstruction Experience*. 2008, Preface.

³ This figure is specifically Commander’s Emergency Relief Fund appropriations. The Iraq figure does not specify the source of the appropriation. Special Inspector General for Afghanistan Reconstruction (SIGAR), SIGAR Audit 11-7. January 2011. Abstract.

⁴ Plummer, Dawson Adam. “Examining the Effectiveness of SWET and the Sons of SWET in OIF.” *Advanced Military Studies Program* (2007): 4.

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Infrastructure development still holds keys to winning in stability and COIN operations. In a more appropriate role, assessing the state of infrastructure in stability and counterinsurgency operations provides a lens through which to view a more fundamental cause of instability, government legitimacy. The state of infrastructure disrepair can indicate how a local government currently fails to meet the needs and concerns of the local population; further, the improvement of infrastructure provides an opportunity to develop the legitimacy of that government. Focusing infrastructure development around smaller, community-based projects could enhance stability and build legitimate governance, the ultimate goals of counterinsurgency and stability operations.

Infrastructure “The First Among Equals”

The latest edition of FM 3-24 includes a role for the restoration of “essential services” and a “clear, hold, build” spectrum of operations.⁵ Within this framework of “building” to “restore essential services”, units found the foundation and terminology to elevate the scope of infrastructure development within their operations. For example, the 1st Cavalry Division deployed to Iraq in 2004 with a campaign plan designed to win the support of the local population.⁶ This campaign plan paralleled counterinsurgent operations as outlined in FM 3-24 and had five lines of operation; restoring essential services was one of these lines. However, essential services, operationally defined as infrastructure development, quickly rose to dominance as the “first among equals”.⁷

Based on doctrine and the common sense idea that the Iraqis wanted essential services restored, the emphasis on infrastructure spread rapidly. By the end of 2004, the Engineer School published the Sewer Water Electrical Academic Trash (SWEAT⁸) Reconnaissance Handbook. Although not intended specifically for the counterinsurgent fight, the SWEAT handbook provided the means to analyze infrastructure.⁹ As SWEAT and an emphasis on infrastructure spread across Iraq and Afghanistan, the Commander’s Emergency Response Program (CERP) provided the money to attempt to repair or build facilities. Money, in fact, became a weapon system employed in many instances to complete public works projects with the expectation that these projects would “win” the support of population.¹⁰ The SWEAT acronym’s ability to identify a physical need for infrastructure development and CERP’s ability to pay for those developments set the stage to push this narrow definition of infrastructure development to the lead role in the counterinsurgency fight.¹¹

Infrastructure Repair Fails to Meet Expectations

Utilizing the SWEAT analytical tool and CERP money, unit commanders across Iraq and Afghanistan spent money to repair and build infrastructure based on the reasonable theory that the Afghan and Iraqi people would want these projects. For example, in June 2003 the 101st Airborne Division undertook over 3,600 CERP projects and spent more than \$28 million

⁵ Department of the Army, *Counterinsurgency*, FM 3-24 (2006): 5-18. (clear-hold-build) Restoring essential services is a common theme throughout the FM.

⁶ Plummer, 4.

⁷ Chiarelli, 10.

⁸ This paper will use SWEAT; however, additional letters continue to expand the complexity of the acronym

⁹ Electronic correspondence with LTC John Lloyd, 6 September 2011

¹⁰ Center for Army Lessons Learned (CALL), Handbook No. 09-27, *Money as a Weapon System*, (April 2009).

