### 1ac plan

#### The United States federal government should substantially increase independent government-owned National Infrastructure Bank issuance of transportation infrastructure loans in the United States.

### 1ac growth

**Advantage 1 is GROWTH:**

**Slow growth is inevitable – *lack of investment* ensures *sustained* recovery is impossible**

**Rasmus 1-30**-13 (Jack Rasmus, Ph.D., Political Economy, “US GDP–On the Road to Double Dip?” 1-30-2013, http://jackrasmus.com/2013/01/30/us-gdp-on-the-road-to-double-dip/)

US GDP data released on January 30, 2013 for the fourth quarter 2012 showed a decline in GDP of -0.1% for the last three months of 2012, thus raising the specter of the US economy, facing still further deficit spending cuts in 2013 amidst declining consumer confidence, may be on track for a possible double dip recession in 2013 or 2014 along with other economies in Europe, the UK, and Japan. In the fourth quarter GDP numbers, government and business inventory spending led the decline. To the extent consumer spending played a positive role at all in the 4th quarter, it was largely driven by auto sales—stimulated by auto dealers offering buyers deep price discounts, virtually free credit with near 0% auto loan interest rates, as well new auto purchases in the northeast as a result of Hurricane Sandy’s destruction of existing auto stock. 2012 Holiday season retail sales data, in contrast, were otherwise not particularly notable and would have been much worse without the auto sales exception. How much longer auto companies can continue the deep price discounts and free credit remains a question going forward. Net export sales continued to sag in the last quarter, as the slowdown in world manufacturing and trade continued. And, as others have noted, an important source of past consumer spending and GDP growth—i.e. health care services—began to slow ominously at the end of 2012 as well, promising to continue that trend into 2013. This weak scenario in the fourth quarter 2012, and the virtual absolute stop to US economic growth, was predicted on this writer’s and other public blogs **in** a piece entitled “US 3rd Quarter GDP: Short Term Myopia vs. Long Term Realities” last October 2012 (see jackrasmus.com, as well as in this writer’s April 2012 book, ‘Obama’s Economy: Recovery for the Few’). Last October 2012, it was noted that the 3% growth rate in the preceding 3rd quarter, July-September 2012, period was artificially produced by record levels of one-quarter federal defense spending accounting for more than one third of total GDP growth in the quarter. That government spending surge was preceded by more than two years of federal government spending reductions, and thus the third quarter defense-government spending acceleration represented previously held back government spending, to be released right before the November 2012 elections. It was predicted in the above blog commentary on GDP 3rd quarter results that government spending therefore would decline sharply in the following fourth quarter—which it did. It was further noted business inventory spending was on a track to decline as well in the fourth quarter, and that US net exports, having turned negative in the third quarter, would continue to decline in the fourth quarter—all of which also occurred in the latest GDP report. The true US GDP growth trend for July-September was therefore not the 3% reported, but only around 1-1.5% for the third quarter when the appropriate adjustments are made. And that 1.5% or so been the average GDP rate for more than two years. Then the bottomed dropped out in the fourth quarter, as GDP collapsed to -0.1%. So what’s going on? Is the fourth quarter GDP an aberration? A temporary one time event? Or a harbinger of a still further slowing US economy, moving more in line with global economic trends indicating a slow but steady further slowdown? In the first quarter 2013, a number of negative developments in the fourth quarter will likely continue, along with new negative developments, together suggesting the first quarter 2013 GDP will at best look much like the fourth quarter—and could even prove worse. First, more than $100 billion has been taken out of the economy with the end of the payroll tax cut last January 1. Second, consumer sentiment and spending is showing a definite sharp decline in the early months of 2013. Deficit cutting will intensify with a deal on the ‘sequestered’ $1.2 trillion agreement that will occur in March in Congress. Defense spending cuts projected will be reduced, but non-defense spending will occur and perhaps even rise. Consumer spending on autos, which has been a plus in 2012, cannot continue at the prior pace. Health care spending will likely continue to slow, as health insurance premiums of 10-20% continue to be imposed in the new year by price gouging health insurance companies looking to maximize their returns in 2013 in anticipation of Obamacare taking effect in 2014. Business spending that occurred in the fourth quarter to take advantage of tax laws will almost certainly slow in the first quarter. Industrial production and manufacturing will add little, if anything, to the economy and housing will contribute to growth through apartment construction. In short, the scenario is one of continued very slow growth. It is not the deficit that faces a ‘cliff’; it is the US economy. As this writer has repeatedly written since last November, the ‘fiscal cliff’ was mostly an economic farce. Real forces were further slowing the real US economy. Those real forces are once again reasserting themselves. However, should Congress proceed with continued deep spending cuts in 2013, should the Euro economies, UK, and Japan continue to weaken, and should China-India-Brazil not succeed in reversing their economic slowdowns significantly—then the odds of a double dip in the US will rise still further in 2013-14, as this writer has repeatedly predicted. The strategic question is ‘Why is the US economy so fragile and weak? Why has it been unable to generate a sustained economic recovery from ‘Epic’ recession since 2009? Why now, after five years since the onset of recession in late 2007, has the US economy stagnating and collapsed to virtually zero growth, once again? ‘ The answers to this are not all that difficult to understand. First, despite $13 trillion in free, no interest money given to banks, investors, and speculators by the US federal reserve for five years now, the banks still continue to dribble out lending to small-medium US businesses. No loans mean no investment mean no hiring mean no income growth for consumption, which is 70% of the economy. Similarly, large non-bank corporations continue to sit on more than $2 trillion in cash. Like the banks, they too refuse largely to invest in the US to create jobs, preferring to hold the cash, or use it to buyback stock and pay shareholders more dividends, to invest it offshore, or to invest it in speculating with financial instruments like derivatives, foreign exchange, commodities futures, and the like. At the same time, the bottom 80% of households, more than 110 million, are confronted with 5 years now of continuing real disposable income stagnation or decline. This income stagnation and decline translates into insufficient income to stimulate consumption spending, which makes up 71% of the US economy. What spending exists is fundamentally credit driven, not income driven. Thus car loans, student loans, credit cards, and installment loans rise and with it household ‘debt’. The problem with the US economy therefore is fundamentally twofold: not only insufficient income but growing household debt. Together they result in consumption becoming increasingly ‘fragile’ (an income to debt ratio term), and therefore unable to play its historic role of generating a sustained economic recovery. Together, fiscal-monetary policies are rendered increasingly ‘inelastic’ in generating recovery as ‘multipliers’ collapse—to use economic jargon. The outcome of all this is ‘stop go’ recoveries, bumping along the bottom, or what this writer has called an ‘epic’ recession.

**That makes stimulus inevitable but doesn’t solve structural weaknesses**

**Duncan 12** (Richard Duncan, chief economist at Blackhorse Asset Management, former financial sector specialist at the World Bank, global head of investment strategy at ABN AMRO Asset Management, studied literature and economics at Vanderbilt University and international finance at Babson College, Chapter 7, in *The New Depression: The Breakdown of the Paper Money Economy*, 2-24-2012, googlebook)

Scenario Three: Massive Fiscal Stimulus This is the most probable scenario. When confronted with the choice, people will almost always choose to die tomorrow rather than to die today. For that reason, it is very likely that U.S. policy makers will choose to apply a great deal of new fiscal stimulus to the economy during 2013 and 2014 (and beyond) rather than allowing the 319/495 catastrophic collapse of the global economy that would otherwise occur. In this scenario, it is assumed that the government will run budget deficits of $1.9 trillion in both 2013 and 2014; and that the economy will expand by 2 percent in both years as a result. Economies are like bicycles—they either move forward or they fall over. Two percent growth is close to the minimum necessary to prevent the U.S. economy from falling over. The following paragraphs explain how these projections for the government’s deficits are derived. Credit growth has driven economic growth in the United States for decades. So how much credit growth would be required to generate real (i.e., inflation-adjusted) growth of 2 percent during 2013 and 2014? To answer that question, it is first necessary to estimate what the inflation rate will be. Here, it is assumed that inflation will be 4 percent in both years. 320/495 What the actual inflation rate turns out to be will be determined, in large part, by how much fiat money the Fed creates each year. The more money the Fed creates, the higher the inflation rate will be. However, there will also be very strong countervailing deflationary pressures because, in most industries, global supply greatly exceeds global demand. That is because wage growth has not kept pace with the increase in production. How much money the Fed prints during 2013 and 2014 will be determined by how much of the government’s budget deficit the private sector is willing to finance at low interest rates. The Fed will have to monetize the shortfall. This question cannot be answered with any degree of certainty. However, one of the lessons that should be understood from the economic crisis in Japan is that when big economic bubbles pop, the private sector has nowhere safe to invest all the money that it made during the 321/495 bubble years. Therefore, the private sector is happy to invest that money (as well as its large annual cash flow) into government bonds even at very low interest rates. That explains why the Japanese government has been able to increase its level of debt relative to GDP from 60 percent when the crisis began in 1990 to approximately 230 percent at the end of 2011, while the interest rate it pays to borrow money for 10 years is still only around 1 percent a year. Similar credit market conditions will exist in the United States’ post-bubble world during the years ahead. The private sector will be glad to invest the money it made during the bubble—and also its large annual cash flow—into U.S. government bonds even at a low interest rate because there won’t be anywhere else to safely invest that money. Still, in this scenario, the size of the government’s budget deficits is so large that private sector purchases probably won’t be 322/495 enough to finance them without pushing the interest rates on government bonds to a much higher level. High interest rates would damage the economy. Therefore, the Fed is likely to have to monetize a significant amount of the government’s debt during 2013 and 2014 to keep interest rates from rising. In this scenario, then, it is assumed that the Fed will print enough new fiat money to finance half of the government’s budget deficit in 2013 and 2014. It is also assumed that this will result in an inflation rate of 4 percent. Fiat money creation will push commodity prices up, but globalization will push almost all other consumer goods prices down. Given an inflation rate of 4 percent, the economy will have to grow by 6 percent in nominal terms to achieve 2 percent growth in real terms. At the end of 2012, the size of U.S. GDP is expected to be $15.7 trillion. To grow by 2 percent in real terms would 323/495 require the economy to expand in nominal terms by $942 billion in 2013 and by $961 billion in 2014. Since credit growth drives economic growth, the next question is how much credit would have to expand in those years in order to generate that much nominal economic growth. As explained earlier, on average from 1952 to 2007, inflation-adjusted credit expanded by 5.0 percent a year, while real GDP expanded by 3.3 percent a year. The ratio of GDP growth to credit growth was thus 66.4 percent over that period. That ratio has been declining over time; more and more credit has been required to generate economic growth. Between 1981 and 2007, that ratio was 54.5 percent. And between 2001 and 2007, it was only 35.8 percent. This suggests there has been a diminishing return on credit. And, it suggests that a growing amount of credit has been misallocated. 324/495 Fifty percent is roughly the midpoint between the average for the last 50 years and the figure for the most recent period, 2001 to 2007, when credit misallocation was particularly bad. So, a ratio of 50 percent economic growth to credit growth will be used to calculate how much credit growth will be required in 2013 and 2014 if the economy is to grow by 2 percent each year. In other words, it is assumed that $2 of credit growth will be required to generate $1 of GDP growth. To generate $942 billion in nominal economic growth in 2013 will take twice as much credit growth, $1,884 billion. And, to generate $961 billion in nominal economic growth in 2014 will require $1,922 billion in credit growth. The final assumption is that private sector debt will remain unchanged in both years. Two percent economic growth should be enough to prevent a debt deflation downward spiral; however, it is unlikely to be 325/495 enough to cause the private sector to significantly increase its level of borrowing. Therefore, it is assumed that all the increase in TCMD will come about as the result of an increase in the government’s debt. Put differently, the government will have to run a budget deficit of $1,884 billion in 2013 and $1,922 billion in 2014. That would be equivalent to 11.8 percent of GDP in both years. The highest budget deficit thus far in this crisis was 10 percent of GDP in 2010. The increase in government expenditure could come about either due to increased domestic spending or as the result of a war. Under these assumptions, government debt would amount to 81 percent of GDP at the end of 2013 and 92 percent at the end of 2014. The Fed would create $942 billion in 2013 and $961 billion in 2014 to finance half of the government’s budget deficits during those years. The balance sheet of the central 326/495 bank would grow to $5.8 trillion by the end of 2014. Exhibit 7.4 summarizes the projected changes in GDP, inflation, and credit as projected in this scenario. EXHIBIT 7.4 Scenario Three: The Most Likely One 2013 2014 GDP at the beginning of the year ($ billions) 15,700 16,014 Real GDP growth target (%) 2% 2% Inflation rate (%) 4% 4% Nominal GDP growth target (%) 6% 6% Nominal GDP growth target ($ billions) 942 961 Ratio of GDP growth to credit growth (%) 50% 50% Nominal credit growth required ($ billions) 1,884 1,922 327/495 2013 2014 Increase in government debt, i.e., the budget deficit ($ billions) 1,884 1,922 Money creation, the Fed monitized half the deficit ($ billions) 942 961 Fed’s balance sheet at the beginning of the year ($ billions) 3,900 4,842 Fed’s balance sheet year end ($ billions) 4,842 5,803 TCMD at the beginning of the year ($ billions) 54,240 56,124 TCMD at the end of the year ($ billions) 56,124 58,046 Increase in TCMD (%) 3.5% 3.4% Increase in TCMD adjusted for inflation % −0.5% −0.6% Real GDP year end ($ billions) 16,014 16,334 Budget deficit to GDP (%) 11.8% 11.8% Government debt at the beginning of the year ($ billions) 11,153 13,037 328/495 2013 2014 Government debt at the end of the year ($ billions) 13,037 14,959 Government debt at the end of the year (% of GDP) 81% 92% Impact on Asset Prices The combination of large budget deficits and significant fiat money creation would be very positive for the stock market—so long as inflation does not meaningfully exceed 4 percent. Government bond purchases by the Fed would keep the price of the bonds high and their yields low. Remember, in the age of paper money, interest rates are determined by the supply of as well as the demand for paper money. The dollar would continue to lose value against other currencies and particularly 329/495 against gold and silver, which would continue soaring upward. Other commodity prices would also spike higher. Much higher food prices would cause increased distress for the poorest third of the world’s population, possibly generating more hunger-inspired revolutions, possibly with significant geo-political ramifications. Core inflation (e.g., food and energy) would rise. However, given the collapse in marginal wage rates brought on by globalization and by immense global excess capacity of all industrial goods, it might not climb above 5 percent by the end of 2014. So long as it doesn’t, scenario three would carry us—or, at least the two-thirds of the global population earning more than $4 a day—into 2015. Conclusion 330/495 Scenario three—or something close to it—is the most probable way for events to unfold during 2013 and 2014. The government has the financial capacity to expand its level of debt significantly in order to stave off economic collapse, just as Japan has done for the last 21 years. This scenario is by no means guaranteed, however. Politics might make any additional increase in government spending impossible. The path described in Scenario three would certainly be the least painful way to reach 2015. Reaching 2015 in that way would not mean the issues at the core of the crisis had been resolved, however. Global supply would still greatly exceed global demand. The United States would continue to deindustrialize and that, in turn, would continue to depress wages and so prevent any new expansion of private sector credit growth. Moreover, the U.S. government would be 331/495 more indebted and less creditworthy than it is now, and inflation would be on the rise. Large-scale deficit spending financed in large part by fiat money creation would be a fix, not a solution. The longer-term outlook would remain alarming. A permanent solution to this economic crisis will require something more than fiscal and monetary stimulus alone. A new approach is necessary. Chapter 9 describes the kind of policy that would work. But first, Chapter 8 describes how high the cost could be if a permanent solution is not found in time.

**Only the plan’s *expertly targeted* investment can *increase* growth rates *with immediate effect***

**Cooper 9-12** (Donna Cooper, Senior Fellow with the Economic Policy team at the Center for American Progress, former deputy mayor for policy for the city of Philadelphia, former secretary of policy and planning for the Commonwealth of Pennsylvania; Kristina Costa, Research Assistant in Economic Policy at the Center for American Progress; Keith Miller, intern with the Economic Policy team at the Center for American Progress, student at the Georgetown Public Policy Institute; “Creating a National Infrastructure Bank and Infrastructure Planning Council: How Better Planning and Financing Options Can Fix Our Infrastructure and Improve Economic Competitiveness,” Center for American Progress, September 2012, <http://www.americanprogress.org/wp-content/uploads/2012/09/InfrastructureBankReport.pdf>)

