STRATEGY RESEARCH PROJECT

INSTALLATIONS MODERNIZATION, QUELLING THE "QUIET CRISIS"

BY

RICHARD T. HAMNER
United States Marine Corps Civilian

USAWC CLASS OF 2002

U.S. ARMY WAR COLLEGE, CARLISLE BARRACKS, PA 17013-5050

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Richard T. Hamner
USMC Civilian

Col Stephen A. Shambach
Project Advisor

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: Richard T. Hamner

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United States military installations' infrastructure has reached an alarming state of deterioration. Resources since the end of the Cold War for installation upkeep have been unable to stem the inexorable decay of base facility infrastructures. Across the services, the Stars and Stripes fly over barracks, family housing, administration, maintenance, storage, personnel support, and operational facilities whose average age is 41 years old and increasing. A "quiet crisis" has emerged. Unless immediate, diverse, measured, sustainable, and sufficient action is brought to bear, continued impacts on quality of life, health/safety, aesthetics, security, community relations, and training will worsen, threatening our military's most important necessity: readiness.

It is unlikely that increased fiscal resources will be available as a long-term remedy. Nor is this solution a panacea for it. The strategic resource environment will be constrained. It is crucial that the best strategic planning efforts be applied to secure optimal and timely improvements, with limited available resources, that best serves our operating forces. This is especially applicable considering the recent budget-impacting events surrounding homeland security.

This paper puts this problem in perspective, reviews current corrective policy, and suggests an augmenting holistic approach to the question: Can this quiet crisis be turned around?

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BACKGROUND:

THE PROBLEM, A QUIET CRISIS

As the United States Department of Defense and its component military services enter this new century of service to country, the strategic challenges could not be greater. Today's multifaceted and revolutionary events portend an era of transition, of change, with support mechanisms radically different from today. This paper addresses the requirements and challenges for strategic leadership in an important but troublesome area of today and tomorrow - installations modernization. It poses strategic considerations, conclusions, and provides "holistic" planning recommendations that DOD military and civilian leaders should ponder in the management of worldwide bases and stations. A strategic focus is absolutely necessary because of the enormous impacts that installations make on our military forces, their families, equipment and weapons platforms, and overall mission readiness.

United States military installations' infrastructure has reached an alarming state of deterioration. Resources since the end of the Cold War for installation upkeep, both in real property maintenance/repair and construction/recapitalization have been unable to stem the inexorable decay of base infrastructure. Across the services a "quiet crisis"[1] has emerged. The Army situation is appalling. It has a $17.8 B maintenance backlog, the largest in the military. A recent Army report found that its "facilities are in a death spiral" that will take 30 years to reverse.[2] Similar situations exist with the Air Force, Navy, Marine Corps, and Coast Guard.

This problem has a serious implication in the area of personnel retention. U.S. soldiers, sailors, airmen, and marines can endure privation when duty calls. But is perpetuating the decay of infrastructure in a resource-constrained environment the only recourse available to defense leadership? Is this management? Is this strategic thinking? Is this moral? Congressman Joel Hefley, member of the House Armed Service Committee recently said that

> You cannot treat young people the way we have and expect them to remain in the service. If you want good and talented people to come into the service and to stay in the service, then you have to provide them a decent place to live and a decent place to work.[3]

The visible, tangible things that military and civilians aboard our bases experience - the barracks, mess halls, homes, and work places - the impact they have on quality of life undoubtedly affect personnel retention. "Duty, honor, country" goes a long way in sustaining personnel recruiting and retention. However, leaking barracks roofs, cold workplaces, crowded

WW II wood frame training spaces, and Quonset hut storage, to name but a few, are an egregious affront to military professionalism and contribute to personnel attrition.

> As sailors review their career alternatives, they look outside the gate at the many civilian firms eager to hire them. To continue to retain our top quality people, we need to win these comparisons. Crumbling facilities are not simply a morale problem, they're a serious readiness issue.[4]

Patchwork mentality and ad hoc resourcing has to stop. Unless immediate, diverse, measured, sustainable, and sufficient action is brought to bear, quality of life, health/safety, aesthetics, security, community relations, and most importantly - readiness - will suffer.[5] The appalling situation does not have to endure indefinitely. However, strategic solutions are necessary to address this crisis.

HYPOTHESIS

The author is a facilities planning professional with Marine Corps Headquarters and has witnessed the severity of facilities degradation over the last decade and the lack of ability to effectively repair and recapitalize its plant account at Marine Corps installations. The hypothesis is that the enormity of this problem across DOD has overrun its resolution by traditional, conventional methods (Title 10 service authorities). Old methods won't work anymore. The Marine Corps Director of Facilities and Services' succinctly put this problem in perspective: "Without heroic funding levels, it will take us decades to resolve the quiet crisis".[6] Conventional and unconventional, routine and revolutionary approaches must therefore be brought to bear in a holistic and strategic manner.

A NATIONAL PROBLEM

Decaying, crumbling infrastructure is not restricted to the DOD arena. If one opens any newspaper today, there are usually announcements of local initiatives to repair schools, roads, or utility systems. These initiatives spur bond drives or tax increases that energize local politics. Nationally, this infrastructure problem was recently described in the American Society of Civil Engineers' 2001 Report Card for America's Infrastructure as having a grade of "D" in 1998 with no improvement to date. The needs were categorized as roads, bridges, mass transit, aviation, schools, drinking water, wastewater, solid waste, hazardous waste, navigable waterways, and energy facilities.

> We estimate this nation needs $1.3 trillion to rebuild its infrastructure in the next five years. It's up to civil engineers to lead the charge for infrastructure solutions and investment... America's infrastructure was once the envy of the world, and the source of our economic might...We must not let the future of America rest on

aging and obsolete infrastructure, or the nation will be unable to face global competition.[7]

Undoubtedly it will take more than civil engineers to address this monumental resource shortfall. Strategic planning by local, state, and national leadership will also be necessary to address this problem as a matter of public policy. DOD's infrastructure decline is only a subset of a greater national concern.

THE 90S DECADE OF INFRASTRUCTURE DECLINE

1990 marked the end of the "Reagan years", the 80s decade which saw large DOD budgets inclusive of MILCON and infrastructure O&M appropriations. The large defense expenditures also successfully contributed to the conclusion of the Cold War. The conclusion of this era spurred an interesting student paper, by LtCol L. Dean Fox, regarding the necessities of the Air Force base commander for facilities modernization in what was projected to be a 1990s decade of major facilities (O&M and MILCON) budget cuts. Ensuing recommendations included commitment, shrewdness, and innovation on the part of the base commander for modernization programs, comprehensive project planning and programming actions, assurance for project competitiveness, and timely execution.[8]

LtCol Fox was certainly prescient in his stated budgetary outlook for the decade of the 90s. Today, however, hindsight reveals the enormity that this problem actually manifested itself and mandates its elevation to a level much higher than the base commander. Local, base level considerations are indeed necessary, but are only part of a larger, more comprehensive and holistic review for a solution.

The decade of the 1990s saw a dramatic draw down of MILCON and O&M facility infrastructure expenditures for various reasons. The primary reasons were reduced DOD budget authority in a post-Cold War environment and, ironically, increased OPSTEMPO of forces drawing on scarce O&M funds. Secretary of Defense Rumsfeld summed the problem best in recent Congressional testimony:

> Over much of the 1990s, the U.S. has both overused and under-funded this force, and it has taken a toll. Asked to do more with less, they have saluted and done their best, but it has been at the cost of needed investment in infrastructure, maintenance, and procurement of equipment. With the end of the Cold War, there was an appropriate draw down, but it went too far - overshooting the mark by a good margin. We are well past the time to take the necessary steps to arrest the declines and put the Armed Forces on a path to better health. The problem goes well beyond operation tempo. For example, many facilities are dilapidated, in urgent need of repair and replacement...35% of Marine Corps infrastructure is over 50 years old...sixty percent of military housing is

> substandard...we need to restore DOD infrastructure...so that our forces are ready for the new and different times of the new century.[9]

GAO has also repeatedly examined this problem for various Congressional inquiries:

> Insufficient facilities investments at military depots do not ensure their viability and may leave DOD ill-prepared to handle a national emergency[10]

General Jones articulated the Marine Corps concern best:

> We want to ensure that our posts possess the infrastructure and ranges necessary to prepare our Marines for the wide variety of contingencies they can expect to confront... just as bases and stations are vital to our current readiness, the recapitalization of our infrastructure is as important to our war fighting strength in the future as is modernization.[11]

National security is a very complex matter. The quality of DOD installations is an important component of the "system of systems" which supports military readiness. Today's declining infrastructure across our services' installations directly reduces national security capability.

CURRENT POLICY AND ANALYSIS

NATIONAL SECURITY STRATEGY

National security policy articulates three concepts supportive of installation modernization:

1) Preparation for an uncertain future by balancing three critical funding priorities: maintaining ability of U.S. forces to shape and respond today, modernizing to protect the long-term readiness of the force, and exploiting the Revolution in Military Affairs (RMA).[12]

2) Preparation for an uncertain future by Revolutionizing Business Affairs (RBA) through enactment of legislation for competitive work-sources, acquisition reform, logistics transformation, and elimination of excess infrastructure via two rounds of BRAC.[13] These priorities appear as "ends" in the Quadrennial Defense Review (QDR) and with the exception of BRAC are again <u>implicitly</u> linked with base infrastructure. Congress recently enacted <u>one round</u> of base closure for FY2005 in its FY2002 DOD budget.

