

Public Works

DIGEST

Volume XXIV, No. 1
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This Issue:
Master Planning

Master Planning	3
Successes	26
Technical Support	36
Professional Development	40



Fort Hunter Liggett, Calif., plans to build three-level townhouse barracks along a new transit corridor, a plan that will support walkability and infill development. Image courtesy of The Urban Collaborative LLC. Page 14



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Public Works DIGEST

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Address mail to:

U.S. Army Installation Management
Command
2405 Gun Shed Road
Fort Sam Houston, TX 78234-1223
Attn: Editor, *Public Works Digest*

Telephone: 202-761-0022 DSN 763
FAX: 202-761-4169
e-mail:
mary.b.thompson@usace.army.mil

Gregg Chislett

Chief, Public Works Division
Installation Management Command

Mary Beth Thompson

Managing Editor
U.S. Army Corps of Engineers



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Master Planning



- 3 Planning essential for maintaining installations, *by Maj. Gen. Jeffrey J. Dorko*
- 4 Fort Hood: Master planning for 2020 and beyond, *by Brian Dosa and Kristina Manning*
- 6 Back to basics: The next generation for master planning, *by Mark Mitsunaga*
- 8 Planning with SRM and OPM for a sustainable future at Fort Hood, *by Mark L. Gillem and John Burrow*
- 10 Solutioneers wanted; inquire within, *by Jerry Zekert*
- 12 Army to establish enterprise real property utilization tool, *by Dwayne Melton*
- 13 New guidance on master planning on its way, *by Jerry Zekert*
- 14 Using townhome barracks to meet sustainable planning goals, *by Mark L. Gillem and Cyndi Skinner*
- 16 Housing and master planning, *by Jonathan Winkler*
- 18 Master planning more important during downsizing than ever, *by Kathryn J. Haught*
- 20 Capacity planning: Preparing for an unknown future, *by Jill A. Schreiber*
- 21 Bulletin presents smart-growth strategies, *by Natalie Myers*
- 22 Balancing the TAB: Fort Wainwright's experience, *by Kate Siftar*
- 23 How to build area development plans, *by Anne de la Sierra*
- 24 Capital investment strategy important to carrying out master plan, *by Michael Hipp, Alexandra Peet and Joseph Tomley*

Successes



- 26 Fort Belvoir transportation management: Becoming multimodal, *by Steve Gleason, Jennifer Wiley and Christopher Landgraf*
- 28 Huntsville planners work with Fort Carson, Joint Base Lewis-McChord to plan new combat aviation brigade campuses, *by Jimmie Lee Jackson*
- 29 Master Planning Institute earns environmental award, *by Andrea Wohlfeld Kuhn*
- 30 Joint Base Lewis-McChord designs modern, efficient Lewis North post, *by Thomas Tolman, Leah Anderson and Gary Stedman*
- 31 Master planners help name Lewis North education center for hero, *by Duane Denfeld and Gary Stedman*
- 32 Joint Base Lewis-McChord builds to plan for special forces, *by Tanya King*
- 33 Huntsville Center plays role in chemical agent disposal facility, *by Debra Valine*
- 34 At Fort Hood: Daring to go net-zero waste, *by Christine Luciano*

Technical Support



- 36 Wizards' magic is just warming up, *by Susan Nachtigall and Nadia Abou*
- 37 Bulletin describes novel erosion control method using compost mulch, *by Heidi R. Howard*
- 38 Center assesses check dams for erosion and sediment control, *by Heidi R. Howard*
- 38 Guidance to ensure successful vegetation and hard armoring, *by Niels Svendsen*
- 39 Bulletin offers insight into composting for explosives remediation, *by Giselle Rodriguez*
- 39 Schultz is Corps' acting chief of Installation Support, *by Mary Beth Thompson*

Professional Development



- 40 Dreams can come true, *by W. Chris Hinton-Lee*
- 41 Federal Planning Division regional conference report, *by Andrea Wohlfeld Kuhn and Jill A. Schreiber*
- 41 Planning conferences to convene in April
- 42 Department of Defense Master Planning Institute 2012 classes, *by Andrea Wohlfeld Kuhn*
- 43 Career Program18 centrally funds web-based training, *by Dana Gunter*



Planning essential for maintaining installations

by Maj. Gen. Jeffrey J. Dorko

Our nation's installations face the challenge of meeting military mission requirements while ensuring our Military, Civilians and Families have the best facilities possible in which to live, work and train. This challenge provides the Army with a unique opportunity to institutionalize sustainable energy efficiencies to enhance military installation capabilities for the next 40 to 50 years.

To capitalize on this opportunity, our planning must embrace sound principles of energy and sustainability.

This planning approach requires a holistic, broad perspective of the entire installation, far beyond just the project-specific. Net-zero, sustainable development through low, compact infill, as well as transit-oriented development, narrow width buildings leveraging natural ventilation and lighting, comprehensive area development plans — every principle and technology must be brought to bear on the challenges we face.

The Army's master planning team — comprising Office of the Assistant Chief of Staff for Installation Management, Installation Management Command and U.S. Army Corps of Engineers members — examined existing planning capabilities



Maj. Gen. Jeffrey J. Dorko
Photo by F.T. Eyre

and determined that effective energy and sustainability planning is not so much a function of the size of the planning team, rather it's all about integrating the right expertise from all of the stakeholders involved.

IMCOM, USACE and the Army's master planning team have worked diligently to ensure we have this expertise. IMCOM, using a practicum approach, has built in-house capabilities to create and maintain many planning products and provide planning support.

The Army's master planning team concurrently created a comprehensive professional education and development program, the Department of Defense Master Planning Institute, to provide planning competencies needed within the Army.

This leading-edge professional planning educational program, accredited by the American Institute of Certified Planners, is the only one of its kind in the federal government and has won national awards from the American Planning Association and

Acronyms and Abbreviations

IMCOM	Installation Management Command
USACE	U.S. Army Corps of Engineers

the Center for Environmental Innovation and Leadership. This invaluable training provides an excellent return-on-investment with formal classroom education for planning professionals, designers and program managers, as well as offering a broad installationwide planning practicum that educates installation stakeholders on the practices of planning and provides them with hands-on capabilities to develop the planning products and services they require. (Editor's note: See article on page 42 for 2012 class schedule.)

Beyond these efforts to provide excellent training and expertise, USACE districts like Fort Worth and Sacramento have transformed their planning delivery teams into regional planning production centers. These centers have demonstrated how leveraging competent planning experts and program managers trained in the practices of planning equipped with both in-house and contracted-enhanced planning capabilities can better serve as technical planning experts to both installations and our USACE design and construction teams.

This edition of the Public Works Digest illustrates many of the great initiatives being implemented, and I encourage you to take time to read about the notable planning efforts that are occurring around the Army.

Sustainable planning is essential for maintaining our installations in the future and caring for our Soldiers, Sailors, Airmen and Marines who have demonstrated their growing commitment to energy sustainability.

Maj. Gen. Jeffrey J. Dorko is the deputy commanding general for military and international operations, U.S. Army Corps of Engineers.



Planners at a DoD Master Planning Institute course work on a master plan for their installation. Photo by Andrea Wohlfeld Kubn



Fort Hood: Master planning for 2020 and beyond

by Brian Dosa and Kristina Manning

In light of a new fiscal reality, we are all being asked to do more with fewer resources and change the way we do business. The importance of having a comprehensive master plan that provides a road map into the year 2020 and beyond is vital to our success.

Daily, we face issues relating to stationing, unit footprints, facility requests and the sustainability of our resources. These concerns, combined with important initiatives such as Net-Zero Energy, Water and Waste, require the involvement and collaboration of all stakeholders.

As Fort Hood moves forward as a pilot installation for net-zero waste with the goal of closing our landfill by 2020, we are putting more emphasis than ever on developing a vision that will carry us forward toward this goal. The Directorate of Public Works' Real Property and Planning Division is making great strides toward developing a strong master plan that will shape the decisions that impact our Soldiers, Civilians and Families.

Real property planning

At Fort Hood, we strive to resolve issues at the lowest level possible. RPPD co-chairs a weekly meeting with the Mission Support Element-G3 called the Facility Stationing Working Group. Staff members from III Corps, brigades, Partners in Excellence and the garrison attend to discuss stationing, construction projects, facility requests and other pertinent issues. Over time, the meeting has grown to more than 40 participants



Brian Dosa
Photo by Fort Hood Training
Support Center Photo Lab



Kristina Manning
Photo by Holly Dreese-Ragbir,
Business Office, DPW, Fort Hood

and plays an important role in keeping units informed of real property planning as well as keeping DPW in touch with the Soldiers' interests and requirements.

Another key event is our Real Property Planning Board, which is held biannually with the senior commander and brigade commanders. The RPPB allows our customers to submit projects for consideration and prioritization within our overall construction program.

In-progress reviews are held at staff level to resolve any issues prior to the final board. The results of the RPPB are then incorporated into the Installation Planning Board, also chaired by the senior commander. The results of these boards are integrated real property and strategic plans.

In addition to using the RPPB to build our construction program, we incorporate major renovation and repurposing projects as a means to provide our customers the facilities they need. Previously, Military Construction projects played a major role in building a master plan; however, with the significant decrements to the program, we are now seeing

a paradigm shift toward a facility investment strategy involving both MILCON and Restoration and Modernization projects.

We now plan to repair and repurpose existing facilities wherever possible. We have already repurposed schools, dining facilities, auto craft shops, shoppettes and bowling alleys to meet the needs of our customers. Most recently, the 68,455-square-foot Meadows Elementary School was renovated to serve as a consolidated headquarters for the Network Enterprise Center.

With the construction of a new post exchange and medical center, Fort Hood is now looking at repurposing the existing 230,000-square-foot PX and 600,000-square-foot medical center. Studies under way to determine the best use of these facilities once new construction is complete include repurposing projects in our R&M plan so that we will be prepared when the time comes to further develop these concepts into executable contracts.

Vision plan

In January 2011, we began developing our revised master plan through a visioning workshop. An outside contractor facilitated discussions, which culminated in our revised vision statement for 2020 and beyond: "The Great Place with Accessible Campuses, Walkable Small Towns, and Modern Infrastructure." ➤



The Clear Creek-Darnall ADP is a master plan for development of that area of Fort Hood. Graphic by The Urban Collaborative LLC

Acronyms and Abbreviations	
ADPs	area development plans
DPW	Directorate of Public Works
MILCON	Military Construction
PX	post exchange
RPPB	Real Property Planning Board
RPPD	Real Property and Planning Division
R&M	Restoration and Modernization



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More than 140 attendees participated in the two-day workshop, including the deputy commanding general, garrison commander, directors and commanders. The final product of our vision plan includes a framework for future development, dividing the installation into 11 districts.

Districts — determined by major roadways, land use and facility footprints — allow us to create area development plans for smaller focus areas. A project manager from the RPPD team is assigned as the primary POC for all master planning issues and concerns in each district. This system provides the customer a single point of entry and a lasting contact, as well as ensuring continuity when it comes to decision making and planning within the individual ADPs.

ADPs

ADPs for four of the 11 districts are under way, and ADPs for the other seven districts are funded. Each ADP begins with a kickoff facilitated by our contractor, who conducts interviews and smoothes development of the plan. Workshops require participation of all stakeholders within the district. Planners take into consideration the design for the adjacent districts to ensure continuity across the installation.

Having these ADPs will guide future



Engineers from the 1st Cavalry Division and DPW staff members develop an ADP for the 1st Cavalry Division District. Photo courtesy of The Urban Collaborative LLC

decision making in the event that activities are realigned or footprints are changed. Command support is vital to the success of ADP development.

The difference that command input makes was noticeable in the results of the ADP workshop held in October with the 1st Cavalry Division. The division provided a team who participated throughout the week and developed a visionary plan that both met the organizational needs of the unit and followed Fort Hood's vision.

A unit representative briefed the cohesive and well-thought-out plan to commanders at the out-brief and gained support from all stakeholders. Without such strong unit participation, it would have been more difficult to gain the necessary senior-level support and truly implement the plan.

The ADP workshops are also helping to expose and remedy gaps in some of our most critical planning efforts. For instance, prior to the Clear Creek-Darnall ADP, the Exchange was set to move forward with construction of a \$35 million PX. Due to the ADP process, we began to question the siting of the PX in terms of land use throughout the rest of the district. This process led to the development of a commercial district with the PX as an anchor.

Our Kouma Housing District is another example of how our workshops are resulting in changes for the better. Our housing partner was prepared to invest about \$20 million in new homes in a noncontiguous housing area. As a result of the ADP for this area, we are now looking at siting these homes in the Clear Creek-Darnall district, where we can take advantage of the synergy



Fort Hood senior leaders take notes during the two-day real property master plan visioning workshop held in October. Photo by Rachel Parks, Sentinel staff

developed with the commercial area and new medical center, and create a more walkable campus that is aligned with our vision.

Way ahead

Fort Hood is on the way to completing an updated real property master plan, which includes net-zero and sustainability initiatives. Next steps include a transportation plan and an installation development plan.

Once the ADPs, installation development plan and transportation plan are complete, Fort Hood will have a comprehensive master plan that we can use as our compass during the uncertain financial times ahead and shape decision making in the new fiscal reality. *(Editor's note: See article on page 8 for more on Fort Hood's master plan.)*

POCs are Brian Dosa, 254-287-5500, Brian.L.Dosa.civ@mail.mil; and Kristina Manning, 254-288-5200, Kristina.L.Manning.civ@mail.mil.

Brian Dosa is the director of Public Works, Fort Hood; and Kristina Manning is the chief, Planning Branch, RPPD, DPW, Fort Hood. 🍌

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<http://www.imcom.army.mil/sites/pw/digest.asp>



Back to basics: The next generation for master planning

by Mark Mitsunaga

Site approval and good solid planning have been neglected and largely overlooked in recent years due to competing priorities imposed by transformation and Grow the Army initiatives. These high-priority projects generated confusion because they were completed outside the normal cycle of planning through the Military Construction program.

Getting back to the traditional process of master planning is more important than ever. Garrison master planners must take a step back to assess where they are and where they need to be in 50 years. They do not have the luxury of taking inordinate amounts of time to perform assessments and make determinations. The current operating tempo has reduced the time available to conduct detailed studies and analyses about who moves where on the installation.

Typically, people see master planners engaging in MILCON project development, programming and project management. They may think that's all master planners do. However, nothing could be further from the truth.

Master planners are the real property gatekeepers for the installation, the garrison commander and the Army. As in the Asian-Pacific culture in which land equates to life, the Army has entrusted master planners with the responsibility for sustaining the "Army's life."

Master planners must understand the rules and guidelines proficiently to know where to improvise and still meet the mission. They must know where to go to get subject matter expert information to ensure compliance. The master plan must be performed "fence to fence" and "cradle to grave" by reverting to the basics of master planning.

Acronyms and Abbreviations	
FEWR	Facility Engineer Work Request
MILCON	Military Construction

been built adjacent to housing and tactical parking located a couple hundred yards away from motor pools because the site could not accommodate all requirements in one place. Infrastructure is aging and operating at or near capacity; to add to existing infrastructure, upgrading would be required. Environmental programs are law driven, and installations are obligated to comply.

In addition, central-based data systems and decision-making tools cannot be sustained because of their complexity and their intensive maintenance and manpower needs. Falling back to basic master planning techniques will arm planners with simple tools that will allow work-arounds for the technological hiccups.

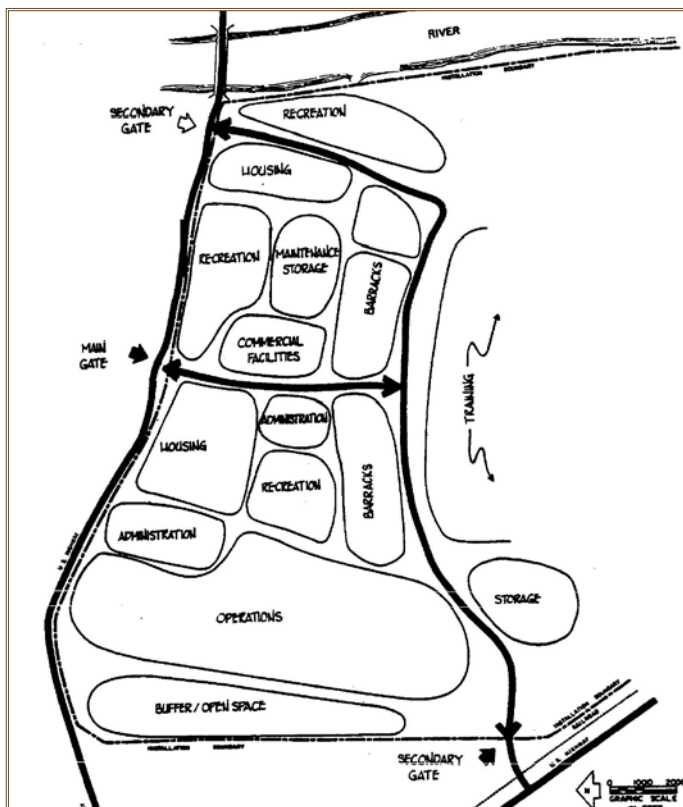
Finally, funding is insufficient to do business, and further cuts to funding and manpower are expected. Those who remain will have to carry the load of those who have left.

Moving forward

Senior planners, who have done master planning from the ground up, are a great resource. These senior planners will have to work with new master planners to train, transfer and perpetuate their knowledge and lessons learned.

In the master planning world, reasons exist why so many steps are built into the process. These steps ensure that master planners cover all the bases needed to build installations in a safe and legal manner while coordinating with and meeting the needs of stakeholders to achieve the installation vision.

The first step is reassessment. Master planners must determine the efficiencies of land use and facility space. They should identify and deal with constraints, i.e., impact areas, environmental issues and housing and facilities that don't tie



This simple working-level diagram shows where major types of facilities and land use are to be placed. U.S. Army graphics

Issues

Several obstacles present challenges for planning. Senior planners retire, taking with them both knowledge and years of experience. Troops redeploy, and equipment needs to be reset. "Vacant lot" planning has ruled till now; wherever there was available flat space, including green space, a facility was placed. The Soldiers' need for space for physical training, staging activities and tactical exercises is greater than in any other community.

Complicating factors can include motor pools that have



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properly into the master plan. The goal is to retain Army lands for long-term use, and the method is to take a big picture, holistic view.

Next, master planners examine documentation to reduce redundancies. Then, they communicate. They talk to people within and outside of the garrison to understand their unique and valuable perspectives. This communication will help streamline coordination on future actions as well as develop a friendlier working relationship among all parties.

Master planners should employ force multipliers, such as outreach and partnering. They should not wait for others to come to them but go regularly to meet and greet other interested parties and to dialog with other government agencies and private entities. Some partnering efforts

may lead to projects funded by others. The Army has land and potential clientele, i.e., Soldiers, Civilians, Family members and retirees, to offer.

Becoming a facilitator is essential. The master planner, as a facilitator, should help resolve conflicts to attain the garrison's and the Army's goals. To do this, master planners must anticipate and understand the various facets of issues and problems well enough to help guide actions toward those goals.

