

# Public Works DIGEST

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**Master Planning,  
Housing, and  
Barracks**

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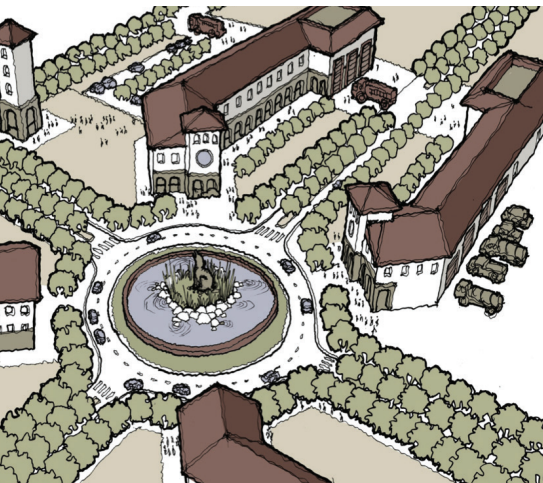


Illustration of planning practices used to create resilient communities



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## Master Planning - "It Takes a Village"

by R. Ellis Smith

The Army teaches us to be flexible, adaptive to change. We must do more with less; shrinking budgets, reduced staff levels, increased regulatory requirements, and uncertainty of the future units who will be stationed here at JRTC and Fort Polk. It can be a challenge; even more so for the master planners who must develop, adapt, implement and carry the vision forward to each succeeding generation of installation Leadership, Soldiers, Families and Civilians. Master Planning takes communication and leadership skills and a positive outlook for the future. Scotty Goins, Master Planner here at Fort Polk, always says, "With the reduction of MCA dollars flowing into the installation, it's time to step up our planning!" He's right. For the past 10 years or so we've "reacted to contact" with implementation of projects (relocatables) that may have solved an immediate problem to meet mission requirements but have now become THE problem due to water intrusion, mold, and repair costs. It's time to take a breather and really consider the future of the installation and the future of the Army through sustainable and thoughtful planning.

To borrow a quote that has been used many times, "It takes a village" to successfully master plan an installation. The Fort Polk Master Planning staff is doing a yeoman's job of updating and creating the components of the Real Property



Master Planner, Scotty Goins briefs the preferred course of action to Commanding General, BG William Hickman and Garrison Commander, COL T. Glenn Moore during the Tigerland Area Development Plan workshop.



Community Planner, Lorna Hanes briefs Commanding General, BG William B. Hickman, Garrison Commander COL T. Glenn Moore, Post CSM Eric G. Crabtree and other participants during the Hub Area Development Plan Workshop.

Master Plan as required in AR 210-20, Real Property Master Planning for Army Installations which refocuses our planning efforts to create sustainable communities by transitioning away from sprawling, land-use-focused development to compact, transit-oriented solutions. But it's not about "checking the box" to complete the plan. Successful Master Planning results from the combined efforts of the planners, installation leadership and guidance, and stakeholder input. In other words, it takes the Fort Polk "village" to create and implement the plan.

Sometimes getting the "village" to show up for Master Planning workshops and events is difficult. Many of our stakeholders are only here for two years and don't see the value of their participation. However, we have seen time and again that Soldiers and Families return to Fort Polk for second and third tours of duty. It's a good place to train and it's a good place to raise a family. The Chief of Staff, COL Lee Walters and the Garrison Commander, COL T. Glenn Moore both spent time here as children and have now returned with their children. They know firsthand the value of making a difference for future generations. We are fortunate also to have the leadership of BG William Hickman as our Commanding General who has taken a strong interest in the completion of the installation's master plans. Because of his leadership and command emphasis, the sometimes reluctant stakeholder attendees show up at the table. It's then the Master Planning

Acronyms and Abbreviations	
AR	Army Regulation
BG	Brigadier General
COL	Colonel
CSM	Command Sergeant Major
DPW	Directorate of Public Works
JRTC	Joint Readiness Training Center
MCA	Military Construction, Army
WWII	World War II

staff's challenge to engage them in the planning process. The result – a good plan that everyone owns and supports!

The fiscally constrained environment we now live in necessitates that Master Plans do not remain on the shelf collecting dust. All of the staff in DPW from the engineers to the maintenance personnel must be on-board to use these plans as guidance in everyday decision-making. Why renovate a building that is destined to be demolished? Why build another storage unit when other facilities are under-utilized? What streets and roads should be improved or upgraded first? What are our priorities? The Master Planning process and resulting documents now give us the tools we need to make informed decisions.

JRTC and Fort Polk have come a long way since its days as a basic training camp for WWII, the Korean War, and as the infamous "Tigerland" of the Vietnam War. Less than 100 of the WWII wooden facilities remain on the installation due to our aggressive program of demolition. However, when we look back at the original plans for Camp Polk we see compact, walkable, multi-story development. Buildings had pitched roofs to shed the rain, large operable windows allowing natural light and air circulation, and were built on piers simplifying repairs and renovations as well as compensating for the unpredictable soil types of Fort Polk. I am not suggesting that we go back to that type of construction but we can certainly learn from the planning principles and proven building techniques of the past and incorporate them into our master plans.



# Creating a Resilient Future through Master Planning

by Edmond G. Gauvreau

This edition of the Public Works Digest focuses on the topics of Master Planning, Barracks and Housing. To develop exceptional barracks and housing for our Soldiers and Families, excellent master planning products are required. Master Planning products ensure high quality quarters are offered while Soldiers and Families are faced with the rapid OPTEMPO and changing missions. Suitable housing is essential to assure our Soldiers and Families they have great places to reside while they continue to support the heavy daily demands placed on them. At the same time, the Army and DOD must plan and provide great installations where our Soldiers and civilians can successfully meet today's mission requirements and be flexible to accommodate rapidly changing actions in the future. A well-planned installation provides the framework where great barracks and housing communities can flourish and grow into great neighborhood communities capable of supporting the



Edmond G. Gauvreau, ALA

installation's Soldiers, Families and civilians.

Our installations are faced with complex planning factors that will affect their long-term viability. We are seeing dynamic changes in installation mission assignments through rapidly directed deployments and changing equipment and technologies. At the same time, communities surrounding our bases are growing closer and closer to installation boundaries. We are faced with potential energy scarcity, which affects the ability to successfully execute our missions. We see the growing impacts on installations from climate change, as well as continued environmental degradation of our land, air and water resources. All these factors cumulatively affect our bases' abilities to achieve resiliency in the face of an unpredictable future.

The concept of resiliency addresses thinking comprehensively about the factors that affect how a base can support missions today, missions tomorrow, and the unforeseen twenty to thirty

Acronyms and Abbreviations	
DOD	Department of Defense
FY	Fiscal Year
OPTEMPO	Operating Tempo
USACE	U.S. Army Corps of Engineers

years out. Resiliency requires bases to be concerned about formulating their military capacities to support undefined missions in a sustainable energy efficient manner while being good stewards of our natural and cultural resources. Installation senior leaders need to consider not just planning and designing building solutions for mission shortfalls but how the buildings fit into succinct districts which promotes sustainable development. Such development should be planned to promote the health of the Soldiers, civilians and Families who reside in these areas through enhanced walkability and biking options. When programming projects or complexes, base personnel must consider both fulfilling the short-term requirement, and assuring designs have inherent flexibility to allow for repurposing in the out years.

In 2015, the installation community will need to define how to create 'resilient' installations and what effect does it have on the master planning of our bases. In the FY14 National Defense Authorization Act, Congress directed all DOD installations to embrace concepts of compact, in-fill development, mixed use, healthy development focused on walkability, as well as capacity planning and the establishment of boundaries in installation master planning efforts. Congress has provided the recipe for the master planning community to use to enhance the

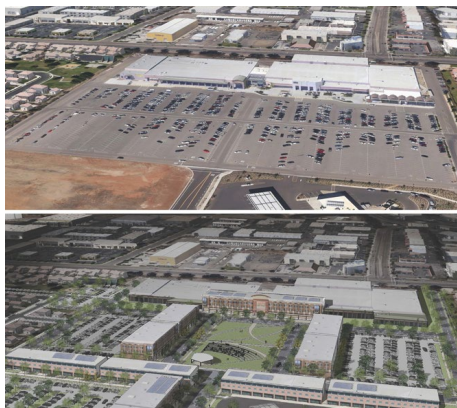


Illustration of a typical resilient planning solution resulting in a more compact installation footprint with public spaces that support the building of community and energy-efficient buildings. (The Urban Collaborative, LLC)

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Master Planning has rapidly evolved over the years since I worked as a Master Planner here at Fort Polk. Missions have come and gone. Plans have changed to adapt to new missions. The changes have been good. I am proud of the Master

Planning staff and all of the employees of DPW who are resilient and forward-thinking and have come together as part of the "village" to work together to build the future JRTC and Fort Polk. It's a future with the capacity to accept new missions and build on the lessons learned and successes of the past!

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## Area Development Plans for U.S. Army Garrison, Hawaii, 2013-2014

by Mark Mitsunaga

As mentioned in previous articles, master planners are the real property gatekeepers for the garrison commander and the Army. The article, “Back to Basics: The Next Generation of Master Planning II,” January 2013, identified shortcomings with vacant lot planning that have been the way of doing business for the past quarter century. We continue to suffer the effects from facilities that don’t belong where they have been built causing mission disconnect and accessibility issues. As a result of this misguided planning, mission areas are separated by family housing on many installations. We continue to be challenged by the second and third order impacts and would like to embrace a way forward that will achieve the “work-live-play” philosophy.

Since the last article, we’ve moved forward in working on our Master Plans. USAG-HI is a large Army installation comprised of 22 sub-installations, approximately 188,000 acres, sprawled on

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qualities of resiliency on our installations.

A successful installation master planning program creates a framework to plan for resiliency. Successful installation master planning programs exhibit three great qualities:

1. Senior Mission/Garrison Commander engagement. Our senior installation leaders’ engagement is essential for a strong planning program. Their leadership and direction is essential for successful installation-wide participation and resource allocation.
2. Comprehensive stakeholder involvement. The installation master plan is a result of a comprehensive planning process involving participation from all the stakeholders. Their buy-in and ownership of the process is essential for success.
3. Strong succinct planning visions to set the direction. This is the guiding principle for all development. Planning visions reach beyond missions, and

USAG-HI Transportation Between Oahu & Hawaii



Oahu Transportation routes; Hawaii Pohakuloa Training Area

two of Hawaii’s eight major islands, Oahu and the island of Hawaii. Accessibility between islands is by air and sea only. The Pohakuloa Training Area is one of four of the Army’s major training areas located on the island of Hawaii. It accounts for approximately 138,000 acres of leased, ceded (lands assigned by Presidential and Governor Executive Orders) and fee-owned lands. Nineteen sub-installations are

describe the resilient end-state to support flexible scenarios assigned to the base.

This edition of the Public Works Digest provides readers many ideas and master planning resources to help maintain a successful installation planning program while achieving the principles of resiliency. You will read great stories like the one from USAG-Hawaii and their efforts to update their master plan within a 9-month process in a manner that introduces qualities of resiliency to support DOD missions now and tomorrow. Fort Hood tells the story about implementing the master plan concepts through area development execution plans and repurposing of facilities. Fort Polk shares with us their lessons of bringing in stakeholders together to enhance the planning process. You will also read how the introduction of low-impact development planning practices is progressing at the U.S. Military Academy, West Point as well as how the master plan guides resilient siting and design solutions. You will be introduced to the USACE Regional Master Planning Support Centers,

Acronyms and Abbreviations	
ACSIM	Assistant Chief of Staff for Installation Management
ADEP	Area Development Execution Plan
ADP	Area Development Plan
AR	Army Regulation
HQDA	Headquarters, Department of the Army
HQUSACE	Headquarters, U.S. Army Corps of Engineers
ID	Infantry Division
IDG	Installation Design Guide
IDP	Installation Development Plan
MILCON	Military Construction
NAF	Non-Appropriate Facilities
OMA	Operation and Maintenance, Army
PTA	Pohakuloa Training Area
SRM	Sustainment, Restoration and Modernization
UFC	Unified Facilities Criteria
USAG-HI	U.S. Army Garrison, Hawaii

amazing planning technical support resources available to help installations with state-of-the-art planning support as well as a complete suite of continuing education resources.

In the future, the likelihood for DOD to acquire additional land for new military installations is extremely remote. The existing installations are invaluable resources critical to our Military readiness. Through effective master planning and introducing concepts of resiliency, we can preserve installation military capabilities to respond to rapidly changing missions while achieving goals of sustainability, energy efficiency, and environmental stewardship.

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# From Real Property Vision to Project Fruition

by Maureen E. Goodrich

Mr. Frank Kendall, the Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L) issued guidance on 28 May 13 that we would be in compliance with UFC 2-100-01 by 1 Oct 18. Specifically, *“The DOD component exercising management responsibility over each installation shall develop a Master Plan that defines opportunities for site development and alternate land use and incorporates specific planning strategies”*

Imagine being a Commander, Platoon Leader or Platoon Sergeant and having a 10-foot wide path to take your Soldiers on a unit run; a dedicated path that doesn't require you to compete with vehicle traffic. Or, imagine being able to go out for a mid-day run without being restricted to a circular track, or linking up with your family for lunch at the Town Center without having to use a car. This is

the future of Fort Campbell's Screaming Eagle District and it is within reach!

No longer viewed as an arduous process, installation master planning melds mission, community, sustainability and planning principles while incorporating stakeholder input to produce a balanced, deliberate document that supports the overarching goals established in the Real Property

## Acronyms and Abbreviations

A-E	Architect-Engineer
ADP	Area Development Plan
AT&L	Acquisition, Technology and Logistics
DOD	Department of Defense
DPW	Directorate of Public Works
GI	Green Infrastructure
HQIMCOM	Headquarters, Installation Management Command
MG	Major General
PW	Public Works
UFC	Unified Facility Criteria

Vision. Master Planning has always been a collaborative and comprehensive process; however it's now a mandate and is

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on Oahu and the remaining 15 sub-installations are located on central, western and northern Oahu. Schofield Barracks is home to the 25th Infantry Division and adjacent to Wheeler Army Airfield, which is home to the 25th ID's 25th Combat Aviation Brigade, all located on central Oahu.

It has been approximately 25 years since Master Plans were updated at USAG-HI. In September 2013, the USAG-HI garrison commander, realizing the criticality of having a Master Plan, allocated \$1.3 million for a contract to update our Master Plans for the major sub-installations.

MILCON is the preferred mechanism to fund major projects. However, due to major funding constraints, improvement and enhancement monies are sparse and not readily available. Therefore, a phasing strategy is required to convey to HQDA our way ahead via the Master Plan to achieve our end state.

Initially, Garrison personnel had a hard time seeing the benefit of a plan that did not provide an identifiable and structured project. A step-by-step approach leading us out of the present existence toward the

desired end state was created. We refined the ADEP through our hybrid process and it now reflects a more comprehensive listing and phasing of projects identified by funding source: MILCON, NAF, SRM, OMA and other monies. The list is reflected within the Master Plan, phase by phase, in a graphics layer method. Not all projects will be awarded and executed as expected in the phasing plan. However, the plan "reserves" space and utilities tie-ins for that project till it obtains its funding.

Another challenge during this period has been our PTA Master Plan. It was initiated in 2011 based on AR 210-20. The development of our ADPs, of 2013, was based on the UFC. We learned that there are disconnects between AR 210-20 and UFC 2-100-1, e.g., differences in terminologies and master planning products. In working with HQUSACE and ACSIM, it was determined that further clarification and refinement is necessary to allow a seamless transition and interpretation between the two documents. This would allow master planners to more easily understand the related documents, which would need to be updated.

ADPs are another layer and part of the Master Plan - not THE Master Plan! The usual effort of updating or creating

Master Plans takes approximately three years. This contract completed 13 ADPs with accompanying master planning documents in approximately 10 months, 3 Dec. 2013 to 27 Sept. 2014. It is considered by HQUSACE, as well as HQDA, a hybrid effort. HQDA has been following this effort to determine if the methodologies acquired may be a model for Army garrisons, particularly for those with constrained sites such as ours.

The Master Plan is a living document; we expect changes. The master planner must ensure that Garrison's efforts are coordinated and focused towards the end state. By doing so, we ensure efficiencies of activities and funding in support of the mission!

Lessons Learned: Be persistent to maintain forward progress, but be flexible to expect the unexpected. We learn from the past as we plan for future and try not to make the same mistakes. Master Planning is a necessity!

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supported with Unified Facilities Criteria (UFC) 2-100-01, Installation Master Planning. Fort Campbell, who completed a Real Property Vision Plan in May 2013, and is on target to complete the Screaming Eagle District Area Development Plan under the new UFC, is one of few Installations truly on the forefront of Master Planning.

With clear direction from the Garrison Commander, Colonel David L. Dellinger, and the experienced guidance of the Senior Mission Commander, Major General Gary J. Volesky, military leaders and staff of the Fort Campbell Directorate of Public Works (DPW) gathered together to craft the future development plan of the Screaming Eagle District. The charrette, facilitated by the Michael Baker International-AECOM Joint Venture, an A-E firm, led the group of stakeholders through a series of exercises from problem analyses and conceptual alternatives to a fully detailed preferred alternative that will be presented to the Real Property Planning Board.

The Screaming Eagle District is derived from the Fort Campbell Framework Plan, which divides the cantonment into identified Area Development Planning districts based on key transportation routes, land uses, mission requirements and other significant features that influence development patterns.

Highlights of the ADP will include the spine of a 13.1-mile trail that will extend throughout the Screaming Eagle District and connect to other Soldier/Family-centric activity nodes, such as the Town Center District and Bastogne Community Center District. The work group, comprised of both military leaders and civilians, linked fresh ideas, everyday leadership challenges and time-tested planning principles to produce a plan that can easily be implemented. Fort Campbell has also been able to use the master planning process (UFC 2-100-

1) to incorporate elements of their new Green Infrastructure Plan into the installation Vision Plan and other planning documents.

The Fort Campbell Green Infrastructure (GI) Plan was approved by Fort Campbell's Commanding General, MG Volesky, in August 2014. It has resulted in a comprehensive installation plan to encourage multi-modal transportation, open space preservation and compatible land use. This plan establishes long-range goals (with annual targets) for the creation of new sidewalks and bike trails and also focuses on improving the connections between on-post housing, administrative and retail areas. In addition to encouraging healthy lifestyles, sections of the Green Infrastructure trails will also incorporate elements of the history of Fort Campbell's 101st Airborne Division to educate participants on the origins of the Division and its subsequent evolution to the Air Assault Division as it exists today.

Development of the GI plan was a year-long process and involved several on-post public meetings along with interviews of key leaders, units, family members and garrison directorates. Community input was also obtained through the installation's Facebook page, family housing surveys and local engagement. DPW staff used this information, and also conducted several on-post bike rides, to create the final GI plan. Fort Campbell leadership has been very supportive of the plan. It has already resulted in the improvement of over two miles of on-post recreational trails and several miles of new sidewalks.