3) The importance and nurturing of defense personnel as...

> ...forces in the U.S. at appropriate levels of readiness to deploy when needed. Quality people, civilian and military are our most critical asset in implementing our defense activities... we must ensure that we remain the most fully prepared and best-trained military force in the world. Accordingly, we will continue to place the highest priority and bear the costs associated with programs that support recruiting, retention, quality of life, training, equipping, and educating our personnel.[14]

Accordingly, personnel and military readiness support the National Security Strategy and the National Military Strategy. An adequate and supporting base infrastructure is necessary to achieve personnel support and military readiness.

QUADRENNIAL DEFENSE REVIEW (QDR), SEPTEMBER 2001

The QDR was written in the context of the 11 September 2001 terrorist attacks and reiterates the value of military personnel to national defense.

> As in generations before, the skill of our armed forces, their devotion to duty, and their willingness to sacrifice are at the core of our nations strength. We must provide them with the resources and support that they need to safeguard peace and security not only for our generations but for generations to come.[15]

The QDR mirrors Secretary Rumsfeld's recent Congressional testimony on the woeful state of the United States military due to a decade of fiscal restraint. This includes personnel and retention problems, increased use of the reserves, low quality of life, and a defense infrastructure that has suffered from under-funding and neglect:

> In recent years, facility sustainment was funded at only 75-80% of the requirement. The result is a deterioration of facilities and an accumulating restoration backlog that has been estimated to cost over $60B. Recapitalization was also significantly under funded. While the private sector replaces or modernizes facilities at an average rate of once every 57 years, defense infrastructure has fallen well short of that standard....192 years.[16]

The QDR further highlights the need to match a transformed military to an equally transformed support structure, a revitalized DOD establishment. This includes a consolidated and streamlined facility infrastructure and enhanced financial systems and modernized business practices. An excess of facility structure (20 to 25%) was stated as draining scarce dollars that could be put to more urgent transformation priorities.[17] DOD's "Efficient Facilities Initiative (EFI)" has been established to address this waste through base closure, consolidation, and/or realignment. EFI will be the framework followed for a single round of base closure in FY05.

NATIONAL MILITARY POLICY

National military policy reemphasizes RMA and RBA and adds jointness as a necessary ingredient. National Military Strategy of 1997 states:

> We must continue to ... maintain a high quality force... high state of readiness... ready to fight as a coherent, fully interoperable, seamlessly integrated - joint force.[18]

Additionally, preparing for an uncertain future requires

> ...fundamental reengineering of our infrastructure and streamlining of support structures through RBA for cost efficiencies necessary to recapitalize the force... this will be difficult to accomplish...[19]

Defense personnel are thus recognized as a "strategic enabler" in National Military Strategy, among others. Adequate housing for them was emphasized,[20] although other facilities and infrastructure initiatives were not elaborated. National military policy is thus lacking explicit reference to the strategic importance that installation infrastructure provides to the nation. Such recognition is also transparent in Joint Vision 2020 documentation as well as Joint Strategic Capability Planning documentation.

DEPARTMENT OF DEFENSE

DOD policy for modernizing installation infrastructure is vested in directives for acquisition, management, upkeep, and disposal of real property (land and improvements).

DOD policy prescribes that the Military Departments and Defense Agencies determine the real property needed to satisfy military requirements both in peacetime and in case of war, ensure that the property is obtained, and dispose of only that real property having no foreseeable military requirement. [21]

DOD also provides broad authority and responsibility for installation management and resource allocation with the Commanding Officer.[22] Service-specific directives implement such policy and are linked with the multi-year PPBS process. Policy for construction execution of funded projects is assigned to either the Army Corps of Engineers or the Naval Facilities Engineering Command.[23]

DEFINITIONS, SCOPE, AND VISIBILITY

The terms "modernization" and "infrastructure" are used in varying contexts within current policy, testimony, periodicals, and media documents. Inconsistency of meanings suggests confusion with their meanings, scope, and boundaries. "Modernization" is more closely linked with equipment procurement/updates (i.e. weapons, C4ISR, etc) and excludes installation infrastructure. "Infrastructure" is equally diverse in scope, recently expanding in meaning to accommodate a new thinking:

> There are significantly different perceptions about what constitutes infrastructure. The term has private sector connotations as well as meanings unique to the defense sector, which reflects the "construction" sense of the word. The QDR, DRI, and NDP offer contemporary views to include the Defense Agencies, national-level logistics management organizations, joint and service headquarters, and OSD as infrastructure elements.[24]

Inconsistencies of meaning must be rectified to clarify meanings of the words and to clearly give installations infrastructure its own niche in this vital area of resource management.

Infrastructure modernization per se is omitted at top policy levels, probably because of its Title 10 (service component) nature and perceived indirect support to war fighting. Additionally, infrastructure does not emerge as a strategic concept until CINC-level deliberate and crisis action planning mandates such planning as part of logistics support for employing military forces in an area of operations.

> If the interventionalist foreign policy of the last two administrations is to be sustained in an effort to maintain order in an increasingly disordered world, then infrastructure will need to assume an equal place with flexible forces and strategic transport in the calculus of military planners.[25]

While this passage addresses the wartime support that infrastructure provides, is it not equally important to consider its role in peacetime planning? Seemingly, explicit reference to infrastructure management, at least at the national military strategy level would provide the visibility that bases and stations infrastructure deserves.

PROPOSED POLICY FIX

Installations and real property management must be energized at national policy levels. Its critical role in supporting military readiness is transparent at such levels. There is no clearly articulated policy statement which links infrastructure to readiness, to national military strategy, and to national security strategy. Without explicit and supportive policy, it is understandable that infrastructure has been under-funded and de-emphasized. The irony is that infrastructure has a direct link to operational readiness. Without top down direction, bottom up resourcing requests will always fall short of the mark and the death spiral of the quiet crisis will continue.

CURRENT REMEDIAL EFFORTS: ARE THEY ENOUGH?

RESOURCING/GOVERNMENT FUNDING

DOD's recently enacted $343.3 B FY02 budget represents the largest defense appropriation ever. This is not surprising in wake of the 11 September 2001 terrorist attacks. Are funding levels thus sufficient to address installation requirements? An analysis of the numbers follows.

There are 300 installations in the United States and 100 overseas-based stations that support 570,000 active duty military. General Krulak, past Commandant of the Marine Corps, called Marine installations its "land-based aircraft carriers, ...launch pads" for Marines Corps expeditionary might. Similar statements are articulated by the other service chiefs. $600 billion

of plant account must be managed in this regard. See Figure 1. What is the level of upkeep required to maintain such a plant? This is a tough question involving multifaceted installation management considerations. However, to simplify the direct question at hand, there are two budgetary contributors that must be resourced annually: maintenance & repair (M&R) and recapitalization.

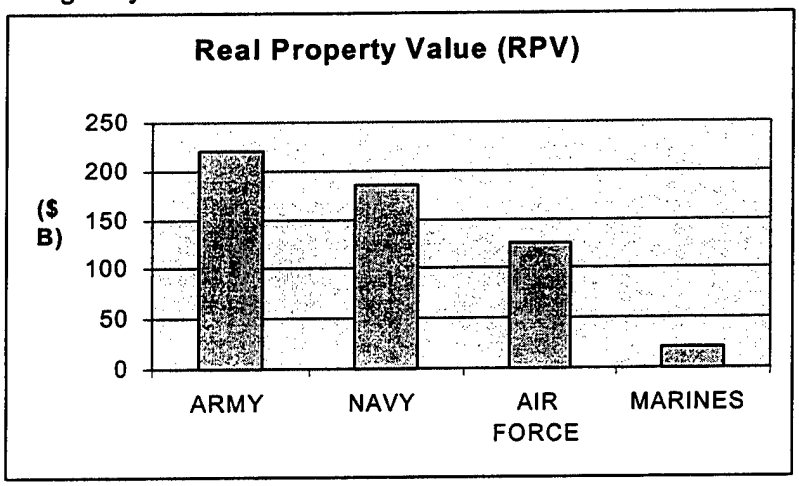

FIGURE 1 - REAL PROPERTY VALUES

Facilities M&R provides recurring as well as ad hoc upkeep of building components that have deteriorated over time, the replacement/repair of which will sustain that facility's useful life. M&R is funded as a subset of the massive DOD Operations and Maintenance (O&M) budget which in the aggregate comprises approximately 1/3 of the overall DOD appropriation. Bases unable to provide M&R to all requirements begin to generate a backlog of M&R (BMAR) that grows annually and is hopefully addressed in subsequent budget authorities.

Recapitalization is also known as capital asset replacement and is a term for the construction investments made annually to replace facilities that have reached the end of their useful life. As a simple example, if 100 buildings valued at $200 M (in today's dollars) are assumed to have a useful life of 50 years through application of recurring annual M&R, a figure of 1/50 x $200 M or $4M is required annually for their eventual demolition and replacement. This is similar to depreciating real property in the business world. Recapitalization is dually funded from major and minor military construction funding. Minor construction is again a subset of the O&M appropriation and is the aggregate of all the facility projects that provide less than $500K of new building construction or existing building alterations. Major construction funds projects exceeding $500K and is authorized and appropriated by separate Congressional line item entitled Military Construction. This appropriation is not only for projects deemed as recapitalization, but also for those facilities and improvements necessary to support major equipment or weapons procurements (new mission starts).