Infrastructure forms the foundation of the U.S. economy. Without highways, power grids, railroads, dams, levees, and water systems, businesses could not transport their goods, homes would be without electricity or drinkable water, parents could not get their kids to school, and the United States would cease to be a world leader in productivity and innovation. But despite our infrastructure’s clear indispensability, decades of negligence and underinvestment have allowed much of it to fall into a shameful state of disrepair. Inefficiencies in our infrastructure affect all aspects of American life. Commuters on our highways now lose more than $100 billion every year in time spent and fuel burned due to ever-increasing congestion on their way to and from work.1 U.S. ports are struggling to handle increased ship sizes and cargo volumes. Lock systems on inland waterways are crumbling, causing tens of thousands of hours of delays every year. And leaking pipes lose an estimated 7 billion gallons of clean drinking water every day.2 Together, these failures jeopardize public health, contribute to environmental degradation, and make American businesses less competitive, forcing them to pass additional costs on to consumers. At the same time, our closest competitors have dramatically stepped up their investment in infrastructure and adopted ambitious plans for additional development. The United States fell to 24th place in overall infrastructure, down from ninth in 2008, according to a 2011 annual survey conducted by the World Economic Forum.3 What’s worse, under current levels of investment, this ranking will likely only continue to fall. A recent Center for American Progress report on America’s infrastructure funding gap estimated that the federal government is underinvesting in infrastructure by approximately $48 billion per year, assuming a goal of adequately maintaining existing infrastructure and preparing for projected economic and population growth.4 But our situation is not hopeless. By coupling increased investment with a number of commonsense reforms, the United States could make great progress toward bringing its infrastructure up to modern standards. The establishment of both a national infrastructure bank and a national infrastructure planning council represents an innovative and promising way in which we could finance and plan infrastructure projects. That is the subject of this report. By establishing a centralized federal lending authority in the form of an infrastructure bank, the United States could: • Increase public investment in infrastructure • Leverage billions in additional private investment • Streamline existing federal lending initiatives • Increase the share of federal money that flows to projects meeting rigorous cost-benefit criteria With a relatively modest investment, the federal government could enable the completion of numerous large-scale projects of critical economic importance throughout our country, potentially producing thousands of jobs in the process. Forming a national infrastructure planning council would also help better coordinate federal investments in infrastructure. This would go a long way toward resolving the siloed decision-making process that currently prevents crucial project integration and encourages inefficient spending across government agencies, as each agency attempts to independently address single components of a complex, interdependent infrastructure system. Better coordination would allow the United States to finally develop a comprehensive national infrastructure plan on par with those implemented by both industrialized and developing nations, while also encouraging the adoption of the best investment and planning practices at all levels. Congress and the Obama administration should be praised for taking a significant step toward better investment coordination and improved due diligence by expanding the Department of Transportation’s Transportation Infrastructure Finance and Innovation program, included in the recently passed Moving Ahead for Progress in the 21st Century Act. Increasing this program’s funding from $122 million in fiscal year 2012 (which began in October 2011) to a combined $1.7 billion for FY 2013 through FY 2014 will help it achieve a considerably greater impact. The program provides low-interest loans, loan guarantees, and lines of credit to public and private investors undertaking large-scale surface transportation projects. Although the program’s limited surface-transportation-only focus and known funding horizon of only two years means it alone cannot shoulder the burden of America’s infrastructure needs, the designers of any future infrastructure bank should look to this program as an example of how to successfully operate a federal infrastructure lending initiative. This report will detail the need for both a national infrastructure bank and a planning council, explain how they each would work, and examine how they would address the specific failings of our current system of infrastructure investment. We will consider existing policy proposals for creating an infrastructure bank and will note which facets of these plans still require significant attention from policymakers. Finally, we will put forward a number of suggestions for immediate action to lay the groundwork for a national infrastructure bank and an infrastructure planning council. The United States **simply cannot wait any longer** to address our crumbling infrastructure. If we take action now to better plan, finance, and coordinate critical investments in our national infrastructure, we can ensure continued prosperity for future generations, while immediately helping the American economy get back on its feet. The need for an infrastructure bank and planning council The overwhelming scale of the challenges facing U.S. infrastructure cannot be adequately addressed by individual state and local efforts or piecemeal federal support. Our myriad overlapping and competing funding streams, programs, and initiatives have repeatedly proven to be inadequate, and the need for central entities to plan, coordinate, and finance projects of national importance could not be more apparent. In this section, we examine the four greatest failings of our current infrastructure investment system and illustrate their detrimental effect on the U.S. economy: • Failure to provide sufficient public funds • Failure to attract private investment • Failure to coordinate investments • Failure to allocate funds efficiently Let’s examine each of these failures in turn. Failure to provide sufficient public funds Despite a large number of independent funding streams and initiatives for infrastructure development already in the federal government, the United States is failing—by a large margin—to adequately invest in its infrastructure. These existing funding streams include multiple federal loan programs, a far greater number of grant opportunities, and many additional layers of programs at the state and local level. A recent Center for American Progress report estimated that bringing America’s infrastructure into a state of good repair and adequately preparing it for projected growth would require the federal government to invest at least an additional $48 billion per year on top of current infrastructure spending levels, which in FY 2010 totaled roughly $92 billion in grants, credit subsidies, and tax expenditures.5 Even then, this spending **could only be considered sufficient if it** triggered $11 billion annually in additional state spending and was accompanied by a $10 billion increase in annual **federal loan authority**. The United States is simply not investing enough to repair and maintain our most critical infrastructure, let alone expand and upgrade it to enable future economic growth. This lack of sufficient funding and political will means we are not only underfunding local water-treatment systems and roadway investments but also perpetually neglecting large-scale regional projects. Such cross-state “megaprojects” have the potential to produce massive economic returns but frequently go unfunded or unconsidered because they are **simply too large** for states, localities, or limited federal programs to finance. While the Transportation Infrastructure Finance and Innovation program and similar initiatives may seek to support large-scale undertakings, it simply does not have the funds to provide the level of capital required for such megaprojects and is generally limited to funding projects that fall into a specific sector—such as surface transportation—instead of integrated, cross-sector proposals. This problem is evident, for example, in ongoing efforts to replace the functionally obsolete Brent Spence Bridge that connects Cincinnati, Ohio, with Covington, Kentucky, carrying traffic from two large interstate highways across the Ohio River. Despite its critical importance to regional commerce and the economic vitality of both cities, project planners have not been able to find a funding source for the $2.4 billion needed to begin work.6 Even with combinations of grants, municipal bonds, and private investment, such projects often require an additional source of funding to make it out of the concept stage.7 Currently this source of funding does not exist, which means the very projects that hold the greatest potential to spur lasting economic growth are the most frequently abandoned. These problems are further compounded by a congressional appropriations process that allocates some infrastructure funds on a year-to-year basis and legislators who are sometimes reluctant to commit resources over the longer time frames required to complete most infrastructure projects. The recently passed Moving Ahead for Progress in the 21st Century Act surface-transportation bill provides program allocations for only two years—well short of the five-year timeframe of most of its predecessors. This leaves states, localities, and private investors struggling to make long-term plans under the **uncertainty of future federal support**. Additionally, this annual appropriations process can encourage state and local policymakers to delay necessary projects in the hope of securing federal funding in the next election cycle, both delaying benefits and potentially increasing costs, as required repairs become more significant.8 Failure to attract private investment Private investors can be valuable and innovative partners in maintaining and modernizing critical infrastructure. Our current system of financing, however, has often failed in its attempts to forge viable partnerships with private investors. While the traditional American method of attracting private capital by offering tax-exempt municipal bonds has been successful in many instances and will remain a valuable tool for infrastructure investment, it often leaves many large potential investors sitting on the sidelines. The reason: These groups are either already exempt from taxes, as in the case of pension funds, or have no state tax liability to begin with, as is the case with international investors. These characteristics have historically made tax-exempt bonds far less attractive to these groups, resulting in extremely limited purchases. In the wake of the Great Recession of 2007–2009, however, many of these institutional investors now say they are eager to diversify their portfolios by investing in infrastructure. The California Public Employees’ Retirement System, for example, has already allotted $4 billion to be invested in U.S. infrastructure projects over the next three years.9 The success of so-called Build America Bonds has demonstrated that alternatives to traditional municipal bonds can have success in attracting pension funds and international investors. The program, initiated in 2009, issued an estimated $117 billion in taxable state and local bonds for which the federal government directly subsidized a portion of the interest costs.10 This made the bonds significantly more attractive to private investors, eliminating inefficiencies in the system of federal bond subsidization that cost the federal government billions of dollars every year.11 Unfortunately, the program was allowed to expire in 2010 and has not yet been renewed. Public-private partnerships offer shareholders a direct stake in projects, and the potential for greater returns are also extremely attractive to these types of private investors. Unfortunately, states and the federal government have not yet fully taken advantage of these new types of investment vehicles. While 25 states have passed legislation expressly aimed at encouraging public-private partnerships, relatively few projects have actually been launched.12 This is largely because our infrastructure financing system lacks the **experience and tools** to quickly identify viable investment opportunities **and** match private investors with public partners. Without improved **coordination**, transparency, and financial assistance, billions of dollars more in potential investment may go unrealized despite the existence of numerous willing investors. In contrast, Europe has a fully functioning infrastructure finance program up and running. (see box) Lessons from the European Investment Bank While the United States struggles to develop a national infrastructure investment plan, the European Union has been operating a transnational, publically chartered infrastructure bank for longer than half a century. Founded in 1957, the European Investment Bank funds critical projects throughout Europe and in developing nations worldwide to the tune of tens of billions of dollars every year. The bank is capitalized by funds from its 27 member states but also raises a large portion of its capital from issuing bonds. These funds are used to offer low-interest, long-term loans to both public and private entities, as well as loan guarantees and technical assistance. The bank is able to offer such attractive rates because it is large, nonprofit, has a AAA credit rating, and is fully backed by member governments.13 In 2010 the bank loaned out more than $100 billion, the vast majority of which (87.5 percent) went to projects in EU countries.14 This included $5 billion in high-speed rail projects; $3 billion in road and bridge improvements; $12 billion in sustainable urban transit; and $134 million in inland waterway improvements.15 Overall, the bank financed 460 “large projects” in 72 countries in 2010 alone, and this was all on top of the investments made independently by individual member states.16 The European Investment Bank should serve as both a useful example for policymakers and as a harsh reminder of how the United States is continuing to fall further behind our international competition. Any U.S. infrastructure bank must learn from the successes and failures of its international predecessors and must do so quickly if we are to keep pace in the decades ahead. \* This report uses 2010 data to allow for easy comparison between European Investment Bank investment levels and federal U.S. loan authorities for infrastructure. (see Figure 1) Failure to coordinate investments The **uncoordinated** and siloed fashion in which federal dollars are allocated also hampers efforts to modernize U.S. infrastructure. Despite the interdependence of America’s electricity, water, transport, and telecommunications networks, the vast majority of federal funds are dispersed by sector-specific programs that do not take into consideration the impact of their initiatives on other infrastructure systems. The Department of Transportation, for example, does not fully consider how increased investment in passenger or freight railways might alleviate the need for additional road and highway expenditures, and does not coordinate the landside port improvements it funds with Army Corps of Engineers waterside investments at the very same ports. Indeed, according to a recent Center for American Progress analysis, integrated transportation spending accounts for only about 2 percent of the Department of Transportation’s investments—a distressing figure for those concerned with maximizing efficiency and minimizing costs.17 Exacerbating this problem is the inherently **reactive nature** of the many federal agencies responsible for various aspects of our nation’s infrastructure. Nearly all of the projects that agencies consider are brought to them by localities, states, or Congress. They are almost never asked to propose projects based on their own **analysis of national needs** or to take on the role of integrating multiple small-scale proposals. Instead, they are only given the responsibility of evaluating individual pitches from policymakers primarily concerned with their own **limited constituencies**. Consequently, the United States has no national goods movement, water, or energy plans to match those of other rapidly developing nations, and our economic competitiveness and prospects for growth are suffering as a result. Failure to allocate funds efficiently Despite inadequate funding levels and limited program coordination, the United States still allocates tens of billions of dollars annually to a multitude of projects across the nation. Such investment could go further toward upgrading America’s infrastructure if it were spent more efficiently. The vast majority of funds for infrastructure projects in the United States are not disbursed on the basis of a **rigorous comparison of** projects’ economic **costs and benefits**. Instead, they are allocated by formula or annual congressional appropriations that place more emphasis on geographic political considerations than on return on investment. For decades, highway funding has been distributed by formulas that heavily weigh vehicle miles of road over the actual need for repair or extension. As a result, Alabama has in the past received more funds than Massachusetts, Florida more than New York, and Georgia more than Michigan.18 This **inefficient process** is only getting worse, as the recently passed surface transportation bill actually increased the percentage of funds apportioned by formula from 83 percent to 92.6 percent.19 Highway spending, however, is not the only area where money is allocated in this fashion. According to the Congressional Research Service, the nation’s 20 busiest ports handle 80 percent of arriving oceangoing ships but account for less than 40 percent of federal Harbor Maintenance Trust Fund expenditures.20 In the allocation of funds for drinking water projects, millions of dollars are allotted every year just to ensure that every state receives at least 1 percent of the funds available.21 Such processes virtually ensure a suboptimal distribution of investment, as money is directed according to arbitrary legal requirements not potential impact. America’s present system of infrastructure financing is failing on multiple fronts and falling well short of providing the levels of **coordinated** and **expertly directed** investment required to rebuild and modernize our aging bridges, electrical grids, and highways. It is clear that if the status quo is maintained, the United States will only continue to fall further behind its neighbors and competitors—with significant and damaging repercussions for the future health of the U.S. economy. How would an infrastructure bank and planning council help? The establishment of a **n**ational **i**nfrastructure **b**ank and national planning council would go a long way toward making the existing system of infrastructure financing more rational, efficient, and transparent. In this section, we lay out the potential benefits offered by both institutions and illustrate how they can immediately help remedy the failures of the status quo. Americans deserve an infrastructure network befitting the largest and most innovative economy in the world, and creating a national infrastructure bank and national planning council will do much to achieve that goal. National infrastructure bank A national infrastructure bank would help spur more infrastructure investment by creating a strong federal lending authority capable of financing and coordinating high-value infrastructure investments throughout the country. It could provide low-interest loans and loan guarantees to state, local, and private investors, and help stakeholders connect available capital with financially viable projects and willing partners. Because all of the funds distributed by the bank would be paid back with interest by borrowers following the completion of their projects, the costs to the federal government following the initial capitalization of the bank would be remarkably low. Every federal dollar put into the bank would be able to achieve an impact well beyond its face value by supporting project after project as long as the bank continued operation. Despite its low costs, however, a national infrastructure bank could put a substantial dent in the infrastructure funding gap by attracting billions of dollars in additional public and private investment. By providing the final financial piece that many large projects require to get off the ground, federal infrastructure loans and loan guarantees could enable hundreds of otherwise-abandoned projects to move forward. An infrastructure bank proposal put forward by Sens. John Kerry (D-MA), Kay Bailey Hutchison (R-TX), Mark Warner (D-VA), and Lindsey Graham (R-SC) estimates that an initial $10 billion endowment could provide up to $160 billion in financial assistance over the next decade, pulling in between $320 billion and $640 billion in additional nonfederal spending.22 Such levels of investment would pour billions of dollars into some of the economic sectors hit worst by the recession, among them the construction industry and heavy manufacturing, and could help put thousands of unemployed Americans back to work on projects with guaranteed economic and social returns. An infrastructure bank could be particularly effective at leveraging additional investment because it would be able to make such investment more attractive to private investors. A federal bank could help **inexperienced states** and localities develop attractive public-private partnerships and could connect willing private partners with these investment opportunities. Providing **a single “home”** for such project proposals would eliminate the need for investors to make redundant pitches to multiple federal, state, and local agencies, making the entire process of linking private capital with critical infrastructure projects both more efficient and user-friendly. **Federal oversight** and guidance could also perform the important task of promoting models that protect wages and collective bargaining rights. For all of these reasons, both the U.S. Chamber of Commerce and the American Federation of Labor and Congress of Industrial Organizations see significant benefits for their members should a national infrastructure bank be created, and both have jointly come out in strong support of establishing such a bank.23 An infrastructure bank would also help overcome the many problems associated with the annual appropriations process and could provide the types of financial assistance that are most useful for infrastructure projects. By providing long-term loans and loan guarantees, the new bank would make year-to-year federal support significantly **more predictable**. Short-line railroad owners could hire employees, and clean energy operations could plan for expansion without being constrained by the **uncertainty** of not knowing whether the critical federal loan programs that support them will exist in a year’s time. Additionally, by building delayed-repayment mechanisms into these loans, many crucial projects could be undertaken even if they may take time to begin generating sufficient user fees or savings to begin repayment. Public and private investors alike frequently find it difficult to acquire financing of this kind, but by filling this void, a national infrastructure bank could further enable billions of dollars in investment. Furthermore, introducing a centralized federal lending authority could help dramatically improve **coordination** between federal agencies and the multiple lending initiatives they oversee. A recent Center for American Progress analysis estimated that in FY 2010, just under $124 billion in total federal lending authority for infrastructure projects was spread out over six different programs in three different departments. (see Figure 1) It would likely be more efficient for an infrastructure bank to assimilate these existing federal loan schemes. Such changes would eliminate redundancies, build capacity to plan intermodal projects, and further improve due diligence in project selection. Energy is a major cost driver when it comes to getting water to the tap and treating wastewater, but our current system does not adequately account for energy needs when planning water-system improvements. A federal lending authority, however, could allow for drinking and clean water infrastructure investments to be coordinated with the expansion of electrical capacity required to support them. Or it could arrange for channel deepening at ports to be planned alongside the bridge replacements required to ensure new and larger freight vessels can access harbors. Bank experts would be able to actively seek out opportunities for cross-state and cross-sector cooperation, and encourage policymakers and private investors to undertake the kinds of visionary and integrated projects that are the most beneficial to economic growth. Finally, more efficiency-driven project selection could possibly deliver the greatest gains. An independent bank with a professional staff could rank project proposals by expected economic and social returns, and allot funds accordingly. They would not have to be constrained by outmoded formulas or arbitrary allocation processes, and could instead ensure that each dollar lent out achieves the greatest possible impact for the greatest number of people. With funding for projects of all kinds becoming increasingly difficult to come by and with infrastructure needs growing daily, we cannot afford to continue being inefficient with our spending. A national infrastructure bank could help reduce such waste, while making the most of limited resources to effectively promote valuable economic, social, and environmental goals. The creation of a national infrastructure bank would thus help increase public investment, attract private investment, improve investment coordination, and ensure investment efficiency. As the United States becomes more integrated into an increasingly competitive global economy, we have no choice but to pursue these goals, and we must do so with the greatest possible urgency. Indeed, the idea of an infrastructure bank is not new to policymakers. (see box on following page) A brief history of state infrastructure banks The idea of establishing infrastructure banks to help finance needed investment is not new to the United States. As of 2010, 32 states and Puerto Rico already had state infrastructure banks in operation, using them to enter into more than 700 loan agreements worth $6.5 billion.24 A handful of banks were established in the 1990s as part of a limited federal pilot program, which was expanded in 2005 to include all states. Since then, most state infrastructure banks have been capitalized using a combination of federal and state funds, although a few have used only state monies to avoid certain federal regulations. While these banks have helped finance hundreds of projects, their results have been somewhat mixed. Almost the entirety of the $6.5 billion allotted in loans comes from only eight states. South Carolina—one of the first participants in the bank pilot program and which raises significant additional funds by allowing its bank to sell bonds—is alone responsible for more than $3 billion of that investment. Many states have barely made use of their banks at all.25 Just as importantly, almost all of these banks provide funding only for surface-transportation projects, ignoring other critical types of infrastructure. Due to their relatively small size, they also do not have the funds or expertise necessary to handle regional megaprojects and generally avoid complex multimodal undertakings.26 State infrastructure banks will play an important role in meeting future infrastructure needs, but they would be more effective working alongside an equivalent federal institution. Such a national bank would be capable of taking on projects that state banks cannot and providing the expertise, coordination, and leadership currently lacking in our infrastructure-investment system. National infrastructure planning council While structuring financing packages for vital projects is among the most important roles the federal government plays in infrastructure investment, its activities extend well beyond this role and into research, issuing regulations, awarding grants, environmental protection, and even directly operating and maintaining locks, dams, bridges, and utilities throughout our country. To coordinate all of these activities and maximize the efficiency of federal infrastructure programs, we need a national infrastructure planning council. Such a council would unite the disparate federal initiatives currently attempting to individually tackle our national infrastructure crisis, thereby making the jobs of federal agencies easier and dramatically improving program effectiveness. Such a council would help federal agencies establish a common understanding of the scope and breadth of the federal government’s investment in our nation’s infrastructure. By sharing current and pending project inventories, synergistic opportunities can more easily be identified and acted upon. Investments in locks and dams on inland waterways could be coordinated with landside improvements at the seaports they service, while the impact of the information technology revolution on commuting patterns could be taken into consideration when allotting highway funding. A national infrastructure council should also be tasked with collecting and disseminating best practices pertaining to project selection, preventative maintenance, and construction cost reduction. It would also promote the use of common objective measures to evaluate the progress of ongoing and completed infrastructure projects. The council would work to identify opportunities for innovation and help develop new mechanisms for leveraging private investment. A national infrastructure council would also work in close coordination with a national infrastructure bank, as the council could coordinate federal activities with nonfederal and private initiatives to ensure that the bank did not unnecessarily duplicate existing federal expert capacity. With all relevant authorities sitting at a single table, we can finally develop and pursue coordinated approaches to overarching national problems such as road congestion and electrical grid reliability. A national infrastructure planning council would help the United States begin to close the gap between our level of investment and that of our international competitors—whose levels of infrastructure investment have surpassed that of the United States for years—and would help spur economic growth in both the short term and the long term. What might a national infrastructure bank look like? Multiple serious proposals for a national infrastructure bank have been put forward at the Congressional level in just the past five years, beginning with the bipartisan Dodd-Hagel National Infrastructure Bank Act of 2007.27 More recent proposals include the 2011 Building and Upgrading Infrastructure for Long-Term Development, or BUILD Act, sponsored by Sens. Kerry, Hutchison, Warner, and Graham, and the National Infrastructure Development Bank Act, sponsored by Rep. DeLauro (D-CT). The BUILD Act also served as the basis for infrastructure bank proposals recently put forward by the Obama administration, including those found in the proposed American Jobs Act of 2011 and the president’s proposed 2013 federal budget.28 These various proposals share many common elements but also differ on several key institutional attributes. In this section we consider which features are almost certain to be incorporated into any future infrastructure bank, as well as components which still require significant attention from policymakers to ensure any proposed institution is as efficient and effective as possible. The fundamentals of an infrastructure bank: Where most plans agree Most infrastructure bank proposals envision a wholly government-owned corporation led by a board selected by the president and subject to some form of congressional approval. Although the board’s size and composition vary among plans, all plans agree that rules must be put in place to ensure the board is not dominated by a single party’s partisan appointees and that its members have sufficient and relevant expertise in infrastructure development and financing. An important balance will also have to be struck between ensuring adequate oversight of the bank and enabling it to operate independent of political pressure, lest its project-selection process simply become another extension of existing, politically motivated allocation methods. The majority of proposals permit an infrastructure bank to offer long-term loans and loan guarantees of up to about 35 years, with the potential for flexible repayment schedules that would allow investors the time required to complete large-scale projects and begin recouping their costs via user fees, tolls, or other revenue sources. Entities eligible to receive financing would include state and local governments, private investors, or public-private partnerships. Eligible project areas vary somewhat between the plans but would almost certainly include energy, transportation, and water projects, possibly alongside environmental and telecommunications undertakings. A successful example of such lending practices can be seen in the aforementioned Transportation Infrastructure Finance and Innovation program. Over the past 14 years, this program has used $9.2 billion in federal funding to provide attractive long-term loans, loan guarantees, and lines of credit that have leveraged more than $36.4 billion in private and public capital, helping undertake 27 major transportation projects across the nation.29 Among the reasons the program has been so successful is its ability to offer loans of up to 35 years and the flexibility of its repayment schedule. Recipients of this program’s loans can wait up to five years after substantial project completion to begin paying back their loans so as to allow time for facility construction and ramp-up.30 The designers of an infrastructure bank would be wise to use these elements of the Transportation Infrastructure Finance and Innovation program as a model. To ensure that a future infrastructure bank accomplishes its goal of attracting significant additional nonfederal and private investment, a cap on the percentage of a project’s financing which can be covered by loans from the bank may also be required. The bipartisan BUILD Act proposal—as well as the most recent administration proposals—set this cap at 50 percent. This would ensure that the federal government never foots the majority of the bill for any project and maximizes the commitments of its public and private partners. Importantly, most existing plans also avoid establishing specific criteria for project selection and leave this process up to the bank’s board. They do, however, emphasize that project selection should take into account **all economic, social, and environmental costs**. The board should also prioritize projects that lead to economic growth and job creation or are of particular national or regional importance. If an infrastructure bank is properly structured and appropriate selection criteria are adopted, then it could not only help construct new and valuable national assets but also create thousands of jobs and promote environmentally sustainable development. An infrastructure bank proposal from Sens. John Rockefeller (D-WV) and Frank Lautenberg (D-NJ) includes an even greater emphasis on breaking down modal silos in the Department of Transportation. The Rockefeller-Lautenberg proposal also includes a requirement for an infrastructure bank to consider the long-term fiscal and competitiveness impacts of their decision making. Some experts advocate including such proposals from the Democratic infrastructure bank bill in the larger bipartisan BUILD Act.31 Variability in bank plans: Important features still to be considered There is a great deal of consensus about what should be included in the creation of an infrastructure bank. But there also is disagreement about certain components. Among the first features of any potential infrastructure bank that remain open for consideration is whether or not a floor should be placed on the size of projects eligible for financing. The proposed BUILD Act and the president’s 2013 federal budget both mandate that estimated project costs be at least $100 million—or, in the BUILD Act, $25 million if the project is in a rural area—in order to receive bank support. The goals of such provisions include ensuring only large projects with substantial returns are financed and keeping bank funds away from smaller projects that could be capable of raising sufficient capital on their own. Such limits, however, may also make it more difficult for the bank to take on the duties of smaller federal lending initiatives such as the Railroad Rehabilitation and Improvement Financing loan program or the Department of Energy’s 1703 and now-defunct 1705 loan programs. These programs support valuable investment in regional rail revitalization and clean energy technologies but generally make relatively small loans to individual companies or local governments. If cost floors exist, policymakers will have to carefully weigh the benefits of streamlining federal investment in infrastructure by assimilating such programs against the costs of cutting support for smaller but still valuable projects. Second, architects of any future bank will have to determine how administrative costs will be covered. These year-to-year costs could simply be taken from the funds used to initially capitalize the bank, although this would diminish its lending authority over time. Yearly congressional appropriations could also be used, but this would then sacrifice the self-sustaining nature of the bank. To circumvent these problems, the BUILD Act proposed allowing the bank to charge fees—such as application and transaction fees—or make interest rate adjustments to ensure a balanced bottom line. This would ensure the fiscal independence of the bank and avoid depleting its loanable funds, but it could make borrowing from the bank slightly less attractive. Regardless of the solution chosen, however, such costs will have to be planned for if the bank is to prove sustainable in the long term. The bank’s ability to increase its pool of loanable funds by issuing bonds or borrowing on global capital markets is also of great importance. The DeLauro proposal includes provisions allowing the bank to do both with the goal of maximizing the amount of money the bank would have on hand to support critical investment. Some state infrastructure banks employ similar practices—including those in Florida and South Carolina—as does the European Investment Bank (described in the box above). But this practice requires attaching higher interest rates to loans issued by the bank since it must subsequently raise more funds to pay back bond buyers.32 Consequently, policymakers will have to evaluate whether the benefits of such debt issuance outweigh the potential for higher rates that could ward off borrowers. Finally, the size of the bank’s initial capitalization and whether it will be a permanent institution are both critical and undecided issues. A permanent institution could help ensure infrastructure investment does not again fall so far below required levels as it has in recent years and would help spur economic growth for decades instead of only in the near term. And if the bank is appropriately structured and fees set at a sufficient rate, then it could become an entirely self-sustaining entity that could operate for decades with virtually no need for additional federal funding. The BUILD Act calls for a permanent bank to be established and capitalized with $10 billion. The DeLauro proposal, in contrast, calls for a temporary bank—to exist for only 15 years—but which would be capitalized with $5 billion annually from FY 2012 through FY 2016. While these are still important features to be decided, there are a number of steps that can be taken to spur the establishment of a national infrastructure bank, as the next section explains. Getting started Neither a national infrastructure bank nor a national infrastructure plan will be created overnight. But there are a number of actions that can be undertaken immediately to move the United States in the right direction. In this section, we will detail the steps that should be taken by policymakers right now to help get these ideas off the ground and help get America’s infrastructure working again. Specifically: • Creating the national infrastructure planning council • Establishing a federal infrastructure bundling entity • Expanding and better utilizing existing federal loan programs in the short term Let’s look at each step in turn. Creating the national infrastructure planning council We should immediately create a federal interagency planning council to ensure we develop a coordinated and comprehensive approach to national infrastructure investment as quickly as possible. The Center for American Progress recommends that the council include, at a minimum, the secretaries or their designees of the following departments, commissioners of the following agencies, and the directors of the following federal offices: • Department of Agriculture, Office Rural Development • Department of Agriculture, Natural Resources Conservation Service • Department of Defense, Army Corps of Engineers • Department of Energy, Office of Electricity Delivery and Reliability • Department of the Interior, Bureau of Reclamation • Department of Transportation, Federal Aviation Administration • Department of Transportation, Federal Highway Administration • Department of Transportation, Federal Railroad Administration • Department of Transportation, Federal Transit Administration • Department of Transportation, Maritime Administration • Environmental Protection Agency, Office of Ground Water and Drinking Water • Environmental Protection Agency, Office of Wastewater Management • Federal Communication Commission • Federal Emergency Management Agency • Federal Energy Regulatory Commission Leadership will be critical to the council’s success. The president should select a knowledgeable and trusted neutral party to lead the council—someone who has experience in both infrastructure investment and interagency coordination. With such a council in place operating with the strong support of the executive branch, departments will be able to have a fuller understanding of each agency’s investments in the nation’s infrastructure and will be better able to identify and take advantage of opportunities for **interagency cooperation**. This will help ensure the federal government makes the most efficient use of its limited resources and is able to strategically confront the challenges ahead. Establishing a federal infrastructure bundling entity Given existing partisan gridlock in Congress and lawmakers’ hesitance to undertake large new projects, it may take some time to establish a national infrastructure bank. But in the meantime we can move toward establishing a bank while also yielding immediate benefits by creating a federal infrastructure bundling entity. This body—which could be thought of as phase one of a national infrastructure bank—would provide intermediary services between public infrastructure projects and willing private investors but would not distribute loans or loan guarantees. It would identify large financeable projects and prepare them for pairing with interested partners, filling a critical void that is presently preventing millions of potential investment dollars from reaching critical projects due to a lack of viable investment options. This bundling entity would be similar in function to the recently announced Chicago Infrastructure Trust but would operate on a national scale and concentrate on larger-scale and more complex projects. The estimated $1.7 billion in investment commitments the Chicago Infrastructure Trust already expects from investors such as JPMorgan Chase & Co. and Citibank, Inc. demonstrates that a national bundling entity could produce immediate benefits.33 To ensure effectiveness, an infrastructure bundling entity should: • Be able to enter into contracts with experts in infrastructure finance, who can work directly with project sponsors • Be able to solicit projects for review and to work with federal agencies to explore creative options for bundling projects such that they may tap public loan programs, as well as private investors • Be required to seek out large-scale, financeable projects in every region of the nation Creating an infrastructure bundling entity would by no means obviate the need for a full-strength infrastructure bank with lending authority, and it would not be able to leverage nearly as much investment. But a bundling entity would produce immediate benefits and help lawmakers recognize the beneficial role a full-fledged bank could provide. CAP recommends that Congress take action to create this entity as soon as possible and appropriate $10 million to fund its operation. Expanding and better utilizing existing federal loan programs in the short term While getting a national infrastructure bank off the ground may take time, there are still hundreds of vital projects throughout the country that need public debt financing. The recent allocation of $1.7 billion to the Transportation Infrastructure Finance and Innovation program over the next two years in the new surface transportation bill is certainly a significant step in the right direction but is insufficient on its own to meet national demand. As a result, CAP recommends restoring the Department of Energy’s 1705 loan program, which invested $25 billion mostly in clean energy projects over two years before expiring in 2011.34 The program should be extended for another 10 years and enabled to support $4 billion in lending authority. This could mobilize up to $40 billion in additional investment, a CAP analysis found.35 Additionally, other underutilized loan programs should be encouraged to streamline their application and awards processes and utilize a greater percentage of their lending authority to put the highest rate of available funds to work. Of the nearly $124 billion available in FY 2010 for federal loans, loan guarantees, and lines of credit, a recent CAP analysis found that only approximately $44 billion was actually disbursed.36 One particular example of such underutilization can be seen in the Railroad Rehabilitation and Improvement Financing program, which has only allocated a total of $1.3 billion in loans since its lending authority was extended to $35 billion in 2005.37 Certainly, accountability and good judgment in the allocation process must be maintained. In any given year it may not be feasible or responsible to disburse the entirety of the funds legally available. But there is significant room for improvement, and our existing system of infrastructure investment is far from tapping its full potential. By expanding and better utilizing existing federal loan programs, at least some progress can be made in repairing and modernizing America’s infrastructure before a national infrastructure bank is established. Conclusion For decades the United States has categorically underinvested in its infrastructure, and it should come as no surprise that the consequences of this negligence are finally coming home to roost. Locks and dams on inland waterways are falling apart. Commuters and businesses alike are losing billions of dollars on congested highways. And the nation’s electrical grids and drinking water systems are aging to the point of failure. Meanwhile, our competitors in the global economy have only ramped up infrastructure investment and adopted ambitious national plans and targets. If the United States is to remain internationally competitive, and our economy is to **return to its previous growth rates**, then we have no choice but to repair and modernize our creaking infrastructure. Establishing a **n**ational **i**nfrastructure **b**ank and planning council could **immediately** help accomplish these goals. To be sure, some commentators—including the Congressional Budget Office, in a recent report—express concerns that there may not be enough suitable projects for an infrastructure bank to finance, particularly in the realm of surface transportation. The same report also notes that surface transportation support through an infrastructure bank may ultimately be duplicative of existing federal loan and loan guarantee programs.38 But as we have established in this report, an infrastructure bank could have an enormous impact in planning and financing the kinds of large-scale, multimodal projects that create jobs and increase our economic competitiveness, but which struggle to attract federal funding or leverage sufficient private funds. Rather than focusing solely on surface transportation—long a priority in congressional appropriations—a national infrastructure bank would ideally be able to finance complex investments that integrate transportation systems and enable our ports, rails, roads, and waterways to operate more efficiently. Moreover, such investments would leverage productivity gains throughout the economy by better connecting improvements in related infrastructure sectors—energy and water infrastructure, for instance. While the Congressional Budget Office report expresses concern that a sufficient pipeline of such projects may not exist in the short term, Robert Puentes of the Brookings Metropolitan Policy Program respectfully disagrees. In 2011 Brookings “challenged public and private leaders to send us their ideas for innovative, transformative investments. And the response was tremendous,” Puentes writes in The New Republic.39 He points out, rightly, that not every project would make sense for financing through a national infrastructure bank, but creating a national bank **sends a clear signal** to the private sector and the rest of the world that the United States is making bigger, smarter choices about infrastructure. A national infrastructure bank is the missing link needed to connect private capital to the kinds of infrastructure megaprojects most needed to boost economic activity and competitiveness. Working in concert, a national infrastructure bank and planning council would help increase and coordinate public investment and ensure that federal dollars go only to deserving projects with substantial potential returns. By helping bridge the gap between private investors and critical infrastructure projects, these institutions could also attract billions of dollars in additional investments and help get promising but complex projects off the drawing board. It is time to stop wasting taxpayer dollars on a system characterized by inefficient formulas and disconnected decision making. It is time to finally create institutions capable of providing Americans with the infrastructure they need to compete, create jobs, and innovate. Establishing a national infrastructure bank and national infrastructure planning council makes economic sense and offers taxpayers the opportunity to multiply a relatively modest investment into massive and meaningful gains nationwide. Only by investing today can we hope to improve our prospects for tomorrow, and only by establishing such institutions can we ensure that our investment achieves its maximum potential. The stakes are simply too high to accept the status quo, and it is past time for us to stop neglecting the very foundation of our economy.