¹¹ Plummer, 2.

dollars.¹² Yet, the projects around Iraq and Afghanistan did not always reduce the violence. In some instances, infrastructure development projects may have made the situation worse and eroded popular support for the counterinsurgent effort. The Feinstein International Center at Tufts University is completing research that tests the theory linking aid, such as infrastructure development, to the goal of building support for the government and the counterinsurgency effort. Although some positive outcomes exist, the bulk of their findings “unearthed consistently negative perceptions.”¹³ The population often developed the view that these projects were attempts to purchase their affection.¹⁴

Army counterinsurgency doctrine emphasizes that winning the hearts and minds involves “persuading the people that their best interests are served by COIN success”.¹⁵ Dr. David Kilcullen adds that the “gratitude theory” or attempting to meet the needs of the population with the hope of instilling enough gratitude to convince them to stop supporting the insurgents, does not work.¹⁶ Army doctrine guards against the idea of winning hearts and minds as conducting operations to make the civilian population “like” the counterinsurgent forces; yet, the multitude of projects and vast amounts of money spent created this very perception. This misapplication of the winning hearts and minds concept results from narrowly defining “restoring essential services” as infrastructure development through SWEAT analysis to identify projects paid for with CERP funds.

As apparent attempts to build a sentiment of gratitude within the population crept into the counterinsurgent fight, a myopic preoccupation with the number of projects completed and money spent developed. This focus then excluded the use of appropriate indicators of effectiveness. This confusion of outputs for outcomes missed the potentially destabilizing effects of some of these projects.¹⁷ The Special Inspector General of Afghanistan found a lack of “a coordinated, results-oriented approach to determine whether CERP projects have achieved their goals, are being used as intended, and are being sustained”.¹⁸ The focus on one or two aspects of “clear, hold, build” and “restore essential services” excluded other doctrinal requirements such as appropriate, population-centric measures of effectiveness.¹⁹

Finally, FM 3-24 warns against a tendency to attempt “large-scale, mass programs” and emphasizes that “small is beautiful”.²⁰ Doctrine repeatedly emphasizes to keep programs and projects small.²¹ However, as the wars in Iraq and Afghanistan progressed, the average CERP project increased in size and cost. From 2004 to 2007, an average of 37% of total CERP funds

¹² Martins, Mark. “The Commander’s Emergency Response Program,” *Joint Forces Quarterly* 37: 46-52, www.dtic.mil/doctrine/jel/jfq_pubs/0937.pdf (1 JUL 2011).

¹³ Stuart, Gordon. “Winning the Hearts and Minds? Examining the Relationship Between Aid and Security in Afghanistan’s Helmand Province.” Feinstein International Center, Tufts University. (April 2010).

¹⁴ Fishstein, Paul. “Winning the Hearts and Minds? Examining the Relationship Between Aid and Security in Afghanistan’s Balkh Province.” Feinstein International Center, Tufts University. (April 2010):58.

¹⁵ Department of the Army, *Counterinsurgency*, FM 3-24 (2006): A-5.

¹⁶ Dilegge, Dave. “Hearts and Minds” *Small Wars Journal*. Blog Post: October 21, 2007. <http://smallwarsjournal.com/blog/hearts-and-minds> accessed on 6 September 2011.

¹⁷ Brosnan, Andy. “The Commander’s Emergency Response Program in Counterinsurgency Warfare: Identifying Problems and Interagency Solutions.” Harvard Kennedy School of Government. (April 2008): 9.

¹⁸ Special Inspector General for Iraq Reconstruction (SIGIR), Audit 11-7, *Contract Performance and Oversight/CERP* (January 2011): ii.

¹⁹ Department of the Army, *Counterinsurgency*, FM 3-24 (2006): 5-14.

²⁰ *Counterinsurgency*, A-8.

²¹ *Counterinsurgency*, A-8

went to projects that cost \$500,000 or more. In 2006, nearly half of CERP funded obligations cost more than \$500,000.²² This creates several problems.

