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THE "ROAD" TO SUCCESS: IMPORTANCE OF CONSTRUCTION ON RECONSTRUCTION IN CONFLICT-AFFECTED STATES

by

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December 2011

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This research compares four different construction programs including CERP, National Solidarity Program (NSP), United States Agency for International Development (USAID), and Provincial Reconstruction Teams (PRT) to determine their potential impact on Afghan stability. It uses a combination of statistical regression, correlation, geospatial and temporal analysis to compare completed construction with recorded SIGACTs (Significant Acts) reported by U.S. forces and NGOs. The results imply that the identified stabilization programs are not using construction effectively to create social capital and stability.

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THE "ROAD" TO SUCCESS: IMPORTANCE OF CONSTRUCTION ON RECONSTRUCTION IN CONFLICT-AFFECTED STATES

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LIST OF ACRONYMS AND ABBREVIATIONS

AIDC	Afghanistan Infrastructure Data Center
AISCS	Afghanistan Infrastructure and Security Cartography System
ANSO	Afghanistan NGO Safety Office
C	Completed Construction Methodology
CDC	Community Development Council
CDD	Community Driven Development
CDR	Community Driven Reconstruction
CERP	Commander"s Emergency Response Program
CIDNE	Combined Information Data Network Exchange
DV	Dependent Variable
ε	Error term
f	Function of
GDP	Gross Domestic Product
IED	Improvised Explosive Devices
ISAF	International Security Assistance Force
IV	Independent Variable
MPICE	Measuring Progress in Conflict Environments
MRRD	Ministry of Rural Rehabilitation Development
NATO	North Atlantic Treaty Organization
NCTC	National Counterterrorism Center
NGO	Non Governmental Organization
NSP	National Solidarity Program
PKSOI	Peacekeeping and Stability Operations Institute

PRT	Provincial Reconstruction Teams
SA	SIGACTs
SIGACT	Significant Act
TRAC	TRADOC Analysis Center
USAID	United States Agency for International Development
USIP	United States Institute of Peace
WITS	Worldwide Incident Tracking System

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I. INTRODUCTION

Failed states are changing the world. Globalization has made it virtually impossible for a country to be sheltered from the problems generated by failed states. These broken states are a hazard, supplying contagion effects of displaced persons and lawlessness (Krasner & Pascual, 2005; National Security Strategy, 2010). They bring down their neighbors, often making them more vulnerable to potential organized terror groups seeking a combination of ungoverned space and mission resources (Patrick, 2011). The Failed State Index, now in its seventh year, is an attempt to understand the root causes of the failed state and "reverse engineer" a solution. This popular reference is just one of many quantitative attempts to understand what happens when governments fail. These states are caught in a cycle of violence, economic collapse and poor governance leaving the population more vulnerable to crime, disease and malnutrition (Haims et al., 2008; Toomey, 2006). Without a functioning state the delicate balance of economy, rule of law and general security, are disrupted accelerating society"s demise, allowing other nefarious organizations the opportunity to take hold where the government once stood.

A. RECENT U.S. RECONSTRUCTION INVOLVEMENT

Correcting the downward trend of failing states before complete collapse is a complex and not well understood challenge. The U.S. has a long history of interventions attempting to remedy this problem, but recent reconstruction and stabilization performance has yielded mixed results. In fact, the U.S. effort to stabilize and rebuild Somalia, Haiti, Bosnia, Kosovo, Liberia, Afghanistan and Iraq are all frequently characterized as inadequate (Buss, 2005, p. 1). The planning for the stabilization and reconstruction effort following OPERATION Iraqi Freedom was flawed primarily because of the core assumptions made about the operating environment. U.S. planners assumed after Saddam Hussein"s regime fell there would be very few security issues to contend with,

and the bulk of the Iraqi government civil servants would simply return to work (Bensahel, 2006, Collins, 2007). Additionally, the U.S. failed to adequately react to the changing conditions in Iraq and the initial, and ultimately, insufficient stabilization plan took far too long to implement (Pirnie & O"Connell, 2008). Another hard lesson the U.S. experienced firsthand in both Iraq and Afghanistan is that successful planning must also incorporate a unity of effort. Buss (2005) argues that future reconstruction will only be effective if the State Department and Department of Defense align efforts through a "deliberate planning process" (p. 4).

Ignoring local history is another flaw made in recent reconstruction efforts. The attempt made to establish a strong central government in Afghanistan failed miserably making it "barely distinguishable from the centralized monarchies and dictatorships that had characterized earlier regimes" (Barfield, 2010, p. 7). The environment in Afghanistan had changed, and the reconstruction effort began with an unsound strategy attempting "to restore a system designed for autocrats in a land where autocracy was no longer politically sustainable" (Barfield, 2010, p. 7). Without sufficient upfront planning, the end state goals will be difficult and potentially unobtainable to reach. Another error made early on in the stabilization and reconstruction efforts was how aid was initially distributed and employed. An effort was made to capitalize on the brief window of opportunity to build goodwill after formal kinetic military operations ended. This effort during the "golden hour" included spending large amounts of money to help with emergency aid and initial reconstruction. The root problem with these actions was the lack of planning. The sheer magnitude of the money spent had little oversight which resulted in corruption, poor quality and did little to encourage the population"s trust in the system (Cordesman & Burke, 2011; Theros & Kaldor, 2011).

B. SUMMARIZED FINDINGS

This report concentrates on the impact of construction on reducing violence, therefore increasing stability, in conflict-affected environments. Additionally this study tries to determine if the methodology or manager of the construction makes a significant impact on stability. After comparing five separate databases with statistical regression and employing geospatial and temporal analysis, the result is construction projects have a statistically significant role in stability, and the method matters.

The majority of U.S. led initiatives included a positive relationship between construction and violence. This does not necessarily mean that Commander's Emergency Response Program (CERP) construction causes violence. The program in Afghanistan is executed in areas of pre-existing higher violence per the philosophy of using money as a weapons system. What this does indicate is that CERP construction has not reduced violence significantly. Of all the programs studied the National Solidarity Program (NSP) has the most potential and promise. The NSP analysis resulted in a negative trend compared to violence. The NSP program also had a statistically significant impact reducing attacks targeting the state and NGOs.

Unfortunately for the impact of construction on stability, while significant, much work was not executed in a manner that emphasizes the potential for betterment. Maximizing this potential can be accomplished by striking the right balance between external international led development and internal local state development, creating clear programmatic goals and ensuring agencies engaging in construction for stabilization are better educated. The impact of construction on stability can also be enhanced by understanding the impact of each element of a stabilization and reconstruction strategy, understanding the pitfalls associated with development and sequencing construction upfront showing the population early results. Finally, there a statistically discernable difference between construction conducted by an outside organization and the

Community Driven Development in Afghanistan. The vast majority of the NSP comparisons resulted in a statistically significant impact on violence. The other programs studied have a positive relationship with violence or are not statistically significant.

C. STRUCTURE

The U.S. has now spent over a decade in Afghanistan in order to stabilize and reconstruct the government to create a potential ally. In just the last six years the U.S. has spent over $2 billion through CERP alone in Afghanistan (Boak, 2011). There is a growing debate about the effectiveness of this funding and its overall impact on stabilization. In this work I will review the impact construction has had on the stabilization of Afghanistan using construction data generated by the U.S. CERP program, the U.S. Agency for International Development (USAID), and the Afghanistan government itself through the Ministry of Rural Rehabilitation Development (MRRD). I will compare this information against the recorded Significant Acts (SIGACTs) by U.S., partner forces and the Non-Governmental Organization (NGO) community to determine if there is any correlation and causation with reduced levels of violence at the village level. This work is not specifically intended to develop a methodology to improve the ongoing stabilization and reconstruction intervention in Afghanistan. Instead, the goal of this study is to export some applicable lessons gained from working in this challenging environment.

Chapter Two of this thesis is a review of current literature on nation-building including accepted frameworks and reviews of recent nation-building efforts. Chapter Three discusses the specific theoretical framework used in detail. Additionally, Chapter Three includes the overall thesis methodology, comparing four different construction programs to determine their potential impact on state stability. Chapter Four discusses the characteristics of the construction work being completed in Afghanistan and the studied organizations that are executing the work. Chapter Five is a description of the data used in the

study, details of data refinement, analysis and study results. Chapter Six contains recommendations and conclusions based on the study results.

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II. LITERATURE REVIEW

After major hostilities have ended following a civil war, or war between two states, conflict often continues. This conflict manifests itself in many different ways including insurgencies, destabilization by spoilers and both organized and unorganized crime. States trying to rebuild in these conflict-affected environments must include more than kinetic action alone. The strategy to end this sustained and deep-seated conflict, including insurgencies, must draw upon reconstruction and stabilization methods. Rebuilding a failed state is a massively complex undertaking, and many authors theorize there is an equally complicated answer. A contemporary nation building strategy is rooted in attempting to replicate the pillars of a successful state in the failed state. The pillars of society, when properly developed, underpin a functioning state.

The United States Institute of Peace (USIP) and Peacekeeping and Stability Operations Institute (PKSOI) state these government attributes include: rule of law, building a safe and secure environment, creating social well-being, stable governance and sustainable economy (2009). They also argue that no effort is complete without uniting individual state development programs through the "cross-cutting principles" of "Host Nation ownership and capacity, political primacy, legitimacy, unity of effort, security, conflict transformation, and regional engagement" (USIP & PKSOI 2009, p. 2–9). The guidance outlined is a very thorough compilation of best practices that can be used to customize a stabilization and reconstruction strategy. Additionally, the USIP and PKSOI orient their guidance based on long-term goals or "end states" and develop their best practices working backwards from the goal. Finally, the work includes some best practices on employing construction to increase stabilization but does not include guidance on what organizations are effective in implementing these programs.

While Ghani, Lockhart and Carnahan (2005) stop short of prescribing their sovereign state definition as a template for state reconstruction, the functions they identified certainly fit this model. Ghani et al. (2005) argue the ten critical state functions are: legitimate monopoly on the means of violence, administrative control, management of public finances, investment in human capital, delineation of citizenship rights and duties, provision of infrastructure services, formation of the market, management of the state"s assets, international relations, and rule of law (p. 5). Both frameworks for stable government omit any discussion of sequencing or prioritization. Instead, they prescribe that each pillar have equal weight and that programs to build these state attributes must be implemented in unison.

Meierhenrich (2004) argues that instead of trying to rebuild a host of state functions at once, the process should be sequenced concentrating on the development of "legality and bureaucracy" (p. 156). This nuanced construct has a great deal of merit in describing the minimum needs for the development of a state. The development of legality, or rule of law, allows for the creation of the social contract between the new state government and its people. This contract will allow the citizens to understand the state goals, what services the state will provide and the citizen"s requirements as a member of the state. Development of state bureaucracy provides jobs for elites and other potential spoilers that might otherwise subvert the reconstruction process. More importantly, these bureaucratic structures will be the foundation of the government"s delivery of everything from infrastructure to security. The state bureaucracy also provides other practical necessities as a process for external aid to be accepted and prioritized by the new state. Meierhenrich (2004) concludes that state reconstruction must be centered on creating utility for its citizens to receive populous support for the new state, but does not specifically describe how to generate that utility (p.155). Rebuilding a state after collapse is a lengthy process, and the fledgling state will be vulnerable to insurgency and other spoilers. The state will not be able to "provide essential services to the

population" increasing the chance of "insurgency because the state's security forces … are unable to establish law and order" (Jones, 2008, pp. 16–17).

While Meierhenrich's (2004) and Ghani et al. (2005) both have strong theoretical approaches to developing state capacity after conflict there is not enough detail within the publications for implementation. Another approach currently being used as the reconstruction strategic foundation in Afghanistan is referred to as the "Comprehensive Approach." This effort to stabilize the state implemented by the International Security Assistance Force (ISAF) in order "to improve on the current level of cooperation between security forces, other government activities, and the rest of the actors involved" (Stavridis, 2011, p. 66). This approach stresses the inclusion of all government activities and increasing its span of influence is not new to stabilization and reconstruction practitioners. Rather, the Comprehensive Approach emphasizes looking at the problem at many levels from the macro international influence to the micro level village and government relationships. This framework aims to coordinate plans and align resources that "the local, national, and global communities have to offer" (Stavridis, 2011, p. 76).

The ISAF Comprehensive Approach tries to employ both top-down and bottom-up development. Part of the thrust is to overcome the unity of effort dilemma that faces complex conflict-affected reconstruction efforts. Addressing these concerns by forcing NGOs, the host nation government, other aid organizations and international military forces to coordinate seems like a logical necessity. In reality, this is extremely difficult and NGOs have resisted what they see as "politicization and militarization of aid" (Cornish & Glad, 2008, p.3). This approach also creates other challenges including an untenable span of control and directing priorities of very diverse organizations. Implementation of this strategy has also degraded security for NGOs operating within Afghanistan, blurring the line between ISAF and theoretically independent NGOs (Cornish & Glad, 2008, p.3).

Kumar (1997) groups the reconstruction of war-stricken societies into three separate categories: political, social and economic rehabilitation. The goals identified under political rehabilitation include institutional capacity for governance, support for elections, human rights monitoring and promotion, security reforms and demobilization and reintegration activities (Kumar, 1997). Identified in this framework as key elements of social rehabilitation are the repatriation and resettlement of refugees, reforming education and health services and social rehabilitation programs for women and children (Kumar, 1997). Finally, the third reconstruction category of economic rehabilitation contain the removal of landmines and unexploded ordnance, reviving agriculture, rebuilding of physical infrastructure and implementing macroeconomic policy reform (Kumar, 1997).

Finally, Timilsina (2006) is one of the few authors that prescribe a sequencing framework during reconstruction activities. However, the recommended framework is less about sequencing and more a practical application of reconstruction activities given the physical state and capacity of the conflict-affected society. Timilsia (2006) breaks down stabilization and reconstruction into three phases. Phase one is characterized by basic security and emergency services, phase two develops legitimate and sustainable indigenous economy, governance and justice and phase three consolidates long-term recovery efforts (p. 18).

A. PILLARS OF RECONSTRUCTION

What each of the authors use to describe their approach is an outline of principles for reconstruction typically called pillars. The “Guiding principles for stabilization and reconstruction” by the USIP and PKSOI argue the end states of a society are: a safe and secure environment, rule of law, stable governance, sustainable economy and social well-being (2009). As discussed, there are several other published reconstruction and stabilization frameworks, but this framework does the best job of describing the range of generally accepted

reconstruction pillars. Using the USIP and PKSOI framework I will review these pillars individually. The process and time required to develop each pillar will depend on the indigenous capacity of the society, and additional factors like resources provided and external influences. It is as important to clearly understand and assess the progress of this development as it is to understand the goal. Therefore, I also review associated measures of effectiveness that can be used to evaluate progress. The goal of the following is to provide an overview of current literature on reconstruction pillars and their accompanying measurement.

1. Security

When states cannot provide basic security they "are unable to garner sufficient legitimacy to maintain citizen confidence and trust" (Brinkerhoff & Johnson, 2009, p. 587). The USIP and PKSOI define a safe and secure environment by five conditions: "cessation of large-scale violence," "public order," "legitimate state monopoly over the means of violence," "physical security" and "territorial security" (USIP & PKSOI, 2009, pp. 38–39). It is widely accepted that at least a minimum amount of security for the population must be established before reconstruction can begin (Stavridis, 2011; USIP & PKSOI, 2009, p. 12).

Short-term security goals involve an overarching end to active hostilities, separating warring parties and securing key sites and infrastructure (USIP & PKSOI, 2009, p. 37). Without conflict resolution activities including disarmament demobilization and reintegration, fighting could quickly resume once the military intervention is over. Long-term security goals must be centered on "freedom of movement" allowing "children to travel to school without fear of attack and farmers to take their goods to market" (USIP & PKSOI, 2009, p. 57). Both quantity and quality is needed in comprehensive security sector reform as security forces will be government representatives to the population and must create trust (Timilsina, 2006, 134).

Progress must be measured "based on the mission's ability to reduce the means and motivations for violent conflict in a society" throughout the stabilization and reconstruction process (Cohen, 2006, p. 2). Metrics that can be used to measure the effectiveness of security efforts include improvised explosive devices (IEDs) reported compared to IEDs found, security transportation prices, progress of Non-Governmental Organizations (NGOs) construction projects and urban construction new-start rates (Kilcullen, 2009). New population financed construction represents analysis of current and future personal security (Kilcullen, 2009, pp. 8–9). Other measures include SIGACTs, SIGACTs targeted at NGOs, and attacks targeting infrastructure as identified by the Measuring Progress in Conflict Environments (MPICE) program (Agoglia et al., 2010, p. 2).

2. Rule of Law

"It is impossible to provide 100 percent security without development" in a conflict-affected society (Stavridis, 2011, p. 68). The conditions that lead to the rule of law end state include: "just legal frameworks," "public order," "cultural of lawfulness," "accountability to the law," and "access to justice" (USIP & PKSOI, 2009, p.64). Establishing public order and accountability to the law are necessary short term steps towards the end state. Furthermore, creating "rule-bound order" will help develop the very "essence of the relationship between citizens and a functioning state" (Ghani & Lockhart, 2008, p. 201). Overhauling the justice system too quickly can result in public confusion and poor results. Meeting the long term goals of rule of law are better achieved through a comprehensive strategic approach that emphasizes a cultural lawfulness, access to justice and creation of just legal frameworks in considering cultural norms (USIP & PKSOI, 2009, pp. 94–95).

Several promising metrics to measure rule of law development include citizen percentage that fear law enforcement agencies, percentage of prison population relative to overall population, percentage of legal cases where

witnesses recant testimony, and the number of known criminals that occupy key government positions (Agoglia et al., 2010, pp. 35–37). Additionally, advanced insurgencies often develop shadow governments to mimic or replace the state in an effort to exert greater influence. Another measure of rule of law reform in this case is the willingness of the population to submit to these shadow courts verses the designated state government courts (Kilcullen, 2009, p. 7).

3. Stable Governance

The benefits of good governance are numerous, and can help a rebuilding state better all other aspects of the recovery (Collier, 2007, p. 64). The key objectives of governance are: "essential services," "stewardship of state resources," "civic participation and empowerment" and "political moderation and accountability" (USIP & PKSOI, 2009, p. 97). But liberal governance instituted before it is institutionalized "can unleash societal demands…thus triggering instability and conflict" (Barnett, 2006, p. 89). So in the short term, the state effort should focus on providing services, transparent and participatory representation and protection of state resources. These actions should build towards the ultimate goal of a relationship between "the government and its people whereby the government provides transparency, safety and security, economic opportunity, goods and services, and the population, in return, gives up some of its liberties and freedoms" (Gregg, 2009, p. 29).

Qualitative population surveys that ask questions related to public satisfaction with essential services, transparency, legitimacy and corruption could indicate perception of government effectiveness (Agoglia et al., 2010, pp. 18–26). Quantitative measures of governance reforms include law revision that is applicable to continuation of the government incumbents, distribution of government services based on identity groups or adherence to government budgets (Agoglia et al., 2010, pp. 18–26). Yet another very interesting measure

of governance reform and control is taxation. The state exhibits high capacity and control when it can collect income taxes from the population (Weller & Ziegler, 2008, p. 16).

4. Sustainable Economy

The fourth end state identified by the USIP and PKSOI is achieving a sustainable economy. A sustainable economy is defined as the "ability of the people to pursue opportunities for livelihoods within a system of economic governance bound by law" (USIP & PKSOI, 2009, p. 132). A legal sustainable economy has many benefits including providing jobs for the population, improving the standard of living, expanding overall opportunity, creating tax revenue and reducing the potential for supporting insurgent groups (Gregg, 2009). The short term goals of developing the economy should be quick employment generation, provision of basic services, stabilizing inflation and open market promotion and transparency while controlling the black market economy (USIP & PKSOI, 2009, pp. 132–4). The long term goal for building a sustainable economy should be a "legitimate and sustainable gross domestic product (GDP), which allows for the employment of its population, and an import/export economy that does not result in deficit spending" (Gregg, 2009, p. 27).

Tracking economic growth is likely the most familiar types of measures used for peaceful and conflict economies alike. The status state economies are measured in various ways including quantitative measures like growth in GDP and qualitative measures of consumer confidence. Several other measures are needed to understand struggling state economy in a conflict-affected environment. The majority of these measures are quantitative including functioning essential services compared to pre-war levels, amount of state generated revenue compared to external financial subsidies and the number of registered businesses (Agoglia et al., 2010, pp. 53–64). Other helpful measures of the economy include estimating black market revenue, tracking the

immigration and departure of educated professionals and public satisfaction with service delivery (Agoglia et al., 2010, pp. 53–64).

5. Social Well-Being

Social well-being, the final pillar identified by the USIP and PKSOI (2009), is defined as the "ability of the people to be free from want of basic needs and to coexist peacefully in communities with opportunities for advancement" (p.162). The failing state results in social collapse and the breakdown of social trust throughout society (Sachs, 2000, p. 35). Offering programs that reinforce social well being, that include social regulation and integration, will give great utility to the state (Meierhenrich, 2004, p. 156). "The State must organize specific, demonstrable initiatives to regenerate social cohesion through policies and programmes that promote participation, equity and inclusion" (Ernstorfer et al., 2007, p. 5). Humanitarian relief concerns such as resettlement of returning displaced persons, supply of basic health services, and providing needed food, water and shelter must be addressed immediately (Timilsina, 2006, p. 138). The longer term goals must include access to education, social reconciliation and further the social aspects of community and national identity (Cohen, 2006, p. 9).

Measures of the infant mortality rate, school enrollment or literacy rates are good ways of measuring the social well-being beyond population surveys (Agoglia et al., 2010, pp. 69–77). Tracking voluntarily returning refugees is also an indicator that the people feel the situation is stabilizing (Agoglia et al., 2010, p. 70). Finally, measuring the process of conflict reconciliation helps track the social well-being within the state through: number of hate crimes, violence to achieve sociopolitical goals, and even surveying the availability for the population to participate in reconciliation events (Agoglia et al., 2010, pp. 69–77).

6. Civil Society

An end state that is not directly identified by the USIP and PKSOI (2009) is the concept of a civil society. A civil society functions properly when social

capital, the set of rules and norms that holds societies together is high (Gregg, 2009, p. 33). By increasing social capital, a robust civil society can generate organizations that "compensate for the lack of state-provided public services" (Posner, 2004, p. 237). The benefits of creating a robust civil society include "improving governmental performance…promoting good health, reducing crime, and generating economic growth" (Posner, 2004, p. 237). Historically, social capital is not constructed through a conscious effort; instead it develops differently in every society (Gregg, 2009, p. 33). Social capital is a natural byproduct of society, but in a conflict-affected environment, people withdraw from public situations. Therefore, constructing a civil society with social capital must put the population in situations where they can interact in safe environments to build trust and interdependence (Gregg, 2009, p. 33). Building social capital within the society should be targeted as a short and long term goal for a developing state.