The budgetary levels needed to sustain the "cost of ownership" of infrastructure, exclusive of raw land and major utility systems have been documented.

Asset based budgeting levels (for real property facilities) = 2 - 4% of Plant Replacement Value (PRV) for M&R + 20-30% of deferred maintenance backlog + 2 -4% of PRV for recapitalization + funding for new mission starts + utility costs.[26]

Application of this formula to the DOD application:

Item	Formula	Amount
M&R	Assume 3% x $600B plant account (PRV)	$18.0 B
Deferred M&R backlog red.	Assume 25% x $26B backlog (BMAR)	6.6 B
Recapitalization	Assume 67 year rate (1/67) = 1.5% of PRV	9.0 B
New Starts	Not incl, assumed N/A	--
Utility Projects	Assumed not included	--
Total		$33.6 B

TABLE 1 - CALCULATED OWNERSHIP COSTS

Assuming M&R rates in the middle of the allowance tolerance for M&R and a very conservative 1.5% rate for recapitalization, approximately $34 B would be an appropriate investment to maintain existing infrastructure. This amount is considered conservative due to the omission of utility projects that is a major and costly problem at large Marine Corps installations. New starts were excluded, assuming that such projects will be planned and funded as separate "tails" to their procurement budgets.

The recently enacted FY2002 DOD budget reflected the following data for comparison with the calculated infrastructure requirements above:

Item	Amount	
MILCON, Family Housing, & Homeowner Assist.	$10.0 B	
Less BRAC Account IV	(0.5 B)	
Less Family Housing O&M	(3.0 B)	For Recapitalization
Less NATO	(0.2 B)	
Subtotal	$ 6.3 B	
Facilities Sustainment, Restoration, Mod, Demo	6.5 B	
Plus Family Housing O&M	3.0 B	For M&R/BMAR Red
Grand Total	$15.8 B	

TABLE 2 - FY02 DOD ENACTED BUDGET FOR INFRASTRUCTURE

Clearly, this appropriation is woefully short, representing less than half of the infrastructure upkeep requirement. Even if the M&R, BMAR reduction, and recapitalization rates are reduced to 2%, 20%, and 100 years respectively, the ownership requirement drops to $23.3 B, and an annual shortfall of $7.5 B still exists. This "most conservative" scenario represents a funding stream of 68% of the upkeep requirement and appears to validate statements made by the Services in Spring 2001 Congressional testimony:

> The Services said their request for maintenance is about 69 percent of what they need. "That's woefully inadequate", said Maj. Gen. Robert L. VanAntwerp Jr., Deputy Chief of Staff for Installations and Housing for the Army. Rep Norman Sisisky, D-Va., a member of the House Armed Service's Subcommittee on Readiness said "We're so far behind in real property maintenance, we'll never catch up."[27]

Assuming level funding of $15.8 B per year, resources versus requirements are diverging at an alarming rate. Therefore, in order for resources to "catch up", something must be done to reduce requirements or increase resources. Increased funding for this problem in the years ahead, though required, is problematic.

Three national-level budgetary challenges are thus evident. First, post-9/11 concerns introduce homeland security, force protection, and counter terrorism which compete for O&M, MILCON, and other funds brought to bear for infrastructure remedies.

Second, the pervasive national problem of infrastructure decline must be addressed at local, state, and federal levels. This $1.3 trillion problem is a significant resource concern but suggests a synergistic planning mechanism across governmental, non-governmental, federal, state, and local realms. This must be done to effectively marshal limited dollars and avoid redundancies and clashes of developmental interests across jurisdictions. This national problem demands teamwork at the national level! Subordinate planning down to and including the local level must be done through regional, state, city, and local jurisdictions which include DOD considerations and representation.

The third national challenge is the rising social security, Medicare, and Medicaid requirements that will surface as the baby boom generation becomes eligible for benefits. The Congressional Budget Office forecasts a sharp spike in such benefits in the 2010 timeframe. Such trends could adversely affect the DOD budget that competes with such non-discretionary spending in the overall annual budget process. This outlook suggests that planning for the quiet crisis must achieve a short-term remedy by 2010, before competing fiscal requirements can manifest themselves against DOD requirements. Thus, there is urgency to solving this problem

over the next decade. Longer-term solutions must therefore be focused on maintaining what is accomplished over the next decade to solve this problem.

SERVICE SPECIFIC INSTALLATION STRATEGY AND VISION

Each service has nobly articulated a strategic plan and vision to address the deteriorating infrastructure they must maintain.

1. **Army**: The Army is in the process of a major transformation to a lighter, more versatile, more lethal, and capable organization of the future. This process requires a transition from today's "legacy" force to an "interim" force (comprised of Interim Brigade Combat Teams) and finally to its ultimate "objective" force. The objective force organization will be comprised of radically changed equipment, missions, and technology and is in the RDT&E stages today. The Army's Assistant Chief of Staff for Installation Management is the proponent for installation support to all three axes of the transformation process and has developed the "Army Installation Strategy" to achieve it. This strategy includes the Army's active and reserve components, and places emphasis on funding maintenance and repair so that investments in facility modernization are protected. Installation templates have been established to support the more imminent IBCT units. "Fort Future" is a longer-term view of its installations in support of the objective force. [28] The Army has recently initiated "Centralized Installation Management" of its infrastructure planning, programming and execution. This change will reduce diversion of scarce installations funding by flowing them to regional headquarters (vice MACOMs), thus allowing these funds to be allocated for their intended purpose.

2. **Air Force**: The Air Force has identified infrastructure as a "key enabler" for current and future operations/readiness in its Concept of Operations 2020 document. They recognize its importance to their people, their working environments, satisfaction with military life, retention, recruiting, and ultimately to the sustainment of aerospace capabilities. Their major command (MAJCOM) commanders are the best judge of the condition of their properties and have reported that 64% of them are in a C-3 or C-4 status. [29]

3. **Navy:** The Navy has adopted a Regional Shore Infrastructure Planning (RSIP) process, Sustainable Development Initiative, and Management Information System to link Navy operational vision with that of its deteriorating infrastructure. [30]

4. **Marine Corps:** Marine Corps Strategy 21 is the overarching vision for supporting future combat capabilities and describes how the Marine Corps will evolve, grow, and transition to the future. Supportive of and complementing this vision, General J. L. Jones, Commandant of the Marine Corps, recently approved Marine Corps Installations Strategy 2020 (I2020). This

document provides vision for Marine Corps bases and stations twenty years hence and beyond. I2020 also ensures that Marine installations will grow and transition in step with the force. It provides guidance to address the full range of issues and challenges facing 21st Century Marine Corps installations.[31] The vision is one of quality facilities, in sufficient amounts, unencumbered, supporting Marines, their families, their readiness, and their culture. I2020 describes these "ends" without articulating specific "ways" or "means" to accomplish them. Such resources and processes were omitted to allow their evolution in subsequent plans and policy.

So there are various service programs, visions, and policies, of varying specificity and priority, in place. What are the strategic requirements and challenges to get there? As subsequently discussed herein, these programs are noble in pursuit of DOD policy. However, they do not appear to be coordinated at the joint level for assurance of policy goals established by DOD. Such programs thus appear parochial in nature and not in consonance with the spirit of jointness. Of equal importance, there is no timeline for achieving desired end states.

DOD INSTALLATIONS VISION

The Defense Department has articulated in its 2001 Report to Congress the "Defense Facilities Strategic Plan", under the auspices of its Installations Policy Board (IPB), a deliberating body through which Department-wide guidance, policies, and decisions are made with respect to important issues affecting installations. The Department has four overarching goals: right size, right quality, right resources, and right tools.[32]

The DOD plan is set to a time "horizon consistent with the military operations that installations support". What does that mean in terms of real timelines? Does it start to solve the construction and maintenance backlogs of today? Is it linked to the PPBS process for budget year 03 and POM 04? Does it reach down to the installation level with guidance, taskers, and follow-on oversight? Do the Joint Staff and CINCs support it? The answer to these questions is still evolving in light of the dynamics of the recent terrorist attacks, the new QDR 2001, and evolving National Security and Military Strategies yet to be issued.

It has been said that "vision without a plan is a dream". DOD's vision is noble, but must be backed with the teeth of effective policy, resources, strategic leadership and consensus across the realm of various agencies.

SHEDDING WEIGHT

After the completion of four rounds of Base Realignment and Closure (BRAC), the Defense Department has repeatedly articulated in various forums that despite a 39% drop in the military force structure (including civilians) since 1990, installations infrastructure had only

dropped 25%. This was documented in 1997 Defense Reform Initiative as a mandate to eliminate unneeded infrastructure:

> The Department is encumbered with facilities we no longer need. These facilities drain resources that could otherwise be spent on modernization. To this end, we believe that a three-pronged strategy is required: close excess infrastructure; consolidate or restructure the operation of support facilities; and demolish unneeded buildings.[33]

Demolition

The 80 million SF demolition program is a good start and has been repeatedly testified in Congress for the past 3 years.