The adoption and subsequent implementation of the new Screaming Eagle ADP will result in another key objective of the Fort Campbell GI plan coming to fruition; the creation of a 13.1 mile on-post fitness trail within the main post cantonment area. Once complete, the Screaming Eagle trail will be a half-marathon.

Like the Vision Workshop, the ADP Workshop is funded and facilitated by HQIMCOM to help Installation Master Planners comply with the DOD requirement of UFC (Unified Facilities Criteria) 2-100-01, Installation Master Planning by 1 Oct 2018. For more information on HQIMCOM funded Vision Plans, ADP's and other Installation Master Planning solutions, please contact Anne de la Sierra, chief of the Master Planning Branch, HQ IMCOM @ (210) 466-0611, [anne.b.delasierra.civ@mail.mil](mailto:anne.b.delasierra.civ@mail.mil)

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## Call for **ARTICLES**

The  
April/May/June 2015  
issue of the  
Public Works Digest  
will feature

### **Environment and Sustainability**

Deadline is March 6, 2015

Submit articles to  
[editor.pwdigest@usace.army.mil](mailto:editor.pwdigest@usace.army.mil)  
202-761-0022



# New Emphasis on Master Planning from OSD and Congress

by Kathryn Haught

**U**FC 2-100-01, Installation Master Planning, has been in effect for two and one half years. Coordination on updated master planning policy is underway to be incorporated into AR 420-1, Army Facility Management and replace interim Army guidance.

In the meantime, Congress and the Office of the DUSD I&E have been formulating higher level guidance. In FYs 13 & 14, the NDAA's included language pertaining to the Real Property Master Plan:

## 10 U.S. CODE § 2864 - MASTER PLANS FOR MAJOR MILITARY INSTALLATIONS

(a) Plans Required — At a time interval prescribed by the Secretary concerned (but not less frequently than once every 10 years), the commander of each major military installation under the jurisdiction of the Secretary shall ensure that an installation master plan is developed to address environmental planning, sustainable design and development, sustainable range planning, real property master planning, and transportation planning.

(b) Transportation Component — The transportation component of the master plan for a major military installation shall be developed and updated in consultation with the metropolitan planning organization designated for the metropolitan planning area in which the military installation is located.

(c) Definitions — In this section:

(1) The term "major military installation" has the meaning given to the term "large site" in the most recent version of the Department of Defense Base Structure Report issued before the time interval prescribed for development of installation master plans arises under subsection (a).

(2) The terms "metropolitan planning area" and "metropolitan planning organization" have the meanings given those terms in section 134(b) of title 23 and section 5303(b) of title 49.

OSD has established more detailed

requirements for Master Planning based on UFC 2-100-01. On 28 May 13, OSD issued a policy memorandum requiring that:

- The DOD Component exercising management responsibility over each installation shall develop a master plan that defines opportunities for site development and alternate land use and incorporates the following planning strategies: sustainability, resource management, transportation alternatives, defensibility, area and network planning, form based planning, and local and regional coordination.
  - All land use, development, and real estate actions on an installation shall conform to its master plan.
  - DOD Components shall establish installation planning boards to review and endorse installation master plans, which shall be approved by a command above installation level no less frequently than every 5 years.
  - DOD Components shall maintain a comprehensive list of all installation master plans and their respective completion dates.
  - DOD Components shall provide master planning training for key personnel using curricula developed either in-house or through the Army's Master Planning Institute, toward a goal of at least 4 hours training for installation commanders and 32 hours of training biennially for installation master planners.
  - DOD Components shall develop or update all installation master plan in accordance with this policy no later than 1 Oct 18. The DUSD for I&E shall establish metrics to evaluate the implementation of this policy.
- Army land holding Commands are updating the RPMPs according to these recent statutes and policies. OSD has been working with Service representatives, including Army, to establish metrics as required. There are currently 4 draft metrics that address RPMP completion, timeliness, programming compliance with RPMP, and training. As these are finalized, they will be integrated into the measures for Service 405, Master Planning, within the


Acronyms and Abbreviations	
ACSIM	Assistant Chief of Staff for Installation Management
AR	Army Regulation
DoD	Department of Defense
DUSD (I&E)	Deputy Under Secretary of Defense, Installation & Environment
FY	Fiscal Year
HQDA	Headquarters, Department of the Army
ISR	Installation Status Report
NDAA	National Defense Authorization Act
OSD	Office of the Secretary of Defense
RPLANS	Real Property Planning System
RPMP	Real Property Master Plan
TAB	Tabulation of Existing and Required Facilities
UFC	Unified Facilities Criteria

Installation Status Report. OACSIM has issued Army policy guidance since approval of UFC 2-100-01 and will prepare further guidance based on Congressional and OSD goals and metrics.

OACSIM recognizes the difficulty of meeting many of these goals with current budget constraints. We are working with the land holding Commands to set priorities and establish procedures that minimize cost. We are also working with land holding Commands to address programming for Master Planning. Many Army Garrisons have completed Area Development Plans and Installation Development Plans according to the principles espoused by Congress and OSD.

Army has often led the way among federal agencies for sustainable Master Planning; even given the current funding constraints, we continue to do so.

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# Joint Base Lewis-McChord (JBLM) Real Property Master Plan (RPMP) Variance Process

by Nathan Kent Harber

JBLM has recently received a lot of interest in its Master Plan variance process, one which is believed to be unique to installations across the Army. Modeled after local municipalities, the JBLM variance process can be adopted for any installation planning activity and can be a valuable tool in enforcing and maintaining a Master Plan for the Installation's community, not just Master Planning.

So what is a variance? It is an exception to the Installation's form-based code. A variance provides equitable relief to project proponents encountering unusual circumstances with a parcel. The request for a variance is typically triggered when complying with the code is especially difficult due to challenging site conditions, terrain sensitivity, height requirements, or limited land. There are two types of variances: area (non-use) and use. Area variances offer an exception to the project proponent encountering difficulties complying with physical requirements of the code, such as adding on-street parking or the setback of a building. The second type, a use variance, allows the project proponent to use the property in a way that deviates from Regulating Plan zoning standard, such as permitting an industrial use in a campus zone.

When the project proponent believes that no option can be achieved without deviation from the Regulating Plan, the proponent can submit a variance request application to the Directorate of Public Works (DPW) Master Planning Division (MPD) (ideally occurring between Requirements Analyses and Planning Charrette phases of project development). MPD staff reviews the application against five criteria and prepares a recommendation for the Facility Utilization Board (FUB). The FUB is a working group of informed, demanding, and involved members from each of the major units and tenant organizations and chaired by the Director of Public Works. It reviews the variance request and takes its recommendation to the Joint Base Commander (JBC) at the next scheduled

Acronyms and Abbreviations	
DPW	Directorate of Public Works
FUB	Facility Utilization Board
FB	Facility Board
GIS	Geographic Information System
JBC	Joint Base Commander
JBLM	Joint Base Lewis-McChord
MPD	Master Planning Division
RPMP	Real Property Master Plan
RPPB	Real Property Planning Board

Facility Board (FB) for a final decision. The FB is the equivalent to a Real Property Planning Board (RPPB) at a Joint Base and is convened monthly. Decisions of the JBC at the FB are not subject to appeal. If approved by the JBC, the variance becomes the governing code for the site in question. It is then recorded in a change log and the GIS database of record is updated to reflect the change. It's also worth noting that Master Planning Division uses this process to make routine updates to the Master Plan when errors in the plan are discovered or when best practices change in urban design and planning that would warrant improvements to the plan and standards.

This leads to the next question: so what? How has this process become a useful tool to the Installation Master Planners? First, it promotes transparency. The public nature of the variance process, with stakeholders and board members, especially at the unit level, participating in the process and given the opportunity to provide feedback on changes proposed to the Master Plan through the process, ensures special interests and "flavors of the day" do not dominate changes to the Master Plan. The process further reinforces that changes to the Master Plan are deliberate and rigorous, adding validity to the implementation of the Master Plan.

The process also promotes interest in the Master Plan by continuing to engage stakeholders and leadership when changes to the plan are required. The presentation of the variance request during a board meeting often draws questions from unit representatives or garrison staff. Continued

## Variance Evaluation Criteria

- 1** **Evaluation Criteria**  
Will the strict application of this Master Plan regulation **deprive the property of rights and privileges** enjoyed by other properties in the same regulating zone or vicinity because of **unusual conditions** applicable to the subject property, including size, shape, topography, location or surroundings, which were **not created by the owner or applicant**?
- 2** Is approval of the requested variance **consistent** with the limitations upon other areas in the vicinity of the subject property to the extent that it does not go beyond the **minimum necessary to afford relief** and/or constitute a grant of special privilege to the applicant?
- 3** Will granting of the requested variance **preserve the public welfare** and avoid materially detrimental or injurious conditions to the property or improvements in the regulating zone or vicinity in which the subject property is located?
- 4** Will the literal interpretation and the strict application of the relevant provisions or requirements of the Master Plan regulations cause **undue hardship** or practical difficulties?
- 5** Would the requested variance be consistent with the **spirit and purpose of the Master Plan** regulations for the area?

community engagement in the planning process is always a desired outcome by planners, as well as leadership.

Finally, it promotes fairness by allowing land use and code disputes to be adjudicated in a public process. Because of the process, more thoughtful decisions are made on issues that will have a long-term impact on the community. By laying out the facts, recommendations, and decisions in writing, emotionally based, "shoot from the hip" decisions that are sometimes made can be avoided.

One final note, this process is a work in progress and is by no means perfect. The Master Planning Division staff





# Implementing the Master Planning Standards: Enhanced Building Design Guidelines

by Nathan Gregory

**H**ow can an installation's Public Works (PW) staff ensure quality design and unified aesthetic principles for all projects, when multiple designers, contracts, and delivery methods are spread out over several years?


In addition to the various neighborhood scale plans and standards required in an Installation Real Property Master Plan, it must also set standards for buildings. Once these standards are established, the real challenge is implementation.

Joint Base Lewis-McChord (JBLM), Washington, PW master planning staff took a new approach by engaging U.S. Army Corps of Engineers, Seattle District, (NWS) designers to produce "Architectural Theme" documents. These were attached to the Requests-for-Proposals (RFP) for every facility in each neighborhood and provided the Designer of Record with coordinated materials, massing, and architectural language for the area. They also provided the installation better control over the final design and a sense of pride in the end product, according to Tom Tolman, Architect and Master Planner with JBLM-PW.

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continues to improve upon it with more frequent use, recognizing that process is more important than the outcome as demonstrated above. The Master Planning staff at JBLM welcomes the opportunity to share its experience in greater detail. For additional information please contact Nathan Kent Harber at [nathan.j.kentharber.civ@mail.mil](mailto:nathan.j.kentharber.civ@mail.mil) or Vince Bozick at [vincent.m.bozick.civ@mail.mil](mailto:vincent.m.bozick.civ@mail.mil).

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While master planning is primarily concerned with urban form and placemaking at the neighborhood scale, the perception of a place is also affected by the proportion, detailing, materials, and scale of the individual buildings that define the neighborhood. In the past, PW staff would insert written requirements into the RFP for a particular project (commonly referred to as "Chapter 6") to outline the materials, form, and detailing, and other local requirements necessary in the offeror's design. Prior experience, however, demonstrated that written standards were subject to broad interpretation and allowed too much variability, causing frequent disagreements about aesthetics during the design and construction phase, often resulting in schedule slippage and increased costs when designs needed to be changed.

When JBLM was on the verge of substantial redevelopment of the East Division Drive and Miller Hill neighborhoods, PW decided to try a different tactic. With dozens of old buildings being demolished and new battalion headquarters, barracks, company operations facilities, and tactical equipment maintenance facilities planned, they needed to be ahead of the game.

Much like a planning or building charrette, NWS architects and designers Tyler Bush, Nathan Gregory, Jennifer Ramirez, and Kyle Shaw initially met with Tolman and fellow PW master planner, Leah Anderson, to look at precedents

Acronyms and Abbreviations	
JBLM	Joint Base Lewis-McChord
NWS	U.S. Army Corps of Engineers, Seattle District,
PW	Public Works
RFP	Requests-for-Proposals

from both on-post and other locations, brainstorm design concepts and discuss goals and lessons from previous projects.

For the East Division Drive neighborhood, a combination of brick with cast stone details, metal panel, and hipped roofs began to emerge as a theme. For Miller Hill, a different color palette of brick and metal was employed, offset by exposed wood struts supporting entry canopies, and gable roofs. For each neighborhood, the designs sought to convey formality, order, permanence, and walk the fine line between historic and modern massing and details. Over the course of a few weeks, the NWS design team developed alternatives and met again with PW to reach consensus. After further refinement, the final document was prepared.

"It's difficult to put an abstract design idea like 'horizontal' or 'permanence' into enforceable RFP language," said Ramirez. "The real advantage of this approach was that we could provide concrete ways to implement these ideas, whether it's by using linear cast stone elements to imply horizontality or a certain proportion of brick to imply permanence. By clearly



*Rendering of a 128-person barracks, produced by NWS designers, shows the materials and detailing required for the facilities in the neighborhood.*



# A Recipe for Master Planning Success

by Matthew Talaber and Jonah Havranek

West Point has found success in building a comprehensive master plan by adhering to three important principles, which include identifying and focusing on areas of emphasis, binding these particular development areas to the overall master planning objective, and integrating flexibility. The marriage of these three principles yields an achievable master plan that recognizes the reality of changing priorities while holding fast to guiding themes.

Our master plan divides West Point into six distinct geographical areas. These six areas each possess unique qualities that demand a tailored approach to planning while also complementing the greater master plan. For instance, our Strategic Outreach Zone encompasses popular visitor destinations and landmarks; therefore, we sought to emphasize the visitor's first impression of West Point in this zone, which in turn invited consideration of capitalizing on visitor-generated revenue. The resultant plan consists of the New Visitor Center project and conversion of an existing housing unit to a supplemental visitor's center located amidst a historic landscape frequented by visitors.

Next, it is imperative to balance specific site development with the overarching master plan objectives. Referring to the Strategic Outreach Zone example again,

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delineating those ideas visually in the designs included in the RFP, we were able to take a lot of the guesswork out of the process for the firms bidding on the project.”

The final “Architectural Theme” document synthesized PW’s goals and ideas into designs that employed similar aesthetic approaches across the various facility types. Rendered elevations and perspective views communicate the design intent; showing materials and colors, but

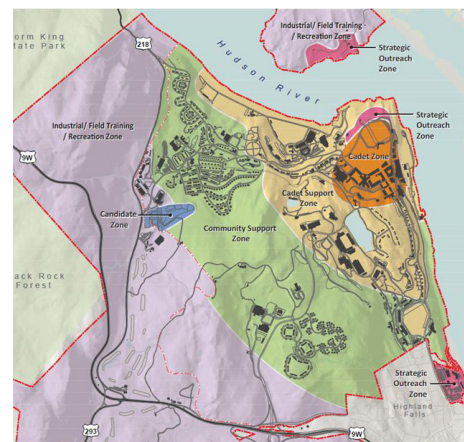
there is a clear link between visitors and our master plan objectives including co-locating like functions, simplifying community engagement, and preserving historic vistas. The Visitor Center location considered community engagement and complements green space preservation. The supplemental visitors’ center places tourist services at the most visited site at West Point and borders historic Trophy Point. Thus, our specific site development preserves part of what matters most. We reinforce the strategic zone where visitors are introduced to West Point, a national landmark. We align visitor expectation with long-term master planning goals. Ultimately, the strategic zones are enhanced through the presence of the Visitor Center.

Historically our master plan has been subject to revision. While the driving principles have remained constant, priorities within each zone have evolved over time. We took this pattern into account when last revising our master plan. For example, within the Cadet Zone we devised at least two planning schemes for athletic fields that could be executed without disrupting the guiding master planning principles. Trying to forecast all possibilities and building a master plan that supports variation saves resources in the long term.

The recipe for master planning success begins with focusing on your highest priority areas and identifying specific

also sizes, proportions, window patterns, unique details, and how the all the elements related to become a cohesive design, consistent with the original vision in the Master Plan.

Now, with many of the buildings in the neighborhoods complete or nearing completion, the architectural themes worked as intended, according to Tolman. “We’ve had great results with these ‘Architectural Themes’ in terms of clearly defining what the installation expects from design teams,” said Tolman. “The end result is what I think are the best buildings on the



Map depicting West Point’s six areas of emphasis, including the Strategic Outreach Zone. (Havranek)

planning goals. Meanwhile, developing these priority areas in concert with the overall master plan promotes unity and harmony throughout the installation. Lastly, account for the inevitability of change and foster a process that allows for future adjustments. Together, these tenets represent a strong framework for crafting a master plan.

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installation since the original historic core structures. It’s resulted in a much smoother interaction between us and the design teams doing work at JBLM, and a consistently higher quality overall. With clear expectations from the beginning, everyone gets along much better.”

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# Implementing the Master Plan through Re-Purposing Facilities

by Mark Gillem and John Burrow

The era of MILCON construction is over. Shrinking budgets, changing priorities, and force reductions point to a different, more cost effective model to meet continually changing needs. While new construction has been a tool to meet new and changing needs, planners have also relied heavily on repurposing old buildings to meet new requirements.

## Fort Hood Case Studies:

Case 1. Albee Hall was an old bowling alley that has been repurposed into regimental brigade headquarters. Installation bowling alleys have been consolidated into one easily managed and more efficient facility. This project eliminated the need for a MILCON project and leveraged consolidation efforts to help balance the TAB.

Case 2. Meadows Elementary School has been repurposed from a school to the headquarters for Fort Hood’s Network Enterprise Center (NEC). Since the local school district funded a new school (and would have paid to demolish the old school), the base was left with two choices: either watch the square footage fall to the wrecking ball or find a compatible user to take over the old school. NEC fit the bill. The old windowless gym was transformed into the server room. Classrooms, located in light-filled narrow wings, became open office areas. And social spaces became break rooms and gathering spots. Occupants have nothing but good things to say about their “new” building.

In addition to these specific cases, Fort Hood planners have also converted a flight simulator into a brigade headquarters, numerous dining halls into offices and culinary arts centers (in total, Fort Hood has repurposed about 35 dining halls), a battalion headquarters into an Army Survivor Outreach center, several company ops facilities into a resiliency campus, an old non-commissioned club into DFMWR headquarters (with some club functions

remaining), a Burger King to the Texas College Culinary Arts Center, an old dependent youth activity center into the 13th Financial Center (admin), an auto skills center into a new library, and a ball park into a dog park. The multitude of examples show that old buildings can be effectively repurposed to accommodate a variety of new uses.

## Lessons Learned:

Lesson 1. Narrow wing buildings like schools or even old dining halls at the end of hammerhead barracks make repurposing more attractive since new users can have ample access to natural light and natural ventilation. This is consistent with the principles in Unified Facilities Criteria (UFC) 2-100-01 (Installation Master Planning).

Lesson 2. Find buildings that have room for growth on the site so that new users in repurposed buildings have opportunities for expansion.

Lesson 3. Prepare for multi-generational use through the use of flexible floor plans and adaptable systems. Yesterday’s bowling alley may be today’s fitness center and tomorrow’s office building.