#### That’s because of *perceived* federal *political risk* – the plan is key to credibly *signal commitment* to investment and overcome deficits in *information* and *expertise*

Lynch 10-18-12 (Matthew Lynch, senior consultant, leads global research team at Woods Bagot, global architecture firm, adjunct professor at Melbourne University, former professor at Columbia University, “Private investment key to social infrastructure,” 10-18-2012, <http://webcache.googleusercontent.com/search?q=cache:_T9AvWuAh9wJ:blog.woodsbagot.com/2012/10/18/private-investment-key-to-social-infrastructure/+&cd=3&hl=en&ct=clnk&gl=us>)

\*\* “SOCIAL INFRASTRUCTURE” IS ACTUALLY REFERRING TO TRANSPORTATION – SEE ALL EXAMPLES USED\*\*

The ROI proposition of social infrastructure development is solid. The EDHEC-Risk Institute, the financial research program of the French business school EDHEC, labels social infrastructure investment an attractive proposition because it offers ‘long-term contracts with steady and predictable inflation-linked income, high operating margins and high risk-adjusted return.’ Its stable, long-term cash flow characteristics are highly desirable to investors. Yet cities aren’t investing in it, private equity firms aren’t jumping on board, sovereign wealth funds don’t make substantial commitments, and pension funds haven’t been increasing their exposure to it. Why? The problem is threefold. First, the sector is little understood. Social infrastructure investments are often misconceived as highly-risky demand-based propositions. For example, toll road investments are often perceived to be dependent on traffic volume, whereas the more common availability-based model actually starts paying the investor once the infrastructure has been delivered regardless of its utilisation. Second, there is perceived to be a high level of associated political risk. A report published by the EDHEC Business School, for example, reckons that pension funds are unwilling to invest in social infrastructure because political cycles can lead to the public sector reneging on prior commitments and re-regulating contracts. And third, the global market for social infrastructure has yet to be sufficiently established to attract significant private and institutional investment. Private investment in social infrastructure is still in its infancy – private capital was only introduced to public projects in the 1990s in the UK. The aforementioned EDHEC report estimates that the global investment pool for social infrastructure projects since then has been limited to just US$100 billion of private capital. Compare this to the US$175 billion recently committed by global development banks to public transport projects. Until these underlying issues have been resolved, the public sector’s fiscally-austere measures will result in continued underinvestment in urban social infrastructure. This is a big problem. Failure to invest in social infrastructure costs taxpayers a lot. The Economist reckons that deficiencies in roads, bridges and transport cost U.S. households nearly US$130 billion in 2010 alone. And the American Society of Civil Engineers expects that the underinvestment in infrastructure will end up costing each family in the U.S. around US$10,600 between 2010 and 2020. On the other hand, the private sector remains an unleveraged and ‘attractive source for [social infrastructure] investment, particularly when public spending cuts start to bite,’ according to Nigel Middleton, a managing director in Barclay’s infrastructure investment business unit, in an interview with Financial Times. For example, Paul Bastian, national secretary for the Australian Manufacturing Workers’ Union, recently estimated that every $1 billion dollars invested in infrastructure creates and sustains 10,000 to 15,000 jobs. The Economist also notes that the involvement of the private sector in public infrastructure projects positively impacts the quality of those projects. ‘Padding, short cuts or shoddy construction are less likely to be tolerated… And city leaders might in turn overcome their aversion to the efficient pricing of public resources…’ Solution: Understanding + de-risking = market growth The future success of social infrastructure is dependent on private investment; historically an investment class that has been developed and managed by the public sector. For this to happen, three problems need to be resolved. First, the sector needs to be better understood. Second, the perceived political risk associated with social infrastructure needs to be removed. And third, the social infrastructure market needs to mature and grow. Solving the first two problems will resolve the third. The U.S. has been leading by example to resolve these problems. At the federal level, President Obama introduced the notion of creating an infrastructure bank which would amalgamate private and public finances and yield long-term returns. Similar in structure to the UK’s Green Investment Bank which was seeded with UK£3 billion, the U.S. infrastructure bank would alleviate pressure from already overstretched state and municipal governments. Obama wants to supply US$10 billion in seed capital, but the idea has not yet been accepted in Congress. This has driven Mayor Rahm Emanuel of Chicago to create the Chicago Infrastructure Trust (CIT), an initiative which dovetails public infrastructure needs with private investment priorities on a case-by-case basis. Mayor Emanuel anticipates that US$7 billion will be needed to upgrade the city’s schools, water system, commuter rail and airport. Already, private institutions including Macquarie Group, Ullico, Citibank and JPMorgan have committed US$1.7 billion to CIT that will be invested in public infrastructure projects. Such investors are offered enticements that include tax-exempt debt and tax-exempt bonds. These kinds of initiatives are helping private investors to better understand the diversity, risks, and timelines of the infrastructure market. Other global cities also need to position social infrastructure investment as an attractive asset class to private and institutional investors. This needs to be a prioritised policy objective. The next critical step will be to reduce the perceived political risks associated with infrastructure investment. Pension funds, for example, have mentioned that social infrastructure investments are highly desirable because of their long-term buy-and-hold nature, but that a transparent and independent regulatory framework first needs to be set up. UK pension funds, for example, currently only allocate to infrastructure investments around 2% of their UK£1 trillion of assets under management – largely due to this perceived risk. Even advanced economies with historically stable governments are susceptible to variation in investor sentiment. A considerable 63% of people recently polled on WAtoday believe that political instability in Australia – typically thought of as a politically secure investment destination – is adversely affecting foreign investment in the nation’s infrastructure. By virtue of resolving these problems, the global social infrastructure market will mature. The U.S. already allocates 2% of its public money on infrastructure, Europe spends 5% on average, and China is spending 9%, according to Natwar Gandhi, CFO for the District of Columbia. The future potential for private investment in the global social infrastructure market is huge. Maturity and growth in the social infrastructure market will further stimulate investment appetite in the private sector – but this will be dependent on future market transparency and decreasing perceived political risk.

**Otherwise, continued slow growth makes *multiple* scenarios for *global conflict* inevitable**

**Duncan 12** (Richard Duncan, chief economist at Blackhorse Asset Management, former financial sector specialist at the World Bank, global head of investment strategy at ABN AMRO Asset Management, studied literature and economics at Vanderbilt University and international finance at Babson College, Chapter 8, in *The New Depression: The Breakdown of the Paper Money Economy*, 2-24-2012, googlebook)

And This Time? What, then, would be the consequences should the world economy spiral now into a New Great Depression? What would happen if a third of total credit market debt (TCMD) in the United States was destroyed by debt defaults, just as a third of the money supply was between 1929 and 1933? There are many roads that could lead to economic collapse. The following pages sketch the two paths most likely to lead there. Afterward, the consequences that would follow on from such a collapse will be described. 345/495 Banking Crisis The most rapid descent into disaster would occur through a collapse of the banking sector. This could come about in so many ways it is difficult to choose only one beginning for this scenario. It could be set off by tighter regulation of the derivatives market that exposed industrywide fraud and resulted in a general panic. A rogue trader could blow a $20 billion hole in the balance sheet of a medium-sized financial institution, bankrupting it and its numerous counterparties. One of the smaller European countries could default on its sovereign debt, bringing down several large banks in France and Germany that would, in turn, drag down their counterparty banks in London and New York. Or a further decline in home prices in America could lead to a new severe round of losses for U.S. banks that destroyed all their capital. In any of these events, should a new TARP-like 346/495 bailout not be put in place quickly enough, losses would ricochet around the globe and the financial system as a whole would collapse layer by layer like a house of cards. In that scenario, TCMD in the United States could easily contract by a third, from $52 trillion to $35 trillion; and, as credit is the new money, this destruction of credit would cause an equivalent contraction of nominal GDP, involving both severe deflation and a plunge in the volume of trade. The equation of exchange of the quantity theory of credit helps visualize that outcome: CV = PT So, a 33 percent contraction in credit (C) would cause a 33 percent contraction in PT, P representing the price level and T the volume of trade. PT is equivalent to the GDP. Severe deflation would affect all three categories of prices, asset prices, commodity prices, and consumer prices. Unemployment 347/495 would soar. Consumption and investment would collapse. Imports into the United States would drop by as much as 75 percent, throwing the entire world into severe depression. The demand for U.S. exports would evaporate. Tax revenues would largely disappear. This would be one path to a New Great Depression. Protectionism Alternatively, protectionism could be the catalyst for calamity. This road to ruin would be more winding than a sudden financialsector Armageddon, but it would end in complete economic breakdown just the same. In this scenario, renewed economic contraction (it would be called a double-dip recession) would push U.S. unemployment above 12 percent, and a grass-roots movement demanding trade protection for U.S. jobs would take shape. It would be recalled that presidential candidate Ross Perot had warned Americans in 1992 that NAFTA and GATT would result in “a giant sucking sound” as U.S. manufacturing jobs were relocated to low-wage countries. Anger against unfair trade and currency manipulation would infect the Tea Party movement or give rise to separate, similar populist political organizations. Growing panic over the lack of jobs in the United States would bring about a political realignment that swept protectionist politicians into Congress during the 2014 mid-term elections. Aggressive protectionist legislation would be enacted the following year. Trade tariffs would cause an immediate increase in U.S. consumer price inflation as the price of imported goods rose in line with the rate of the tariff. Higher inflation would push up interest rates, further damaging the housing market. Other countries would match U.S. tariffs with retaliatory tariffs on U.S. exports. To this, the United States would respond with a further round of tariffs. A trade war would begin. Global trade would contract sharply. Asia’s export-driven economies would suffer, and China, the country with the world’s largest trade surplus, would be particularly hard hit. Its industrial output could not be absorbed domestically due to the country’s low wage structure. The Chinese people do not earn enough to be able to afford to buy what China’s factories produce. The resulting glut of Chinese goods would cause a collapse in their product prices, lead to a wave of business failures, and put an end to new investment. Corporate distress would result in a systemic banking crisis. Unemployment would soar. China’s economy would quickly collapse into severe depression. China’s imports would contract in line with its exports. The boost that Chinese demand had given to global commodity prices would end. The commodity-producing countries such as Brazil, Australia, Thailand, and Indonesia would be hard hit, as would be countries such as Germany, Japan, and Korea, which had supplied China with higher valued-added products. International finance could not survive the strain of contracting global trade, plunging commodity prices, falling corporate profits, and the bankruptcies those developments would cause. A systemic banking crisis would be the inevitable outcome. Here, then, would be a complete replay of the Great Depression: mass joblessness, extensive credit destruction, and a collapse in international trade. A bout of hyperinflation could be incorporated into either or both of the above scenarios should governments respond to bank failures and economic contraction with successive rounds of massive fiat money creation, as they would be prone to do. Hyperinflation would not prevent economic collapse, however. It would destroy the savings of the middle class, as it did in Weimar Germany during the 1920s. It would also cause devastatingly high rates of interest. Finally, it would completely destroy the value of the dollar and the value of all the other fiat currencies affected by hyperinflation. Although hyperinflation would not be a solution, if the past is any guide, politicians would resort to it as a desperate expedient nevertheless. Andrew White wrote a fascinating account of the politics and economic consequences of hyperinflation during the French Revolution, which he published as a small book in 1912, Fiat Money Inflation in France. It is well worth a read and available for free download courtesy of the Project Gutenberg (at www.gutenberg.org/ebooks/ 6949). Geopolitical Consequences The consequences of a New Great Depression would extend far beyond the realm of economics. Hungry people will fight to survive. Governments will use force to maintain internal order at home. This section considers the geopolitical repercussion of economic collapse, beginning with the United States. First, the U.S. government’s tax revenues would collapse with the depression. Second, because global trade would shrivel up, other countries would no longer help finance the U.S. budget deficit by buying government bonds because they would no longer have the money to do so. At present, the rest of the world has a $500 billion annual trade surplus with the United States. The central banks of the United States’ trading partners accumulate that surplus as foreign exchange reserves and invest most of those reserves into U.S. government bonds. An economic collapse would cause global trade to plummet and drastically reduce (if not eliminate altogether) the U.S. trade deficit. Therefore, this source of foreign funding for the U.S. budget deficit would dry up. Consequently, the government would have to sharply curtail its spending, both at home and abroad. Domestically, social programs for the old, the sick, and the unemployed would have to be slashed. Government spending on education and infrastructure would also have to be curtailed. Much less government spending would result in a dramatic increase in poverty and, consequently, in crime. This would combine to produce a crisis of the current two-party political system. Astonishment, frustration, and anger at the economic breakdown would radicalize politics. New parties would form at both extremes of the political spectrum. Given the great and growing income inequality going into the crisis, the hungry have-nots would substantially outnumber the remaining wealthy. On the one hand, a hard swing to the left would be the outcome most likely to result from democratic elections. In that case, the tax rates on the top income brackets could be raised to 80 percent or more, a level last seen in 1963. On the other hand, the possibility of a right-wing putsch could not be ruled out. During the Great Depression, the U.S. military was tiny in comparison with what it became during World War II and during the decades of hot, cold, and terrorist wars that followed. In this New Great Depression, it might be the military that ultimately determines how the country would be governed. The political battle over America’s future would be bitter, and quite possibly bloody. It cannot be guaranteed that the U.S. Constitution would survive. Foreign affairs would also confront the United States with enormous challenges. During the Great Depression, the United States did not have a global empire. Now it does. The United States maintains hundreds of military bases across dozens of countries around the world. Added to this is a fleet of 11 aircraft carriers and 18 nuclear-armed submarines. The country spends more than $650 billion a year on its military. If the U.S. economy collapses into a New Great Depression, the United States could not afford to maintain its worldwide military presence or to continue in its role as global peacekeeper. Or, at least, it could not finance its military in the same way it does at present. Therefore, either the United States would have to find an alternative funding method for its global military presence or else it would have to radically scale it back. Historically, empires were financed with plunder and territorial expropriation. The estates of the vanquished ruling classes were given to the conquering generals, while the rest of the population was forced to pay imperial taxes. The U.S. model of empire has been unique. It has financed its global military presence by issuing government debt, thereby taxing future generations of Americans to pay for this generation’s global supremacy. That would no longer be possible if the economy collapsed. Cost–benefit analysis would quickly reveal that much of America’s global presence was simply no longer affordable. Many—or even most—of the outposts that did not pay for themselves would have to be abandoned. Priority would be given to those places that were of vital economic interests to the United States. The Middle East oil fields would be at the top of that list. The United States would have to maintain control over them whatever the price. In this global depression scenario, the price of oil could collapse to $3 per barrel. Oil consumption would fall by half and there would be no speculators left to manipulate prices higher. Oil at that level would impoverish the oil-producing nations, with extremely destabilizing political consequences. Maintaining control over the Middle East oil fields would become much more difficult for the United States. It would require a much larger military presence than it does now. On the one hand, it might become necessary for the United States to reinstate the draft (which would possibly meet with violent resistance from draftees, as it did during the Vietnam War). On the other hand, America’s all-volunteer army might find it had more than enough volunteers with the national unemployment rate in excess of 20 percent. The army might have to be employed to keep order at home, given that mass unemployment would inevitably lead to a sharp spike in crime. Only after the Middle East oil was secured would the country know how much more of its global military presence it could afford to maintain. If international trade had broken down, would there be any reason for the United States to keep a military presence in Asia when there was no obvious way to finance that presence? In a global depression, the United States’ allies in Asia would most likely be unwilling or unable to finance America’s military bases there or to pay for the upkeep of the U.S. Pacific fleet. Nor would the United States have the strength to force them to pay for U.S. protection. Retreat from Asia might become unavoidable. And Europe? What would a cost–benefit analysis conclude about the wisdom of the United States maintaining military bases there? What valued added does Europe provide to the United States? Necessity may mean Europe will have to defend itself. Should a New Great Depression put an end to the Pax Americana, the world would become a much more dangerous place. When the Great Depression began, Japan was the rising industrial power in Asia. It invaded Manchuria in 1931 and conquered much of the rest of Asia in the early 1940s. Would China, Asia’s new rising power, behave the same way in the event of a new global economic collapse? Possibly. China is the only nuclear power in Asia east of India (other than North Korea, which is largely a Chinese satellite state). However, in this disaster scenario, it is not certain that China would survive in its current configuration. Its economy would be in ruins. Most of its factories and banks would be closed. Unemployment could exceed 30 percent. There would most likely be starvation both in the cities and in the countryside. The Communist Party could lose its grip on power, in which case the country could break apart, as it has numerous times in the past. It was less than 100 years ago that China’s provinces, ruled by warlords, were at war with one another. United or divided, China’s nuclear arsenal would make it Asia’s undisputed superpower if the United States were to withdraw from the region. From Korea and Japan in the North to New Zealand in the South to Burma in the West, all of Asia would be at China’s mercy. And hunger among China’s population of 1.3 billion people could necessitate territorial expansion into Southeast Asia. In fact, the central government might not be able to prevent mass migration southward, even if it wanted to. In Europe, severe economic hardship would revive the centuries-old struggle between the left and the right. During the 1930s, the Fascists movement arose and imposed a police state on most of Western Europe. In the East, the Soviet Union had become a communist police state even earlier. The far right and the far left of the political spectrum converge in totalitarianism. It is difficult to judge whether Europe’s democratic institutions would hold up better this time that they did last time. England had an empire during the Great Depression. Now it only has banks. In a severe worldwide depression, the country— or, at least London—could become ungovernable. Frustration over poverty and a lack of jobs would erupt into anti-immigration riots not only in the United Kingdom but also across most of Europe. The extent to which Russia would menace its European neighbors is unclear. On the one hand, Russia would be impoverished by the collapse in oil prices and might be too preoccupied with internal unrest to threaten anyone. On the other hand, it could provoke a war with the goal of maintaining internal order through emergency wartime powers. Germany is very nearly demilitarized today when compared with the late 1930s. Lacking a nuclear deterrent of its own, it could be subject to Russian intimidation. While Germany could appeal for protection from England and France, who do have nuclear capabilities, it is uncertain that would buy Germany enough time to remilitarize before it became a victim of Eastern aggression. As for the rest of the world, its prospects in this disaster scenario can be summed up in only a couple of sentences. Global economic output could fall by as much as half, from $60 trillion to $30 trillion. Not all of the world’s seven billion people would survive in a $30 trillion global economy. Starvation would be widespread. Food riots would provoke political upheaval and myriad big and small conflicts around the world. It would be a humanitarian catastrophe so extreme as to be unimaginable for the current generation, who, at least in the industrialized world, has known only prosperity. Nor would there be reason to hope that the New Great Depression would end quickly. The Great Depression was only ended by an even more calamitous global war that killed approximately 60 million people. Conclusion This chapter will be called alarmist. It is intended to be. These disaster scenarios are not predictions. However, they are meant to serve as a warning of how bad things could become if policy fails to prevent the New Depression from becoming the New Great Depression. Calamity on the scale described in this chapter is not just conceivable, it has recurred throughout history. All the civilizations of the past eventually collapsed due to mismanagement or war. It would be a mistake to believe ours is invulnerable to a similar fate. This crisis should not be underestimated.

### 1ac advantage 2

#### Transportation infrastructure is collapsing due to systematic underinvestment and lack of rigorous evaluation methods

--TI collapsing now – only NIB solves: -national planning key, systematic underfunding, lack of rigorous evaluation methods

--impacted with investment and economic growth

Galston 1-23-13 (William A. Galston, Ezra Zilkha Chair and Senior Fellow, Brookings Institution’s Governance Studies Program, former policy advisor to President Clinton, “Crumbling Infrastructure Has Real and Enduring Costs,” 1-23-2013, http://www.brookings.edu/blogs/up-front/posts/2013/01/23-crumbling-infrastructure-galston)

Anyone who travels abroad can see that the United States no longer has a world-class infrastructure. And there’s hard evidence to back up that impression. The World Economic Forum compiles a massive annual “Global Competitiveness Report.” The 2012-2013 edition finds that the United States has fallen well behind many members of the European Union, Canada, and Asian countries such as Singapore, Japan, and South Korea in the overall quality of its infrastructure. We rank 18th in railroads, 19th in ports, 20th in roads, 30th in airports, and 33rd in the quality of our electrical system. ¶ An outstanding new report from the Building America’s Future Educational Fund explains why this has happened. Relative to our economic competitors, we have no national infrastructure planning, we systematically underfund infrastructure investments, and we fail to use rigorous measures of evaluation and accountability for the projects we do manage to fund. This makes for a drag on our economy. One example: in 2010, Americans spent a total of 4.8 billion hours stuck in traffic, wasting 1.9 billion gallons of fuel, at a total cost of $101 billion. ¶ And it will only get worse. According to the Building America’s Future report, by 2020, every American port will be struggling to cope with at least twice the tonnage it was designed to handle. While a projected 94 percent of the nation’s economic growth will occur in metropolitan areas, these jurisdictions are already home to “the most congested highways, the oldest roads and bridges, and the most overburdened transit systems,” with no relief in sight. The report warns that “if we don’t create a transportation system that functions reliably and cost-effectively in the 21st century, companies operating in this globalized world can simply choose to do their business elsewhere.” ¶ But before it comes to that, the American economy will pay a steep price. Another report, from the American Society of Civil Engineers, lays out the projected costs, sector by sector. Here’s the bottom line: by 2020, if the mounting investment gap in infrastructure is not addressed, “the economy is expected to lose almost $1 trillion in business sales, resulting in a loss of 3.5 million jobs . . . the cumulative cost to the U.S. economy will be more than $3.1 trillion in GDP and $1.1 trillion in total trade.” ¶ These numbers would appear large enough to arrest the attention of even the most jaded policy makers. This has not happened. Instead, current fiscal trends and policies portend a long-term squeeze on domestic discretionary spending—the pool of funds from which federal infrastructure investment is drawn. Innovative plans for federal government partnerships with the private sector to leverage scarce public resources have not gone forward in some instances and have fallen well short of adequate scope in others. While things have gone better at the state and metropolitan levels, aggregate investment continues to fall far short of needs—by an estimated $1.1 trillion between now and 2020, according to ASCE projections. ¶ As the Building America’s Future report observes, most of our global competitors have access to infrastructure banks that attract private capital to fund major projects. A recent Brookings report has proposed one model for such a bank in the United States. (There are several others.) Sound proposals to break through the current impasse in infrastructure funding are not hard to find. It has proved much more difficult to mobilize elected officials and average citizens around plans that will require higher taxes and fees upfront in return for a stronger economy and better quality of life down the road. ¶ One of the key tests of democratic self-government is each generation’s ability to overcome chronological myopia and provide for the future that its children and grandchildren will enjoy. Throughout history, Americans have found a way to do that—from the canals and roadways of the early 19th century to the Civil War-era Transcontinental Railroad to Theodore Roosevelt’s Inland Waterways Commission to FDR’s bridges, tunnels, and airports that put millions back to work during the Great Depression, to Dwight Eisenhower’s visionary Interstate Highway System, begun in the 1950s and still benefitting the nation two generations later. It remains to be seen whether today’s Americans will muster the will and resources to do as well for their posterity.