> The demolition program has been a success story for the Department. In May 1998, we set a goal to eliminate 80 million SF of obsolete facilities by 2003. Over the past 3 years, the Department demolished and disposed of over 44.9 million SF of excess and obsolete facilities and other structures...and the program is 5.5 million SF ahead of our goal.[34]

Unfortunately, it only represents 2.6% of an estimated 3 billion square foot DOD plant account. GAO reported in 1997 that DOD infrastructure was 23% excess to its needs, despite 4 BRAC rounds. If a quarter of DOD's physical plant is truly excess, then the "success" story above only represents 11% of it. Substantially more weight must be shed.

Efficient Facilities Initiative

The FY02 Defense Bill enacts another round of BRAC in FY05 under a revised charter entitled "Efficient Facilities Initiative" (EFI). This initiative supports transformation of its facilities to meet the challenges of the new century. EFI's goals are three-fold: closing or realigning unneeded bases, improving the base closure process, and authorizing tools for efficient operations of enduring military installations (e.g. privatizing, community partnering, etc). BRAC/EFI is a vital contributor to infrastructure efficiencies. Its FY05 timing disappointed Secretary Rumsfeld because current excess infrastructure will have to be maintained for an additional 2 years (beyond the requested 2003 EFI start). This bill provides DOD an important means to substantially improve its infrastructure position and 3 years to prepare for it. DOD must seriously and aggressively plan for EFI in 2005 and execute it judiciously with full support of the joint military as well as Congress.

REVOLUTION IN BUSINESS AFFAIRS (RBA)

RBA is important because it allegedly saves money that could be used for other purposes, such as modernization of equipment and weapons as well as procurement of new

systems. This does not support the case for installation modernization, but it is discussed here because of its relevance to the subject.

The theme of RBA has been touted in QDRs of 1997 and 2001. Reforming DOD's ways of conducting business makes sense if such reforms provide streamlined cost saving and mission enhancing tools for mission accomplishment. An "agile defense infrastructure" is characterized by QDR, Defense Reform Initiative, and National Defense Panel recommendations as the capability of adapting to rapidly changing technologies and responding to a growing array of threats. Agility is the competency that sustains world class performance over time, and is built on 3 key capabilities: relevancy, accommodation, and flexibility.[35] Are our military bases agile today? The answer to this question begs further analysis.

Privatization and Outsourcing

This enabler has been promoted throughout the government over the last decade as a means to improve efficiency and innovation. Applied to base infrastructure, there are some who advocate the "magic" of it, recommending 100% outsourcing, for instance, of the Navy's shore installations.[36] Others say it works well, but there are lessons learned and "ripple effects" that must be considered.[37] GAO has also recommended several steps that DOD should take to address problems at its depots including better definition of future work and its apportionment to depots versus the private sector, developing short and long term strategies to ensure capabilities, personnel, and equipment are in place.[38] Privatization and outsourcing will continue to be a big part of strategic planning for installations.

Regionalization

Regionalization is supposed to save scarce dollars by combining like functions across all military bases in a region, thus eliminating redundancies of effort and consolidating them. Functions and facilities are organized along core business models, such as disbursing, MWR or civilian personnel offices. This makes sense, and has been responsible for the emergence of DFAS , CCPOs, and consolidated MWR offices across DoD. Pros and cons flourish. An argument against the concept is rooted in maintenance of the base commander's role as the sole point of authority, responsibility, and accountability at the installation. A favoring argument is the Army regionalized installation management process via Centralized Installation Management which will fix installation funds to installation projects. Jumbling of these roles has to be addressed given that regionalization is a fact.[39]

Legislation

DoD has proposed legislation to increase minor construction thresholds from $500,000 to $750,000, to exclude environmental remediation from project cost accounting, to change thresholds for Davis Bacon wages from $2,000 to $1,000,000, and to revise guidelines for real property leasebacks.[40] Such proposals enable flexibility in project execution both in cost savings as well as timeliness.

ARE CURRENT EFFORTS ENOUGH?

This is a tough question. Much of the answer is based on the ability of the EFI to reduce plant account as well as maintenance of infrastructure resources to match annual M&R and recapitalization requirements. Let's look at the numbers in this regard.

If the PRV of the DOD plant account is reduced by 25% to $450 B (through continued demolition and a successful EFI in FY05) and we assume that the BMAR backlog is substantially reduced by closure (assume by 50%), the revised ownership costs are reduced from $33.6 to $23.5 B. This is still substantially over the annual $16 B annual appropriation. This suggests further ways and means are necessary to solve the problem.

Savings accruing from the RBA, measured or spectral, must be discounted since current policy and thinking is to apply them to modernization programs (i.e. weapons and equipment). Revised policy should preclude this mindset and keep such savings in the installation arena. Otherwise, RBA savings will not be applied to declining infrastructure, but will merely be reallocated to modernization accounts.

As shown in Figure 2, current efforts are insufficient. More must be done to tip the scales. Inexorably, time works against installations infrastructure. Asset usage and weather take their toll on the quality of facilities. Without upkeep, maintenance backlogs increase.

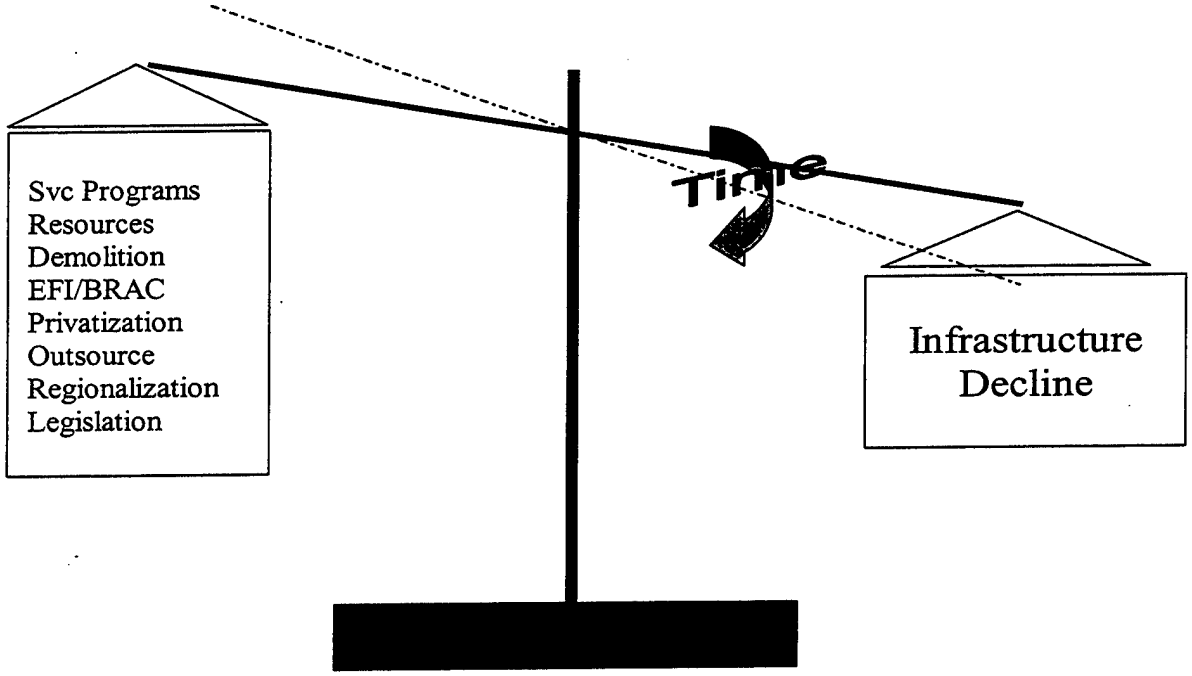

FIGURE 2 CURRENT SERVICE INFRASTRUCTURE PLANNING

ENABLING REMEDIAL EFFORTS

STRATEGIC ROLE OF BASE MASTER PLANNING

The role of planning professionalism for master development of our nation's bases and stations could not be greater. Past practices for such individuals was limited to service specific and base level scopes of effort. This is no longer applicable. The master planner of today and tomorrow must indeed be holistic and joint-service capable. Such planners must possess strategic capabilities and have resourcefulness in matching ends, ways, and means in a resource constrained and complex environment. In addition to the traditional planning concepts of balancing facilities/infrastructure requirements to existing assets and the resultant planning actions (construction, repair, alteration, maintenance, equipment installation, and demolition projects) that emanate from this process, the role of installation planning will change in the strategic environment.

By necessity, installation planning must entail all of the enablers discussed herein, a daunting challenge which has training implications across the joint service spectrum. Additionally, planners must strive to achieve design excellence by using general principles modified for local conditions. These include:

> 1) Identifying unifying elements and building around them, thus avoiding scattered, unordered facilities with ill-defined transportation networks. 2) Striving for simplicity and encouraging mixed-use development and grouping of like uses. Past practices of pure land use zones are becoming less rigid. Multiple and

> discreet zoning is being simplified with mixed-use development districts- for example, airfield, industrial, and mission support. Vertically integrated, multi-use, and multi-resourced construction projects, a source of past resistance, must be adopted to promote more efficient facilities. 3) Increasing density (which reduces infrastructure costs) and encouraging pedestrian activity (reduces fuel costs) with positive environmental impact. 4) Clustering related activities. This complements other principles and enhances force protection. 5) Defining outdoor spaces. 6) Promoting pedestrian activity.[41]

The installation master planner must marshal all resources synergistically:

> Tomorrow's military installations will require a new, more integrated approach to planning and design. Current practices that promote isolated functional zones and object buildings need to be replaced by a model that views comprehensive planning, architecture, and landscape design on an interrelated continuum. Planners must apply successful principles for physical planning that enhance environmental protection, resource conservation, and quality of life. The principles presented here cannot be applied independently. They, and the professionals that apply them, must work together.[42]

AREA DEVELOPMENT PLANS

This concept is a "plan within a plan" and augments an existing base master plan. It encourages the use of creative, holistic solutions that focus on areas of a base rather than ad hoc construction planning and execution. Such planning thus focuses scarce resources and helps decision makers make short term decisions with a long-term perspective.[43] However, the areas invested in must pass other strategic tests and must be supported by DOD.