Lesson 4. Avoid building new facilities with concrete block and load-bearing walls. Build with adaptability in mind by using long spans, few internal load-bearing walls, and minimal columns.

Lesson 5. New facilities should be built to allow for repurposing, like old hammerheads with concrete superstructures. These types of buildings will have the flexibility to create future larger or smaller spaces.

Lesson 6. When reusing old, windowless buildings such as bowling alleys or warehouses, program in funds to add windows when converting spaces. Occupants are more productive, energy costs can be reduced through the use of natural light and natural ventilation, and

Acronyms and Abbreviations	
DFMWR	Department of Family, Morale, Welfare and Recreation
MILCON	Military Construction
NEC	Network Enterprise Center
TAB	Tabulation of Existing and Required Facilities
UFC	Unified Facilities Criteria


public safety can be improved with “eyes-on-the-street.”

Lesson 7. When preparing Area Development Plans, identify buildings that have the qualities that can support later repurposing and that are efficient users of limited land area. Typically multi-story, narrow-wing buildings built with durable materials are candidates for keeping regardless of their current use. However, single-story, windowless, wide footprint buildings with wood or metal studs and sided with short-lived materials (vinyl or exterior insulation and finish systems) may be candidates for future removal.

Lesson 8. Never assume that reprogramming will bust various thresholds (e.g. anti-terrorism/force protection triggers; seismic upgrades, accessibility improvements, or programming limitations). Know the rules. Do the math.

As shown above, repurposing can be a viable approach to supporting sustainability at an installation. By considering the embodied energy in an existing building, figuring out ways to effectively reuse that building can make good planning as well as good economic sense.

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# Going from Good to Great in Planning: Conducting Master Planning Assessments

by Jerry Zekert and Mark Gillem

Being successful requires not only having the knowledge of what excellence is, but also how to achieve it as well as how well you are achieving these goals. This recipe for success applies to the classroom, sporting events and in the workplace. A thorough assessment process can be invaluable to helping to achieve excellence. The best assessments help identify gaps in achieving success but also help identify areas that need improvement.

In the world of master planning, self-assessments can help planners determine what is working and what needs improvement in terms of an installation's master plan. After all, installations need the required plan elements and these elements need to address the appropriate content in order to sustain our missions, environments, communities, and budgets. Fortunately, we have help in identifying both the elements and the content for installation master plans in the form of Unified Facilities Criteria 2-100-01, Installation Master Planning. In addition, the UFC outlines a clear assessment approach based on three tiers.

**Master Planning Tier I assessment:** Used to evaluate if an installation has the appropriate processes, resources, and products in place.

**Master Planning Tier II assessment:** This stage of assessments go one step further and analyzes the content of the

products identified in Tier I to determine if they incorporate the 10 planning strategies found in the UFC. In a Tier II assessment, shortfalls become visible so that they can be addressed in the next round of plan updates.

**Master Planning Tier III assessment:** These assessments focus on analysis of planning at the area development plan level. They are optional per the UFC and go in even greater detail.

Taken together, Tier I, II, and III assessment results can be incredibly useful tools to help planners advocate for the resources necessary for continuous improvement of their plans.

USACE has taken this approach and evolved the assessment process into not only an assessment process but an accredited planning learning event where installation stakeholders along with the USACE team assess together the installation's planning program, understand the standards set forth in the Unified Facilities Criteria and formulate strategies to help resolve any gaps in planning process and products. The assessments typically take no more than two days on-site and are conducted by installation stakeholders who know the plan and know the mission. The planning assessment facilitators educate the stakeholders about the UFC and service planning processes and walk them through the assessment protocol. At the end of these highly collaborative workshops, which are accredited training events, participants brief their leadership on their findings and outline needed plan updates. Installations receive a final report documenting the assessment findings, the planning efforts that need to be completed and a programmatic estimate required for the effort. This affordable option really helps installations to understand requirements for managing a successful program, as well as the most important actions needed to achieve success and develop an implementation plan for excellence.

Since all Department of Defense installations must have UFC-compliant


Acronyms and Abbreviations	
HQ	Headquarters
NAVFAC	Naval Facilities Engineering Command
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers

master plans no later than 1 October 2018, these assessments can be quite useful in helping installations identify what is needed to meet the deadline. The objective of assessments should not be to simply identify failure but rather to identify room for improvement. Results should then be used to advocate for the resources needed to make these improvements happen.

HQ United States Marine Corps has recognized the value of the master planning assessment process and have brought together a team from USACE, Naval Facilities Engineering Command (NAVFAC) and the Marine Corps bases to conduct installation-wide planning assessments. This process is on-going, but already the participating Marine Corps bases have identified areas that need improvement, and developed a roadmap for success. They have also been able to leverage these assessments to broaden throughout the Marines a better understanding of installation planning and its importance to supporting Marines worldwide. With better plans in place, installations will be better prepared to address today's known requirements and tomorrow's unknown future.

Installations interested in facilitated self-assessments can contact the article POC for more information.

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USMC Master Planning assessment team at Camp Butler Japan. (Zekert)



# Integrating Low Impact Development Storm-Water Management with Development Planning at Historic West Point

by Jim Frisinger

In 1802 President Thomas Jefferson authorized building the U.S. Military Academy at West Point on the heights where Polish military engineer Thaddeus Kosciuszko had built Army fortifications in 1778 to block British movement on the Hudson River. The U.S. Army Corps of Engineers (USACE) is now supporting the Military Academy’s mission to “educate, train and inspire the Corps of Cadets” by tackling modern storm-water runoff issues and improve upon this awesome historic landscape as West Point develops into its third century.

Today the 2,000-acre main campus cantonment area has a daily population of 12,400 and graduates 4,500 cadets a year. The U.S. Army Garrison (USAG) at West Point, the nations longest continuously occupied military installation, is using USACE to integrate 21st century environmental technology into its vision for a growing campus in its 20-year development plan.

Storm-water runoff complications include steep topography and impermeable soils, both being design constraints at West Point. Adding to the complication is the shortage of good mapping of buried utilities and stormwater collection points, and the aging wastewater treatment system” West Point struggles to maintain this aging

storm-water infrastructure, which results in erosion and pollution downstream. Storm-water pressure on the historic and aging infrastructure of West Point required a systematic approach with regard to green infrastructure planning, an approach to managing storm water by infiltrating it in the ground where it is generated using varying practices including enhanced natural systems.

Under Section 438 of the Energy Independence & Security Act (EISA), West Point as with all federal agencies must maintain predevelopment hydrology of a site under development to ensure receiving waters are not negatively impacted by changes in runoff rates, volumes, durations and temperatures.

In the nearly completed 16-month Low Impact Development (LID) Storm Water Management Plan (SWMP), USACE identified cost-effective green technology opportunities to manage storm water runoff. The project team led by USACE Engineer Research and Development Center, Construction Engineering Research Laboratory (ERDC-CERL), drew upon the USACE Fort Worth District’s extensive experience. The team had previously participated in the development of the LID Guidance Manual and training for USACE Districts and military installations, funded by the Assistant Secretary of the Army for Installations, Energy and Environment. USACE collaborated with Henningson, Durham and Richardson Architects and Engineers to create a combined team of agronomists, landscape architects, historic landscape architects, and civil and agricultural engineers.

“Integration of LID technology with historic architecture and historic landscapes is a unique challenge most installations don’t have to deal with,” said Heidi Howard, research agronomist at ERDC-CERL. “So we’ve had to not only

Acronyms and Abbreviations	
ADA	Americans with Disabilities Act
DPW	Directorate of Public Works
EISA	Energy Independence & Security Act
ERDC-CERL	Engineer Research and Development Center, Construction Engineering Research Laboratory
LID	Low Impact Development
SWMP	Storm Water Management Plan
USAG	U.S. Army Garrison
USACE	U.S. Army Corps of Engineers

address security issues and Americans with Disabilities Act (ADA), but the historic aspects.”

West Point’s campus is a historic district and National Historic Landmark where some of the landscapes were designed by Olmsted Brothers a century ago. These landscapes surround historic staff and cadet housing, and pervade design of such iconic locations as the Plain, the Flirtation Walk, Buffalo Soldier Field and Kosciuszko’s Garden. Adding complexity is the 200 years of West Point development: buildings were built upon buildings – and also built upon landfills across the installation. Historic buildings and landscapes, as well as the rocky coastline of the Hudson River, present interesting challenges for the team as they utilize Low Impact Development technologies based on a landscaped approach.

As the project draws toward the finish line, the team has compiled a list of concrete recommendations to USAG at West Point. Together, the recommendations integrate LID concepts into the master planning process. These green planning principles and concepts are now available early in the project design cycle and not a last-minute consideration. The recommendations will significantly reduce runoff pressure on the wastewater treatment system.

Concept design plans were developed ➤



*Aerial view of West Point*



# Planning and Designing the Built Environment for Military Resiliency

by Andrea Stolba

American military bases are beset with a multitude of complex planning and urban design inadequacies. Technocratic urban forms, the prioritization of vehicular movements, the absence of community centers, and sprawl create degraded social interactions, increased vehicular traffic, and place a tremendous burden on residents and resources. Encouraging strong, motivated military units is dependent on the relationship of facilities, unit cohesion, and the connection of the Service Member and Families to their neighborhood. The goal of military planning and design should be to craft cohesive identity, promote positive interactions, and enable voluntary Service Members to train, deploy, live, and raise their families with a quality of life commensurate with the extraordinary demands of the American military.

The human experience is greatly affected by the layout which determines circulation, adjacency, distance and speed of travel and aesthetics of a city's urban fabric and public spaces. Cultural connections, civic vitality and natural movements are predetermined by urban design; improving the setting for the experience is critical to creating the desired outcome. A defined vision,

articulated through architecture, landscape design, and infrastructure, sets the stage for the user's experience. Bridging the gap between individually allocated projects and the comprehensive urban planning and design of American military bases can foster the vibrant, walkable, and desirable communities that Service Members and Families deserve. Improving the quality of public spaces and community centers to resemble what has been achieved in revitalized cities across the nation enhances the Department of Defense's ability to retain experienced Soldiers, Marines, and Airmen and to provide them with an appropriate quality of life through their environment.

A multitude of studies have been conducted on the sociological importance of communities, public spaces and urban design; however, the application of this well researched topic to American military bases has sparsely been undertaken. Military bases are enclaves that house and employ hundreds of thousands of American Service Members and their Families and are connected to the infrastructure and environment of the region. The revision of the Master Planning doctrine, Army Regulation 420-1, Chapter 10, attempts

to establish a platform for the planning, design and retrofit of dozens of military bases in parallel with that of revitalized cities and suburbs across the nation.

The economic adversity that faces today's military construction requirements should further emphasize the importance of comprehensive planning that enables the development or redevelopment of a built environment over time to achieve a collective vision for a place. The establishment of comprehensive design principles should be embraced and prioritized by senior executive leadership as it reinforces the strong values already instilled in the culture, training and organizational components of the military. A shared concern and appreciation for the military community improves the quality of life for Service Members and their Families as well as enhances the Department of Defense's ability to attract and retain a qualified and experienced workforce.

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for sites that were vetted during a USACE-led design charrette with West Point personnel, including cadets, to demonstrate the feasibility and benefits of green infrastructure technologies. One of these plans, ranked highest based on specific criteria, will be brought to full design for short-term construction. As a result of the team's involvement with the faculty and staff, project members were invited as guest lecturers to the cadets' Water Resources Planning and Design class.

The achievements of this LID SWMP may have a national impact. The program is on the radar of Assistant Secretary of the Army for Installations, Energy and Environment Katherine Hammack. USAG's Directorate of Public Works (DPW) is well-integrated into the user community and talks to other installations. This project will serve as a pilot in the development of a process for SWMPs that can be replicated at other federally owned or operated facilities.

"The Fort Worth District has presented ideas that expose the storm water in

the landscape while filtering it non-mechanically before it reaches the Hudson River," said Matthew Talaber, director, USAG DPW. "West Point is excited about the possibilities being considered."

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# Why Windows? The Value of Natural Light in Master Planning

by Jerry Zekert and Courtney Cross

The common depiction of dank windowless cubicle ‘farms’ in popular media certainly suggests workplaces that lack natural light are generally unfavorable. However, a growing body of research suggests that exposure to natural light at work is not merely preferable it is actually crucial for human health and productivity.

A 2011 study conducted at the University of Oregon, found employees in workplaces with poor daylight took substantially more sick leave hours. Additionally, a strong association has also been found between lack of exposure to daylight in the workspace and physiological, sleep and depressive symptoms. Participants at a 2014 study in Brazil were broken into two groups, half with access to a window and half without. Those with access to a window had higher cortisol levels and lower melatonin levels at night, which correlated with poor sleep quality, depressive symptoms and other psychiatric disorders.

Several corporations have conducted workplace studies on the effect of natural light in their offices. Lockheed Martin found a 15 percent boost in contract productivity when daylighting was integrated into their offices in Sunnyvale, California. Los Angeles based Verifone, Inc. had a 25-28 percent increase in total product output and a 5 percent boost in productivity, when workers moved to a daylit distribution center. According to two different 1998 reports, attention tests found that people with windows with natural views of vegetation scored higher and natural light alone was found to increase alertness with monotonous work.

Daylighting can also significantly reduce building energy use and associated utility costs. National Renewable Energy Laboratory in 2007 established the goal that their new Research Support Facility would use half the energy of a typical

large office building. The building width varied between 50 and 60 feet. Daylighting was a key factor driving the energy reduction since lighting typically represents 30-40 percent of a commercial building’s total energy use. Engineers for this project were able to use daylight to reduce lighting power densities. The estimated lighting Energy Use Intensity is 7 percent of the as-built energy model, a reduction of over 23 percent from standard construction.

Therefore, in order to support optimum human health and productivity as well as reduce building energy use, it is vital to plan facilities that have ample access to daylight. This is best initially supported at the master plan level by showing notional footprints for most facilities at about 50 feet wide. Of course, hangars, warehouses, shopping centers and other large floor plate users have different needs but for most military buildings – from offices to barracks to townhomes, 50 feet is an ideal width for providing the maximum interior workspaces with access to windows. In general, roughly an area within the first fifteen feet from an exterior window receives optimal daylight, so in a 50 foot wide building, 30 feet benefit from natural light. The remaining interior portion of the facility can be used for services such as restrooms, storage and hallways where occupants do not spend as much time, or these areas can also be optimized with light wells for expanded daylit area. This is one reason why so many master plans show narrow wing buildings, from the new plan for downtown Fort Worth to Fort Hood’s long-range master plan.

The use of windows will not only enhance our mission by improving productivity, but they support several master planning strategies from Unified Facilities Criteria 2-100-01 (Installation Master Planning) including: sustainable



*Many older buildings, including this one at Fort Sill, were designed with narrow wings and numerous windows so that all occupants could have access to natural light and cooling breezes.*

planning that calls for narrow wing buildings just for the reasons described above; healthy community planning that calls for creating healthier environments for our Soldiers and their families; and defensible planning that calls for more natural surveillance by using “eyes on the street” which is best supported by buildings with (appropriately strong) windows facing the street.

But none of this is really new. Many of the military’s oldest buildings used narrow wings, from the historic quad barracks at U.S. Army Garrison Hawaii to the historic classroom buildings at Fort Belvoir, narrow wing buildings make great places. So, planners should:

- Use narrow wing footprints of about 50 feet wide for most notional buildings on their master plans
- Put width and window require- ➤





# Why Trees? The Value of Street Trees in Master Planning

by Jerry Zekert and Courtney Cross

**V**isual preference surveys consistently show that people have a strong preference for places with trees.

When people think of great streets, trees are always an attribute. The value of trees is much greater than purely aesthetic, though that is definitely a factor; trees provide safety and shade and compounding benefits are associated with each of these characteristics.

**Safety Benefits.** A 2008 study by the Texas Transportation Institute building upon over a decade of evolving research indicates street trees greatly improve roadway and pedestrian safety, as well as enhancing pedestrian comfort and walkability. Street trees create a visual edge to the driving environment, thus providing both a visual and physical buffer to protect pedestrians. Psychologist Daniel Berlyne's research suggests that the rhythm of street trees also provides an optimal visual complexity, which could enhance driver attentiveness to the streetscape. If you want to slow traffic and improve pedestrian safety, then plant street trees at regular intervals.

**Energy Benefits.** According to a 1985 study of microclimates in urban centers, the canopy of a tree intercepts approximately 90% of solar radiation, decreasing temperatures by up to 41 degrees Fahrenheit. Trees help maintain

cooler microclimates and reduce the urban heat island effect. Shading pavements and cladding increases the lifespan of materials due to reduced thermal exposure. According to Dan Burden's article on the 22 Benefits of Urban Street Trees, street trees that shade buildings can improve building energy use and reduce utility costs by 15-35%. Comfort of pedestrians and building occupants is also improved when people too are less subjected to direct sun exposure, improving walkability and outdoor comfort. Tree canopies slow the fall of rain, which reduces infrastructure expenses from storm-water runoff, and also provides some shelter from storms.

**Social Benefits.** From a social standpoint, a three-year study by the American Planning Association showed that trees reduce stress and aggression. This means that trees can help improve resiliency on installations. This may be one reason why the former Commanding General at Fort Bliss, Major General Dana Pittard, ordered his staff to plant 20,000 trees at the installation. Fort Hood has also embarked on an impressive tree planting program and has been named a Tree City USA. Trees enhance the character of outdoor spaces and improve views. A study of Chicago public housing conducted in 1997 at the University of Illinois showed that green spaces with trees reliably drew larger groups of people and a greater diversity of ages than places without trees. This suggests that natural features, like trees, are vital to the success of outdoor spaces.

**The Master Planning Impact.** Street trees will help installations meet key master planning strategies including sustainable planning and healthy community planning. Trees will also help installations meet the FY13 National Defense Authorization Act requirement for more sustainable design and development. Hence:

- Planners and landscape architects should prioritize street trees over almost all other landscape elements.
- Where appropriate, street trees should be included in programming documentation.




*Majestic street trees at Wheeler Army Airfield shade the streets, sidewalks, and historic buildings along Wright Avenue.*

- Master plans should show street trees on almost all roads on an installation. Rather than spend money on complex shrubs, specimen trees, and ground covers, just plant street trees.
- In order to boost the efficacy of shading, specify trees with a dense canopy and a high branch height. Low maintenance varieties with deep root structures, which produce less debris, are advisable to keep roadways and sidewalks clean. Native or climatically adapted species will require less water and be more likely to mature and flourish.
- For optimal coverage, trees should be planted at regular intervals, 25' to 30' on center, along as many streets as possible, but at minimum in publicly used and high-traffic areas.
- Planting trees between curbs and sidewalks is best since, from this location, trees can help shade both the street and sidewalk.

So next time you look at a tree on your base, don't think of its beauty first, think of its ability to reduce energy costs, capture stormwater, enhance pedestrian safety, and improve the social environment.