Measuring the developing civil society can be difficult but is still very important to capitalize on the numerous benefits strong social capital can provide. Surveys are an important tool for quantifying trust. Surveys should be frequently conducted with questions that cover participation in civic groups, degree of community trust, within group solidarity, and even opinion about minority and marginalized groups (Agoglia et al., 2010, p. 76). Measures that look at the number, resources, and publicity of civil society organizations can also help determine trust among the population (Agoglia et al., 2010, p. 29). A final social capital measure is tracking participation in social organizations that cross group identities (Agoglia et al., 2010, p. 76).

7. Summary

An argument can be made that each of the pillars discussed are important and critical in some measure to the overall success of the state. It is generally agreed that security is a necessary condition before other pillars can be effectively implemented (Gregg (2009), Stavridis (2011)). But, in conflict-affected

environments, work to develop capacity in the other pillars or end states cannot wait. The resolution of violence is often tied directly to factors that can be addressed by working towards the other pillars including better rule of law, governance, and creating economic opportunities. In this way each program used by the state or international force must maximize each pillar for the greatest effectiveness. By identifying the end states up front the goal is more directly in mind, and better measures of effectiveness can be developed and implemented. It is critical for the state to keep meaningful and accurate records to determine progress in order to evaluate the program"s effectiveness towards stabilization.

B. RECENT STUDIES OF STABILIZATION AND RECONSTRUCTION

Several recent attempts were made to quantify the variety of benefits construction, training, job generation, and other stabilization methods targeted under the CERP program. Gorkowski (2009) argued projects should be prioritized based on the population"s needs and a deserve component that evaluates a local village"s actions towards the state. Gorkowski (2009) hypothesized construction can counter an insurgency by first maximizing needs and deserves of each project, and then increasing the publicity a project receives. However, the CERP construction funding in the At Tameem province in Iraq did not reduce violence. The problem most likely is not Gorkowski"s (2009) model but that the projects reviewed did not use the model in their implementation. In a similar effort, Berman, Shapiro and Felter (2009) found a positive correlation between construction projects and reduced levels of violence in Iraq. Their encouraging conclusions included data from across Iraq, but did not provide a local level implementation guide. O"Connell (2008) completed a similar regression analysis from Afghanistan construction and violence data at the provincial level. He found an increase in violence related to construction. This work did not suggest any specific reason for the positive correlation; thus more study is needed to resolve the conflict between these findings and Gorkowski (2009) and Berman et al. (2009).

Beath et al. (2010) completed a recent review of the NSP ongoing in Afghanistan. The study compared the impact of the NSP on local governance, access to utilities and services, social cohesion and political attitudes and economic activity generated at the village level. Using a group of both control and experiment villages the study found that the NSP was "successful in improving villagers' perceptions of their economic situation and of government representatives and officials and some nongovernmental actors" (Beath, et al., 2010, p. vii). Unfortunately, Beath et al. (2010) found no decrease in violence affecting the NSP villages or decrease in tribal feuds.

C. VOID IN EXISTING LITERATURE

Recent advances in reconstruction literature have begun to explore the challenges generated in a conflicted-affected environment. However, the vast majority of the literature still focuses on stabilization and reconstruction in the post-conflict environment. Recent history has shown that post-conflict reconstruction is often a luxury that is not practical with competing political priorities and budgetary constraints. Berman, Shapiro and Felter (2009) and Gorkowski (2009) both reviewed stabilization activities in Iraq at the provincial and village level respectively, but their results conflict on the impact of CERP in reducing violence. Two additional authors looked at stabilization activities in the conflict-affected environment of Afghanistan. Both O'Connell (2008), at the provincial level, and Beath et al. (2010) reviewing the village level, found that the stabilization and reconstruction techniques reviewed did not decrease violence.

What has yet to be studied are the specific elements under stabilization and reconstruction activities for their individual impact. By isolating specific elements of the CERP program or other stabilization and reconstruction initiatives it will be possible to determine if any specific activity results in the reduction of violence and increased stabilization. Additionally, the unit of measure is an important factor in determining the impact of stabilization and reconstruction activities. The previous studies discussed looked at both the

village and provincial levels. While there is some merit to this analysis, reviewing the data at the district level in Afghanistan also has great potential. Developing aggregate totals for a region can be difficult due to the spillover effect when reviewing impact at the village level. The borders drawn on a map are often arbitrary, and increasing the number of divisions in the information exposes the study to greater error. A successful stabilization program at the village level could result in no decrease in violence due to outside forces. Additionally, the vast diversity in any country, including Afghanistan, makes a provincial study less likely to show the true impact of stabilization efforts by averaging out the highs and lows ignoring potentially vast societal differences.

This study will focus on the role construction plays in reconstructing and stabilizing a state. Most authors classify construction as a part of a larger effort to jump start the economy of a conflict-affected state. Focusing my efforts within this pillar helps fill the existing literature void in two different ways. First, the unit of study will primarily be conducted at the district level. This should help address both issues discussed, and better account for spillover effects using small enough units to reflect the true nature of population. Second, this study will review the impact of four stabilization and reconstruction programs implemented by three different organizations. This is an attempt to determine if different organizations with different implementing techniques will have any difference in results. Specifically, are there tangible benefits of having an international force, host nation personnel or military units manage and implement the stabilization effort? Does the background, training, or perceived role have a noticeable impact on the results?

Finally, instead of looking at CERP or the other stabilization programs as a whole, I will be reviewing the specific impact of construction as an individual component of reconstruction. During my literature review, I found no individual studies that isolated a specific activity to determine the potential impact. Focusing on construction could show that we need to better understand the effectiveness of each of the activities under the reconstruction and stabilization

umbrella. Developing and identifying the minimum effort required to achieve impact is very important for efficiency and effectiveness. Something that is minimal investment in time also allows for better emphasis and quicker results. Furthermore, this process will help future policy makers customize and prioritize a construction program to best meet the needs of a future situation.

III. THEORETICAL FRAMEWORK

The state in a conflict-affected environment is placed in a precarious position. The state must defeat any active opposition while simultaneously attempting to increase state administrative, police and military capacity. If the opposition is insurgent in nature, attempting to separate the insurgency from the population can result in alienating state supporters and creating greater opposition. When the state is weakened to the point where it cannot provide protection for its population, external support through military intervention may be the only way to reestablish state control. The goal in this situation is to adequately defeat the insurgent forces and to develop overall state capacity. The problem is that a state government is removed from the equation when it cannot provide services to its population who are in desperate need. Therefore, the social contract between the population and government does not exist resulting in the state becoming dispensable in the eyes of the population. The best way to correct this may be through developing social capital, emphasizing program benefits and generating ownership in the process. The goal of economic stabilization practices in a conflict-affected environment should be to create a self-sustaining economy but more importantly the process should link government and people. The remainder of this section explores these ideas in greater detail.

A. STATE LEGITIMACY AND SERVICE PROVISION

Legitimacy links the population to the state. The USIP and PKSOI (2009) argue that state legitimacy is composed of how accepting the population and international community is of the state and the state accountability to the population. A failed state that cannot provide basic services to their population breaks the previously established social contract causing a loss of legitimacy in the eyes of the population (Brinkerhoff & Johnson, 2009; Ernstorfer, et al., 2007). These basic services include provision of water, food, security and potential

prosperity. Many authors argue state legitimacy is directly tied to the provision of basic services for the population (Brinkerhoff, 2005; Hilhorst, Christoplos & Van Der Haar, 2010; Posner, 2004; Timilsina, 2006; USIP & PKSOI, 2009). Without legitimacy a state will not be able to influence and control their population without resorting to the threat of or use of force. Insurgent groups can actually gain legitimacy in the eyes of the population by providing basic services filling the void left by the state. Without legitimacy the unstable state is prone to violence (Barnett, 2006). Improving this situation theoretically can be accomplished by reversing the causation. If the loss in state legitimacy is caused by its inability to provide services to the population, the state can gain legitimacy from the population through help in providing services.

Services need to be resumed as soon as possible after major hostilities have ceased to erode enemy support and gain legitimacy from the population (Toomey, 2006, p. 20). When a state cannot provide services it is placed in a desperate situation. With very little capacity to supply services the state typically requests and accepts help from an outside state or group. The third party provider, typically a foreign military or NGO which supplies these services, will gain the legitimacy and authority from the population (Haims et al., 2008, p. 24). This additional layer of bureaucracy places the state further away from gaining population support and undermines state legitimacy. Providing goods and services through a third party increases the likelihood of corruption which further reduces state legitimacy (Grymes, 2003).

B. COST BENEFIT ANALYSIS OF SUPPORT

In a conflict for control of the state, both the incumbent and the insurgent force fight over control of the people"s behavior to gain resources in an effort to defeat the rival. The population must weigh the costs and benefits of supporting the state in a counterinsurgency effort, supporting the insurgency or remaining neutral. Costs and benefits can be either be immediately available to the general public or contingent upon their support. If a benefit is provided as a common

good, such as roads used to take crops to market, the individual does not have to join either group to receive this benefit. A private benefit, also referred to as a "selective incentive," is one that is only received under certain conditions such as protection, as an insurgency member, from state raids (Kalyvas & Kocher, 2007, p. 180). An entire village raided in the middle of the night is a publicly shared cost for all villagers, but a night letter delivered to a person's doorstep is typically a direct threat to the individual.

The population weighs both public and private costs and benefits, but also assesses the probability of receiving those costs and benefits (McCormick & Giordano, 2007, p. 296). If the state threatens to inflict a high cost to any person helping the insurgency, but no villagers have ever seen any state agents, the probability of incurring this cost is very low. Therefore, the value of this cost is very low and is not given much weight. If the state has a group of police constantly patrolling the streets, the probability of incurring this cost is high and, therefore, the value of patrolling is also high.

Increasing selective incentives, or excludable benefits, is one way the state can gain support from the population. Nonexcludable costs and benefits do not play into the decision calculus because the population receives each regardless of participation. Members of the population will find it irrational to spend personal resources on something that is gained for no additional effort (Polletta & Jasper, 2001, p. 289). Additionally, individual preferences play into the population's choice. Many people are likely to accept fewer benefits and greater costs when necessary to support their preferred side (Mason, 1996, p. 72). This concept is also linked closely with the importance of the state being seen as legitimate in the eyes of the population as the sole provider of these benefits.

C. GROWING CIVIL SOCIETY

Public support is needed for the state to develop successfully in a conflict-affected environment. Growing this support can be achieved by building social

capital within the society. Fukuyama (2000) defines social capital as "an instantiated set of informal rules or norms shared among members of a group that permits them to cooperate with one another" (p. 98). When state capacity to provide services is low, a substitute method is required. By increasing social capital, a robust civil society can generate organizations that "compensate for the lack of state-provided public services" (Posner, 2004, p. 237). The benefits of creating a robust civil society include "improving governmental performance…promoting good health, reducing crime, and generating economic growth" (Posner, 2004, p. 237).

Unfortunately, civil society is typically weakest following a state failure because people withdraw from a society that lacks basic governance, security and rule of law (Posner, 2004, p. 247). Normally, a significant amount of trust is required to build civil capital in a community. A robust civil society can serve as a stop gap measure to fill the void left by the absent state to provide basic services. However, there must be a driving force making people supplement or totally replace a functioning state. Organizers face a classic collective action problem trying to mobilize people to act when a person determines that the same benefit is gained for no additional effort (Polletta & Jasper, 2001, p. 289). Furthermore, overcoming the collective action problem becomes more difficult as the size of the group increases (Fukuyama, 2000, p. 109). Posner (2004) argues the best solution to the collective action problem is providing a form of payment to the people for their participation in service delivery (p. 243). This solution is only temporary, and unless civil society is adequately developed, when the funding goes away so too will the volunteers.

D. OWNERSHIP AND PARTICIPATION

Participation in the reconstruction process is well documented by academics to generate long term success for the implemented program (Condrey, 2010; Orr, 2002; UN Evaluation Office, 2009). Making the process inclusive gives people the opportunity to have their voices heard and can serve

as a “platform for dialogue” to address other social issues pertinent to the conflict (Fripp, 2006, p. 12). Encouraging participation and ownership will also give the local population a strong incentive to maintain their investment. The investment of time, money, supplies or social capital will shape future decisions to ensure the investment is not lost (Toomey, 2006, p. 20). Protecting the investment could include physical maintenance, vandalism protection or protection against insurgent sabotage. Participation in reconstruction provides significant social benefits to the community and process including: “(a) instilling dignity; (b) mobilizing (sic) people as problem solvers in their own social environments; (c) facilitating access to higher arenas of decision making” (Brown, 2005, p. 762).

Community participation can help identify the real needs of the community because participation itself is an indicator of the value of the project to the community (Weggeland, 2011, p. 21). Project ownership can have additional impacts beyond supporting individual project completion. Community ownership can create stronger local institutions, develop civic capacity and improve social relations leading towards increased state legitimacy (Barron, 2011; Davids, Rietjens & Soeters, 2010). Widespread involvement will also help decrease the potential for spoilers and, if done in a transparent fashion, will help reduce the potential for groups channeling funding away from its intended purpose (Orr, 2002). Tracking participation rates can also be used as a good gauge of popular support for the sponsoring organization. If people are willing to openly participate in a reconstruction activity in a conflict-affected environment, they most likely think the organization and process has legitimacy (Kilculin, 2009, p. 8).

E. RECONSTRUCTION THROUGH CONSTRUCTION

The conflict-affected environment provides significant challenges to economic recovery. Construction is one part of a larger process to rebuild a conflict-affected nation-state. The development of the existing economy hinges on the construction of the physical infrastructure to provide building blocks of stabilization. The quantifiable benefits of construction are easily cited including

creating jobs, better physical access to markets, infrastructure development and health improvement (USIP & PKSOI, 2009, p. 9–151). The more qualitative and potentially less tangible benefits include potential for construction activities to reduce insurgent violence utilizing techniques discussed in the previous section. However, reconstruction and stabilization of a nation-state is an extremely complicated process. Planning construction to achieve both immediate physical and strategic benefits is often either overlooked, poorly implemented, or both. The limited literature on the effect of construction activities typically focuses on overarching policy, but it does not offer a model for local implementation. Any successful model for construction in this environment must be viable at the lowest level.

Making the economy the primary focus of state reconstruction helps solve collective action and legitimacy problems while increasing social capital when the state provides basic services. First, developing the economy is central to the state achieving success in the key functions as defined by Ghani et al. (2005). Several of the core state functions directly attributed to economic development include management of public finances, formation of the market and management of the state"s assets. Second, a huge advantage of focusing on the economy is that the population sees progress and development and the potential state utility. The specific projects targeted can bring goods and services to both population centers and rural areas. Third, the provision of infrastructure services as part of economic development brings the country together. "Reliable infrastructure ensures the essential predictability required for participation by a state and its citizens in information networks and in a global economy that depends on just-in-time production and distribution" (Ghani et al., 2005, p. 7). Meierhenrich (2003) concurred stating that developing "transportation is critical to reducing the distance between the core and the periphery…. and geographical linkage is key to sustaining fledgling states" (p. 161). Fourth, a state that is able to raise money can fund an army to protect its borders and provide legitimate monopoly on the means of violence. Fifth, trade is interrelated with developing

diplomatic relations with neighboring states and the international community. Finally, investing in the population through economic development contributes to human capital making citizens active actors in society (Ghani et al., 2005, p. 6).

Employing the local population to work on projects in the area surrounding their community creates greater ties with civil society and ownership. The connection a person feels to civil society "often contributes critically to his personal economic performance" (Kuran, 2004, p. 119). Also, employing local workers generates social capital because they will learn by working as a community and needs are satisfied "more effectively" (Fukuyama, 2000, p. 105). As civil society develops, the community has a stake in protecting their physical investment leading to greater rule of law. Community projects create "a critical mass of group members" that "derive a benefit from participation that is independent of the public good that the group is designed to generate" (Posner, 2004, p. 243). These groups are better equipped to supplement state services without undermining legitimacy or state utility.

Targeting the economy also is helpful in developing worker trade associations. These groups often act as advocates or watchdogs to ensure the state is properly developing workers rights and market regulation (Posner, 2004). These associations help "provide a thousand reminders to each citizen that he lives in society" (De Tocqueville, 2003, p. 595). Creating groups around trade and labor unions will result in other civil associations, greater social capital and eventually "pave the way for political associations" (De Tocqueville, 2003, p. 604).

Using construction as the tool to meet these goals is a great way to combine multiple benefits in one program. Building a road betters security through easier patrols, extends the rule of law and provides an influx of money contributing to the economy. Locally run projects funded through the host nation create jobs building state legitimacy as the government implements services, social capital and helps develop social well-being. This effect was discussed by

Pirnie and O"Connell (2008), who argue that when construction employed the local population there was increased support for the government.

Additionally, there is strong evidence to support that what is needed for stabilization is better economic policies. Bueno de Mesquita and Root (2000) advocate the creation of free market economies to drive good governance. Reinforcing their point, Persson and Tabellini (2006) state that stable government increased economic growth more than the change to democracy. By beginning the reform around existing local political communities, Ellis and Sisco (2010) believe that increased stability and legitimacy derive from reinforcing existing local governance structures. Brinkerhoff and Johnson (2009) agree with this approach adding decentralized local governance increases service delivery speed while avoiding „winner takes all" politics.

1. Community Driven Development

One way to employ the techniques and best practices discussed is using Community Driven Development (CDD) or Community Driven Reconstruction (CDR). CDD is the latest in a long line of approaches used by the UN to solve problems that have traditionally hindered their development work. A typical CDD program requires members of the community to band together to select, lobby for funding, contribute equity, manage and construct projects to better their individual villages. These groups are often initially given technical construction and management support where needed by NGOs or other aid organizations. The strength of a CDD approach is the potential combination of "governance, humanitarian assistance, reconstruction, and reconciliation" under one program forcing divided societies to work together to succeed in creating unity and trust (USIP & PKSOI, 2009, p. 10–191). The CDD approach allows local people to identify their needs and help themselves. Making a group commitment towards a construction project demonstrates and increases trust within the community (McKechnie, 2003, p. 8). Execution of the project helps generate both ownership and social capital. A study performed by Fearon, Humphreys, and Weinstein

(2009) showed that communities that had a CDD program also had increased social capital in post-conflict Liberia (p. 288). The increased social capital also has the potential to harden the community against insurgent activity. The insurgent group can undermine local support by attacking a project where the community has invested time, labor and materials (Patterson & Robinson, 2011, p. 119). CDD projects develop ownership that can cause the community to "defend, maintain, and expand the project after donor organizations have left" (DOA, 2008, p. C-2).

Another benefit of the CDD approach tackles the difficult challenge of absorptive capacity of the state. The conflict-affected state is often unable to convert large amounts of financial assistance into contracted construction projects. CDD increases the absorptive capacity of the state by stimulating the demand through small manageable projects. This is done by creating jobs, growing state administrative support and energizing the supply chain for goods and services (Bannon et al., 2004, p. 27). Using construction as the conduit for local government reform helps manage the population"s expectations for service delivery and makes them a state collaborator in the process (Galtung & Tisné, 2009, p. 107).

CDD programs can also serve as the focal point for external assistance provided to the conflict-affected state. Large scale development programs often have several agencies providing assistance leading to overlapping and uncoordinated programs. Community driven programs can better assess what is needed by creating a master needs assessment for outside organizations resulting in better overall unity of effort (Bannon et al., 2004, p. 24). This switch also changes the dynamic of the relationship between the people and aid providers. Ownership of the master list gives the local CDD council more control over the reconstruction process creating a better sense of stability in an otherwise unstable situation. The CDD can serve as "public private partnership" that creates the ability to quickly and cheaply fund service provisions

(McKechnie, 2003, p. 8). World Bank field experience has highlighted that the CDD process is more cost efficient than other rural development methods (Bannon et al., 2004, p. 30).

2. Potential Risks Associated with Construction

Rebuilding state capacity and legitimacy through construction has potential risks that must be mitigated. First, the fragile or failed state typically will not have the resources to fund nationwide economic development programs. Generous financial donors or significant loans from the World Bank and technical knowledge are required for large scale development. Additionally, there is an ongoing academic debate that aspects of a country's diverse culture will suffer by adopting liberalized economic practices. Multicultural proponents claim that the spread of globalization destroys "local cultures, harms the affected communities" and "even humanity as a whole" (Kuran, 2004, p. 115). The programs that conflict with local culture may be unsustainable over the period of time required to be effective. If the construction process or project conflicts with local culture the "reconstruction efforts are likely to fail, incentivize corruption, and weaken the legitimacy of the … government" (Malan, 2010, p. V). Supporters of globalization claim that change happens in all cultures, "and in periods of economic transition, it inevitably accelerates" (Kuran, 2004, p. 115). Economic development does not have to change a culture to be effective. A smartly crafted plan will incorporate the strengths of the culture into economic development such as selling traditional rugs or exporting indigenous produce. There are however certain cultural practices that can significantly hinder economic development. Culture will harm development if specific groups of people are discriminated against by "class, cast, ethnicity, religion, or gender" (Sachs, 2006, p. 87). Balancing these traditional customs and local beliefs with a developing economy may be extremely challenging.

Another barrier to economic development could include the introduction of technology. Using a simple hand pump to irrigate a field may be time consuming

and labor intensive, but a new automated system could quickly breakdown without proper training or maintenance. A failing state will also have to overcome a potential loss of intellectual capital to develop the economy and rebuild. The more educated, upwardly mobile section of the population may choose to escape the chaotic situation and not return. Since ideas generate other ideas, the lack of internally generated technological advancement leaves a state struggling to keep pace with modernization (Sachs, 2000, p. 30). The international aid received by a state can even hinder economic performance. Donor programs have the tendency to create parallel structures without harmonization or aid predictability therefore undermining state legitimacy (Ghani et al., 2005, p. 9). A country"s geography can also hinder economic development when land locked and located in a tropical region without significant natural resources (Sachs, 2000, p. 30).

Economic aid can also generate corruption. Pervasive corruption in a state struggling to rebuild can undermine support for the government, damage social capital, and hinder economic growth (Jones, 2008, pp. 16–17). Corruption is common when a massive amount of aid is given to a rebuilding state that may not have the means to absorb the funding (Baliamoune-Lutz & McGillivray, 2008, p. 1; Stavridis, 2011, p. 74). Corruption is usually exacerbated by the pressure to commit money quickly without the right oversight and audit mechanisms in place (Theros & Kaldor, 2011, p. 25). Before aid is committed, donating agencies must consider the capacity of the economy, capability of local workers, and available bureaucratic structures (Cross, 2010). Considering these factors and aligning smaller projects with the local capability to meet the immediate need will help overcome these issues.