"OWNERSHIP"

Retained facilities must be brought under the wing of an "owner". Someone at the local level must accept specific oversight and accountability for individual facilities aboard the installation. Just as the individual homeowner "feels the pain" for the sustainment of his home, so too must someone feel the pain for the welfare and upkeep of individual base facilities. The common problem of complacency, "it's not my problem", ignorance, and lack of attention to detail for facilities maintenance must be corrected. Responsible oversight of the DOD facility inventory, building by building, is mandatory.

> The solution to the problem involves leaders becoming more proactive and responsible in taking care of the facilities and property they have...empower yourself and your subordinates with the right information to do the job...establish short and long term goals. Think beyond the tenure of your command...improve upon your sense of observation...seek best use of maintenance, avoiding nice to have items... conduct detailed internal inspections on a regular basis...be resourceful and utilize self help programs.[44]

Weapons, aircraft, tanks, etc., DOD's visible contributors for readiness, are closely watched and maintained. Systems exist for their security, accountability, and upkeep. Can the same be said for facilities? The same lack of ownership that drove the quiet crisis through the 90s continues today. A wake up call is therefore necessary to energize local management practices to implement ownership as a matter of policy. "Pride of ownership" should apply to DOD installations as well as private sector properties. Its benefits are apparent, including timeliness of maintenance, quality of BMAR reporting, quality of life, aesthetics, and overall building life extension.

USE OF ORGANIC ASSETS

Each service has its own blend of engineering and construction assets they use for operations in support of CINC requirements, especially for joint and combined bare base development. Army capabilities include heavy engineer battalions which can perform construction, maintenance, repair, and rehabilitation of various facilities, including roads, airfields, command posts, and bridges. The Air Force employs its RED HORSE (rapid engineer deployment, heavy operational repair squadron engineering) squadrons for major force bed-down, heavy damage repair, and heavy engineering operations in its assigned AOR. Air Force PRIME BEEF (Prime Base Engineer Emergency Force) units also utilize 50 to 200-man civil engineering personnel to support worldwide peacetime and wartime real property maintenance and engineering functions. Navy Seabee battalions are the backbone of their organic construction force. Marine Corps uses ESB (Engineer Support Battalions) for sustainment engineering similar to its sister services. [45]

Organic assets can be enablers to infrastructure remedial actions if used in accordance with policy. Today's policy supports their use only for training related activities and of course during emergencies. However, given the strategic role that installations play in national security, policy should be changed to expand their use, especially if other current and enabling means cannot keep pace with ownership requirements.

JOINTNESS/JOINT BASING

The future environment has tremendous implications for how DOD geo-positions itself and its installations. Today's basing may be sufficient for today's security environment, but may require strategic change, based on the threat environment and its associated uncertainty.

> The strategic problem for the United States is that continuing to operate as it has in the past makes no sense...The current military, and even the next military, might be designed to this end, but not the military after next...If U.S. defense executives are to avoid the tunnel vision of immediate problems and pressures

> they need to include in their current planning a thorough reassessment of organizational, management, and technological opportunities open to them.[46]

This must include basing strategy. It must be flexible to rapidly evolve to something completely different, as national security strategy changes with new world threats. This could mean more base consolidation, or conversely, a more decentralized base posture, perhaps primarily OCONUS, in space, or undersea. Today's $600 billion DOD infrastructure in conjunction with continuing service level budget shortfalls introduces visionary considerations at the joint level for the strategic leader. Two such considerations are proposed.

First, consensus must be sought from DoD that today's installation boundaries remain viable in the future strategic environment. US military basing strategy across the world must be carefully planned in the post Cold War and 9/11 security environment. Considerations are numerous. For instance, western reliance and tradition of concentrating and massing logistic support operations makes such bases vulnerable to attack, especially with biological weapons. Western forward bases are a big weakness in Asia, where growing belligerent military power nullifies our conventional warfare superiority.[47] Are current Cold War basing concepts valid in today's environment? Should bases be more forward? More home based? Smaller? How do force protection mandates affect decisions? How will the Services' various transformation efforts affect basing requirements in the future? Should they be more joint? These considerations suggest that bases of the future be modified from their current day configurations and be provided with flexible, agile infrastructures that accommodate strategic missions. Thus the Joint Staff, OSD, and CINCs should review basing strategies vis-à-vis QDR, NSS, and NMS. The joint operational chain of command must therefore strategically validate the national military force lay down concept from current and future threat perspectives.

Second, sincere planning efforts must be made at the joint level to capture redundancies of assets and combine them. Service interests must surrender to these higher considerations. The leader must demand equal consideration from sister services. Realized efficiencies in this regard will alter and reshape installation attributes: numbers of bases, location, boundaries, range areas, encroachment concerns, PPBS considerations, and ongoing master planning initiatives.

These actions must be done before the FY05 BRAC/EFI to facilitate the best infrastructure response possible. Political (SECDEF, even Presidential level) oversight should be provided to preclude bureaucratic and time delays.

A proposed framework to guide a joint process of matching ends, ways, and means in this regards is shown in figure 3. A ***Joint Basing Board (JBB)*** would establish U.S. military

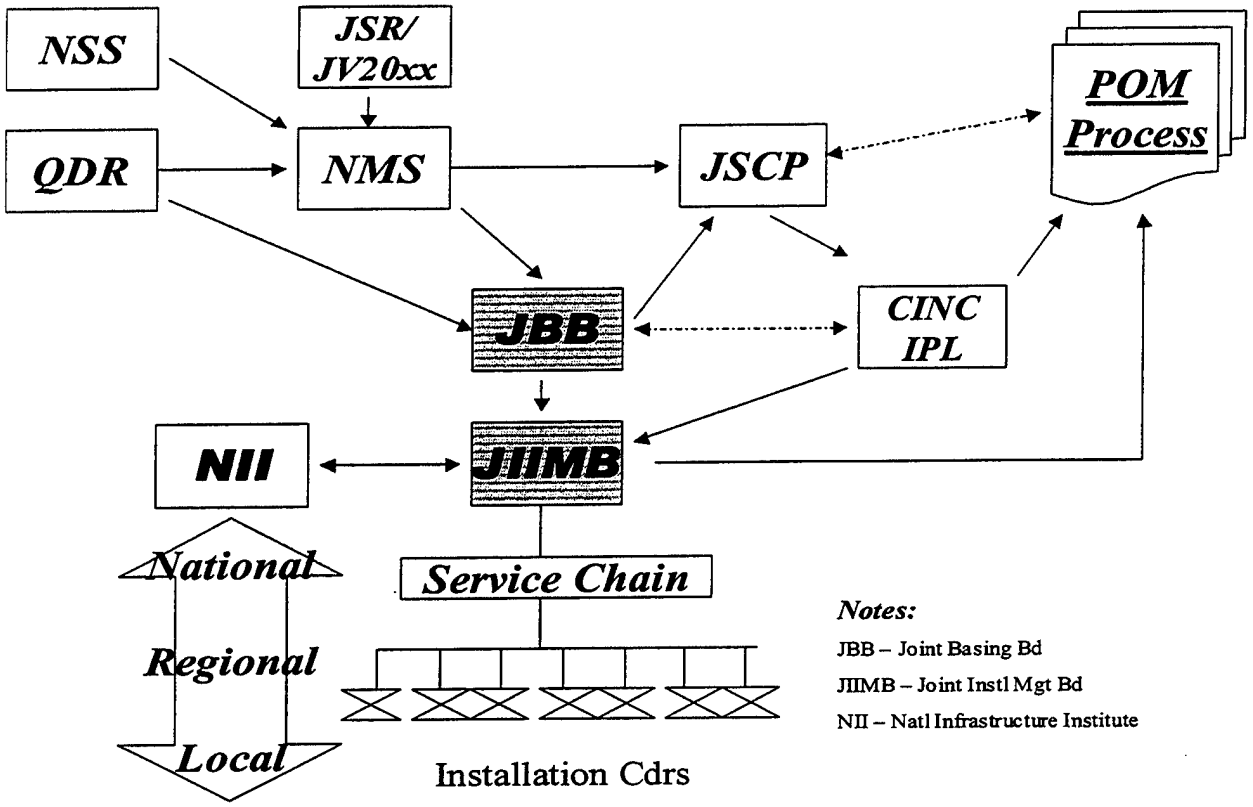

FIGURE 3 STAND UP THE JBB AND JIIMB

worldwide basing requirements necessary to achieve NMS and QDR. QDR 2001 mandates a reoriented and redistributed U.S. military global posture based on regional deterrence threats, a reliance on forward stationed forces, and a flexible basing system. Transformed armed forces of the 21st century must thus be optimally sited in CONUS and OCONUS accordingly. A ***Joint Installations Infrastructure Management Board (JIIMB)*** would provide oversight and decision-making of all installation modernization issues. The current Defense Installations Policy Board appears to be the correct forum, but must be enabled and resourced to act broadly across service, interagency, state/local, international, boundaries and with Congress.