#### Only the plan can overcome institutional and political barriers to intermodality

CBO 12 (Congressional Budget Office, “Infrastructure Banks and Surface Transportation,” July 2012, p.8, http://www.cbo.gov/sites/default/files/cbofiles/attachments/07-12-12-InfrastructureBanks.pdf)

Because an infrastructure bank would most likely be¶ designed to evaluate projects on the basis of their overall¶ benefits and costs, it could select projects for which¶ there have typically been barriers to completion, such as¶ projects involving multiple modes of transportation or multiple government jurisdictions.24 Currently, because¶ of choices made by the Congress regarding how to allocate¶ funds among transportation projects, funding tends¶ to favor projects that involve a single mode of transportation¶ or a single jurisdiction, and more complicated¶ projects can face substantial barriers to financing. An¶ infrastructure bank—through a subsidy and federal¶ involvement—could provide incentives for multiple¶ jurisdictions to cooperate. In addition, eliminating the¶ distinctions among transportation sectors when making¶ funding decisions would allow funding streams to be¶ unconstrained by the type of project being proposed¶ (say, mass transit versus highway) and might facilitate¶ connectivity in the transportation network.25

#### Intermodality is key to supply chain effectiveness

Jackson 7 (Colonel Donald E. Jackson, Jr., United States Army, M.A. Strategic Studies, U.S. Army War College, USAWC Strategy Research Project, “Leveraging the Strategic Value of the U.S. Inland Waterway System,” 3-30-2007, http://www.dtic.mil/dtic/tr/fulltext/u2/a469583.pdf)

Finally, effectively integrating the capabilities of road, rail, and waterway maximizes the¶ throughput capability of existing infrastructure and provides needed redundancy for shippers.¶ USDOT coordination of the U.S. Interagency effort includes liaison with the Executive Branch¶ Departments of Commerce, Homeland Security, Agriculture, and Defense, as well as local and¶ state governments and industry stakeholders. Strategic analysis provides the critical path in¶ determining the best method of connecting the origins of freight with domestic and international¶ destinations. Working with its national partners USTRANSCOM is mapping the Department of¶ Defense (DOD) deployment and distribution process, from end to end, beginning with the point¶ of origin of a commodity, the “factory”, to the forward-most point of distribution or point of effect¶ where material travels its last mile to the “foxhole”.45 This initiative assists identification of¶ organizational, process, and information technology gaps that enable process improvements¶ through joint solutions.46 This USTRANSCOM model provides some potential strategies that¶ could be adopted at the national level to achieve effective integration in the commercial sector.¶ Intermodal facilities and operations are key to achieving effective integration. Intermodal¶ facilities, such as inland ports, serve as cargo transfer points connecting competing industries in¶ the freight transportation market. Intermodal facilities are the decisive points along the critical¶ path of freight movement, effectively leveraging capacity and capability of multiple transportation¶ industries. Unfortunately, many of these facilities have insufficient cargo handling infrastructure,¶ minimizing effectiveness of a multi-mode approach to cargo transfer. These cargo transfer¶ points are often excluded from state and local urban planning efforts, limiting access and¶ constraining integration efforts. These constraints increase the costs of cargo transfer and thus¶ marginalize efficiencies gained through integrating transport modes. The Framework¶ recognizes this as a challenge, targeting existing facility improvement at these critical junctions¶ as an objective to eliminate bottlenecks, focusing resources to developmental infrastructure at¶ existing intermodal connectors.47

#### Effective intermodal supply chains are key to logistics ((rapid deployment and effective sustainment)) – vital to deterrence and disaster relief

USMA 9 (U.S. Maritime Administration, “America’s Ports and Intermodal Transportation System,” January 2009, http://www.mtsnac.org/docs/2009/America's%20Ports%20and%20Intermodal%20Transportation%20System%20(Jan%2009).pdf)