Capture is also a potential problem with construction activities in conflict-affected environments. Capture occurs when special groups “seize the benefits” generated by the construction funding, contracts, material supply or the labor used (McNab & Mason, 2007, p. 368). These special groups can be divided along religious, class, ethnic or other social divisions. Existing societal fragmentation can often intensify if projects are not allocated in a fair and

transparent manner. Capture can negate the benefits of the construction activities; diverting public goods and services, and therefore subverting state legitimacy.

A construction program must constantly balance the amount of autonomy given to the host nation. International contracting companies can be contracted to construct the needed work in any conflict-affected environment. This, however, is typically done at a much greater cost compared to using local companies and workers. Using international workers provides fewer jobs and training for the host nation population. However, large scale or complicated projects might demand a level of expertise that is not available locally. Projects that are highly technical and seen as critical, for example a hydroelectric dam, are better completed by a competent organization with trained and experienced staff. Smaller scale projects with more flexible timelines afford the opportunity to develop host nation capacity while building the local economy (USIP & PKSOI, 2009).

Finally, the sustainability of a project is a major issue when implementing a construction program in a failing or failed state. Programs that do not focus on developing local capacity and invest in human capital create a dependency on the aid "reducing the chances for sustainability and squandering opportunities for nascent governments to establish their legitimacy" (Brinkerhoff, 2005, p. 7). Sustainability can also be a problem with the project itself. The ability to sustain a project is significantly reduced when projects are constructed without local techniques or when a required supply chain for maintenance parts is unavailable.

These factors can be difficult to overcome, but there are several things that can be done to jumpstart economic development. First, education has numerous benefits and will specifically help the economy through the inclusion of new ideas for innovation and the generation of entrepreneurs. "Without higher education geared towards producing responsible citizenship and marketable skills in the economy, neither administrative reform nor competitiveness can be realistic goals" (Ghani et al., 2005, p. 7). Second, the economy-focused state

should create a free marketplace without social or class restrictions. Eliminating individual restrictions allows a greater and more diverse population into the work force, and has the potential to increase the overall intellectual capital. Finally, the inclusion of the right technology allows countries to create more products with "increasing returns to scale" (Sachs, 2000, p. 39).

F. ARGUMENT

I argue that by maximizing the elements of social capital, state legitimacy, participation and ownership and providing exclusive benefits when implementing a construction program should theoretically generate greater stability. When construction is executed in a conflict-affected environment, specifically in a contest between an insurgent group and state, I hypothesize the opposite is also true. If the state does not maximize these parameters it can actually decrease stabilization. This hypothesis can be represented by the functional relationship:

$$S \approx f\left(SC, L, P, E\right) \tag{1}$$

S = Stability

SC = Social Capital

L = Legitimacy

P = Participation and Ownership

E = Exclusive Benefits

Stability is designated as the Dependent Variable (DV) for this analysis. There are many different theoretical measures of societal stability. The Failed States Index developed by the Fund for Peace uses twelve indicators from mounting demographic pressures to progressive deterioration of public services to approximate stability (Fund For Peace, 2011). There are several other similar indexes that use survey data and expert opinion to approximate state stability. These can be useful tools for long term, state-wide trends but do not yield any granularity on specific regions or specific affect on stability within the country.

Other approaches to estimating stability include participation rate in reconstruction programs, taxation rate, and progress of NGO construction projects (Kilcullen, 2009, pp. 8–9). The potential theoretical value of these measures is great but the data to measure these programs is extremely limited, flawed or unavailable. SIGACTs or incident counts are a record of where and when violence occurred. Using SIGACTs as a stability indicator has advantages and disadvantages. Some of the largest advantages are, as a general trend, a reduction in violence is needed for greater stability, and low violence is both a short and long term goal. Other benefits of using SIGACTs are the availability and accuracy of the data. The period of recorded data is generally better and more robust compared to other tracked metrics. However, SIGACTs as a measure can also be misleading. The report of violence will partially depend on the individual or group making the report. Additionally, areas with low violence does not indicate the state has control (Kilculin, 2009, p. 7). Using recorded violent acts against NGOs to describe area stability helps mitigate some of these concerns. NGOs should be more able to complete their construction projects with limited interruption when the state is in control. I have chosen to utilize SIGACTS from the WITS database and the USAID NGO violence database to approximate stability. Both databases will be described in greater detail below in the data section.

In order to determine if construction has any effect on stability, completed construction projects are used as my Independent Variable (IV). The completed construction will represent the development of the four parameters discussed above: social capital, link to state legitimacy, participation and ownership, and exclusive benefits. The greater the construction programs maximize these parameters, I hypothesize the greater impact on stability the program will have by reducing violence. This project will compare four different construction programs executed by different agencies and governments to determine their potential impact on Afghan stability. Described in greater detail in the next section, these programs are CERP-related construction by regular army units, CERP executed

by PRTs, construction executed by NGOs through USAID and the NSP sponsored by the Afghan government.

I hypothesize that increased ownership and community investment by the local population will decrease measured violence. Further, I argue that constructing wanted, locally sustainable projects also increases stability, i.e., decreasing measured violence. I will use a combination of statistical regression and temporal analysis to compare completed projects with recorded SIGACTs reported by U.S. forces and NGOs. This can be represented by the following equations:

$$DV \approx -(IV) \tag{2}$$

DV = Dependent Variable

IV = Independent Variable

$$SA \approx -f(\beta_1 C + \varepsilon) \tag{3}$$

SA = SIGACTs

β1 = Unknown Coefficient

C = Completed Construction Methodology

ε = Error term

The state must exploit all available benefits from stabilization and reconstruction programs in order to increase efficiency of effort to defeat an insurgency. Emphasizing social capital, process ownership, and exclusive costs and benefits through service provision should help create the bond between state and population. Until this bond is created the state will not be able to effectively defeat an insurgency increasing the overall costs of the effort.

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IV. AFGHANISTAN CONSTRUCTION PROGRAM OVERVIEW

The war in Afghanistan is now the longest conflict in U.S. history. The U.S. has employed several different construction implementing strategies in order to stabilize and support the Afghan government. Practically speaking, the U.S. Military leads the reconstruction effort in Afghanistan under a larger umbrella of COIN strategy using CERP funding. The U.S. State Department implements the majority of their construction funding through USAID. The USAID model uses NGOs as implementing partners to complete construction in Afghanistan. Another large ongoing reconstruction program is the National Solidarity Program that falls under the Afghan Ministry of Rural Rehabilitation and Development. This can best be described as a grassroots program that allows the selected villages to select, manage, and construct their own development projects. Each of these programs has different approaches to reconstruction and stabilization in conflict-affected environments which leads to different implementation goals and methodologies.

A. BASIC CERP IMPLEMENTATION

The Commander"s Emergency Response Program originated in Iraq as a tool for commanders to quickly fund high impact humanitarian need projects aiding the local population. The program was authorized for use in Afghanistan and maintains the same intent "to enable commanders to respond to urgent humanitarian relief and reconstruction requirements" (USFOR, 2011, p. 2). The CERP program is indented for smaller projects, below $500K, that have a "positive impact" on the local population and meet the designated project selection criteria of: "(1) quick executability; (2) local national employment; (3) benefit to the Afghan population; (4) high visibility to the local populace; and (5) sustainability by (the government of Afghanistan) (for projects >$50K)" (USFOR, 2011, p. 5). The projects generally fall into three different categories including "reconstruction, death benefits/battle damage payments, and economic

development" (Patterson & Robinson, 2011, p. 117). This study is concerned specifically with the potential effect of construction projects and does not include CERP funds targeting other pillars and programs.

The CERP program in Afghanistan has had documented success. Anecdotally, a group of interviewed U.S. military officers stated that "„where the road ends, the Taliban begins‟" (Crane, et al., 2009, p. 62). Their personal experience using CERP showed how new roads allowed the military to increase secure areas as villages were connected. Other groups took suggested CERP implementation guidelines to heart. One military unit implemented a „shura to shovel‟ program that featured a two day deadline before project kickoff, and completed over 55 small projects that "produced clear benefits to the community and quickly galvanized the locals against insurgent encroachment" (Petit, 2011, p. 29).

Unfortunately, there is a large amount of research that documents the shortcomings of this program. Weggeland (2011) recently published a harsh criticism of the program claiming no overarching accountability measures or clear guidance have resulted in fueling "corruption, community insecurity and insurgent coercion" (pp. 2–3). Other significant problems with the CERP program involve the procedures and design. The CERP manuals and other military field manuals provide documentation on the theoretical best use of project funding, but execution is left up to commander‟s discretion. Unfortunately, the commander may or may not have experience or education in stabilization and reconstruction. After providing any needed emergency relief, more complicated construction projects are generally the accepted next step towards stabilization. The military often does not "have sufficient expertise" to implement construction projects resulting in a hit-or-miss stabilization effort (Patterson & Robinson, 2011, p. 117). Brosnan (2008) identified a serious lack of education for military members executing the CERP program. The study indicated out of 1,000 Army officers surveyed 59 percent did not receive any training beyond program administration (Brosnan, 2008, pp. 3–4). 71 percent said they used subjective criteria to assess

success and 41 percent said they were not informed about the understood root of conflict in their assigned area (Brosnan, 2008, pp. 3–4). Additionally, when commanders push for quick results, underdeveloped construction projects can result in unstaffed, unusable or unwanted facilities that create an easy insurgent target and a disenfranchised population (Patterson & Robinson, 2011, p. 118). Potentially the most critical issue with the CERP program is the theory behind project implementation. The U.S. military is spending money in a village with the hope of endearing the population to the government. This process inserts the U.S. into the state and population relationship, and typically demands some type of COIN population support in exchange for projects. This action can actually undermine the legitimacy of the central government by highlighting the fact that they were not able to provide the service.

B. PRT CERP IMPLEMENTATION

Provincial Reconstruction Teams (PRT) were established to help enhance CERP spending by developing stronger links between the villages and the provincial level government structure. The three main functions of a PRT are to develop good governance, increase security and contract reconstruction activities (DOA, 2008, p. F-1). PRT reconstruction activities target construction of schools, government buildings, health clinics and community centers (DOA, 2008, p. F-2). On paper U.S. PRTs are made up of a compilation of both military and State Department civilians from Civil Affairs, Military Police, Psychological Operations, Explosive Ordnance, Intelligence, Medical, administrative and infantry soldiers for security (Perito, 2005, pp. 4–5). The U.S. is not alone as operators of Afghanistan PRTs. The Canadian, British, German, and Italian forces all had a similar model and a separate regional responsibility for the mission (OCSR, 2006). Project selection is conducted in a multi-step process. The original list is developed by the PRT through discussions with provincial government officials, national ministries, local citizens and published development plans (DOA, 2008, p. F-3). Then the PRT engineer reviews

potential projects for technical feasibility, and finally the host-nation coordination team develops the funding priority in consultation with the provincial council (DOA, 2008, p. F-3). PRT project execution differs from regular CERP by specifically linking the process of project ranking through the provincial government.

This system has some stabilization success in Afghanistan. The Gardez PRT sponsored a conference to discuss development plans that brought together 100 local tribal elders and both local and national government officials to build strong governance ties (OCSR, 2006, p. 10). Additionally, PRT members are widely recognized as being more culturally sensitive and generally able to have better relationships with area leaders compared to their combat unit counterparts (Perito, 2005, p. 8).

The PRT mission has also faced large amounts of criticism for the role played in Afghanistan. Different governments and different approaches resulted in some creative solutions but, as a whole, the program lacked coordination, oversight and an overarching concept of operations (Perito, 2005, p. 1). PRTs in many cases have blurred the civil-military line, and in the process "undermined the perceived neutrality" of NGOs "increasing the risk for aid workers" (Waldman, 2008, p. 3). Finally, even though PRTs are focused on stabilization, the personnel that are assigned to these units are still very under qualified for the task they face (Perito, 2005, p. 11).

C. USAID PROJECT IMPLEMENTATION

USAID falls under the U.S. State Department and their mission is to "support long-term and equitable economic growth" by supporting agriculture, trade, global health, humanitarian assistance and democracy around the world (USAID, 2011). The execution of construction projects is typically through an implementing NGO partner that has experience and contacts in the area. USAID also funnels reconstruction funding through local start up NGOs to help develop civil organizations. USAID has adopted the nine principles of reconstruction and

development first published by Natsios (2005) of ownership, capacity building, sustainability, selectivity, assessment, results, partnership, flexibility, and accountability (DOA, 2008, p. C-1). These principles are closer to guidelines that are passed on to the implementing partner. Most NGOs use some form of participatory process in selecting and developing projects. The participatory process can be defined as making decisions through consensus without alienating group members (Social Impact Inc, 2005, p. 51). After awarding projects, USAID works through the implementing partner to complete the work having less interaction with the local people and government compared to the PRT model. The USAID model has a few distinct benefits including personnel that are better trained and experienced in stabilization and reconstruction efforts. Additionally, USAID works to develop a top-down and bottom-up approach to stabilization that connects government with community leaders during the process of infrastructure development (Social Impact Inc., 2005, p. 7). USAID has the luxury of a more focused reconstruction mission and can use NGOs to plan for "mid to long-term focused projects with ensured sustainability" (Malan, 2010, p. 46).

USAID has had an overall positive impact on the country of Afghanistan. Their work has contributed to a drop in the infant mortality rate by 22 percent, resulted in more than 70,000 loans to women-owned business and developed infrastructure for the life changing technology of cellular phones with over 6.5 million subscribers (USAID Asia, 2011). Unfortunately, Earl Gast, director of the USAID mission in Afghanistan in 2010, concluded past USAID operations were wasteful and checkered with failed reconstruction efforts (Cross, 2010, p. 10). Some problems that stem from this process begin with the many different implementing partners. Completing construction through an implementing partner allows for some flexibility but, at times, resulted in a "community participation model" that was "not clearly articulated" (Social Impact Inc., 2005, p. 51). A previous Kabul USAID director was quoted as saying the organization "„lacked an overarching strategy"" (Starr, 2011, p. 7). Similar to the traditional

CERP model, NGO implementing partners increased delivery speed but bypassed the government, limiting capacity development and potentially undermined state legitimacy (Barakat, 2009, p. 111).

D. NATIONAL SOLIDARITY PROGRAM (NSP)

The final method of project execution in this report is a review of the NSP under the MRRD. The NSP is a CDD based program where members of the community band together to select, lobby for funding, contribute equity, manage and construct projects to better their individual villages. The NSP first started in 2003 with the goals to "deliver project-based community" development and "improve community governance" (IROA, 2010, p.73). Villages with at least 25 families qualify for the program and must elect a Community Development Council (CDC) (NSP, 2009, p. 2). A CDC can request up to $60,000 to complete infrastructure or human capital development programs (IROA, 2010, p. 73). Unlike the other reconstruction program models, each project requires that the community commit some capital to the project in the form of funding, materials or labor. There is also typically an implementing partner NGO that assists with the skilled work and human development aspects of the project (Barakat, 2009, p. 115). Under the NSP over 55,000 projects worth more than $800 million were completed in almost every Afghanistan district (National Solidarity Programme, 2011). These projects, with an average cost of $14,500, accessed 70% of the rural communities through the second phase of the program (National Solidarity Programme, 2011).

The NSP has received wide praise for bringing together communities and building a foundation for democracy through development. CDD projects are typically much smaller, more sustainable and better develop ownership through village participation (McNab & Mason, 2007, p. 366). Ongoing evaluations of NSP have reported the creation of the village level development groups have resulted in greater improved "civic capacity," "social relations" and "state legitimacy" (Barron, 2011, p. 1). These projects are also being completed at a 30

percent less cost compared to the same work done by outside NGOs, according to World Bank estimates (Warner, 2007). Part of this is the reduction in corruption that has plagued the Afghanistan reconstruction effort. Villagers donate to the projects they want, work to bring the project in under budget and increase transparency to ensure spending is done correctly (Warner, 2007). An amazing 75% of the households interviewed within NSP communities responded that the "national government was concerned about the welfare of their communities" (Barakat, 2009, p. 117). As a result of the NSP program two communities turned in weapons caches and yet another defeated an insurgent attack without any U.S. or coalition forces involvement (Weggeland, 2011, p. 21).

In some ways the NSP is a victim of its own success creating strong local CDCs that have taken the place of some other attempts to create "formal" governance structures. The District Development Councils, the step above the CDCs, are creating friction between the MRRD and the Afghan Independent Directorate of Local Governance working to establish District Development Assemblies as relevant governance structures (UN Evaluation Office, 2009, p. 52). Thus far the anecdotal evidence showing improved security has not translated to larger studies. Beath, Christia and Enikolopov (2011) found the NSP did not reduce the likelihood of villages being attacked. The process of supporting local ownership of projects and state governance creates a delicate balance between empowering local leaders and undermining national leadership (Hilhorst, Christoplos & Van Der Haar, 2010).

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V. DATA DEVELOPMENT AND ANALYSIS

The focus of this study is to determine if different construction programs have any discernable difference in creating stability in a conflict-affected environment. I began by compiling information on each of the construction programs previously discussed and matching unclassified datasets. All of the construction data used in this study was retrieved through the DataCards program sponsored by the National Defense University (http://www.datacards.org). DataCards is an index of data sources relating to irregular warfare worldwide. Each of the individual data sources is rated for content, quality, and includes a description of the intended purpose. The DataCard site also contains the Afghanistan NGO Safety Office Database that tracks enemy activity specifically targeting or impacting NGOs working around the country. The final source of data was the Worldwide Incident Tracking System (WITS) database sponsored by the U.S. National Counterterrorism Center (NCTC).

Each of the projects in the construction databases were classified into categories based on the normalized CERP data categories. These categories include agriculture, education, electricity, transportation, water and sanitation, civic clean up, healthcare, other urgent humanitarian or reconstruction, protective measures, repair of civic and cultural facilities, rule of law and governance, telecommunications and transportation. Also, each project location province and district were normed for easier and more accurate comparison.

A. DATA SET DESCRIPTION

1. CERP Data Normalized

The CERP Data Normalized dataset is compiled from raw data included in the Combined Information Data Network Exchange (CIDNE). CIDNE is a classified database that houses information on SIGACTs, Civil Affairs and

construction activities for theatre operations in Afghanistan and Iraq. The normalized data was developed by a group from the Army organization TRADOC Analysis Center (TRAC) in an attempt to clean and format the information for easier analysis. The data includes the originating organization, the type of CERP project, a short description of the work, the provincial location of the project, completed project date and the project cost. I used the original CIDNE data to cross-reference the data to check for completeness and accuracy. This normed dataset is the most complete and consistent of the available Afghanistan CERP datasets. The original dataset contains 11,867 records spanning between 2003 and 2011.

I compared this dataset with the original CIDNE data and was able to further edit and remove 20 projects that were terminated after the normed dataset was generated. Additional projects that were removed from the dataset were CERP activities such as battle damage and condolence payments. The resulting database includes 5881 CERP construction related projects from 2003 to 2010 in seventeen provinces.

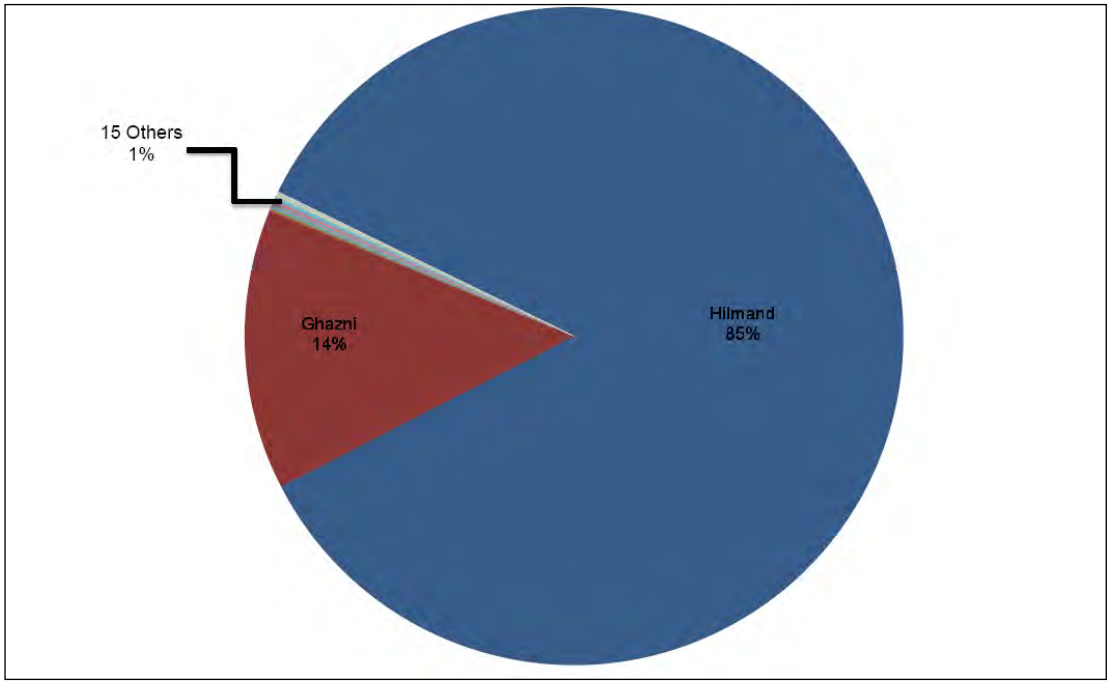

Figure 1. Percent of Afghanistan CERP Construction by Province

An identified weakness in this dataset is inconsistent project descriptions. Additionally, the CERP construction program has received some criticisms that it concentrated too much money in Helmand province. This is reflected in the data with 85 percent of the CERP construction projects within the study period located in Helmand province. A subset of this information includes construction projects completed by U.S. PRTs in Afghanistan. This data represents 241 projects valued at almost $18 million in the Helmand and Ghazni provinces between 2008 to 2011.

2. USAID Construction in Afghanistan

The project database used in this study to analyze construction projects sponsored by USAID in Afghanistan is named the Afghanistan Infrastructure and Security Cartography System (AISCS). The AISCS is a product developed by the Afghanistan Infrastructure Data Center (AIDC); a USAID funded program to track and report USAID and other NGO construction countrywide (AIDC, 2011). The program in Afghanistan is managed by the NGO International Relief and Development with a goal to "manage data collection, cataloging, mapping and reporting in support of Afghanistan's infrastructure development goals (AIDC, 2011). The database includes the project name, reference number, project type, description, location, and project complete date. The project was first funded in 2004 in an attempt to pull together all the reconstruction and stability work being accomplished in Afghanistan by USAID. Since its inception, the AIDC has provided extensive infrastructure and security-related information on a regular basis in the form of maps and catalogues to the USAID Afghanistan mission, the U.S. Embassy, ISAF, IRoA ministries and other international donors. In 2009, the program expanded to include all projects completed by donor agencies including other NGOs and military organizations. In order to manage the growing information exchange, USAID OIEE facilitated information-sharing agreements

for the AIDC with the U.S. Army Corp of Engineers – Afghanistan Engineering District North (USACE AED-N) and the U.S. National Geospatial-intelligence Agency (NGA).