The completion of these large projects requires that engineers contribute an extensive integration of key stakeholders to “build, operate, maintain” these complex projects.²³ Evidence indicates that many infrastructure development projects, built to the most recent Western standards, exceeded the capability of the nascent Iraqi Ministries at the national and provincial level to operate and maintain. Therefore, the brand-new, state-of-the-art facilities at best did not achieve the intended effect with the population, and often remained idle.^{24,25} As these infrastructure improvements remained offline, the insurgency often continued unabated in the areas around these projects.²⁶

Through all this effort, lives lost, and money spent, the effectiveness of infrastructure development through the pairing of SWEAT analysis with CERP funding remains unclear. Army units were:

...correct in focusing on the Iraq population in order to counter the insurgent support, but the essential service line of operations now appears to be over emphasized by follow-on divisions and organizations. The SWEAT concept seems to be the primary focus of many military and government organizations. The SWEAT concept alone is not enough to determine stability, dislodge insurgents from a population, or win the support of a local population. In other words, the SWEAT concept does not appear to directly address the underlying causes of the insurgency.²⁷

The mixed results of the reconstruction of Iraq and Afghanistan resulted from a reliance on the aggressive pursuit of a narrow application of counterinsurgency doctrine – infrastructure development through SWEAT analysis and CERP funding. This approach, fueled in part by a desire to instill gratitude in the population, elevates one part of counterinsurgency doctrine and one definition of infrastructure development while neglecting other principles necessary for success. A proper role for infrastructure improvement requires understanding how the governed perceive their government’s management of that infrastructure and how this relates to the issues that matter most to them. FM 3-24 requires the counterinsurgent to ask, “How do I know this

²² Brosnan, 16.

²³ “build, operate, maintain” is a concept found in project delivery and was an operating principle of infrastructure development in Joint Task Force Eagle commanded by LTC Paul Huszar, OIF 2009-2010.

²⁴ The intent of this project is not to catalog each use of CERP money for infrastructure or document each individual infrastructure project. In general, the Special Inspector General of Iraq Reconstruction cites the subsequent abandonment of many of these projects and their ultimate ineffectiveness among the sources of waste of U.S. government funds in the Iraq conflict.

²⁵ Plummer, 10 and *Hard Lessons*, 272. Most agencies, including Army units, recognized this need for developing the capacity to operate and maintain this new infrastructure. At the national level, U.S. government entities attempted a number of different approaches to strengthen indigenous capacity to manage upgrades and modern infrastructure improvements. However, many of these failed. The National Capacity Development Program, Ministerial Assistance Teams, and a Joint Task Force for Capacity Development all encountered enough obstacles to de-rail these efforts. The U.S. never quite built a successful capacity-building program at the national level in Iraq.

²⁶ However, there are counter examples where the violence did subside in the wake of infrastructure improvements. MAJ Dawson Plummer cites continued violence (see above) as well as COL Craig A. Collier. Major General Chiarelli cites a connection between infrastructure improvement and a decrease in violence.

²⁷ Plummer, 4. The SWEAT handbook may be a perfectly acceptable tool for infrastructure assessment. At issue here is the focus on using SWEAT to identify infrastructure deficiencies and then using CERP funds to “fix” the problem.

effort matters to the local populace?”²⁸ The strength of infrastructure development as a “weapon” comes not from the money spent or gratitude for a new school, sewers, or other large infrastructure improvements but in improving and proving the legitimacy and effectiveness of the government.²⁹

Infrastructure in Government Legitimacy

Infrastructure holds an intimate connection to government legitimacy and therefore is a key to winning public support for the cause of the counterinsurgent. A “perception of moral incorrectness or malfeasance ... arises from the reality of governments being unwilling or unable to provide basic services (to maintain decent roads, education, health and other public services)”³⁰ In considering issues of legitimacy, this morality matters. Historical research into the causes of insurgencies reveals, “while material grievances matter ... emotion and moral motives were essential to the emergence and consolidation of insurgent collective action.”³¹ These moral motives can include a desire for participation, a claim to dignity and personhood, and self-determination.³² Dilapidated infrastructure may communicate a failure in government legitimacy; attempts to develop that infrastructure must recognize this symptom of government dysfunction. In fact, as our large CERP funded projects remained idle they conveyed this exact sense of government failure.³³ Further, a more complete reading of counterinsurgent doctrine requires an appreciation of these local preferences.³⁴