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ments in Installation Planning Standards

- Participate in design reviews to make sure that the width and window requirements are followed in detailed designs

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# Army Corps Planners Helping Propel Johnson Space Center to the Next Generation

by Jim Frisinger

*While Department of Defense installations have been working to transform their base master plans to meet new DOD, and Service-specific planning guidance, other federal agencies have learned from our successes and have adopted the DOD master planning protocols for their organization. One such agency is the National Aeronautics and Space Administration (NASA). This article describes the amazing master planning journey for the Lyndon B. Johnson Space Center in Houston, Texas.*

When you hear the word NASA, you typically equate astronauts and rockets, not master development plans. Yet, NASA is known for its master plans and long-range vision – it took a decade to build the International Space Station. The Fort Worth District U.S. Army Corps of Engineers has been enlisted to help NASA's Lyndon B. Johnson Space Center (JSC) develop an 18-month master plan for its center that will prepare the center facilities for the next generation of human space flight.

JSC is home to astronaut training, U.S. human spaceflight Mission Control Center, the International Space Station program office and the Orion Multi-Purpose Crew Vehicle office, part of NASA's deep space exploration mission. Built in 1960 and still home to many of those early facilities, the Johnson Space Center (JSC) has spent the past two years assessing the "health" of the facilities and working to meet federally mandated energy and water use reductions, along with evaluating the climate uncertainties of being housed on the Texas Gulf Coast.

The 18-month master planning process is set to be completed by December 2015 and covers facilities in Texas and JSC's sister facility in New Mexico. The plan covers about 100 buildings at the JSC. This master planning support effort is part of the center's JSC 2.0 charter, a center-wide effort to transform and ready the center for the next generation of human space

flight. The JSC 2.0 charter asks center employees to visualize a facility -- if built today -- that would best meet the goal of being a leading global enterprise in human space exploration that is sustainable, affordable and benefits humankind. "The work that we are doing centers on this idea of transforming JSC. All that we're doing revolves around where we want to take the center in the next 20-plus years," said Perry J. Bennett, the master planner at JSC.

Tight deadlines and limited in-house resources compelled the JSC planning team to look outside for support, according to Matt Kenney, a facilities master planner and engineer at NASA's White Sands Test Facility, who is also working on the project. The Fort Worth District team of Dr. Rumanda Young, master planning section chief of the district's Regional Planning and Environmental Center (RPEC) and Army Corps of Engineers Southwestern Division energy development manager, along with Susan Wolters, RPEC landscape architect, met with JSC officials to explain the program. Instead of the six-month to 12-month acquisition process to hire private consultants NASA JSC expected, signing up the Corps took two months, putting its planning team on better schedule. In fact, early on, the Corps team identified specific sustainability measures NASA could take in the short term.

The JSC team learned of RPEC from the reputation of the Corps' work in Galveston and Houston, as well as at Fort Hood and Joint Base Pearl Harbor-Hickam. In particular, JSC was impressed with the Fort Worth District's work on sustainability/energy effort on military installations. "In reducing dependency on water and energy demand, the Corps has been at the forefront," said Bennett. "Their reputation is well-known."

Today, all federal agencies are under mandates to meet certain sustainability and energy goals. In addition, the Corps also has a ready understanding of the type of master planning requirements outlined

Acronyms and Abbreviations	
ADP	Area Development Plan
DOD	Department of Defense
JSC	Johnson Space Center
NASA	National Aeronautics and Space Administration
RPEC	Regional Planning and Environmental Center

in NASA Document 8810, according to Bennett. Those include reducing footprints, climate control, historic preservation, how to go about design and new construction, demolition and disposal of outmoded facilities. It also requires the National Environmental Policy Act process is imbedded in its master planning. The final master planning document, Bennett said, will be a "living, breathing" strategic document applicable for future projects and programs.

The Corps was also asked to integrate into the JSC's long-term master planning process NASA's Climate Risk Management Plan. By policy, NASA pushes to the local center level the responsibility to manage the risk of these impacts. The NASA handbook on requirements also sets up responsibilities the agency has to be good stewards of the environment by lessening the impact of its operations.

Located near Galveston Bay, JSC is susceptible to the tidal impacts and winds from hurricanes in the Gulf of Mexico. JSC, as it builds new support facilities, includes sustainability and development plans which will enable NASA JSC to respond to the still unknown risks from climate change in decades to come.

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# Implementing the Master Plan - Using Area Development Execution Plans

by Kristina Manning and Tricia Kessler

Although a complete and compliant Master Plan might be considered a pinnacle of the planning process, Fort Hood's planning division advances a step beyond the Master Plan by producing Area Development Execution Plans (ADEPs). The ADEPs help implement Plan-Based Programming, one of the 10 Master Planning Strategies outlined in UFC 2-100-01, Installation Master Planning. They also tie Planning to Engineering within DPW; Fort Hood's Comprehensive Army Master Planning Solution (CAMPS) program makes the process even easier.

Plan-based programming is a tenet of DOD budgeting—the Planning, Programming and Budgeting System (PPBS) links requirements to the Fiscal Year Defense Plan (FYDP), through which all major Defense initiatives are funded. The first step in the process is creating the plan—what is it we want to do, make or acquire? The second step, programming, defines what we need to do to get there. The effectiveness of the first two steps helps achieve the third—funding for the plan. Ironically, in the world of Master Planning, we too often resort to generating a plan from a known program. We have a facility requirement—where can we site it? The program exists, but it is not tied to a physical, visible plan, and does not support a Master Planning vision. ADEPs ensure that the program is based on the plan.

An ADEP identifies all project requirements necessary to execute the Master Plan; these project requirements can be executed individually, or combined to form a larger project.

To create an ADEP, planners overlay a grid onto an ADP or the installation. At Fort Hood's Visioning Workshop in January 2011, stakeholders divided the installation into 11 districts. Over the next three years, we created Area Development Plans (ADPs) for each district, and over the past year, we used the ADPs to make an ADEP for each district. We laid a 1650' x 1650' over the entire installation, so each of

the ADEPs for the 11 districts correspond to the ones around it; the number of parcels in each district range from 34 to 63. We then evaluated each parcel to determine the projects required to execute each aspect of it: all demolition, building construction, and horizontal construction including streets, sidewalks, parking lots and greenspace. By dividing horizontal construction like streets and sidewalks into segments, an entire street can be executed as one project or as a part of another project. Sidewalks can be executed as a part of a major sidewalk initiative, or in conjunction with other horizontal upgrades in a smaller area.

Each parcel has a technical plan, which indicates horizontal and vertical demolition and construction. Details of each project requirement, such as type, location, size, current working estimate, etc, are recorded in spreadsheets, which can be used to consolidate projects. Because DPW Planning provides the project requirements to DPW Engineering, Master Plan execution is combined with other previously identified SRM and MCA projects, ensuring that the Master Plan is the basis for programming at Fort Hood.

After we completed all ADEPs, Mr. Brian Dosa, Director of Public Works, convened a workshop to prioritize all the major projects on Fort Hood. By district, we identified the most important projects, and then combined the list to rank SRM, MCA and alternative funding projects throughout the installation. This prioritized list also keeps the Master Plan in the forefront of programming process.

Several years ago, Fort Hood developed a computer-based program, CAMPS, which supports master planning, design and engineering decisions at the installation level using interactive software. By uploading ADEP data to the program, planners and engineers can access the ADEP information to prioritize requirements and projects within any of Fort Hood's 11 districts.

Acronyms and Abbreviations	
ADEP	Area Development and Execution Plan
ADP	Area Development Plan
CAMPS	Comprehensive Army Master Planning Solution
DOD	Department of Defense
DPW	Directorate of Public Works
FYDP	Fiscal Year Defense Plan
MCA	Military Construction, Army
PPBS	Planning, Programming and Budgeting System
SRM	Sustainment, Restoration and Modernization
UFC	Unified Facilities Criteria

Plan-Based Programming is one of the 10 requisite strategies of Master Planning delineated in UFC 2-100-01. It is also the root of DOD requirements generation, because it ensures that a product is based on a vision. By creating ADEPs that flow from ADPs, Fort Hood guarantees that our program requirements are based on the plans that follow our Master Plan Vision: The Great Place with accessible campuses, walkable small towns, and modern, energy-efficient infrastructure.

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# Regional Planning Support Centers: Great Resources for Master Planning Technical Support

by Jerry Zekert

**U**SACE recently streamlined master planning by creating Regional Planning Support Centers (RPSC) to provide technical planning services. The nine USACE Regional Planning Support Centers, with their wide range of capabilities and customers, are as follows:

## NORTH ATLANTIC DIVISION

Regional Planning Support Center-Europe District

Lead: Mr. Paul Mason

The planning team is composed of a cadre of engineers, architects, and GIS/mapping experts who are supported by a large staff of architects, engineers, environmental, and other technical experts with extensive knowledge of U.S. regulatory requirements as well as European/African norms, standards, and practices.

Current master planning projects include comprehensive master plans for several garrisons, large restationing feasibility studies, net zero energy, waste and water studies, facility condition assessments, facility utilization and space allocation surveys, GIS development, mapping (through multiple technologies), and about 20 planning charrettes. The primary customers of the Europe District are the larger Army Garrisons in Germany, Italy, and Belgium as well as the Air Force bases in Portugal, Spain, England, Germany, Turkey and Italy. Other planning initiatives include missile defense, contingency operations sites, and NATO initiatives throughout Eastern Europe. Planning within the Europe District can be a mixture of creativity and diplomacy as we work to contribute to peace and stability on these two continents.

Regional Planning Support Center-Baltimore District

Lead: Ms. Beth Santos

The Baltimore District team is developing Master Plans, Vision Plans,

and Area Development Plans at Watervliet Arsenal, Tobyhanna Army Depot, and Letterkenny Army Depot; and supporting facility utilization surveys at Aberdeen Proving Ground, Carlisle Barracks, and Fort Meade. Current planning and programming efforts include requirements analysis studies, planning charrettes, and DD1391 development for projects at Carlisle Barracks and the National Defense University.

## SOUTH ATLANTIC DIVISION

Regional Planning Support Center-Savannah District

Lead: Mr. David Futrell

The team consists of architects, landscape architects, site civil engineers, and community planners; all with extensive military Master Planning Experience. The majority of master planning support is accomplished by in-house teams which provide DOD clients project a high degree of flexibility and personal service at reasonable costs. Master planning and programming capabilities consist of Planning Charrettes and DD1391, Facility Requirements Analysis, Installation Design Standards, Utility and Traffic Studies, Real Property Master Plans, Area Development Plans\*, Space Utilization Studies\*, Installation Status Reports/Facility Condition Surveys\*, Project Site Planning and Alternative Siting Analysis\*, and Energy Conservation and Alternative Power Studies (\* Parts of an Energy Conservation and Alternative Power Study). Master Planning Services have also been provided at DOD locations in Kuwait, Afghanistan, Guantanamo Bay, and Honduras. Currently, we are serving Fort Gordon with two on-site Master Planners supporting Cyber Command Road to Growth Master Planning actions.

Regional Planning Support Center-Mobile District

Lead: Mr. Brian Peck

Current efforts include: a Vision Plan

Acronyms and Abbreviations	
AFB	Air Force Base
DD	Department of Defense (forms)
GIS	Geographic Information System
NATO	North Atlantic Treaty Organization
RPEC	Regional Planning and Environmental Center
RPSC	Regional Planning Support Centers
USACE	U.S. Army Corps of Engineers

& Area Development Plan for Fort Irwin, California; a Vision Plan for Anniston Army Depot, Alabama; and Facility Utilization Studies at U.S. Military Academy at West Point, New York. We are currently managing over 30 Installation Complex Encroachment Management Action Plans for the Air Force's encroachment management and master planning program. In addition, we are currently managing Air Force Community Partnership Initiative projects at several installations.

Similarly, Installation Compatible Use Zone and Criteria is underway to establish and codify compatible land and resource use criteria at Warren Air Force Base (AFB), Malstrom AFB, and Minot AFB.

## LAKES AND RIVERS DIVISION

Regional Planning Support Center-Louisville District

Lead: Mr. Mark Real

This core group of community planning, architectural, landscape architectural, and civil engineering experts serve primary clients at Fort Campbell, Fort Knox, Scott AFB, Wright-Patterson AFB, Detroit Arsenal, Rock Island Arsenal, Crane Army Ammunition Activity, Bluegrass Army Depot, and Defense Supply Center-Columbus. In addition, the Center has facilitated planning and programming assistance in other U.S. and overseas locations such as the Pacific Ocean, Saudi Arabia, Korea, and Europe, either



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as an independent in-house team or in partnership with other RPSCs. Military planning and programming expertise is also made available to the Army Office of the Assistant Chief of Staff for Installation Management, G3/5/7, G4, and G8 by virtue of this team's long standing service to the Combat Readiness Support Team. Products include Vision Plans, Area Development Plans, Illustrative Plan, Requirements Analyses, Project Site Plans, Planning Charrettes, Parametric Design Report Review, Economic Analyses, and DD1391.

#### SOUTHWEST DIVISION

Regional Planning Support Center- Fort Worth District

Lead: Dr. Rumanda Young

Fort Worth District is home to the Regional Planning and Environmental Center (RPEC), which supports five mission areas: Military Master Planning, Interagency and International Services Master Planning, Energy and Sustainability, Research and Demonstrations, and Operations Master Planning of recreation and natural resources for U.S. Army Corps of Engineers lakes. RPEC also supports USACE Headquarters as the Planning Support Center for Southwestern and Pacific Ocean Divisions.

RPEC Master Planning Support Center provides centralized services for implementation of Planning and Program Management support for Energy, Facility, and Site Planning. This support includes: Unified Facilities Criteria compliant master planning documents, renewable energy planning and installation, sustainability plans, energy audits, facility condition assessments, infrastructure planning, transportation plans, and 1391 program development.

Some of the most notable programs

RPEC Master Planning executes include planning and energy projects for the : U.S. Marine Reserve Forces, , Defense Logistics Agency, National Aeronautics and Space Administration, U.S. Army Garrison - Hawaii, Fort Hood, Fort Polk, the Environmental Security Technology Certification Program, and the Energy Visualization program in partnership with the U.S. Army Corps of Engineers' Engineer Research and Development Center, Construction Engineering Laboratory.

#### SOUTH PACIFIC DIVISION

Regional Planning Support Center- Sacramento District

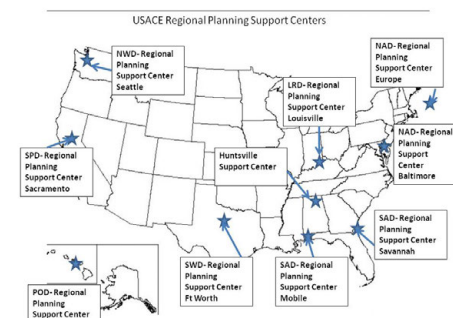
Lead: Mr. James Oliver

The Sacramento District has experience with DD1391's, Facility Utilization Study, Area Development Plans, Vision Plans, Installation Design Guides, Real Property Master Plans, Installation Development Plans, Energy Studies, Traffic Studies and Utility Studies. The District is innovative and develops new planning products such as the Installation Sustainability Assessment and the Installation Design and Development Guide, the Installation Complex Encroachment Management Action Plan, Traffic Control Management Systems – to include traffic sign retro-reflectivity. The Sacramento District has supported Major Command level clients for years and has two world wide Architect-Engineer Indefinite Delivery Indefinite Quantity's vehicles for master planning and GIS. The Sacramento District, along with the Fort Worth District, support the Pacific Ocean Division's planning activities.

#### NORTHWESTERN DIVISION

Leads: Ms. Laura Kemp, Mr. Bruce Hale, Mr. Jonathan Petry, Mr. Mike Jerina

Northwestern Division is a Virtual Master Planning Support Center using expertise from each Military District, which results in flexible staff able to



respond to changing workload, identify technical specialty teams from within three districts' significant resources, and maintain strong connections with installations.

Recent projects include Site Utilization Plan/Facility Requirements Analysis for Chief Joseph Dam and West Facilities Modernization Master Planning for the National Geospatial-Intelligence Agency.

Technical Specialty Teams with members from each district provide leadership for Vision and Sustainability Charrettes and expertise in Visualization Graphics, Technical Writing, Transportation, Utilities, Landscaping, Cost Estimating, GIS Data, and DD1391 preparation.

#### PACIFIC OCEAN DIVISION

Regional Planning Support Center- Pacific; Fort Worth District and Sacramento District

Lead: Mr. Stan Wakamoto with support from Dr. Rumanda Young and Mr. James Oliver

Pacific Ocean Division utilizes reach-back capabilities from Fort Worth and Sacramento Districts to provide master planning and programming services to installations.

#### U.S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE

Lead: Ms. Sally Parsons

Our world-wide scope creates enterprise-level support and the ability to coordinate complex projects across multiple geographic regions and organizations. Huntsville ➤



## Enterprise Military Housing (eMH), Correcting the Data: The Inventory and Utilization Process

by Shenise L. Foster

The Enterprise Military Housing (eMH) system is the database of record for all Department of Defense (DOD) housing assets worldwide. This common process database system allows for the Office of Assistant Chief of Staff for Installation Management (OACSIM) to make sound strategic investment decisions for government-owned and managed Family and Unaccompanied Housing assets across the Army portfolio. Among the many modules within eMH, one that is highly beneficial is the Inventory and Utilization (I&U) module. This allows all garrison housing offices to correct, validate and approve all facility data that is currently displayed in the system.

So what is the purpose of the inventory and utilization period? This opportunity allows the garrison housing offices to run data quality checks to ensure that the footprints for Family and Unaccompanied Housing are correctly being represented within eMH. It also allows Headquarters staff (i.e. Installation Management Command [IMCOM] and the Office of the Assistant Chief of Staff for Installation Management [OACSIM]) to know what information is being corrected in order to cross walk it with other real property database systems such as the Headquarters Installation Information System (HQIIS) and the Real Property Planning and Analysis Systems (RPLANS). If erroneous

information is found within eMH, it is the responsibility of the garrison housing office to submit an inventory change request (ICR) to the eMH Support Office for correction.


How does this affect eMH? When garrison housing offices validate and have their information approved at the Headquarters level, two major components of the system are improved. The first is the reports module that can be accessed in eMH. The garrison housing office will have the ability to view and print adhoc and roll up reports to assist in decision making. In order for the reports to be seen, all installations must complete the I&U process during the specified time allotted. Another affect of validating the I&U data is the improved accuracy of the quarterly and annual reporting for the Installation Status Report (ISR) Services section. The OACSIM pulls certain data fields from eMH to answer the designated top loaded questions for the ISR Services section as they relate to Family and Unaccompanied Housing and brief these results to the Assistant Secretary of the Army, Installations, Energy & Environment.

What is the housing office's role? It is imperative that each garrison housing office participate in the I&U process by attending the online training sessions and validating all information during the specified time period. Online training clips and outreach

Acronyms and Abbreviations	
DOD	Department of Defense
eMH	Enterprise Military Housing
HQIIS	Headquarters Installation Information System
I&U	Inventory and Utilization
ICR	Inventory Change Request
IMCOM	Installation Management Command
ISR	Installation Status Report
OACSIM	Office of the Assistant Chief of Staff for Installation Management
RPLANS	Real Property Planning and Analysis Systems

messages are available in eMH for reference as well. The eMH Support Office is available via email at emhsupport@aemcorp.com or by phone at 1-800-877-8503.