The original data includes 43,000 total projects completed between 2003 and 2011. The information within the database continues to be refined and updated. For this study, I reviewed the projects included in the database and only included projects that had construction related activities. Where possible blanks in the record were interpreted based on the information available.

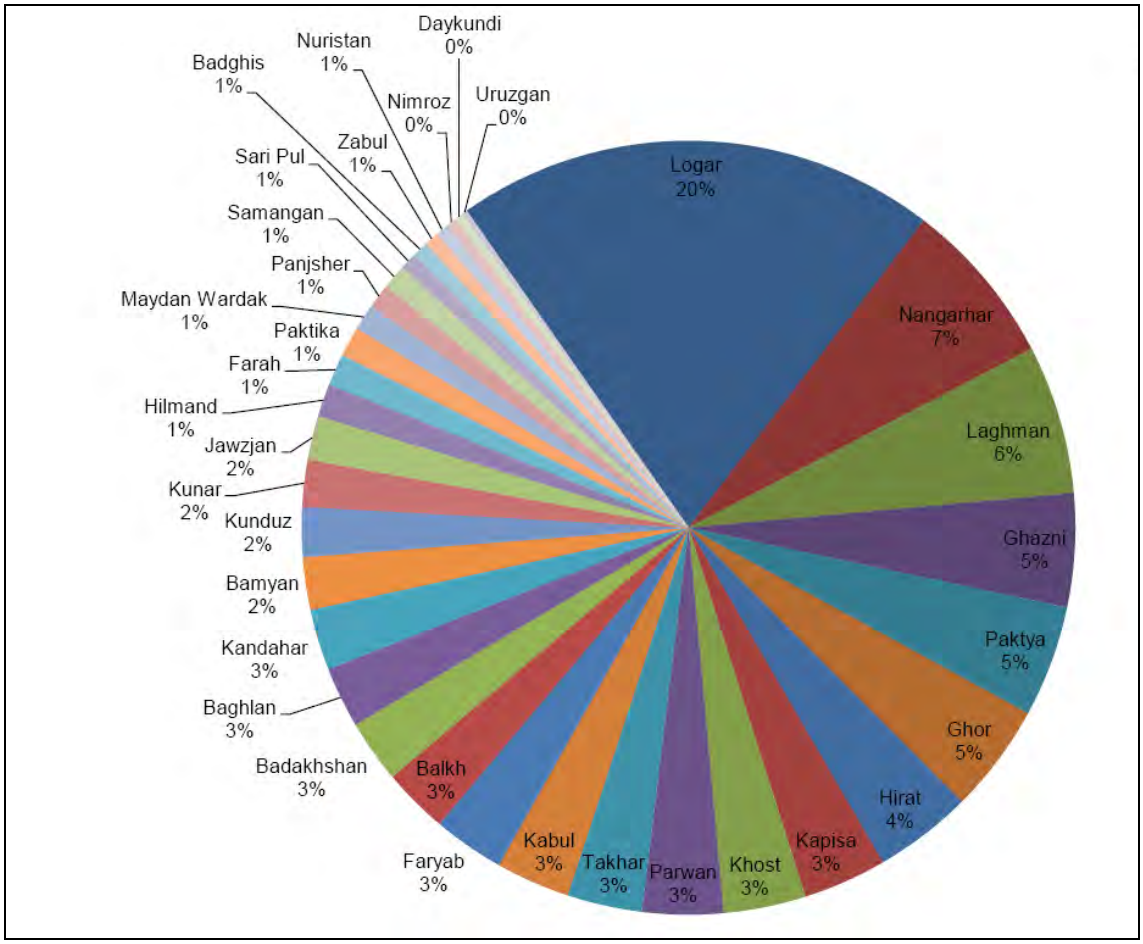

Figure 2. Percent of Afghanistan USAID Sponsored Construction by Province

The majority of the projects did not include specific geolocation but did include province and district location. Entries that were incomplete were removed from consideration. Many others were removed from consideration because they did not include construction as the aid mechanism. This database has some inconsistencies in information and very little documentation information on project cost. The result was a project list including 2,467 entries during the study analysis period between 2003 and 2010.

3. MRRD Construction in Afghanistan

The MRRD has several programs to develop rural regions throughout the country, but the NSP is the largest and best well known. The MRRD approximates that 70% of rural communities in Afghanistan have received projects through this $800 million initiative (NSP, 2011). The information on the NSP projects was taken from the MRRD database of more than 55,000 records of development projects. The database includes information on the specific program of execution under the MRRD, date completed, description of work, project cost, and location. The database has been reviewed for accuracy by outside groups and continues to be standardized and updated by the MRRD. The data includes information on 37,779 projects from both phases of the NSP program beginning in 2002 and continuing through the end of 2010. Entries from the original database were not included if the project did not include a physical construction process. As an example, if a village received machinery for future projects it was not included. But, a project was included for example if the result of the materials or equipment purchased also included physical construction. Figure 3 shows that not only is the distribution of the NSP fairly uniform, the emphasis on rural development is apparent with only 1 percent of the construction awarded in Helmand province.

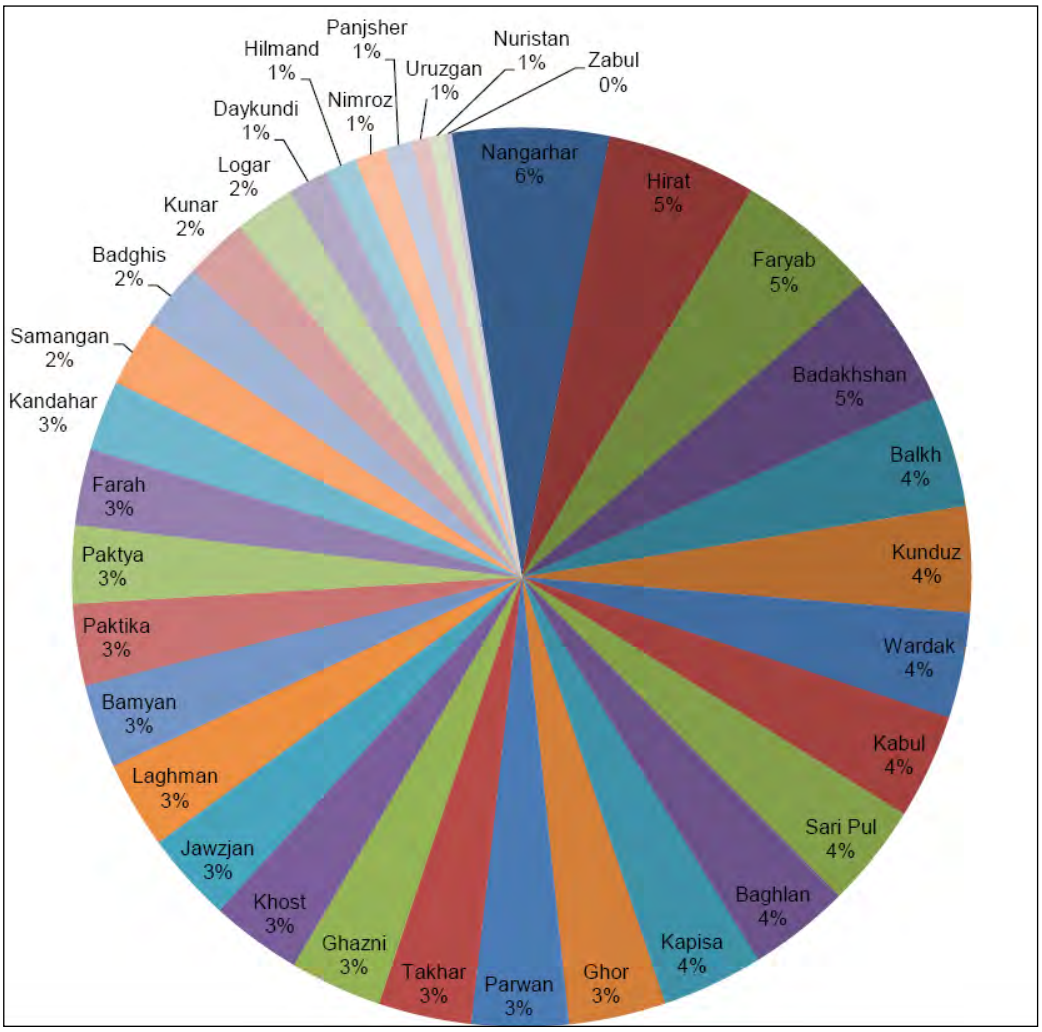

Figure 3. Percent of Afghanistan NSP Construction by Province

4. NGO Safety Data

The Afghanistan NGO Safety Office (ANSO) collects information on incidents aimed at or affecting NGOs operating in the country. The ANSO produces quarterly reports that attempt to analyze the trends of incidents against NGOs reviewing types, causes, locations and casualties. The information is geolocated and includes the incident data, details, casualties and the type of attack. The growing database features 1,230 incidents between 2003 and 2011. These incidents are reported by NGOs that experience violent activities directed at their organization. This information is a descriptor of the stability and support

for stability activities in a conflict-affected environment. NGOs typically try to represent an independent third party that does not have a political agenda for control. Most publish primary goals of supplying humanitarian aid without any obligation for the population to supply something in return. When insurgent forces target NGOs they risk undermining popular support for their cause. In areas where these violent acts occur, insurgent groups are likely more entrenched and have more control over the population. As a limitation, the database is sparsely populated in the first two years of recorded data but has become more complete and accurate overtime. Also, prior to the establishment of the ANSO office, the data between 2003 and Aug 2009 had to be compiled from multiple sources and therefore is not as reliable as data collected by the office itself.

5. WITS

The Worldwide Incident Tracking System (WITS) data is compiled by the U.S. National Counterterrorism Center (NCTC) (https://wits.nctc.gov/). The WITS data includes 9,383 geolocated entries containing detailed information on terrorist incidents in Afghanistan from 2004 until 2010 including the date, type, description and tracking number. The NCTC defines terrorism when "groups or individuals acting on political motivation deliberately or recklessly attack civilians/non-combatants or their property and the attack does not fall into another special category of political violence, such as crime, rioting, or tribal violence" (WITS, 2011). Each of the incidents in the database for Afghanistan are taken from open source reporting generated by the media, police forces, military forces or NGOs. The incident is recorded if it fits the NCTC definition of terrorism and only when the action was actually executed. Planned or disrupted attacks are not included. The entries also include, if known, the group or organization responsible for the incident. Figure 4 reveals a distinctive trend of increased in violence in Afghanistan between 2004 and 2011.

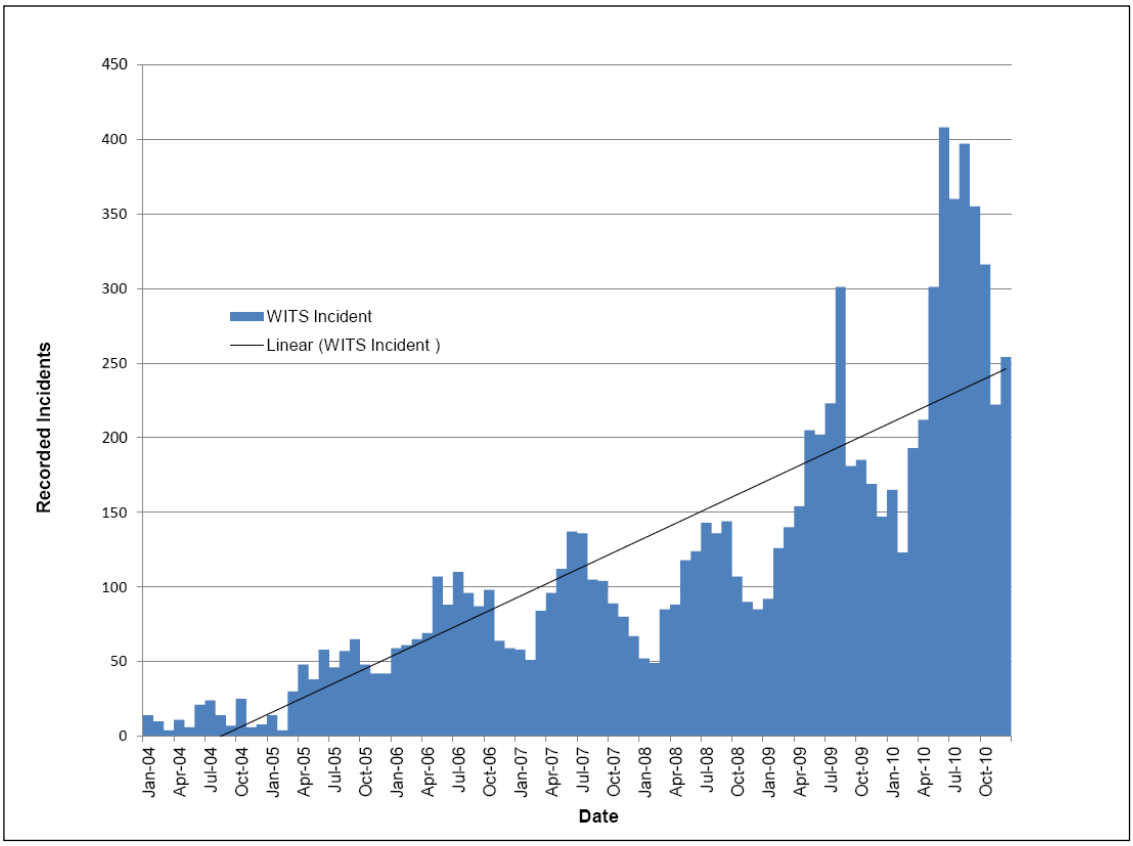

Figure 4. Recorded WITS Incidents per month in Afghanistan

The description of the incident includes information on the target. Many of these incidents targeted the state government. The struggle of an insurgent group against the state is core to stability in a conflict-affected environment. In an effort to better understand the affect of construction on stability I customized the WITS data to include a list that only includes attacks directly against government officials and facilities. Within the existing data, 5,258 incidents can be clearly identified as attacks against a government target.

Another good measure of stability is to track the act of hostage taking (Kilcullen, 2009, p.9). If local officials and pro-government supporters are being taken at a high rate by the insurgent forces it demonstrates the inability of the state to secure the area and protect their population. Additionally, it sends a signal to the remaining population that the insurgent force have raised the costs for active and passive support of the state. However, low kidnapping rates do

not imply state support (Kilcullen, 2009, p. 9). These areas could simply be under the control of the insurgent force. Within the existing WITS data, 737 records documented the act of hostage taking in 33 of 34 Afghanistan provinces between April 2004 and May 2010.

B. DATA ANALYSIS

1. Data Refinement

Each database was further refined, shaped and standardized for analysis in this study. Each of the reconstruction and stabilization project databases were reviewed and trimmed to include only the completed construction projects. Governance, education or other development projects were only included if the construction of a physical structure was at the heart of the project. Since Afghanistan has changed both provincial and district boundaries so every project and incident location was reviewed and, if necessary, normed into a standard 34 provinces and 329 districts. The data had to be further cleaned to eliminate special characters and formats incompatible with ArcGIS.

2. Unit of Analysis

To test the potential affect of construction on stability, I first sorted each of the data sets by location and date. The CERP dataset only includes the provincial location of completed projects. Both the NSP and USAID data includes a finer granularity of project location. The completed projects of these programs include district and, in some cases, village locations. Unfortunately, analysis at the village level was not possible because of the lack of geolocation of the villages in Afghanistan and the wide variety of spelling for individual villages. Additionally, the location information for CERP projects more specific than the provincial level is classified.

3. Regression and Correlation Analysis

I then established the null hypothesis; there is no significant effect of construction (IV) on violence (DV). Using both statistical regression and correlation in Excel, I tested each of the construction methods against both the WITS and ANSO incident databases. Projects at both the district and province level were compared by month they were completed with any incidents that occurred that same month. I completed two different comparisons using the number and location of construction projects undertaken as well as the cost and location of these projects. This was done to include the USAID data into the comparison as the USAID project database did not include individual project cost. Measuring the value of each project has both benefits and drawbacks. Using the dollar amount per project could potentially show a clear correlation between a given level of effort and the reduction in violence. However, the cost of an individual project can vary a great deal between the reconstruction programs studied making a direct comparison hard. Using the project as an individual unit does not test the input of funding into the stability equation but looks at construction as a intrinsically beneficial act bringing a society together. The downside of using the number of completed projects is a measure of scale between larger and smaller projects. Excel was used to run the regression and correlation of the data occurring between January 2003 and December 2010.

4. Geospatial Analysis

ArcGIS was used to plot both the projects and violence at the provincial and district level throughout Afghanistan. Each project or incident was plotted according to the best known location. Some USAID projects included exact geolocation while other projects had location information that included only the province in which the construction was executed. I used the provincial or district geographical center as the completion location when exact coordinates were not available. All of the violence data was plotted according to the exact geolocation available in the data.

5. Temporal Analysis

Each of the datasets included the date construction was completed or when the incident occurred. ArcGIS has an available feature that allows this date to be included in the properties of the created map layer. This allowed me to display projects and violence month by month over the same period of time analyzed using Excel regression and correlation. These layers can be assembled in different combinations to aid analysis over time.

C. RESULTS

1. Regression and Correlation

Table 1 contains the regression results of the number of construction projects compared to violence at the provincial level of analysis. The overall trend discovered was CERP and NSP construction projects have a statistically significant role in stability. All CERP regressions had strong T-Statistics with a very high degree of confidence to reject the null hypothesis that there is no affect of construction on violence. The CERP program had the strongest correlation out of the programs reviewed including a correlation with the WITS data equaling 0.199. All CERP regression results in Table 1 also indicate a positive relationship with violence. This trend is very small, and can be explained by the core CERP philosophy of money as a weapons system. CERP projects are typically placed in more populated areas with insurgent activity and existing violence to influence the population. The results also indicate that CERP construction activities did not decrease violence. Additionally, the largest trend indicates for every 17 projects only one additional violent incident occurs. Better application of the construction could potentially reverse this trend increasing stability and decreasing violence.

Number of Projects	WITS	WITS (Hostages Taken)	WITS (Gov. Target)	ANSO NGO Violence
CERP Projects (All Provinces)	0.0598***	0.0039	0.0313***	0.0148***
	(5.090)	(4.343)	(3.042)	(1.616)
R-squared	0.04	0.0002	0.031	0.16
Observations	2856	2856	2856	2856
PRT Projects (Ghazni & Helmand Only)	-0.129	-0.1234*	-0.0466	-0.0626
	(9.553)	(4.083)	(6.173)	(3.394)
R-squared	0.012	0.040	0.0026	0.0213
Observations	72	72	72	72
USAID Projects (All Provinces)	0.0785***	0.0085	0.0089	0.0041
	(5.188)	(4.344)	(3.091)	(1.637)
R-squared	0.003	4.65E-5	9.91E-5	7.7E-5
Observations	2856	2856	2856	2856
NSP Projects (All Provinces)	-0.0297***	-0.0086**	-0.0169***	-0.0006***
	(1.093)	(4.34)	(3.069)	(1.630)
R-squared	0.02	0.002	0.014	0.01
Observations	2856	2856	2856	2856

Error associated with the regression is listed in parentheses.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level

Table 1. Regression Results: Number of Completed Projects Constructed by Program Compared With Violence at the Provincial Level

Table 1 also shows the overall strong relationship between the NSP projects and violence. The NSP regressions resulted in either a very statistically significant or statistically significant relationship reducing violence. This trend indicates that CDD programs like the NSP can help create stability in conflict-affected environments. The NSP and WITS regression coefficient in Table 1 also indicates the NSP program reduced about five violent acts on average, per province, per year. The Figure 4 WITS histogram illustrates the increasing violence in Afghanistan over time. A comparison of the two trends results in an absolute change of 0.1362 between the NSP and WITZ coefficients during the same time. The negative trend the NSP program achieved in this environment is noteworthy considering the substantial obstacles to the program"s success.

The null hypothesis for the CERP projects implemented by the PRT cannot be rejected. I cannot conclude that PRT implemented CERP has a significant effect on violence. All of the PRT construction reported in the CERP Normed Database fell into two provinces: Ghazni and Helmand. This resulted in only 72 observations and, consequently, there was not enough data to be able to draw a stronger correlation. USAID comparison resulted in a high confidence to reject the null hypothesis when comparing the WITS data only. The USAID regression at the provincial level proves to be inconclusive with the lowest confidence of any comparison. All the USAID project comparisons resulted in a slightly positive correlation with violence, but are so slight the increase is negligible.

Table 2 shows the results of the regression of three programs at the provincial level using project cost, in U.S. dollars, as the unit of measure. Again the CERP program construction was very statistically significant when compared against each measure of violence. All of the regression coefficients were slightly positive, but very small. This is noteworthy considering CERP are placed specifically where greater violence is occurring. NSP also resulted in three of four categories as statistically significant at the one percent level. The NSP regression coefficients are not as large when using dollars compared to using

individual projects as the unit of measure. This could indicate the cost of a NSP project is not as important as the project itself. PRT projects did have a very statistically significant result when compared to the total WITS database. Better data and research into this result could yield a greater negative violence trend. Finally, only CERP projects using cost as a unit of measure had a very statistically significant relationship with the hostage incidents recorded by the WITS database.

Cost of Complete Projects	WITS	WITS (Hostages Taken)	WITS (Gov. Target)	ANSO NGO Violence
CERP Projects (All Provinces)	3E-8***	2.81E-7***	1.5E-7***	0.00000001***
	(5.145)	(4.284)	(3.057)	(1.626)
R-squared	0.02	0.027	0.015	0.013
Observations	2856	2856	2856	2856
PRT Projects (Ghazni & Helmand Only)	-1E-6***	-5.59E-7	-1.03E-6	-3E-7
	(9.5647)	(4.137)	(6.111)	(3.4224)
R-squared	0.009	0.0147	0.0225	0.0047
Observations	72	72	72	72
NSP Projects (All Provinces)	-2E-6***	-4.03E-7*	-8.9E-7***	-4E-7***
	(5.159)	(4.341)	(3.0711)	(1.631)
R-squared	0.01	0.001	0.0126	0.007
Observations	2856	2856	2856	2856

Error associated with the regression is listed in parentheses.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level

Table 2. Regression Results: Cost of Completed Projects Constructed by Program Compared With Violence at the Provincial Level

Table 3 has the results of the USAID and NSP construction projects compared to violence at the district level. The only USAID regression statistically significant is the comparison with NGO violence. This positive relationship with violence could occur because of the majority of the NGO violence database consists of reports made by USAID implementing partners. The remainder of the USAID comparisons are not statistically significant at effecting violence. The NSP projects, again, resulted in a statistically significant relationship reducing violence in three of four violence databases.