Documentation

Developing and refining land use maps and concept plans to define how areas are to be used in relation to their activities is another must. Future development plans spell out what the installation might look like in relation to mission and base operating requirements in the out years. A phasing development plan shows how

the installation will get to the end state with a phased strategy of smart planning that includes demolition, development, repurposing and consolidation. This preparation may be the most important part of the process because it is the plan of execution.

The site approval process and Facility Engineer Work Request documents the requirements, refines the scope of work and reduces or eliminates conflicts. The FEWR activates the Directorate of Public Works "machinery" and keeps master planners connected.

The installation map should identify the projects, including ongoing ones, e.g., MILCON; Operation and Maintenance Army; job order contracting; troop; Morale, Welfare and Recreation;

housing; environmental; training and ranges; and Army compatible use buffer, to mention some.

Tools

Several tools help master planners do their jobs. Army regulations, technical manuals and training circulars provide guidance and instructions.

The tabulation of existing and required facilities is a foundational element of the master plan. It is used to justify the MILCON program. Some planners refuse to work with and update it, which is a hindrance to their efforts.

The Army Stationing Installation Plan lists military and Civilian manpower on the installation, usually for the present and the following five years.

An area development plan provides detail for a specific area within the installation. It is tied to the master plan and focused towards the end state.

The Facility Planning System provides criteria that help determine facility spaces in relation to units.

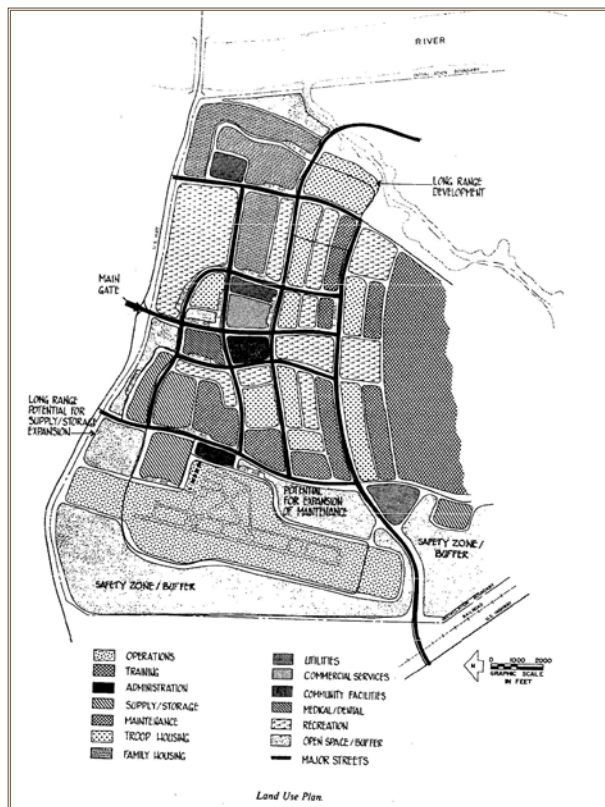
The Integrated Facility System is an automated information collection system that encompasses the life cycle management of real property resources.

An installation design guide sets guidelines and recommendations for the development of the installation.

The geospatial information system and computer aided design database graphically keep the facilities, infrastructure and constraints to aid in reducing conflicts, redundancies and repetitive actions.

A real property planning board comprises garrison elements and major tenants on the installation.

Good staffing actions take advantage of in-place protocols to process and document actions and accomplishments. This method also requires follow-up actions, so actions won't fall to the wayside.



This diagram, which is more refined than the concept plan, shows where groups of land use belong on the installation.



Planning with SRM and OPM for a sustainable future at Fort Hood

by Mark L. Gillem and John Burrow

“Nothing succeeds in war except in consequence of a well-prepared plan.” Napoleon Bonaparte

While these wise words are not directly applicable to the efforts of Public Works staffs, the underlying theme is certainly relevant. Without a plan, which is more than a list of projects and platitudes, success is hard to reach.

But planners also know that plans change as soon as they encounter reality, so the recommendations and findings in installation master plans must be flexible if they are to last beyond the printing date. Moreover, planners cannot simply hand over their well-prepared plans to engineers and architects and just hope for the best.

Planning is much more about the process and much less about the actual document. That process should begin with a clear vision that structures the planning and design process. Plans should be crafted to support the vision, projects should be programmed, and then detailed facility designs should be prepared in conformance to the plan. In this way, planning precedes programming and design, which is consistent with the Department of Defense’s Planning, Programming, Budgeting and Execution System.

All too often, programming comes first, and planners are given a DD Form 1391 and asked to find a suitable site. This inevitably results in “vacant lot planning,” because there usually is no effective plan to

guide these siting actions.

Fortunately, with the assistance of staff from Headquarters Installation Management Command, Headquarters U.S. Army Corps of Engineers and the Corps’ Fort Worth District, Fort Hood, Texas, is on track to have a completely updated real property master plan that will address this problem and recent assistant chief of staff for installation management guidance that requires planners to focus on more sustainable infill development. Now planners at Fort Hood are making flexible plans to guide investment decisions at all levels, from the smallest Sustainment, Restoration and Modernization repairs to the largest Military Construction projects.

Fort Hood planners have been asking a key question: what role should master planning play in an era of constrained budgets with a new focus on repurposing, removal and repair as well as more emphasis on using other people’s money, such as the Exchange, housing partners and enhanced use leases?

The RPMPs of the last era largely focused on siting MILCON projects and left the SRM and OPM efforts up to programmers and engineers. This situation resulted in uncoordinated and asynchronous development where, for example, recently rebuilt roads and parking lots were demolished to accommodate utility work in support of facility projects. Such waste is not acceptable.

Acronyms and Abbreviations	
ADP	area development plan
BRAC	Base Realignment and Closure
MILCON	Military Construction
OPM	Other People’s Money
RCI	Residential Communities Initiative
RPMP	Real Property Master Plan
SRM	Sustainment, Restoration, Modernization

To begin the planning process at Ford Hood, more than 140 participants worked together to develop a new planning vision. Their vision is for Fort Hood to be “the Great Place with Accessible Campuses, Walkable Small Towns, and Modern Infrastructure.” (*Editor’s note: See article on page 4 for more on Fort Hood’s planning process.*)

Now, smaller groups have begun preparing area development plans, or ADPs, for four of 11 districts and will have all of the ADPs completed by the end of 2012. In addition, they have prepared repurposing plans for a soon to be excess post exchange and hospital. And they have found room for significant new housing on the installation in a way that supports infill and transit-oriented development.

How does this connect to SRM and OPM projects? The process begins with a well-prepared plan not with a program or listing of projects. This way of doing business is perhaps the most innovative aspect of the Fort Hood effort. All too often, planners site known program requirements on open land. That

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Qualities


Like playing chess on a grand scale, master planners must plan many steps ahead while being strategic and persistent when the moment calls for action. They must use the Asian philosophy of being patient as they work toward the end state. They need to be ready to take advantage of opportunities, no matter how small, and then execute quickly and deliberately.

Master planning is a living process that has interruptions and distractions. When obstacles arise, master planners must implement cautious but deliberate alternatives that will allow them to shift focus without losing ground. Master planning covers subject matters that are broad and deep, making it a very difficult and complex profession.

They must deal with the past 20 to 50 years and plan for the future 20 to 50 years. Others have the luxury of giving up.

Master planners are the Army’s installation gatekeepers. They can flex and adjust to take on future challenges that better align us toward the mission of the Army.

POC is Mark Mitsunaga, 808-656-6511; mark.m.mitsunaga.civ@mail.mil

Mark Mitsunaga is a master planner, Directorate of Public Works, U.S. Army Garrison Hawaii. 



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method is not effective planning. Moreover, these actions have generally been limited to MILCON-scale work, which is on the decline.

The well-prepared plan is an actual drawing made to scale that shows the relationships between buildings, roads, sidewalks, parking areas, natural systems, operational constraints and utilities. After the plan is created, planners and programmers identify projects that are needed to implement the plan. Planning comes before programming. These projects include SRM-, OPM- and MILCON-scale work.

SRM – The surprising finding at Fort Hood is that comprehensive, sustainable planning visions can be achieved largely through SRM-scale efforts. Since much of the work needed to make Army installations more walkable, more compact and more energy-efficient can be done as renovations, repairs and upgrades, SRM funds are an ideal mechanism.

In the 1st Cavalry District, for example, restriping roads to allow for on-street parking, adding sidewalks to make a connected network, converting unused parking lots into usable parks, adding street trees to promote comfortable walks, demolishing World War II wood structures to make room for infill and renovating buildings so that they address streets are projects identified in the planning process and shown on the ADP.

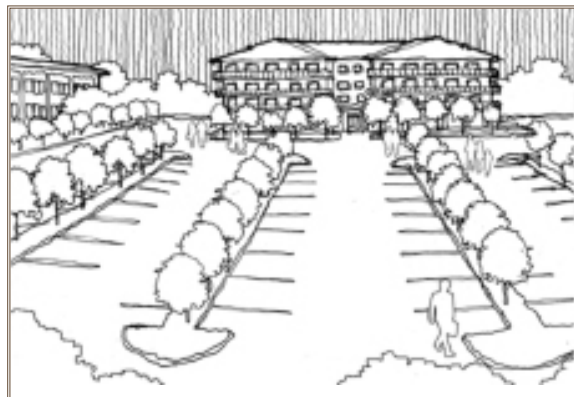
By locating SRM projects geographically, they can be more easily synchronized with other work. Now, programmers can

proceed with preparing the requisite documentation and prioritization for these projects.

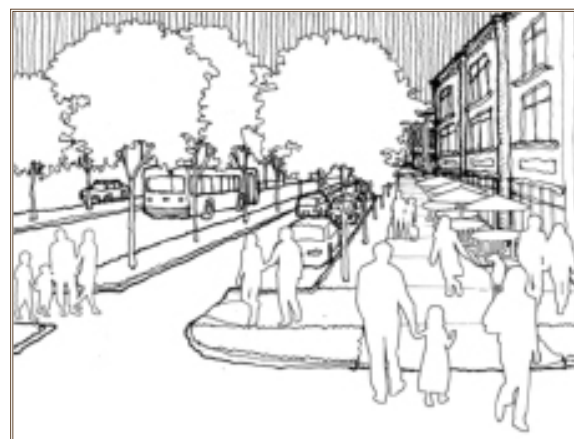
OPM – Given declining MILCON budgets, using OPM will be even more essential in the future. At Fort Hood, for example, the Residential Communities Initiative partner has money to build new housing on the edge of Fort Hood. But the new planning vision called for housing not on the outskirts but in the heart of the installation.

The RCI partner is now fully engaged in replanning its investments to match this vision. In addition to the much-needed housing, it will build the streets, utility networks, parks and open spaces for the development that will also benefit the entire installation.

Similarly, the Exchange has agreed in principle to plan for a new walkable town center in the heart of the installation. When the project proceeds, the Exchange will fund much of the infrastructure needed to create what it calls a “lifestyle” ➤



SRM-funded car parks with integrated bioswales will replace uninterrupted oceans of asphalt at Fort Hood.



Fort Hood will develop boulevards using OPM and SRM funds that accommodate pedestrians, transit, bikes and automobiles.



The new town square at Fort Hood can be developed using a combination of OPM, SRM and MCA funding. Images courtesy of The Urban Collaborative LLC



SRM-funded street repairs will incorporate medians to support low impact development goals and to help establish streets that will be a magnet for future infill development.



Solutioneers wanted; inquire within

by Jerry Zekert

As the year 2012 initiates, the world is experiencing much change. Financial challenges include the constant beat of reduced budgets, limited construction dollars and smaller workforces.

Faced with the rapid churning of stationing activities resulting in the need for new or revised facilities, installations see their land and facilities being consumed at a more rapid rate. At the same time, they recognize the importance of seizing opportunities for energy-effective and sustainable development, and maintaining stewardship of the environment, including natural and cultural resources.

The struggle to meet all these requirements now and in the future is not just a black and white decision solved by an infusion of resources. Meeting these needs resides in how we formulate solutions.



Jerry Zekert
Photo courtesy of the Master Planning Team

The traditional linear problem solving and project management process is antiquated. Today's solutions have to be holistic, comprehensive and collaborative, involving many diverse stakeholders. Planners and designers cannot just solve a problem in their cubicle. They must

interact and work with integrated teams. Analyzing criteria and designing a simple project is no longer acceptable. Teams have to be nimble and formulate many diverse alternatives to solve these complex problems.

What is needed is a new set of problem solvers — SOLUTIONEERS — who embrace the holistic process of translating complex requirements into integrated solutions.

What is a solutioneer? A solutioneer is a professional planner, designer, engineer, architect or other professional who uses his or her skills creatively and collaboratively to facilitate imaginative, holistic solutions that meet not only the needs of today but long-term requirements as well.

Solutioneers embrace the planning process, have a broad knowledge of

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center." In the long term, the Defense Commissary Agency may also come to the table with funds for a new facility that is aligned with the planning vision.

MILCON – Although in decline, a few MILCON projects will still occur. At Fort Hood, these will be primarily mission-related facilities and some quality-of-life buildings. In addition, significant remodels, like those planned for the old hospital, may need MILCON funding. Planners should proactively prepare for just such an event.

BRAC – The Army just completed the last round of Base Realignment and Closure, but another round may be justified. Installations that position themselves with effective capacity plans will be able to respond quickly to BRAC initiatives and may be able to make more compelling cases for staying off the BRAC list.

In Fort Hood's Clear Creek-Darnall District, planners have identified room for up to 6 million square feet of new infill

construction, 9,000 new on-street and off-street parking spaces and sustainable sites for more than 1,000 Family housing units. None of this needs to be programmed just yet, but the installation now has a plan in place should the need arise for redevelopment.

This planning approach also supports the Army's net-zero goals. Fort Hood has been chosen by the Army to be a pilot for net-zero waste by 2020. The lessons learned from Fort Hood will be critical in allowing other installations to achieve their net-zero waste goals by 2050.



Planning is a key component of net zero in many respects. Planning focuses on the repurposing of real property to be more efficient; reducing waste, energy and water; recycling materials and resources; and probably the most significant, changing habits. Not only is net zero the right thing to do, it will also free up resources during current and future eras of constrained budgets.

Past planning efforts have usually stopped at siting known requirements, which typically stretch out, at most, five

years into the future. This type of short-term planning is not that helpful.

While plans must accommodate known requirements, they need to also show the long-term vision for the installation and identify a variety of funding strategies to meet that vision. Without this proactive approach, RPMPs are bound to be little more than poorly prepared report cards rather than well-prepared plans. And little will succeed in installation management except in consequence of a well-prepared master plan.

POC is Mark Gillem, 510-551-8065, mark@urbancollaborative.com.

Mark L. Gillem, Ph.D., AIA, AICP, is an associate professor, University of Oregon; principal of The Urban Collaborative LLC; and a consultant, Master Planning Team, U.S. Army Corps of Engineers. John Burrow is the chief, Master Planning Division, Fort Hood.  



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planning and execution, and have great skills in communication, including visual communications. They engage stakeholders and collectively create great solutions.

For many, solutioneers challenge the tried-and-true culture of project development that has been relied upon for years. Anyone can be a solutioneer, but it requires the breakdown of paradigms on how to solve problems

Here are four recommendations that all can follow to become solutioneers.

Use the planning process as a foundation for problem solving. The planning process — which involves five steps that take the team from visioning, analyzing existing information, formulating alternatives and selecting preferred solutions to execution — provides the methodology to effectively and holistically solve problems. Solutioneers make sure that existing plans and principles are embedded to ensure consistency of development throughout the installation.

Ensure all stakeholders are involved throughout the process. Solutioneers are facilitators who work with all of the stakeholders to create collaborative solutions that meet the needs of all participants.

Involvement is not just reviewing a



A team of solutioneers from Navy Facilities Engineering Command Atlantic discuss imaginative solutions during an Advanced Planning class in Norfolk, Va. Photo by Jerry Zekert

document or providing comments. It is involving stakeholders' participation from the beginning of the effort to the end. It is including their help in formulating solutions. It is listening, advising and engaging the stakeholder community, which may include participants from outside of the gate such as local cities and towns.

Become technically proficient in a broad area of expertise. Solutioneers, by trade, help solve problems imaginatively. In that context, they need to know a lot about complex considerations.

They need to think big and to not allow details to limit creativity. They need to understand many of the planning principles of energy, sustainable development and environmental stewardship. They need to understand planning as well as fundamental architecture, landscape architecture design and engineering practices. They need an understanding of programming requirements and options for formulating alternative solutions, including the rules for Military Construction, nonappropriated funding, Sustainment, Restorations and Modernization and public-private ventures.

The Army Corps of Engineers established the Department of Defense Master Planning Institute that provides a vast array of training opportunities. Information about its courses is available at www.dodmpi.org. (Editor's note: See article on page 42 for more information.)

Also, participation in professional forums is recommended. Stakeholders expect solutioneers to provide imaginative solutions, and without an understanding of best business practices, they cannot provide this service.

Learn to communicate effectively. Solutioneers are



Marine Corps Air Station Miramar, Calif., stakeholders participate in an installation exercise. Photo by Jerry Zekert

communicators. They are able to talk to stakeholders and team members and forge collaborative solutions. They are also great listeners. They solicit and want to hear what all the team members have to say.

In addition, solutioneers need visual communication skills. They use drawings, renderings and other visualization tools to illustrate the solutions the team develops. This skill is essential for project success.

The time is right for solving tough planning and development challenges in different ways. The traditional linear problem solving approach does not give the creative solutions needed to solve today's problems. Collaborative, integrated, holistic solutions require creative, innovative solutioneers.

Solutioneers use a broad approach to planning. They are technically proficient and knowledgeable about best practices. They make sure every effort is made to introduce stakeholders into the process, and they employ their communication and listening skills along with visual techniques. This is the recipe for providing great solutions for today and tomorrow.

POC is Jerry Zekert, 202-761-7525, jerry.c.zekert@usace.army.mil.

Jerry Zekert is the chief, Master Planning Team, Headquarters, U.S. Army Corps of Engineers.



Army to establish enterprise real property utilization tool

by Dwayne Melton

The Army will soon have the interactive real property utilization tool it has long needed. The system will manage space assignments and track asset utilization across the Army's global footprint. The chosen system was designed for Army use and has proven its value for more than a decade.

Solution

In 1999, Army Pacific Region master planners recognized a challenge — the state of their real property inventory, or RPI, did not reflect the stationing and utilization issues they were having on the ground. The means to acquire and maintain accurate building asset data did not meet their demands. Tools did not exist to leverage as-built drawings and RPI data together to support effective asset utilization management and decision making.

The Pacific Region funded the development and implementation of the Proactive Real-property Interactive Space Management System. PRISMS uses a combination of a geographic information system, computer-aided design and RPI data to bring asset utilization information to business users through a graphical user interface.

Now in its 13th year of execution, PRISMS brings millions of square feet and years of innovation to the Army's enterprise. PRISMS has been used unofficially to manage space assignments, build scenarios, make space requests and track utilization at multiple installations



As this example depicts, authoritative system integration combined with a graphical interface allows for ease of property management. Graphic courtesy of Irene Motonaga, Syncadd Systems Inc.

across the installation management community.