The lifeblood of America’s economy passes through our ports – everyday, trains, trucks,¶ barges and ships move goods into, around, and through our ports to meet the commercial¶ and military needs of the Nation. Ports receive shipments from farms and factories¶ destined for markets throughout the world. Goods flow from factories in Europe, South¶ America, and the Far East through our ports on the way to factories and stores throughout¶ the country. Petroleum, chemicals, and raw materials move across the oceans through¶ our ports to reach U.S. industries.¶ The seas and rivers, ports and terminals and their nearby transportation links, and interstate¶ rail, road, and marine highway systems are the critical and intertwined transportation¶ network that “delivers the goods.” Containers, bulk, breakbulk, neo-bulk, project¶ cargo, automobiles and trucks, and petroleum and other bulk liquids all flow through¶ our transportation system that begins at our Nation’s ports. Such a system requires an¶ advanced and sophisticated network of not only ports and terminals, but fleets of trucks,¶ rail cars, and barges to carry this cargo to the customer and to fuel our economy. It also¶ requires highly trained personnel both ashore and afloat. And it needs support services¶ and industries to keep the network up and running. A failure of any one of these parts¶ prevents the efficient functioning of the rest of the system.¶ As our economy has become interdependent on the global economy, the U.S. Gross Domestic Product (GDP) has grown exponentially. This global interdependence among trading nations has brought prosperity, but has also placed additional demands on our ports and the end-to-end delivery system of imports and exports that are so vital to America’s economic growth and our role as the world’s leading economic power.¶ Although foreign trade accounted for only 13 percent of U.S. GDP in 1990, it grew to nearly 22 percent by 2006. Recent projections indicate that foreign trade will be equivalent to 35 percent of GDP by 2020 and may grow to 60 percent in 2030. As foreign trade continues to grow, marine transportation will become even more important to our economy. Approximately 90 percent of America’s overseas foreign trade tonnage is moved by ship. And, America’s network of waterways moves more than 2.3 billion tons of domestic and foreign cargo each year.¶ The transportation network that serves our economy also benefits our national defense. The movement of military and related traffic essential to national security relies heavily on our commercial transportation system. Ports moving commercial and consumer goods also move military equipment and supplies that enable the United States to project its power anywhere in the world. Robust intermodal connections are necessary to support the flow of global commerce and the deployment of military forces. Only focused, sustained attention to both business and military needs will allow for a truly seamless, integrated intermodal freight transportation system.¶ Until recently, additional capacity demands could be met because there was always a way to build another terminal or add another highway lane. That is no longer the case. Today, our Nation’s ports and intermodal systems face a growing capacity crunch.¶ We are confronted with capacity stretched to its limits, aging and decaying infrastructure, multiple demands for land and high construction costs. And when a problem occurs in one part of the system, it can have a ripple effect throughout the entire waterborne and surface transportation network.¶ Today, there is an urgent need to address congestion’s systemic challenges. Although ports and their intermodal connections are continually making improvements, any benefits can be quickly offset by the rapid pace of growth in shipments and the relatively slow and often daunting process of financing and constructing new infrastructure.¶ Clearly, there is a need to better manage the transportation process “end to end.” We must improve efficiency, reliability and cost savings and provide environmentally sustainable world class service to customers. But the decisions of today and tomorrow are much more complex than they were 20 or 30 years ago.¶ Now, transportation decision makers in metropolitan planning organizations, cities, individual states and the Federal government must consider not only the “why” and “how” of infrastructure needs, but also their impact on the environment, local communities and quality of life of future generations.¶ Given the enormity and breadth of these challenges, it is imperative that the United States adopt a truly national freight transportation policy. We must ensure the efficient movement of goods in the domestic and global supply chains while promoting a productive and competitive U.S. economy and addressing national defense needs.¶ In order to accomplish these goals, individual stakeholders, as well as individual segments of the transportation system, must no longer stand alone but attain full integration into the overall solution. The Nation’s ports should serve as the focal point for present and future efforts.¶ America’s Ports and Intermodal Transportation System¶ In the past, transportation management, planning, and funding were often viewed from an individual modal perspective, such as rail, road, and marine transportation. But today’s transportation decisions are far more complex and require a system-wide perspective. The benefits are clear. With a nationwide understanding of common problems and agreement on broad goals for the way forward, ports, governments and the private sector will be better able to collaborate to achieve solutions to improve our Marine Transportation System and freight movement. The Maritime Administration is committed to this effort and to working with our stakeholders to ensure the Nation’s ability to move goods and people, meet military needs and support and grow our economy.¶ To move forward and facilitate consensus among the various interests serving the Nation’s transportation system, the Maritime Administration prepared this report, “America’s Ports and Intermodal Transportation System.” The Report identifies key system-wide findings and challenges in the vital strategic areas of end-to-end freight shipments, water access, ports, terminals and landside access and interstate rail and highways. The Report also discusses significant institutional challenges including governance, the role of private industry, financing the transportation system and infrastructure development.¶ The Report’s primary goal is to ensure that the entire Marine Transportation System develops capacity in concert with other transportation modes. For example, a port that increases its capacity “inside the gate,” with no corresponding improvements in the approach channels, intermodal connectors and rail, road and marine highway corridors that serve it, will realize little overall system gains. The Report’s findings and recommendations will help ensure that the U.S. port system can effectively and efficiently respond to the challenges of future growth in freight shipments in the coming years and support our Nation’s needs.¶ The Report is also fully aligned with the U.S. Department of Transportation’s National Strategy to Reduce Congestion on America’s Transportation Network. The Department of Transportation recognizes that congestion across all transportation modes continues to limit the predictable, reliable, and efficient movement of people and goods, and poses a serious threat to continued economic growth. Since 2006, there have been several Department-wide efforts to address congestion at our Nation’s gateways and on our highway corridors, bridges, and roads. Four of these initiatives support the Report’s recommendations and are discussed throughout this analysis:¶ • Reduce bottlenecks at major freight gateways, including Southern California;¶ • Develop new interstate highway and rail capacity through a¶ “Corridors of the Future” concept;¶ • Encourage states to consider enacting public-private partnership laws; and¶ • Implement technological and operational improvements.¶ As summarized here and explained further throughout this Report, a focus on three areas – Deep Water Access, Ports and Terminals, and Interstate Corridors – as well as on institutional challenges, will help to achieve national objectives to reduce congestion and improve transportation infrastructure.¶ III. The Marine Transportation System¶ Transportation is a system of systems, an integrated network, not just within the United States, but also around the world. Our domestic network must operate seamlessly in order to keep America competitive in the global transportation and logistics network. Ports have become the nexus of that system.¶ The Nation’s port system is made up of thousands of large, medium, and small terminals and intermodal facilities in approximately 360 commercial sea and river ports. More than just facilities for loading and off-loading cargo, they are a great engine of economic growth. A recent study reported by the American Association of Port Authorities (AAPA) found that in 2006, U.S. deep-draft seaports and seaport-related businesses generated approximately 8.4 million American jobs and added nearly $2 trillion to the economy. But their success story does not end there.¶ Ports are not limited to working with just the maritime sector. According to the AAPA, port authorities may also have jurisdiction over airports, bridges, tunnels, commuter rail systems, inland river or shallow draft barge terminals, industrial parks, Foreign Trade Zones, world trade centers, terminal or short-line railroads, ship repair, shipyards, dredging, marinas and other public recreational facilities. Ports may also undertake community or regional economic development projects beyond those directly benefiting the port itself.¶ However, ocean port operations are decentralized and governed by local port authorities that may or may not own and/or operate significant portions of the port. There is also little coordination of port operation at the Federal level and, thus, ports compete for both business and government funding to maintain and improve infrastructure.1¶ Distribution centers receive international containers (typically 20, 40, or 45 foot lengths) from ports, re-allocate the contents, and then re-pack the freight in 53 foot domestic truckloads to be moved to their ultimate destinations. Thousands of distribution centers have emerged in near-port areas and at key transportation nodes, further constraining capacity and prompting the call for new and innovative models to speed the movement of freight to and from our major container ports.¶ With over 85 percent of our Nation’s containerized freight flowing through 10 ports, and projections for continued increases in containerized foreign trade, there is great pressure on our port and intermodal system to use capacity more efficiently. The following pages briefly describe these 10 ports. Appendix 1 also provides a listing of major U.S. port and terminal facilities.¶ Top 10 Ports in the U.S.¶ The Port of Los Angeles¶ The Port of Los Angeles is located in San Pedro Bay, just 20 miles south of downtown Los Angeles, California. According to 2007 U.S. Census Bureau estimates, the Los Angeles metropolitan statistical area, with a population of 12.9 million people, ranked second in the country behind only New York. The port encompasses 7,500 acres, 43 miles of waterfront and features 27 cargo terminals, including dry and liquid bulk, container, breakbulk, automobile and Omni facilities.¶ In 2007, the port ranked first in terms of container volume moving nearly 5.7 million TEUs (loaded). This accounted for over 39 percent of the container traffic on the West Coast and 18.6 percent nationally. From 2002-2007, container traffic increased by 22 percent at the port.¶ Overall, more than 77 million metric tons of international waterborne cargo flowed through the port in 2007. While imports accounted for 79 percent of the total foreign trade by volume, they also accounted for 87 percent of the value. On average, over 212,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, iron and steel, heavy machinery, furniture and plastics.¶ The Port of Long Beach¶ The Port of Long Beach is also located in San Pedro Bay, California and also serves a population of 12.9 million people. The port encompasses 3,200 acres and features 10 piers, 80 berths and 71 Post-Panamax cranes. Facilities include dry and liquid bulk, container, breakbulk, and Roll-on/Roll-Off (RO/RO).¶ In 2007, the port ranked second in terms of container volume moving over five million TEUs (loaded). This accounted for over 34 percent of the container traffic on the West Coast and 17 percent nationally. Volumes actually increased slightly at Long Beach in 2007 (four percent). Over the last five years, container traffic has increased by nearly 61percent at the port.¶ Overall, more than 38 million metric tons of international waterborne cargo flowed through the port in 2007. While imports accounted for 45 percent of the total foreign trade by volume, they also accounted for 70 percent of the value. On average, over 105,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, wood pulp, iron and steel, plastics, and heavy machinery.¶ The Port of New York/New Jersey¶ The Port of New York/New Jersey is a bi-state port located on the East Coast of the U.S. With a population of 18.8 million people, the New York/New Jersey metropolitan area ranked as the most populated in the country. The port features seven cargo terminals, 54 container cranes and three cruise ship terminals. Facilities include dry and liquid bulk, container, breakbulk, and RO/RO.¶ In 2007, the port ranked third in terms of container volume moving nearly 3.9 million TEUs (loaded). This accounted for 33 percent of the container traffic on the East Coast and 13 percent nationally. Since 2003, container traffic has increased by over 30 percent at the port.¶ Overall, more than 80 million metric tons of international waterborne cargo flowed through the port in 2007. While imports accounted for 78 percent of the total foreign trade by volume, they also accounted for 75 percent of the value. On average, almost 220,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, salt and stone, wood pulp, iron and steel and beverages.¶ The Port of Savannah¶ The Port of Savannah is located in Georgia. The City of Savannah has a population of 329,000. The port encompasses 1,400 acres and includes container, breakbulk, and RO/RO facilities.¶ In 2007, the port ranked fourth in terms of container volume moving nearly two million TEUs (loaded). This accounted for 17 percent of the container traffic on the East Coast and seven percent nationally. Since 2003, container traffic has increased by more than 79 percent at the port.¶ Overall, more than 33 million metric tons of international waterborne cargo flowed through the port in 2007. Imports accounted for 60 percent of the total foreign trade by volume and 63 percent of the value. On average, almost 92,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, salt and stone, wood pulp, paper products, and plastics.¶ The Port of Hampton Roads¶ The Virginia Port Authority oversees four general cargo terminals: Norfolk International Terminals, Portsmouth Marine Terminal, Newport News Marine Terminal and the Virginia Inland Port in Front Royal. All of the terminals are operated by the Virginia Port Authority’s¶ affiliate, Virginia International Terminals, Inc. The Norfolk area, with a population of approximately 1.7 million people, was ranked 34th in the country in 2007.¶ In 2007, Hampton Roads was ranked fifth in terms of container volume moving nearly1.6 million TEUs (loaded), accounting for 13 percent of the container traffic on the East Coast and five percent nationally. Since 2003, container traffic has increased by more than 43 percent at this port.¶ Overall, more than 42 million metric tons of international waterborne cargo flowed through the port in 2007. While imports accounted for 32 percent of the total foreign trade by volume, they also accounted for 60 percent of the value. On average, almost 116,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, grains, wood, heavy machinery and paper products.¶ The Port of Oakland¶ The Port of Oakland – ranked sixth in the country – is located on the eastern shore of San Francisco Bay in Northern California – an area that is home to 4.2 million people. The port encompasses 1,210 acres and includes 20 deepwater berths and 35 container cranes (29 of which are Post-Panamax). Additionally, the port boasts 10 container terminals and 2 intermodal rail facilities.¶ In 2007, the port ranked fifth in terms of container volume moving nearly 1.4 million TEUs (loaded). This accounted for 10 percent of the container traffic on the West Coast and five percent nationally. Since 2003, container traffic has increased by more than 34 percent at the port.¶ Overall, almost 17 million metric tons of international waterborne cargo flowed through the port in 2007. Imports accounted for 53 percent of the total foreign trade by volume but 68 percent of the value. On average, almost 46,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, wood pulp, iron and steel, beverages and fruit and nuts.¶ The Port of Charleston¶ The Port of Charleston is home to 630,000 people and located in South Carolina along the U.S. East Coast. Three of the port’s five terminals support container traffic and boast 21 cranes (16 of which are at least Post-Panamax in size). The other two terminals support breakbulk cargoes with the capability of handling RO/RO cargo as well.¶ In 2007, the port ranked seventh in terms of container volume, moving almost 1.4 million TEUs (loaded). This accounted for 12 percent of the container traffic on the East Coast and five percent nationally. Since 2003, container traffic has increased by over 12 percent at the port.¶ Overall, more than 19 million metric tons of international waterborne cargo flowed through the port in 2007. Imports accounted for 64 percent of the total foreign trade by volume but 67 percent of the value. On average, over 53,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, iron and steel, salt and stone, vehicles and paper products.¶ The Port of Houston¶ The Port of Houston is centrally located on the U.S. Gulf Coast and is home to a population of 5.6 million people. The port has the benefit of being located along the Gulf Intracoastal Waterway, providing a navigable inland waterway route along the Gulf Coast. Port facilities include general cargo, containers, dry bulk, and breakbulk.¶ In 2007, the port ranked eighth in terms of container volume, moving almost 1.4 million TEUs (loaded). This accounted for 68 percent of the container traffic on the Gulf Coast and five percent nationally. Since 2003, container traffic has increased more than 49 percent at the port.¶ However, a majority of the cargo moving through the Port of Houston moves on vessels other than containerships. The port ranked first by tonnage in international cargo moved in 2007 (133 million), but only 12 percent of that cargo was carried on container vessels. Exports accounted for 65 percent of the total foreign trade by volume, but only 47 percent of the value. On average, nearly 365,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of petroleum, organic chemicals, salt and stone, grains, and byproducts of iron and steel.¶ The Port of Seattle¶ The Port of Seattle is located in the Puget Sound area of the Pacific Northwest and is home to 3.3 million people. The port features four container terminals with 10 container berths and 25 cranes (7 Super Post-Panamax and 14 Post-Panamax). The port also includes two major rail hubs and two major Interstate Highways within five minutes of the terminals.¶ In 2007, the port ranked ninth in terms of container volume, moving nearly 1.3 million TEUs (loaded). This accounted for nine percent of the container traffic on the West Coast and four percent nationally. Since 2003, container traffic has increased by nearly 57 percent at the port.¶ Overall, nearly 21 million metric tons of international waterborne cargo flowed through the port in 2007. While imports accounted for 46 percent of the total foreign trade by volume, they also accounted for 76 percent of the value. On average, almost 56,000 tons of cargo moved through the port daily in 2007, with the top five commodities consisting of salt and stone, grains, seeds, wood and petroleum.¶ The Port of Tacoma¶ Like the Port of Seattle, the Port of Tacoma is located in the Puget Sound area of the Pacific Northwest and is home to the same 3.3 million people. The port encompasses 2,400 acres, includes two transcontinental railroads and several Interstate Highways within minutes of the terminals. In addition to container traffic, the port also supports bulk, breakbulk, and RO/RO facilities.¶ In 2007, the port ranked tenth in terms of container volume, moving over 1.1 million TEUs (loaded). This accounted for eight percent of the container traffic on the West Coast and four percent nationally. Since 2003, container traffic has increased by nearly 22 percent at the port.¶ Overall, more than 18 million metric tons of international waterborne cargo flowed through the port in 2007. While imports accounted for 35 percent of the total foreign trade by volume, they also accounted for 81 percent of the value. On average, almost 50 thousand tons of cargo moved through the port daily in 2007, with the top five commodities consisting of seeds, grains, wood, iron and steel, and salt and stone.¶ Small and Medium Size Ports¶ Not to be overlooked, our small and medium size ports play a vital role in the Nation’s port system. These ports serve specific market niches and have developed special handling techniques for specific commodities, such as fresh produce, frozen meats, and building materials that are containerized and/or palletized. They can also be the sole source of commodities for isolated communities. Also, these ports provide redundancy and resiliency for emergency preparedness.¶ Indeed, the efficient and smaller ports that dot the U.S. coasts, Great Lakes, and inland waterways offer a range of options in the event of primary port slowdowns or stoppage due to natural or man-made events, thereby minimizing the impact on the entire transportation system. Still other ports can serve to relieve pressure and congestion when other nearby large ports approach capacity limits.¶ Small and medium ports also play a vital role in the local communities they serve. For example, the port of Anchorage, while not considered a major port in the global system, handles more than 90 percent of the commodities consumed and produced in the entire state of Alaska.¶ As noted, small and medium size ports may specialize in niche commodities upon which entire industry sectors rely. For example, the port of Southern Louisiana handles approximately 50 percent of bulk grains produced in the entire U.S. Midwest for export. Its importance to the Nation was never more apparent than when the port was closed in 2005 by Hurricane Katrina just prior to the harvest season. Fortunately, it reopened in time for the surge of operations and the season was a success.¶ The variety and versatility of America’s ports demonstrates that the Marine Transportation System must efficiently handle all types of cargo. In recent years, attention has revolved around the growth in merchandise shipped in containers and the increasing size and number of vessels calling at ports, straining distribution centers, railroads, and highways. However, bulk, breakbulk, neo-bulk, project cargo, automobiles and trucks, petroleum and other bulk liquids arriving at our Nation’s ports also all flow through our transportation system – whether on the water, highways, rail or through pipelines. These cargoes account for 83 percent of our waterborne freight by tonnage, and are vital to the Marine Transportation System and our economy.¶ National Defense¶ The same network that serves the U.S. economy also supports our national defense. Our Armed Forces can project power anywhere in the world through the same commercial transportation system that provides us with goods and commodities. Every day, the United States military moves assets across the Nation to the fighting front, using the seaports for deployment of equipment. When troops are deployed, the ports wear two hats as they work with both the military and commercial sector to efficiently move the goods for the economy and national defense.¶ Employment Opportunities¶ The Maritime Administration further expects that continued growth in foreign trade and domestic freight movements – along with changing technology – will create new employment opportunities in the trucking, rail, and maritime industries. In many cases, these new workers must be highly skilled and well qualified. This all translates into more high-paying jobs in our marine terminals, transportation company offices, trucking firms, railroads, shipyards and on board our ships.¶ IV. Institutional Challenges¶ America’s top ten U.S. container ports experienced a¶ staggering 54 percent increase in container movements¶ between 2001 and 2006. Many of our ports are already¶ nearing the limits of existing capacity, and the system¶ faces a projected doubling in cargo over the next 10 to¶ 15 years. Port capacity, however, is not our only challenge.¶ Since 9/11, there has also been a significant increase¶ of port security measures, including capital improvements,¶ training and operating expenses. Some examples¶ of security expenditures include the implementation of¶ Transportation Worker Identification Credential (TWIC),¶ enhanced cargo screening and the Port Security Grant¶ Program. No one denies the importance of these measures¶ for the ports. However, every dollar spent on security¶ is one less spent on capacity improvements.¶ The Port Security Grant Program has helped offset some¶ of the security improvement costs by funding security¶ planning, perimeter and surveillance equipment, patrol craft and other necessary items.¶ However, the grants are not available to fund the follow-on maintenance and staff required¶ to keep the equipment operational and in service. In the long term, this may make some¶ of the new activities difficult to sustain without a long-term commitment.¶ Port development has also become a costly and time consuming process. Just obtaining¶ the necessary permits can take years; project completion can run into decades. We face¶ similar challenges with dredging, both to maintain existing channel depths and deepening¶ and widening channels to accommodate the newer, larger vessels.¶ In addition, shipping raw materials needed for U.S. manufacturing brings additional challenges¶ as they compete with containerized freight for transportation infrastructure. Export¶ raw materials and bulk commodities such as grain and soda must also vie for their share¶ of the goods movement system. And where demand outpaces capacity, the system underperforms¶ and costs increase.¶ Other factors also affect capacity. These include significant environmental challenges, a¶ limited supply of land to expand, congested road and rail linkages and a shortage of labor¶ to handle new cargo demands. The whole system is overtaxed.¶ As container congestion increases, the pressure on bulk and breakbulk terminals will also increase. Often these niche terminals are crowded out by containerization. That is the bad news. The good news is that bulk and breakbulk vessels are the most adaptable to congestion challenges and can shift towards less congested routes. However, the same challenges of land and water access will limit their options in the future.¶ Adding rail capacity is costly and will take time. A recent study estimates that excluding the cost of land acquisition, an investment of $148 billion of infrastructure expansion over the next 28 years is required to keep pace with the projected 88 percent increase in freight rail demand.2¶ Our ability to build more roads is also severely limited. Most urban areas do not have the space to widen existing roads or build new ones. Plus, the cost of construction is prohibitive and prospective projects bring, in many cases, local opposition that can significantly delay or stop projects. In fact, the Highway Trust Fund – a key public highway funding source – is expected to be depleted by 2009.¶ Changing trends in transportation also bring new challenges. For example, the expansion of the Panama Canal will open new opportunities for larger container ships to call at U.S. East and Gulf Coast ports. Coupled with the expansion of marine terminal and intermodal assets at facilities, such as the Ports of Virginia and Houston, this will lead to a significant increase in container traffic calling at Gulf Coast and Eastern ports. However, with the continued growth in foreign trade this shift will do little to relieve congestion at our West Coast ports.¶ Taken together, declining public funding, scarcity of land, regulatory barriers, environmental concerns and other external factors clearly demonstrate that the United States must find new and innovative approaches to care for and make the best use of our current transportation infrastructure.¶ Changing and Emerging Trends¶ The advent of the shipping container had a dramatic and profound effect on transportation and our society. It enabled the manufacturing of goods to take place thousands of miles from where they would be eventually purchased or consumed. It triggered major shifts in international trade routes, altered the gateways that handled the goods, and shifted domestic freight corridors.¶ However, the container revolution is but the latest in a series of tectonic shifts in transportation and their effect on how we live and work. Long before containers, the development of the railroads in the 19th century triggered a shift from waterborne transportation to land, which in turn allowed communities to develop in States and territories where it had been impractical to do so before. The Interstate Highway System had a similar influence on transportation and American society. We became a nation on the move and that mobility is now woven into our national character.¶ There is no doubt that transportation will continue to change at a remarkable pace. Future developments and rapidly emerging factors will not only determine how and where goods move, but will influence how we live. For example, environmental concerns – both at the global and community level – could affect the methods and cost of freight movement.¶ In the first half of 2008, soaring energy costs – especially petroleum¶ – boosted the price of transportation, increasing pressure to manufacture¶ products closer to the consumer. Increased exports from the U.S. are¶ also affecting trade flows. Even climate change presents new opportunities¶ as new water routes open in the Arctic, which had heretofore been¶ inaccessible. All of these factors are likely to affect the supply chain and¶ the economy.¶ Developments like these can also cause shifts in the Marine Transportation¶ System that often outpace our ability to develop the policies, infrastructure,¶ and technologies to accommodate them. Careful planning is essential¶ to forecast and manage change before it overwhelms the Marine¶ Transportation System.¶ Environmental¶ Air quality compliance issues, particularly emissions on the U.S. West Coast, are of¶ concern. Options for reducing emissions include using alternative fuels and emission¶ reduction technologies for large vessels approaching populated areas; employing shoreside¶ electricity (also known as “cold ironing”) for ships in port; and replacing or upgrading¶ cargo-handling equipment in ports and the dray trucks that move freight into and out of¶ them.¶ Policy implemented by state or local authorities, instead of at the Federal or international¶ level, can negatively impact international trade and our ability to uniformly improve air¶ quality. For instance, some jurisdictions are considering stricter air quality standards and¶ legislating specific practices to reduce emissions. States, municipalities, and ports are¶ also contemplating various fees to finance the cost of implementing these requirements.¶ However, if not properly enacted, these policies could require one costly ship configuration for one port, and another costly configuration for a different one. On the international level, global adoption of a carbon cap-and-trade policy could lead to wholesale changes in trade routes and volumes.¶ Environmental issues are not limited to just air quality. There are also efforts to limit¶ the spread of invasive non-native aquatic species by regulating shipboard discharges¶ of water, including ballast water, and new standards could significantly affect marine transportation.¶ Health Issues¶ The side effects of freight transportation in and near ports situated in urban, high population areas have been linked to health problems, particularly those associated with air emissions. Ships, trucks, trains, and cargo-handling equipment emit nitrogen oxide (NOx), diesel particulate matter (PM) and other pollutants. NOx is a key contributor to smog and ozone formation, while diesel PM contains unhealthy air contaminants. As cargo volumes continue to increase, ports, industry and local, state, and Federal government agencies must determine how to best minimize these pollutants and reduce their harmful effect on the community.¶ Some jurisdictions are already taking action. One example is the Port of Long Beach, which, combined with the Port of Los Angeles, forms the largest container port complex in the U.S. Port-related activities in Long Beach emit about 48 tons of NOx and 2.5 tons of diesel PM each day, or about ten percent of the region’s pollutants. These are from a combination of sources, including ocean-going vessels, cargo handling equipment, trucks in the port, harbor craft, and locomotives.¶ Recognizing the health hazards these emissions can represent, authorities have developed a Clean Air Action Plan aimed at reducing emissions for each of these sources.¶ The plan eliminates older, less clean diesel trucks by helping to finance a new generation of clean or retrofitted vehicles and equipping all major container cargo and cruise ship terminals with shore-side electricity so that vessels at berth can shut down their diesel-powered auxiliary engines. The plan also calls for reducing ship speeds when entering¶ or leaving the harbor, using low-sulfur fuels, and other emission-reduction measures and technologies. Some estimates project that implementation of this plan would cut PM¶ pollution by 47 percent, NOx emissions by more than 45 percent, and sulfur oxides by¶ 52 percent.3¶ Several other communities and ports around the country, such as Seattle and Oakland, are considering variations of this plan. In addition, some states, municipalities, and ports are contemplating various fees to finance the cost of this environmental remediation.¶ Energy¶ In spite of the recent decline in price, the cost of fuel will have a profound impact on the entire Marine Transportation System, both in the short and long term. In 2000, when oil prices were $20 per barrel, it cost only $3,000 to ship a standard 40-foot container from Shanghai to the U.S. East Coast (including inland costs). By the spring of 2008, however, shipping the same container cost $8,000, and approaching $200 per barrel of oil, it cost $15,000.4 In addition to increasing overall costs, the imbalance between the efficiencies of various methods of transportation is likely to trigger a shift of freight between modes. For example, a truck can move one ton of cargo 155 miles using a gallon of fuel. However, railroads can move the same cargo 413 miles, and inland marine towing vessels can transport it 576 miles. As the price of fuel increases, the resulting modal shift could play a significant role in shaping our future international trade routes, selecting gateway ports and determining which interstate corridors are sustainable into the future.¶ Exports¶ Several factors have combined in recent years to trigger a rapid increase in U.S. exports. A few years ago, most export containers were empty and going overseas only to be refilled with imports destined for the U.S. Today, they are being filled with grain and other produce, paper and metals for recycling, and goods manufactured in the U.S. for consumption, or use in other countries.¶ A factor driving this trend is the decline of the U.S. dollar which makes U.S. goods sold overseas cheaper and imports to the U.S. more expensive. There are other reasons too. For example, the rapid increase in the cost of steel and other raw materials, combined with upward construction trends in developing countries, such as China and India, have also triggered a surge in recycling. Containers are perfect to export these materials from the U.S. for re-use in a myriad of construction and manufacturing markets abroad.¶ Port Governance and the Role of Private Industry¶ Overview¶ According to AAPA, there are 183 U.S. commercial deep draft ports dispersed along the Atlantic, Pacific, Gulf and Great Lakes coasts. This includes seaports of Alaska, Guam, Hawaii, Puerto Rico, Saipan, and the U.S. Virgin Islands.¶ However, port governance in the United States varies widely and consists of both public and private entities. These organizations are found throughout all levels of government, i.e., Federal, state and local. Port authorities are usually instrumentalities of state or local governments that are established by enactments or grants of authority by the state legislature.¶ In contrast to other countries, the U.S. Federal Government does not control ports or port authorities during peacetime. However, port activities are subject to U.S. law and jurisdiction regarding security, safety, environmental protection, customs and immigration.¶ Neither the U.S. Congress nor any Federal agency has the power or right to appoint or dismiss port commissioners or staff members. However, the U.S. Constitution specifically grants Federal jurisdiction over navigable waters of the United States, including deep draft channels and harbors. Generally, this authority is delegated to the U.S. Coast Guard and the U.S. Army Corps of Engineers.¶ Federal Governance¶ The issues facing the transportation system are not going unnoticed. Across the spectrum of government and the private sector, there is growing sense of urgency that that the transportation system must be able to meet present and future economic and national security demands.¶ Because commercial waterborne transportation impacts every citizen’s livelihood and way of life, it is essential that the Federal Government ensure the continuance of a safe, economically efficient, equitable, and environmentally-sound intermodal transportation system.¶ The Transportation Research Board (TRB) – one of the six major divisions of the independent National Research Council – has acknowledged that the Marine Transportation¶ System is a joint public-private enterprise, the same as other parts of the Nation’s transportation system. Private stakeholders own and operate vessels and terminals, while the public sector provides some infrastructure and is responsible for maintaining the operation of the system in a safe, secure, and environmentally-responsible manner.¶ The TRB identified the Federal Government’s current role in the Marine Transportation System as:¶ • Constructing, operating and maintaining the navigable channels;¶ • Managing the traffic on the waterways;¶ • Providing mariners with aids to navigation, charts and information on water and weather conditions;¶ • Regulating the safety and environmental compatibility of vessels;¶ • Responding to marine accidents that threaten public safety and the environment;¶ • Helping to finance the highways that connect marine ports and terminals to the larger transportation system; and¶ • Ensuring the security of the Marine Transportation System and its many¶ components.5¶ However, the Marine Transportation System cannot be viewed in isolation. The United States has built a vast and highly productive network of transportation assets based on the strengths of the individual modes – air, marine, highway, transit, and rail. Each is important and each plays a critical role. But due to our increasing dependence on waterborne trade, the marine mode is increasingly important to meet our national economic and security objectives.¶ Americans require and deserve the safest and the most efficient transportation system we can provide. The Federal Government’s challenge is to blend these separate transportation modes into a single, fully coordinated system – one that connects and integrates the individual modes in a manner that is at once safe, economically efficient, equitable, and environmentally sound.¶ Today, 18 Federal departments and agencies play a role in the Marine Transportation System, with no single entity designated as the lead agency. This presents challenges in both policy formulation and the coordination and delivery of the broad range of Federal Government services.¶ As the Marine Transportation System approaches capacity, stakeholders are increasingly calling for the Federal Government to play more of a leadership role in dealing with the many challenges and to improve the efficiency and quantity of the services it delivers. The Federal Government should identify projects that have national significance and serve as the broker in developing funding partnerships for them.¶ The different Federal agencies involved in marine transportation separately manage their individual pieces or sections of the system. Essentially, Federal management ends at each agency’s organizational boundary – whether this is most effective or not, or if it makes good reason or not. Listed below are some of the non-security Federal functions related to the marine component of the U.S. transportation system and the agencies with current oversight and control.¶ Inland waterway lock maintenance, replacement, and development –¶ U.S. Army Corps of Engineers (USACE)¶ • Design¶ • Approval¶ • Construction Contracting¶ • Maintenance¶ Permits for channel/harbor maintenance and deepening – USACE¶ Aids to Navigation and Vessel Traffic Services – U.S. Coast Guard (USCG)¶ Ship owner’s nationality verification – USCG¶ Marine safety and regulations – USCG¶ • Vessel documentation and inspection – USCG¶ • For new vessel construction/reconstruction¶ • For vessel surveys and repairs¶ • Development of construction and safety regulations for vessels¶ Mariner Training and Education – Maritime Administration¶ Mariner certification and documentation – USCG¶ • Mariner testing and certification¶ • Mariner documentation data systems¶ Great Lakes pilotage – USCG and Saint Lawrence Seaway Development Corporation¶ Licensing of deep water ports – Maritime Administration and USCG¶ Environmental protection (e.g., pollution prevention, ballast water management, spill cleanup) –¶ • National Pollution Funds Center (USCG)¶ • Marine safety and environmental science functions (USCG)¶ • Marine pollution education (USCG)¶ • Marine pollution prevention programs (USCG and Maritime Administration)¶ Charting services and weather and tide data – National Oceanic and Atmospheric Administration (NOAA)¶ Domestic and international regulations and rulemaking related to fair competition laws – Federal Maritime Commission (FMC)¶ Infrastructure and info-structure development and maintenance –¶ • Construction approval and inspection of waterside port facilities (USACE, Maritime Administration, USCG and NOAA)¶ • Bridge administration (USCG)¶ International marine mode representation in overseas venues – Department of State, USCG, and Maritime Administration¶ 􀂬 • Development of International Standards in Maritime Safety¶ 􀂬 • Development of International Standards for Marine Environmental¶ Protection¶ In December 2004, the President formed the Committee on the Marine Transportation System (CMTS) to provide a coordinating body among Federal agencies. It is comprised of the 18 entities that have a role in the Marine Transportation System and brings together the authorities, resources, or capabilities of multiple Federal agencies to resolve large or complex issues.¶ State and Local Governance¶ State and local governments play an equally important role in the transportation system. All strive to provide the safest, most efficient and reliable transportation system possible within their jurisdiction, while maximizing the economic benefits for their citizens. They also collaborate to provide combined resources to address regionally significant projects and issues. State and local governments also work with the Federal Government to identify and fund projects of national significance within their jurisdiction.¶ This multi-jurisdictional cooperation is already showing solid results. For example, the Department of Transportation spearheaded the development of the Southern California National Freight Gateway Collaboration as a major component of the Department’s initiative to reduce congestion.¶ Comprised of leaders representing Federal Government, State of California, local governments, ports, metropolitan planning organizations and other stakeholders, the Collaboration will address the challenge presented by the record growth in freight moving through the ports of Long Beach and Los Angeles. In fact, more than 44 percent of the Nation’s imported containerized goods move through these ports to destinations throughout the country.¶ The Collaboration will assist the affected agencies and interests (e.g., environmental, community and business interests) to expeditiously address various concerns, issues and opportunities facing the Southern California National Freight Gateway. However, the Collaboration will not act as “super-decision-makers”; that power will be left to existing authorities.¶ Through this innovative approach, the Collaboration identifies and focuses on concerns, issues, or opportunities in these initiatives and assists the constituency to address them – often through public participation and stakeholder involvement with the appropriate agencies.¶ In some cases, the Collaboration may simply work to see that the various initiatives are better coordinated, delivered on time and functioning in an appropriate manner. In other situations, the Collaboration has begun to explore priority topics, such as the movement of freight, public health, safety, environmental and community issues and economic development and opportunities.¶ State, regional, and local governments play many roles in today’s Marine Transportation System. States’ departments of transportation and metropolitan planning organizations identify, prioritize, and allocate funding for transportation projects. While these are local decisions, they significantly affect ports, industries, or consumers in the transportation system. However, these local decisions should not be made in isolation; they should take into consideration the national system.¶ Many ports function as a component of city or municipal governments. Port terminals are often leased by the port authority to individual private sector tenants. As such, investment and policy decisions that have an impact on individual port capacity and efficiency are often jointly determined by local governments and their private sector tenants.¶ Many of the large and medium sized ports have state and local port authorities which own public terminals and related facilities. Public sector involvement has traditionally been due to the state and local economic benefits that accrue from port operations and the large capital investments necessary to build and maintain infrastructure. As noted above, while some port authorities operate terminals, many others lease terminals to private corporations. There are also many terminals in operation on the coasts and along inland water-¶ ways that are privately owned and operated. All of these ports and terminals make up a network that is vital to the health of the transportation system.¶ State and local governments also share a problem with their Federal counterparts. The cost to replace or expand needed infrastructure continues to rise. In many cases, the cost is beyond the capability of a single entity, such as a state department of transportation, to bear. In addition, the complexity and interrelated goals and responsibilities of public and private sector freight stakeholders underscore the importance of developing new funding mechanisms for the transportation system.¶ Funding the Transportation System¶ The Federal Government relies heavily on general revenues to fund the Marine Transportation System, while funding for aviation and highways relies almost exclusively on collections from users of the systems that are placed in a trust fund.¶ In 2002, the Government Accountability Office noted that traditionally, Federal participation in the maritime industry has been directed mainly at projects related to “waterside” issues, such as keeping navigation channels open by dredging, icebreaking, or improving the system of locks and dams; maintaining navigational aids such as lighthouses or radio systems; and monitoring the movement of ships in and out of the Nation’s coastal waters.¶ Federal participation has generally not extended to “landside” projects related to port capabilities, such as building terminals or piers and purchasing cranes or other equipment to unload cargo. Some maritime stakeholders, particularly port owners and operators, have now proposed using a portion of customs duties for infrastructure improvements to the Marine Transportation System. They point out that the Marine Transportation System generates billions of dollars in revenue, and some of these funds should be returned to maintain and enhance the system. However, unlike transportation excise taxes, customs duties are taxes on the value of imported goods paid by importers and ultimately their consumers – not on the users of the system – and have traditionally been viewed as revenues to support the Federal Government’s general activities.6¶ Public-Private Partnerships¶ Today, public-private partnerships are increasingly viewed as a major component of funding and developing a seamless, reliable, and cost-efficient 21st century national transportation system. In a 2004 report to Congress, the Federal Highway Administration (FHWA) found that capital-intensive highway and transit projects benefit from them. And some of these partnerships are also involved in the actual management of assets, such as ports and terminals.¶ Banks and private investment firms are now investing heavily in private infrastructure, including highways, bridges, and ports. States such as Texas, Virginia, Florida, and Georgia are relying more heavily on private capital to expand their highway systems. Billions of dollars are flowing into these projects.¶ Private investors are looking for opportunities to invest in infrastructure and know how to measure economic costs and benefits to ensure that the public interests in transportation projects are being met. Partnerships in marine terminals are seen as a wise investment that can pay off by creating more efficient terminals that compete for business while keeping local jobs and paying into the local and state tax base.¶ An excellent example of a public-private partnership delivering real world benefits is the new APM Terminal in Portsmouth, Virginia. APM Terminals North America opened a new 55-foot deep-water container terminal, which is now the largest privately-owned container terminal in the United States. It is also the third-largest container terminal in the United States and is capable of handling one million TEUs annually and has the potential to expand to more than two million TEUs.¶ The project is the largest private investment in the history of the Hampton Roads region. APM invested $500 million to convert 600 acres into a highly automated marine terminal of 291 acres and surrounding buffer zone. The State of Virginia invested in highway improvements to access the terminal which will provide several hundred local jobs.¶ This new model also recently led to the development of the Heartland Corridor project connecting the Port of Virginia to intermodal distribution centers in Chicago. This project will link the existing rail network; build new lines where needed; and raise tunnel and bridge heights to accommodate double-stack trains. In total, the project will cost over $300 million, which will be paid for by multiple private users, the Federal government, and the states of Kentucky, Virginia, and West Virginia.¶ The Deparment of Transportation has moved both administratively and recommended to Congress to expand the use of public-private partnerships. As a result, there is now greater flexibility in financing transportation infrastructure, which includes using innovative contracting methods. In addition, recently enacted transportation legislation encourages states to explore innovative financial and contracting methods that make greater use of private sector resources.¶ The Administration has also recommended a number of legal changes to help promote public-private partnerships. For example, risk aversion and lack of experience with the private sector often drive public agencies to spend considerable time and resources developing systems for soliciting projects, ensuring adequate competition, and allocating the risks associated with designing, constructing and operating a large transportation facility.¶ These administrative procedures limit private sector flexibility and have deterred many states from exploring such partnerships. And the additional costs associated with developing a public-private partnership can also diminish the potential value these partnerships may offer. This is especially true because some of the benefits are difficult to quantify.¶ However, there can also be significant cost and time savings associated with public-private partnerships. The FHWA report showed that public-private partnerships can save from six to 40 percent of construction costs and significantly limit the potential for cost overruns. The reason for these savings is that the private sector often has more appropriate incentives to limit costs than the public sector. In addition, having one entity responsible for design, construction, and operation can result in efficiencies that are not possible with traditional design-bid-build methods.¶ Public-private partnerships can help reduce the time it takes to build a project in two ways – innovative financing and project management. Innovate financing generates the most significant time-savings and can cut many years off project delivery. Although frequently less dramatic, innovative project management also reduces the time it takes to finish a project, often saving months if not years.7¶ Clearly, the Marine Transportation System would greatly benefit from and needs greater access to these resources. But bringing an infusion of private capital to the transportation system cannot merely be a good monetary investment with a high rate of return for a¶ few people. Rather, investments in roads, rail, ports, and waterways must yield dividends for the Nation, including easing congestion, minimizing environmental impacts, spurring economic growth and helping to sustain America’s leadership in the global marketplace.¶ Types of Financing Mechanisms¶ Revenue Bonds¶ Revenue bonds are issued by governments, authorities, or public benefit corporations and are secured by a pledge of the future revenues to repay the bonds over time. In a port’s case, revenue bonds can be issued on a consolidated basis; that is, they would be backed by both aviation and seaport revenues, regardless of the projects being financed. This results in a stronger credit and a lower interest rate on the bonds. Although port revenue bonds are typically issued on a fixed-rate basis for a term of up to 25 years, variable rate bonds, and shorter-term notes also can be issued to diversify the port’s capital structure and to reduce interest costs by appealing to a wider group of investors.¶ If a port is designated as a government entity, it can issue bonds for most projects on a tax-exempt basis, meaning that investors who hold the bonds pay no Federal income taxes on the interest they receive. As a result, the port would be able to pay lower interest rates than are paid on taxable bonds, which in turn, provides for significantly lower financing costs.¶ General Obligation Bonds¶ General obligation bonds are debt instruments issued by states and local governments that can be used to raise funds for ports and public works. What makes general obligation bonds, or GO bonds, unique is that they are backed by the full faith and credit of the issuing municipality. This means that the municipality commits its full resources to paying bondholders, including general taxation and the ability to raise more funds through credit. The ability to back up bond payments with tax funds is what makes GO bonds distinct from revenue bonds, which are repaid using the revenue generated by the specific project the bonds are issued to fund.¶ GO bonds give municipalities a tool to raise funds for projects that will not provide direct sources of revenue, such as roads, bridges, parks and equipment, and, of course, port projects. As a result, GO bonds are typically used to fund projects that will serve the entire community; revenue bonds, on the other hand, are used to fund projects that will serve specific populations, who provide revenue to repay the debt through user fees and taxes.¶ Taxing Authority¶ Ports and port authorities rely on issuing bonds – usually general obligation or revenue bonds – for operation as well as infrastructure development. Besides bonding authority, some port districts have been granted taxing authority, such as the Port of Seattle and the Port of Tacoma.¶ Each port authority can levy property taxes under state law for general taxing purposes. This taxing authority is subject to two limitations: (1) the total levy rate may not exceed $0.45 per thousand dollars of assessed value; and (2) annual increases for levy are restricted to the lesser of inflation or one percent.¶ The annual increase in the allowable levy is based on the amount of taxes that could have been levied in the previous year, even if the port did not levy the full amount. The Tax Levy is available for general port purposes, but may not be used to pay debt service¶ on revenue bonds. It is these ports’ policy to use the levy solely for capital expenditures, environmental expenses, and community investments.¶ Container Fees¶ There is growing interest in container fees to pay for a number of environmental or congestion relief initiatives that will increase the flow of cargo through large metropolitan areas and major corridors in the United States.¶ Although there could be repercussions, such as the loss of business, the States of California and Washington have explored the idea of user fees to address growing transportation and environmental costs. In California, State Senator Alan Lowenthal authored SB974, which would impose a $60 per TEU fee on containers moving through the ports of Long Beach, Los Angeles, and Oakland.¶ The fees’ proceeds – which were expected to be $400 million to $500 million annually – would have been split evenly between air quality projects related to freight movement throughout the state and to improve the goods-movement infrastructure located outside the ports.¶ The California Senate passed the Lowenthal bill (SB 974) in August 2008 by a vote of 22-9. This vote follows California Assembly approval of the bill in July by a vote of 45-31. But the bill was vetoed by the Governor on September 30, 2008.¶ Net Income¶ Net income for funding purposes represents the cash that could be generated from the port’s business activities after payment of all expenses. It differs from the standard accounting concept of income in that it excludes non-cash items such as depreciation and amortization. It also includes non-operating items such as interest earnings. Net income can be used directly to fund capital projects (pay-as-you-go) or leveraged (borrowed against).¶ Alternative Financing¶ Alternative financing refers to off-balance-sheet funding mechanisms that do not rely on port capital or credit capacity. This includes private or third party development, conduit financing (debt secured by a private company) or project financing (debt secured solely by project revenues).¶ Future Workforce¶ Given growing throughput and rapidly changing technology, a fully staffed and well-trained workforce is critical to the safe and efficient operation of the Marine Transportation System. Deep draft, coastal and inland vessel crews are under increasing pressure to accomplish more with fewer personnel. They must operate more efficiently and comply with more and more rules, regulations, and requirements. Merchant Marine Academies, state schools, union, and non-union sponsored schools and training centers must address these new challenges and opportunities to meet the increased demand for well trained and qualified mariners.¶ Port personnel who load and unload vessels, move, track and account for cargos and ensure the safety and security of people and property must meet the increased demand for moving greater volumes of freight at greater speeds and adapting to new technologies and environmental protocols. Truck drivers who move the cargo to and from the ports are¶ increasingly in short supply at a time when demand is increasing and supply chains are changing. They must also be well trained and equipped with the safest and most environmentally sound equipment.¶ The entire workforce, port, and employer leadership must collaborate to ensure the future workforce is positioned to meet all of these demands. They must work in concert so that the entire Marine Transportation System can function safely and effectively.¶ Infrastructure Development¶ From 1946 through 2005, U.S. public port development capital expenditures totaled $30 billion which funded the construction and improvements to port facilities and related infrastructure.8 The need for infrastructure development is only increasing. Projected cargo demands suggest that we may need the capacity of a new container terminal the size of the Ports of Seattle/Tacoma each year for the next five to ten years. Several trends are also emerging as we look at future requirements for the Nation’s maritime infrastructure, including:¶ • Specific geographic needs will drive solutions, e.g., international gateways and trade corridors;¶ • The private sector is increasing its investment in port and terminal infrastructure; and¶ • The public sector is limited in its ability to fund future connector infrastructure needs.¶ There is evidence that the private sector is concerned too about the lack of investment in the Nation’s logistics infrastructure. The National Chamber Foundation released a study in April 2008 entitled “The Transportation Challenge: Moving the U.S. Economy.” The study concludes that there is a need for more investment in the transportation system in order to support increasing trade and population growth in the United States. According to the report, underinvestment is contributing to congestion which is costing U.S. businesses and consumers both time and money.¶ Historically, the acquisition and use of available land for necessary development met few objections because expansion was in the name of economic prosperity. But many port communities are now encountering competing demands for waterside land for purposes other than those related to waterborne commerce: namely, commercial, residential, and recreational uses. This issue is discussed in greater detail in Section V under “Community and Land Use Issues.”¶ Deeper channels to accommodate larger ships also make dredging a major component of infrastructure development in the transportation system. However, many other issues also affect infrastructure development.¶ Infrastructure development is also not just about bricks and mortar. To achieve an enhanced integrated transportation system for the movement of international and domestic freight, new technology must be exploited. And it must be planned and built into the infrastructure and transportation network, and designed into communication and information flows right from the start.¶ National Defense, Security and Emergency Preparedness¶ In partnership with the Maritime Administration and the National Port Readiness Network (NPRN), the Department of Defense (DOD) has designated 15 commercial ports as Strategic Seaports. These Strategic Ports are geographically dispersed along the Nation’s coasts. Each has individual capabilities that provide DOD with the facilities and services the military requires to perform its mission. Recent history has shown that these same capabilities can also be applied to domestic emergency relief activities after a natural disaster.¶ Military deployments require the large-scale use of RO/RO ships, which are capable of carrying a combination of aircraft, wheeled and tracked vehicles, oversize equipment, and containers. As demonstrated during Operation Iraqi Freedom, loading of combat units requires substantial staging areas for vehicles and aircraft, adequate port rail infrastructure and port labor that is skilled in handling non-containerized military equipment.¶ The effectiveness of military cargo port operations is tied to the mobility planning process and the availability of staging areas and rail infrastructure for sequencing arriving equipment. As noted, U.S. ports will continue to expand their operations to meet the forecasted growth in commercial containerized freight. However, if these ports reduce the area available for non-containerized cargo, there will be fewer facilities to support military cargo handling. This, in turn, may reduce the ability of U.S. ports to facilitate military unit deployments.¶ Indeed, the deployment of U.S. forces and materiel from “fort to foxhole” depends on the commercial intermodal freight transportation system. This vital military cargo shares a transportation system that is already stressed by carrying commercial freight with demanding delivery schedules.¶ With the exception of ammunition and other specialized or dangerous cargoes, virtually all CONUS-based military contingency cargoes are deployed through U.S. commercial seaports. Commercial cargo and peacetime military cargo are primarily containerized, whereas military surge cargo is based on moving an entire military unit’s needs (force package), which contains wheeled vehicles, tanks and other equipment. Military surge and sustainment freight also differ in volume and needed configuration in comparison with normal commercial port operations. This surge deployment of cargo puts unique pressure on staging areas and requires the use of other labor skills to load the cargo.¶ Military freight mobilization also moves under compressed timeframes, with a requirement to maintain real-time communications between public and private transportation entities and DOD command and control. If not properly planned, coordinated, and executed, military operations can disrupt commercial transportation operations both immediately and over the longer-term. For example, U.S.-based forts may load and dispatch six trains per day to ports, while the receiving port may only have the capability of handling and unloading one to two trains per day.¶ Military deployments, which must preserve unit integrity, may also require that a port receive materials and supplies from more than a dozen different U.S. military installations in a short timeframe. Trains and trucks may be dispatched from bases and arrive at the terminal gates with little advance warning. DOD logistics planners have adopted successful commercial methods of handling freight and will re-direct cargo at the last moment to accomplish a just-in-time delivery. But again, these changes occur with little or no warning to the receiving port.¶ The ability to meet these many requirements is raising alarms at the highest levels.¶ The “Department of Defense Report to Congress on Projected Requirements for Military Throughput at Strategic Seaports,” states that “commercial cargo volume growth has generated increasing concern about the future adequacy of Strategic Seaport infrastructure to meet national security requirements and readiness.”9¶ Clearly, as the volume of trade continues to increase, we must ensure that the U.S. transportation system maintains the ability to fully accommodate defense mobilization requirements. It is important to note, however, that in today’s modern world, sealift and emergency planning cannot be successfully accomplished in isolation. They must be integrated into the much larger planning process for the entire U.S. transportation system so as to serve both economic and national defense needs.¶ The Maritime Administration and other parts of the Department of Transportation are also working with other Federal agencies in outreach and coordination activities designed to assist the maritime industry in emergency preparedness, response and recovery efforts related to maritime transportation security incidents and natural disasters. This includes interaction with key industry associations and Marine Transportation System stakeholders in planning and training forums, conferences, workshops, exercises, real world response and recovery efforts and establishing a communications link between the broader business community and Federal leadership regarding private sector concerns that may arise during emergencies.¶ Homeland Security¶ The President approved the National Strategy for Maritime Security in October 2005, which is an overarching document of eight supporting plans that cover the spectrum of preparedness, protection, response, and recovery for all hazards, both man-made and natural.¶ The Maritime Administration coordinates with other government entities, as well as state and local security providers, in order to facilitate the movement of commerce in a secure environment. Transparency, accountability, and interoperability are essential elements of a secure and efficient transportation system, which is why security and safety are inextricably linked to the movement of commerce. For example, knowing where vessels are located, their next and last port of call and the cargo being carried, is used to both coordinate movement through the supply chain and analyze the security risk. The latter is based on threat, vulnerability, and consequence.¶ The U.S. Coast Guard and U.S. Customs and Border Patrol have the responsibility and authority to ensure the security of vessels and cargoes entering ports. Security measures to identify risks at the earliest opportunity are part of an in-depth, layered security program. The Maritime Administration acts as a catalyst between Federal, state, and local entities that provide security, and the Marine Transportation System private sector.¶ Maritime Domain Awareness (MDA) is the foundation for preparing, protecting, and responding to a transportation incident. The Maritime Administration is the MDA Executive Agent for the Department of Transportation, as is the U.S. Coast Guard for the Department of Homeland Security and the Navy for the Department of Defense. In a collaborative effort, the knowledge that each Executive Agent possesses is shared in order to provide clarity and actionable information to identify threats. The Federal Government also administers port security grants to harden the security of our Nation’s portS. The Maritime Administration, U.S. Coast Guard, and the Transportation Security Administration are included in the review of grant applications and make policy recommendations about the grant program to the Secretary of the Department of Homeland Security.¶ Port security is a “must have” from both a homeland security perspective and a business perspective. As with safety, security is based on customer demands and expectations. In order to facilitate commerce and enhance security simultaneously, the private sector, state, and local entities must be considered to effect solutions commensurate with the security threat. The physical security at the port and the economic security of our homeland are inextricably linked.