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### REFERENCE

Department of Defense Memorandum, Enterprise Military Housing Information Management System, 16 April 2014

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Center is also a Center of Expertise for DD Forms 1391 and Project Definition Report/Engineering Form 3086 support.

Our customers include the Office of the Chief of Staff for Installation Management, Army Reserve Installation Management Directorate, Installation Management Command and Network Enterprise Technology Command. Three of our projects recently received awards from the American Planning Association:

an Area Development Plan for Guam, Saipan, and American Samoa; an Area Development Plan for Schofield Town Center; and the Logistics Readiness Center Project Definition and Validation Plan. The project is the first initiative of its kind. Current master planning projects include Soto Cano Airbase, Honduras, and delivery of five DD Forms 1391 for a chapel, maintenance facility, Tactical Equipment Maintenance Facility, barracks, and rotary wing hangar project in support of Joint Task Force Bravo. The Huntsville Center initiated a master planning analysis of the

entire Portsmouth Naval Medical Center complex in Portsmouth, Virginia, which includes the development of a master plan, health care requirements analysis, concept of operations, in-source versus out-source analysis, capital investment strategy and other analyses.

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Jerry Zekert is the chief of the Master Planning Team at Headquarters, USACE. 



# Inventory Control Management for Government-Owned Army Family Housing

by Tacoma R. Anderson

Sound real property and inventory control management is a vital part of the Army's Housing Program. The inventory management systems that are being implemented and utilized at each level of the Army are currently driving the funding requirements for the maintenance and repair (M&R) of the organization's facilities. In addition, the management of real property is used in accordance with the Facility Investment Strategy (FIS) to determine future military construction projects that will eliminate inadequate homes from the inventory, while providing leverage to invest in enduring facilities. The Army's overall goal is to reduce cost through reduction of inadequate and excess inventory. Effectively managing the housing inventory program ensures we provide our Service members and their Families homes that are functional and well maintained.

The FIS provides strategic direction to installation commanders for managing their sustainment, modernization, restoration, reduction, and demolition programs. It helps commanders manage the resources under their authority in a way that achieves the organization's mission and also builds public trust.

Accurate housing inventory is crucial to the success of the Army Housing Program and is the foundational factor for determining budget requirements. The inventory and other data reported in databases such as the Enterprise Military Housing (eMH), the Real Property Inventory (RPI), the Real Property Planning and Analysis System (RPLANS), the Installation Status Report – Infrastructure (ISR-I) and the Headquarters Installation Information System (HQIIS) are used for the purpose of planning and programming future budget requirements.

The primary real property source systems from which HQIIS receives data are the General Fund Enterprise

Business System (GFEBs), the Planning Resource Infrastructure Development and Evaluation System (PRIDE), the Rental Facility Management Information System (RFMIS), and the Real Estate Management Information System (REMIS). These infrastructure system stakeholders are represented by the Assistant Secretary of the Army, Financial Management and Comptroller (ASA FM&C), the National Guard Bureau, and the United States Army Corps of Engineers, respectively. The HQIIS serves as the Army's data warehouse for real property and related facility information. The role of each installation that provides housing data into any of the above mentioned data systems is to ensure that all data is current and reflects the actual status of the home at the time of input.

Other key factors in the inventory management process are the Quality ratings (Q-ratings) and the Mission Functional ratings (F-ratings) in the ISR-I system. Having correct data provides valuable information on the living standards and condition of the current housing inventory. Ensuring that inspectors are properly trained is fundamental to the success of the quality assurance and control of the housing inventory programs. If the home Q- and F-ratings are not accurately reported in the ISR-I system, which feeds into RPLANS, REMIS, and HQIIS, and varies from the information in the eMH system, then it causes discrepancies in the overall reporting process. The real property inventory is the data source being used to provide the requirements for the Army budgetary process; however, future budgetary data requirements will be determined by the information contained in the eMH database. It is critical that data consistency occurs across all systems to ensure we provide our Service members with the best quality homes that the Army has to offer in the most efficient manner.

Acronyms and Abbreviations	
ASA FM&C	Assistant Secretary of the Army, Financial Management and Comptroller
eMH	Enterprise Military Housing
F-rating	Mission Functional Rating
FIS	Facility Investment Strategy
GFEBs	General Fund Enterprise Business System
HQIIS	Headquarters Installation Information System
ICR	Inventory Change Request
ISR-I	Installation Status Report-Infrastructure
M&R	Maintenance and Repair
OACSIM	Office of the Assistant Chief of Staff for Installation Management
PRIDE	Planning Resource Infrastructure Development and Evaluation System
Q-rating	Quality Rating
REMIS	Real Estate Management Information System
RFMIS	Rental Facility Management Information System
RPI	Real Property Inventory
RPLANS	Real Property Planning and Analysis Systems

The final key factor in maintaining adequate housing inventory is to properly divest of homes that no longer meet the standards through right sizing, demolitions and the returning of homes to host nations. The other process that can remove properties that are no longer required due to low military presence is to convert the homes to other uses by submitting requests through the chain of command with the required documentation to the Office of the Assistant Chief of Staff for Installation Management (OACSIM), Army Housing Division for approval. Once approved, the garrison submits an Inventory Change Request or ICR through the eMH system. Through the use of these various processes and by being diligent in ensuring that the data is consistent across all data systems, the Army can provide Service members the best service and homes available. ➤



## Ft. Carson's LEED Gold Certified, Energy Efficient Barracks, Facilities Near Completion

by Al Barrus

A major part of keeping troops ready for long combat missions is to keep them comfortable while training at their home post. "It's been a tough 10-13 years. Our soldiers have been at war this whole time" said Vince Turner, chief of Military Construction for the Omaha District, U.S. Army Corps of Engineers. "You have to realize that many of these troops at Fort Carson have been deployed four, five, maybe six times."

Deployments have increased in recent history. But, to counter the discomfort of extended time away from home, barracks have changed drastically to help counter deployment fatigue. The barracks construction, slated for completion January 2015, will house 1,200 male and female soldiers. This construction is just one element of a larger Omaha District USACE project at Fort Carson for the


recently reformed 4th Combat Aviation Brigade, which also includes dining facilities and recreational areas all built near the CAB's workplace at Butts Army Airfield.

"They really are beautiful barracks," said Dean Quaranta, Fort Carson's Chief of Housing. "These new barracks are all for single soldiers, both male and female. One big improvement is that they are in close proximity to their workplace." Decreased distance between work and home has a huge impact on time, resources and quality of life. The planning and design for the new facilities has been years in the making. "A lot of thought and planning has gone into these," Quaranta continued. "A lot of time is saved in commuting. Where they are staying now is on the main part of the post: several miles from the airfield. These new facilities put them right next to the airfield."

The physical location of the new facilities was just one element of the vast planning and engineering process. These barracks have also been calculated to net zero electricity use through energy efficient design and on-site power generation. This was achieved through a competitive contract bidding process, which was awarded at \$94.9 million. "The contractors who presented the most energy-efficient, sustainable barracks facilities achieved better ratings in the overall proposal evaluation. Mortenson's solution provided

use of quality assurance measures defined in the ISR-I foundation, the facility inspections. Good stewardship over the inventory management program is essential to the Army's budget.

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Acronyms and Abbreviations	
CAB	Combat Aviation Brigade
CSM	Command Sergeant Major
HDR	HDR Incorporated
LEED	Leadership in Energy and Environmental Design
PV	photovoltaic
USACE	U.S. Army Corps of Engineers

well insulated barracks along with energy efficient building systems. To help achieve net zero energy goals, the contractor also proposed a solar array." Turner said of Mortenson, a Denver-based construction contractor known for their applications of energy efficient designs.

According to Turner, the design-build team, which included Nebraska-based engineering firm HDR, Inc., aimed to achieve LEED Gold certification from the U.S. Green Building Council. The sustainable design features for the barracks includes a consolidated boiler and chiller facility for the facilities' domestic water needs. Other green-energy features include solar walls in the façade, solar hot water panels for 30 percent of hot water consumption, solar photovoltaic arrays to offset 24.8 percent of annual energy consumption as well as energy-efficient, radiant floors for all of the apartment units.

For the U.S. Army Corps of Engineers, sustainability and green design is a high priority, and it goes along well with the improvements in morale for the junior-enlisted troops. "The ability that our soldiers will have with these new kitchenettes inside the barracks will allow them to cook their own foods in their own homes," said CSM. Antoine Duchatelier, CSM of the 4th Infantry Division's 4th CAB. "It will give them a lot more autonomy so that they won't have to go out to the dining facility if they don't want to. The way the barracks and other facilities have been engineered is a great benefit to this organization. I think from the design standpoint you can really see that



*These barracks, located in Fort Carson, Colo., have been constructed in close proximity to Butts Army Airfield. (Weddington, USACE)*

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It is not financially prudent for installations to retain excess inventory or inadequate homes. With so many constraints on Army dollars, funds must be applied for intended objectives, so that resources are not wasted on duplicative efforts or unnecessary expenses. Installations can achieve the established objectives defined in the FIS by maintaining inventory through the





# First Sergeants Barracks Program (FSBP) 2020

by Kaye Pazell and SGM Luis G. Miranda

With HQDA EXORD 261-12 First Sergeants Barracks Program (FSBP) 2020, the Army returned full control of the day-to-day operations and management of unaccompanied Soldier housing (barracks) back to the unit chain of command. The EXORD also tasked IMCOM to support the unit chain of command with enterprise standards and training. The program reinforces the Chain of Command and focuses on the holistic management of barracks and relationships between the Unit leadership and the garrison services.

FSBP supports the Army of the future by taking care of Soldiers and using resources wisely while providing clearly defined roles and functions. It requires increased presence of military leaders in the barracks to reinforce standards for cleanliness, property accountability and facility maintenance and repair. The program promotes individual Soldier accountability and Non-Commissioned Officer reinforcement of standards. FSBP 2020 allows Soldiers to assimilate into the Army, reinforces Army values, and fosters continued growth as part of a larger Army team.

The EXORD tasks IMCOM to serve

*(continued from previous page)*

the Corps of Engineers actually took input from the soldiers and put it into practical application,” Duchatelier said in closing. “That’s something that is going to be a great benefit to the Army as a whole. When a soldier is living in a place where they feel secure and comfortable, they are guaranteed to do great things.”

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as an enabler. The garrison Housing Manager serves as the primary point of contact and subject matter expert for all housing programs, including FSBP 2020. Trained and proficient in housing operations, management, budget development and execution, contract and database management, training, and regulatory guidance, the Housing Manager’s expertise is critical in supporting the military leadership.

Military leaders have access to the Enterprise Military Housing (eMH), the Army’s sole database of record to manage all aspects of the barracks. This web based program provides leaders and garrison staff data regarding assignments, terminations, inspection results, property hand receipts, and Certificates of Non-availability. Simply put, eMH helps First Sergeants manage their barracks.

FSBP 2020 is designed to take care of our Soldiers with three basic principles.

- Support the Mission: Provide Senior Commanders flexibility to ensure single Soldiers are afforded world-class living arrangements
- Take care of Soldiers: Provide quality accommodations and furnishings. Minimize changes to Soldier room assignments. Maintain good order, discipline, health, and welfare
- Use resources wisely: The target barracks utilization is 95 percent installation-wide. Garrison Commanders cannot issue Certificates of Non-Availability unless this utilization standard is met, with some exceptions allowed by

Acronyms and Abbreviations	
eMH	Enterprise Military Housing
EXORD	Executive Order
FSBP	First Sergeants Barracks Program
HQDA	Headquarters Department of the Army
IMCOM	Installation Management Command
NCO	Non-Commissioned Officer
SGM	Sergeant Major

regulation.

Quality unaccompanied housing is essential in preserving and enhancing the All-Volunteer Force. Leaders at all levels are obliged to ensure single Soldiers are housed in clean, safe, functional, and secure barracks, which reinforces our commitment to provide a quality of life commensurate with their service and sacrifice to the nation. A proper living environment includes privacy, comfort, and predictable living standards.

FSBP 2020 reinforces the importance of NCO leadership in the daily care of their subordinates, and is the leaders’ responsibility to ensure standards are maintained and preserve the right of each Soldier to have a clean, healthy living environment with a degree of privacy. Leaders at every level, Commanders, Sergeants Major, First Sergeants, Platoon Sergeants, and Squad Leaders are responsible for command and control, enforcing standards, caring for Soldiers, and property accountability. On the way ahead for FSBP 2020: First Sergeants will execute day-to-day barracks operations, and integrate FSBP 2020 into NCO training core competencies

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# Suite Life in Store for 101st Airborne Division

by Katie Newton

**W**alls are going up on a new three-story Headquarters and Headquarters Battalion (HHB) barracks, which will house 296 Soldiers from the 101st Airborne Division at Fort Campbell giving them fresh, modern facilities designed to improve the quality of life for single Soldiers.

Fort Campbell, located on the Kentucky-Tennessee border, is home to the only Air Assault division in the world—The 101st Airborne Division. The HHB barracks Unaccompanied Housing (UH) project is one of the few projects providing modern facilities for the 101st Airborne Division.

“This project holds great significance to Fort Campbell and specifically to the Soldiers of the 101st Division,” said Rodney Boyd, project manager, U.S. Army Corps of Engineers (USACE) Louisville District. “The opportunity to provide living quarters that have the latest technology and building systems with

a sense of comfort and convenience for Soldiers is a great honor.”

The USACE Louisville District awarded the \$25.75 million project to Sundt Construction, Inc., Tempe, Arizona, which began work in March 2014. The project—nearly a quarter complete, with fabricated wood wall panels being erected in November—is expected to be ready to house Soldiers by October 2015.

The more than 110,000 square feet will include 148 suites, featuring apartment style units with two bedrooms and one bathroom each. “The most important part of the new HHB barracks is that it will exceed the Army’s current standards for single Soldier living environment,” said Marvin Brown, Fort Campbell Housing Specialist.

The modern barracks will be equipped with bigger common areas with flat screen televisions, pool tables and foosball tables, an internet café and separate living spaces


Acronyms and Abbreviations	
HHB	Headquarters and Headquarters Battalion
LEED	Leadership in Environmental Design
UH	Unaccompanied Housing
USACE	U.S. Army Corps of Engineers

making them more comfortable for the single Soldiers. “We are committed to the quality of life of the single Soldier,” said Brown. “So with every new barracks built, we feel that we are accomplishing that inherent commitment to our Soldiers.”

The new facility was designed with sustainability in mind and meets Leadership in Environmental Design (LEED) Silver certifications by the U.S. Green Building Council. Planning and design processes helped to establish goals for the site, energy, water, materials and indoor environmental quality that would have to be followed throughout the design, construction and the lifecycle of the building. Some features include water reduction measures like low-flow toilets and shower heads. Measures were also put in place to optimize energy performance and reduce environmental impact through the use of recycled content and waste diversion.

“This project will get Soldiers out of less desirable accommodations and enable the demolition of antiquated barracks of yesteryear,” said Brown. The barracks will replace the old Hammerhead barracks, built during the Korean War era approximately 65 years ago, which are being demolished.

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*A rendering of the new three-story HHB barracks at Fort Campbell that will house 296 Soldiers.*



## Engineering with Nature Pays Dividends in Arid Southwest

by Ariane Pinson

**W**hat if you could make something good happen, and do so cost-effectively, sustainably and on a grand scale? You would leap at the chance, wouldn't you?

Engineering with Nature can make this happen. EWN is a holistic approach for planning, designing, constructing, and operating engineering projects that relies on natural forces and processes to help create and maintain the projects. The end result is a sustainable, resilient, long-term solution to ecosystem restoration, navigation, and other problems. EWN is not a novel concept, but has become an increasingly important strategy that USACE is using to redress ecosystem damage that encompasses large landscapes.

The Middle Rio Grande in Albuquerque is one such damaged landscape. The remaining floodplain in this 41 mile-long reach looked like a “war zone,” littered with jetty jacks and abandoned construction rubble. Invasive species dominated the understory. Gone was the riparian gallery forest mosaic (bosque), with its park-like vistas interspersed with grassy meadows and wetlands. Gone was the wide, braided river with its spring overbanking floods. The change was profound, transformative. What was lost through dredging, levee-building, and dams couldn't be restored in a day or a year. The scale is too vast, the cost too high.

EWN offered a cost-effective and sustainable way for USACE Albuquerque District Planner Alicia Austin Johnson



*Native willows in a flooded willow swale; this is one of the features of the Middle Rio Grande Restoration Project. (McKenna, GeoSystems Analysis, Inc.)*

and Ecologist Ondrea Hummel to restore portions of this floodplain. EWN features were established under three projects:

- The BioPark Section 1135 project restored nine acres of wetland and 48 acres of bosque.
- The Rt. 66 Section 1135 project restored 121 acres of bosque.
- The Middle Rio Grande Restoration Section 3118 project restored 916 acres of habitat in 18 areas along a 26-mile stretch of the river.

Central to their EWN strategy has been to reintroduce spring floodwaters to the floodplain to re-create a hydrologic environment more favorable to the establishment of native willow and cottonwood. “This creates a ‘home-court advantage’ for native species,” Austin Johnson says.

Bringing floodwater into the bosque means bringing the land down to water level through bank terracing, construction of high-flow channels and backwater channels, and connecting unused irrigation ditches to the river. As the spring flood rises, it spills into these features, saturating the ground, recharging the near-surface water table, and creating slackwater nursery habitat for the endangered Rio Grande silvery minnow. As floodwaters recede, young-of-year minnow migrate to the main channel, and the roots of native willow and cottonwood seedlings track the summer water table decline.

Austin Johnson is pleased with this outcome: “Although we focused on a multi-species approach to the restoration, we expect the year-on-year success of these channels in creating minnow nursery habitat to be phenomenal,” she said.

Away from the river, the land was lowered to the water table by creating depressions that intersected the spring water table. Willows established in these “swales” are maintained indefinitely by seasonal water table fluctuations. “Within a year of establishing our first swale, the willows were attracting endangered

### Acronyms and Abbreviations

EWN	Engineering with Nature
USACE	U.S. Army Corps of Engineers

Southwestern willow flycatchers,” Austin Johnson observed. “We hope in the future that these swales attract nesting pairs as well.”

Because of water scarcity in a fully allocated basin, open water wetlands have been re-created at only one site but the results are stunning. At the BioPark, excavation to the water table coupled with natural water table fluctuation and native seed dispersal resulted in the establishment of wetland and wet-meadow habitat. “This scarce habitat has provided a haven for waterfowl, no matter the season or time of day,” she said.

By creating a partnership with nature, Austin Johnson and Hummel have re-created far more acreage of self-sustaining habitat in the Middle Rio Grande than they could have otherwise afforded. Monitoring of these projects under an adaptive management paradigm has ensured that the best practices have been identified and replicated in subsequent Albuquerque District projects and those of sister federal and state agencies in the region. Monitoring has shown that these restored environments provide critical habitat for the region's endangered species.

“This is truly a case of ‘if you build it, they will come’,” Austin Johnson says, “If you enable the river to flood the bosque with something resembling historical seasonal norms, native plants and animals will find their way to this site on their own. Because EWN is so cost-effective, we are able to affect this change at the landscape scale, which is truly exciting to me.”