Integration

At the Office of the Assistant Chief of Staff for Installation Management, PRISMS is being integrated with Army authoritative systems including the Army Stationing and Installation Plan, the Real Property Planning and Analysis System, the Installation Status Report and the RPI. The integration makes way for PRISMS to connect with the Headquarters Installation Information System and the enterprise GIS, Army Mapper. PRISMS is to be officially integrated with other Army systems in fiscal 2013.

In combination with ASIP population data and RPLANS allowances and requirements, PRISMS provides a holistic picture of installation utilization through dashboards and graphical user interfaces for business users across the Army. PRISMS provides a platform for master planners, real property personnel, stationing personnel, space utilization personnel and business users to share data.

Planning

PRISMS was designed by master planners for master planners. PRISMS' design incorporates the master planners' need for accurate gross and net areas for real property assets from as-built drawings

and RPI. The master planner's role has always been central to establishing balance between installation assets required to support mission activities and the actions necessary given each installation's circumstances.

Because the federal government's budget deficit affects current and future total force requirements at every installation, the availability, utilization and condition of land, facilities and manpower at Army installations is vital information. In addition, the ability to accommodate contingency, mobilization, surge or drawdown at Army installations and the cost of operations and manpower implications at Army installations are all very real concerns. The ability of the Army's existing facility and asset inventory to adapt to remissioning is integral to these decisions.

More than 80 percent of Public Works output is dependent on the installation's real property inventory, making data accuracy essential. In today's environment, the situational circumstances are being driven by the forces of increasing fiscal constraints and the resulting reductions in available resources. Data accuracy is even more necessary than in past years.

The Army realizes the need for "ground truth." PRISMS is the interactive real property utilization tool for the Army, ➤

Acronyms and Abbreviations	
ASIP	Army Stationing and Installation Plan
GIS	geographic information system
PRISMS	Proactive Real-property Interactive Space Management System
RPI	real property inventory
RPLANS	Real Property Planning and Analysis System



New guidance on master planning on its way

by Jerry Zekert

Installations are championing a new approach to planning that is transforming them into sustainable communities rather than sprawling, inefficient and haphazard developments. In support of this new approach, the Office of the Deputy Under Secretary of Defense for Installations and Environment is championing the importance of installation planning to all of the services.

The updated Department of Defense Unified Facilities Criteria for master planning will define common planning practices throughout DoD. These practices will make planning consistent among all military services using the same planning strategies, common plan formats, regulated site approval processes and enterprise requirements for planning competency, training and professional development.

Senior planners from the Army, Air Force, Navy and the Marine Corps developed this UFC. It is in the final staffing stage and should be out for distribution in early 2012.

The UFC identifies 10 planning strategies that must be included in all planning initiatives throughout DoD. The strategies are:

- sustainable planning;
- natural and cultural resource preservation;
- healthy communities;
- defensible planning, i.e., anti-terrorism


Acronyms and Abbreviations

DoD	Department of Defense
UFC	Unified Facilities Criteria

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and by 2013, this capability will be available Armywide.

POC is Dwayne Melton, 210-466-0592, dwayne.melton@us.army.mil.

Dwayne Melton, P.E., is a master planner, Headquarters Installation Management Command. 

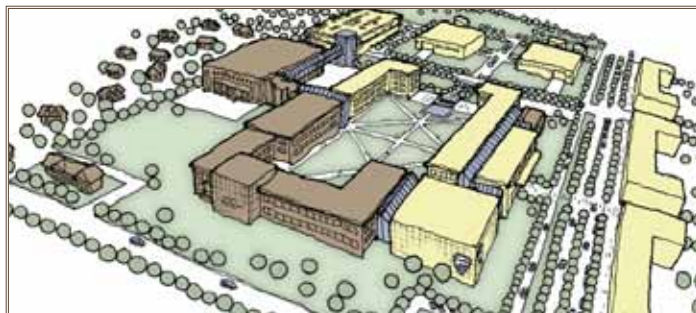
- and force protection;
- capacity planning;
- area development planning;
- network planning;
- form-based coding;
- facility standardization; and
- plan-based planning.

These strategies translate into compact, infilled, multi-story solutions that embrace mixed-use, walkable, low-impact development and transit-oriented planning. Planners will focus on area development planning and efficient network planning concepts, and they will include energy efficiency and other sustainability concepts in their planning.

Planning will be more regulated. Siting for construction will follow an installation planning code, enabling more efficient installation development that addresses long-term capacity. This way of doing business will require that the facility design process be more nimble in order to respond to the plan.

Simply put, DoD is adopting plan-based planning concepts that will drive all installation development. In the past, planners designated a site for a project and that was the end of it. The programmers were free to build anything, in any form. Plan-based planning means that the installation's plan will not only designate a site but also regulate the site's massing, building use, parking and landscaping. The planning will drive the programming.

Throughout DoD, planning will have five components. The services may call these components by different names, but each service's planning will have a vision, installation planning standards, an installation development plan that includes area development plans, an investment



Infill development will create a great campus at U.S. Army Corps of Engineers Cold Region Research and Engineering Laboratory, Hanover, N.H. Graphic by U.S. Army Corps of Engineers and Urban Collaborative LLC




The new DoD UFC for master planning will recommend walkable development in all planning efforts. Graphic by Urban Collaborative LLC

strategy and a summary plan.

The UFC will also strongly recommend that all services maintain professional competencies and expertise in planning and that they use more regulated site approval processes that will ensure consistent planning throughout DoD.

This UFC ensures that all installations will adopt the best planning practices that cities and towns throughout America have been using for decades. The requirements in this UFC will help to preserve the long-term military resilience and capacity of our installations while meeting today's mission needs and embracing the tenets of energy efficiency and sustainability.

POC is Jerry Zekert, 202-761-7525, jerry.c.zekert@usace.army.mil.

Jerry Zekert is the chief, Master Planning Team, Headquarters, U.S. Army Corps of Engineers. 



Using townhome barracks to meet sustainable planning goals

by Mark L. Gillem and Cyndi Skinner

On Nov. 23, Lt. Gen. Michael Ferriter, the assistant chief of staff for installation management, issued master planning policy guidance for sustainable design and development. The guidance requires that:

“Planners will incorporate the following key principles of sustainable planning in their Master Plans, area development plans, and other planning products: compact development, infill development, transit-oriented development, horizontal and vertical mixed-uses, connected transportation networks, low impact development, multi-story construction, narrow buildings, sustainable planning and energy efficiency practices that embrace district energy, as well as holistic energy, water and waste management, facility utilization and building reuse as well as lifecycle planning.”

Implementing Armywide policy like this at the local level can be a challenge, especially when planners are confronted with outdated plans, a culture resistant to change and overly rigid facility standards. How can this be done? This article highlights one specific case that demonstrates how planners can use known requirements to meet this new ACSIM guidance.

The process, however, does not begin with requirements. Rather it begins with the creation of a shared planning vision anchored in the needs and context of the installation. At Fort Hunter Liggett, Calif., using a collaborative training practicum conducted by Headquarters U.S. Army Corps of Engineers and with the participation of Headquarters Installation Management Command staff, installation planners and other stakeholders determined that their planning vision is, “to create a flexible training environment surrounding an attractive small town with walkable main streets and a usable town square, where Soldiers, civilians, and their families enjoy living and working.”

In support of this vision, new area development plans sited smaller scale

buildings facing streets and parks, much like historic Paso Robles, about an hour south of the installation. When the requirement for a new barracks emerged, installation planners faced the choice of finding a site for a traditional barracks, which would have perpetuated the old vacant lot planning model, or meeting the barracks requirement in a way that conformed to the master plan vision. They chose the latter path.

After all, who would voluntarily live in a traditional barracks anyway? While the economic and accessibility benefits of living on an installation are certainly compelling, many young Soldiers cannot wait to move out of their assigned barracks. In some cases, they have even married each other, not out of love but out of a desire to get into more attractive military Family housing. The smaller scale of the latter makes the former look and feel confining and uncomfortable.

There is little argument that traditional barracks are rather large and impersonal. They frequently have long, windowless, double-loaded corridors that are more appropriate for prisons than homes. Access to natural light, natural ventilation and any sense of human scale is largely missing from many new barracks. They are neither comfortable places to live nor efficient buildings to operate.

To complicate matters, these big buildings require extensive antiterrorism setbacks and construction standards, including progressive collapse, 25-meter standoff distances and expensive glazing systems anchored into the structural members. All of this comes at a steep price.

Acronyms and Abbreviations	
ACSIM	assistant chief of staff for installation management
IMCOM	Installation Management Command
TAB	Tabulation of Existing and Required Facilities

First, the psychological toll associated with living in an impersonal dormitory-like building has been well documented by researchers on college and university campuses. Crime, violence and a general disregard for maintenance and upkeep are not uncommon. This toll is one reason why universities are moving away from the dormitory model to one that embraces smaller scale townhome units where fewer people share common areas.

Second, the added construction costs associated with antiterrorism measures make large buildings more expensive than smaller buildings, and barracks are no exception.

Third, and perhaps most important from a planning perspective, the extensive setbacks needed for larger barracks complicate infill and compact development goals.

Given the costs associated with the larger barracks model and the incompatibility such a model has with the installation’s planning vision, a new model was needed. Planners initially turned to the townhome barracks prototype at Fort Leonard Wood, Mo.



These multi-level Navy townhome barracks in Norfolk are not subject to antiterrorism requirements since they only have 10 residents. Images courtesy of The Urban Collaborative LLC.



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According to a Fort Leonard Wood brochure, townhouse style permanent party barracks house junior enlisted Soldiers in a new way. Departing from the traditional block barracks buildings, these units create a home-like feel in a neighborhood atmosphere. The townhouse barracks use the Army standard “1+1” floor plan configured into five-unit buildings. Each two-person unit has its own exterior entrance, individual bedrooms and lavatories, full kitchen with appliances and a shared bathroom.

The model was developed with the support of the U.S. Army Corps of Engineers’ Fort Worth District Barracks Center of Standardization, the Corps’ Kansas City District and the Department of Public Works at Fort Leonard Wood. Proponents of the model argue that the smaller typology increases Soldier morale and retention, minimizes common circulation area to maximize individual Soldier space, reduces construction costs since wood frame construction is less expensive, accommodates a wide variety of project sites and construction types, and easily adapts to fit local character.

Townhouse style barracks are also consistent with the 1994 Government Management Reform Act and with the

2005 *Holistic Barracks Strategy*, which remains the focal point for the barracks program, according to Zeli King, ACSIM Barracks Program manager, in the January/February 2011 Public Works Digest. Key goals of the resulting barracks modernization program include eliminating common area latrines and crowded sleeping quarters, providing a common standard of living and learning from the Navy’s barracks privatization efforts. Moreover, the Army recognizes that unaccompanied personnel housing is a quality-of-life issue that affects readiness and retention.

Given these benefits, it is hard to overlook the potential for this new model. At Fort Hunter Liggett, planners and designers are taking the model to the next level. Since these buildings have no more than 10 occupants, they do not need standoff distances or progressive collapse designs. Hence, they can fit on much smaller sites and be used to infill in already developed areas.

They can also be used to help frame connections between developed areas of an installation. At Fort Hunter Liggett, the initial plan is to build four of these small barracks directly along a new main street and close to the new town square. Porches and stoops will face the street and parking will be behind.

To maximize land use efficiencies, the buildings will have three levels, similar to Navy unaccompanied housing in Norfolk, Va., instead of the one and two levels built at Fort Leonard Wood. And to fit within the installation design guide standards, they will be built with stucco and roofing to match the installation’s vernacular theme.



Planners are working directly with the architects to ensure that the buildings achieve the installation’s planning vision. This iterative process is somewhat unique and guarantees that the plan is useful in siting actions and design decisions.

Planners have used the revised townhome barracks model to support key ACSIM goals. They allow for more compact, infill development. The land needed to site these buildings is significantly less since antiterrorism setbacks are not required, which supports the use of infill sites in compact, walkable districts.

Townhome barracks support transit-oriented development by allowing more dense development to occur along a transit corridor within walking distance of transit stops. They support horizontal mixed-uses by allowing planners to site them within a 10-minute walk of many other uses rather than isolate them in a barracks compound. As a building typology, they support goals for multi-story construction and narrow buildings, which have substantial energy and performance benefits.

Even in this era of declining budgets, planners have the ingredients to make more sustainable installations. The Army will still build barracks and office buildings as well as roads and parking. Designers just need a clear recipe to follow, which, if done right, is a real property master plan. As is the case at Fort Hunter Liggett, the plan should help drive facility siting and typology decisions that can meet the ACSIM goals for sustainability and energy-efficiency.

POC is Mark L. Gillem, 510-551-8065, mark@urbancollaborative.com.

Mark L. Gillem, Ph.D., AIA, AICP, is an associate professor, University of Oregon; principal of The Urban Collaborative LLC; and a consultant, Master Planning Team, U.S. Army Corps of Engineers. Cyndi Skinner, AICP, is the chief, Master Planning Division, Fort Hunter Liggett.  



Fort Hunter Liggett plans to build three-level townhouse barracks along a new transit corridor, a plan that will support walkability and infill development.



Housing and master planning

by Jonathan Winkler

Military installations should provide sustainable, efficient, harmonious, secure and visually compatible physical environments conducive to attracting and retaining skilled and motivated personnel. To reach this goal, the Army relies on the coordinated efforts of many professionals to execute and fulfill the myriad duties and responsibilities that are outlined in numerous regulations and manuals.

If this method sounds confusing and overwhelming to you, be assured that you are not alone. If you're in the housing business, the bottom line is that your Public Works master planner is central to pulling this all together. Housing professionals need to know and rely on her or him to ensure installation housing requirements are fully addressed in the master plan.

Guidance

The Army master planning regulation, AR 210-20, is now being updated and absorbed into Chapter 10 of AR 420-1, the Army's regulation for overall facilities management. The update documents policy by defining the components of the real property master plan and their purposes. It does not provide specific instruction on how to develop an RPMP.

The *Master Planning Technical Manual* is the Army's how-to master planning guide. First published in 2006, it was recently updated and now contains 606 pages of detailed instruction on how to develop, prepare and update the RPMP.

The manual defines the tangible RPMP products, which include:

Acronyms and Abbreviations	
DA	Department of the Army
IDG	installation design guide
RCI	Residential Communities Initiative
RPLANS	Real Property Planning and Analysis System
RPMP	real property master plan
RPPB	real property planning board
TAB	Tabulation of Existing and Required Facilities

- vision plan,
- installation design guide,
- capital investment strategy,
- long-range component, and
- real property master plan digest.

The technical manual describes what planning data is needed, where to find it, how to analyze it, how to package it and how to get it into practice to fulfill the vision and spirit of the regulation. It is a comprehensive, highly detailed tool with numerous how-to examples, and it provides useful instruction for all planners from the novice to the seasoned professional.

The manual provides an outline of the entire planning process, addressing how and why to plan and explaining the master planner's role. Extensive background information and references are also provided for further research and direction. Seasoned planners can bypass these basics and proceed directly to specific sections.

Master planning is a key aspect of Army facilities management, and the *Master Planning Technical Manual* is a valuable reference.

Automated systems

The Real Property Planning and Analysis System, known as RPLANS, is an Armywide software system that correlates data about facilities, populations and force structure with standard facility allowances and requirements. Data from



A housing site plan shows the distribution by rank of Family housing, which must conform to installation standards just as other facilities do. Graphic by IMCOM-Europe

RPLANS support a number of other Army automated systems including the Installation Status Report for Infrastructure.

“TAB” is the term for “tabulation of existing and required facilities.” The TAB reports facility assets, requirements, excesses and shortfalls. RPLANS-generated TABS are recognized by Headquarter Department of Army as part of the justification for construction programs and are the basis for evaluating installation infrastructure needs. The TAB is part of the capital investment strategy, which is a required component of the RPMP.

Each TAB pillar — assets, force and criteria — is supported by one or more automated system. The RPLANS suite of systems receives data directly from the Army Stationing and Installation Plan, called ASIP; the General Fund Enterprise Business System, or GFEBs; and the



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Headquarters Installation Information System. RPLANS feeds data to the Installation Status Report and is linked to Construction Appropriations Programming Control and Execution System, or CAPCES, data.

Standards

In 2003, the vice chief of staff of the Army directed that installation design standards be developed for site planning, buildings, vehicular and pedestrian circulation, landscaping, site elements such as signs and utilities, force protection and sustainable design. These standards became the framework for the installation design guide process, which provides:

- standardization across installations;
- a sense of community, order, tradition and pride;
- guidance on cost-effective resource investment;
- sustainability, reliability and efficiency.

Installation design guides

IDGs are specific to each garrison. Their purpose is to provide design guidance for standardizing and improving the quality of the total environment of the installation. This guidance affects not only the visual impact of features on the installation but also the impact of projects on the total built and natural environment. The improvement of the quality of visual design and development and use of sustainable design and development practices have a direct and future impact on the quality of life for those who live on, work at or visit the installation.

IDGs document negative aspects of an installation, e.g., cluttered, confused and unattractive features, and provide a vision and plan for future improvements based on that garrison's specific architectural and historical character, facilities arrangement, circulation patterns and landscape features. The result is a road map to an end state where facilities and infrastructure are

clear, orderly, logical and attractive.

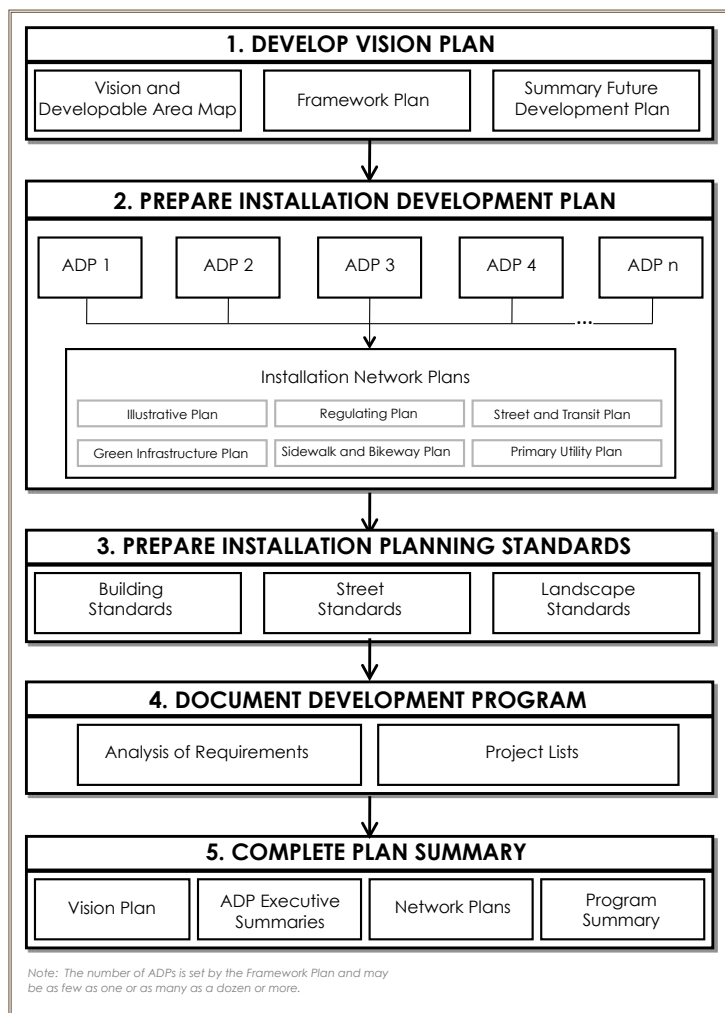
The IDG documents a visual order, architectural character, common regional design elements and landscape features that will result in improved visual quality on the installation. The installation's visual quality is achieved through a process of analysis, planning, design and implementation. This process includes planning compatible land use arrangements, performing site analyses that achieve appropriate site selection and designing site layouts, architectural character and landscape features that complement adjacent facilities.