#### Effective logistics is key to conventional deterrence – uniquely prevents conflict initiation and escalation

--local conventional balance of power trumps global or threat of nuclear use (i.e. troops key)

Gerson 9 (Michael S. Gerson, research analyst at the Center for Naval Analyses, “Conventional Deterrence in the Second Nuclear Age,” Parameters, Autumn 2009, http://www.carlisle.army.mil/USAWC/parameters/Articles/09autumn/gerson.pdf)

Deterrence is once again a topic of discussion and debate among US defense and policy communities. Although the concept has received comparatively little attention since the end of the Cold War, it seems poised to take center stage in America’s national security policy during the coming decades. With two ongoing wars already straining the military, concerns about a recalcitrant and militarized Russia, Iran’s continued uranium enrichment activities, North Korea’s nascent nuclear arsenal, and top-to-bottom military modernization in China, adversary-specific deterrence strategies will likely become a prominent component of national and international security in an increasingly multipolar world.¶ As part of this renewed interest in deterrence, conventional weapons are playing an important role. The “New Triad,” consisting of both nuclear and advanced conventional weapons; proposals for conventionally armed intercontinental ballistic missiles; and, more generally, the concept of Prompt Global Strike all represent a growing belief that advanced conventional capabilities can substitute for some missions previously relegated solely to nuclear weapons. Although there has been considerable debate over these specific initiatives—for example, the effect that putting conventional warheads on ballistic missiles would have on strategic stability—most specialists agree that conventional forces can help reduce the role of nuclear weapons in US security strategy. In fact, in recent years the US military has expanded the concept of “strategic deterrence,” a term that once encompassed only intercontinental nuclear weapons, to incorporate both nuclear and conventional forces, as well as diplomatic, economic, and informational tools.1¶ The recent emphasis on substituting conventional for nuclear weapons in selected missions is an important step in developing a credible and robust twenty-first century deterrent, but it does not fully consider¶ the unique logic and strategy of conventional deterrence. The current debate focuses primarily on the use of conventional weapons for “deterrence by punishment,” the threat to impose unacceptable costs, such as the destruction of an adversary’s strategic and high-value targets, in response to unwanted actions. Yet, one of the most important contributions of conventional forces is “deterrence by denial,” the threat to deny an adversary the ability to achieve its military and political objectives through aggression.2 If some early strategists were accused of “conventionalization” by treating nuclear weapons merely as more powerful and effective tools of war, the current debate regarding conventional contributions to deterrence may be accused of “nuclearization” in that it treats conventional capabilities merely as a substitute for nuclear weapons.¶ This article seeks to expand the current debate about the role and utility of conventional forces in US deterrence strategies by reexamining the traditional logic of conventional deterrence, which focuses on deterrence by denial, in the context of the modern international security environment. It is primarily concerned with the role of US conventional forces in extended deterrence, defined as the threat of force to protect allies and friends, rather than “central” or “homeland” deterrence.3 This focus on extended deterrence—and especially on the role of deterrence by denial in extended deterrence—highlights the central importance of protecting territory from attack and invasion. Historically, the desire for control over specific territory has been a frequent motivator of interstate crises and conflict.4 While interstate conventional wars have significantly declined since the end of the Second World War, the potential for conflict over Taiwan or on the Korean Peninsula, the prospect of future clashes over control of scarce natural resources, and the 2008 war between Georgia and Russia attest to the continued possibility of conflict over specific territory that has important strategic, economic, political, religious, historical, or socio-cultural significance.¶ Consequently, this article examines how US conventional military power can be used to deter conventional aggression against friends and allies by threatening to deny an adversary its best chance of success on the battlefield—a surprise or short-notice attack with little or no engagement with American military forces. The ability to prevent an opponent from presenting the United States with a fait accompli—that is, from strik¶ ing quickly and achieving victory before substantial US (and perhaps coalition) forces can be deployed to the theater—is a central component of modern conventional deterrence.¶ Conventional Deterrence in US Strategy¶ Broadly defined, deterrence is the threat of force intended to convince a potential aggressor not to undertake a particular action because the costs will be unacceptable or the probability of success extremely low. This threat has always been one of the central strategic principles by which nations attempted to prevent conflict.5 Even so, the development and rigorous analysis of deterrence as a discrete strategic concept did not occur until the advent of nuclear weapons.¶ Deterrence theory was developed against the backdrop of the Cold War nuclear arms race and focused on the prevention of nuclear conflict. Yet, while the majority of academic research and public debate was concerned with the prevention of nuclear war—the net result was that deterrence became synonymous with nuclear weapons—conventional deterrence, appropriately, assumed an increasingly important role in the development of military strategy during this period.6 As the Soviet Union began to amass a large and survivable nuclear arsenal that was capable of global reach in the late 1950s and early 1960s, the credibility of the Eisenhower Administration’s policy of “Massive Retaliation,” which threatened an overwhelming nuclear response to virtually any Soviet aggression, was brought into question. Once the Soviet Union developed survivable nuclear capabilities that could reach the US homeland, many defense officials and analysts argued that the threat of Massive Retaliation lacked credibility against anything other than an all-out Soviet nuclear attack.7¶ As a result, western military strategy eventually shifted from total reliance on nuclear weapons as a means of deterring both Soviet conventional and nuclear aggression to a strategy of “Flexible Response,” which included conventional and nuclear elements. From the mid-1960s onward, NATO relied on conventional power, backed by the threat of nuclear escalation, to deter any conventional assault on Europe by the numerically superior Warsaw Pact, and relied on nuclear weapons to deter nuclear attacks.8 By incorporating “direct defense”—the ability to respond to Warsaw Pact aggression, especially conventional aggression, with proportionate (i.e., conventional) force—into NATO strategy, the concept of Flexible Response sought to create a more credible means of deterrence across the entire spectrum of conflict.¶ Following the Cold War, conventional deterrence earned an even greater role in US national security strategy. With the demise of the Soviet Union and significant advancements in conventional precision-guided munitions, many defense analysts concluded that “smart” weapons could provide a powerful deterrent against a wide variety of threats. While some commentators argued that nuclear weapons were still necessary to prevent nuclear attacks, and others contended that conventional weapons were “the only credible deterrent” even against nuclear threats, almost all agreed that technologically advanced conventional weapons could now take the place of nuclear weapons in many missions.9 Following the remarkable success of sophisticated conventional firepower in Operation Desert Storm, William Perry declared, “This new conventional military capability adds a powerful dimension to the ability of the United States to deter war.”10¶ In the current international security environment, conventional deterrence can be useful against nonnuclear and nuclear-armed adversaries. For regimes that do not possess nuclear, chemical, or biological weapons, US conventional capabilities will likely be the most credible and potent deterrent. History suggests that, in general, nations without weapons of mass destruction (WMD) are not intimidated by an opponent’s nuclear capabilities. For example, nuclear weapons did not give the United States significant advantages before or during the Korean and Vietnam wars; nor did they dissuade Egypt from attacking Israel in the 1973 Yom Kippur War11 or Argentina from attacking the British-controlled Falkland Islands in 1982.12 This circumstance is due in part to the perceived impact of the “nuclear taboo,” a moral and political aversion to using nuclear weapons that has emerged due to the long absence of nuclear use in time of war. The nuclear taboo reduces the credibility—and therefore the utility—of nuclear weapons, especially against regimes not possessing nuclear weapons or other WMD.13¶ Although implicit or explicit nuclear threats may lack credibility against non-WMD regimes, many potential adversaries believe that the United States will use conventional firepower, especially because America has conventional superiority and a demonstrated willingness to use it. Consequently, when dealing with non-WMD-related threats, conventional deterrence will be the most likely mechanism for deterring hostile actions.¶ According to Admiral Michael Mullen, the current Chairman of the Joint Chiefs of Staff, “A big part of credibility, of course, lies in our conventional capability. The capability to project power globally and conduct effective theater-level operations . . . remains essential to deterrence effectiveness.”14¶ Conventional deterrence also plays an important role in preventing nonnuclear aggression by nuclear-armed regimes. Regional nuclear proliferation may not only increase the chances for the use of nuclear weapons, but, equally important, the possibility of conventional aggression. The potential for conventional conflict under the shadow of mutual nuclear deterrence was a perennial concern throughout the Cold War, and that scenario is still relevant. A nuclear-armed adversary may be emboldened to use conventional force against US friends and allies, or to sponsor terrorism, in the belief that its nuclear capabilities give it an effective deterrent against US retaliation or intervention.15 For example, a regime might calculate that it could undertake conventional aggression against a neighbor and, after achieving a relatively quick victory, issue implicit or explicit nuclear threats in the expectation that the United States (and perhaps coalition partners) would choose not to get involved.¶ In this context, conventional deterrence can be an important mechanism to limit options for regional aggression below the nuclear threshold. By deploying robust conventional forces in and around the theater of potential conflict, the United States can credibly signal that it can respond to conventional aggression at the outset, and therefore the opponent cannot hope to simultaneously achieve a quick conventional victory and use nuclear threats to deter US involvement. Moreover, if the United States can convince an opponent that US forces will be engaged at the beginning of hostilities—and will therefore incur the human and financial costs of war from the start—it can help persuade opponents that the United States would be highly resolved to fight even in the face of nuclear threats because American blood and treasure would have already been expended.16 Similar to the Cold War, the deployment of conventional power in the region, combined with significant nuclear capabilities and escalation dominance, can help prevent regimes from believing that nuclear possession provides opportunities for conventional aggression and coercion.¶ The Logic of Conventional Deterrence¶ There is comparatively little theoretical literature on conventional, as opposed to nuclear, deterrence, but what scholarship does exist provides a useful baseline for analyzing the utility of conventional deterrence in the emerging international security environment. The few scholars who have¶ studied conventional deterrence generally agree on its basic logic, offering refinements, additional insights, and supporting evidence rather than competing theories. Consequently, the existing literature can be readily synthesized into a broader, more complete, and more robust theory of conventional deterrence, effectively incorporating arguments from important works on the subject.17¶ The logic of conventional deterrence is based on three interrelated arguments. First, states contemplating conventional aggression typically seek relatively quick, inexpensive victories.18 The history of conventional warfare demonstrates that most nations desire and develop military strategies designed for rapid, blitzkrieg-style wars rather than protracted wars of attrition.19 Long and costly wars can ruin economies and create political instabilities undermining the effectiveness, reputation, and survival of the government or state.20 War is inherently unpredictable, and most leaders do not want to get trapped in a costly and bloody conflict with no end in sight and an uncertain final outcome.¶ Second, conventional deterrence is primarily based on deterrence by denial, the ability to prevent an adversary from achieving its objectives through conflict.21 If states typically seek short and low-cost conflicts, then conventional deterrence largely depends on convincing an adversary that it cannot achieve its objectives rapidly or efficiently. In this context, the deterrent effect is achieved in large part by the possibility of getting bogged down in a long and costly war of attrition. According to John Mearsheimer, one of the principal architects of conventional deterrence theory, “. . . deterrence is best served when the attacker believes that his only alternative is a protracted war: The threat of a war of attrition is the bedrock of conventional deterrence.”22 Thus, if a state believes it can achieve rapid victory, deterrence is more apt to fail; conversely, deterrence is more likely to succeed when an aggressor state believes it cannot achieve its goals in relatively short order.23¶ Although the strategy of conventional deterrence primarily depends on deterrence by denial, the usefulness and applicability of deterrence by punishment should not be overlooked, especially in light of significant advancements in conventional precision-strike capabilities. In practice, a robust and flexible conventional deterrence strategy should combine both mechanisms, as some adversaries are more likely to be deterred by the threat of punishment and others by the threat of denial. For example, some leaders may believe that they can simply withstand or “ride out” whatever punishment the opponent’s conventional forces can inflict. For these regimes, threats to deny success may be a more potent deterrent than threats of punishment. On the other hand, some aggressors may convince them¶ selves that US conventional forces will not be able to successfully deny their objectives. These leaders may believe that they can achieve their aims in spite of the opposing conventional power because they have greater resolve and are willing to fight longer and harder, and accept greater casualties. Often, they base this resolve on the belief that they can achieve their goals before substantial US conventional power arrives, a fait accompli. These opponents may perceive that they have a better conventional war-fighting strategy or a “home field advantage” since the conflict is on their territory. Their resolve is often based on strategy that incorporates the employment of asymmetric tactics to offset US conventional advantages, such as supporting terrorism or acquiring WMD. In all these cases, the threat of punishment may be the most effective deterrent.24¶ In general, however, denial has an important advantage over punishment: If conventional deterrence fails, a force designed for deterrence by denial is more able to engage in conventional conflict, control escalation, and exercise a winning strategy. Given that a credible deterrence by denial strategy requires that an adversary believe that U.S. forces are actually capable of denying victory on the battlefield, this force posture is inherently designed to fight and win a conflict in the event of a deterrence failure.25 According to Lawrence Freedman, “In principle, denial is a more reliable strategy than punishment because, if the threats have to be implemented, it offers control rather than continuing coercion. With punishment, the [adversary] is left to decide how much more to take. With denial, the choice is removed.”26¶ Third, and finally, the “local” balance of military power—the balance between the conventional forces of the attacker and those of a defender in the area of conflict—often plays a critical role in conventional deterrence, since it is local forces that will impact an aggressor’s calculations regarding a quick victory.27 If US adversaries seek relatively short and inexpensive wars, and if the key to deterring conventional aggression is convincing those adversaries that they will not be able to achieve such an objective, then credible and effective deterrence requires that US forces be in or near the region, or readily able to deploy, for an immediate response. When the local balance favors the adversary, deterrence is more likely to fail because the regime will calculate that it can achieve a rapid success. When the local balance favors the defender, deterrence is more likely to succeed.28¶ The importance of the local power balance in deterrence calculations suggests that US conventional superiority in and of itself is not as relevant as some analysts have suggested.29 In fact, the available evidence suggests that overall superiority may be insufficient to establish deterrence. Despite¶ the apparent advantage of conventional superiority in the macro sense, deterrence may still fail if the opponent believes it has a local advantage.¶ Challenges for Conventional Deterrence¶ The existing scholarship, previously outlined, provides a framework for how conventional deterrence works. The majority of this literature, however, is now decades old. While the core elements of deterrence theory, both conventional and nuclear, remain relevant, it is necessary to reexamine some of the theory’s assumptions and arguments in the context of today’s security environment.30¶ Quick Victory, Deterrence, and the “Fait Accompli”¶ In the future, the desire for relatively quick, low-cost victories may lead states that are considering conventional aggression against the United States to employ a “fait accompli” strategy.31 The purpose of this strategy is to rapidly achieve limited objectives, such as seizing a piece of territory, with little or no military engagement. A fait accompli strategy hinges on strategic surprise; the goal is to attack swiftly and achieve victory before the United States has time to mobilize and deploy forces.32 Following the accomplishment of limited objectives, the adversary may switch to a defensive posture designed to repel any counterattack. By striking quickly and then exercising a defensive posture, the adversary hopes to deter or complicate US attempts to reverse any gains or restore the status quo.33¶ The fait accompli strategy—and, more generally, military planning for rapid victory—is an important component of strategic thinking in several nations. China’s concept of “Local Wars under Modern High-Technology Conditions” envisions localized, short-duration, and high-intensity conflicts using technologically advanced weapons for both symmetric and asymmetric combat, including cyber, space, and information warfare.34 According to some analysts, China’s military strategy for its Taiwan contingency approximates a fait accompli-type strategy. China would attempt to rapidly defeat, or at least incapacitate, Taiwan, perhaps through a massive conventional missile strike, thereby forcing Taiwan to capitulate before US forces could arrive.35 Similarly, according to a high-ranking North Korean defector in 1997, Kim Jong-il apparently believed that he could achieve a quick victory against South Korea by launching a massive missile strike against Seoul, while at the same time forestalling US intervention by threatening missile attacks on Japan.36¶ As a result, conventional deterrence puts a premium on forward-deployed combat power, as well as forcible entry, force sustainment and reinforcement capabilities, and regional base access. Compared to deterrence by punishment, which relies primarily on precision-strike capabilities, deterrence by denial involves a number of complicated logistical issues that impact an adversary’s calculations regarding success. With deterrence by denial, not only might an adversary question America’s political willpower but, equally important, it could question whether the United States is capable of responding, and, if so, how quickly. These types of calculations will be especially important for states hoping to achieve a fait accompli, since this strategy is predicated on the ability to accomplish objectives before substantial US forces can arrive.¶ Rapid-response and force sustainment may present increasingly complex challenges in the coming decades, as current and potential adversaries develop both symmetric and asymmetric means to counter US power projection. China, for example, is developing a range of anti-access and area-denial capabilities intended to diminish the capacity of extra-regional nations to deploy, operate, and sustain forces in its geographical region.37 The ability, whether real or perceived, to prevent or weaken US power projection capability and operational effectiveness can undermine deterrence efforts. Consequently, the credibility of conventional deterrence—and execution of the threat if deterrence fails—requires convincing potential aggressors that the United States can and will rapidly respond to aggression against its global interests, and that there is nothing the regime can do to prevent or hinder the response.¶ Deterrence by Denial and Deterrence by Defeat¶ In the emerging international security environment, the concept of denying victory has to be carefully evaluated. There is an important difference between the threat to merely deny a rapid victory and the threat to completely defeat the opponent. The traditional logic of conventional deterrence hinges almost exclusively on the former. It is important to note that this threat does not necessarily require defeating the opponent. Rather, the deterrent effect is derived by convincing the aggressor that it cannot accomplish its objectives within an acceptable timeframe and cost. Even if an adversary believes it could achieve success through a protracted war, Mearsheimer argues, “deterrence is nevertheless likely to obtain, largely because the protracted nature of the conflict will result in high costs.”38¶ In some future scenarios, however, this threat might be insufficient to obtain effective deterrence. One central challenge for both conventional and nuclear deterrence in the twenty-first century is that the United States faces challenges from a variety of states with varying mo¶ tives, objectives, cultures, and propensity for risk-taking. Most important, while some future adversaries may be motivated to aggression by opportunity and the prospect of profit and gain, others might be motivated by some perceived necessity. According to Richard Ned Lebow, international crises and conflicts can result from a leader’s perception of an impending and detrimental change in the external security environment, such as a shift in the regional or international balance of power that jeopardizes the nation’s long-term security, or from a leader’s attempt to divert domestic attention away from internal political instabilities and turmoil to generate a “rally around the flag” effect.39 In these situations, the regime believes that it must act to prevent an even more dire outcome that might occur if they did nothing.¶ The distinction between states motivated by opportunity and those motivated by necessity has important and far-reaching implications for the design and implementation of effective conventional (and nuclear) deterrence strategies.40 In particular, states motivated by opportunity or necessity are likely to have different risk calculations and tolerances to costs. According to Prospect Theory, an influential model of decision-making under risk, decision-makers tend to be willing to accept significant risks and costs to prevent losing something of great value, and are more risk-averse and sensitive to costs when attempting to gain something new.41 Based partly on insights from Prospect Theory, it is now well known that decision-makers consider not only the potential costs and risks of action, but, equally important, the potential costs of inaction.42 Consequently, a state that is motivated by some perceived necessity may be willing to take substantial risks, especially if inaction is believed to result in a certain and intolerable loss. In these circumstances a leader may calculate that the costs of doing nothing outweighs the potential costs and risks of action.43¶ Prospect Theory suggests that the concept of denying victory will apply differently depending on the adversary’s motivations for aggression. Since nations motivated by opportunity and the prospect of profit and gain are likely to be relatively risk-averse and sensitive to costs, the threat to prevent rapid and low-cost success will be sufficient for deterrence. Even if victory is attainable in the long-run, the prospect of a long and expensive conflict often is enough to induce caution and restraint.¶ Leaders motivated by the necessity to prevent losing something of value, however, may be willing to engage in a long and expensive conflict, especially if the stakes are deemed critical to national security or domestic political survival. In such cases, the ability to deny a swift and inexpensive victory may be insufficient for the purpose of achieving deterrence, since the leadership might calculate that the objectives are sufficient to run the risk of a protracted conflict. While they might still prefer a short and inexpensive conflict, and may attempt a fait accompli-type victory, they would probably be willing to engage in a longer and harder conflict if the final objectives are worthwhile. Consequently, in these cases the United States must credibly threaten to defeat the adversary, rather than simply deny the prospect of a quick and cheap victory, in the early stages of conflict so that the opponent cannot hope to eventually achieve its objectives in a protracted war. For regimes motivated by necessity, credible deterrence will not hinge on the ability to deny only a quick victory, but rather on the ability to completely defeat the opponent quickly.¶ The Credibility of Conventional Deterrence¶ Credibility, according to Sir Lawrence Freedman, is the “magic ingredient” of deterrence.44 Deterrence credibility is a function of an adversary’s assessment of a nation’s military capability and political resolve. For deterrence to be credible, an adversary has to believe that the United States has both the military capability and the political willpower to carry out its announced objectives.45 Of all the concepts and theories associated with deterrence, the issue of how to demonstrate or signal credibility has been the dominant theme in academic and policy literature.¶ Whereas in the nuclear context discussions about deterrence credibility have centered on political willpower and resolve, in conventional deterrence the issue of credibility has focused on the military capabilities component of the credibility equation. The almost exclusive emphasis on resolve for credible nuclear deterrence and on capabilities for credible conventional deterrence is the result of the inherent differences between nuclear and conventional weapons. There is little doubt that nuclear weapons are extremely destructive. The pertinent question for credible nuclear deterrence is not whether one can inflict significant costs for unwanted actions (assuming, of course, that the nuclear forces are survivable and there are appropriate command, control, and communications), but rather whether one will use nuclear weapons, since the execution of the threat might risk retaliation in kind. As Herman Kahn argued, in the nuclear are¶ na “credibility depends on being willing to accept the other side’s retaliatory blow. It depends on the harm he can do, not the harm we can do.”46¶ In the conventional setting, it has been advocated that the situation is essentially reversed. Given the comparatively limited power of conventional weapons, an adversary may doubt whether conventional forces are capable of denying a rapid victory or inflicting the associated costs that outweigh the benefits of aggression. As Richard Harknett explains:¶ The nature of conventional forces invites skepticism at a level that few deterrence theorists have emphasized—that of capability. Due to the contestable nature of conventional forces, it is a state’s capability to inflict costs that is most likely to be questioned by a challenger. In a conventional environment, the issue of credibility is dominated by suspicions about the capability to inflict costs rather than on the decision to inflict costs . . . . In the end, a state evaluating a conventional deterrent can assume that the deterrer will retaliate. The pertinent question is how costly that response will be.47