Number of Projects	WITS	WITS (Hostages Taken)	WITS (Gov. Target)	ANSO NGO Violence
USAID Projects	0.0094	-0.0037	0.0003	0.0057**
(District)	(1.094)	(1.2367)	(0.6746)	(0.3342)
R-squared	4.95E-5	5.93E-6	1.43E-7	0.0002
Observations	33600	33600	33600	33600
NSP Projects	-0.0038**	-0.0025	-0.0024**	-0.0015***
(District)	(1.0937)	(1.2367)	(0.6745)	(0.3342)
R-squared	0.0002	5.14E-5	0.0002	0.0002
Observations	33600	33600	33600	33600

Error associated with the regression is listed in parentheses.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level

Table 3. Regression Results: Number of Completed Projects Constructed by Program Compared With Violence at the District Level

The final regression results table, Table 4, is the cost of the NSP projects compared to violence at the district level of analysis. The final comparison also resulted in statistically significant regression coefficient values in three of four categories of violence. The regression result for NSP projects are more significant when the unit of analysis is the number of projects compared to the

project cost. This same pattern occurs at both the district and provincial level reinforcing that the number of projects are more important than the money spent.

Cost of Complete Projects	WITS	WITS (Hostages Taken)	WITS (Gov. Target)	ANSO NGO Violence
NSP Projects (District)	-2.25E-7**	-1.36E-7	-1.27E-7**	-8.7E-8***
	(1.0937)	(1.2367)	(0.6745)	(0.3342)
R-squared	0.0002	4.85E-5	0.0001	0.0002
Observations	33600	33600	33600	33600

Error associated with the regression is listed in parentheses.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level

Table 4. Regression and Correlation Results: Construction and Refined Violence

	CERP	USAID	NSP
Agriculture	12.8%	0.0%	18.3%
Civic Clean Up	3.2%	0.0%	0.0%
Economic, Financial, and Management Improvements	0.0%	0.2%	0.0%
Education	14.2%	19.0%	2.0%
Electricity	5.0%	0.0%	15.6%
Food Production And Distribution	0.3%	0.0%	1.6%
Healthcare	8.6%	23.5%	0.3%
Irrigation	1.6%	0.0%	0.0%
Other Urgent Humanitarian Reconstruciton Projects	3.5%	0.0%	0.0%
Protective Measures	2.8%	0.0%	0.0%
Repair Of Civic And Cultural Facilities	7.9%	3.4%	3.5%
Rule Of Law And Governance	4.3%	1.8%	0.0%
Telecommunications	0.5%	0.0%	0.0%
Transportation	16.9%	4.2%	30.2%
Water And Sanitation	18.2%	44.4%	28.3%

Table 5. Construction Percentage by Type Based on Number of Projects

There are a few notable trends that are throughout all of the results. CERP construction has the largest impact on attacks against the state. The CERP regression coefficient, 0.0313, and correlation, 0.0176, is larger than all other methods for projects as the unit of measure. This could be related to the amount of CERP construction that is focused on increasing state capacity.

The three top state related categories are Protective Measures, Repair of Civic and Cultural Facilities and Rule of Law and Government. These categories of construction accounted for 15 percent of CERP projects compared to only 5.2 and 3.6 percent of USAID and NSP construction respectively. Additionally, the majority of the CERP projects were constructed in the same area where 18 percent of the total violence occurred.

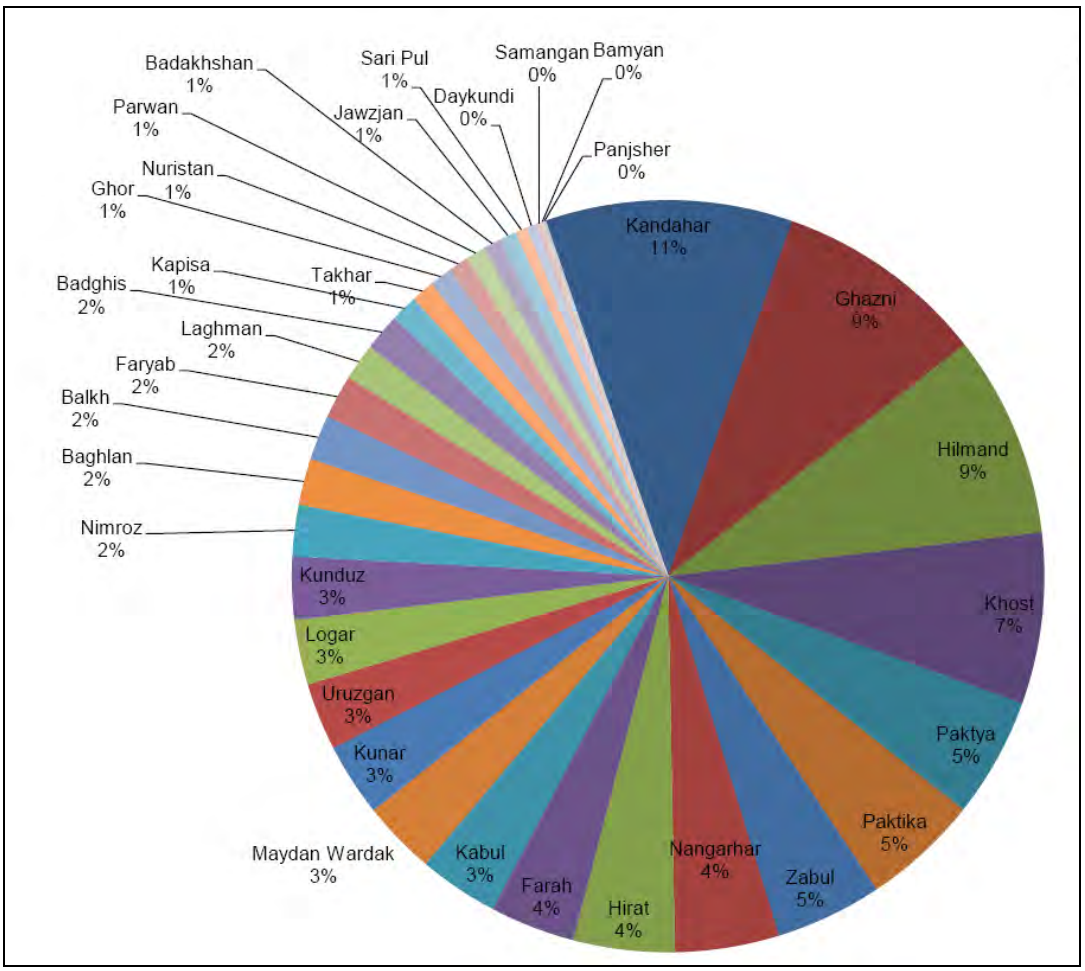

Figure 5. Percent of Total Recorded WITS and ANSO Violence by Province

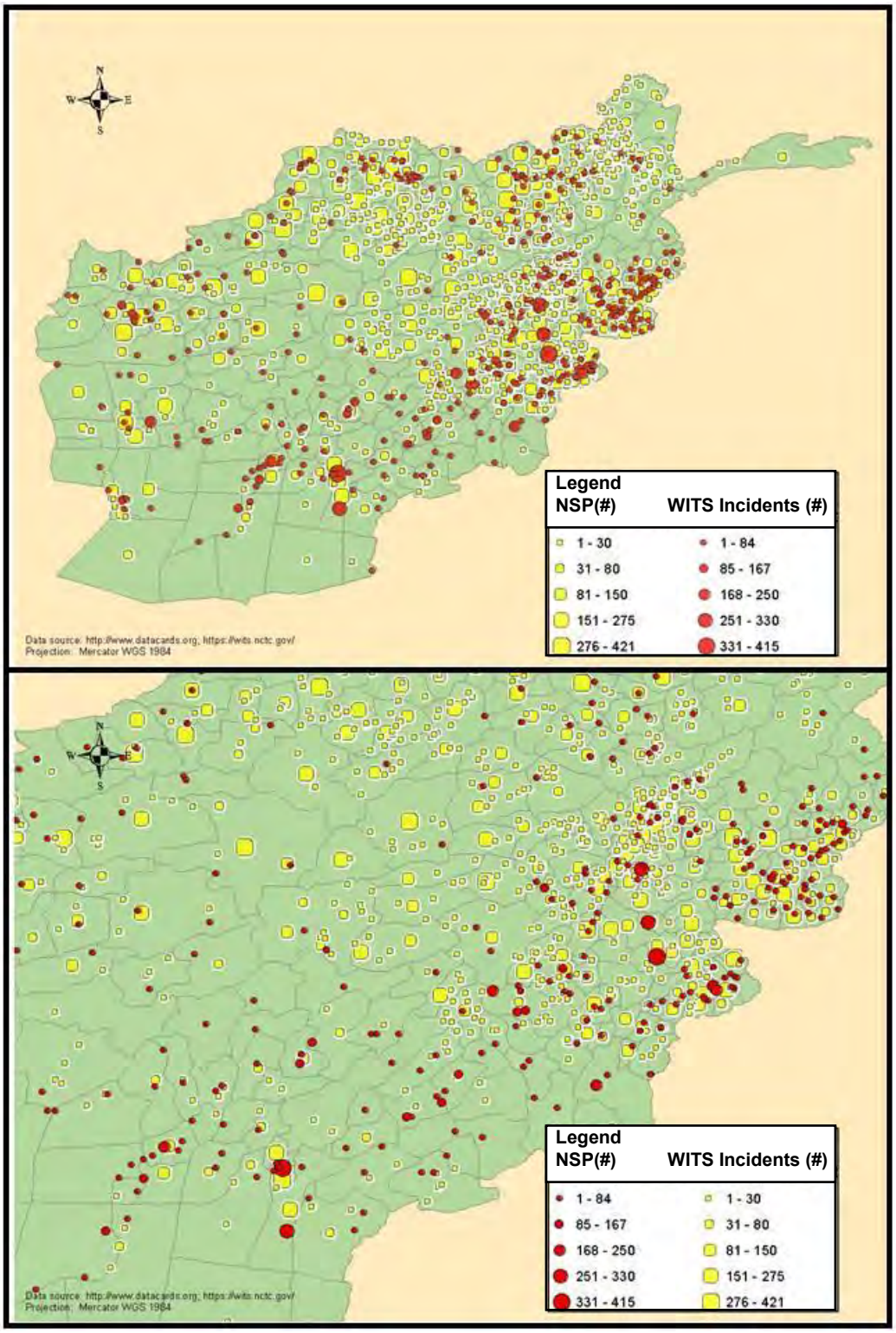

Figure 6. Number of Recorded WITS Incidents and NSP Projects: Afghanistan (top) and S.E. Afghanistan (bottom)

The NSP projects also show an interesting relationship to recorded WITS government attacks. The NSP regressions in every comparison resulted in statistical significance at the 1 percent or 5 percent level. Furthermore, all of the regression coefficients were negative, indicating a decrease in violence targeting the state. The NSP is doing more than any other construction program in linking the state government to its population.

2. Geospatial Analysis Results

Each of the projects and the violence from the examined datasets were plotted using ArcGIS. ArcGIS allows the user to examine the geospatial aspect of the refined data. All of the violence data is plotted exactly where the incident occurred using latitude and longitude. The CERP data for CERP and PRT projects were placed at the geographical center of the province where the construction occurred. The NSP projects are plotted at the district where the work occurred. Finally, the USAID completed projects are plotted at the exact latitude and longitude, if the information was available, or at the district center. All of the information plotted was projected onto the Afghanistan map using the WGS1984 datum and Mercator projection. The points vary in size based on the number of projects or incidents that occurred at that location. Plots of individual datasets are available in Appendix C.

The result of NSP projects and WITS incidents geospatially is displayed seen in Figure 6. One of the striking visuals this comparison displays is the vast coverage of the NSP. The majority of the violence is located in more populated areas that ring the country. There are many NSP project locations where there is little to no violence reported. This is more clear in the bottom half of the frame where the figure focuses on the southeast portion of the country for greater acuity. This figure is a striking representation of the relationship between recorded violence and NSP construction. More violence occurred where fewer NSP projects were completed.

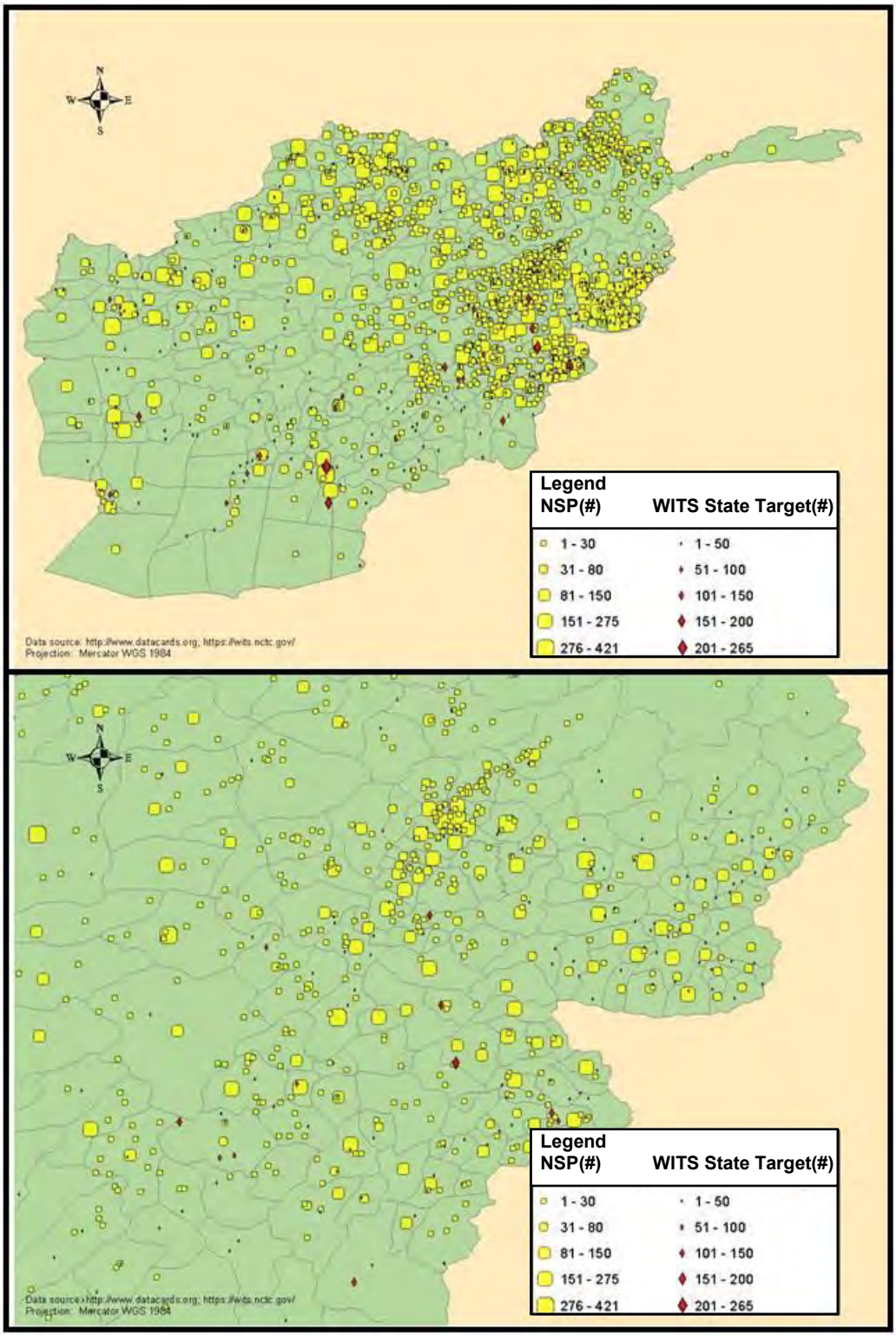

Figure 7. Number of Recorded WITS State Targeted Incidents and NSP Projects: Afghanistan (top) and S.E. Afghanistan (bottom)

The next geospatial analysis discussed is the relationship between the NSP and violence from the WITS database targeted at the state. The majority of the violence targeted at the state is located in more populated areas. This is true of all recorded violence. However, the recorded violence against the state also occurred in areas without a large NSP footprint. A notable spatial representation of this data is on the bottom of Figure 7. This figure enhances the case that the NSP strengthens the relationship between the population and the state.

The CERP projects in relationship to attacks targeted against the state are displayed in Figure 8. The CERP projects appear to also have a correlation with attacks against the state. Unlike the NSP projects, more state attacks occur in the same area as completed CERP projects. Some of this can be explained by the chosen location and type of the CERP projects. This relationship can also be explained by the limited distribution of CERP construction across the country. The CERP program chose to target specific areas key to building capacity in the Afghanistan government. This limited the potential impact of the CERP construction program in building stability. Concentrating CERP construction in one location can also contribute to local inflation, capture, and oversaturation of the economy.

The last geospatial figure included in this study is the plot of CERP construction and recorded WITS incidents. The location of the CERP construction is in areas where violence occurred. This correlation is more clear in the lower portion of Figure 9. The CERP program is specifically designed to be implemented in areas of greater violence in an attempt to reduce violence. The possibility that less violence would have occurred if the CERP work was not completed in these areas cannot be proved with the available data.

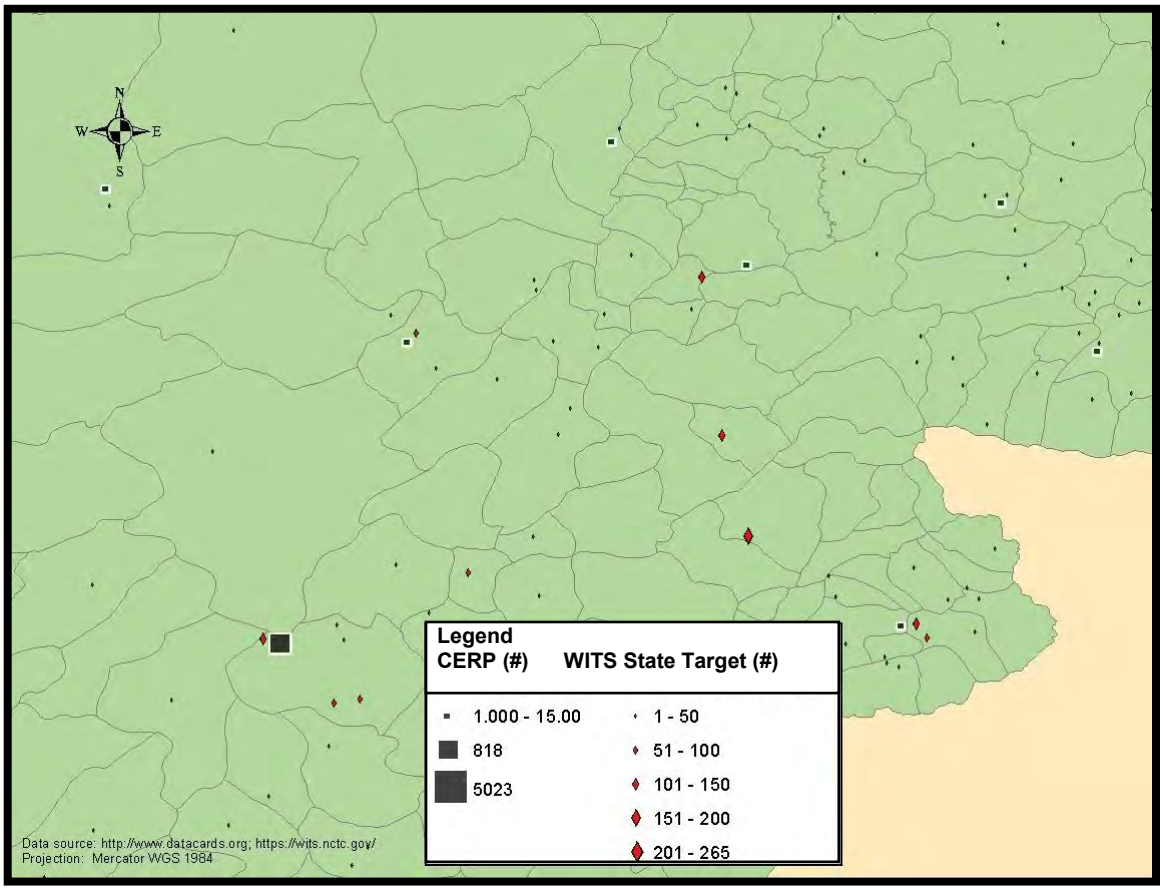

Figure 8. Number of Recorded WITS State Targeted Incidents and CERP Projects in S.E. Afghanistan

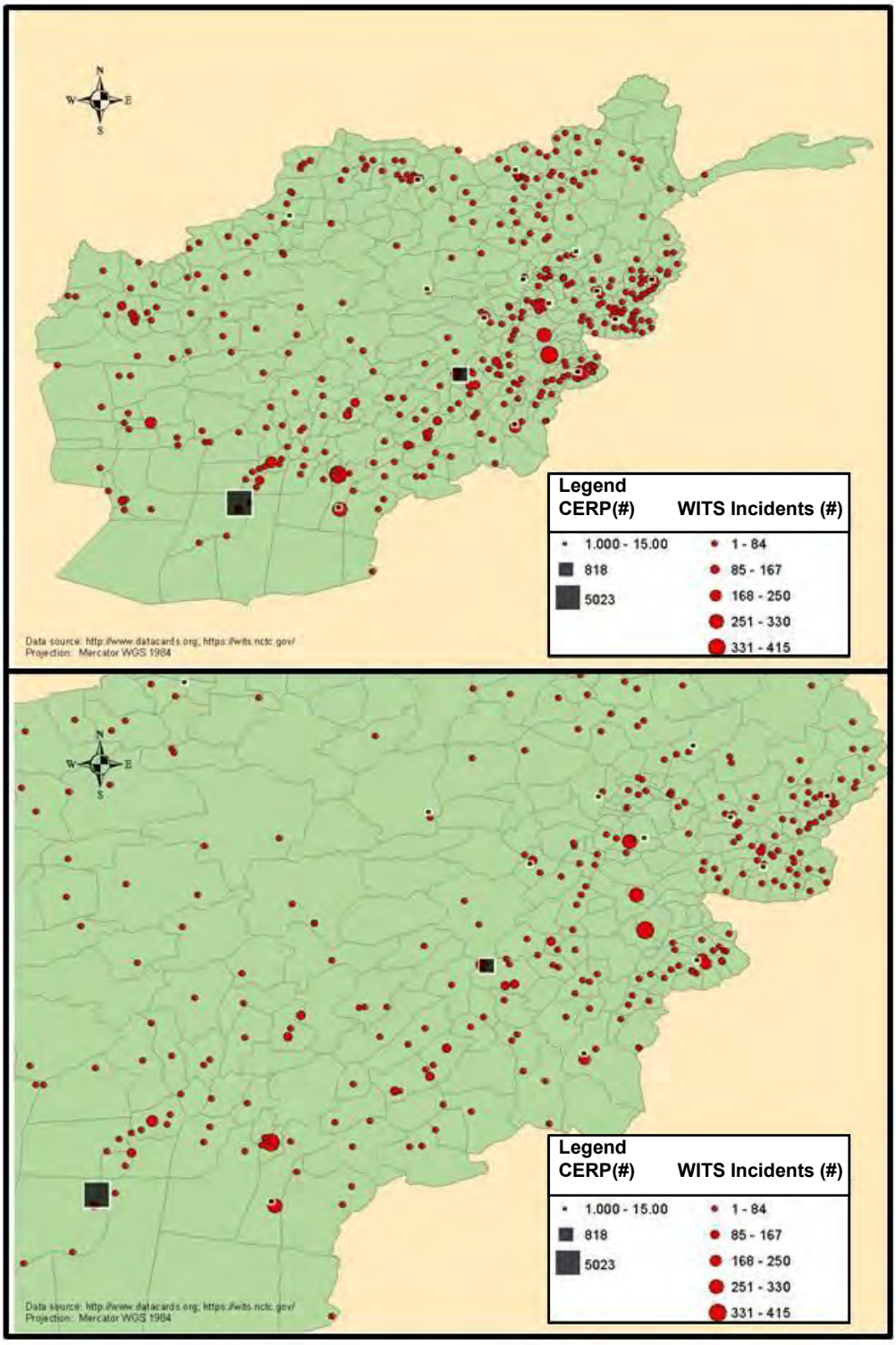

Figure 9. Number of Recorded WITS Violence and CERP Construction: Afghanistan (top) and S.E. Afghanistan (bottom)

3. Temporal Analysis Results

Another feature of ArcGIS is the ability to display data that contains a temporal component. The construction data and the recorded violent incidents contain a construction complete date or incident date respectively. The available project and violence data were examined over time using ArcGIS to determine if any patterns or relationships could be explained. As previously argued, if construction is implemented maximizing ownership and development of a civil society the impact should be decreased violence. The act of construction has the potential to develop stronger societies and, after the completion of each project, another measure of social development is completed. The most recent data is displayed on the map as a large icon and each event icon shrinks over time. The different combinations of construction and violence, plotted in six month intervals to further investigate this relationship, are located in Appendix D. A six-month interval was chosen to represent yearly highs and lows of violence.