REVOLUTION IN FACILITIES AFFAIRS

Another enabler for addressing the challenge is facilities innovation. Novel, exciting, and timely methods of meeting facilities requirements must be formulated and made part of acquisition policy. The strategic leader must galvanize support from government and outside agencies in promoting new types of facilities and efficient, economical, timelier ways to erect them. This could include changing the law to allow annual Military Construction programming

in lieu of today's untimely 5-year processes. Thus, facilities transformation through innovation must become a vision.

New construction technologies must be exploited. Tomorrow's military facilities demand flexibility equal to that of the future transforming military platforms and organizations they will support. Large, unwieldy, expensive "dinosaur" facilities of today must yield to versatile, less costly, easily configured and maintained "launch pads of our military of tomorrow". This includes a new way of categorizing facilities. Legacy facilities of today, traditionally designed and constructed as a "sole use" must give way to new and agile facilities concepts. Adaptable, modular, easily-erectable, multipurpose, relocatable, maintainable, affordable, and simple are just a few terms that describe them. Most of all, they must flexibly support mission readiness better than they do today.

A NEED FOR STRATEGIC LEADERSHIP

We need strategic leadership. Forces that shape policy in installation infrastructure modernization are varied, with associated considerations, trends, and challenges for the future:

FUTURE UNCERTAINTY AND ABILITY TO BE FLEXIBLE

Preparing for an uncertain future introduces uncertainties of foreign and domestic military force requirements, basing issues, infrastructure requirements, resourcing, and associated procurement/upkeep mechanisms. National and military security strategy of the future has been recommended as:

> ...one that blends components of ...five...alternatives. It should integrate ...increased emphasis on joint, combined, and inter-agency experimentation, research, and development, but avoidance of lock-in to one particular type of future force. Phrased differently, the U.S. military should prepare for transformation but not yet undertake it.[48]

This suggests an equally dynamic infrastructure strategy. Additionally, how is infrastructure modernization and development, typically slow in maturation, to keep in step with an evolving and dynamic security strategy?

HOMELAND DEFENSE AND BASE CLOSURE

The recent terrorist attacks in New York and Washington have energized a focus on the military and homeland defense. This environment may negatively affect the prospects for base closure, the major means of achieving successful installation modernization. Congress refused to enact BRAC legislation in past-year defense bills. BRAC's nature of being politically charged and economically contentious to affected regions may continue to exclude it from legislation,

exacerbating base declines, as scarce resources are wasted on unneeded infrastructure. This places a premium for an efficient and effective round of base closure allowed by Congress in FY05.

PPBS IMPLICATIONS AND LACK OF FISCAL RESOURCES

A continuing challenge is that the PPBS only looks 6 years hence. The strategic leader for installation management must look substantially beyond this time horizon and formulate a vision that is consistent with joint and National Security goals. PPBS thus only starts the process of achieving an adequate base vision, free of the quiet crisis, and reflecting budgets that support the long process to goal achievement.

As shown previously, the magnitude of today's infrastructure decline dwarfs whatever fiscal resources are allocated today to meet it. Competing DOD and supra-DOD fiscal necessities will grow (homeland defense, social programs, national infrastructure, etc)

The strategic leader must deal with such fiscal problems at the joint level, transcending service parochialism. Strategic fiscal competencies are primary in winning the resources to construct and maintain infrastructure as well as achieving an optimal balance between military requirements and off-base commercial operations. Political competence and interpersonal communication skills are necessary to achieve consensus and persuade the Congressional Family Housing and Military Construction Appropriations Committee to allocate funding. Business acumen will also be necessary for contractual service decision-making.

SERVICE CULTURE

The strategic leader in installations management must foster culture change in two dimensions: •elevating the importance of installations and jointness of installations.

The Marine Corps has formalized the importance of its installations in planning documents over the last decade and has recently reiterated this position as its "fifth element" of the Marine Air Group Task Force (MAGTF). Such designation elevates installations to equal importance with the other MAGTF elements: Ground Combat, Air Combat, Command Element, and Combat Service Support. This is significant because it sets the stage for future resource decisions by senior Marine Corps leaders. Installations must be treated equally with the other Fleet Marine Force (FMF) operational MAGTF elements. This had not previously been the case and was considered an urgent matter of cultural significance and change. Marine Corps strategic leadership must now inculcate in Marine Corps culture that their bases and stations are equal in importance to their sister MAGTF elements. A cultural change is necessary, one that elevates installation professionalism and provides the attention, respect, and resources it

deserves. Without it, the quiet crisis will be perpetuated, continuing its inexorable decline with readiness visions unachieved.

> In 2020, Marine Corps installations provide a high-quality training environment and are recognized as directly supporting total force readiness. Without installations, there is no readiness.[49]

Culture change suggested by the Marine Corps example can be expanded to the entire DOD where similar environments exist: Air Force "expeditionary forces in readiness", the Army "objective force", and Navy "fleet battle groups" have effectively relegated installations' importance a few notches down on service policy and resource totem poles.

Changing this mindset will be a challenging problem for the installation's strategic leader. Resistance to change will prevail. He or she must stress the importance of installations to the entire DOD system. Policy regarding personnel administration, training/schools, duty assignments, evaluations, promotion, and retention will be impacted. A guiding coalition comprised of senior military and civilian staff must be established. Strategic leaders must continually communicate the significance of installation management to all DOD management and Secretariat levels. Actions and policy change must support this emphasis. Examples could include appropriate installations' orientation training at entry-level and mid-grade officer schools. New schools and MOS's could be established. Assignment policy could gradually incorporate installation duty as part of service career progression and be made mandatory for promotion to Lt Colonel. Promotion and awards policy should energize installation duty as rewarding to one's career path. The ramifications and implications are complex. Systems thinking will be mandatory. Cultural change will take time and must be nurtured. However, the beginning steps should be taken now, at a time when concurrent actions to remedy the quiet crisis must also commence.

BASING STRATEGY

Base realignments in response to threats and other national security mandates create significant challenges to the strategic leader of today. Past Base Realignment and Closure scenarios document the highly charged and political environment that accompanies basing of U.S. armed forces installations. The strategic leader in installations management must be ethically strong to withstand political and socio-economic forces that diverge from doing what is right. Collocating and consolidating one service's assets on joint or perhaps foreign soil introduce coordination, communication, and negotiation challenges. Such challenges could be daunting to those unprepared, and will require skills that will test the strategic leader's competencies in dealing with merging cultures, people and systems diversity, competing

professional jurisdictions, diplomacy, and technical problems. Leading change will require strategic reach back to today, perhaps by establishing strategic action teams to plan, coordinate, and implement and report progress.

Basing strategies will compete with non-military interests for common space, within an expanding national and world climate. This poses another challenge for the strategic leader. Ethical issues will undoubtedly arise due to conflicts of interest and differing value perceptions between society and the military on how scarce space can be used. Undoubtedly, such space-use pressures on installation commanders will increase as our nation expands in population, economic prosperity, and associated development opportunities. Encroachment at our bases and stations today reflects the growing concern that development by outside agencies will constrain training and maneuver capacity and capability for the future.

> We are increasingly finding that many forms of encroachment upon our bases and stations threaten to degrade our readiness... Such concerns about sea, land, and airspace utilization have necessitated close coordination and frequent compromise with many elements of the civilian sector...[50]

Additionally, large-scale equipment acquisition programs through the strategic horizon will require increased and expanded use of bases and their training ranges. The challenge to the strategic leader is awesome - one of matching future base needs with limited availability of such resources - in a volatile, competitive, politically charged climate. Evolving technologies (e.g. simulation) and the revolution in military affairs introduce additional uncertainty.

Accordingly, the requirements of strategic leadership to develop a basing strategy will be particularly difficult and will require a keen vision for future installation configurations and basing. The vision must be dynamic and flexible to change. Adept demographic, political, and social skills will be necessary. Interpersonal relationships with competing parties as well as with those from whom the DOD will acquire space will be paramount. Strategic leadership must build on General Jones' Congressional testimony by expanding current pro-active engagement policies with federal, state, and local governments to maintain base flexibility and prevent encroachment. Acquisition strategies must be included. Technical competence and expertise in legal, real estate, environmental, natural resources, land use planning, legislative, and public affairs matters will be necessary to achieve goals. Obviously the interaction of these diverse elements will require team building, goal setting, consensus building, and empowering mechanisms to be established. An uncanny ability to ascertain and articulate second to fourth order effects of DOD actions on the public and vice-versa is absolutely necessary.

More immediate and probably more challenging concerns for the strategic leader involve current and intermediate range housing shortfalls, especially those of woefully inadequate

quarters at some installations. How do these conditions affect climate, morale, and retention? Is it ethical to house the military in such conditions with knowledge that final solutions could be years hence? Are there short-term solutions? Can BAH rates be increased to allow better off-base housing until permanent quarters are constructed? Strategic leadership should not include the simple tolerance of these unresolved issues.