All construction, renovation, maintenance and repair of military Family housing projects as well as all other projects on post must comply with the IDG.

The IDG includes standards and general guidelines to provide a structured methodology for establishing projects.



The Installation Planning Board meets at Wiesbaden Army Airfield, Germany, to review projects. Photo courtesy of IMCOM-Europe



The RPMP process moves from developing a vision through stages to the completed digest. Graphic by Office of the Assistant Chief of Staff for Installation Management



Master planning more important during downsizing than ever

by Kathryn J. Haught

The Army is entering a period of austerity not seen in recent budget years. An impact to funding that will affect the long range component and capital investment strategy of real property master plans is a foregone conclusion. Master planners must also alter their mindsets since business as conducted during the past 10 years has changed.

Members of Congress are questioning every program in the federal budget. The Department of Defense budget cannot escape impact.

Military Construction dollars are expected to fall precipitously. Force structure changes for many of the major initiatives — Grow the Army, Global

Defense Posture Realignment, Base Realignment and Closure, Modularity — are nearly complete, yet several transformed units remain in legacy facilities that fall short of requirements based on the newer standards. Today's environment includes discussions on cutting military and Civilian personnel for the first time since the post-Cold War drawdown.

Senior Army leadership recognizes that existing facilities continued to deteriorate while building went on for new missions. Leadership recognizes that, while personnel cuts will produce some excess facilities requirements at some locations, the Army will continue to have deficit and quality issues to resolve. The leadership

Acronyms and Abbreviations	
AFS 2020	Army Facility Strategy 2020
AR	Army Regulation
CIS	capital investment strategy
MILCON	Military Construction
OACSIM	Office of the Assistant Chief of Staff for Installation Management
R&M	Restoration and Modernization

recognizes that implementing both budget and personnel cuts will affect facility usage. It recognizes that database inaccuracies make facility assessments more time consuming, and it also recognizes that it cannot resolve these issues without master planning in the forefront.

For these reasons, Army Facility Strategy 2020 was formulated to ensure: ➤

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The design guidelines incorporate sustainability, quality, anti-terrorism and force protection, historical and cultural considerations, safety and compatibility. Project design issues associated with site planning, architectural character, colors and materials, vehicular and pedestrian circulation, exterior lighting, utilities and landscaping must follow the IDG.

Garrison commanders are responsible for:

- developing and updating the IDG;
- chairing the installation's real property planning board, which reviews and approves projects established on the prioritized improvement projects list to meet Army standards;
- obtaining senior mission commander approval and submitting the projects list through the Installation Management Command region for approval and funding; and
- enforcing IDG standards.

Senior mission commanders are responsible for:

- reviewing and approving the IDG.
- reviewing and approving RPPB-prioritized improvement projects list recom-

mendations, ensuring they meet Army standards, prior to submission to the region director.

The ultimate success of an IDG relies heavily upon endorsement by both the senior mission commander and the garrison commander, as well as the commitment of all project stakeholders working as a team to apply established standards.

Violations and variances from standards are reviewed and adjudicated by the RPPB. The senior mission commander chairs an installation planning board to review and approve the RPPB's actions.

Privatized housing

Residential Community Initiative, or privatized, housing will also consider such installation practices and policies. Paragraph 3(c) of the *Construction, Renovation and Condition Standards for Residential Communities Initiative Family Housing Program – Update #4* spells out the requirements. The paragraph says:

“... installations have published guidelines and construction standards (e.g. Installation Design Guide) that may exceed or differ substantially from local codes and standards. It is DA RCI's intention that installation practices and polices apply to RCI projects

unless waived by appropriate installation authorities. If an installation guideline or standard appears unreasonable for an RCI project and a consensus solution cannot be reached at the installation level, DA RCI may be consulted in resolving the conflicting standards.”

Housing and planning

Housing is a critical component of installations, and the impression an installation makes on the Soldiers, Civilians and Families who live and work there has an impact on quality of life as well as mission readiness.

Good master planning is the first step towards providing efficient, harmonious, secure and visually attractive neighborhoods that are conducive to attracting and retaining skilled and motivated personnel. The master planner is key to creating, improving and sustaining great installations.

POC is Jonathan Winkler, 571-256-9737, jonathan.winkler@us.army.mil.

Jonathan Winkler works in the Strategic Planning and Construction Branch, Housing Division, Office of the Assistant Chief of Staff for Installation Management. 📷



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- efficient and effective use of facilities through space allocation to approved standard space allowances,
- efficient and effective use of facilities through space allocation to approved standard space allowances,
- excess to deficit facility conversions,
- excess facility demolition, and
- building envelope improvements to reduce energy intensity and improve water efficiency.

AFS 2020 supports the Army of 2020. In turn, AFS 2020 is supported by the Army Facility Investment Strategy.

This new way of business requires a different approach to master planning with AFS 2020 providing the blueprint. As part of AFS 2020, the Army Facility Investment Strategy will enable the installation management community to plan more efficiently while taking funding shortages into account.

The objectives of the Army Facility Investment Strategy are:

- sustain Army facilities at a minimum of 90 percent of the Facility Sustainment Model,
- demolish or repurpose excess facilities,
- rehabilitate substandard facilities that are not excess via Restoration and Modernization funds to improve facility quality, and
- build for only the most critical shortfalls via MILCON.

While the concepts are not new, they fell by the wayside due to the urgency of building in recent years. Sustainability has been of paramount importance for many years, but the Army now has an opportunity to truly implement it in facility restoration and modernization.

The Office of the Assistant Chief of Staff for Installation Management is updating the master planning regulation. The current regulation, AR 210-20, will cease to exist, and master planning will be

found in Chapter 10 of AR 420-1. The Office of the Secretary of Defense is also in the process of updating the Unified Facility Criteria for master planning.

The release of these documents will support the strategy detailed in AFS 2020. Both documents emphasize sustainability and conservation of energy and natural resources, including land.

Master planners and other garrison staff members at Army installations have always excelled at implementing sustainability by maintaining and preserving existing resources. They now have an opportunity to apply sustainability to a greater degree. Doing so will require master planners and space utilization specialists to analyze existing floor plans to determine whether standard criteria can be met. The benefits of reuse to the Army are immeasurable.

The components of the installation's real property master plan should reflect this new strategy. Installation CISs should be updated to show major R&M projects. The installation's approved CIS will provide the requirements for implementing force structure changes directed by Headquarters Department of the Army.

This new strategy requires that regulatory and illustrative plans use the existing facilities by default rather than assuming new construction. Master planners must creatively adapt existing floor plans to modern missions. When only MILCON will satisfy a facility requirement, master planners can apply the new principles for tall, narrow buildings integrated into existing districts.

While this strategy is already saving scarce resources — money and land — by renovating instead of building, there are also possible savings from using utility and road structures already in place and from avoiding development of new areas. In the long term, using valuable land



A Soldier checks out his new home in a renovated barracks in Europe. Photos courtesy of OACSIM




Fort Benning, Ga., Starship barracks undergo renovations inside and out.

that might be needed in the future for training or other uses could necessitate land acquisition to meet those currently unforeseen needs.

With the new budget guidelines from Congress and the process under way to implement cuts, master planners have a tough task before them. However, they also have an opportunity to increase the degree of sustainability and conservation in their master plans.

POC is Kathryn J. Haught, 571-256-1183, kathryn.haught@conus.army.mil.

Kathryn J. Haught is a master planner, Operations Directorate, OACSIM. 



Capacity planning: Preparing for an unknown future

by Jill A. Schreiber

The beginning of a new year often brings thoughts about the possibilities of the year ahead, and 2012 will certainly be an interesting year for planning. The impact of current fiscal policy on Military Construction provides an opportunity to truly focus on establishing goals for growth and development within installation boundaries, determining the carrying capacity of Army land holdings and preparing plans that can flexibly accommodate an unknown future.

Capacity planning allows planners to determine an installation's maximum development capacity based on conformance to the installation's planning vision, goals and objectives. While known requirements need to be sited in the master plan, room needs to be reserved for unknown future requirements.

The difference between the existing condition and the future build-out is the capacity. In this way, planning precedes programming, is proactive and does not account only for current known requirements. Notional facilities are sited on the illustrative plan to show the potential for future growth and development of the area.

Planning based on an area's development capacity, not just current known mission requirements, demonstrates a commitment to the value of land and enables installations to show how they can flexibly accommodate future missions. This perspective on the room for growth within cantonment boundaries allows planners to actually implement a plan in alignment with an installation's vision — executing construction as mission needs drive and funding becomes available.

Capacity planning also provides a line of defense against Base Realignment and Closure actions, as leadership is able to immediately interpret the carrying capacity of the land holding and determine the strategic value of the installation as a defense asset.

Installations throughout the Army



Jill A. Schreiber
Courtesy photo

have started thinking about capacity planning as a crucial component of their master planning efforts. At Fort Sill in Lawton, Okla., the West Campus Area Development Plan demonstrates the feasibility for construction of 85,000 to 1,505,000 square feet of mission support space and 259,000 to 546,772 square feet of community support space, depending on building height. Fort Sill has just undergone a transformative BRAC process — \$432 million for construction of 27 new facilities, but it continues to look ahead and validate its ability to accommodate new missions and facilities and adapt to changing Army needs.

Fort Hunter Liggett, headquarters for the U.S. Army Combat Support Training Center, in California's Salinas Valley, has used capacity planning to justify the expansion of its training campus while guarding against encroachment on training land. Operational readiness training complexes, barracks and mission support facilities are sited in areas



The Fort Sill West Campus ADP demonstrates the areas capacity for current and future development.
Graphic by The Urban Collaborative LLC

Acronyms and Abbreviations	
ADP	area development plan
BRAC	Base Realignment and Closure
UFC	Unified Facilities Criteria

within the cantonment once thought of as built to capacity. Construction has already commenced on support facilities established in fiscal 2011's area development planning process. Fort Hunter Liggett's plan maximizes the capacity of the cantonment area while preserving valuable range and training land, ensuring their continuing viability as a premier training location for the Army.

Fort Hood in Killeen, Texas, has also started a capacity planning effort as part of a comprehensive plan to update ADPs throughout the installation. As one of the largest land holders in the Army, Fort Hood has a tremendous potential for mission impact. Numbers from the initial planning effort demonstrate Hood still has room to accommodate even more facilities in support of future missions. The ADP for the 1,406-acre Clear Creek-Darnall district indicates space for 3.3 million to 6.1 million square feet of buildings, again depending on building height, and more than 9,000 additional parking spaces.

Any strong master plan is a living document. Simply documenting and siting current known requirements is short sighted.

Master plans need to be adaptable, created to seize opportunities that arise with an unknown future. Capacity planning provides a way for planners to identify the potential of their installation and to be prepared to execute proactively as opposed to reactively.

An update to the Unified Facilities Criteria for installation master planning, currently UFC 2-000-02, has been submitted by a multi-service comprehensive working group and is currently under review. Capacity planning will be included as one of the 10



Bulletin presents smart-growth strategies

by Natalie Myers

A Public Works Technical Bulletin will help master planners achieve the smart-growth principles embedded in Army Regulation 210-20, *Real Property Master Planning for Army Installations*. The Corps of Engineers' PWTB 200-1-96, *Initiating Regional Smart-Growth Strategies*, is available for download at http://www.wbdg.org/ccb/ARMYCOE/PWTB/pwtb_200_1_96.pdf.

AR 210-20 states that all planning and development for installations must consider regional planning factors. This provision can help installations achieve the smart-growth ideals, which value long-range, regional considerations of sustainability.

The regulation's goals include:

- achieving land-use patterns that eliminate noise, dust, radio and frequency interference;
- protecting a continuous system of natural corridors that decrease training and testing pressures; and




Communication on a regional level brings regional considerations to installation master plans. Photo courtesy of Engineer Research and Development Center

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sustainable planning strategies within the UFC.

POC is Jill A. Schreifer, 202-731-0098, jill@urbancollaborative.com.

Jill A. Schreifer, AICP, is the chief operating officer and planner, The Urban Collaborative LLC, and a U.S. Army Corps of Engineers contractor. 

- expanding mobility options to minimize transportation costs.

Although AR 210-20 is now being updated, the update will also incorporate the tenet of smart growth.

There has been little discussion about these regionally smart outcomes, and as a result, many neighboring communities are still making counterproductive development decisions. Smart growth means that natural systems must be understood at a regional scale, and regional transportation systems such as highways, trains and mass transit must create a framework for compact development. This extension requires an understanding of interrelated systems and having strong, regional engagement and cooperation.

Understanding those interrelated systems is no easy task. An overwhelming number of issues are involved, and the potential exists for regional initiatives to fall apart because of their sheer size and complexity. Yet, many aspects of smart growth — integrated transportation and land-use planning, conservation of sustainable open space and attainment of a jobs and housing balance — are most logically approached from a regional perspective.

For installations looking for a next step or a starting point, the PWTB offers practical explanations for how to proceed. It is important to keep in mind that smart growth is a process, not an end state. Smart growth involves continuous, ongoing improvement and a realignment of community goals and practices to grow in a more responsible and resilient manner. The bulletin focuses on a framework to guide regional organization, which includes information gathering, communication and action.

Information gathering means knowing the fundamentals of the planning process, integrating environmental, economic and social factors in measurements and assessments, and analyzing changes in attitudes, values and behavior. Provided within the PWTB is an overview of

Acronyms and Abbreviations	
AR	Army Regulation
PWTB	Public Works Technical Bulletin

master planning at Army installations. The bulletin identifies the documents and processes critical to implementing smart-growth policy.


Communication builds awareness, informs to promote understanding and engages planners in achieving sustainability. Available to Army and other federal planners are resources and training that can help them address smart-growth issues and find the necessary tools. More than a dozen courses, websites, forums and organizations are cataloged.

Action encompasses measuring efforts in moving toward sustainability and showing results. To this end, the bulletin presents an eight-step process to engage regional stakeholders in moving forward toward incorporating regional considerations within their master plans. The steps are an accumulation of literature, expert review and case study experiences.

Few geographic regions have been very successful in guiding overall development in ways that achieve smart-growth objectives. The reason: few are looking at the sum of the parts. Regions must knit together the picture that says, "This is how we are growing, and these are the implications."

The PWTB builds on the common understanding that installation master plans need to include regional growth strategies. A forward-moving agenda can then be initiated in a way consistent with these aspirations.

POC is Natalie Myers, 217-373-6741, natalie.r.myers@usace.army.mil.

Natalie Myers is a researcher, Construction Engineering Research Laboratory, Engineer Research and Development Center, Champaign, Ill. 



Balancing the TAB: Fort Wainwright's experience

by Kate Siftar

Fort Wainwright, Alaska, planners attended the first Real Property Planning and Analyses System Work Group, which was held during the first quarter of this fiscal year. Hosted by Linda Tuttle, RPLANS project manager, Office of the Assistant Chief of Staff for Installation Management, the meeting was a productive discussion of issues and solutions. Those who participated in the work group understand all too well the RPLANS challenges at the installation level over the past two years.

RPLANS is a web-based critical tool for master planning and defining facility requirements. Basically, RPLANS lists all the real property assets on an installation and describes both space deficits and excess space unique to each installation. Deficits support new construction — the Military Construction program. The accuracy of this data is especially critical during these unusual economic times.

RPLANS produces a tabulation of existing and required facilities, known as the "TAB." The challenge for each installation is to have a "balanced TAB" — no space that is not being used and enough existing space or programmed space for all to accomplish their missions.

In spring 2010, Web RPLANS was launched, not without the usual accompanying technical difficulties, of course. Following the much appreciated hands-on training, Fort Wainwright planners began the arduous task of editing the data from category codes to square footage, construction, demolition, requirements and allowances. So began the endless cycle of real property surveys, data checks, edits, rechecks, locking and unlocking data, and algorithm problems.

As soon as an issue was solved, it seemed another problem would instantly come up. VISTA Technology Services Inc. provides RPLANS support for OACSIM. Its help desk supplies installations with the necessary avenue to vent frustrations and identify inaccuracies as installations master

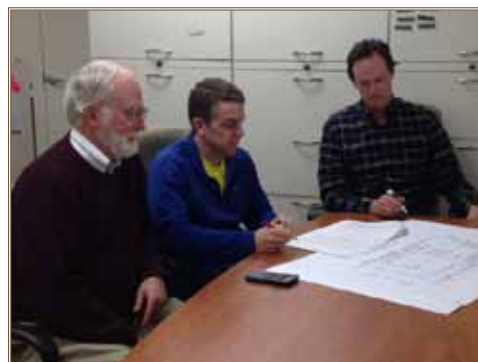


Kate Siftar
Photo by Brianna Siftar

this planning tool.

One of the biggest challenges has been accurately capturing programmed construction data from completion timelines to square footage to type of facilities. Another challenge is accommodating the change from the legacy installation Integrated Facilities System to the General Fund Enterprise Business System, another web-enabled financial management system.

IFS is the real property inventory record, which is a critical component of the calculation that balances the TAB. If an installation is lacking sufficient real property inventory to meet its requirements, MILCON is programmed to address the deficit. If the installation asset data is inaccurate and creates a space excess, a proposed MILCON project would not be justified and potentially could be deleted



Fort Wainwright planners (left to right) Chip Davis, Dave Sanchez and Jim Blizzard review RPLANS TAB and MILCON requirements. Photo by Kate Siftar

Acronyms and Abbreviations	
IFS	Integrated Facilities System
MILCON	Military Construction
OACSIM	Office of the Assistant Chief of Staff for Installation Management
RPLANS	Real Property Planning and Analysis System
TAB	(RPLANS) tabulation of existing and required facilities

from the program. Potential deletion of a much needed MILCON project causes a lot of stress and anxiety at the installation level.

RPLANS interacts not only with IFS but with several other automated planning tools — the Army Criteria Tracking System, the official repository for criteria that determines how much authorized space an installation gets; the Facility Planning System for allowances and requirements; force structure data from the Army Stationing and Installation Plan; and the Installation Status Report, which relies on assets and requirements data from RPLANS.

A new planning module with scenario builders in RPLANS is nearing completion. It is forecasted for release in the second quarter of fiscal 2012.

Master planners manage change at installations and program requirements based on a multitude of data from numerous and changing data bases. Web RPLANS is a relatively new addition to the master planning tool box.