A lack of attention to some of these local preferences may explain the mixed results of the present infrastructure development efforts in Iraq and Afghanistan. Rebuilding infrastructure without respecting local determination and government legitimacy could contribute to the rampant perceptions of corruption and the pervasive negative perceptions of infrastructure development noted above. Further, many units reported frustration in their attempts to include community participation in “project identification, decision making, and delivery”.³⁵ Perhaps the emphasis on the number of projects completed and funds spent fueled this frustration and outweighed the development of appropriate measures of effectiveness that would have considered the attitudes of the community and government legitimacy. One infrastructure development project that respects self-determination inside a local government capable of managing that project could create more support for the counterinsurgent effort than many incomplete or unwanted projects. The narrow SWEAT/CERP implementation of infrastructure development often missed the underlying desire of that population for participation, a claim to dignity and personhood, and self-determination.³⁶

²⁸ Department of the Army, *Counterinsurgency*, FM 3-24 (2006): 5-14.

²⁹ Fishel, John T. and Max G. Manwaring. *Uncomfortable Wars Revisited* (Norman, OK: University of Oklahoma Press, 2006): 42.

³⁰ Fishel and Manwaring, 42.

³¹ Wood, Elisabeth Jean. *Insurgent Collective Action and Civil War in El Salvador* (Cambridge: Cambridge University Press, 2003):2.

³² Wood, 2. These were findings in El Salvador. Any translation of these effects to Iraq or Afghanistan remains, at this point, speculation.

³³ Brosnan, 16.

³⁴ Department of the Army, *Counterinsurgency*, FM 3-24 (2006): 5-14.

³⁵ Gordon, Stuart. “Winning the Hearts and Minds? Examining the Relationship Between Aid and Security in Afghanistan’s Helmand Province.” Feinstein International Center, Tufts University. (April 2010.)

³⁶ For a parallel case study see De Soto, Hernando. 1989. *The Other Path: The Economic Answer to Terrorism*. Harper and Row. New York. De Soto argues for listening to the “excluded” and finding ways to bring them into the formal economy. He

Infrastructure Construction, Repair, and Assessment: A Way Ahead

Given a population's underlying desire for participation and self-determination in a legitimate government, infrastructure development can continue to play a key role; however, the national or even provincial governments may not serve as appropriate targets of intervention. Focusing efforts at the local level of government with smaller projects may better persuade the population to support the counterinsurgent effort.³⁷

For example, USAID found success through the Community Action Program (CAP). This program aimed to create a sense of citizenship and inter-community cooperation at the local level while ameliorating adverse social and economic conditions.³⁸

Based on tests performed on 89 statistically selected sample projects, the CAP achieved 98 percent of its intended outputs, including citizen participation, inter-community cooperation, local government cooperation, local employment generation, and consideration of environmental concerns.³⁹

A large and growing body of literature also points to evidence that this approach, a focus on building democracy and stability at the lowest level, produces the “best” results.⁴⁰ In light of this evidence and the difficulties experienced at national and even provincial levels, this approach appears to have merit.⁴¹ International development has a well-developed body of literature describing how to execute infrastructure development while also respecting self-determination and maximizing the participation of the local population. On this point, engineers have an unconventional ally in public health; much of the reason for infrastructure projects results from the impact especially water and sewer projects have on individual, family, and tribe health. In public health circles the concept of Community Led Total Sanitation (CLTS) has evolved. The body of literature supporting this approach indicates that rebuilding infrastructure *should* precede bottom-up and without large financial infusions into foreign systems.⁴²

faults the insurgents, in this case “The Shining Path” for their proscriptive solutions to the problems of poverty. By his account, his organization’s ability to listen brought results that halted the insurgents.

³⁷ At its foundation, this statement addresses the issue of federalism. In Stability and COIN operations, at which level of government should the counterinsurgent enhance legitimacy? This remains a fundamental question, but a full discussion and analysis lies outside the scope of this paper.