BASE MANAGEMENT

Marine Corps I2020 states that installations will be unparalleled in capability and efficiency. They will be driven by mission with an enhanced business focus.[51] Today's installation commanders are beset with base management issues. Achieving the stated Marine Corps vision is daunting. As the aging defense installation infrastructure continues to deteriorate, strategic leadership must look to efficient, effective, and timely methods of halting it. Suggested holistic methods of merging current and enabling remedial efforts will require thorough analysis, team building, and consensus. Diversity of people, functional arrangements, competing business and fiscal interests will introduce coordination and consensus challenges. Ethical issues will arise as strategic leaders balance base management concepts with conflicting operational support. For instance, can the armory function, a large Military Construction cost driver, be privatized (with resultant costs savings) - given it's probable impact to FMF security and readiness? Some base support mechanisms will be incompatible with operational support, despite realized business efficiencies. Frustrations will surface, but the strategic leader must look past such setbacks and keep the vision at heart, realizing the professional cultural change he/she is leading will, by default, seek the optimal methods of solving facility shortages in constrained resource environments.

LEARNING FROM OTHER EXAMPLES

DEPARTMENT OF ENERGY

DOD can learn much from this example. The DOE has developed a Strategic Facilities Plan to accomplish the modernization of all of its laboratories by 2012. The plan is mission driven, which means that it must be:

- Adequate to accommodate expected mission,
- Right-sized to type and quality of space and equipment,
- Co-located with appropriate activities and organizations,
- Adaptable to changing research and technology requirements, and
- Flexible, versatile, and durable (last greater than 50 years).

- Economical in use (or non-use) of off-site leased space.

The plan emphasizes the development of preferred working environments, which means that it:

- Attracts and retains high quality staff,
- Incorporates latest advances in information technology for worker productivity,
- Provides quality training and conference facilities
- Ensures environmental, health, and safety provisions for employees and visitors,
- Removes "retired" facilities (these are buildings excess to requirement)
- Assures the laboratory development is a good community neighbor,
- Provides facilities that are efficient to operate and maintain.

The plan mandates an outline of likely mission futures, assumes a resource constrained funding environment (except for inflation growth), and directs identification of all facilities needs with a focus on existing facilities before new construction projects are generated. New initiatives (new starts) are not included due to their uniqueness in planning. The laboratories' changing nature of its research also mandates development of facilities rehabilitation and new construction with sensitivity to:

- Collaborative research to accommodate modern (not outdated) equipment/approaches
- Technology evolution to accommodate ever increasing equipment-intensive facility structures including flexibility for utility and infrastructure requirements.
- Technology zoning to enhance synergy for co-located research activities.
- Integrated workplace concepts, including "smart infrastructure".

These concepts support changing business practices and make the best use of limited resources, namely, people, space, time, and money.[52]

Figure 4 suggests a framework that Defense can follow. In this case a 10 year timeframe was established to complete the installation modernization, a process which provided strategic facilities for the next half century.

OAK RIDGE NATIONAL LABORATORIES

This organization has a facilities infrastructure RPV of $4.5 B the majority of which (like DOD) is greater than 40 years of age, and which (also similar to DOD) 67% is in need of rehabilitation. The RPV size of DOD dwarfs that of this example, but there are concepts of interest that could be applied to the DOD problem, especially individual DOD "keeper" sites. First, the Oak Ridge Facilities Modernization Initiative provides a dedicated project team to carry out the task of providing world-class facilities, phased over time, using a combination of federal

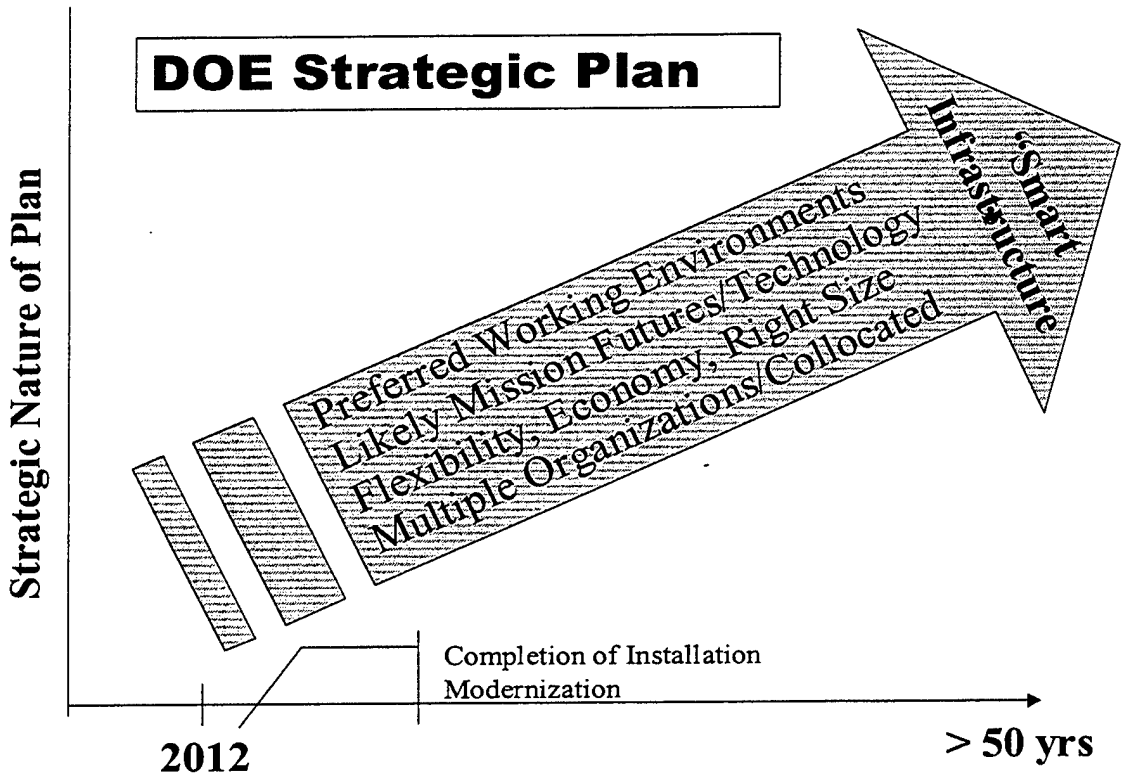

FIGURE 4 LEARNING FROM THE DOE EXAMPLE

(DOE), State of Tennessee, and private sector funding. The initiative recognizes a resource constrained environment and adopted phased projects, executed with multiple funding sources. Second, the initiative adopts an "Enhanced Operational Discipline Initiative" which integrates effective stewardship of the facilities by building occupants with work processes therein. A facility management pilot project in this regard was implemented in FY 2001. Finally, the Oak Ridge example provides a structured, but graded process of consolidating existing facilities with new construction as well as developing an exit strategy for "cheap to keep" facilities.[53]