The first set of temporal analysis figures are a comparison of the NSP projects and the WITS violence data between January 2004 and July 2010. This series of snapshots show the NSP projects in yellow spreading out throughout the country over time. The majority of the recorded violence, displayed in red, is located in areas of fewer competed NSP projects. This is not conclusive proof that NSP construction drives down violence but the graphic is striking visual evidence. The density of completed projects by month and year are displayed in the same panel.

The second set of temporal figures review the spread of the recorded violence over time. The plotted WITS data and violence targeting NGOs displayed by year are also located in Appendix D. This panel of mapped data shows that the early violence was predominantly in the Southeast portion of the country. Significant violence began occurring in the northern part of the country by July 2006. The violence that encircled the country by the summer of 2009 was still predominantly in Afghanistan's more populated areas. Included in this

panel of maps is a data clock showing the density of violent incidents by month and year. Violence increased steadily overtime, specifically during the summer months when the insurgency mounted a new offensive.

A closer look at the potential impact of the NSP on violence targeted at the state is also included in Appendix D. The linear regression relationship discovered between the NSP and violence targeted at the state indicated the CDD style construction reduced violence against the state. The temporal analysis conducted on this relationship reinforces this finding. While overall violence in Afghanistan increased between 2006 and 2010, state targeted violence occurred in areas predominately void of the NSP influence. Increasing the NSP development helped create a stronger tie between the population and state government. This appears to have a direct influence on the attacks targeted at the state.

The final temporal review is the relationship between the CERP program and recorded violence in the WITS database. The CERP construction program strategy was different than the NSP. The CERP construction was concentrated in just a few places around the country where it was determined critical to develop state capacity. The amount of CERP construction was also limited in the earlier time period reviewed. While violence encircled the country, the CERP construction program lagged significantly in branching out to other areas beyond the capital region. This time lag is part of the reason that CERP construction and violence had a positive regression coefficient. CERP money was spent in areas where violence had already become a problem instead of in areas where violence could be prevented by developing social capital through construction.

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VI. RECOMMENDATIONS AND CONCLUSIONS

This study of the impact construction can have on stability looked at different implementation methodology currently used in Afghanistan. I have found that the act of construction provides a distinct and significant impact on violence in the studied conflict-affected environment. The use of CERP and NSP programs are both statistically significant in impacting violence. The regression and visual comparison of CERP construction resulted in a increase in violence. This relationship can be explained by the current CERP implementation strategy. The U.S. military uses CERP as a bargaining chip to increase popular support for the counterinsurgency effort. This can undermine the relationship between the population and state. The relationship between population and state will ultimately be what creates long-term stability in a conflict-affected environment.

Of all the options for construction the NSP shows the greatest benefits in conflict-affected environments reviewed in this study. The NSP process is shown to be the most cost efficient and provides significant opportunity to develop human capital. The NSP is documented to increase the bond between population and state in conducted surveys and linear regression conducted in this report. The NSP strengthens state legitimacy by proving state utility through providing services to the population. The program also allowed the state to provide exclusive benefits for the villages that met the established criteria to receive a project. This process helped co-opt the villages into the state run program creating a deeper investment in creating a beneficial outcome. The projects developed were more desired by the population because the population, not an NGO or military representative, make the decision on what to build. The NSP greater increased participation and ownership compared to other forms of construction creating greater social capital. The NSP led to a reduction in violence and an increase in stability, during a time period where overall violence increased throughout the country.

Construction can be used to significantly impact violence. Programs using CDD techniques like the NSP had the greatest impact on creating stability in conflict-affected environments. Unfortunately, the U.S. has spent a great deal of time and money attempting to build our way towards stability using other methodologies that are not as successful. The U.S. sponsored construction processes have not been used to their potential to reduce violence and create stability. This severely limited the potential impact of the CERP construction program in building stability. Overall there is significant potential to better the relatively small regression coefficients through careful program implementation and reduction of corruption that currently plagues Afghanistan. Better management could reverse the trend creating a more stable environment.

A. RECOMMENDATIONS

Recommendations for policy considerations can be extracted from the study findings. The tangible benefits of construction provide known and measureable benefits developing the local and national economy. However, this study shows that construction in Afghanistan has not made a significant impact on increasing stability through the reduction of violence in this conflict-affected environment. The following recommendations are made for consideration by policy makers.

1. Strike the Right Balance

The balance between international coalitions and the host nation managing development is sometimes hard to reach. In a conflict-affected environment development should begin as soon as possible with outside agencies likely being the only feasible organizations able to get construction underway. Whenever possible, the international group should empower the host nation to implement their own development program. Only smaller-scale projects may be possible at first, but with targeted training, larger projects will soon be feasible. Until that time, larger-scale projects are better executed through

international capability to speed project completion and raise quality of critical infrastructure development such as the electrical grid. Using CDD can speed delivery of services, link the population with the state and give the community a stake in its success. CDD done correctly by emphasizing transparency and accountability for the money spent on the program will help keep more money in the targeted communities, generate more employment and build host nation capacity for construction and all associated industries.

2. Clear Program Goals

Each of the construction methodologies reviewed in this study suffered from unclear execution guidance or unclear program goals. Organization should be clear about the true purpose of the stabilization and reconstruction efforts. Are they to provide jobs for the local economy or used as barging chips for information? What are the expectations of the program? Is this program simply political cover for the larger battle against insurgents? PRT teams never were given specific guidance during the establishment of the program nor were U.S. and coalition teams. The CERP program is historically at the mercy of individual commanders to develop the local program when many commanders do not have any education or experience in stabilization and reconstruction activities. The USAID also suffered from diverging priorities and an unclear strategic vision. Additionally, NGOs are at the mercy of what donors are willing to support, making focused long term programs difficult. Finally, the NSP was designed to create ties between the state and population developed friction when state government conflicted with CDCs. These are just a few examples of the need to supply and continually update program guidance. Without clear guidance, individual units are bound to lose ground with the constant shifting of priorities by local commanders. Clear program goals are also needed to achieve greater unity of effort between these myriad of organizations operating in conflict-affected environments.

3. Education

Education should be the corner stone for all members implementing any reconstruction and stabilization program. International and coalition forces need to be better educated on the potential impact of construction to develop stronger state function through CDD. This education needs to go beyond the rules of CERP spending and focus on the broader pillars of reconstruction. If the U.S. chooses to continue to employ stabilization and reconstruction activities as a major emphasis in a counterinsurgency policy, it is only fitting that education is paired with the emphasis given.

4. Maximize Impact of Individual Programmatic Elements

When specific guidance is given on stabilization and reconstruction programs it often reads like a laundry list intended to fit every circumstance conceivable. While it may not be possible to predict future situations, it is possible to review the impact of past stabilization programs. This report focused on the impact of construction on stability. What it found was that construction is significantly linked to stability but, in Afghanistan, construction only accounted for a small effect on stability. The potential for stabilization through construction were not reached. Understanding the impact of individual elements within the construct of a larger strategy allows for greater tailoring and customization. Increasing the impact of the individual portions of a stabilization and reconstruction program will likely increase the overall program impact.

5. Sequencing Construction First

All the benefits of construction can be used as the focus of the stabilization process. Construction can provide the foundation to build governance capacity, develop the rule of law through commerce and trade, provide social development with jobs all while reviving the economy. Putting reconstruction at the top of the agenda shows the population that the state can provide services quickly after direct confrontation has ended. In many situations

the list of state functions that require development is long and there are many competing priorities. Attempting to do everything at once spreads resources thin and, without early results, the population is likely to lose faith in the capability of the government. Providing these services will allow a government to maintain ties with the population and build trust by providing results.

6. Understand the Potential for Negative Impact

Each culture will have a different definition of terms like corruption, greed, capture, and bias. However, all of these factors occur in every culture and can be exacerbated by introducing construction projects into the community. Aid can create additional resentment in a community instead of creating greater trust. It is important to understand how these projects are implemented change the dynamic of power among the population. People will fight to maintain their status as a local powerbroker or increase their status with a new contract award. Assuring that the project decision making process is as open and transparent as possible will help reduce the negative impact of inserting money into a community. Project funding should be given only with transparent accounting to help eliminate the potential for capture and get more of the positive impact distributed throughout the community.

B. AREAS FOR FURTHER RESEARCH

1. Impact of Individual Elements of Stabilization

This study showed the impact of construction on stabilization. Future study can be done on of each of the individual elements within a stabilization program to draw out their specific effect. Understanding the individual impact will help customize future approaches to stabilization and reconstruction. It will also help determine possible more effective combinations and sequencing of approaches.

2. Survey the Recipients' Opinion

The true impact of a stabilization program may be best determined by asking the recipient for their opinions on the process. A survey can be developed and implemented that isolates construction from other stabilization activities to determine if the process was conducted in a manner that reinforces stability.

3. Breakdown the Results By Region

It can be argued that each culture will have a different perception to the same stabilization and reconstruction programs. Determining the differences in culture among different regions of the country and then controlling for the cultural differences could improve future findings.

4. Develop CERP Construction Study

The possibility that less violence would have occurred if CERP construction was placed in other areas in Afghanistan cannot be proven with the available data. This relationship needs to be better explored to determine the potential impact of CERP construction by setting up a study to control for experimental variables. The U.S. should carefully select locations with similar size, historical violence levels, ethnic background. Then designate half a control area while the other half receives CERP funding for construction. Only after a deliberate study of these methods will the true impact of CERP in conflict-affected environments be determined.

C. CONCLUSIONS

Theoretically, by maximizing social capital, legitimacy, participation, providing exclusive benefits construction activities, can help stabilize a conflict-affected environment. The goal of these activities must be more than physical reconstruction. Unfortunately, a great deal of the aid dedicated for Afghanistan will never make it to the people who need it. Estimates of as much as 40 percent

of Afghan aid was returned to donor countries (Waldman, 2008, p. 6). The efforts of the CERP, USAID and NSP programs are working to stabilize Afghanistan but need help to be successful. The reconstruction and development effort must link society and state to create the social contract between population and government. The state needs to supply unique services to the population and include them in a system of representation to co-opt the people increasing ownership in the state system to be successful. Years of war have seriously degraded the level of trust and social capital in Afghanistan, and these attributes will take a great deal of time to repair. The development of significant social capital after three decades of continuous conflict could take another 30 years. More effective spending and oversight is needed if these programs are to make a significant difference in reconstructing Afghanistan for the future.

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APPENDIX A: DATA EXCERPTS

I. CERP DATASET EXCERPT

Reference Number	Organization	Payment Date	Type normalized	Description	Project Cost	Province
M36114	RC East	10/1/2004	Water And Sanitation	Well/irrigation system for village	$ 19,998.00	Hilmand
CERPSAF8M00764	TF Hammer	9/10/2008	Healthcare	Sharana Hospital Infrastructure Improvements	$ 19,998.00	Hilmand
CERP8BKBTFP054	201	3/18/2008	Water And Sanitation	Tanet Coat Well	$ 19,999.92	Hilmand
CERP8BKBTFP051	209	1/31/2008	Water And Sanitation	Boghowy Olia Well	$ 19,999.99	Hilmand
CERP8BKBTFP052	209	2/2/2008	Water And Sanitation	Boghowy Sofia Well	$ 19,999.99	Hilmand
CERPBAF8C00166	Tf Cincinnatus	5/23/2008	Transportation	Bamian Snow And Ice Removal	$ 19,999.99	Hilmand
CERPJAF8A00009	Prt Asadabad	3/3/2008	Education	Boys And Girls School	$ 19,999.99	Hilmand
CERPJAF8B00045	Prt Asadabad	3/3/2008	Education	Nishigam Girls Secondary School	$ 19,999.99	Hilmand
CERPJAF8B00047	Prt Asadabad	3/3/2008	Education	Manogal Village Girls School	$ 19,999.99	Hilmand
CERPJAF8C00117	Prt Asadabad	3/3/2009	Education	Chambal Village Boys And Girls School	$ 19,999.99	Hilmand
1-508-0075	RC East	5/13/2005	Education	8 room school building	$ 20,000.00	Hilmand
1-508-0080	RC East	6/22/2005	Education	8 room school - New Kalay	$ 20,000.00	Hilmand
1-508-0090	RC East	6/21/2005	Education	Bermel government compound school	$ 20,000.00	Hilmand
1-508-0091	RC East	6/21/2005	Education	Moromor 8 room school	$ 20,000.00	Hilmand
1-508-0092	RC East	6/21/2005	Education	Zeruk proper 8 room school	$ 20,000.00	Hilmand
2-35-05-0142	RC South	3/24/2005	Transportation	Delivery of gravel through the Daub Pass	$ 20,000.00	Hilmand
ABAD002	RC East	10/1/2004	Education	Orphanage to provide a safe environment for children	$ 20,000.00	Hilmand
GAR-N12018	RC East	2/27/2005	Education	Teachers' Training Institute rehabilitation	$ 20,000.00	Hilmand
M36125B	RC East	10/1/2004	Water And Sanitation	Water well and drinking system	$ 20,000.00	Hilmand
M36126	RC East	10/1/2004	Water And Sanitation	Water well and drinking system	$ 20,000.00	Hilmand
M36127	RC East	10/1/2004	Education	Rebuilding primary school destroyed by Taliban	$ 20,000.00	Hilmand

II. USAID DATASET EXCERPT

Reference Number	Organization	Payment Date	Type Normalized	Description	Province	Normed District
2052	LBG	1/18/2005	Transportation	Kabul to Kandahar	Maydan Wardak	Saydabad
C05-570-00033267	UNOPS	2/4/2006	Transportation	Chak Road	Jawzjan	Fayzabad_JN
2068	LBG	12/12/2006	Transportation	Kabul to Kandahar	Maydan Wardak	Chaki Wardak
2067	LBG	2/2/2005	Transportation	Kabul to Kandahar	Zabul	Qalat
CR 108	LBG	6/27/2005	Transportation	Kabul to Kandahar	Zabul	Shahjoy
C05-028	UNOPS	9/1/2006	Transportation	Qalat Road	Zabul	Qalat
IOMAFG005	USAID	9/30/2003	Healthcare	Ragh BHC	Badakhshan	Yawan
416	MSH	1/26/2004	Healthcare	Khandod BHC	Badakhshan	Wakhan
414	MSH	4/1/2004	Healthcare	Zebak BHC	Badakhshan	Zebak
1838	MSH	8/1/2004	Healthcare	Khwahan BHC	Badakhshan	Khwahan
1563	MSH	4/3/2005	Healthcare	Tagabak BHC	Badakhshan	Arghanj Khaw
1857	MSH	2/1/2005	Healthcare	Atin Jelaw BHC	Badakhshan	Argo
S007	CHF	2/6/2005	Education	Gandom qool Boys and Girls High School	Badakhshan	Kishim
407	MSH	2/19/2005	Healthcare	KishimCHC	Badakhshan	Kishim
1560	MSH	2/20/2005	Healthcare	Jari Shah Baba BHC	Badakhshan	Kishim
401	MSH	2/22/2005	Healthcare	Hafiz Mughol BHC	Badakhshan	Argo
1167	MSH	1/1/2005	Healthcare	Baharak CHC	Badakhshan	Baharak_BN
425	MSH	2/26/2005	Healthcare	Khurdakan CHC	Badakhshan	Shahri Buzurg
S011A	CHF	10/12/2005	Education	Sari Shahr Primary School	Badakhshan	Baharak_BN
PRTFZD008	IOM	9/15/2006	Healthcare	Baharak CHC	Badakhshan	Baharak_BN

III. MRRD NSP DATASET EXCERPT

Reference Number	Organization	Payment Date	Type Normalized	Description	Project Cost	Province	Normed District
MRRD12865	nsp	12/30/2004	Transportation	Gravelling Tertiary Road	$ 66,795.00	Balkh	Kishindih
MRRD45596	nsp	10/4/2006	Electricity	Supply Power Line	$ 64,322.00	Hirat	Injil
MRRD5460	nsp	8/23/2004	Education	Construction Primary School Building	$ 64,176.00	Balkh	Chimtal
MRRD26908	nsp	5/26/2004	Education	Construction Secondary School Building	$ 64,066.00	Farah	Farah
MRRD55937	nsp	1/27/2005	Transportation	Gravelling Tertiary Road	$ 63,714.00	Kunduz	Khanabad
MRRD45609	nsp	9/6/2004	Education	Construction Primary School Building	$ 63,670.00	Hirat	Injil
MRRD5341	nsp	9/26/2004	Education	Construction Secondary School Building	$ 63,256.00	Balkh	Chimtal
MRRD10871	nsp	11/30/2004	Agriculture	Construction Protection Wall	$ 62,016.00	Bamyan	Kahmard
MRRD21315	nsp	11/7/2005	Agriculture	Construction Canal	$ 61,932.00	Badakhshan	Shaki
MRRD784	nsp	11/10/2005	Electricity	Construction Micro-Hydro Power Plants	$ 61,843.00	Baghlan	Andarab
MRRD9379	nsp	3/28/2005	Education	Construction Secondary School Building	$ 61,728.00	Daykundi	Ishtarlay
MRRD5634	nsp	6/5/2007	Water And Sanitation	Construction Water Supply Network	$ 61,513.00	Baghlan	Dahana-I- Ghuri
MRRD28840	nsp	7/19/2005	Education	Construction Primary School Building	$ 61,513.00	Faryab	Qaysar
MRRD46183	nsp	12/27/2005	Education	Construction Secondary School Building	$ 61,513.00	Hirat	Guzara
MRRD47419	nsp	10/18/2006	Electricity	Supply Power Line	$ 61,387.00	Hirat	Zanda Jan
MRRD55230	nsp	1/15/2008	Education	Construction Secondary School Building	$ 61,387.00	Kunduz	Qalay-I- Zal
MRRD15225	nsp	11/15/2005	Water And Sanitation	Construction Water Supply Network	$ 61,369.00	Balkh	Nahri Shahi
MRRD54840	nsp	11/16/2004	Transportation	Basic Access Tertiary Road	$ 61,367.00	Kunduz	Imam Sahib
MRRD13858	nsp	1/9/2005	Education	Construction Secondary School Building	$ 61,365.00	Jawzjan	Mardyan
MRRD4005	nsp	7/26/2005	Transportation	Gravelling Tertiary Road	$ 61,325.00	Panjsher	Bazarak
MRRD17370	nsp	8/14/2005	Transportation	Gravelling Tertiary Road	$ 61,325.00	Panjsher	Rukha
MRRD9558	nsp	12/15/2004	Water And Sanitation	Construction Water Supply Network	$ 61,325.00	Parwan	Jabalussaraj
MRRD32436	nsp	10/30/2007	Transportation	Basic Access Tertiary Road	$ 61,325.00	Ghor	Chaghcharan
MRRD9251	nsp	4/15/2006	Transportation	Construction Bridge	$ 61,325.00	Panjsher	Khenj (Hese- Awal)
MRRD46221	nsp	11/22/2005	Agriculture	Rehabilitation Karez	$ 61,325.00	Hirat	Guzara

IV. USAID SSO INCIDENT DATASET EXCERPT

Incident Date	Regional Command	Latitude	Longitude	Incident Type	Details	Province
4/29/2003	RC East	34.33889	68.84857	Complex Attack	MOI Security Guards were killed when attacked on security post by a group of unidentified armed persons	Maydan Wardak
9/24/2003	RC South	31.67290	64.91733	Complex Attack	Eshanullah,Afghan engineer shot and wounded by unidentified gun men	Kandahar
9/24/2003	RC South	32.42539	65.13690	SAF	Shot once/recovered	Hilmand
9/14/2009		31.60963	67.83689	Kidnapping	The construction subcontractor ACB's field team (15 personnel) left the project site to Pakistan where they reside for the upcoming Eid holidays. When they crossed the Pakistan border, the group was stopped and	Zabul
9/30/2003	RC South	31.83442	64.39764	SAF	Shot once/recovered	Hilmand
10/2/2003	RC South	32.64871	65.96221	SAF	Anwar Shah, Afghan engineer shot and wounded	Uruzgan
10/2/2003	RC East	33.41708	68.35393	IED	Ehsaan Ali, Afghan engineer, Killed in an IED attack	Ghazni
3/22/2010		31.59700	67.84100	Kidnapping	Truck Stolen, Employee Released	Zabul
1/30/2004	RC East	34.11039	68.76648	MVA	Afghan drivers were killed in traffic accident	Maydan Wardak
2/21/2004	RC South	31.61537	65.75227	SAF	Suzanne Wheeler & Paul Burke / Helicopter - attack - seriously injured	Kandahar