³⁸ See next

³⁹ USAID Office of the Inspector General. Audit of USAID Iraq’s Community Action Program. Audit Report Number E-267-05-001-P. January 31, 2005.

⁴⁰ This also speaks to democratic theory and theories of sovereignty – where does sovereignty lie? In a democracy, sovereignty lies with the people. A full discussion of this topic is beyond the scope of this paper; however, an argument could be made that attempts to quell insurgency in an aspiring democracy could benefit from a focused effort at the level of government closest to the people.

⁴¹ In addition to the capacity building difficulties at the national level noted earlier, and the JTF Eagle experiences in developing capacity at the provincial level, public policy literature contributes the “Implementation Problem.” A full discussion of this concept sheds light on the issue at hand, yet remains tangential. Succinctly, this literature cites the difficulties in achieving the desired effects of legislation or a government program because inevitably a subordinate government or organization will fail to implement the program effectively. This is a weighty consideration when trying to convince a population that their government functions to their benefit; further, this would tend to support interventions as close to the population as possible while still respecting their desire for self-determination. See Pressman, Jeffrey L. and Wildavsky, Aaron. *Implementation*. (Berkeley: University of California Press 1971).

⁴² Sah, Sameer and Negussie. Community Led Total Sanitation (CLTS): Addressing the challenges of scale and sustainability in rural Africa. *Desalinization* 248 (2008):666-672.

In CLTS, a small element, an engineer platoon for example, would enter a village and engage the existing community leadership. Working by education of the population and through existing leadership at the village level the small element facilitates the design of indigenous solutions to problems. For example, this may take the form of a new latrine the village builds for itself with some design help from the engineer platoon. The small element may provide plans and serve as a sounding board, but take care to not impose solutions on the community. Engineers Without Borders (EWB) actively practices this approach and often takes the additional step of holding elections for a village water committee charged with project maintenance or holding elections on the final design of the solution. This provides immediate empowerment of the populace, develops local government legitimacy, and costs far less money.

Where often in Iraq and Afghanistan CERP and SWEAT analysis focused on large projects, this approach favors small projects. Under such a tailored approach, appropriate, population-centric measures of effectiveness could be created, such as the measures used by USAID's Community Action Program. Finally, this avoids attempts to instill gratitude and creates a legitimate government; the local government would oversee the solution to the program that the community as a whole supported. This approach "restores essential services", or develops infrastructure, in a more doctrinally complete foundation and in the process creates greater incentives for the population to choose to support the counterinsurgent effort.

Conclusion

The work of distilling lessons learned from the past decade of conflict has just begun; much work remains. However, this review of the literature and doctrine has identified the beginning of a new foundation for the role infrastructure development plays in stability operations and the counterinsurgent fight. If money is a weapon system, it must surely be targeted as precisely as any other weapon system. If armies can't "shoot" their way out of an insurgency, a maxim made popular early in the Iraq conflict, then it appears that armies can't buy their way out either. However, carefully targeted projects focused on improving the legitimacy of local governments and encouraging a citizen's choice to support the government effort against the insurgency represents progress in our understanding. This approach will require improved metrics, precise targeting, patience, and incredible restraint in spending money to accomplish these projects. It will also require flexible and culturally-astute leadership beginning at the platoon level.

Attaining the level of education in the ranks of our leadership that enables work with other government agencies and village leadership will require changes in the education of our leadership. The Engineer School rapidly adapted to support SWEAT and needs to continue those adaptations by applying the lessons learned. As a possible starting point, the Engineer School at Fort Leonard Wood, which emphasizes the importance of graduate education, could create a formal relationship with Engineers Without Borders. Whether through a partner organization or through internal application of these lessons learned, the Engineer approach to infrastructure development in Stability and COIN operations must emphasize the legitimacy of the local government in order to accomplish its mission.

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