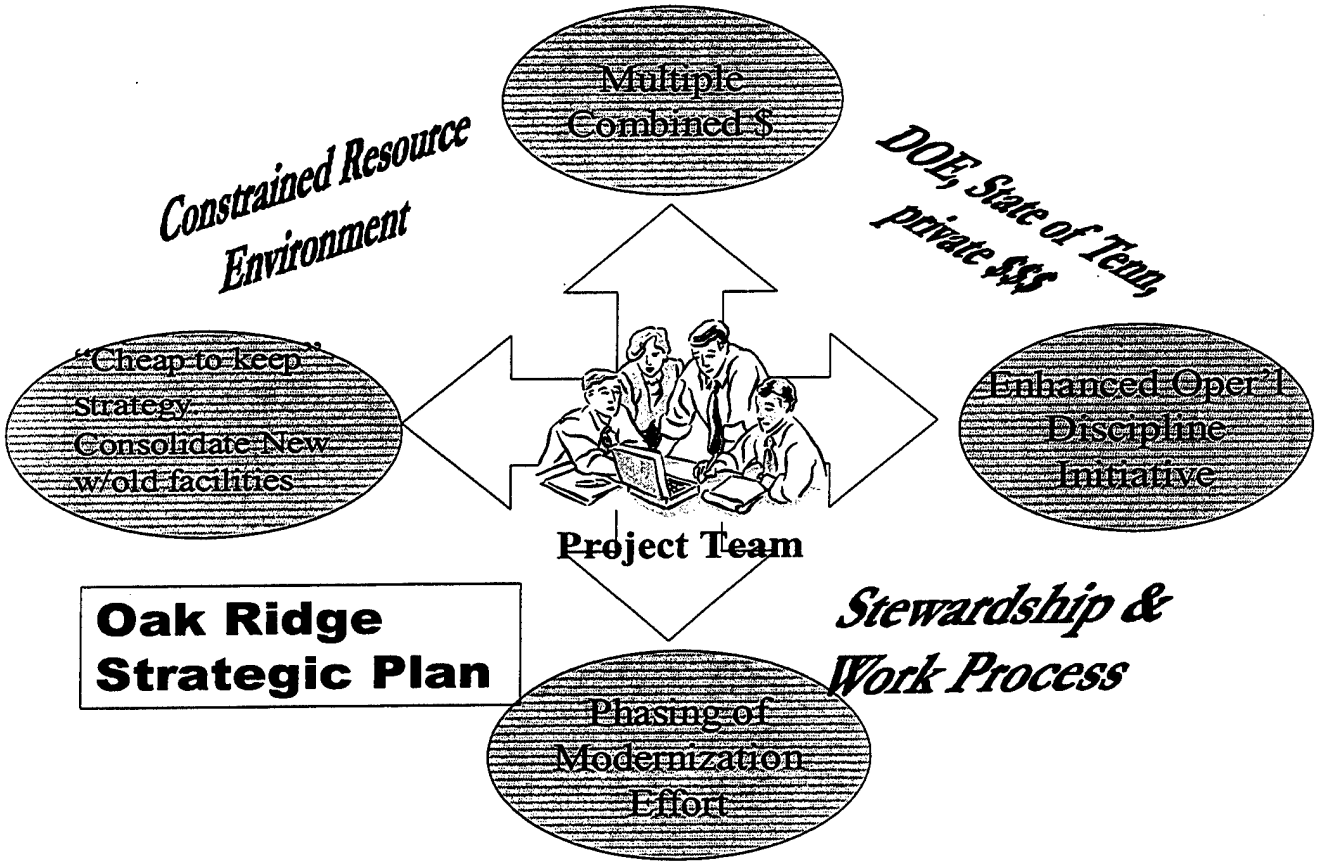

FIGURE 5 LEARNING FROM THE OAK RIDGE EXAMPLE

SOUTHWEST MISSOURI STATE UNIVERSITY EXAMPLE

This organization provided a 21st Century Long Range Vision and Five Year Plan for facilities and support services. Smallest of the three examples cited herein, SMSU was faced with a significant problem of infrastructure deterioration with insufficient corrective resources. Less than 1/2 of 1% of funding was devoted to repair of its facilities over the last decade (similar to DOD). Their strategy to reverse this situation was purely fiscal, that of a dedicated commitment of resources in an amount of 3% of RPV, to sustain effective maintenance and repair programs at the school. The infusion of additional funding would be sourced from state levels as well as supplemental private contributions. A metric that spurred state funding was their last place standing in classroom square footage per FTE student. A Space Planning Advisory Committee prepared a facilities reutilization plan for assuring efficient use of existing facilities before new development commenced.[54]

What is learned from the SMSU example is a validation of 3% RPV for budgeting of M&R as well as the value of metrics for communication and justification of resourcing needs.

CONCLUSIONS AND RECOMMENDATIONS

It is imperative that we get the business of DOD installations infrastructure in order. Installations modernization, however, is a runaway train, a vestige of over a decade of insufficient funding within a fiercely competitive "zero sum game" fiscal environment. Over the last decade, lacking top-level policy, this area of resource management was relegated to second-rate status within parochial service cultures that generally reapportioned installation accounts to fund increased OPSTEMPO. The quiet crisis consequently emerged since installations' requirements grossly exceeded, even diverged from declining resources available for their upkeep. Even this descriptive oversimplifies an enormous and convoluted problem which crosses numerous spheres of fiscal, political, legislative, cultural, management, and policy influence. This is a systemic problem.

National policy is lacking, exacerbated by differences of infrastructure definitions and scope. Service level visions and planning, albeit noble, are nonetheless parochial and grossly under-resourced. Policy focuses on the importance of soldiers, sailors, Marines, and airmen. This is rightfully so. But policy lacks attention to the tangible infrastructures which house, train, and sustain them and which eventually launches them to serve our national security. Service level installations plans lack timelines for ultimate problem resolution that stems directly from resource level uncertainty. The QDR introduces some specificity about the necessity for revitalizing the DOD establishment, but essentially leaves ways and means to this end as a matter of NMS. Such strategy is yet to be published within the Bush Administration and provides an opportunity for such to occur.

As a remedy, the following actions are recommended:

Recommendation 1: Provide visibility and emphasis. Establish explicit and specific policy at national military strategy level that establishes an adequate, supportive, modern, and flexible installation infrastructure objective, derived from and consistent with force structure requirements of National Security Strategy and Quadrennial Defense Review.

Recommendation 2: Segregate (and redefine) base infrastructure from other modernization and infrastructure initiatives.

This is an urgent problem that must be substantially solved over the intermediate, 10-year term. That's because it will compete with greater national infrastructure mandates as well as ever increasing baby-boomer social benefits that loom large by 2012. The national problem introduces opportunities to work synergistically with other entities at the local, regional/state, and national levels. Social security budgets represent roadblocks to success.

Recommendation 3: Establish a sense of urgency within established policy to remedy installation deterioration prior to 2012.

Old methods won't suffice anymore. Heroic funding levels would be needed to balance requirements with resources. Given the competitive nature of the resource environment over the next decade, it is reasonable to conclude that such heroic funding levels will not accrue. As a matter of fact, recent Congressional testimony by Secretary Rumsfeld warns Congress not to increase base improvement funding in order to protect bases from closure. Thus the FY03 funding levels are proposed to decrease until actual base closure sites are known. In this environment, huge plant account reductions are necessary, beyond the 25% articulated by DOD leadership as allegedly being excess. DOD must shed weight and the ways/means are numerous. It is imperative that an effective EFI/BRAC be implemented. Enabling efforts exist which can and should be used to ameliorate infrastructure decline. However, these efforts must be coordinated strategically across various jurisdictional boundaries. Outsourcing, privatization, regionalization, legislation, joint basing, use of organic assets, and facilities innovation provide ways and means to reduce infrastructure requirements. Concurrent efforts must be made to sustain current funding levels until requirements match resources. Start ramping defense infrastructure needs down while maintaining or increasing (if possible) resources to maintain plant account.

Recommendation 4: Seek increased fiscal resources from Congress.

Recommendation 5: Establish/revise analytical and reporting metrics for PPBS and Congressional oversight. Established service metrics are useful, but must be coordinated into a common, joint management tool. Metrics should be tied to IPBs current goals of "right size, right quality, right resources, right tools". Add "right location" to the goals.

Recommendation 6: Shed infrastructure weight substantially beyond the 25% excess capacity previously articulated. Aggressively pursue EFI with goal of implementing realignments in FY05 or ASAP.

A strategy is required, based on thinking that matches the various ends, ways, and means realistically, holistically, jointly, and synergistically. There are two end states to be achieved: First, arresting the rate of infrastructure decline. Then, after turning the train around, achieving an infrastructure which matches the service visions that we only read about today. All resources must be brought to bear. Just as a coalition of nations is organized to meet a regional security threat, so too must our installations decline be met with teamwork, at the national, regional, and local levels. There is no other way. A framework must be established which pools U.S. military, interagency, civilian community, host nation, business, and

Congressionally appropriated resources to similarly pooled and generic military infrastructure requirements. Such requirements are strategy driven. Infrastructure requirements must become joint and must be matched to assets strategically, and at all levels of the DOD chain.

Recommendation 7: Centralize oversight of policy. Make it joint. Revise the Joint Strategic Planning System to incorporate joint level basing and infrastructure boards (JBB and JIIMB) as a guiding coalition for installations reform. Collaborate with the recently established National Infrastructure Institute. Update and reenergize DOD-level policy directives on installation management. Establish vertical and horizontal frameworks which provide commonality across the services in master planning, budgeting, reporting, and accountability.

There are cultural implications that must be addressed by strategic leadership, those of service parochialism, basing preferences, installation importance, and resistance to change. These introduce challenges for the strategic leader to surmount as he or she quells this quiet crisis.

Recommendation 8: Consistent with joint policy, establish service level policy which elevates the role of installations as strategic assets to national security.

Recommendation 9: Bring military engineering organic assets to bear in a manner which promotes training, resolves pressing & painful infrastructure situations, and which does not detract from operational readiness.

As funding streams are appropriated by Congress, it is important that they be protected from competing interests within service and DOD accounts. The 1990's paradigm of raiding the installation management O&M accounts to fund increased OPTEMPO must stop. Increased OPSTEMPO and other requirements should be funded by means separate from cannibalizing existing accounts. Thus, in a manner similar to Military Construction, fencing of installations funds should be strongly considered.

Recommendation 10: Consistent with integrity of operational funding mandates, consider fencing of O&M funds used for facility sustainment and repair. Further recommend a combined PPBS construction and sustainment line item.

Recommendation 11: Pursue Revolution in Facilities Affairs (RFA) by exploiting RBA as well as research & development effort for facilities infrastructure innovations.

Can the quiet crisis be quelled? It can, but not without strategic leadership. These 11 recommendations outline joint, national-level effort with non-parochial thinking, using multi-faceted processes and resources, and consensus building. This crisis is a subset of a larger leadership issue, that of installations management whose strategic ramifications are enormous. Strategic leadership in this arena will pose many challenges, on many uncertain fronts, during

times of volatility and calm, involving diverse peoples and systems, new acquisitions, reorganizations, and within an environment of rapidly changing combat capabilities. We must begin now to solve this problem over the next decade and the installation solutions proposed must be agile, always flexible to change. The importance of installations must be elevated to a status acknowledging their significance in readiness and national security. The time is now to foster a change of mindset, of enriching a culture of installations professionalism in the Defense Department that provides shining, flexible, and supportive bases for our equally shining operational forces. Failure to meet this end erodes national security and fails our nations most valuable defense resource: its soldiers, airmen, sailors, and marines.

WORD COUNT = 11,002

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