V. WITS INCIDENT DATASET EXCERPT

ICN	Incident Date	City	Province	Latitude	Longitude	Normed District	Hostage	Government Target
200458131	19-Jan-04	Kandahar	Kandahar	31.612499	65.709442	Kandahar	0	1
200458147	27-Jan-04	Kabul	Kabul	34.516666	69.183334	Kabul	0	1
200458215	2-Jun-04	Qades	Badghis	34.808613	63.430279	Qadis	0	0
200458216	7-Jun-04	Kharar	Logar	34	69.25	Khoshi	0	1
200458229	7-Jun-04	Khowst	Khost	33.338055	69.920281	Khost(Matun)	0	0
200458233	10-Jun-04	None	Kunduz	36.75	68.75	Chahar Dara	0	0
200458299	27-Mar-04	Kabul	Kabul	34.516666	69.183334	Kabul	0	0
200458389	12-Jan-04	Mazar-e Sharif	Balkh	36.706944	67.112221	Mazari Sharif	0	1
200458390	11-Jan-04	Gerdi Sari	Paktya	33.666668	69.333328	Ahmad Abad	0	0
200458393	14-Jan-04	Khowst	Khost	33.338055	69.920281	Khost(Matun)	0	1
200458401	11-Jan-04	Jalalabad	Nangarhar	34.426109	70.451386	Jalalabad	0	0
200458448	5-Jan-04	Kandahar	Kandahar	31.612499	65.709442	Kandahar	0	1
200458481	4-Jan-04	Kabul	Kabul	34.516666	69.183334	Kabul	0	1
200458488	2-Feb-04	Nader Shah Kowt	Khost	33.316666	69.654999	Nadir Shah Kot	0	0
200458597	19-Jan-04	Eshashem	Badakhshan	36.75	72	Wakhan	0	1
200458607	24-Jan-04	Jalalabad	Nangarhar	34.426109	70.451386	Jalalabad	0	0
200458614	26-Jan-04	None	Hilmand	31	64	Garmser	0	0
200458628	28-Jan-04	Khowst	Khost	33.338055	69.920281	Khost(Matun)	0	0
200458755	20-Feb-04	None	Zabul	32.25	67.25	Qalat	0	1
200458756	11-Feb-04	Khowst	Khost	33.338055	69.920281	Khost(Matun)	0	1
200458917	28-Aug-04	Zormat	Paktya	33.666668	69.333328	Ahmad Abad	0	0
200459035	11-Jul-04	Herat	Hirat	34.363201	62.184971	Hirat	0	0
200459041	29-Apr-04	Faryab	Faryab	36.25	64.833328	Shirin Tagab	0	1
200459046	14-Apr-04	Kandahar	Kandahar	31.612499	65.709442	Kandahar	0	1
200459057	1-Feb-04	Deh Rawod	Uruzgan	32.621944	65.460281	Dihrawud	0	1
200459059	6-Jun-04	Gerdi Sari	Paktya	33.666668	69.333328	Ahmad Abad	0	0
200459061	1-Jun-04	Jalalabad	Nangarhar	34.426109	70.451386	Jalalabad	0	1
200459347	25-Feb-04	Sorubay	Kabul	34.591389	69.756111	Surobi	0	0
200459348	6-Mar-04	Qalat	Zabul	32.106667	66.910553	Qalat	0	0
200459349	21-Mar-04	Herat	Hirat	34.363201	62.184971	Hirat	0	1
200459351	26-Apr-04	Kandahar	Kandahar	31.612499	65.709442	Kandahar	0	1
200459352	5-May-04	Mundul	Nuristan	35.283611	70.168892	Mandol	0	0
200459373	7-Jan-04	None	Hilmand	31	64	Garmser	0	1

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APPENDIX B: ANALYSIS

I. REGRESSION AND CORRELATION EXAMPLE

SUMMARY OUTPUT: National Solidarity Program and USAID SSO Incidents

Regression Statistics	
Multiple R	0.085101468
R Square	0.00724226
Adjusted R Square	0.006894412
Standard Error	1.630751465
Observations	2856

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	55.36819189	55.36819189	20.82019472	5.25784E-06
Residual	2854	7589.78587	2.65935034		
Total	2855	7645.154062			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.499601928	0.035755542	13.97271315	5.76569E-43	0.429492623	0.569711233	0.429492623	0.569711233
NSP Projects #	-0.006431245	0.00140946	-4.562915156	5.25784E-06	-0.009194907	-0.003667583	-0.009194907	-0.003667583

RESIDUAL OUTPUT

Observation	*Predicted USAID SSO*	*Residuals*	*Standard Residuals*
1	0.499601928	-0.499601928	-0.306416678
2	0.499601928	-0.499601928	-0.306416678
3	0.499601928	-0.499601928	-0.306416678
4	0.499601928	-0.499601928	-0.306416678
5	0.499601928	-0.499601928	-0.306416678

	MRRD Projects #	*USAID SSO*
MRRD Projects #	1	
USAID SSO	-0.085101468	1

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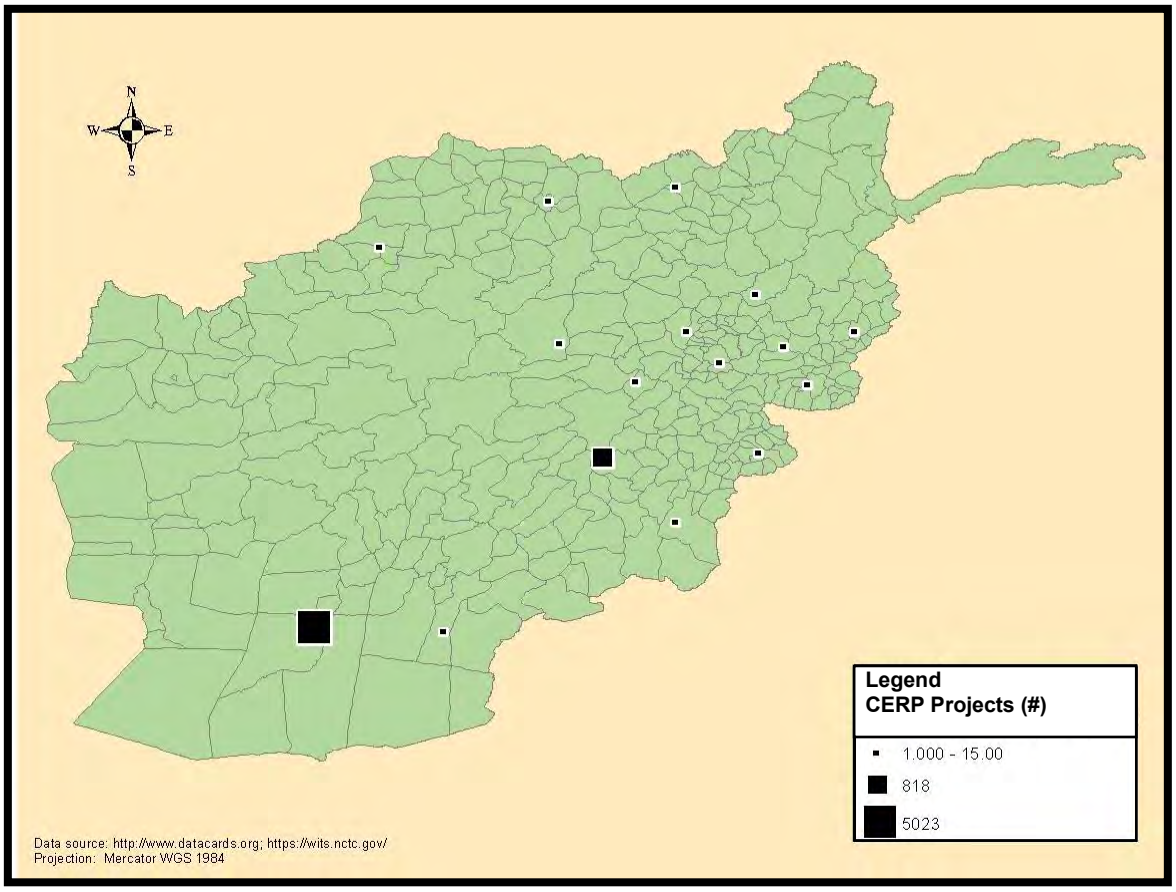
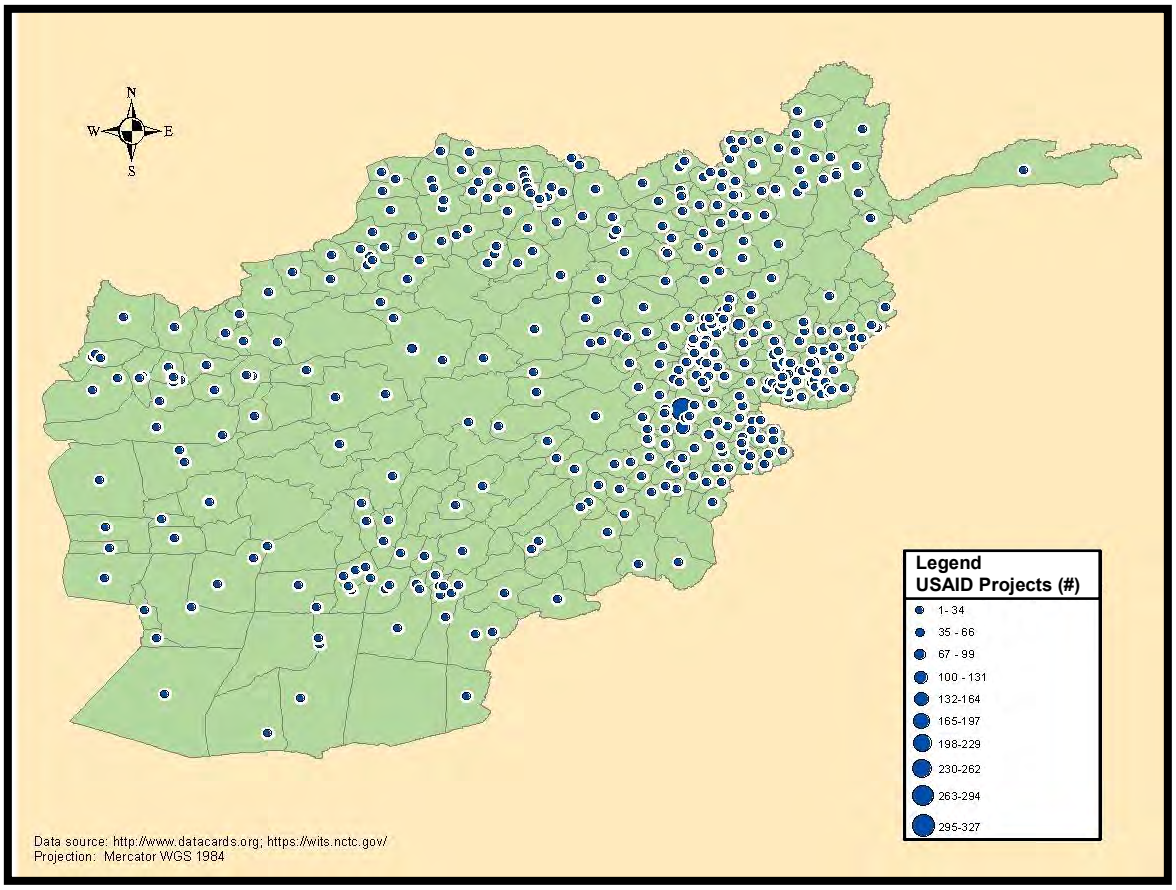
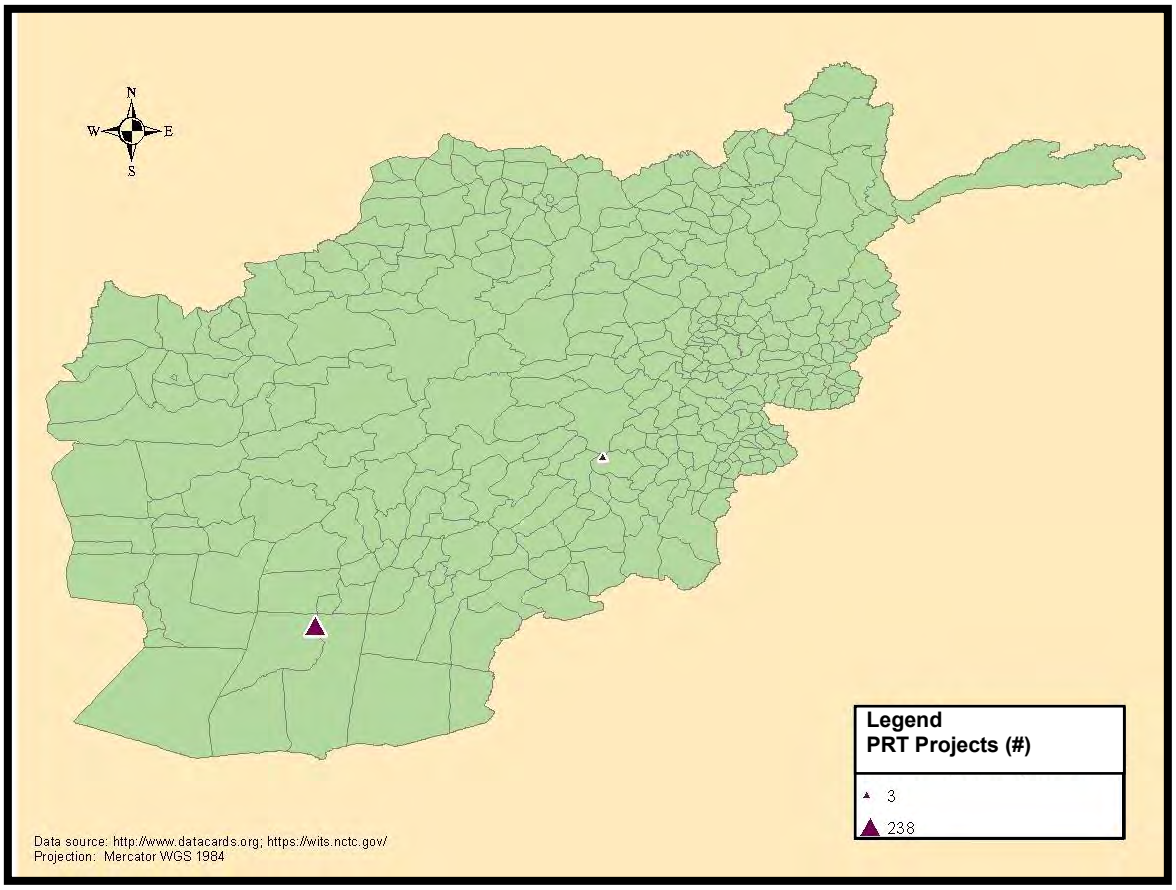
APPENDIX C: GEOSPATIAL ANALYSIS FIGURES



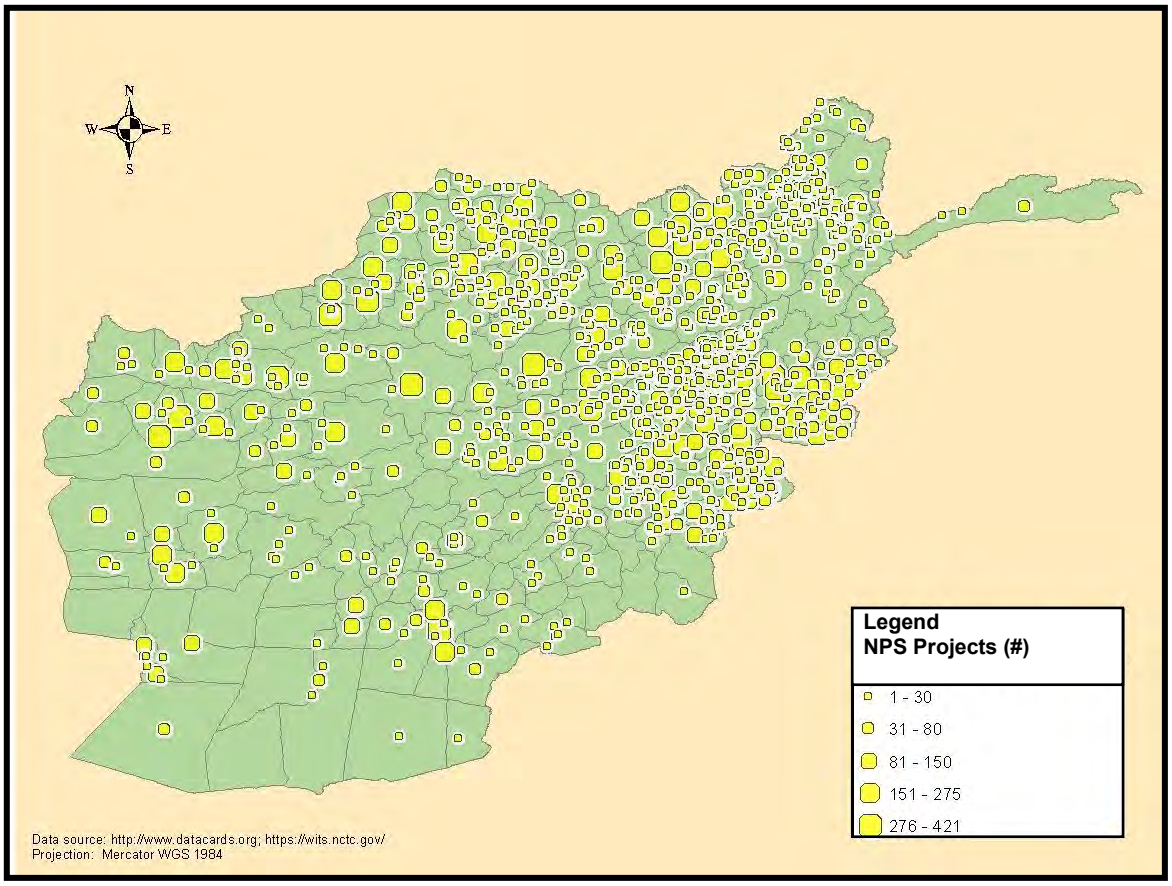
Completed CERP Construction Projects by Location and Number