EWN aligns natural and engineering processes and uses collaborative efforts to efficiently and sustainably deliver economic, environmental and social benefits. As a result of the program, the national EWN team has created new technical and engineering guidance for



# USACE Releases Robust Climate Change Adaptation and Strategic Sustainability Plans

by The Army News Service

On October 31, 2014, in response to Executive Orders 13514 and 13653, the U.S. Army Corps of Engineers (USACE) released its 2014 Climate Change Adaptation Plan and annual Strategic Sustainability Plan.

“USACE has been factoring climate change and its impacts in to all its missions and operations for decades. USACE is working with the Obama Administration to identify and address the existing and future risks and vulnerabilities of climate change and ensure that communities and ecosystems are protected and flourish.” said Jo-Ellen Darcy, Assistant Secretary of the Army (Civil Works) and USACE Senior Sustainability Officer.

“We are making sustainability a part of all the decisions we make in designing, constructing, and managing water infrastructure. In the coming years we will reduce greenhouse gas emission, reduce non-tactical vehicle petroleum consumption, and increase renewable electricity consumption.” she said.

The 2014 Sustainability Plan provides an overview of how USACE is saving taxpayer dollars, reducing carbon emissions, cutting waste and saving energy. USACE is concentrating on several focus areas, to include implementing energy and water conservation measures; implementing a Non-Tactical Vehicle Fleet Management Plan; implementing not less than \$10 million in energy performance contracts in support of the President’s Performance

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the Department of Defense, Army, Navy and USACE that will reduce the costs of environmental restoration projects concerned with contaminated sediments.

The USACE EWN program recently received two agency recognitions – the Green Innovation Award as part of the Chief of Engineers Awards of Excellence (Sustainability Category) and the

Contracting Challenge; and influencing visitors’ behavior at USACE recreation facilities to reduce energy and water consumption.


On that same day, former USACE employee, William D. Goran, received the Climate Champion award at the annual GreenGov Presidential Awards ceremony at the White House. The GreenGov Presidential Awards honor exceptional Federal personnel, teams, projects and facilities, and programs that exemplify President Obama’s charge to lead by example in sustainability. Goran recently retired as the director of the Center for the Advancement of Sustainability Innovations for the U.S. Army Engineer Research and Development Center in Champaign, Illinois.

Goran’s award marks the second year the USACE has been recognized at with a GreenGov Presidential Award. Kathleen White of the Institute for Water Resources and Mark Huber of the Army’s Geospatial Center were part of an interagency team that won the Climate Champion Award in 2013 and Jeanette Fiess, the Northwestern Division’s sustainability and energy program manager, won the 2013 Sustainability Hero Award.

The 2014 Climate Change Adaptation Plan assesses key vulnerabilities to the impacts of climate change – such as severe weather, sea level rise, or flooding – and outlines how USACE plans to address those impacts to protect its missions. It

Natural Resource Management award that competed in the Secretary of Army Environmental Awards competition.

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Acronyms and Abbreviations	
Lt. Gen.	Lieutenant General
USACE	U.S. Army Corps of Engineers

describes activities that evaluate the most significant climate change related risks to agency operations and missions both in the short and long term. It outlines actions USACE is taking to manage these risks and vulnerabilities.

“The release of these two plans demonstrates the focus USACE is placing on sustainability and on mainstreaming climate change adaptation for our constructed and natural water-resources infrastructure,” said USACE Chief of Engineers Lt. Gen. Thomas Bostick. “Addressing sustainability and climate change are critical for us as an organization and the important work we do for the nation now and into the future.”


Members of USACE are engaging in external collaboration, improving their understanding of climate change impacts and vulnerabilities, and developing new policy and guidance to support adaptation implementation based on the best available and actionable science.

For additional information about these plans visit:

[http://www.usace.army.mil/Portals/2/docs/Sustainability/Performance\\_Plans/2014\\_USACE\\_Sustainability\\_Plan.pdf](http://www.usace.army.mil/Portals/2/docs/Sustainability/Performance_Plans/2014_USACE_Sustainability_Plan.pdf)

[http://www.usace.army.mil/Portals/2/docs/Sustainability/Performance\\_Plans/2014\\_USACE\\_Climate\\_Change\\_Adaptation\\_Plan.pdf](http://www.usace.army.mil/Portals/2/docs/Sustainability/Performance_Plans/2014_USACE_Climate_Change_Adaptation_Plan.pdf)

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## Net Zero Planner Tool Helping Installations Meet Federal Mandates

by Jim Frisinger

Federal mandates to reduce energy use, codified in a decade of legislation and executive orders, have produced laudable goals. They've even popularized the phrase "net zero," the high bar applied to energy, water and waste reduction initiatives.

The Army's definition of net zero energy, for example, means an installation produces as much energy on site as it uses over the course of a year. As the largest single tenant in the country, the Department of Defense owns or operates 2.2 billion square feet and spent \$4.1 billion on energy for FY 2011. Not only does net zero offer the potential for significant dollar savings, but the strategic advantages of energy independence and reduction in greenhouse gas emissions.

The Army has set strategic goals for having nine net zero energy installations by 2020 and promulgated a January 2014 directive for all installations to implement net zero energy, water, and waste to the maximum extent practical and fiscally prudent. "It's fair to say that's a very challenging goal," said Dr. Michael Case, a program manager for Installations at the U.S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory (ERDC-CERL) in Champaign, Illinois.

In 2010 ERDC-CERL helped the Army launch the Modeling Net Zero Energy Installations Program. It identifies best practice processes needed to plan low-energy communities. Out of this has emerged the Net Zero Planner, a process tool for life-cycle energy use analysis. It is a framework for modeling and simulation that automates the process, greatly reducing time and cost requirements for these studies.

It's been developed at a number of pilot sites including the United States Military Academy at West Point, New York; the Portsmouth Naval Shipyard, Maine; Fort Leonard Wood, Missouri; the Waterways Experiment Station, Mississippi; and Fort Hunter Liggett, California. More recently

the ERDC-CERL Net Zero team added water and solid waste capabilities. "We needed a holistic view across all these things because they affect each other," said Case.

With Net Zero Planner, building-by-building/project-by-project analysis is augmented with a broader, installation-wide vision that incorporates master planning, said Case. It helps sort through an immense number of alternatives. For instance, different packages of energy efficiency measures to various building types (segregated by function or era of construction across the installation) can be modeled quickly. Net Zero Planner not only combines conservation measures (reducing waste and cutting demand for water and power) but provides a fresh look at ways to improve the efficiency of the supply and distribution side of the ledger.

For example, should a central plant with heating and cooling loops and co-generation be built? Or would a decentralized system be better? Or maybe even grouping several buildings in clusters served by a single unit? It helps decide what the impact would be for building a huge solar array on the installation – or whether funds might be better spent building a waste-to-energy plant. It can help determine whether an installation should pursue recycling or move toward composting, and whether capturing greywater is worth the expense.

Net Zero Planner models existing conditions carried into the future and compares it with the forecasted impacts across the installation of changes made on the energy, water and waste fronts. "Until we had the data and calculations produced by Net Zero Planner, we were just discussing opinions," said Case. Case said it also empowers the installation to answer the fundamental question: "Do the incremental projects that I'm considering fit into a feasible and cost-effective trajectory to reach the goals that my installation has set?"

Among ongoing refinements of Net

Acronyms and Abbreviations	
CAMPS	Comprehensive Army Master Planning System
ERDC-CERL	U.S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory
FY	Fiscal Year
JB	Joint Base
USACE	U.S. Army Corps of Engineers
USACERL	U.S. Army Construction Engineering Research Laboratory

Zero Planner are pilot programs at Fort Hood, Texas, and Joint Base Pearl Harbor-Hickam. There it is being deployed in concert with the Comprehensive Army Master Planning System (CAMPS) Dashboard. CAMPS is a real property mapping and planning system that tracks people and places across the installation.

At Fort Hood, real-time metering and monitoring will be fed into CAMPS with the Net Zero Planner capabilities so tenant energy use data is monitored at a glance. Engineers will generate reports more easily, and do database queries and computations that had been very time-consuming, said Alan Howard, Fort Hood Master Planner and CAMPS administrator.

JB Pearl Harbor-Hickam will use the Net Zero Planner-CAMPS pilot to identify excessive energy and water users on Ford Island and select conservation targets. A Net Zero model will be translated into work plans with the right mix of such technology as photo-voltaic cell placements, cool building roofs and advanced air-conditioning systems, said Installation Energy Manger Katie Ramirez.

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# Fort Worth District's Dr. Rumanda Young Named Lt. Gen. John W. Morris Civilian of the Year

by Jim Frisinger

Each year the U.S. Army Corp of Engineers presents the Lt. Gen. John W. Morris Civilian of the Year Award to one civilian employee for achieving the highest overall standards of excellence among 34,000 peers. Lieutenant General Thomas P. Bostick, USACE Commanding General and Chief of Engineers, indicated "this prestigious award is given to the nominee who has achieved the highest overall standards of excellence and has made the most significant and noteworthy contributions to the mission, reputation and prestige of the U.S. Army Corps of Engineers." This year's recipient was Dr. Rumanda Young, whose dual roles include Chief of the Master Planning Section of the Ft. Worth Regional Planning and Environmental Section, as well as the Southwestern Division's Energy Development Manager.

In accepting the honor, Young said she

was proud of the service her team of Fort Worth District Regional Planning and Environmental Center master planners, engineers, architects and environmentalists provide for USACE customers. "I am especially proud of the military real property master planning services we perform for our men and women of the armed forces," she said. "Without adequate facilities, infrastructure, space management, and quality of life services it would be detrimental to the mission readiness of our troops."

Young also thanked Fort Hood's Kristina Manning, chief of the Real Property Planning Division, Directorate of Public Works, "who took the risk of trusting a total stranger many years ago ... by allowing Fort Hood to be the first Army beta test to our new sustainable planning process. The success of that program has lead to many other installations following

Acronyms and Abbreviations	
CAMPS	Comprehensive Army Master Planning Solution
CERL	Construction Engineering Research Laboratory
ERDC-CERL	U.S. Army Engineer Research and Development Center-Construction Engineering Research Laboratory
Lt. Gen.	Lieutenant General
RPSC	Regional Planning Support Center
USACE	U.S. Corps of Engineers
UTA	University of Texas at Arlington

that blueprint, with U.S. Army Garrison-Hawaii program being the latest success. Fort Hood is now willing, once again, to be one of the beta testing grounds for a net zero modeling grant."

When the USACE Divisions established the Regional Planning Support Centers, the decisions were based on several factors. The decisions included master planning capacity (both in-house and contracted) to provide planning support, the master planning competencies of the planning team and the teams knowledge and understanding of installation planning needs. The leadership qualities of the team leaders to lead the planning efforts in the Region were also considered. USACE RPSC's are led by top notch leaders in the field, such as Rumanda Young

In her dual roles, Young works in real property master planning, keeping military installations and other federal customers mission-ready. She helps them be forward-looking by planning five to 20 years out – to anticipate changing missions and requirements. She has roles in water and sustainability, helping military and other federal customers meet strict mandates to reduce energy and water consumption and increase efficiency. These requirements have real numbers assigned to them and hard deadlines. "Whether it is energy audits, renewable energy sources, water-saving approaches like low-impact development or reuse, we help to get those plans into action so they can meet those mandates more easily," said Young. ➤



Dr. Rumanda K. Young, chief of the Master Planning Section of the Fort Worth District Regional Planning and Environmental Center, receives her Lt. Gen. John W. Morris Civilian of the Year Award from Lt. Gen. Thomas P. Bostick, commanding general and chief of engineers, and Command Sgt. Maj. Karl J. Groninger, U.S. Army Corps of Engineers.



# Military Value Analysis Model

by Mike Weir

Headquarters, Department of the Army (HQDA) has used the Military Value Analysis (MVA) model as a quantitative tool in all of its major stationing decisions since BRAC 2005 which uses attributes for Training, Deployment, Medical Access, Quality of Life, Family Housing, Brigade Complex, Developable Area, Population Impact, Connectivity and Geographic Distribution. The Resource Management office of HQDA, or G8, has requested validation of the current model by reviewing the Military Value Analysis Model Attributes with the major attribute stakeholders. It is expected that HQDA will run this model in the 2nd or 3rd Qtr in FY15 for selected Installations.

The IMCOM G4, MILCON Master Planning Division is working with Installation Master Planners and GIS / IGI&S team members to make recommendations to the HQDA G8 concerning one of the MVA attributes, “Developable Area”. Previous versions of the analysis used an attribute called “Buildable Acres”. The result and representation of this attribute often

brought criticism from the local Installation Subject Matter Experts - primarily that the output was not accurate.

The IMCOM PW’s approach to validating this attribute is to define the attribute called “Developable Area” based on current master planning policies and requirements and have the Installations validate their individual results. The IMCOM Master Planning team has expertise in this area along with the Master Planners at each Installation. HQ IMCOM PW is currently conducting a series of Visioning Charrettes and Area Development Plan Practicums with our Garrisons to ensure compliance with The Deputy Under Secretary of Defense (AT&L) memorandum issued on 28 May 13. This guidance states that we would be in compliance with UFC 2-100-01 by 1 Oct 18. Specifically, “The DOD component exercising management responsibility over each installation shall develop a Master Plan that defines opportunities for site development and alternate land use and incorporates specific planning strategies.”

Acronyms and Abbreviations	
ADP	Area Development Plan
ArcGIS	Geographic Information Software by “ESRI”
AT&L	Acquisition, Technology and Logistics
BRAC	Base Realignment and Closure
CIP	Common Installation Picture
DOD	Department of Defense
FY	Fiscal Year
GIS	Geographic Information System
HQ IMCOM	Headquarters, Installation Management Command
HQDA	Headquarters Department of the Army
IGI&S	Installation Geospatial Information and Services
IMCOM	Installation Management Command
MILCON	Military Construction
MVA	Military Value Analysis
PW	Public Works
Qtr.	Quarter
UFC	Unified Facilities Criteria

To arrive at the Developable Area attribute for the MVA model IMCOM is using a special purpose geospatial model developed in the ArcGIS desktop

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In addition to working for the U.S. Army Corps of Engineers, she is an adjunct professor at the Southern Methodist University Lyle School of Engineering and also at the University of Texas at Arlington (UTA) School of Architecture. Young earned a masters degree in urban planning with an environmental emphasis and a doctorate in public policy and urban planning at UTA. But in many ways her “proving ground” has been at Fort Hood over the years. That’s where she is using a two-year Department of Defense grant to combine two analytic tools to help the Pentagon cut its installation energy bill. The Comprehensive Army Master

Planning Solution (CAMPS) Dashboard tool, which she helped develop at Fort Hood, covers facility inventory and meter data. The other tool is the Net Zero Planner, developed by the U.S. Army Engineer Research and Development Center-Construction Engineering Research Laboratory (ERDC-CERL) in Champaign, Illinois, which provides energy use life-cycle analysis and forecasting. Her team will integrate the unified tool into the daily workflow. CERL and Joint Base Pearl Harbor-Hickam are also collaborating in the pilot program.

Her long-time enthusiasm for resource management spills over to positive effect at work. “I was teaching about sustainability and conserving our energy and water

resources before we were even having those conversations to the level we are having now at the workplace,” she said. “So to me it’s been wonderful that there is an outside passion that I’ve always been involved in, in teaching and industry, that I’m now able to bring into my day-to-day job. That passion makes me very happy with what I do, and that probably shows.”

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*Jim Frisinger is a public affairs specialist with the USACE Fort Worth District. Jerry Zekert is the chief of the Master Planning Team at Headquarters, USACE.*





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software modeling framework. This model will be installed at each Installation on their current GIS desktop software installation. This presents an opportunity for each Installation to run the model locally and validate their “Developable Area” attribute and report it to HQ IMCOM.

The Developable Area model will take into account constraints to development as defined by Army Master Planning as well as special case constraints identified by the installation leadership. Constraints will have the affect of eliminating areas located within the Installation Growth Boundary by using a subtractive process. Typical constraints might include force protection, environmental, cultural, topography and natural constraints, existing buildings, roads and pavement, communications and electrical utilities constraints, and other constraints to be determined locally. In addition to constraints, the calculations, implemented locally by each installation, can include additional features identified

by the Installation in specific Area Development Plans. The resultant analysis will define three developable area categories on each Installation in terms of available acres for development:

- Developable Area 1: Land that can be immediately developed with some preparation, relocation, or demolition.
- Developable Area 2: Land that can be developed with some relocation, or demolition of buildings on the demolition list.
- Developable Area 3: Land that can be developed with more extensive relocation or demolition of existing permanent buildings

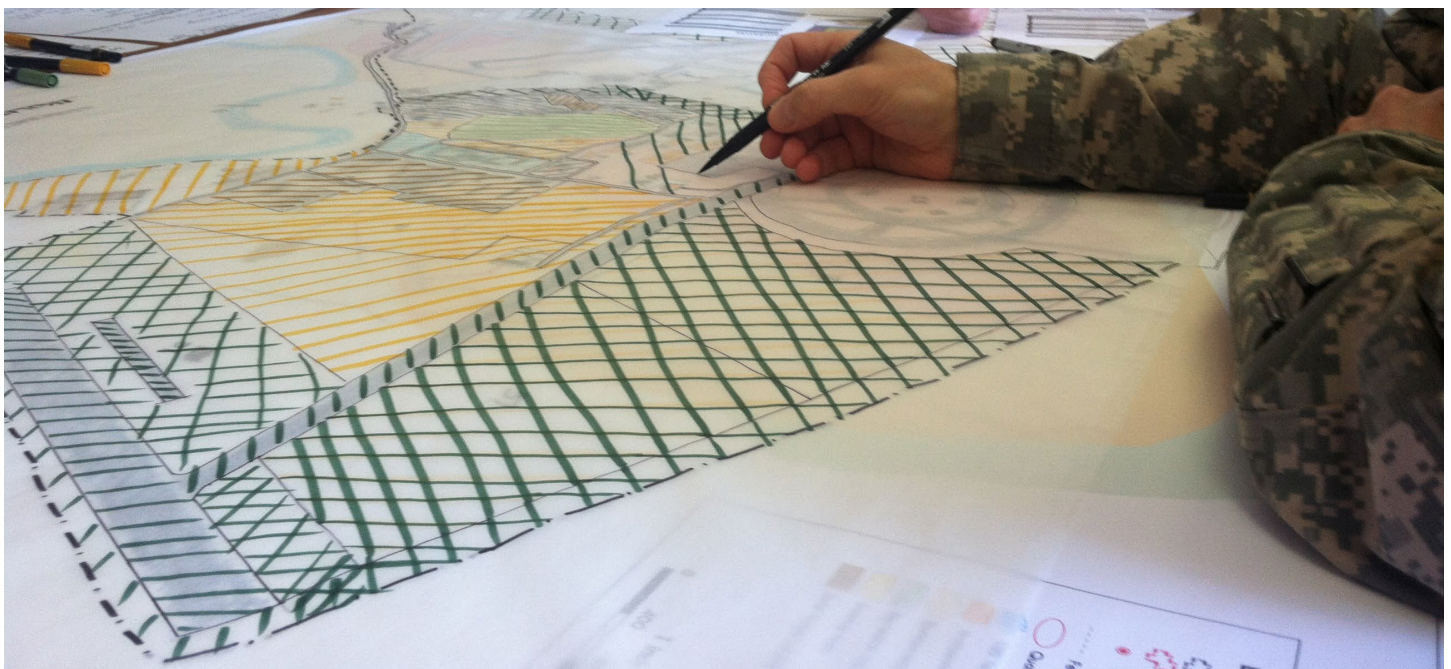
Implementing this methodology using GIS technology to derive results based on the best geospatial data available at the Installation ensures that the results are quantifiable and the methodology is repeatable. Using this modeling process while having the results validated at the Installations will ensure to IMCOM and HQDA that a process and a method has been put in place that can be continuously

Installations create, edit, update and maintain Geospatial Information (GIS Data Layers) that represent the Infrastructure of their Installation. The Army has identified 43 layers that are required for each Installation; layers collectively called the Common Installation Picture (CIP). These CIP data layers, along with additional local requirements for spatial data, become the Installation’s spatial data of record. Our MVA model will utilize these data layers to identify “Developable Area”.

evaluated and where the results provide a high level of confidence to Army Leadership.