#### Rapid disaster relief provides a terminal backstop to every impact

Butts 94 (Kent Hughes, Associate Professor of Political Military Strategy in the Center for Strategic Leadership, U.S. Army War College, “Environmental Security: A DoD Partnership for Peace,” Strategic Studies Institute Monograph, 4-1-1994, http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubid=339)

The change in the international arena since the end of the¶ cold war has given rise to an entirely new approach to viewing¶ U.S. security interests, and a recognition of the importance of¶ environmental factors in international stability and the onset of¶ conflict. During the cold war, parenting by both the United¶ States and the Soviet Union limited regional conflicts or ensured¶ that sufficient superpower attention was paid to preclude their¶ escalating into nuclear war. In the absence of superpower¶ control, long festering regional, ethnic and religious enmities¶ have erupted into conflict that defies international management¶ and threatens U.S. security interests. With Somalia as the¶ precedent, the use of U.S. forces to address the humanitarian¶ dimensions of this conflict has been established and public,¶ media, and nongovernmental organization (NGO) pressure exists to¶ commit additional U.S. forces to humanitarian and peacemaking¶ missions. Because the U.S. Government's ability to manage¶ multiple conflicts and fight multiple wars is limited, there is¶ an increasing need for the United States to become proactive in¶ addressing the causes of such conflicts before they occur,¶ significant among them environmental issues. As an element of¶ government with significant interest in solving regional problems¶ before they escalate into conflict, the Department of Defense¶ (DOD) should play a major role in problem resolution and conflict¶ prevention. This report examines adverse environmental actions as¶ potential causes of conflict, assesses DOD capabilities to¶ mitigate these actions, and recommends policies for the DOD to¶ proactively address environmental issues.¶ The DOD environmental security mission has its roots in the¶ fact that environmental problems that lead to instability and¶ contention are being ignored, and U.S. combat forces are becoming¶ involved in the resulting conflict. In addition, DOD's¶ environmental security mission supports the National Security¶ Strategy (NSS) of the United States and must be understood in¶ that context.¶ The NSS is the document written by the National Security¶ Council to reflect U.S. national interests and objectives and the¶ strategic concepts for achieving them.¶ traditional elements of power: political, military, economic,¶ and social. The environment became an element of the National¶ Security Strategy and a recognized objective that supports U.S.¶ interests in 1991, when the NSS pointed out, "the stress from¶ environmental challenges is already contributing to political¶ conflict," and listed as a primary U.S. objective to "achieve¶ cooperative international solutions to key environmental¶ challenges."2 DOD has a larger role beyond the physical defense¶ of the nation. As an element of power with unique technical¶ attributes, DOD is an appropriate and well-qualified entity with¶ which to achieve environmental objectives of the National¶ Security Strategy. The question needs to be asked, "if not DOD,¶ what agency has the resources and experience to execute the U.S.¶ environmental security mission?"¶ In the 20th century, international environmental problems¶ have contributed significantly to international instability and¶ conflict, and therefore have the potential to involve U.S. combat¶ forces. As the current environmentally related crises in Haiti¶ and Somalia make clear, DOD has a vested interest in mitigating¶ environmental problems before they evolve into¶ difficult-to-manage state or regional conflicts. Regional wars¶ that threaten U.S. interests potentially can involve U.S. forces,¶ and incur substantial operational and public support costs to the¶ United States and to DOD. By participating on a preventive basis¶ in the resolutions of environmental issues that could lead to¶ such conflict, DOD can forestall future Somalia-like involvements¶ before they occur--an action that is extremely cost effective.¶ Recognizing this phenomenon, the Deputy Undersecretary of Defense¶ for Environmental Security has defined DOD's role in¶ environmental security to include, "mitigating the impacts of¶ adverse environmental actions leading to international¶ instability."3 This role reflects the Secretary of Defense's¶ recognition that the four primary threats to U.S. national¶ security interests are: regional dangers, nuclear dangers,¶ dangers to democracy, and economic dangers.4 All of these¶ threats have significant environmental components and all could¶ involve U.S. combat forces in regional conflict. Such involvement¶ carries high costs to DOD in terms of lives, dollars, and, as the¶ media graphically portrays the resulting casualties, the¶ potential loss of public support for the military and other DOD¶ missions.¶ DOD can address environmental security objectives across a¶ broad spectrum of operations, taking preemptive measures that¶ could alleviate the need for the direct involvement of U.S.¶ combat forces. Such¶ to mitigate adverse environmental conditions that could lead to¶ international instability or conflict and, therefore, pose a¶ threat to U.S. national security.¶ THE CONCEPT OF ENVIRONMENTAL SECURITY¶ The environment is not a new security concept, but in the¶ past it has primarily been seen as a victim rather than a cause¶ of conflict.6 Today, its role as a primary variable in regional¶ stability is unquestioned.¶ Environmental degradation imperils nations' most¶ fundamental aspect of security by undermining the¶ natural support systems on which all of human¶ activity depends.¶ Michael Renner, 19897¶ Security requires a fundamental level of economic,¶ environmental, and physical well-being; a healthy economy and a¶ healthy environment go hand-in-hand. Society must find solutions¶ that protect the environment and its natural resources while¶ allowing for the development required to sustain living standards¶ in a growing world population.¶ The legitimacy of a state regime depends upon its ability to¶ manage the country's resource base in a manner that satisfies the¶ basic needs of its population. Environmental degradation has the¶ potential to erode that resource base and make it impossible for¶ the government to satisfy these needs and to maintain the¶ confidence of its people. If sustainable development is precluded¶ by environmental problems, it may lead to environmental refugees,¶ internal conflict over scarce resources and, ultimately, to a¶ loss of legitimacy and downfall of the regime. This phenomenon is¶ particularly important to U.S. interests in the post-Soviet era,¶ where promoting democracy and free market economies in¶ vulnerable, developing states is a primary objective of the¶ United States and its allies.¶ Environmental security requires a broad approach because¶ environmental systems are interconnected, having effects that¶ cross the boundaries of time and space. For this reason,¶ difficulties stemming from local environmental neglect can¶ escalate into regional or global conflict. Long-term¶ sustainability implies the ability to meet basic human needs over¶ time and states must¶ increasing tolerance for change, and apathy over resource¶ depletion make it difficult for developing states to assess and¶ understand environmental processes and develop technical¶ expertise in time to take corrective action.8¶ Instability and conflict often result from the poverty¶ created by the economic regression of resource depletion or¶ scarcity. The abuse of power by the leaders of many developing¶ countries has frequently manifested itself in exploitive resource¶ management practices, a wasting away of the economic¶ infrastructure, human suffering and ethnic-based competition for¶ increasingly scarce resources, and, ultimately, to conflict.¶ Given this phenomenon, why have security analysts been slow to¶ focus on environmental destruction as a source of conflict?¶ First is the long lead time of most environmental threats.¶ In prioritizing threats to a nation's security, it is natural to¶ focus governmental resources on objectives that guarantee¶ security in the short term. The perception of threats such as¶ nuclear holocaust or conventional warfare is very visceral and¶ the system for prioritizing political and economic objectives is¶ based on annual evaluations, elections and other short-term¶ considerations. However, the absence of an overarching Soviet¶ threat and a growing public awareness of impending environmental¶ shortages and irreversible losses have provided the conditions¶ necessary to allow the security community to consider less¶ obtrusive factors of global instability.9¶ The global population has grown geometrically and will¶ double over the period from 1950 to 2000, bringing environmental¶ issues to the fore. Rates of global population continue to¶ increase, particularly in the vulnerable developing world,¶ accelerating demand for food and a broad range of other natural¶ resources. The global rates of consumption of natural resources¶ are far greater than the ecosystem has previously endured.10 The¶ world is rapidly moving beyond local shortages, which¶ historically have created local conflict, to regional or¶ transboundary resource shortages with the potential to escalate¶ into far reaching hostilities involving U.S. forces. In numerous¶ regions the ability of the earth to replenish its renewable¶ resources, even with the human intervention of irrigation and¶ fertilizer, has already been exceeded. Indeed, these very¶ interventions often create unforeseen, adverse environmental¶ consequences. Thus, the frequently ignored, long-lead-time¶ environmental factors have reached their thresholds and are¶ causing instability that security policy analysts cannot ignore.¶ Second, technological advances have allowed society to use¶ natural resources more creatively¶ combination of population increases and technological advances¶ has allowed many countries to exploit their resource base at¶ rates that outstrip the carrying capacity of the environment.¶ With such accelerated and unmanaged resource use, the difference¶ between renewable and nonrenewable resources becomes irrelevant,¶ as the ability of the ecosystem to regenerate itself is¶ destroyed. Overgrazing, overfishing, toxic and hazardous¶ pollutants, and soil loss can permanently deplete "renewable"¶ resources.11¶ Third, scientific knowledge is far greater than in the past,¶ yielding a heightened awareness of the interconnectedness of¶ ecosystems and of human reliance on the maintenance of ecosystem¶ balance. The resulting understanding has increased the urgency of¶ solving environmental problems.12 Further, advanced methods of¶ data collection provide growing evidence that current practices¶ are undermining critical ecological balances at the national,¶ regional and global levels. These changes have made security¶ policy analysts aware of the urgency of resolving environmental¶ security issues before they can lead to conflict. Accomplishing¶ this task, however, will require a strategy.¶ The time frame associated with recognizing environmental¶ threats, creating a strategy with which to address them, and¶ planning and executing the threat-mitigating strategy is longer¶ than those encountered with the traditional security threats of¶ weapons proliferation and regional conflict. To meet these¶ threats one must recognize the wisdom of preventing conflict by¶ providing resources to address the sources of instability.¶ Conflict resolution is much more expensive in terms of lives,¶ money and environmental destruction than conflict prevention. As¶ Secretary of Defense Robert S. McNamara noted, simply purchasing¶ more military hardware does not buy a country greater security. A¶ country must develop a strategy that employs all elements of¶ national power and a variety of resources to mitigate threats¶ before they lead to conflict, whether the threats are political,¶ economic, environmental, or military.13 Preventive strategies¶ are more effective when they emanate from a position of strength¶ and, where possible, have a synergistic relationship with¶ strategic concepts to achieve other national objectives. By¶ emphasizing and applying U.S. knowledge, institutions and¶ technologies, environmental degradation can be limited and¶ environmentally sustainable development can be fostered. This is¶ the only long-term strategy that will allow the nations of the¶ earth to improve the living conditions of impoverished peoples¶ and reduce the likelihood of conflict.14 And, in the end, a¶ strategy of conflict prevention saves vast financial resources¶ and perhaps thousands of¶ transgressions of DOD and their domestic health risk potential,¶ to the exclusion of the much more significant international¶ dimension, it is important to clarify the threat that¶ environmental security issues pose to U.S. national interests.¶ Therefore, this section explains what constitutes an¶ environmental threat, lists various threats at the three¶ geographic levels, and provides clear examples of how¶ environmental issues are threatening U.S. interests in the former¶ Soviet Union, Middle East, and Caribbean.¶ All environmental problems are not threats to national¶ security. Determining which constitute legitimate national¶ security issues and prioritizing them is a difficult challenge.¶ No generally accepted criteria for making such a determination¶ exist, and the arguments defending the validity of environmental¶ security as a national security issue often criticize the lack of¶ a methodology by which decisionmakers can determine when risks¶ exist and when resources should be committed, a criticism¶ relevant to many issues of national security.15¶ Prioritization for environmental risk analysis is based on¶ the assumption that environmental problems create or contribute¶ to events that threaten U.S. national security interests by:¶ • Undermining the legitimacy of governments or promoting¶ instability;¶ • Creating civil strife or conflict that could involve U.S.¶ forces;¶ • Harming U.S. strategic alliances and the ongoing¶ democratization process.¶ Environmental actions may receive priority when they provide¶ an opportunity to foster engagement in humanitarian issues, or¶ promote U.S. strategic interests.¶ These threats may occur at three general geographical levels¶ of resolution, although they are not mutually exclusive. The most¶ notable environmental threats to U.S. security are:¶ • Global: competition for or threatened denial of strategic¶ resources; ozone depletion; global warming; loss of biodiversity;¶ proliferation of weapons of mass destruction; effects of¶ demilitarization of nuclear, chemical, biological and¶ conventional weapons; space¶ access to land, air, and water.¶ • State: environmental degradation of the resource base on¶ which governmental legitimacy depends; risks to public health and¶ the environment from DOD activities; increasing restrictions on¶ military operations and access to air, land, and water;¶ inefficient use of military resources; reduced weapons systems¶ performance; demilitarization of nuclear, chemical, and¶ conventional weapons systems; and erosion of public trust.16¶ Each of these categories may have global, regional or national¶ dimensions.¶ East Europe and the Former Soviet Union.¶ It is in the U.S. national interest that stable societies¶ and governments emerge in Eastern Europe and the former Soviet¶ Union (FSU). Unfortunately, both regions are politically and¶ economically unstable and threatened by environmental problems.¶ To survive as stable entities, these governments must address the¶ basic needs of their people, which requires that their societies¶ are capable of producing (or acquiring) and distributing food,¶ vital materials and services. The FSU's GDP growth in 1992 was¶ estimated at -18.5 percent,17 while consumer prices escalated at¶ least 70 percent during 1990-91 in FSU nations; some saw consumer¶ prices rise by approximately 125 percent.18 The nations of the¶ FSU and East Europe cannot establish viable economic and¶ political systems without solving some of their fundamental¶ environmental problems.¶ The Soviet regime released untreated industrial and¶ hazardous wastes into the environment at military and civilian¶ facilities in both the FSU and Eastern Europe, and pursued¶ policies leading to irreversible contamination of natural¶ resources. East Europe has some of the dirtiest coal-fired power¶ plants in the world; pollutants pose health risks and threaten¶ buildings. One well-publicized example is the Lake Baikal region,¶ where agricultural irrigation practices led to catastrophic¶ damage and the destruction of agricultural lands. Mismanagement¶ of nuclear production, testing, and wastes irradiated many sites.¶ The facility at Mayak, which produces plutonium for military¶ purposes and for handling and burying radioactive wastes, remains¶ one of the most problematic operations, due to several serious¶ accidental nuclear releases. Significant quantities of¶ radioactive waste were dumped into the Techa River; large areas¶ of land and approximately a half-million people were¶ irradiated.19 Moscow itself is dangerously polluted;¶ approximately 350 sources of radioactive contamination were¶ discovered in the city between 1982-1987. Since then, over 300¶ new sources of radioactive contamination have been found.20 The¶ weapons testing sites at Semipalatinsk¶ be the most contaminated site on earth by the late 1960s. The¶ contamination in waters offshore is estimated at about 1.5¶ million curies.22 Also, nuclear accidents continue to occur,¶ such as the April 1993 nuclear waste explosion at Tomsk-7, a¶ military facility.¶ Nationally or regionally-based environmental problems in¶ these lands have direct and serious implications for economic and¶ political stability. If not adequately addressed, transboundary¶ environmental problems could trigger significant economic, social¶ and political disruptions within a nation or region. As more is¶ learned about the movement of pollutants and delicate ecological¶ balances, it is increasingly clear that each nation is vulnerable¶ to the environmental actions of other states.¶ Instabilities leading to armed conflict are only one aspect¶ of the environmental equation. Aside from interest in the¶ stability of regimes in Eastern Europe and the FSU, the United¶ States has a particular interest in the management of weapons of¶ mass destruction in the former Soviet empire. Without stable¶ governments, the likelihood of mismanagement, of terrorism, or of¶ black-market sales of both nuclear and conventional weapons¶ increases dramatically. There are stockpiles of extremely¶ hazardous chemical and nuclear materials in the FSU. It is not¶ clear how these materials are being safeguarded. For example,¶ there may be as much as 150,000 tons of heptyl--a supertoxic, a¶ carcinogenic liquid rocket fuel used for Russian missiles--¶ stockpiled in closed production facilities and missiles. No¶ technology is known for handling it.23¶ The United States has clear and immediate interests in¶ negotiating and carrying out arms reduction and safe disposal of¶ weapons. These issues entail daunting technical challenges in¶ addition to the political challenge of reaching agreement. No¶ single FSU nation has the authority to determine the fate of¶ these weapons. Even with effective agreements and planning, the¶ danger from these weapons and the need for continuous control and¶ oversight by governments will continue; some of these weapon¶ components cannot be degraded into "safe" materials in the¶ foreseeable future. The complex set of tasks involved in nuclear¶ weapons destruction would be impossible if the FSU lacks¶ authoritative government actors to negotiate and execute¶ demilitarization and cannot be safely accomplished without¶ Western technical assistance.¶ In addition to concern about the direct impacts upon¶ stability arising from environmental conditions in the FSU and¶ Eastern Europe, the United States must be concerned about¶ indirect transboundary effects on the rest of Europe. Some of¶ those effects are obvious. Ecosystems are connected, and¶ pollution does not respect national¶ waters. Groundwater contamination spreads across national¶ borders; air pollution blows across borders. Moreover, the¶ political and economic consequences of environmental crises spill¶ over national and regional borders as well. For example, soil is¶ depleted by pollution and by lack of clean water; as soil is¶ degraded, agricultural productivity declines and migrations occur¶ as people seek more productive farm lands. Large migrations from¶ the East would create very significant economic and security¶ problems for the receiving lands, and would threaten their¶ stability. Environmental systems and processes do not remain¶ static. If effective steps are not taken to address these¶ problems, deterioration will spread.¶ There are economic motives for pursuing environmental¶ security. As the peoples of the FSU and Eastern Europe seek to¶ rebuild infrastructure and open new relationships, existing and¶ potential economic ties are important. The region is potentially¶ very important for new markets, which the United States wants to¶ encourage for economic as well as political reasons. If these¶ nations fail to meet environmental challenges or to set and meet¶ environmental goals, they will maintain severely polluting¶ industries---and attract more polluting industries. Failure to¶ meet Western environmental standards will limit trading¶ opportunities and increase local, regional and global threats to¶ the environment.¶ Given the strong interest in the stability of this region,¶ there are reasons for alarm. The catalogue of severe¶ environmental problems in the FSU keeps growing, as more is¶ learned about the conditions, and health effects data are¶ released. There is massive contamination of both air and water¶ sheds; large areas of land and surface waters have been polluted¶ with hazardous and radioactive materials. One-sixth of the¶ world's land mass is moving toward disaster. One of three¶ inhabitants of this territory lives in an ecological crisis zone,¶ covering an area of over 4 million square kilometers,24 resulting¶ in severe health effects. The former German Democratic Republic,¶ for example, had the largest uranium mine operations in Europe,¶ which supported the USSR nuclear weapons industry. Three mines¶ have over 150 million tons of uranium mill tailings, plus many¶ tons of contaminated liquids. One site, now closed, generated¶ thousands of cases of lung cancer, with more reported each¶ year.25 Neither Eastern Europe nor the FSU has the strong¶ efficient governmental infrastructure or economic resources¶ necessary to successfully assess, or more importantly, mitigate¶ these environmental threats.¶ Contaminated lands and livestock can destroy a state's¶ ability to produce foodstuffs for many years, perhaps¶ permanently. Diminished crop and fish production, and consequent¶ food shortfalls, are consequences¶ neuro-toxic effects that impair brain function. Decrements in the¶ mental as well as physical capabilities of many people would¶ affect the region's ability to build and maintain reliable armies¶ and manage sophisticated socio-economic systems. The success of¶ economic restructuring and political stability are¶ interconnected. No nation can maintain complex political, social¶ or economic infrastructures without a healthy citizenry.27¶ For these reasons, the West, and particularly the United¶ States, must play a role in revitalizing the environmental¶ processes and resources in Eastern Europe and the FSU if there is¶ to be any stability possible in these areas. The problems are¶ massive and unaffordable; they require long-term, often technical¶ solutions.28 Additional sites and problems continue to appear in¶ these areas, driving cost estimates even higher.¶ The West should prioritize problems that seem particularly¶ important to stability, and assist in the design and¶ implementation of targeted remediation and pollution prevention¶ projects to address them, based on risk and the probability of¶ widespread and/or long-term effects. Assistance programs should¶ stress management, training, and techniques for pollution¶ prevention; Western nations need to attend to issues (and groups)¶ that can assist in building infrastructure and legitimacy.¶ Technical and managerial aid should be tied to problems that¶ empower Eastern Europe and FSU nations to concentrate on¶ developing systemic capabilities. DOD personnel have the¶ technical knowledge and organizational skills to help the East¶ European and FSU governments begin to address these problems.¶ Water in the Middle East.¶ The Middle East is characterized by a relative scarcity of¶ water resources, and by the presence of users of those resources¶ who are members of different cultural, national, ethnic, and¶ religious groups. Population growth is also among the most rapid¶ in the world. An estimated 217.4 million people lived in the¶ northeast Africa and the Middle East area in 1983. By the year¶ 2000 the World Bank estimates that the population will have grown¶ to 337 million or an increase of 55 percent.29 The combination¶ of resource scarcity, rapid population growth, and social and¶ cultural differences can be volatile. As Peter Gleick notes,¶ "local or regional instability arising from a combination of¶ environmental, resource and political factors may escalate to the¶ international level and become violent."30 If this occurs in the¶ Middle East, it would threaten U.S. petroleum supply and could¶ involve the use of weapons of mass destruction.¶ The potential for water resource-related conflicts in the¶ region exists in several river¶ River; and between Egypt and its upstream neighboring states over¶ the Nile River.¶ Tigris-Euphrates Issues. Turkey has embarked on an ambitious¶ program to develop the water resources of these river systems.¶ The Grand Anatolia Project, consisting of 21 dams, will provide¶ water supply, hydroelectric capacity and irrigation to Turkey.¶ However, downstream water supplies to Syria and Iraq could be¶ reduced by up to 40 percent and 80 percent respectively by these¶ projects.31 Syria and Iraq have protested these projects as being¶ inimical to their strategic interests, since a majority of their¶ water comes from outside their borders. In the 1970s, Iraq almost¶ went to war with Syria over the reduced flows in the Euphrates¶ produced by the filling of Turkish and Syrian dams coincident¶ with a dry period.32¶ Kurdish separatists fighting Turkey have also been aided by¶ Syria and Iraq as a means of showing these states' displeasure¶ with the Turkish water projects. As of 1992, this insurgency had¶ taken 3,500 lives.33¶ Jordan River. Demand for the limited water available in this¶ basin is already substantial, and is expected to grow as¶ population increases. These waters are shared by Jordan, Syria,¶ Israel and Lebanon. Jordan and Israel already use more than 100¶ percent of their renewable water resources. In the past 10 years¶ the Palestinian population on the West Bank has more than¶ doubled, further exacerbating differences in access to water¶ between Israel and Palestine, currently estimated at 354 cubic¶ meters/person/day (cmd) for Israelis versus 119 cmd for¶ Palestinians.34¶ The control over headwaters of the Jordan River has been a¶ critical strategic interest of Israel. In the 1967 Arab-Israeli¶ War, Israel occupied these headwaters to ensure control over¶ water. These resources provide approximately 33 percent of the¶ total sustainable water yield to Israel.35¶ Nile River. The Nile is literally the lifeblood of Egypt.¶ Ninety-seven percent of Egypt's water comes from the Nile, yet¶ Egypt is particularly vulnerable to impacts of upstream¶ development or diversion of water, since 95 percent of the Nile's¶ flow originates outside Egypt's boundaries, and comes from the¶ other eight basin states. Additional upstream water development¶ could pose a basic strategic threat. Egypt has indicated its¶ willingness to fight to maintain its access to Nile River¶ flows.36¶ Water resource issues could pose significant sources of¶ conflict in the Middle East. In two of the three cases, actual¶ armed conflict has already taken place.¶ further complicate the situation. Hostilities which arise over¶ water could quickly escalate to more general conflict which would¶ in turn affect U.S. strategic interests related to petroleum¶ access and honoring treaty or friendship relations.¶ Haiti.¶ The manner in which environmental issues can endanger U.S.¶ security interests and involve U.S. forces in life-threatening¶ conflict is demonstrated by recent events in Haiti. The United¶ States has a long economic relationship with Haiti, that, like¶ its neighbor the Dominican Republic, resulted in U.S. forces¶ being sent to its shores during this century to support a¶ struggling government.¶ Today, Haiti is a threat to U.S. national security. The¶ flood of illegal Haitian immigrants to the United States is a¶ burden that incurs significant domestic political and diplomatic¶ costs, promotes divisive political and legal debate that has¶ diverted foreign policy resources from other more vital¶ international issues, and overwhelms the economic, health and¶ human services infrastructure of the areas to which the refugees¶ arrive. Large numbers of Haitian immigrants carry the HIV virus¶ and have the potential to place disproportionately high demands¶ on the already burdened U.S. health care system. In Haiti, the¶ decline in infant mortality and the cultural norms of its¶ uneducated, rural population have caused the population rate to¶ increase from 2 to 3 percent annually since the 1970s, with¶ average fertility increasing to 6.3 children per female.37 As a¶ result, Haiti's 6 million population is expected to rise to¶ famine levels of between 9.5 and 15.5 million by 2025.38¶ Moreover, diplomatic efforts to resolve the Haitian conundrum¶ have divided State and Defense Departments and very nearly¶ established the precedent of introducing unprotected U.S.¶ military forces into violent, life-threatening situations with no¶ clear objective or possibility of success. Haiti's political¶ difficulties stem from severe environmental degradation that¶ eroded the resource base upon which any government could be¶ successfully established.¶ Haiti is an example of how ignored environmental problems¶ promote instability. A country's environmental security is¶ threatened when it undergoes change in its quality of life over a¶ short period of time with limits placed on its alternative¶ responses. This can occur when overpopulation consumes elements¶ of the state's resource base at rates that exceed the land's¶ carrying capacity. When migration is constrained, the imbalance¶ becomes chronic. In a desperate search for¶ have eroded vast quantities of topsoil, creating a loss of arable¶ land of 1 percent annually.39 Some of the effects of¶ environmental degradation that have particularly important¶ national security ramifications lag behind the direct cause. The¶ requirement for energy resources in the developing world has this¶ effect.¶ In Haiti it was known for some time that deforestation was¶ causing social instability. In 1978, the President's Council on¶ Environmental Quality (CEQ) annual report indicated that¶ deforestation was virtually complete and warned that such¶ resource degradation would result in social disruption and¶ instability.40 By the mid-1980s, the Haitian peasants' continued¶ unchecked harvesting of bush and seedling trees for firewood and¶ cultivation of marginal soil had denuded the landscape of soil¶ retaining flora and allowed devastating erosion and loss of soil¶ productivity. The result has been an exodus of environmental and¶ political refugees to the United States with significant impacts¶ on Florida's economy and social infrastructure, which continues¶ to cause turbulence.¶ The environmental-energy linkage has profound global¶ implications. For example, the 1978 CEQ report states that for¶ Ouagadougou (then Upper Volta), the forest was completely¶ stripped within a 70 kilometer circle around the urban center.¶ The trees had been harvested for firewood. The average laborer in¶ Ouagadougou spent 20 percent of his income for fuelwood each¶ year.41 Such actions can directly affect national security¶ because deforestation can lead to desertification.¶ Desertification is the gradual, long-term reduction of soil's¶ productivity and resulting spread of desert-like conditions. It¶ is a major cause of destabilizing migration. Most of the world's¶ drylands are at risk to the desertification processes with at¶ least one sixth of the world's population threatened.¶ The search for energy resources to support the economies of¶ the industrial states has been a national security issue for some¶ years. What has not been clear to security policymakers, however,¶ is the connection between political instability, environmental¶ degradation, and the energy issue. The search for family energy¶ sources in developing countries such as Haiti has led to resource¶ depletion, large scale migration and instability. DOD has the¶ institutions and technical infrastructure to help these countries¶ develop alternative energy sources that are not high-tech,¶ complicated, and¶ U.S. security interests, the Department of Defense is a logical¶ choice to execute U.S. environmental security missions. Formally¶ recognizing DOD's environmental security roles, the Secretary of¶ Defense created the Office of Deputy Under Secretary of Defense¶ for Environmental Security during the Clinton administration DOD¶ reorganization and committed DOD to addressing important¶ international environmental issues. To determine how best to use¶ DOD in this effort, it is important to review some of its¶ environmental capabilities.¶ Considering its broad spectrum of operations, DOD has many¶ assets with which to mitigate environmental threats to national¶ security. The spectrum of DOD operations ranges from the nuclear¶ deterrence/strike roles of the Air Force and Navy to the purely¶ domestic issues supported by the Civil Works Program of the Corps¶ of Engineers. In these roles DOD brings rapid response, excellent¶ organization, and efficient management capabilities. Important¶ environmental issues already addressed by DOD entities include¶ chemical and nuclear demilitarization, toxic and hazardous waste¶ cleanup, and nuclear accident assessment.¶ However, DOD's installation support capabilities may be the¶ most useful and first called upon in responding to environmental¶ problems. A DOD skill unique among federal agencies is its¶ management of installations that have the characteristics of¶ small towns and communities around the world. This aspect gives¶ DOD the capability to understand not only the technological¶ issues associated with environmental challenges but also the¶ institutional organizations and relationships necessary to solve¶ environmental problems, particularly those associated with the¶ industrial and military base areas of East and Central Europe and¶ the FSU.¶ Some examples of these capabilities are:¶ • Training in all aspects of environmental compliance,¶ prevention, restoration, and conservation;¶ • Assessing and anticipating environmental needs, trends,¶ challenges, and emergent technologies;¶ • Preparing environmental documentation;¶ • Satellite, aircraft, seaborne and terrestrial observation,¶ monitoring, sensor, and mapping platforms;¶ • Cleanup technologies and processes;¶ • Waste minimization technologies and processes;¶ • Conservation technologies and processes;¶ • Restoration technologies¶ • Explosive ordinance disposal;¶ • Chemical and biological weapons accounting, monitoring,¶ transfer, storage, and destruction technologies;¶ • Nuclear weapons accounting, monitoring, transfer, storage,¶ dismantling, and disposal technologies;¶ • Surveillance technologies, platforms, command and control¶ mechanisms to monitor treaty obligations;¶ • Toxic and hazardous waste minimization, storage,¶ monitoring, transfer, and disposal technologies;¶ • Hazardous material incident response;¶ • Transfer and cleanup of military installations for¶ civilian use;¶ • Land and sea mine detection and removal;¶ • Orbital debris control and tracking;¶ • Air, land, and sealift to respond quickly, sustainably,¶ and in mass;¶ • Human health assessment, risk analysis, monitoring,¶ facilities and services (medical);¶ • Civil affairs;¶ • Financial management;¶ • Legal services;¶ • Interagency partnerships and relationships;¶ • Accountable and responsive chain of command and control;¶ • Development of energy sources;¶ • Established communications networks;¶ • Public participation processes;¶ • Public affairs;¶ • Land and installation management;¶ • Environmental¶ • Coastal and ocean sciences;¶ • Climatology;¶ • Habitat/Ecosystem restorations;¶ • Contract preparation, solicitation, award, management and¶ litigation for all capabilities listed; and,¶ • Policy, regulations, specifications, and guidance¶ development on all issues listed.¶ DOD Research and Development for Environmental Security.¶ As part of developing a strategic plan for environmental¶ security, consideration must be given to incorporating¶ Tri-Service/DOD RDT&E efforts concerning environmental issues.¶ The Tri-Service Environmental Quality Research and Development¶ Program (a joint service program that consolidates existing¶ science and technology funded research) will provide numerous¶ technologies appropriate to address national, regional, and¶ global environmental issues. To achieve effective technology¶ transfer, however, a mechanism with appropriate funding must be¶ developed and incorporated into the program.¶ In addition, new environmentally related initiatives under¶ DOD control also have great potential to provide technologies and¶ data appropriate for addressing environmental security issues.¶ The Strategic Environmental Research and Development Program¶ (SERDP), a joint DOD/DOE/EPA program, was established by Congress¶ in P.L. 101-510 on November 5, 1990.42 This program facilitates¶ DOD and DOE efforts to address, through basic and applied R&D,¶ the development of data and technologies that will enhance DOD¶ and DOE capabilities to meet their environmental obligations. As¶ one of its tenets, the program also is intended, "to identify and¶ foster research, development, and demonstration programs to help¶ solve major national and international environmental problems¶ through the use of the Departments' technical and research¶ capabilities, as well as their unique data collection and¶ analysis capabilities."43 The SERDP is structured into six¶ thrust areas: cleanup, compliance, conservation, pollution¶ prevention, global environmental change, and energy¶ conservation/renewable resources. Each area will provide¶ technologies that have¶ programs numerous opportunities to apply ongoing research to¶ environmental security issues. However, to transfer developed¶ technologies to the address of environmental security issues¶ effectively, an implementing process must be developed.¶ Medical Support in Environmental Security.¶ The Army Medical Department (AMEDD) has unique resources and¶ capabilities to perform risk assessments of environmental issues.¶ The centerpiece of these resources is the Army Environmental¶ Hygiene Agency (AEHA), with its main element located at Aberdeen¶ Proving Ground, Maryland and its three direct support activities¶ located at Ft. Meade, Maryland; Ft. McPherson, Georgia; and¶ Fitzsimons Army Medical Center, Texas. This organization has over¶ 650 employees representing the disciplines associated with¶ occupational and environmental health. In addition to AEHA, which¶ has a world-wide mission, two other organizations exist with¶ similar but more limited capabilities: the U.S. Army Pacific¶ Environmental Health Engineering Agency (USAPACEHEA) in Japan and¶ the 10th Medical Laboratory in Germany.¶ These organizations share some common characteristics.¶ First, the work they perform is accomplished with in-house¶ resources, in contrast to most other science and technology¶ organizations and laboratories, which rely heavily on contractor¶ support to execute their missions. Second, military personnel¶ comprise a significant portion of their staffs. At AEHA¶ approximately 30 percent of the authorized positions are¶ military; over 75 percent of the staffs at the 10th Med Lab and¶ USAPACEHEA are military. These in-house capabilities allow the¶ organizations to respond quickly to emergency requests, and the¶ staffing allows for deployment to areas that are sometimes¶ inaccessible to civilians.¶ The role that they perform in support of environmental¶ security issues is primarily in health risk assessment. The AMEDD¶ can deploy physicians, toxicologists, engineers, and other¶ technical specialists to an area, where they assess the potential¶ health or environmental risk and prioritize the environmental¶ security hazards. They can also produce the medical input¶ required when decisionmakers are determining appropriate levels¶ of cleanup, remediation, or treatment. Risk assessment-based¶ decisions not only mitigate liability, but provide a basis for¶ the cost effective use of resources.¶ The unique in-house expertise of these organizations,¶ combined with their rapid deployment capability, has been a major¶ environmental security asset. The AEHA was selected to assess the¶ potential health effects of the oil fires in Kuwait on DOD¶ personnel. The data collected during the 8-month sampling effort¶ is considered the most comprehensive ever gathered on such an¶ environmental health issue. DOD, through¶ technical specialists, with the necessary equipment, and in the¶ time frame required to perform the assessment. This effort, which¶ received close support from EPA and the National Oceanic and¶ Atmospheric Agency (NOAA), is likely to be used as a basis for¶ major studies and analysis for years and will also be used by the¶ Veterans Administration (VA) in their registry of Desert Storm¶ veterans. It also demonstrates the AEHA's capacity to provide¶ timely assistance for disaster relief.¶ Another example of the military's unique capabilities is the¶ assignment of AEHA teams to the former Czechoslovakia to survey¶ contamination at a former Soviet air base. The team provided¶ assessment data and recommendations on cleanup and possible¶ conversion to civilian use. The AEHA also sent health physicists,¶ expert in radiation, to Chernobyl to analyze the health risk¶ associated with that environmental disaster.¶ AMEDD professionals have been deployed in conjunction with¶ other Federal agencies, such as Department of State and EPA, as¶ well as to augment existing Army teams deployed to Somalia and to¶ Florida (Hurricane Andrew).