Fort Wainwright has moved beyond the initial resistance stage. Its master planners are still experiencing some frustrations, but they are fewer and fewer. Planners are now, finally, beginning to have a positive RPLANS experience.

RPLANS has slowly but continually improved with each scheduled data upload. RPLANS is a business enterprise experience that incorporates all of the data master planners could possibly need, making it an incredible planning tool to cope with the mandated but necessary, exciting but frustrating, changes to



How to build area development plans

by Anne de la Sierra

One of Headquarters Installation Management Command's master planning goals is to break the installation real property master plan, usually referred to as the RPMP, into components that master planners can develop without depending on expensive and time consuming efforts. Area development plans, or ADPs, which are in-depth analyses of a specific area of the installation, fit neatly into this goal.

The RPMP has five sections, one of which is the long range component. An ADP is a major portion of the long range component.

Development of an ADP follows a basic process. The ADP begins when you prepare a "composite constraints and opportunities map," which is a baseline assessment of existing conditions. Once constraints such as endangered species, installation boundaries, utility capacities, watersheds, wetlands and others have been identified, as well as opportunities for development presented by the land itself, its features or its relative location on the post, you can determine the areas on the installation that are most appropriate for future development.

It is important to understand what you have so that you can determine what you need. Features such as steep slopes, flood plains or hazardous waste sites often limit installation development, while a feature like a shoreline may present an excellent opportunity for developing water-based activities.

After the areas suitable for future development are revealed in this overall

composite of the installation, an ADP can be constructed to provide details on function, form and land use. Each ADP will consist of an illustrative and regulating plan. Each will be holistic in scope and unified by function or architectural character. Some examples of ADPs include an airfield, an industrial complex, a Family housing area, a brigade complex or an administrative area.

ADPs can be prepared at any time during the development of the long-range plan, but they are generally triggered by one of the following:

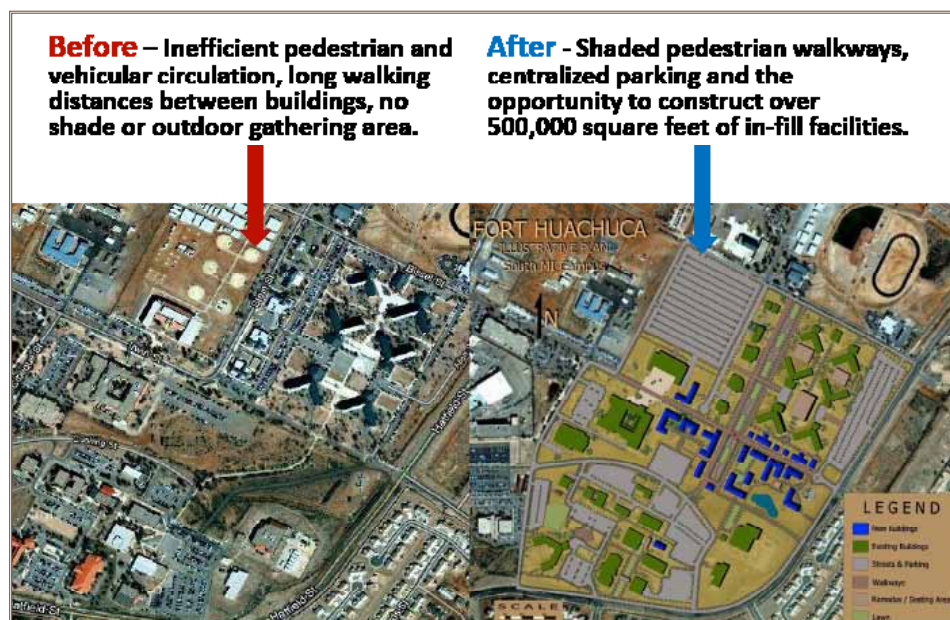
- a change in mission that involves a specific portion or group of installation facilities;
- a change in program that involves a specific type of installation facility;
- revitalization or modernization that causes numerous changes to a specific area;
- a problem within a specific area, such as a lack of pedestrian amenities, traffic circulation conflicts or open expanses between buildings;

Acronyms and Abbreviations	
ADP	area development plan
IMCOM	Installation Management Command
RPMP	real property master plan

- downsizing that causes numerous changes to a specific installation area; or
- funding status changes that accelerate execution.

Once you have chosen the area of your installation requiring an ADP, begin with a visual inspection of the site. The inspection allows you to identify which facilities need to be demolished, which need to be renovated and which should remain. This determination allows you to work around existing conditions.

Next, create goals and objectives for the area based on your installation's mission and vision statements, and create design principles for use in development. Then, begin to develop alternatives, which may include extreme changes such as rerouting traffic or constructing new roads for the most efficient use of the available land; developing pedestrian, bicycle and service vehicle access lanes; placing



The ADP (right) demonstrates considerable improvement over existing conditions (left). Graphic by Randy Covington and Anne de la Sierra

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the way installations do business.

POC is Kate Siftar, 907-361-3315, kathleen.d.siftar.civ@mail.mil.

Kate Siftar is the chief, Master Planning Division, Fort Wainwright.



Capital investment strategy important to carrying out master plan

by Michael Hipp, Alexandra Peet and Joseph Tomley

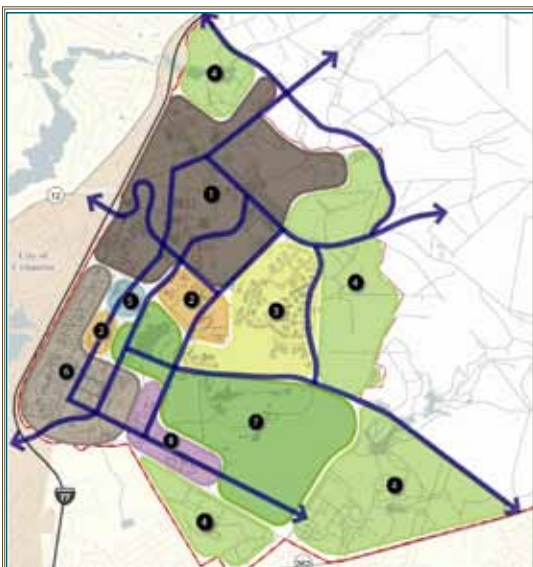
The real property master plan consists of five components: the digest, the long range component, the short range component, the installation design guide and the capital investment strategy. The CIS is an often overlooked and under-briefed component of the RPMP.

The RPMP brings to mind a shiny, bound document that details the installation's architectural preferences and

standards. Included is a set of detailed maps that describe the installation's land-use and framework plans, color coded to show the location of future projects. The RPMP would also contain a list of prioritized Military Construction and Sustainment, Restoration and Modernization projects.

Though the CIS is seldom the focus of attention, this component is the backbone of the RPMP. The CIS is developed through detailed analysis of the installation force structure, facility requirements and existing assets. The product of this analysis is a solution that will correct the facility deficiencies in the form of new construction, repurposing and demolition.

In 2009, Fort Jackson, S.C., teamed with U.S. Army Corps of Engineers' Savannah District, engineering and design consultant Atkins and Rubicon Planning LLC to update all components of its RPMP. The installation quickly realized the importance of the CIS and learned several lessons while completing the process.



An excerpt from the Fort Jackson RPMP shows a typical framework plan. Graphics by Atkins/Sigma Planning Group

Acronyms and Abbreviations	
CIS	capital investment strategy
FCG	Facility Category Group
MILCON	Military Construction
RPMP	real property master plan
SRM	Sustainment, Restoration, and Modernization
TAB	Tabulation of Existing and Required Facilities

Army modernization has profoundly affected planning, bringing the CIS component to the forefront. The convergence of the quickly changing force structure and the evolution of facility design standards for predominant facility categories have challenged the automated planning systems.

Vital integrated systems such as the Army Stationing and Installation Plan and the Real Property Planning and Analysis System have not kept up. These elements of modernization coupled with the Army's recent focus on using the Installation Status Report – Infrastructure rating as a key metric in the prioritization of MILCON and SRM projects make this data even more critical. Not only do planners need assurance that they are constructing the right types and

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groupings of or individual facilities based on function; designing low-impact development features for sustainability; and centralizing parking.

Evaluate alternatives as a group and measure them against your design principles to determine which alternative or combination of alternatives best meets the installation's needs. You will then fully develop the preferred alternative to include details such as:

- land use plans;
- building setbacks from parking and streets;
- parking lots and road grids;
- pedestrian circulation;

- outdoor space such as recreational fields, gathering areas with fountains and shade, plazas, picnic areas, grilling spots and volleyball courts;
- major landscape elements; and
- service areas.

Most ADPs pictorially show the space available for infill development. They serve as a valuable tool for implementing the Sustainment, Restoration and Modernization; Repair and Maintenance; and Military Construction programs over a 10-year period.

After the ADP is completed and approved, a regulating plan is prepared that is similar to a zoning ordinance. The regulating plan details what can and

cannot be constructed. (For in-depth information on the regulating plan, see Appendix C of the *Master Planning Technical Manual*.)

Headquarters IMCOM, with the assistance of the U.S. Army Corps of Engineers, is facilitating on-site development of ADPs so that talented in-house master planning staffs can continue to develop the remaining ADPs and other products that collectively make up the RPMP.

POC is Anne de la Sierra, 210-466-0607, annde.lasierra@us.army.mil.

Anne de la Sierra is a master planner, Public Works Division, Headquarters IMCOM.



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quantities of facilities, but the databases of record must reflect this need.

Because of this data gap, decisions should not rely exclusively on the Real Property Planning and Analysis System's Tabulation of Existing and Required Facilities, called the "TAB," to identify critical facility shortages and surpluses. Instead, planners should conduct independent analyses according to doctrine and by mission importance, especially for those facility category groups that impact the mission the most. Without this step, planners may be relying on incorrect data and mistakenly make poor programming decisions.

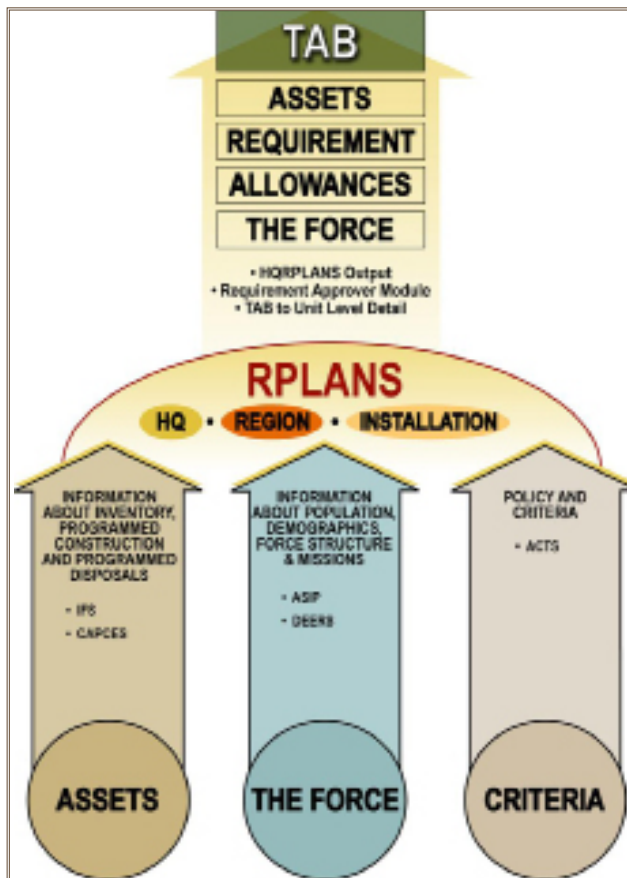
The key is to start the analysis by reviewing installation population against the Army Stationing and Installation Plan. Build a hierarchy that captures all tenants while looking for "missing" units, support organizations and other personnel, such as contractors. In addition, identify critical FCGs and calculate mission requirements.

The automated systems do not provide sufficient detail to properly build accurate facility requirements by category. Likewise, the systems cannot provide vital insight into unit and command requirements across categories. Planners should take the time to diagram force structure, seek unit level visibility and anticipate important requirements and stationing edits.

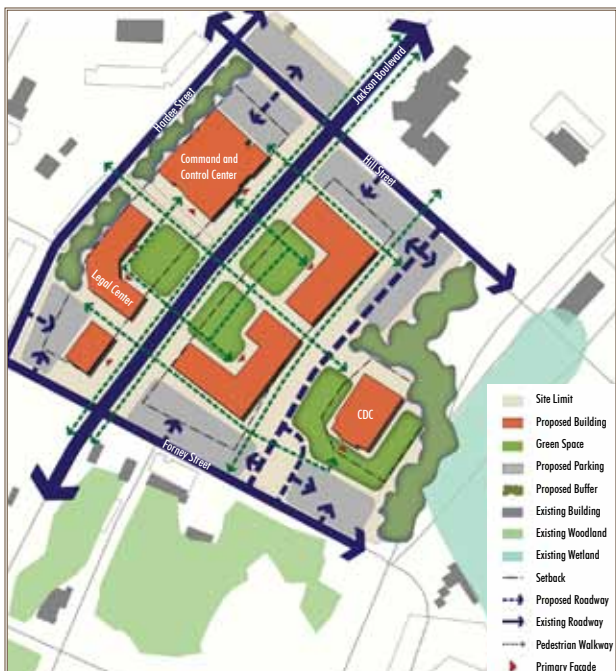
Next, planners should scrub the TAB, by line, to determine that assets for critical FCGs are correctly assigned. Standard designs have changed the calculation methodology and inventory practices significantly, requiring that planners closely scrutinize assets. Programmed Construction

should be compared to the Future Year Defense Plan and Construction Appropriations Programming Control and Execution System. Primary category code assignments and Installation Status Report – Infrastructure ratings for existing assets should also be reviewed. Planners may expect major changes in "excess" and "deficits." These efforts will result in an accurate snapshot that may be used for identifying the best investment strategies and action plan.

The result is a CIS that will prioritize and align required facilities and



An installation's assets, force and criteria are the pillars of the TAB.



Another Fort Jackson RPMP excerpt provides an example of a concept plan

capital. A quality CIS will streamline and synchronize the funding and execution processes with the installation's long-range planning goals. In this sense, a CIS is the foundation for both horizontal — across organizations and facility types, and vertical — through higher headquarters and facility proponents, planning.

POC is Michael Hipp, 803-751-3829, michael.hipp@us.army.mil.

Michael Hipp is chief, Master Planning Division, Fort Jackson, S.C.; Alexandra Peet is a senior planner, Atkins; and Joseph Tomley is a senior planner and analyst, Rubicon Planning LLC.



Fort Belvoir transportation management: Becoming multimodal

by Steve Gleason, Jennifer Wiley and Christopher Landgraf

Fort Belvoir, Va.'s vision for the future is an installation served by a multimodal transportation system that reduces its commuter workforce's reliance on the personal automobile. Making this vision a reality is the job of the Fort Belvoir Transportation Management Program.

Located in the greater Washington, D.C., metropolitan area, the installation operates within some of the most congested roadways in the country. Getting to work is a daily challenge for most employees. Regional traffic backups can impact operations and mission readiness.

Compounding this challenge is the lack of land at the installation that limits the amount of surface parking that can be provided and other factors that include physical constraints, setbacks required to meet anti-terrorism and force protection, and the relocation of existing uses. As Fort Belvoir continues to grow, managing transportation challenges and opportunities will become increasingly important while it transitions from a suburban to an urban installation.

Fort Belvoir is the largest employment center in Fairfax County, with about 39,000 personnel working for 145 separate military tenant organizations within the installation. With the completion of Base Realignment and Closure in September,

the installation almost doubled in population.

The installation has been a true partner in the region and has contributed to the construction of significant road improvements both on post and off post to increase the capacity. In addition, the Department of Defense Office of Economic Adjustment has agreed to contribute more than \$180 million for the widening of U.S. Route 1, a major arterial roadway for the region that runs directly through the installation.

Fort Belvoir recognizes that the high costs of road improvements and loss of land that must be set aside for roadway widening is neither a desirable nor a sustainable way to expand its workforce. Therefore, the solution lies in becoming more multimodal.

TMP

Transportation at any military installation, let alone one that is located within one of the fastest growing areas in the country and is bisected by a public highway, is a complex system. Fort Belvoir planners recognized that a plan to successfully reduce commuting trips to the installation must manage and build upon all elements in the transportation system, and they committed to creating such a plan — the TMP.

The TMP is a continually evolving program that comprises numerous elements ranging from roadway circulation and security requirements at gates to scheduling policies and employees' personal needs. The TMP's purpose is to achieve trip reduction, meet parking requirements and increase transportation options for its employees.

With the TMP, the garrison is committed

Acronyms and Abbreviations	
BRAC	Base Realignment and Closure
SOV	single-occupant vehicle
TMP	Transportation Management Program

to achieving greater travel efficiency as it continues to grow by proactively establishing specific plans for parking, access, circulation and multimodal options for its employees. As part of this commitment, Fort Belvoir retained the Atkins federal planning group to prepare a TMP that develops a coordinated approach to reducing its reliance on single-occupant vehicles.

The TMP's goal is to reduce SOVs to no more than 60 percent of the post's total commuting population. Achieving that goal means 40 percent of employees are transported by other means of travel.

To attain that goal, the installation is requiring that all new administrative office projects follow the Army parking allocation standard that limits staff parking to 60 percent. These requirements are helping to transform the installation by reducing surplus parking and encouraging alternate travel modes.

As it continues to evolve, the TMP will develop specific strategies for increasing participation in ridesharing, public transit and alternate work schedules. A business plan to market and promote the TMP will be created, and the program will be monitored and evaluated. The ongoing TMP efforts provide a framework for success that will continue to improve as more public transit options and mobility programs are put into place for personnel to use.

Successes

Trip reduction efforts have been ongoing for several years and started prior to the influx of BRAC employees. Several TMP-recommended strategies were launched and are already affecting employees' commutes:

Personnel strategies included:

- hiring a full-time TMP coordina-



Employees board an Eagle Express bus, which connects the installation to an off-post transit transfer station, one of Fort Belvoir's multimodal commuting options. Photo courtesy of Atkins



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tor, who manages and coordinates the remainder of this list;

- partnering with local government to manage traffic and enhance transit options for regional residents and employees, including an express bus system to the post; and
- implementing telework and alternate work schedule policies.

Physical improvement strategies consisted of:

- establishing a shuttle bus within the post;
- completing on-street dedicated bike lanes on post; and
- constructing parking structures in place of surface parking lots.

Outreach strategies involved:

- maintaining a transportation management website, an online resource for commuters;
- hosting periodic commuter fairs to inform and educate the workforce on alternate travel options;
- setting up a Fort Belvoir Transportation Working Group, which meets monthly;
- engaging with Fairfax County's Ride-share Program coordinator to establish carpools and vanpools;
- supporting several operational TMPs at agency levels; and
- launching an online commuter survey to evaluate current travel modes and commuter issues.

Changing behavior

On paper, the Belvoir TMP will identify, evaluate and select a set of strategies that influence employee commuting methods, enhance workday trip-making and enhance flexibility for work schedules and commuting. The TMP will also establish a plan for how and when these strategies can effectively be implemented.