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Mike Weir is a program manager with HQ IMCOM Public Works IGI&S. 



Developable Areas at Fort Riley using the GIS Model





# Andrea Wohlfeld Kuhn Inducted as a Fellow of the American Institute of Certified Planners of the American Planning Association

by Andrea Wohlfeld Kuhn

The American Institute of Certified Planners (AICP) elected Andrea Wohlfeld Kuhn to the prestigious AICP College of Fellows for her outstanding achievements in urban planning. Andrea is currently a Senior Planner at Headquarters, U.S. Army Corps of Engineers (USACE). She was one of 40 honorees who were inducted into the AICP College of Fellows during the American Planning Association's (APA) 2014 National Planning Conference in Atlanta.

Andrea was recognized for the significant contributions she has made to the planning profession. During the course of her federal career, she has integrated sustainability into the fabric of federal planning and delivered innovative training. Intent on educating and mentoring others,

she has given worldwide presentations, published extensively, and created a legacy of AICP and American Institute of Architects (AIA) accredited planning classes through the Department of Defense Master Planning Institute (DOD MPI). Designed to address the needs of entry-level to experienced planners, engineers and architects, Andrea developed innovative new courses and workshops and instructed on topics ranging from master planning principles and practices to ethics, law, sustainable planning and reuse of historic structures. During her tenure with the Navy, Andrea was appointed as the Navy's Program Manager for sustainable planning. She led a team of Navy, Army and Air Force representatives to develop an early study on sustainability entitled Sustainable Planning: A Multi-Service Assessment (1999). This study received the 2001 Smart Growth - Sustainability Award by the American Society of Consulting Planners.

Secondly, Andrea was recognized by the AICP for her role in federal policy development. Prior to her current position with USACE, Andrea was the Team Leader for the Evaluation Branch at the U.S. General Services Administration's (GSA's) Office of Real Property. She led federal interagency executive working groups and published numerous federal guides on key real property and planning issues such as security, succession planning, and best practices in real property management. After competitively being selected to GSA's Advanced Leadership Development Program, she pursued her desire to exchange land use practices on an international basis, which led to an assignment at Deutsche Post DHL's corporate real estate headquarters in Bonn, Germany. Upon her return to the U.S., she was able to further advance federal real property planning policies with a broader, international perspective.

Thirdly, Andrea's induction as a Fellow was based on her promotion of social and environmental justice at the local and federal levels. Earlier in her

Acronyms and Abbreviations	
AICP	American Institute of Certified Planners
APA	American Planning Association
DOD MPI	Department of Defense Master Planning Institute
FAICP	Fellow, American Institute of Certified Planners
GSA	U.S. General Services Administration's
LEED	Leadership in Energy and Environmental Design
USACE	U.S. Army Corps of Engineers

career as the Navy's Special Assistant for Socioeconomics, she represented the Navy on DOD and federal task forces, including the U.S. Environmental Protection Agency's Working Group on Environmental Justice. She worked closely with her federal counterparts and was instrumental in developing the DOD Strategy on Environmental Justice, an educational training video, and associated training and guidance for use throughout DOD. At the start of her career, as a community planner with Fairfax County, Virginia's Department of Housing and Community Development, she served as a liaison with local residents and obtained federal grants for neighborhood improvements for low- and moderate-income residents.

Lastly, Andrea was recognized for her involvement with APA and allied organizations. She was elected Chair of APA's Federal Planning Division (FPD) in 2002, served as Awards Chair in 2000, and as the Navy Liaison from 1999-2000. She was a member of the team that won the FPD award for "Outstanding Federal Planning Program" for the DOD Unified Facilities Criteria for Installation Master Planning (2012) and the FPD award for "Outstanding Federal Planning Program" for the DOD MPI in 2009. She has given presentations at conferences of allied organizations such as the Society of American Military Engineers, Greenbuild, and the American Council of Engineering Companies.



Andrea Wohlfeld Kuhn with FAICP medal and certificate



# UFC Master Plan Compliance Requirement

by Dwayne Melton

The Under Secretary of Defense (AT&L) is requiring all Department of Defense components to be fully compliant with the Installation Master Planning Unified Facilities Criteria 2-100-01. The deadline stated in the 28 May 2013 policy memorandum requires compliance by the end of fiscal year 2017. As required by the UFC, the new structure for the Real Property Master Plan consists of four required components: Vision Plan, Installation Planning Standards, Installation Development Plan, and Capital Investment Strategy. The UFC is extremely easy to read and understand and provides helpful graphics in the appendices. To view approved UFC compliant Vision

Plan and Area Development Plans (sub-parts of the Installation Development Plan), please visit the HQ IMCOM RPMP EKO website at [https://eko.usace.army.mil/usacecop/is/fa/arpmp/master\\_plans/](https://eko.usace.army.mil/usacecop/is/fa/arpmp/master_plans/).

The Vision Plan is the foundation of the master plan where the fundamental ideas are collaboratively developed by the Garrison staff, tenants, and members of the surrounding community to create a Vision Statement. Stated in the UFC, “The vision statement is a clear and concise description of a desired end state, and should capture the essence of the entire planning effort. A strong vision creates a mental picture of what the installation will look like once the vision is achieved.”

Once the Vision Plan is collaboratively developed, the next step is the Installation Development Plan (IDP), by completing Area Development Plans (ADP) on each district identified in the Framework graphic of the Vision Plan. One ADP is developed for each planning district; therefore, the quantity of ADPs is dependent upon the number of planning districts. Because this quantity is unknown until the Vision Plan is complete, the time required to develop a UFC compliant RPMP can range from 150 days for a small installation with only 1 planning district, 300 days for a small installation with 2 planning districts, and so on. The times do not include the pre-coordination efforts

Acronyms and Abbreviations	
ADP	Area Development Plan
AT&L	Acquisition, Technology and Logistics
DOD	Department of Defense
EKO	Engineering Knowledge Online
HQ IMCOM	Headquarters, Installation Management Command
IMCOM	Installation Management Command
IDP	Installation Development Plan
RPMP	Real Property Master Plan
UFC	United Facilities Criteria

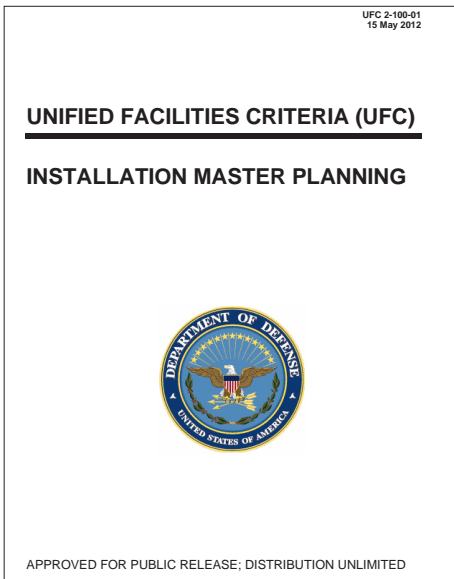
which take a significant amount of time due to scheduling of key leadership and stakeholder participation. As we continue to work towards our goal of completion by 30 September 2017, we have many more practicums to conduct.

Funding shortfalls and manpower reductions have made it increasingly difficult for the Garrison Master Planning Division to accomplish the collaborative charrettes required to meet these requirements. HQ IMCOM G4, Public Works, has taken the initiative to centrally fund consultant facilitated Vision Plan charrettes, creation of Installation Planning Standards as well as Area Development Plan practicums, which are components of the Installation Development Plan. HQ IMCOM plans to provide one Vision Plan, Installation Planning Standards development, and one ADP through the centrally managed program for all IMCOM installations. Garrison Master Planning Chiefs merely need to ask for assistance in order to participate.

The publication of the Installation Master Planning UFC offers all DOD Master Planners the chance to shape the future of our installations and provide a healthy community for our Soldiers and their Families.

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Dwayne Melton works in Asset Management at HQ IMCOM, Fort Sam Houston, Texas.



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Today, Andrea continues to lead teams to create sustainably planned communities and military installations. She can often be found on-site at installations stateside or overseas, instructing others in the various aspects of planning, evaluating existing conditions, facilitating preparation of Vision and Area Development Plans, and above all, striving to improve the lives and environments for military and civilian personnel and their families.

Andrea credits her coworkers and numerous team members with her receipt of this honor.

A short video about USACE sustainable planning initiatives can be seen at: [www.youtube.com/watch?v=EJJOzpbqRmpA](http://www.youtube.com/watch?v=EJJOzpbqRmpA).

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Andrea Wohlfeld Kuhn, FAICP, LEED Green Associate, is a Senior Planner with Headquarters, USACE.



## TRADOC Commander: Empowering Others Best Way to Progress

by Audra Calloway

**E**mpowerment is a two-way street between subordinates and supervisors, said Gen. David Perkins, Training and Doctrine Command commanding general, during the Association of the United States Army's Annual Meeting and Exposition in Washington, D.C.

Perkins was the keynote speaker for the AUSA Civilian Professional Development Seminar, held October 15, 2014. His address was followed by two hour-long civilian panel discussions. The first panel focused on improving the supervisor-employee relationship, and the second discussed professional development programs available to Army civilians.

Most of the empowerment Perkins has

received throughout his career has not come from his bosses, he said, but from his subordinates. "If you're a battalion commander and you're conducting a deliberate attack and all of a sudden your company commander goes out and sees that there's two bridge crossings, now you can use either one," Perkins explained to the audience. This is empowering, he said, because, "now my subordinate has given me options. My subordinate is setting me up for success." Perkins said empowering others is the best way to progress and develop your career. "If you are a subordinate -- which we all are -- spend most of your time figuring out how you can empower your boss, not what your boss can do for you. Because then what happens is, they feel very

Acronyms and Abbreviations	
AOR	Area of Responsibility
ASA/MRA	Assistant Secretary of the Army Manpower and Reserve Affairs
AUSA	Association of the U.S. Army
ERDC	The Engineer Research and Development Center
Gen.	General
SETM	Senior Enterprise Talent Management
SOUTHCOM	Southern Command
TDY	Temporary Duty

comfortable with empowering you," he said.

While the Army has many programs in place to develop civilian talent, Perkins added that Employees often learn the most through their relationships with coworkers. "It's that relationship



*General David Perkins  
Training and Doctrine Command Commanding General*



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between peers, supervisors and subordinates where most development actually occurs,” he said. “That’s not to say that the former part of it is not important. It is very important.”

In the past few years, the Army has added new professional development programs and training opportunities for Army civilians. The Army has created the Senior Talent Management Program, or SETM, which focuses on continuing development for GS -14 and 15-level employees. The Enterprise Talent Management Program, concentrating on GS-12 and 13-level civilians, will be unveiled soon, and the Army is also developing additional professional development opportunities aimed at civilians at the GS-12 level and below.

The Army also needs to invest time and effort into developing supervisors, because they have a singularly important role in the Army and in accomplishing the mission, said Ellen Halverson, panelist and deputy chief of staff, G-1/4 (Personnel and Logistics), U.S. Army Training and Doctrine. This is because supervisors set the conditions, environment, relationship and communications, she said. “It really starts with the supervisor, although I believe employees have a very important role in that discussion and it is as important, but that supervisor really has the lead. And (the Army needs) to make sure that we are fostering and strengthening that supervisor’s ability to do that,” she said.

#### CENTRALIZED SUPERVISOR TRAINING

To better train supervisors, the Army’s current 40-hour supervisor development course is being redesigned, according to Kim Summers, panelist and director of the Army Management Staff College.

“That is being looked at and will be part of the redesign and revision process that we’re going through with an expected deliver of sometime [fiscal year 2016] for that revision,” he said. He added that the “transparency, trust, the commitment that you have for the workforce and what they do speaks volumes to the idea of developing skills as a supervisor.”

#### LOCAL TRAINING

Supervisor training can also be added locally at installations. The Engineer Research and Development Center, or ERDC, U.S. Army Corps of Engineers, has established local performance management training for supervisors. During the training, senior leaders receive realistic supervisor challenges and work with their peers to determine how the situations should be properly handled. “It’s helped us put the trust back between the supervisors and our employees,” said panelist Dr. Peggy Callaway, director for Human Capital with ERDC. “Ultimately it’s about enabling our supervisors to enable our employees.”

#### PROFESSIONAL DEVELOPMENT


“I think Army civilians interested in a TDY (temporary duty) and return mission are probably more prepared than you think,” said panelist Ricky Yates, who participated in a SETM 179-day professional development TDY at U.S. Southern Command. Yates served on the Operations Security Team, where he conducted operation security surveys at embassies and security cooperation offices in South America. He also transferred the Southern Command operational website from Special Operations Command back to Southern Command, known as SOUTHCOM.

The SETM assignment broadened his knowledge of the Army by giving him “a different understanding of

the SOUTHCOM mission, their priorities and the host of challenges which they endure in a vast AOR (area of responsibility) of 31 countries and territories.” “If you’re interested in the SETM program, you’re going to find it both professionally and personally rewarding and challenging,” Yates said. The panelists urged potential applicants to speak with their supervisors and determine a plan to back fill their positions during their absence.

Panelist Clay Brashear attended the Army War College through the SETM Senior Service College, and panelist Bill Metheny attended the Naval War College through the Defense Senior Leader Development Program. Both these programs require participants to sign mobility agreements. There will always be responsibilities that will fall to someone else while you’re gone, said Jenn Gunn, who completed a 90-day public affairs developmental assignment with Civilian Workforce Transformation in the Office of the Assistant Secretary of the Army for Manpower and Reserve Affairs. “Don’t withhold an opportunity like this from your deserving employees just because you know it’s going to be painful to lose them from the office for a little bit. Your staff can benefit from this if you take the opportunity to cross-train while they’re gone. You can build on the skills of your organization and you might be surprised at who steps up to the plate when given a chance,” Gunn said.

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*Audra Calloway is a Public Affairs Officer with the ASA/MRA Work Force Transformation Center in Washington, D.C.* 



# Looking for Career Progression? Join the Civilian Expeditionary Workforce

by Rebecca Silvas

**W**ith critical installation management vacancies in deployed locations open now, U.S. Army Installation Management Command employees have additional career development opportunities at their fingertips. “No one knows installation management better than IMCOM,” said MG Lawarren Patterson, IMCOM deputy commanding general for Operations and chief of staff. “It’s the willingness of our employees to provide and manage support to Soldiers in deployed locations that sets this command apart as an enabler of readiness and premier support organization.”

According to IMCOM leaders, there’s an immediate need to fill about 23 vacancies that include positions in public works, administration, housing, construction, plumbing and operating forklifts. In the long term, the command hopes to develop a pool of applicants

ready to serve at any location in The Army’s Home. The deployment experience allows civilians to use their capabilities, experience and knowledge to support crucial Department of Defense missions abroad. Deployable civilians are needed to serve as qualified volunteers to fill critical functions in Afghanistan and other locations across the globe – everything from humanitarian aid and disaster relief to support infrastructure and contract management.

Volunteering for deployment gives civilian employees an extraordinary opportunity to broaden their skills and expertise while directly supporting operations of national interest. As a deployee, you will live and serve on a variety of American bases and compounds with your military and government colleagues. Some of the locations will be quite austere and remote, and unlike any community back in the United States, ➤

Acronyms and Abbreviations	
IMCOM	Installation Management Command
MG	Major General

IMCOM handles the day-to-day operations of U.S. Army installations around the globe – We are the Army’s Home. Army installations are communities that provide many of the same types of services expected from any small city. Fire, police, housing, and child-care are just some of the things IMCOM does in Army communities every day. Our professional workforce strives to deliver on the commitments of the Army Family Covenant, honor the sacrifices of military Families, and enable the Army Force Generation cycle.

<http://www.army.mil/imcom>



Department of the Army civilians inspect a base expeditionary targeting surveillance systems-combined (BETSS-C) tower before transferring it to the Afghan National Army near Kabul, Afghanistan on April 12, 2014. (U.S. Army photo by Sgt. Jarred Woods, 1st Sustainment Command (Theater)).



# Garrison Master Planning Division

by Anne de la Sierra

The US Army Installation Management Command, School of Public Works was created in 2010 to provide continuous learning on many facets of the DPW Mission. The first Master Planning course was taught in Feb 2013, is conducted at least twice per year and continues to be very successful. You are highly encouraged to attend this hands-on, interactive class regarding real estate, real property, master planning, site approvals, RPLANS and any and everything that is accomplished in a Master Planning Division of a Garrison DPW. The class is taught in San Antonio, Texas, usually at a hotel /

conference center on the Riverwalk, and the tuition is free and the TDY expenses are paid for by HQ IMCOM. The class is intended to provide information and knowledge on the day to day requirements of a Master planner, as well as addressing specific topics such as the implementation of the new UFC for Installation Master Planning, how to submit a project for the Facilities Reduction Program, as well as a space utilization exercise. Another major benefit of the class is that it is taught by the HQ IMCOM subject matter experts on each of the Planning / MILCON / Real Property / Real Estate topics, to address current issues and concerns. Our next class is 26 – 30 Jan 2015, and the one following is 23 – 27 Feb 2015.

Information about the Academy, and other courses offered, can be found on AKO at <https://www.us.army.mil/suite/page/649494>. Additionally, you may register for classes via ATRRS, and the DPW classes are at <https://www.atrrs.army.mil/atrrscc/course.aspx> For additional information, and registration, you may contact Mr. Ed Gamino (210) 466-0451.

The following are some quotes from the Evaluation sheets from the students in the class:

Acronyms and Abbreviations	
AKO	Army Knowledge Online
ATRRS	Army Training Requirements and Resources System
DPW	Directorate of Public Works
HQ IMCOM	Headquarters, Installation Management Command
MILCON	Military Construction
RPLANS	Real Property Planning and Analysis System
TDY	Temporary Duty
UFC	Unified Facilities Criteria

- “Instructors were enthusiastic, competent, able to convey usable information and provided a Big Picture prospective.”
- “All topics were relevant to my job and success.”
- “I received a clearer understanding of the Master Planning Division responsibilities and requirements.”
- “The most beneficial portion was the overview of the new UFC for Master Planning.”