#### Deterrence is empirically validated – statistically reduces the probability and magnitude of conflict

Moore 4—chaired law prof, UVA. Frm first Chairman of the Board of the US Institute of Peace and as the Counselor on Int Law to the Dept. of State (John, Beyond the Democratic Peace, 44 Va. J. Int'l L. 341, Lexis,)

Running the hypothesis for the principal wars of the twentieth century does seem to provide support. While until recently the origins of World War I were more actively debated, there seems increasing support for the proposition, deeply believed by President Woodrow Wilson and enshrined in the Versailles Treaty, that nondemocratic [\*396] Germany and Austria were the aggressors. 162 The key is understanding that the war really began on the Eastern Front with an aggressive Austrian attack against Serbia, enthusiastically encouraged by Germany. That aggression in turn precipitated a cascade of Russian mobilization and Germany's declaration of war against France, Russia, Luxembourg, and Belgium. Even after the attack on Serbia, France ordered its troops to pull back from the border with Germany. And democratic Italy, a formal ally of the Central Powers, declared that it was only committed to a war of defense and accordingly pulled out of the coalition and instead joined the Entente Powers. Contrary to the oft-repeated arguments about World War I being caused by a tightening of competing alliances, there was no real alliance with Britain, except at a low level in military to military planning, and the British would not even tell the French that they would assist them in the event of German invasion because it might leak to the Germans! Much less did they seek to communicate such a pledge to Kaiser Wilhelm II. Indeed, we know that even late in the crises, both the Kaiser and Foreign Secretary Gottlieb von Jagow believed that Britain would remain neutral. In turn, the lack of British willingness to publicly join forces with France in deterring Germany reflected a split within the Liberal leadership. The prime minister, H. H. Asquith, confided to his girlfriend: "I suppose a good 3/4 of our own party in the House of Commons are for absolute non-interference at any price." 163 And as to the initial attack on Serbia, the Kaiser felt the risks of Russian intervention were low since he believed Russia was in no way prepared for war. This understanding of the aggressive intentions of Germany's leaders in World War I, even if they did not seek the kind of world war that resulted, is now widely accepted in Germany, as reflected, for example, in the work of the [\*397] German historian Fritz Fischer. 164 Paradoxically, some in the United States, France, and Britain seem to have accepted the arguments to the contrary poured out by the special section of the German Foreign Office set up after the war to challenge the imputation of German war guilt. 165 World War II is, on the Western Front, a poster child for the paradigm. 166 The paradigm also meets the origins of the war in the Pacific theater as well, where the government of Tojo intentionally set out on an aggressive "Southern Strategy" following Japan's aggression against China and growing resource concerns from the resulting sanctions. No doubt deterrence, which might have been expected from Britain, France, and the Netherlands in the area of Japanese expansion, was substantially reduced by the then perceived defeat of all three powers by Hitler. 167 The United States seemed the only real obstacle to the proposed hegemony, and many factors suggested to Japanese leaders that the United States could be effectively removed by a major strategic blow against the fleet concentrated at Pearl Harbor. 168 Whatever the debate about the comparative roles of Stalin and Kim Il Sung in the Korean invasion, it is clear that there was almost no deterrence before the attack. U.S. military forces, except for a 500-man training team, were withdrawn from South Korea in 1949. Congress had refused to adequately arm the government of South Korea as requested by our ambassador and military command in Korea, and both Secretary [\*398] of State Dean Acheson and General Douglas MacArthur, as Supreme Allied Commander Far East, had made public statements implying that Korea was beyond the United States defense perimeter. 169 Indeed, these statements were consistent with the views of the Joint Chiefs in the prevailing climate of limited military resources and focus on the Soviet threat in Europe. Kim Il Sung is said to have sought to persuade Stalin that the United States would not intervene because the attack would be a decisive surprise attack lasting only a few days or weeks. And the overall strategic equation had just been drastically changed by the 1949 Soviet explosion of their first atomic weapon and the Communist takeover of China. 170 Moreover, if the United States had not fought to prevent a Communist takeover of China, why would it do so in Korea? The Vietnam morass cannot be quickly summarized, but it should be noted that the defeat of South Vietnam came about only after the Paris Accords had produced a Nobel Peace Prize for both sides and that, following the American force withdrawal, congressional abandonment of Vietnam, and collapse of the presidency in Watergate, a totalitarian North launched a twenty-two division Korean style regular army invasion of the South. The absence of deterrence was so complete that North Vietnam kept back only its anti-coup division around Hanoi. And the lack of American will for reengagement was so total that President Ford was not even able to get both houses of Congress to agree on a simple authorization to use U.S. forces for the orderly evacuation of Americans from Saigon. 171 The Iran-Iraq War and the Gulf War also closely fit the hypothesis. In both, an aggressive Saddam Hussein, sensing an absence of effective deterrence, initiated an attack. The collapse in Iranian deterrence, which lured Hussein in the war against Iran, was a product of the domestic turmoil following the fall of the Shah. Kuwait simply seemed an easy target after the bitter experience in the war with Iran. And, while there could have been signals from the United States or Britain to give Saddam pause before the invasion of Kuwait, no such signals [\*399] materialized. 172 As the dramatic reduction in deterrence accompanying the Iranian revolution illustrates, it is possible that the apparently greater risk of war for nations undergoing a transition to democracy, postulated by Professors Mansfield and Snyder in their 1995 Foreign Affairs article "Democratization and War," may result, at least in part, from the dramatic reduction in levels of deterrence in many such settings. 173 Prior to the ongoing revolution in the former Soviet Union, for example, levels of deterrence from centralized state power made a serious Chechnya insurrection unlikely. Conversely, the Gulf War illustrates yet another example of how effective deterrence may have worked to prevent Saddam Hussein from using chemical weapons against the coalition to liberate Kuwait, despite his earlier use of such weapons against Iran and even his own people. George Bush and Margaret Thatcher clearly warned Hussein that the coalition would not tolerate the use of weapons of mass destruction. In a letter to Hussein, Bush said, "You and your country will pay a terrible price if you order unconscionable acts of this sort." 174 A UN Special Commission on Iraq later found copies of this Bush letter all over the country. And a 1994 European Union Assembly report found that the presence of nuclear weapons on U.S. aircraft carriers in the Gulf may well have deterred Iraq. The failure of the second phase of the UN operation in Somalia and subsequent failed UN efforts in Rwanda also reflect an absence of effective deterrence against aggressive nondemocratic regimes. The first phase of the Somalia operation, undertaken by President George Bush at [\*400] the urging of Secretary General Boutros Boutros-Ghali, may have saved as many as a million Somalis from starvation as feuding clan leaders sought to use starvation as a weapon in their political struggles. Following withdrawal of the bulk of U.S. forces, however, Mohamed Farrah Aidid and his Habr Gidr clan began attacking UN forces in a bid to take control rather than participate in a UN brokered coalition government. On June 24, 1993, twenty-four Pakistani UN peacekeepers were killed, apparently by Aidid's forces. These attacks occurred in a setting of substantially reduced deterrence. Understandably, UN leadership, supported by the United States, sought to hold Aidid responsible and to move forward with the mission. Subsequently, after the United States led a special operation in Mogadishu against Aidid's forces that resulted in two MH-60 Black Hawk helicopters shot down and eighteen U.S. soldiers dead, President Bill Clinton ended the effort to control Aidid, rather than commit the forces necessary to decisively carry out the Security Council mandate. The result, in a setting of already low deterrence, was a collapse of the UN mission. One week after the battle of Mogadishu, in a context of wide press attention given in the aftermath of that battle to the body of an American soldier dragged through the streets, the U.S.S. Harlin County, on a UN peacekeeping mission to Haiti, was turned away from the dock in Port-au-Prince by an orchestrated "riot" of fewer than 200. 175 The detrimental consequences for UN operations continued. General Marrack Goulding, the UN Under-Secretary-General for Political Affairs, informed me that following Clinton's decision to stand down U.S. forces in Somalia, UN peacekeepers around the world were greeted with the cry: "Welcome to Mogadishu." It was in that climate that autocratic Hutu leaders in Rwanda concluded that killing a few UN peacekeepers would cause them to go home and give the Hutu extremists a free hand against the Tutsis. They promptly attacked and killed Belgian peacekeepers and were rewarded when Belgium followed Clinton's lead and withdrew their forces. At that point no further consensus could be developed in the Security Council to intervene against the developing genocide in Rwanda. We will never know what would have happened had Clinton stuck with the UN mandate in Somalia and committed U.S. forces to overwhelmingly prevail against Aidid and his apparent Osama bin Laden backers. We do know, however, that the collapse of the UN operation in Somalia and the subsequent genocide in Rwanda took place in a setting of rapidly [\*401] decreasing deterrence against nondemocratic regimes. 176 Non-war settings, or "the dogs that did not bark," also seem generally consistent with the hypothesis. Thus, neither Canada nor Switzerland seek to militarize their borders with the United States or France, respectively, despite overwhelming military (including nuclear) superiority by their large and contiguous democratic neighbors. Nor do the citizens of the United States fear the French or British nuclear deterrents, despite their ability to devastate the United States - vice versa for the citizens of France and Britain. And NATO, where substantial levels of conventional and nuclear deterrence are present, is a tight alliance that may well have avoided major war wherever its pre-commitments were clear, as was certainly true for any conventional invasion of the core of NATO. Analysis of abrupt changes in the two elements in the war synergy also lends support to the hypothesis. As examples, the ongoing shift in the former Soviet Union from totalitarianism toward democracy produced changes of enormous consequence, many of which would have been unthinkable under the former Soviet regime. These include the fall of the Berlin Wall, the reunification of Germany, the dissolution of the Warsaw Pact, the expansion of NATO to the East, dramatic reductions in military forces, the sale by Russia to the U.S. of fissionable material recycled from Soviet nuclear weapons, and at least a partial removal of the old Soviet automatic veto in the Security Council. Moreover, the spillover effects on arms control from these governmental changes in the former Soviet Union were far greater than the converse spillover from arms control on U.S./Soviet political relations. And, as examples with respect to levels of deterrence, it has already been noted that the internal turmoil following the Iranian revolution produced a rapid decrease in deterrence and ultimately a mistaken attack by Saddam Hussein. Conversely, once coalition forces had been committed to defend Saudi Arabia in Operation Desert Shield, deterrence against a full scale Iraqi attack on that country increased [\*402] dramatically. Even in the absence of Desert Storm, the threat had likely passed for Saudi Arabia. Similarly, the partly internal, partly international wars in the ongoing breakup of the former Yugoslavia seem to be a product, at least partly, of a variety of factors reducing deterrence that was formerly present under Tito's iron rule. It might also be noted that the absence of direct great power war since World War II - the longest such period in five centuries - coincides with the powerful increase in deterrence from nuclear forces.