In practice, the trip reduction success of the TMP lies in the decisions of its employees; for the TMP to be successful,

a paradigm shift away from automobile travel is required. Therefore, the heart of the TMP is a process to successfully and realistically change the behavior of Fort Belvoir's workforce.

"Changing the behavior of commuters is a difficult process, but it's critical to Fort Belvoir's future," said Col Mark Moffatt, deputy garrison commander for Transformation and BRAC.

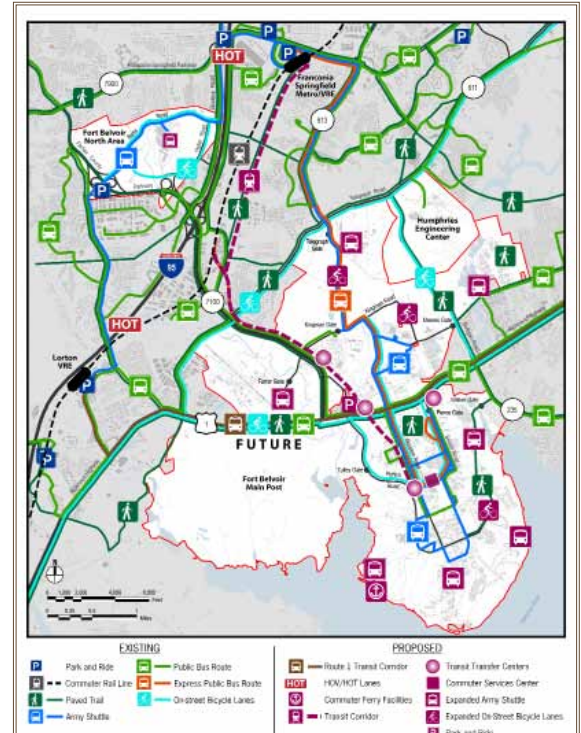
Before a behavior can be changed, however, it must be understood. In 2011, Atkins completed a visioning workshop as part of the real property master plan update for Fort Belvoir. Users showed a desire for future planning decisions to improve travel options for getting to work and for advancing Fort Belvoir as a pedestrian-friendly place to live and work.

An installationwide commuter survey was completed in November, and early results are encouraging. Respondents reporting that they drive to work alone have decreased nearly 5 percent in the past four years despite Fort Belvoir's population nearly doubling in that same time.

These commuter survey results showing reductions in the use of SOVs are a key indicator for TMP success. As the TMP is developed and evolves with periodic monitoring and evaluation, the installation expects to see continued positive changes in driver attitudes and behavior. Working with tenant organizations through their transportation coordinators will be critical to implementing recommendations so the TMP becomes a responsive program to manage traffic and not just a static document.

Benefits

In addition to reducing traffic impacts and improving travel conditions, both the



The Fort Belvoir TMP employs multimodal transit options for installation employees' use. Graphic by Atkins

installation and local community stand to benefit from the TMP by advancing government sustainability goals for energy reductions and air quality improvements. The costs of new roadway construction and environmental impacts are high when compared to the costs to implement a TMP.

Other potential management benefits include reductions in employee tardiness and absenteeism, attracting a wider pool of qualified candidates who prefer more travel choices and reducing turnover for employees who may be facing long commutes to work.

"We are taking a proactive transportation system approach that will serve Fort Belvoir's diverse workforce, improving the quality of life, enhancing traffic movement while decreasing the environmental impact on Fort Belvoir to conserve its beautiful nature," said Juanita Green, TMP coordinator.





Huntsville planners work with Fort Carson, Joint Base Lewis-McChord to plan new combat aviation brigade campuses

by Jimmie Lee Jackson

The Defense Department's decision to add two additional combat aviation brigades, the 13th and the 16th, created a unique opportunity in the world of military planning and programming. The decision to place CABs at Fort Carson, Colo., and Joint Base Lewis-McChord, Wash., placed tremendous strain on the already stressed master planning divisions of both installations.

To effectively meet the challenges posed by accelerated suspense dates, unique facility programming requirements and Military Construction funding constraints, the Office of the Assistant Chief of Staff for Installation Management tasked the U.S. Army Corps of Engineers' Engineering and Support Center, Huntsville's MILCON Planning and Programming team with assisting the local installation staffs.

To ensure all facets of the CAB requirements were addressed, Huntsville Center contracted separate, customized area development plans. The plans, rather than focusing on what should be developed, addressed how and when development should be implemented to ensure all needs are met.

The first ADP was for the 13th CAB, which is scheduled to start arriving at Fort

Carson in fiscal 2012. The installation had the task of identifying a suitable location for the CAB. Members of the Fort Carson Master Planning Division assessed potential sites and settled on Butts Army Airfield.

In August 2010, the first steps to address the issues associated with the 13th CAB were put into action at the ADP kickoff meeting. At this meeting, key stakeholders from Army Forces Command, Installation Management Command and USACE outlined and verified project requirements, potential constraints and issues that could be detrimental to the development of the selected sites.

Based on the information gathered, the project delivery team came up with several alternative layouts. All had positive and negative effects that had to be taken into consideration, vetted and assessed before a finalized layout could be selected by the PDT. After several weeks of scenario planning and reassessing the locations of facilities, a preferred alternative was selected by the PDT and endorsed by the installation.

Next, the PDT switched gears to take an in-depth look at the major infrastructure components that encompassed the site. In addition to providing detailed assessments of the infrastructure, the PDT developed

Acronyms and Abbreviations	
ADP	Area Development Plan
CAB	combat aviation brigade
FY	fiscal year
JB	Joint Base
MILCON	Military Construction
O&M	operations and maintenance
PDT	project delivery team
USACE	United States Army Corps of Engineers

and proposed courses of action to correct deficient systems.

In late June 2011, the Fort Carson ADP for the 13th CAB was finalized and submitted for approval. The plan was a detailed strategy that included an assessment of the associated infrastructure, all of the requirements, site layouts, utility capacities assessments and costs for required improvements. This final product enabled the installation to develop detailed MILCON projects to support construction for the 13th CAB.

The ADP at JB Lewis-McChord for the 16th CAB is using the same methodology used at Fort Carson and expanding on it. The development of the 16th CAB ADP required the PDT to provide a roadmap for how the facilities would be developed and phased, plus examine the specific funding sources to be used during each phase.

This atypical requirement forced the PDT to take a typical ADP and morph it. One way that this product is unique is the use of three planned phases similar to what is used in a real property master plan. Phase one covers a one-to-five-year time period and concentrates on small operation and maintenance projects that can be easily funded at a local level. Phase two comprises the five-to-10-ten-year time period and the more in-depth major O&M upgrades that may or may not be approvable at the local

(continued from previous page)

Fort Belvoir's continued effort toward becoming a true multimodal community offers an encouraging vision for the future that will make the installation a desirable place to live, work and play.

POC is Christopher Landgraf, 703-806-0043, christopher.w.landgraf.civ@mail.mil.

Steve Gleason is a project manager, and Jennifer Wiley is a transportation planner with Atkins; Christopher Landgraf is chief, Facility Planning, Directorate of Public Works, Fort Belvoir.



Master planners meet at Fort Carson, Colo., to design the area development plan for the new 13th Combat Aviation Brigade. Photo by Aaron Briggs



Master Planning Institute earns environmental award

by Andrea Wohlfeld Kuhn

The Center for Environmental Innovation and Leadership awarded the 2011 *Workforce Development Through Training Award* to the U.S Army Corps of Engineers for the Department of Defense Master Planning Institute training program, which the Corps offers through Proponent Sponsored Engineer Corps Training.

The award was presented during the GOVgreen Conference Dec. 1, in Washington, D.C. The award recognizes training programs that enable employees and volunteers to support environmental missions and programs and to enhance their future career prospects.

The USACE Master Planning Team

Acronyms and Abbreviations

CEIL	Center for Environmental Innovation and Leadership
DoD	Department of Defense
PROSPECT	Proponent Sponsored Engineer Corps Training
USACE	U.S Army Corps of Engineers

had updated the PROSPECT master planning courses and developed new courses and workshops that focus on key energy and sustainability training. The updated program of courses was named the DoD Master Planning Institute. Now, a world-class workforce has the most up-to-date, essential tools and materials to achieve sustainable, energy-efficient planning, engineering and architectural solutions.

Classes and workshops are open to private citizens; contractors; and federal, state, city and county employees. All courses are fully accredited by the American Institute of Certified Planners, the American Institute of Architects and the National Society of Professional Engineers, and they provide continuing education units. (Editor's note: See page 42 for an article on DoD Master Planning Institute classes.)

POC is Andrea Wohlfeld Kuhn, 202-761-1859, andrea.w.kuhn@usace.army.mil.



Andrea Wohlfeld Kuhn and Jerry Zekert pose with the DoD Master Planning Institute's CEIL award. Photo courtesy of CEIL

Andrea Wohlfeld Kuhn, AICP, LEED Green Associate, is a senior planner, Headquarters USACE

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installation level. Phase three covers a time period ranging from 10 to 15 years and focuses on facilities that will require MILCON replacement or development to satisfy the final CAB build out.

Two factors fuel this out-of-the-box requirement. One is the CAB's projected arrival date of FY 2012, which has forced the JB Lewis-McChord master planners to be reactive to an immediate requirement as opposed to planning for a future requirement. The other is that new MILCON funding restraints have reduced the number of projects that are being funded, forcing the re-evaluation of how master planners develop projects.

During the 16th CAB ADP kickoff meeting in November, the PDT took a long look at what would be required to successfully complete a long-range plan

by first assessing what was required, what was currently available, which facilities could be reused and the cost to rehabilitate each facility. These analyses will enable the PDT to successfully reach the desired three-phase plan.

Each planned phase will be accompanied by a financial package that can be used by the installation to obtain funding. For example, the PDT will deliver a series of rough order-of-magnitude estimates for the short-range component that can be transferred to Directorate of Public Works work orders and placed on the installation's funding priority list. In addition, costs and detailed write-ups will be provided to support the medium-range plan that can be put into a renovation and modernization DD Form 1391. Last, the long-range phase will be supported by documentation that can be

used to produce a MILCON DD Form 1391.

Even though the 16th CAB ADP is in its early developmental phases, it is already apparent that the result will be a win-win situation for all parties involved. The final product will have addressed the entire airfield requirement and associated issues. The 16th CAB will be in usable facilities, and the airfield will receive an unprecedented number of required upgrades. In addition, the installation will have a fully developed roadmap for developing Gray Army Airfield.

POC is Jimmie Lee Jackson, 256-895-8130, jimmie.l.jackson@usace.army.mil.

Jimmie Lee Jackson is a community planner, Planning and Programming, U.S. Army Engineering and Support Center, Huntsville.



Joint Base Lewis-McChord designs modern, efficient Lewis North post

by Thomas Tolman, Leah Anderson and Gary Stedman

The 1990 decision to demolish the North Fort Lewis, Wash., “temporary” World War II buildings and construct new facilities created a significant master planning challenge. The challenge was how to realize a modern and well-designed cantonment that could be built as the wood buildings were demolished.

Now called Lewis North, part of Joint Base Lewis-McChord, the post was constructed in 1941 as a 41st Infantry Division cantonment. More than 1,000 wood frame buildings were erected. The 41st Infantry Division trained there and then fought in the South Pacific. The 41st was followed by other divisions, and during the 1960s, North Fort Lewis served as a basic training camp preparing Soldiers for Vietnam.

After the 1960s, North Fort Lewis fell into decline. By the 1980s the wood barracks were substandard housing and were scheduled for replacement with modern barracks, dining facilities, administration offices and shops. The Master Planning Division had to plan replacement buildings that would improve Soldier quality of life and military readiness.

The Directorate of Public Works planners developed a plan that could be accomplished over a 30-year period. This plan requires flexibility and continual refinement as the military mission changes.

The creation and implementation of a real property master plan was critical to success. The real property master plan consisted of a land use plan that organized the Lewis North area into compatible use zones with community-related facilities at the center and bands of barracks, administration and maintenance zones extending out toward training land.



World War II wood buildings cover Lewis North in 1941. Photo courtesy of DPW Cultural Resources Section, JB Lewis McChord

The planners sought to avoid a piecemeal project-by-project approach to development. By evaluating the whole of Lewis North to determine which areas could support new construction and how much of the existing facilities would remain, planners were able to create sustainable, livable communities easily adaptable to the ever-changing military program.

The area did not have a clean slate — a large parcel of land with which to work. Designers had to fit each piece of the overall plan into blocks of the former North Fort Lewis cantonment as the temporary buildings came down. Also, to create efficiencies, the new construction would rely on as much of the existing infrastructure as possible.

The new build-out of Lewis North started in 1995 and continued through 2011 to accommodate four brigades and an updated community area that includes dining facilities, a fitness center, a medical and dental facility, a fire station, a credit



The John D. “Bud” Hawk Education Center is one of three education centers on JB Lewis-McChord. Photo by Stella Senn, Business Operations and Integration Division, DPW, JB Lewis-McChord.



The John D. “Bud” Hawk Education Center is one of the facilities sited by JB Lewis-McChord master planners. Photo by Stella Senn, Business Operations and Integration Division, DPW, JB Lewis-McChord

Acronyms and Abbreviations

DPW	Directorate of Public Works
JB	Joint Base



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union, exchange services and a Soldier service club, The Warrior Zone. The new cantonment covers more than 800 acres and has more than 160 new permanent buildings.

“Personally, I am mostly happy about working on Lewis North,” said Capt. Andy Stockhoff, 555th Engineer Brigade. “We have good facilities — gym, shoppette, places to eat, etc., and traffic is not as bad as what I see on Lewis Main.”

The John D. “Bud” Hawk Education Center is one of the structures that will nearly complete a modern cantonment at Lewis North. But, planning is never complete, with the education center finished, the Master Planning Division is continuing to look to the future, taking on the next JB Lewis-McChord facility challenge.



Soldiers assemble in front of a Lewis North permanent construction building. Photo courtesy of DPW Cultural Resources Section, JB Lewis McChord

POC is Gary Stedman, 253-966-1790, gary.stedman@us.army.mil.

Thomas Tolman is acting chief, Leah Anderson is an architect, and Gary Stedman is a master planner, Master Planning Division, DPW, JB Lewis-McChord. 🌟

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202-761-0022

Master planners help name Lewis North education center for hero

by Duane Denfeld and Gary Stedman

The JB Lewis-McChord Master Planning Division located a site for the education center that would be centrally located and convenient. The building design was required to fit into the installation architectural theme and be compatible with the surrounding buildings.

Construction started in 2009, and the building was completed in August. However, its completion did not end the Master Planning Division’s role.

Master Planning serves on the

Installation Memorialization Board and took an active role in identifying a hero that the building could honor through naming. The Memorialization Board selected a living Medal of Honor recipient, Sgt. John D. “Bud” Hawk of Bremerton, Wash.

Hawk was awarded the Medal of Honor for actions during World War II. Now 87, Hawk is most proud of his life as an educator. He taught and served as a principal in the Kitsap School District for more than 30 years.

The John D. “Bud” Hawk Education Center was dedicated Aug. 19. The center, with nine classrooms and an auditorium, is the third facility on JB Lewis McChord in which military members can learn and become better Soldiers and citizens.

POC is Gary Stedman, 253-966-1790, gary.stedman@us.army.mil.

Duane Denfeld, PhD., is the building historian, Environmental Division; and Gary Stedman is a master planner, Master Planning Division, DPW, JB Lewis-McChord. 🌟



Joint Base Lewis-McChord builds to plan for special forces

by Tanya King

Facilities can't be built fast enough to accommodate the rapidly growing 1st Special Forces Group at Joint Base Lewis-McChord, Wash. Even if they could, space and money are scarce. Having a master plan is the answer to ensuring the right buildings are built at the right time.

It's not possible to build when money is available without giving thought to the end result, according to Lt. Col. Mike Sierakowski, 1st SFG engineer. Funded construction projects need to be completed to house Soldiers living in outdated facilities. Once vacated, the old buildings will be demolished, making way for other new buildings.

The goal is to preserve space for future growth based on what 1st SFG thinks requirements are going to be while taking sustainability into account.

To help solve the long-term demolition versus construction puzzle, the unit partnered with the U.S. Army Corps of Engineers' Seattle District and architecture and engineering firms BergerABAM and Mithun. Common themes emerged as the planning team jotted down ideas on pieces of paper and brainstormed.

"From planning, we came up with a sustainable compound in a walkable environment that would be a great place to live and work and train," said Fred Brown,

Corp of Engineer's Special Operations Command Program manager. "It got everyone on the same sheet of music from the start. Everyone had ownership in the process, because they were able to express what was important to them, and we listened."

Creating a master plan is taking a vision and making it tangible, which is particularly important when working with the military, Brown said. Achieving the vision would've been extremely difficult without a master plan.

"We can't just drop in buildings without taking into account how they relate to one another," he said. "We can maximize space usage and enhance functional relationships between buildings through compact development."

The master plan became the construction road map with flexibility being the key, said Morgan Ennis, Corps of Engineers project manager. If the planners weren't flexible, the plan could become obsolete in a few years as new requirements for mission, security or manning arose.

"The master plan helped us to look ahead 10 to 20 years," Sierakowski said.

The plan increases the site's overall capacity while relocating and consolidating functions. Most administrative, housing and personnel support facilities are on the

Acronyms and Abbreviations

1st SFG	1st Special Forces Group
---------	--------------------------

West Compound. The East Compound houses most battalion operations and supporting maintenance facilities.

Walking paths and jogging trails are incorporated throughout the design to encourage walking as a mode of transportation. Similar buildings are collocated, increasing ease of use and functionality. The theory behind housing these components together is to provide a more walkable campus, maximizing green space and making it a more enjoyable place to live and work.

Achieving this level of functionality wasn't easy, however. Roadblocks included security concerns, and environmental and sustainability issues.

At round-table discussions, each team member contributed something different to the plan.

"The design firms would provide information about things we [1st SFG] didn't think about, such as modern sustainment and green building codes," said Sierakowski. "They also helped us achieve a campus feel with trees and running paths."

The plan is Silver certified in the Leadership in Energy and Environmental Design program, which considers



This architect's drawing depicts housing areas with open, grassy areas for physical fitness and team sports. Graphics courtesy of BergerABAM



An artist's rendering depicts a bird's eye view of the West Compound, which houses most administrative, housing and personnel support facilities.



Huntsville Center plays role in chemical agent disposal facility

by Debra Valine

Anniston Chemical Agent Disposal Facility operators destroyed the last of the chemical weapons stockpile at Anniston Army Depot, Ala., Sept. 22. The U.S. Army Engineering and Support Center in Huntsville, Ala., was the design and construction agent for the facility. Huntsville Center also acquired all of the facility's specialized equipment such as the furnaces, pollution abatement equipment and the control system for the site.

The demilitarization phase of ANCDF operations started Aug. 9, 2003, following several years of facility systemization, team training and preparation. The ANCDF, which sits on a 50-acre depot remote site, was constructed between 1997 and 2001. Construction oversight was managed by an on-site resident engineering office and was supported by Huntsville Center engineering and construction specialists.