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Anne de la Sierra is a HQ IMCOM Public Works Master Planner in Fort Sam Houston, Texas. 🌟



Master Planning class photo, June 2014

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contributing to the overall experience. You will receive training to help you prepare for living in-theater.

In addition to the experience you will gain from your deployment, you may be also eligible for a 35 percent post differential pay, 35 percent hazardous duty differential pay and significant overtime compensation in addition to base salary.

Supporting Soldiers, communities and national interests is what IMCOM is all about. Imagine being able to help

the local community build hospitals and schools, bring electricity to a village and disperse disaster relief. Consider taking the next step in career development, and apply today. The application process begins with filling out an Army Civilian Volunteer Request for Deployment form, found at <http://cpol.army.mil/library/mobil/webforms/index-Army.html>. Submit your completed form and resume to the HQ IMCOM deployment coordinator email address: [usarmy.imcom-hq.mbx.g1-civper@mail.mil](mailto:usarmy.imcom-hq.mbx.g1-civper@mail.mil). Please note that incomplete forms will NOT be considered.

For additional information, please email

[usarmy.imcom-hq.mbx.g1-civper@mail.mil](mailto:usarmy.imcom-hq.mbx.g1-civper@mail.mil) or visit <http://www.cpms.osd.mil/expeditionary/>.

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Rebecca Silvas and Patrick Kerr are Human Resources Specialists with the G1, Human Resources Headquarters, U.S. Army Installation Management Command. Amanda Rodriguez is a Public Affairs Specialist in the Public Affairs Office at Joint Base San Antonio-Fort Sam Houston, Texas. 🌟



# Master Planning Educational Training

by Andrea Wohlfeld Kuhn

**A**re you a planner, engineer, architect, project manager, realty specialist, or employed in a related position and need to gain a better understanding of how the master planning process works and how planning can be of benefit to your projects? With the publication of the DOD Unified Facilities Criteria (UFC) for Installation Master Planning (UFC 2-100-01) on 15 May 2012, it is more important than ever to employ an integrated approach that includes master planning. Although students are encouraged to take Proponent Sponsored Engineer Corps Training (PROSPECT) Course 75, Master Planning Principles, early in their training program, there are no prerequisites for any of the master planning courses, and they may be taken in any order. Classes have been scheduled to provide a balance of east coast-west coast offerings, to provide availability to more students and reduce travel costs. As always, the instructor team is available to travel to your installation or regional location, which often results in reduced costs per student and the ability to reach an entire team(s) at once.

Master planning courses and Area Development Plan Workshops are offered through the U.S. Army Corps of Engineers PROSPECT program, also known as the Department of Defense Master Planning Institute (DOD MPI). Courses range from introductory level to advanced, and include universal planning practices as well as Army-specific information. Each of the courses references the UFC and provides key information on UFC implementation. Classes usually include employees from the other service branches, including the Navy, Air Force, and Marine Corps, as well as those from related federal agencies, such as the Department of Homeland Security (Coast Guard), and consultants who provide master planning support. This mixture of attendees offers an opportunity for interagency and private sector sharing of best practices and innovative approaches to master planning.

The key goals and objectives of the DOD MPI are 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 all federal, state, city and county employees. The original Army-focused materials were expanded to include information relevant to all DOD service branches and other Federal agencies. All courses are fully accredited by the American Institute of Certified Planners (AICP), American Institute of Architects (AIA), and National Society of Professional Engineers (PE) and provide continuing education units.

One of the unique features of these classes is that the instructors employ a variety of dynamic media that goes beyond lectures, and includes hands-on training, small group exercises, field trips, site visits, and other learning opportunities. While basic theory and history is a necessary 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, multi-media presentations, field trips, and literature reviews are used to provide a complete learning experience. The instructional staff is composed of federal and private-sector professionals who are AIA and AICP accredited subject matter experts.

Course Descriptions: Brief descriptions of Fiscal Year 2015 DOD Master Planning Institute classes are as follows, with more detailed descriptions, costs, and registration available at <http://ulc.usace.army.mil/> or <http://www.dodmpi.org/>. Area Development Plan Workshops are listed on the DOD Master Planning Institute

Acronyms and Abbreviations	
AIA	American Institute of Architects
AICP	American Institute of Certified Planners
DOD	Department of Defense
DOD MPI	Department of Defense Master Planning Institute
PE	National Society of Professional Engineers (PE)
PROSPECT	U.S. Army Corps of Engineers Proponent Sponsored Engineer Corps Training
UFC	Unified Facilities Criteria

website at <http://www.dodmpi.org/>. All classes are fully accredited and offer American Institute of Architects (AIA), American Institute of Certified Planners (AICP), Professional Engineer (PE) and continuing education units.

## Course 258

### Master Planning Energy and Sustainability April 14-17, 2015: Seattle, Washington

This course covers energy and sustainability on a broader planning level, rather than at the individual building level. Discussion and demonstration of energy-related planning practices and initiatives provide effective strategies for implementation. Classroom learning is enhanced by field trips and demonstrations of energy-saving methodologies from a planning and design perspective, including metrics to evaluate energy efficiency. Cost: \$2,100

## Course 241

### Master Planning Practices April 27-30, 2015: Washington, DC

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. Students will learn the steps of the Army master planning process to identify components and understand the difference between short- and long-term planning horizons, the concept of capacity planning, and formulation of customer requirements. Since this course focuses





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on Army planning, unlike the broader focus of the other courses, it is more appropriate for Army planners rather than a broader audience. Cost: \$2,200

**Course 163**

**Master Planning Historic Structures II  
June 2-4, 2015: Washington, DC**

This course emphasizes installation master planning practices, preservation & federal regulations, Secretary of the Interior's Standards, DoD regulations, LEED and sustainability goals and consultation with State Historic Preservation Officers. Cost: \$2,040

**Course 392**

**Master Planning Sustainable Historic Structures  
July 14-16, 2015: Portland, Oregon**

This course focuses on instructing planners, historic preservation experts, and those in related fields on how to integrate the master planning process with applicable laws, regulations, and UFC 2-100-01 (Installation Master Planning) while addressing the unique characteristics of historic structures. Sustainable, energy-efficient solutions for historic preservation as well as pertinent laws, regulations and guidance are covered. Cost: \$1,425

**Course 319**

**Master Planning Guideline Implementation (formerly Coding Practices)**

**July 27-28, 2015: Baltimore, Maryland**

This new course provides students with an understanding of the concept of form-based coding and its use in the planning and development of sustainable installations. Students will learn how to develop a code, planning standards, and create a regulatory plan for code enforcement. Cost: \$1400

**Course 948**

**Master Planning Visualization Techniques  
July 28-31, 2015: Huntsville, Alabama**

This course provides an overview of visualization techniques and offers hands-on training in using Google SketchUp and Google Earth. Students will produce several basic Area Development proposals using these tools and gain knowledge of the concepts of scale, massing of facilities, landscaping, architectural compatibility and force protection requirements. Cost: \$2,375

**Course 326**

**Master Planning Program Execution (formerly Applied Skills)**

**July 29-31, 2015: Baltimore, Maryland**

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 determine the impact to the installation's real property master plan. Cost: \$1,700

**Course 952**

**Master Planning Advanced Techniques  
August 17-20, 2015: Portland, Oregon**

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, and although they are encouraged to take Course 75 prior to this, there are no prerequisites for this or any of the other master planning courses. Cost: \$2,450

Register now and increase your understanding of master planning by signing up for one or more of these courses at or <http://ulc.usace.army.mil/> or <http://www.dodmpi.org/>.

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Course Number	Date and Location	Title	Cost
258	April 14-17, 2015 Seattle, Washington	Master Planning Energy and Sustainability	\$ 2,100
241	April 27-30, 2015 Washington, DC	Master Planning Practices	\$ 2,200
163	June 2-4, 2015 Washington, DC	Master Planning Historic Structures II	\$ 2,040
392	July 14-16, 2015 Portland, Oregon	Master Planning Sustainable Historic Structures	\$ 1, 425
319	July 27-28, 2015 Baltimore, Maryland	Master Planning Guideline Implementation (formerly Coding Practices)	\$ 1,400
948	July 28-31, 2015 Huntsville, Alabama	Master Planning Visualization Techniques	\$ 2,375
326	July 29-31, 2015 Baltimore, Maryland	Master Planning Program Execution (formerly Applied Skills)	\$ 1,700
952	August 17-20, 2015 Portland, Oregon	Master Planning Advanced Techniques	\$ 2,450





# Career Program 27, Housing Management

by Judith M. Hudson

Career Programs (CPs) were established to ensure there is an adequate base of qualified and trained professional, technical, and administrative personnel to meet the Army's current and future needs. Career Program (CP) 27, Housing Management, is comprised of Civilians who work in a variety of housing related positions supporting Housing Services, Unaccompanied Housing, Army Family Housing, Residential Communities Initiative, and Lodging.

In April 2011, Mr. Thomas L. Lamont, Assistant Secretary of the Army, Manpower and Reserve Affairs (ASA M&RA) published Civilian Career Program Management guidance as part of the Army's commitment to implementing the Civilian Workforce Transformation (CWT). This guidance increased the number of CPs across the Army by adding seven new ones to the existing 24 for 31 in total and aligned each civilian position in the Army with a CP. Each CP is comprised of occupational series grouped together on the basis of occupational structure, grade range, commonality of job and qualification characteristics.

Each CP has a Functional Chief (FC), Functional Chief's Representative (FCR) and a Proponency Office led by the Career Program Manager (CPM). The FCR acts on the behalf of the FC and has enterprise level responsibility to ensure the CP maintains a well qualified, motivated and well-balanced civilian workforce, capable of supporting Army missions. The FCR serves on the Army Career Program Policy Committee, chairs the CP 27 Career Planning Board, manages CP training plans and Career Maps, and identifies resourcing requirements. For CP 27, the FC is the Assistant Chief of Staff for Installation Management (ACSIM), LTG David Halverson. The FCR is the Chief of Army Housing, Office of the Assistant Chief of Staff for Installation Management (OACSIM), Ms. Suzanne

Harrison.

CP 27 is comprised of over 650 Careerists predominately assigned to positions classified in the 1173 Housing Management job series. Approximately 95 percent of Careerists in CP 27 are assigned to the Installation Management Command (IMCOM) and OACSIM. About 54 percent of CP 27 Careerists are Appropriated Fund employees, 36 percent are Local Nationals and the remainders are Non-Appropriated Fund employees.

As part of the CWT, CP 27 conducted a comprehensive analysis of competencies. Competencies are a measurable pattern of knowledge, abilities, skills and other characteristics that individuals need in order to successfully perform their work. The Army has identified 28 Non-Technical Competencies that are standard across the Army. In February 2013, a team of housing management Subject Matter Experts (SMEs) convened to identify and define the Technical Competencies that are also necessary to support the Army housing mission. During the summer of 2013, Careerists and their supervisors participated in a Competency Management Survey (CMS) to assess individual competency importance, potential gaps and proficiency ratings. Utilizing the results of this survey, CP 27 SME's met in April 2014 to identify competency gaps across the career program. As a result, CP 27 identified the need to concentrate training in the following competencies: Customer Service, Financial Management, Written Communication, Housing Management and Housing Management Calculation.

CP 27 launched the Army Housing Academy (AHA) in 2012 to support the training needs of Careerists. The Academy offers courses in a variety of subjects to include Unaccompanied Housing, Army Family Housing, Residential Communities Initiative, Housing Services Office and General/Flag Officer Quarters. In addition to

Acronyms and Abbreviations	
ACT	Army Career Tracker
ACTEDS	Army Civilian Training, Education and Development System
AHA	Army Housing Academy
ACSIM	Assistant Chief of Staff for Installation Management
ASA M&RA	Assistant Secretary of the Army, Manpower and Reserve Affairs
CP	Career Program
CPM	Career Program Manager
CWT	Civilian Workforce Transformation
CMS	Competency Management Survey
FC	Functional Chief
FCR	Functional Chief Representative
FY	Fiscal Year
GS	General Schedule
IDP	Individual Development Plan
IMCOM	Installation Management Command
LTG	Lieutenant General
OACSIM	Office of the Assistant Chief of Staff for Installation Management
SME	Subject Matter Expert

supporting Technical Competencies, these courses support some of the Army Non-Technical Competencies. These courses are offered both in San Antonio and at the Pentagon. Careerists can access the training schedule through Army Career Tracker (ACT) (<https://actnow.army.mil>) and apply for courses through GoArmyEd (<https://www.goarmyed.com>). To attend AHA courses, a Careerist must have both an updated ACT account and a GoArmyEd account. Careerists need to create an Individual Development Plan (IDP) in ACT by clicking on the "My IDP" tab. The IDP will be routed to your supervisor for approval and then transmitted to GoArmyEd. IDPs should reflect the training for which you are applying. Supervisors and CP 27 personnel will review your training request through GoArmyEd. If approved, the training is funded through the Army Civilian Training, Education and Development System (ACTEDS). ➤



# The Army has Found a Better Way to Train Engineers and Contracting Professionals

by Alan Bugg

Since 2009, the Army Construction Management Education Program has been providing Engineers and Contracting Professionals practical tools and education needed to serve in construction management roles. The program's main objective is to support mission-related competencies and strategic goals by concentrating on subjects related to the construction management business. Traditionally, the Army has hired engineers to serve as construction managers. However, most engineering school curriculums do not focus on construction management, creating a huge challenge in the performance of construction management oversight. As a result, engineers were required to learn construction management skills "on-the-job" creating less-than optimal environments to learn application skills.

When the BRAC action moved the Armor School from Fort Knox to Fort Benning there emerged an immediate demand for construction management skills. The Construction Management Education Program was originally conceived in January 2009 in partnership

with Auburn University to directly address this need within a very challenging period of construction at military installations. The program initially focused on providing instruction in practical construction management skills to the large number of young engineers who were hired to manage the construction program at Fort Benning, Georgia. The program quickly demonstrated an ability to provide instruction lacking in conventional education of the young engineers. The program reduced the amount of time needed for recently hired engineering graduates to develop into effective project engineers and eventually Resident and Area Engineers.

Over the past five years, the program has further expanded to include members of the federal Acquisition workforce including contracting officers, contract specialists, and project managers working in the construction field. The program greatly enhances their knowledge of construction management and the challenges facing the construction industry. This provides contracting and project management personnel with the

contextual knowledge needed to make accurate, informed decisions concerning acquisition strategy, construction changes, and dispute resolution. In addition to providing a solid background in construction management, the program satisfies the requirement for 24 semester hours of business in order to obtain an Administrative Contracting Officer warrant.

With the expansion of the program to include a new class every academic year, the program has evolved into a Graduate Certificate program. Beginning in May 2013, the certificate program concept was converted to a certificate program and expanded worldwide. The program is now divided into 3, 12-hour certificates:

- Certificate 1- Executive Graduate Certificate in Construction Management
- Certificate 2- Executive Technical Certificate in Construction Management
- Certificate 3- Executive Integrated Process Certificate in Construction Management

The first certificate program is completed over two semesters and consists of the following classes: Construction Cost Estimating, Construction Contracting Business, Construction Project Management and Scheduling, and Construction Law and Risk Management. The second and third certificates are completed concurrently over four semesters. Certificate 2 coursework includes Mechanical and Plumbing Systems, Electrical Systems, Construction Information Management (Building Information Modeling), and Structures. Certificate 3 coursework includes Construction Integrated Processes I, Construction Integrated Processes II, Executive Issues in Construction, and Sustainability (LEED).

Students attend classes on the Auburn University campus for four days at



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CP 27 also manages an ACTEDS funded Intern Program. Under this program, selected individuals enter CP 27 at the GS-7 level and graduate after two years of intensive training as a GS-1173-11 Housing Manager. The program includes On-the-Job Training, AHA and other classroom training. Interns sign a mobility agreement and are placed in a permanent position upon graduation. CP 27 currently has interns training at Fort Stewart, Fort Riley, OACSIM, Joint Base Lewis-McChord, and Fort Bragg. For FY15, CP 27 will be selecting an intern to train in Germany.

Army leaders are focused on developing the workforce to meet the needs of the Army both today and in the future. CP 27 is supporting this effort through enterprise management of Careerists dedicated to supporting the housing needs of Soldiers and Families across the Army worldwide.

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# National and Federal Planning Training Conferences in Seattle in April

by Andrea Wohlfeld Kuhn

The American Planning Association (APA) will hold its annual training conference in Seattle this year at the Washington State convention center, from April 18-21, 2015. Seattle is known for its leadership in developing sustainable, energy efficient communities and buildings, and therefore promises to be an ideal location for the conference. A glimpse at the conference topics shows sessions on smart cities and sustainability; parks, recreation, and greening communities; the planning office of the future; the new economy; whole streets; and planning and climate change; among others.

To continue the format started last year, the Federal Planning Division (FPD) Training Workshop will be condensed from previous years, and be more fully integrated into the national APA conference. The FPD Workshop will occur on the last day of the APA conference, on April 21, 2015. The FPD awards ceremony and business meeting will occur the evening before, on April 20th.



At the time of this writing, planning was underway, but had not been finalized as to whether federal agency/military related workshops will be held following the FPD Workshop, on April 22nd. Interested participants should check the FPD website at <http://federalplanning.org> for up to date information.

More information can be found on the respective websites:

- American Planning Association: April

Acronyms and Abbreviations	
APA	American Planning Association
FPD	Federal Planning Division
HQUSACE	Headquarters, U.S. Army Corps of Engineers

18-21, 2015;

<http://www.planning.org/conference/>

- Federal Planning Division: April 21, 2015; <http://federalplanning.org>

Topics at both conferences will include sessions that address critical issues facing planners and those in related fields, including topics such as energy, sustainability, climate change, environmental issues, natural and cultural resources, transportation planning, land use, legal aspects, ethics, etc.

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the start of each semester to meet with their professors, meet the other students in the cohort, and begin coursework. The balance of the coursework is delivered online using the latest internet teleconferencing technologies. These online classes meet once a week for two hours with additional coursework completed by the student during each week. Students have the option of completing only one certificate or all three certificates depending on their workload and preference. Students who complete all three certificates and a Capstone research paper/project are awarded a "Master of Building

Construction" degree from Auburn University.

The first cohort of 18 students graduated with a Master's in Building Construction program in May 2011. Since then, 27 additional Army personnel have graduated with a Master's in Building Construction. To date, 48 additional Army students have completed Certificate 1 and 33 of those students are enrolled in Certificates 2 and 3. Twenty-four additional students began Certificate 1 in August 2014. The feedback received from both supervisors and students has been positive. Without exception, all students say they agree that the program has enhanced their job performance, confirming it has been well worth the time

invested.

The next enrollment period for the program is spring 2015 with classes starting in August 2015. For more information, contact the head of graduate studies at Auburn University's McWhorter School of Building Science, Anoop Sattineni ([sattian@auburn.edu](mailto:sattian@auburn.edu)).

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