Completed USAID Construction Projects by Location and Number

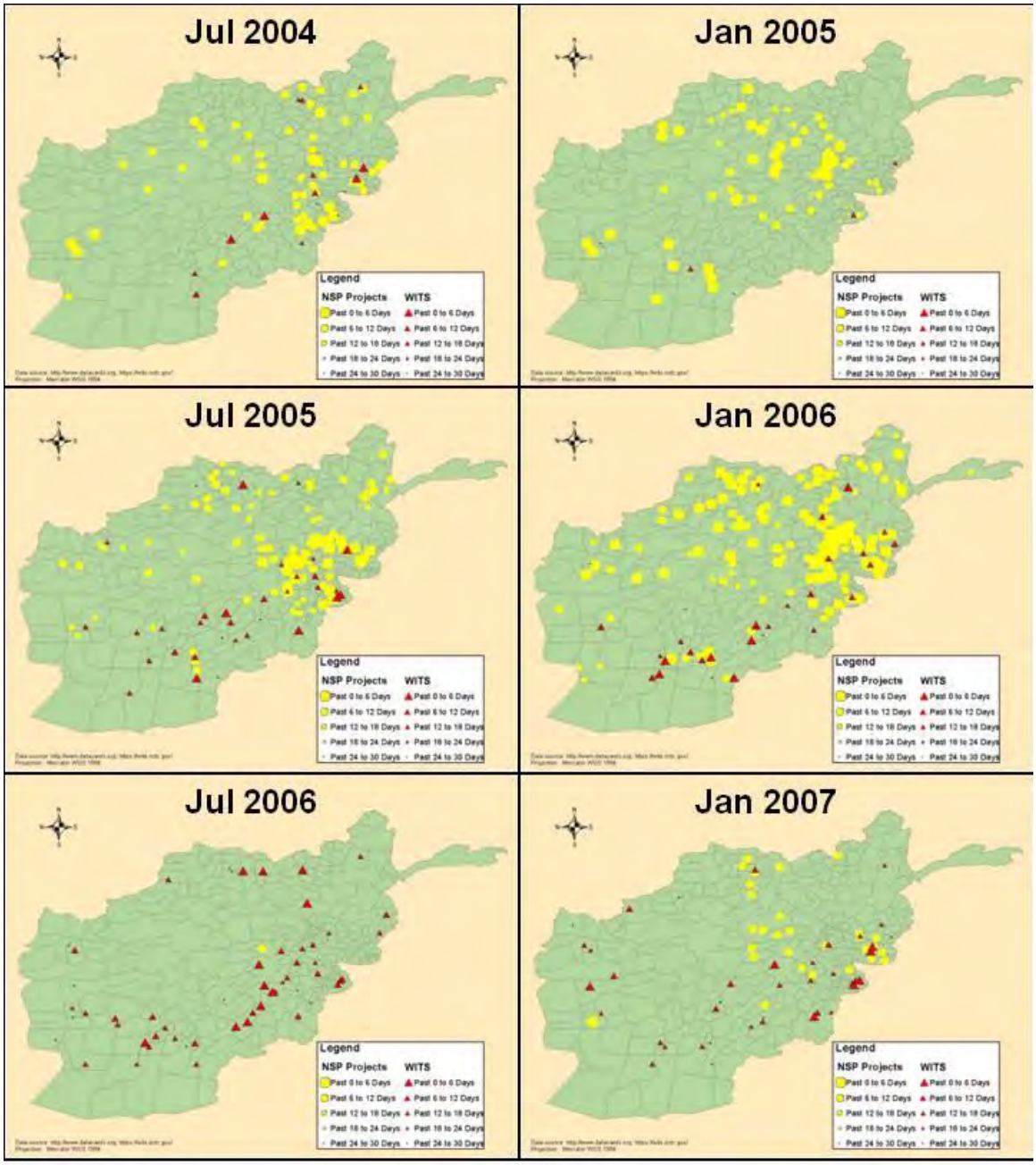


Completed PRT Construction Projects by Location and Number

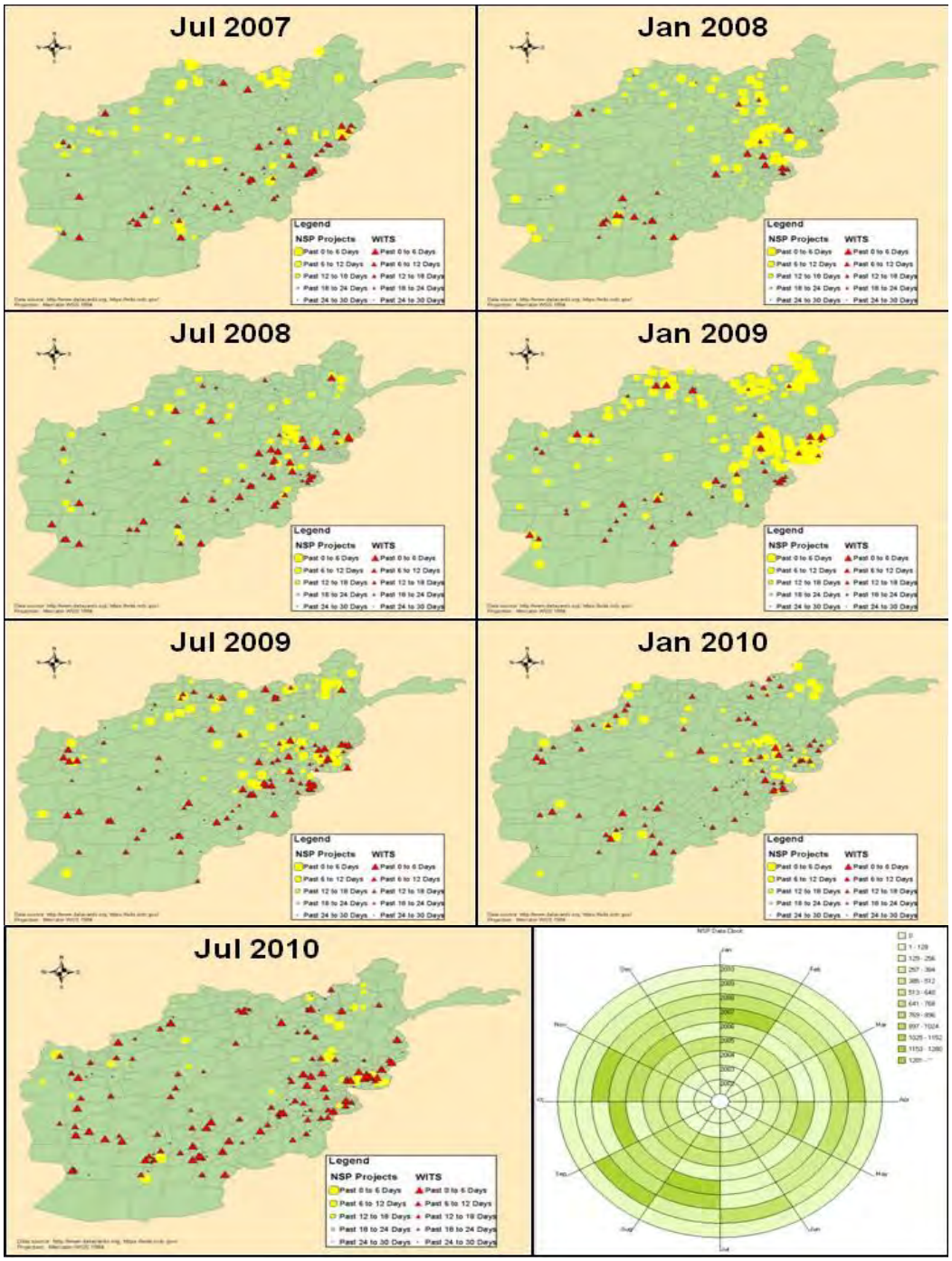


Completed NSP Construction Projects by Location and Number

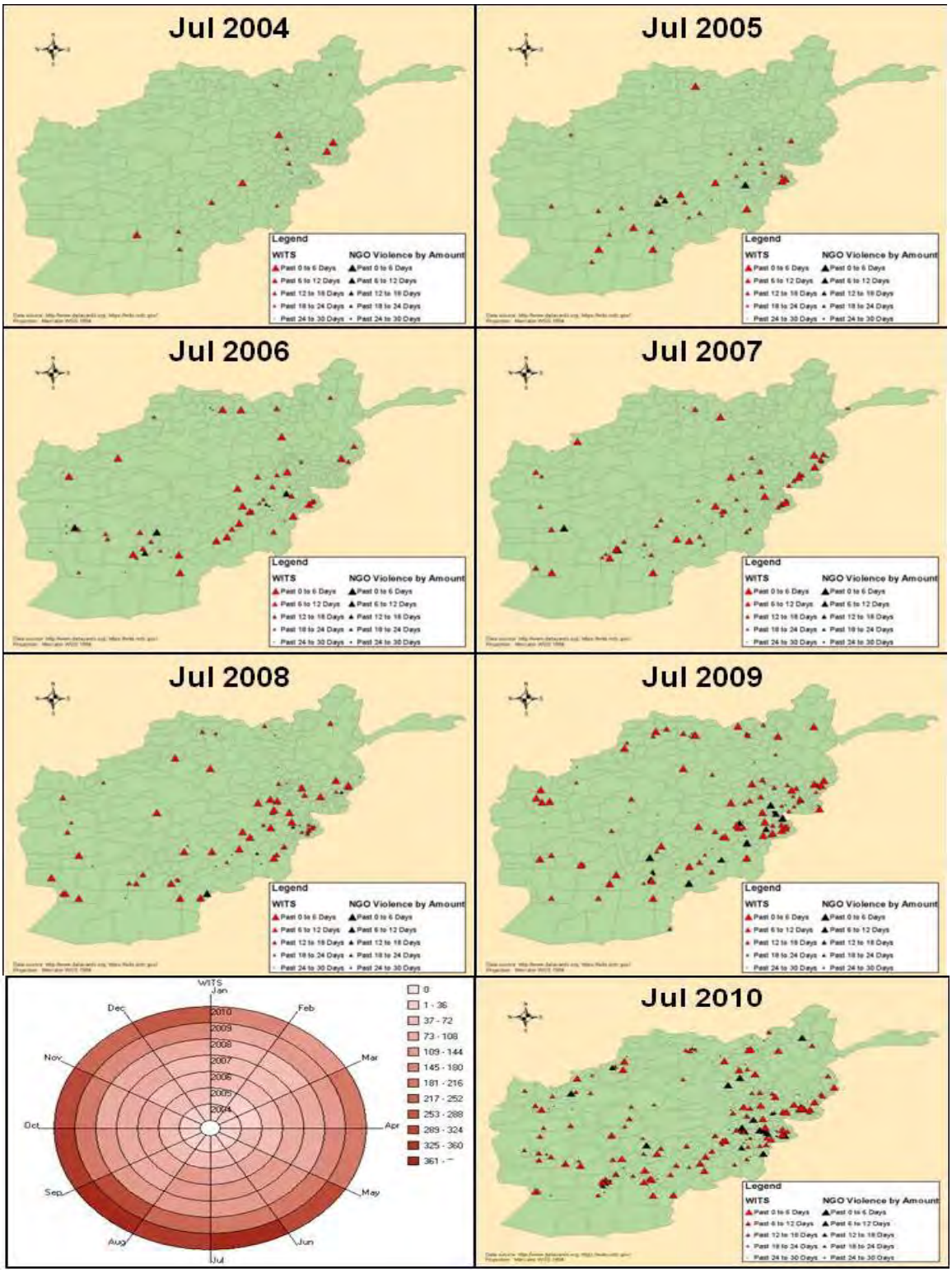
APPENDIX D: TEMPORAL ANALYSIS FIGURES



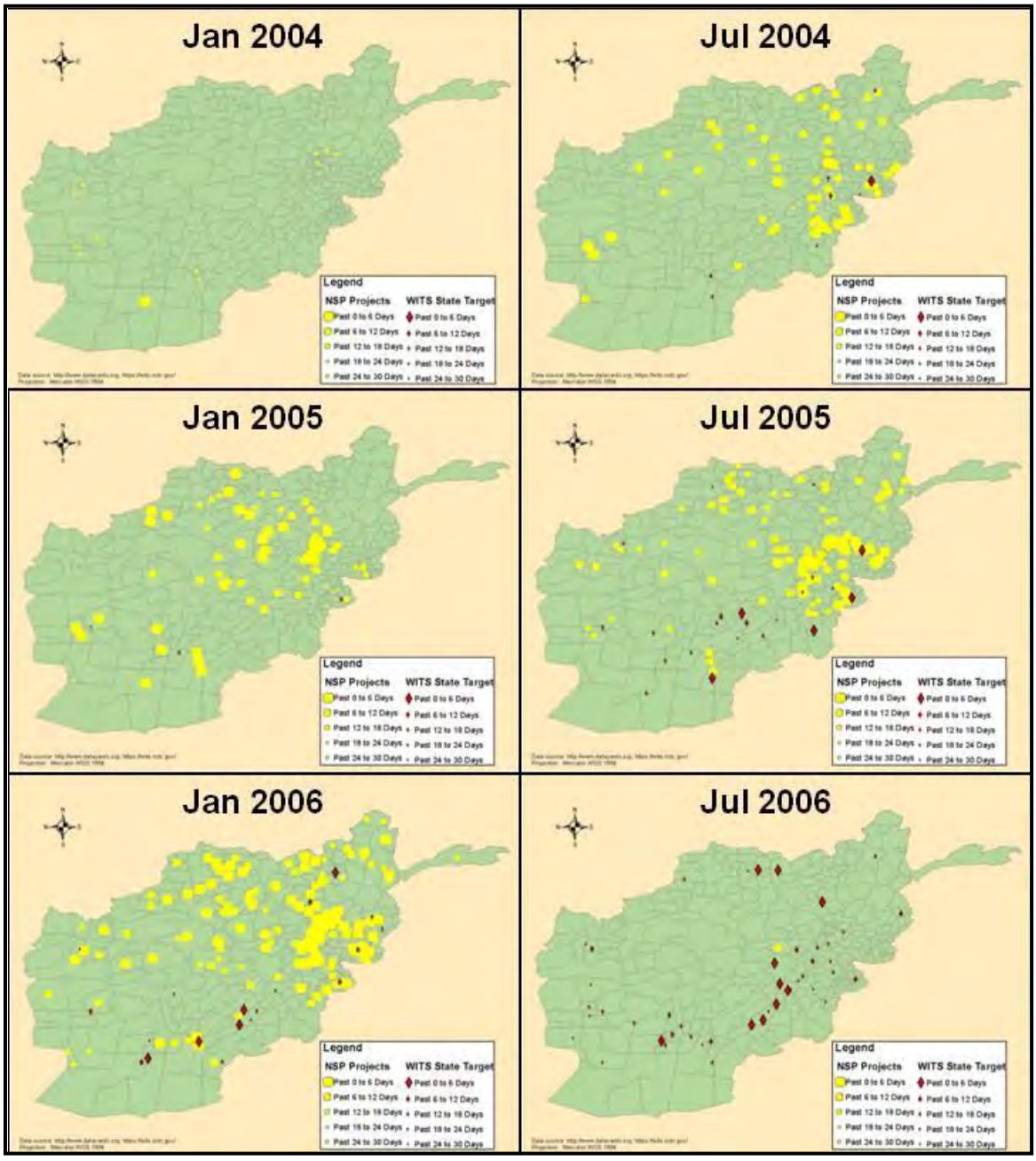
Number of Completed NSP Construction Projects and WITS Violent Incidents:
Jul 2004 - Jan 2007



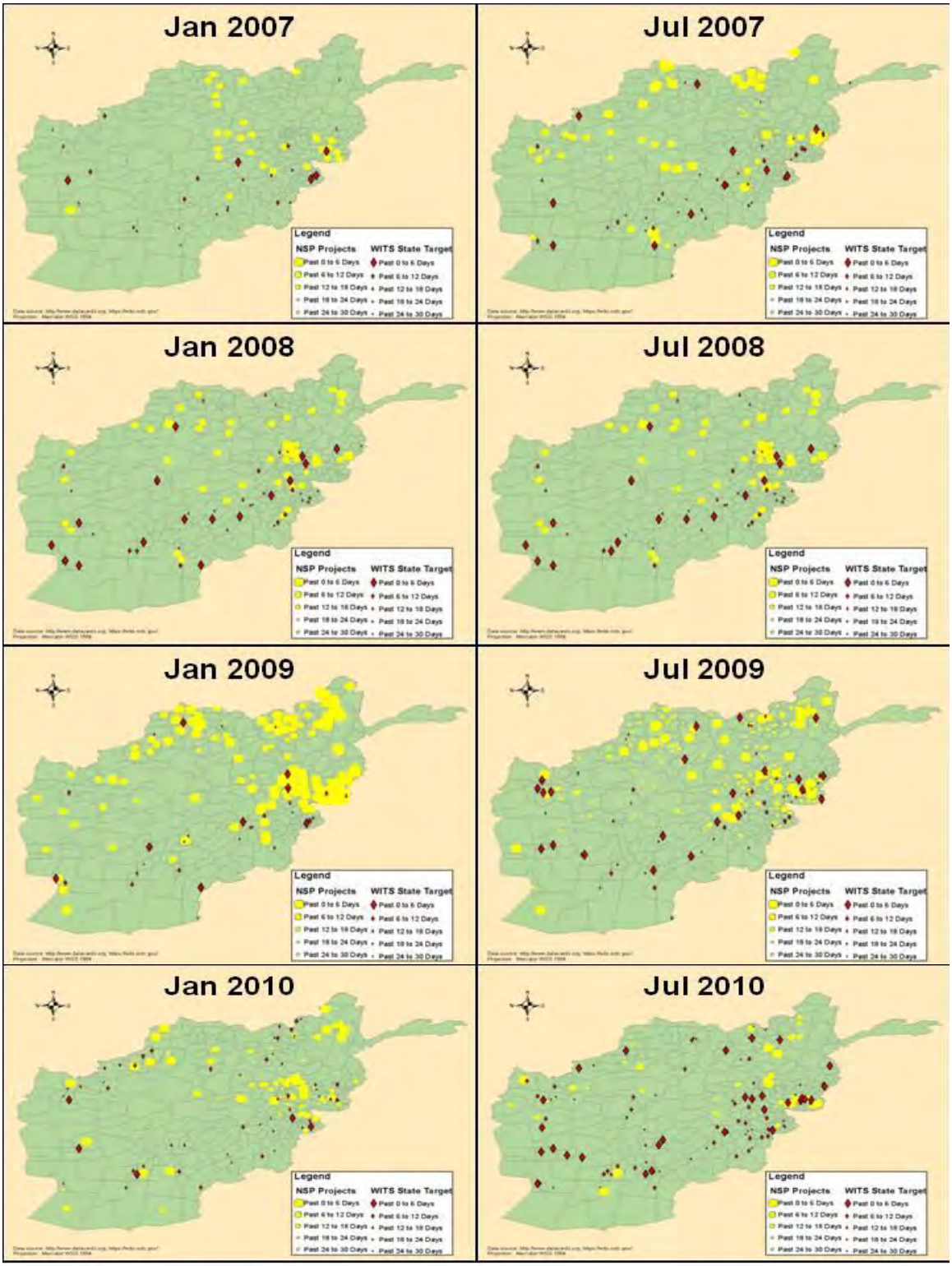
Number of Completed NSP Construction Projects and WITS Violent Incidents: Jul 2007 - Jul 2010 and NSP Projects by Month and Year (Lower Right)



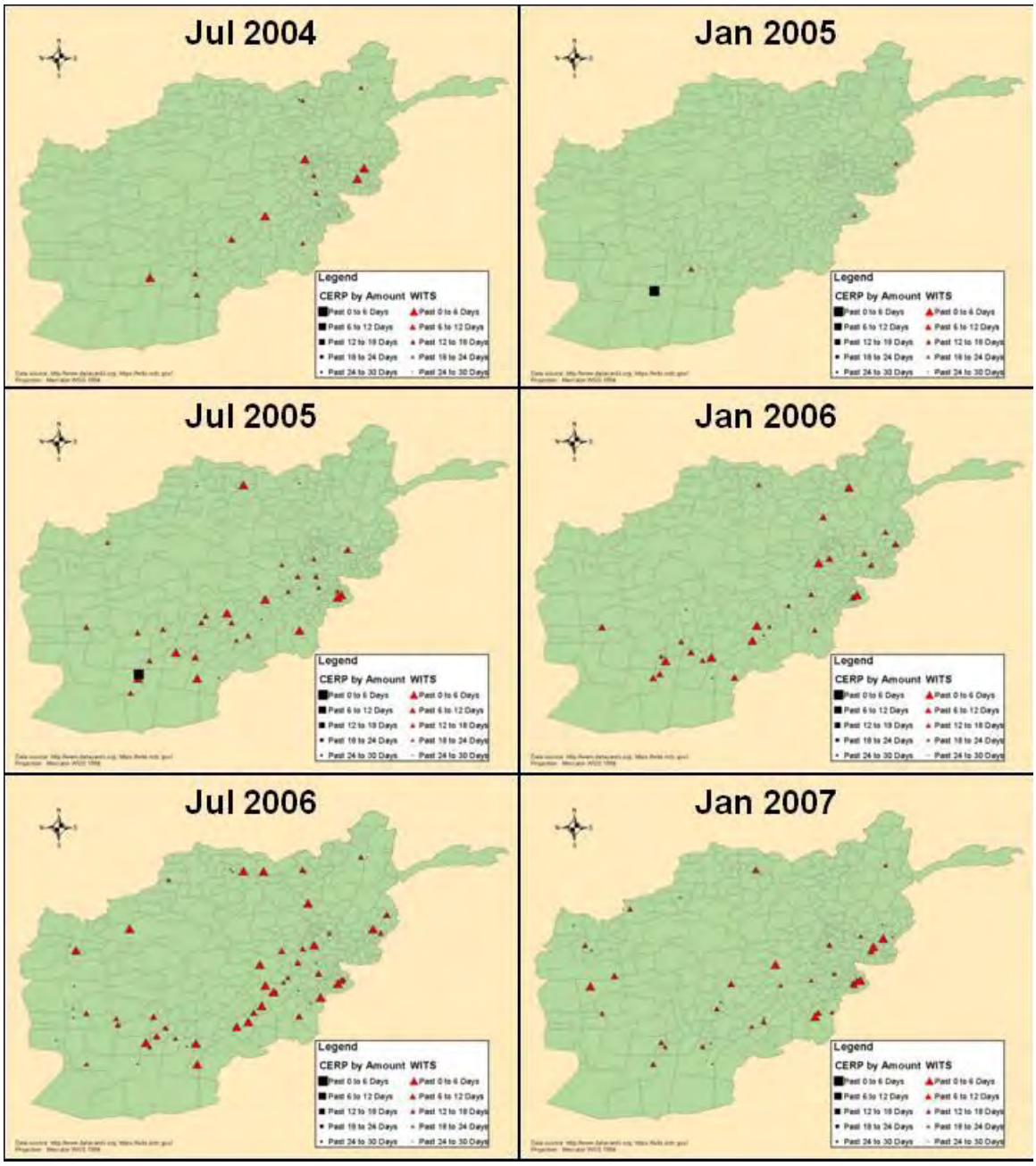
Spread of WITS and NGO Targeted Violence by Number: Jul 2004 - Jul 2010 and WITS Violence by Month and Year (Lower Left)



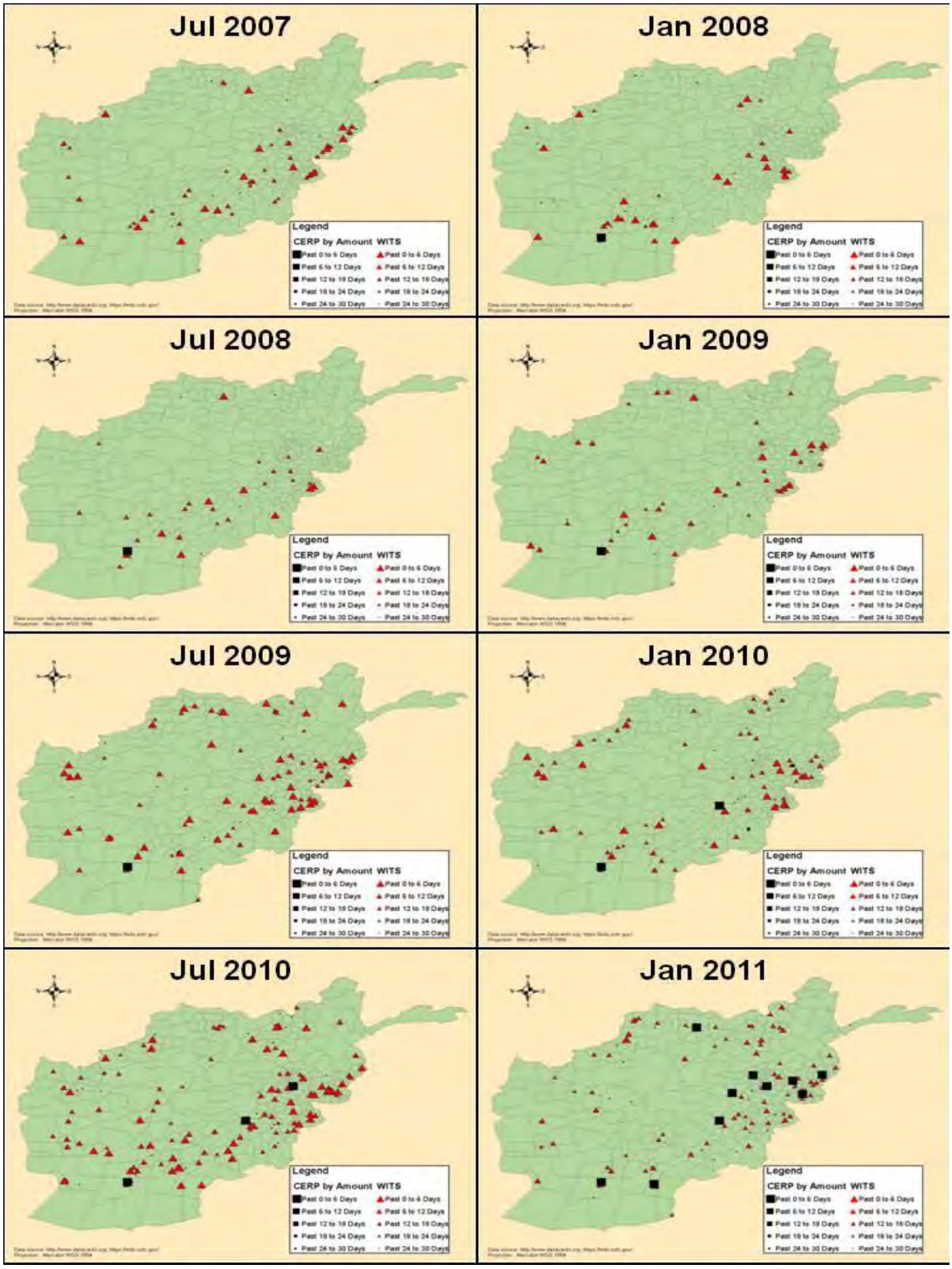
Completed NSP Projects and WITS Violence Targeting the State by Number: Jul 2004 - Jul 2006



Completed NSP Projects and WITS Violence Targeting the State by Number: Jan 2007 - Jul 2010



Completed CERP Projects and WITS Violence Targeting the State by Number: Jul 2004 - Jan 2007



Completed NSP Projects and WITS Violence Targeting the State by Number: Jul 2007 - Jan 2011

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