The Huntsville Center mission provides engineering, construction and safety support to the Chemical Materials Agency and the Program Manager for Assembled Chemical Weapons Alternatives, and serves as the life-cycle project manager for the process equipment and facility design,



The Anniston Chemical Agent Disposal Facility is in the process of being cleaned and shut down after completion of its mission in 2011. Photo by Michael Abrams, Anniston Chemical Activity Public Affairs

facility construction, equipment acquisition and equipment installation for all of the program chemical demilitarization facilities.

The Anniston Chemical Activity provided the safe and secure storage of more than 7 percent of the nation's original chemical weapons stockpile. ANCA also was responsible for the safe transportation of the munitions to the ANCDF for destruction. The chemical munitions and agents stored at the depot contained either GB or VX nerve agents or mustard (blister) agents.

Huntsville Center awarded the systems

contract for the ANCDF to Westinghouse Electric Corp., Feb. 29, 1996. The chosen technology was reverse disassembly followed by incineration.

The plant was designed and constructed to withstand earthquake forces and has a ventilation system that provides negative air pressures within the plant to assure vapor containment. All vapors and gases that left the plant passed through the pollution abatement system and carbon filters.

The munitions were loaded by hand onto conveyors that carried them into the Munitions Demilitarization

Acronyms and Abbreviations

ANCDF	Anniston Chemical Agent Disposal Facility
ANCA	Anniston Chemical Activity
CMA	Chemical Materials Agency

(continued from previous page)

innovation and design process, materials and resources, indoor environmental quality, sustainable sites, energy and water efficiency, and atmosphere.

"We tried to maximize green space and grassy areas," Brown said. "We thought it would help with quality of life and be a good use of existing real estate."

In addition to environmental consideration, designers incorporated heightened security measures because of

1st SFG's mission.

"We tend to be a lot more secure than conventional Army," Sierakowski said. "We isolate ourselves, so, if there's ever a need for us to secure ourselves within the cantonment area, we can."

One of the biggest benefits, he said, was the ability to brief higher headquarters on how the unit's unique needs would be met and show the road map. The 1st SFG can then prioritize, obtain funding and build gradually while still remaining flexible enough to add buildings where place-

holders are incorporated in the design as the mission changes.

"A lot of times there are a lot of great ideas, but the military has constraints the civilian world doesn't have," Brown said. "It's nice to put a plan on paper, but this plan is realistic and buildable."

POC is Tanya King, 206-764-6958, tanya.m.king@usace.army.mil.

Tanya King is a public affairs specialist, Seattle District, U.S. Army Corps of Engineers.



At Fort Hood: Daring to go net-zero waste

by Christine Luciano

Fort Hood, Texas, representatives are working together for a greener and sustainable future to meet its net-zero waste goal — eliminating landfill waste by 2020. The slogan “2020: Perfect Mission, Perfect Vision,” emphasizes that reaching net-zero waste will take a community effort to recycle and repurpose more and waste less.

Soldiers, Airmen, Civilians and contractors participated in Fort Hood’s Net Zero Waste Kickoff Workshop to discuss ideas for four work groups, which will focus on reducing, repurposing, recycling, and marketing and outreach. The work groups’ leaders will develop targets, objectives and

action plans with their team members and brief their progress to the commanding general quarterly at the Environmental Quality Control Committee. Team leaders will also meet independently with their work groups to start implementing ideas.

Achieving the net-zero waste goal requires everyone’s participation, said Brian Dosa, director of Public Works.

“The biggest challenge is changing the culture,” Dosa said. “No one can change all of Fort Hood, but you can change your behaviors and influence those around you.”

Some of the brainstorming ideas developed at the kickoff included:

- partnering with organizations like Goodwill and the Salvation Army to easily donate personal property for reuse;
- establishing agreements with manufacturers to purchase old electronics;
- instilling supply discipline and procuring for use only; and
- including a clause in contracts that vendors will support net-zero waste efforts.

“It’s going to take everyone on Fort Hood to make this possible,” said Jennifer Rawlings, pollution prevention and sustainability coordinator. “At the end of the day, we all buy stuff, and we all put things in the trash. We need to get

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Building where robotics separated the explosives and withdrew the agent, which was destroyed in the liquid incinerator. Explosives were destroyed in the deactivation furnace, and projectiles were decontaminated in the metal parts furnace.

According to Steve Light, a program manager in Huntsville’s Chemical Demilitarization Directorate, the success at Anniston allowed the collection of many lessons learned that are incorporated into the two remaining facilities under construction: the Pueblo Chemical Agent-Destruction Pilot Plant in Pueblo, Colo., and the Blue Grass Chemical Agent-Destruction Pilot Plant in Richmond, Ky.

“Learning the successes and challenges of the munitions demilitarization campaign at ANCDF really helped us do a better job at Pueblo and Blue Grass,” Light said. “They are different types of plants and technologies, but they are required to destroy the same type of chemical munitions.

“Many people, both retired and still on staff, have contributed to this success,” Light said. “We look forward to the CMA program completion in April.”

Pueblo and Blue Grass are not on

that schedule because they use different technology, Light said. Those facilities will be completed in 2017 and 2021 respectively.

“Everyone in the Huntsville Center that touched this project should take a minute to celebrate its successes, and they should all take pride in the accomplishment of the safe elimination of the Alabama chemical weapon stockpile,” said Boyce Ross, the director of Engineering.

Working together, ANCA and the ANCDF workforces destroyed the stockpile safely, ensuring maximum protection of the installation and community population as well as treaty compliance. In March 2006, the ANCDF operators completed destruction of the GB nerve agent followed by completion of VX nerve agent munitions in December 2008. Sept. 22 saw the end of the stockpile with the completion of the mustard agent campaign.


Most munitions at Anniston were incinerated in the ANCDF. However, a small percentage of munitions were too old or had the potential to leak and, therefore, could not be processed in the facility. Anniston officials used a static detonation chamber to heat these munitions to 1,000 degrees Fahrenheit.

This intense heat caused the munitions to self-detonate and then burn away within the sealed chamber.

With destruction completed, ANCDF now moves into closure operations — cleaning and shutting down the facility. CMA has safely completed disposal operations and closed its facilities in Edgewood, Md.; Newport, Ind., and on Johnston Atoll in the Pacific. The incineration sites at Pine Bluff, Ark., and Umatilla, Ore., have also completed their stockpile operations and are in the closure process.

CMA continues to safely store and destroy chemical weapons in Tooele, Utah, and oversees the safe storage of chemical weapons stockpiles at the Blue Grass and Pueblo, sites. Huntsville Center will continue to play a key role in the Army mission to safely destroy the chemical weapons stockpile.

POCs are Steve Light, 256-895-1466, steven.g.light@usace.army.mil; and Michael Abrams, Anniston Chemical Activity public affairs officer, 256-453-3840, mabrams@ancdf.org.

Debra Valine is the chief, Public Affairs, Huntsville Center. 



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everyone aware of what they are purchasing and what to do with the materials when they are done.”

Garrison commander Col. Mark Freitag emphasized that achieving net-zero waste will be an installation effort to make a difference and meet the 2020 goal.

During the kickoff, Freitag, the work group leaders and the team members signed a declaration:

“I agree to serve as a member of the designated Net Zero Waste Workgroup. As a team member, I am committed to participate fully, serve in internal team roles as directed by the goal leader or team leader, and to accomplish my team assignments.”

“As Fort Hood moves forward, [reaching] net-zero waste will become more important to the commands and work its way down,” Freitag said. “Everyone needs to go back to their work places and start spreading the word that this is the way of the future and where Fort Hood is moving.”

The 41st Fires Brigade is taking the



Rufus Walker, assistant recycle manager, briefs 41st Fires Brigade leaders about recyclable materials collection at Fort Hood.

initiative by educating its leaders about net-zero waste goals.

“Leaders and Soldiers need to optimize what they are doing, so that by 2020, we are at net-zero waste, and nothing is going into the landfill,” said Col. William McRae, 41st Fires Brigade commander. “Fort Hood is not going to get to where it wants to unless we have the leadership involved and Soldiers take ownership of their efforts. And it starts with recycling.”

To work towards the net-zero waste goal, the Fort Hood Recycle Center placed more than 1,600 recycle containers within 500 feet of facilities throughout Fort Hood. The additional recycle containers make it easy and convenient to recycle paper, plastic, aluminum cans and cardboard. The recycle center expects to collect an additional 40 tons of material from the new containers.

More recyclables also means giving back more to the community. In fiscal year 2012, the recycle center will give more than \$195,000 to the Directorate of Family, Morale, Welfare and Recreation to support community events.

“You cannot over emphasize recycling,” said Command Sgt. Maj. Kelvin Hughes, 41st Fires Brigade command sergeant major. “It’s a great program for the

betterment of our environment, and we just need to do it. It’s important every leader comes on board and puts priority and focus on recycling across the installation.”

POC is Jennifer Rawlings, 254-535-8557, jennifer.n.rawlings.civ@mail.mil.

Christine Luciano is the environmental outreach coordinator, Directorate of Public Works, Fort Hood. 🌱



Arianna Wong of Fort Hood Family Housing and Mike Kancilja of the Directorate of Public Works Environmental Division sign a declaration committing to achieving net-zero waste at Fort Hood by 2020. Photos by Christine Luciano

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Wizards' magic is just warming up

by Susan Nachtigall and Nadia Abou

Advancements in Military Construction continue to evolve at the same pace as the Army itself. The policies, requirements and standards have significantly changed over time, begging the question: how can the Army effectively prepare to support Army Transformation as well as long range strategic plans and objectives?

The Combat Readiness Support Team from Headquarters U.S. Army Corps of Engineers and the program manager for MILCON Business Process have cracked part of the code for responding to this question. The CRST is a highly specialized team providing dedicated, embedded staff augmentation support to select Army staff activities and to the Office of the Assistant Chief of Staff for Installation Management. The CRST and the PM MBP found the answer to be in re-engineering the tools used by the Army Facility Standardization Program and the MBP.

Initially, re-engineering involved the use of integrated “wizard” applications to reduce data redundancy and data entry error rate while simultaneously assuring that USACE geographic districts are using the most up-to-date standards and criteria for the Army’s construction projects.

The wizards are hosted on the Military Construction Requirements and Standardization Integration Suite, known as MRSI, which was developed and is managed by the CRST for the ARSTAF, OACSIM and Headquarters USACE. MRSI is designed to simultaneously support key decision points in the MILCON process and supporting databases for the OACSIM, USACE headquarters and geographic districts, and installations.

Wizards are defined as modules of software components operating on discrete tasks. However, the magic of these wizards has exceeded the definition’s expectations. They have redefined the MILCON requirements and standardization process.

Installations are dependent on coordination among agencies, centers of standardization, facility design teams, project managers and MILCON Business Process stakeholders. They also assist the Facility Design Group at OACSIM and the COS Management Board at Headquarters USACE in synchronizing and integrating management of the Army Facility Standardization Program. The MRSI Suite integrates key phases executed by each of those entities to successfully plan and execute MILCON implementation.

Data repository modules contain references, key points of contact and subject matter experts used in planning, design and construction. Many of these modules contain repetitive or commonly used data.

MRSI provides a single source, multi-distributive architecture in which repetitive data is entered into the designated database of record once and repopulated to other modules through transparent smart links between various modules. This approach simultaneously reduces the risk of data entry error and the level of effort needed to enter repetitive information in multiple modules. Information

Acronyms and Abbreviations	
ARSTAF	Army staff
COS	Center of Standardization
CRST	Combat Readiness Support Team
MBP	MILCON Business Process
MILCON	Military Construction
MRSI	Military Construction Requirements and Standardization Integration (Suite)
OACSIM	Office of the Assistant Chief of Staff for Installation Management
PM MBP	program manager for MILCON Business Process
RFP	request for proposal
USACE	U.S. Army Corps of Engineers

accuracy is “magically” achieved across the entire MRSI Suite. This level of accuracy and data confidence simplifies as well as expedites user access to relevant information at a high degree of confidence, a significant feature senior level managers and key ARSTAF elements had been seeking for the MILCON process.

Since its rapid fielding start, the MRSI Suite has been identified as the foundation for the ARSTAF MILCON dashboard concept supporting various decision forums.

How do the wizards work their magic? The MRSI Suite allows project managers and their teams to use a data entry application to easily create a request for proposal using USACE-approved templates for MILCON projects. The module to create the RFPs is called the “RFP Wizard.”

Many players are involved in ensuring an installation’s success. The MRSI Suite has been designed and has excelled in saving installations both time and costs by using the RFP Wizard.

The second wizard on the MRSI Suite is the “3086/Project Definition Report System Wizard.” This wizard focuses on the preparation, submission and reporting and storage required for the project definition report and validating project cost.

When efficiency and coordination ➤



This icon from the MRSI Suite website represents the RFP Wizard. Graphic courtesy of CRST



Bulletin describes novel erosion control method using compost mulch

by Heidi R. Howard

The Corps of Engineers has issued a Public Works Technical Bulletin that describes a unique use of compost and mulch for erosion and sediment control. The PWTB explains the approach by which the Engineer Research and Development Center's Construction Engineering Research Laboratory evaluated the effectiveness of compost and wood fiber mulch both in the laboratory and the field.

PWTB 200-1-99, *Development and Evaluation of Compost Mulch Best Management Practices for Erosion Control*, can be found on the Internet at http://www.wbdg.org/cdb/ARMYCOE/PWTB/pwtb_200_1_99.pdf.

Controlling soil erosion is critical to safeguarding military lands, both physically and in the broader ecological footprint. Unmitigated erosion can wash out roads and other infrastructure.

Soil erosion also is a major source of pollution in waterways. Phosphorus and nitrates that reach surface water encourage mineral and nutrient enrichment of water sources, while heavy metals and organic chemicals harm aquatic organisms. In addition, sediment that enters bodies of water increases turbidity and causes siltation.

The PWTB provides guidance for land managers interested in using compost mulch best management practices for erosion control. Composted byproduct materials, such as wood fiber mulch and garden or landscape compost from municipal and military land management activities, can provide a cost-effective method for erosion control and vegetation establishment while reducing landfill waste and impacts to water quality. These composted materials can provide a rapid method for erosion control when used as a blanket or as a check dam.



CERL evaluates composted mulch erosion control blankets in the field. Photo courtesy of ERDC

The PWTB focuses on using compost wood fiber mulch, shredded and screened, as a best management practice, and it also provides results and lessons learned from a side-by-side evaluation of composted mulch treatments.

POC is Heidi Howard, 217-373-5865, heidi.r.howard@usace.army.mil.

Heidi Howard is a researcher, ERDC-CERL, Champaign, Ill.

Acronyms and Abbreviations

CERL	Construction Engineering Research Laboratory
ERDC	Engineer Research and Development Center
PWTB	Public Works Technical Bulletin

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among multiple agencies within different commands is critically important, the MRSI Suite eases the hardship of searching through haystacks to find a needle. In addition to the wizards' ability to produce MILCON magic, the MRSI Suite provides the ability to review OACSIM facility standards, USACE standard designs or criteria and Military Construction Army contract scopes based on Army standards and Army standard designs.

The MRSI Suite holds the key to assisting installation with successful MILCON planning and life-cycle management. It provides a one-stop shop for planning, requirements, standards, decision making and integration. Without

this collaboration, final MILCON execution operations would not function as effectively as the Army deserves.

The magic isn't over yet; the wizard's wand is just getting started. The CRST is continuing to pursue improved and effective solutions for the present and the future in planning for military transformation and construction with several modules already under development or testing.

In the future, the MRSI Suite will provide services extending to the materiel acquisition community in support of the Materiel Program executive offices and program, project and product managers developing and fielding materiel systems; the tactical and theater construction arena; and to joint systems development. The MRSI Suite's use has already branched

outside the Department of Defense enterprise to provide its expertise to the Department of Homeland Security for the U.S. southern border fence line program, and it is being considered for use with select U.S. Air Force projects.

The CRST will strive to give the ARSTAF the ability to make better informed decisions, using one key data location. Stay updated on the MRSI Suite at <https://mrsi.usace.army.mil>.

POCs are Susan Nachtigall, 217-373-4579, susan.d.nachtigall@usace.army.mil; and Nadia Abou, 817-886-1803, nadia.abou-el-seoud2@usace.army.mil.

Susan Nachtigall is the program manager, MRSI Suite; and Nadia Abou is the strategic communications officer, CRST, USACE.



Center assesses check dams for erosion and sediment control

by Heidi R. Howard

The Corps of Engineers issued a Public Works Technical Bulletin that describes the methods by which the Engineer Research and Development Center's Construction Engineering Research Laboratory assessed and quantified the effectiveness of both common and unique check dam systems. PWTB 200-1-97, *Evaluation of Check Dam Systems for Erosion and Sediment Control at Military Facilities*, can be found at http://www.wbdg.org/cdb/ARMYCOE/PWTB/pwtb_200_1_97.pdf.

Check dams are structures that can be placed directly in the path of water flow. They lower the potential for erosion by

reducing the shear stress and energy in the flowing water. Check dams also reduce sediment load by trapping and containing sediment in the structure and by allowing its deposition in ponded water behind the structure.

The PWTB provides the results of laboratory and field investigations on the effectiveness of five types of check dams — rip-rap berm, compost filter berm, plastic grid dam, triangular foam berm and compost sock — under three different slope conditions — 6:1, 9:1 and 12:1 — in a rainfall simulator and on a 24:1 slope in the field. Quantitative analysis was conducted by comparing the runoff volume and sediment load from the check dams under both conditions.

The PWTB outlines the evaluation process used and the results to help land managers select check dam systems. It



Sediment is captured by a triangular foam berm, a type of check dam commonly used on military lands that was evaluated. Photo courtesy of ERDC

includes cost information.

POC is Heidi Howard, 217-373-5865, heidi.r.howard@usace.army.mil.

Heidi Howard is a researcher, ERDC-CERL, Champaign, Ill. 

Acronyms and Abbreviations	
CERL	Construction Engineering Research Laboratory
ERDC	Engineer Research and Development Center
PWTB	Public Works Technical Bulletin

Guidance to ensure successful vegetation and hard armoring

by Niels Svendsen

A Public Works Technical Bulletin that helps military land managers make sound decisions when selecting rehabilitation methods has been released by the U.S. Army Corps of Engineers. PWTB 200-1-100, *Selection of Reinforced Vegetation and Hard Armoring Techniques*, is posted on the Internet at http://www.wbdg.org/cdb/ARMYCOE/PWTB/pwtb_200_1_100.pdf.

The costs of unsuccessful periodic or regularly scheduled land rehabilitation



Camp Atterbury, Ind., is successfully using geogrid stabilization for some embankments. Photo courtesy of Engineer Research and Development Center

efforts on military lands can easily consume the budgets of installation Directorates of Public Works and natural resources offices. Reinforced vegetation and hard armoring, two of the more dominant mechanisms for rehabilitation of steep gradient land areas, can be extremely costly on a per-acre basis. Without proper installation of these materials to match soil type, gradient, hydraulic resistance and soil strength, these products may not perform as intended by the design.


Since these materials are often placed in areas with steep gradients where improved slope stability is required to resist high water velocities and soil shear stresses, failure avoidance is crucial. Considering the elevations and gradients where these materials are applied, product failure can be life-threatening during mudslides resulting from soil slope failure. Proper guidance regarding the use and maintenance of these materials is essential to a successful long-

Acronyms and Abbreviations	
PWTB	Public Works Technical Bulletin

term installation.

The PWTB details the basic technologies and techniques, including the selection process, for reinforced vegetation and hard armoring needed to maximize the safety, success, efficiency and cost benefits of soil stabilization efforts on military installations. The bulletin is meant to be used as a primer to help Army personnel identify and understand the technologies and materials available for — and the basic engineering concepts behind — steep slope stabilization and erosion control to support military activities.

POC is Niels Svendsen, 217-373-3448, niels.g.svendsen.

Niels Svendsen is a researcher, Construction Engineering Research Laboratory, Engineer Research and Development Center, Champaign, Ill. 



Bulletin offers insight into composting for explosives remediation

by Giselle Rodriguez

A new Corps of Engineers bulletin presents case studies and lessons learned from four Army cleanup sites where composting was used to remediate soils contaminated with explosives and nitroaromatic materials. Public Works Technical Bulletin 200-1-95, *Soil Composting for Explosives Remediation: Case Studies and Lessons Learned*, is posted on the Internet at: http://www.wbdg.org/ccb/ARMYCOE/PWTB/pwtb_200_1_95.pdf.

Composting is a process in which organic wastes are degraded by microorganisms at elevated temperatures under both aerobic and anaerobic conditions. This treatment method has been shown to degrade commonly found explosive compounds such as TNT, RDX, HMX, DNT and tetryl along with nitrocellulose in soils and sludges.

The main advantage of this process is that, unlike incineration — another method often used — composting results in an enriched product that can sustain vegetation. After cleanup levels are achieved, the composted material can be returned to the site.

In addition, composting can be a lower cost alternative to other remediation

processes. For example, Umatilla Chemical Depot, Utah, saved more than \$2 million by composting contaminated soil compared to other methods, including incineration.

The bulletin provides an introduction to the use of composting to remediate explosives-contaminated soils and its use at Department of Defense sites. It includes information about the main characteristics of the process such as temperature, moisture, oxygen, carbon-to-nitrogen ratio and amendments. It also presents cost data.


In addition, the bulletin discusses case studies for four sites where composting was used: Umatilla; Joliet Army Ammunition Plant, Ill.; Plum Brook Ordnance Works, Ohio; and Milan Army Ammunition Plant, Tenn. Information includes site background, a description of contaminants present at the site, remediation alternatives evaluated before final selection of composting and how the composting process was approached.



A worker uses windrow composting to treat contaminated soils at Plum Brook Ordnance Works. Photo courtesy of Engineer Research and Development Center

Lessons learned from these sites will be useful at other sites with contaminated soils, such as training ranges and property designated as Formerly Used Defense Sites. The bulletin offers insight and guidance for applying this method wherever soil contamination is present.

POC is Giselle Rodriguez, 217-373-3434, giselle.rodriguez@usace.army.mil.

Giselle Rodriguez is a researcher, Construction Engineering Research Laboratory, Engineer Research and Development Center, Champaign, Ill. 

Schultz is Corps' acting chief of Installation Support

by Mary Beth Thompson


Mike Schultz is backfilling Stacey Hirata as the acting chief of Installation Support at Headquarters U.S. Army Corps of Engineers in Washington, D.C. Hirata deployed to Afghanistan Jan. 14 for a six-month tour as the director of the Joint Program Integration Office. Schultz also backfills Hirata's other positions as chief of the headquarters' regional integration teams for the Northwestern Division and for the Engineering and Support Center, Huntsville.

Schultz has more than 36 years of experience in progressively increasing leadership and managerial positions in the installation and facilities business.

Schultz has held positions as a deputy resident engineer for the Corps, as a director of Public Works and Logistics, as the deputy director of the Army's Environmental Program, as the chief of staff in the Office of the Assistant Vice Chief of Staff of the Army, as a deputy division commander for the Corps, and

as chief of Construction and deputy for Operations in the Office of the Assistant Chief of Staff for Installation Management, and as the deputy for Program Integration in the Directorate of Military Programs and International Operations at Corps' headquarters.

Schultz can be reached at michael.schultz@usace.army.mil.

Mary Beth Thompson is the managing editor, Public Works Digest. 



Dreams can come true

by W. Chris Hinton-Lee

I believe I can fly. Why is that, you ask? Because I don't know I can't (fly).

At a recent keynote speaking engagement, the host introduced me.

“She is a visionary and a pioneer who has blazed a career path characterized by a series of history-making firsts. After becoming the first black woman to earn a degree in architecture at the University of Arkansas and the first black woman to become licensed to practice architecture in Maryland, she joined the [U.S. Army] Corps [of Engineers]. She is, in fact, the first black woman to hold every position of leadership she has held throughout her 37-year Corps career. She began her career at the bottom of the professional ladder as an architect intern, and she is completing her career at the top of the Civilian ranks as a Senior Executive Service member and the highest ranking architect in the Corps,” she said.

She ended the introduction by asking me to tell the audience how I did it. My answer was simple, and it forms the basis for this article.

Growing up with four siblings in rural Mississippi, we were not allowed to use the word “can’t.” My mother used to tell us the story of the bumble bee. As the story goes, the bumble bee is not supposed to be able to fly. Its big round body and itsy-bitsy wings make it impossible. But the bumble bee doesn’t know this, so it just flies anyway it wants to fly.



W. Chris Hinton-Lee works as an architect in the Corps' Baltimore District Construction Division in 1986. Photo by Fran Feldman



*W. Chris Hinton-Lee
Photo by Jeffrey M. Henon*

The moral of the story is, if you teach a child she can do something, and she doesn't know that she can't, then she can! And therein lies the secret — the belief that I can do it, which serves as the root of my success in virtually everything I undertake.

My whole career has been the manifestation of a dream in progress. I am an architect, and for as long as I can remember, I have dreamed of being an architect. My road to dream fruition was a bit circuitous due to a variety of obstacles, but because of my bumble bee upbringing, I persevered.

My high school counselor laughed at me for aspiring to become an architect, informing me that Mississippi universities did not offer architecture. (The current program at Mississippi State did not yet exist). Instead, she convinced me to enroll at Jackson State, a liberal arts college.

After three years there, my bumble bee teachings kicked in, enabling me to rise above the laughter and follow my dream. I decided to transfer out of state to the University of Arkansas's five-year architecture program.

My college advisor, learning of my plan to transfer, sent for me and asked me three questions I'll never forget, because they changed my life. She asked:

- Why do you think you can be an architect?
- Do you know any lady architects?
- Do you know any colored architects?

I sat there for a moment, and then it hit me! At that time, I didn't even know any white male architects, but what did that have to do with my dream to become one? It was at that meeting that I vowed to never again allow anything or anyone to steal or defer my dreams. And from that time to this time, I never have.

The fact that it hadn't been done before was being offered as advice not to even try. But clearly the facts didn't matter. And thanks to my bumble bee upbringing, I was empowered to strive for it, because I didn't know I couldn't do it.

Not knowing I couldn't gave me the confidence to pursue headlong every career goal I set, taking a back seat to no one, never believing a career milestone was out of my reach even though it had never before been done. The lesson of the bumble bee, therefore, became my mantra for all those I mentored.

As I depart after 37 years with the Corps, I impart the following nuggets that proved invaluable during my rewarding career:

- Develop a bumble bee mentality — I don't know I can't, so I can!
- Develop the audacity to dream. What would you go after if you couldn't fail?
- Pursue your wildest dreams with blinders on. Keep your eye on the prize.
- Ignore the facts; the facts don't matter. Soar like an eagle, always rising above adversity. Follow your dreams. And remember, it's never too late.

W. Chris Hinton-Lee, SES, AIA, retired Dec. 31 as chief architect, U.S. Army Corps of Engineers, and regional business director, South Atlantic Division.



Federal Planning Division regional conference report

by Andrea Wohlfeld Kuhn and Jill A. Schreifer

The first-ever Federal Planning Division of the American Planning Association Regional Workshop met in Denver Nov. 9-10. The workshop's theme was "Interagency Collaboration for Sustainable Landscapes."

The conference brought federal planners from the National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, Federal Highway Administration and the Department of Defense as well as consultants together to discuss key federal land management planning topics.

The opening plenary speaker, Harris Sherman, the under secretary for natural resources and environment, Department of Agriculture, challenged participants to think about how to bring federal planners together in the future, how they can make data collection more consistent and how they can learn from one another's planning efficiencies. Sherman emphasized the critical relationship between ecological, economic and social sustainability. Partnerships must involve state, local, federal and nongovernmental organizations in leveraging funds and working together to achieve common goals.

Another plenary speaker, Mark Gelernter, dean and professor, College of Architecture and Planning, University of Colorado, Denver, stated that the population in many Colorado regions has doubled or tripled within one lifetime. Eighty-two percent of Colorado's population now lives in cities, necessitating additional consideration of the impacts to public lands and transportation systems, and making planning that addresses these issues even more important.

Throughout the conference, panel and workshop presentations covered sustainable transportation and land use, resource management in an era of collaboration, interagency memorandums about climate

change and air quality, and the revised DoD Master Planning Unified Facilities Criteria.

Transit in Parks Technical Assistance Center representatives highlighted unique transportation projects under way in national parks with grant funding available for transportation initiatives and innovations. National Park Service planners also discussed a planning approach at Yellowstone that focuses on the district or zone scale. Limited planning resources are directed to the areas in most need. The result is a plan that identifies suitable building locations, building sizes, functions and design standards. This process is similar to DoD's plans in implementing its revised Unified Facilities Criteria, which will focus in part on area development planning.

The closing plenary session featured speakers from each agency addressing the future of land management planning from their organizational perspectives. Key challenges include unfunded mandates, capacity issues and climate change.

The Bureau of Land Management is



Plenary speakers (left to right) Barbara J. Johnson, National Park Service; David Loomis, U.S. Forest Service; Alan Gilbert, Department of the Interior; Mark Gelernter, University of Colorado, Denver; and Under Secretary for Natural Resources and Environment Harris Sherman, Department of Agriculture; pose at the opening session in Denver. Photo by Mark L. Gillem

revising land-use plans to create more effective, outcome-based and responsive planning. The Fish and Wildlife Service is looking at adaptive management to develop more meaningful planning documents, and the Forest Service is emphasizing its "roadless rule" by designating one-half of national forest lands off-limits. The Forest Service will also shift its land management focus from timber harvesting to preserving existing resources and administering recreation lands that will meet increased demands from larger populations.

These land management issues sometimes result in conflicting

Planning conferences to convene in April

The American Planning Association and the Federal Planning Division will hold their annual conferences and training workshops in Los Angeles. The Federal Planning Division will meet April 11-13, and the American Planning Association April 14-17.

This year, the Federal Planning Division's National Training Workshop will feature a two-day of Department of Defense-related session April 10-11, before the workshop. Sessions will address critical planning issues including energy, sustainability, climate change, environmental concerns, natural and cultural resources, transportation planning and land use.

More information can be found at the websites, <https://www.planning.org/conference/index.htm> and http://www.federalplanning.org/training_workshop_2012.htm.

POCs are Andrea Wohlfeld Kuhn, 202-761-1859, andrea.w.kuhn@usace.army.mil; and Jerry Zekert, 202-761-7525, jerry.c.zekert@usace.army.mil.

Acronyms and Abbreviations

DoD Department of Defense



Department of Defense Master Planning Institute 2012 classes

by Andrea Wohlfeld Kuhn

Recognizing the need for an enhanced, comprehensive suite of training classes that focus on the essential topics of master planning, the instructors of the U.S. Army Corps of Engineers Proponent Sponsored Engineer Corps Training master planning courses developed new courses and area development plan workshops that are now under the auspices of the Department of Defense Master Planning Institute. These classes range from introductory to advanced and include universal planning practices as well as Army-specific information.

The key goal of the DoD MPI is to develop a world-class workforce by providing the most up-to-date, essential tools and materials to achieve sustainable, energy-efficient planning, engineering and architecture solutions. Classes and workshops are open to all interested parties, including private citizens; contractors; and



Students at a workshop in Sembach, Germany, work on their area development plan proposal. Photo by Andrea Wohlfeld Kuhn

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demands on scarce resources. All the closing plenary speakers concurred that the key to success is effective data management in a collaborative, interagency manner rather than individual agency data bases. Planning must be done at the district or neighborhood level to be effective.

The planning committee hopes to make a regional workshop an annual event to

federal, state, city and county employees.

The original Army-focused materials are now expanded to include information relevant to all DoD service branches and other government agencies. All courses are fully accredited by the American Institute of Certified Planners, the American Institute of Architects and the National Society of Professional Engineers, and they provide continuing education units.

One of the unique features that sets these classes apart from others is that the instructors employ a variety of dynamic media that go beyond lectures. The teaching methods include hands-on training, small group exercises, field trips, site visits and other learning opportunities.

While basic theory and history is a part of the curriculum, students have the opportunity to develop ideas or plans that can actually be implemented at their locations. By identifying and engaging all relevant stakeholders in area development plan workshops, full participation is realized and buy-ins to solutions and subsequent implementation is enhanced.

Technologies include computer programs used for site design and calculations of space, materials and personnel. Sketches, data from on-site observations, interviews with stakeholders, guest lecturers, multimedia presentations, field trips and literature reviews are used to provide

allow federal planners opportunities to collaborate and share best practices.

POCs are Andrea Wohlfeld Kuhn, 202-761-1859, andrea.w.kuhn@usace.army.mil; and Jill A. Schreiber, 202-731-0098, jill@urbancollaborative.com.

Andrea Wohlfeld Kuhn, AICP, LEED Green Associate, is a senior planner, Headquarters U.S. Army Corps of Engineers; and Jill A. Schreiber, AICP, is the chief operating officer and planner, The Urban Collaborative LLC.

Acronyms and Abbreviations

DoD MPI	Department of Defense Master Planning Institute
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a complete learning experience. The instructional staff is composed of federal and private-sector professionals who are accredited subject matter experts.

A brief description of the calendar year 2012 DoD MPI schedule of classes follows. More detailed descriptions and registration are available at <http://www.dodmpi.org/> or <http://ulc.usace.army.mil/>. Increase your understanding of master planning by signing up for one or more of these courses at either website.

Course 948 Master Planning Visualization Techniques

Jan. 30–Feb. 2, Huntsville, Ala.

This course provides a fundamental overview of planning visualization tools such as Google SketchUp, Google Earth and Photoshop. Students receive hands-on instruction in various software applications and produce renderings and area development plans that illustrate sustainable, energy-efficient solutions.

Course 392 Historic Structures I March 12–16, Seattle

This course presents the unique characteristics, legal requirements, procedures, technical knowledge and skills necessary to administer, maintain and repair federal historic properties. Sustainable, energy-efficient solutions for historic preservation as well as pertinent laws, regulations and guidance are covered.

Course 258 Master Planning Energy and Sustainability Factors March 19–23, Denver

This new course covers energy and sustainability on a broader level, rather than at the individual building level. Discussion and demonstration of energy-related planning practices and initiatives demonstrate effective strategies. ➤



Career Program 18 centrally funds web-based training

by Dana Gunter

If you are one of the 30,000 Civilians who are now aligned to Career Program 18 – Engineers and Scientists– Resources and Construction, you could be training right now for free. Currently the CP-18 Proponency Office is working with a General Services Administration-approved vendor to provide courses that count towards continuing education units, professional development hours or continuous learning points in areas such as engineering, architecture, interior design, geology and land surveying.

These courses can be taken by any careerist and are not limited to licensed professionals. This eLearning program is hosted on a web-based platform making training and course resources available anytime, from anywhere with a PC and an

Internet connection.

Interested individuals should contact the CP-18 team at cp18proponencyteam@usace.army.mil for information on how to apply. Applicants' information is reviewed to ensure they qualify as CP-18 participants. Once approved for the training, they will have one year of unrestricted access to any course on any topic area with no limit on the number of courses they may complete.

This opportunity includes Leadership in Energy and Environmental Design certification training such as Building Design and Construction, and Existing Building and Operations Maintenance. In addition, there are numerous courses mapped to the Federal Building Personnel Training Act of 2010.

Acronyms and Abbreviations

CP-18	Career Program 18, Engineers and Scientists – Resources and Construction
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This training opportunity is available to the CP-18 community and is appropriate for professionals at the GS-11 to GS-15 levels or pay band equivalents. With hundreds of courses to choose from and the ability to take as many courses as you want, what are you waiting for?

POC is Dana Gunter, 202-761-5270, dana.m.gunter@usace.army.mil.

Dana Gunter is the Army Civilian Training, Education and Development System program manager, CP-18 Proponency Office, Headquarters U.S. Army Corps of Engineers.

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Classroom learning is enhanced by field trips and demonstrations of energy-saving methodology from a planning and design perspective.

Course 319

Master Planning Coding Practices April 23-27, Chicago

This new course gives students an understanding of the form-based coding and its use in the planning and development of sustainable installations. Students will learn how to develop a code and planning standards, and create a regulatory plan for code enforcement.

Course 326

Master Planning Applied Skills July 25-29, Baltimore

This course provides an overview and techniques to develop real property requirements and allowances, assess stationing actions and ensure sustainability and energy factors are included. Students will learn to use Army planning tools to conduct planning studies and requirements analyses, and to determine the impact to the installation's real property master plan.

Course 952

Master Planning Advanced Techniques Aug. 13-17, Portland, Ore.

Through an intensive, hands-on workshop, students use a planning charrette technique to develop an area development plan for a real world planning problem at an installation. Advanced concepts and cutting-edge sustainable and energy-efficient practices are featured. Participants are required to have a fundamental knowledge of master planning or real property management.

Course 163

Historic Structures II May 21-25, Port Townsend, Wash.

This course increases awareness and sensitivity to maintenance, repair and energy-saving measures in historic structures and enhances preservation craft skills. Through lectures and field exercises, the course covers the secretary of the interior's standards, levels of treatment and repair versus replacement, a key concept in promoting sustainability and energy efficiency.

Course 75

Master Planning Principles

Nov. 5-9, New Orleans

This course offers an introduction to master planning concepts and principles including the comprehensive issues of sustainability and energy. An overview of the planning process is provided, with an emphasis on general planning principles that are applicable to all organizations and government levels.

Course 241

Master Planning Practices Dec. 3-7, San Antonio

This course expands on the basic sustainable, energy-efficient planning concepts in Course 75 and relates them to Army-specific examples and practices, including analysis of requirements and forecasting.

POCs are Jerry Zekert, 202-761-7525, jerry.c.zekert@usace.army.mil; and Andrea Wohlfeld Kuhn, 202-761-1859, andrea.w.kuhn@usace.army.mil.

Andrea Wohlfeld Kuhn, AICP, LEED Green Associate, is a senior planner, Headquarters U.S. Army Corps of Engineers.

U.S. Army Installation Management Command
2405 Gun Shed Road
Fort Sam Houston, TX 78234-1223
www.imcom.army.mil



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