

# **Eagle's Wings**



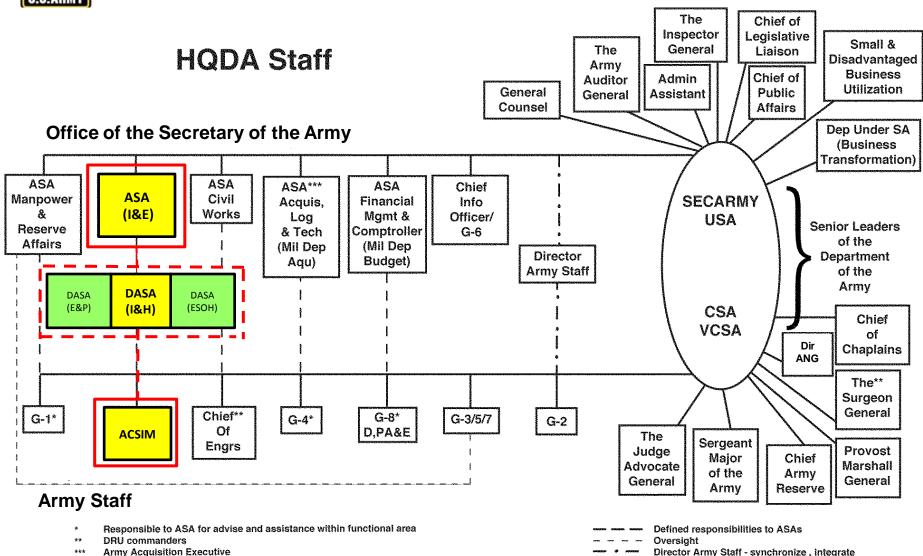
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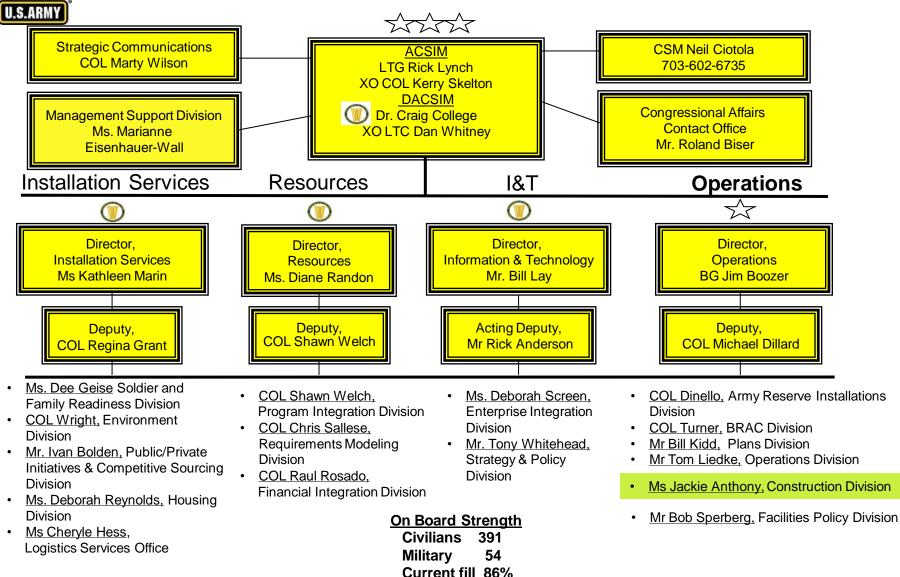


## **Headquarters Department of Army**





#### Office of the Assistant Chief of Staff for Installation Management





## **Nutrient and Sediment Loadings**

## Annual Loadings to the Chesapeake Bay:

- 291 million pounds of nitrogen (59% emissions, runoff)
- 13.8 million pounds of phosphorus (30% runoff, non AG)
- 6.6 billion pounds of sediment

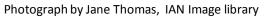
\*Source: Chesapeake Bay Program, 2008 data



Photograph from Low Impact Development Center



Satellite image by NASA







Army LID Policy to Meet or Exceed:

- Energy Independence and Security Act (EISA), Sec. 438, December 2007
- Environmental Protection Agency (EPA), Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act, December 4, 2009
- OSD Policy Memo, DoD Implementation of Storm Water Requirements under Section 438 of the Energy Independence and Security Act (EISA), 19 Jan 2010
- Executive Order (EO) 13508 Chesapeake Bay Protection and Restoration
- Under the Chesapeake Bay TMDL, EPA will establish waste load allocations for "point sources" subject to NPDES permits
- LEED Silver Construction



- Develop new ASA(I&E) storm water policy mandating use of Low Impact Development
  - All projects (not just > 5,000 sq-ft)
  - Limitations on Site Clearing & Grubbing
  - Mandatory in FY11 SRM and FY13/14 MILCON
  - No Non-recreational Retention Ponds (storage under parking lots)
  - Mandatory Modeling (LID features attempt to restore to predevelopment hydrology)
  - Foster Cultural Change w/Guidance and Training: (2010 spend plan)
- Project Development
  - Master Planner/LA/Architect/Engineer involvement
  - In Line w/Installation Design Standards
  - Coordination w/USACE (incorporate in Army Standards & Standard Designs)



- ASA(I&E) Low Impact Development Policy
- Mandatory Timelines: FY11 SRM and FY13/14 MCA
- Get the construction community engaged; Provide Guidance and Training for the DPW: Master Planner/ Landscape Architect/Architect/Engineer and USACE
- Integrate and Update: FDG/FDT- Army Standard, ARs, IDGs, Unified Facility Criteria (UFC) 3-210-10, LID Manual, COS's (Army Standard Designs), etc.
- Demonstrate success: Fort Belvoir Medical Center (GC/DPW/BRAC Project Manager/Design Build A&E); DEMVAL projects



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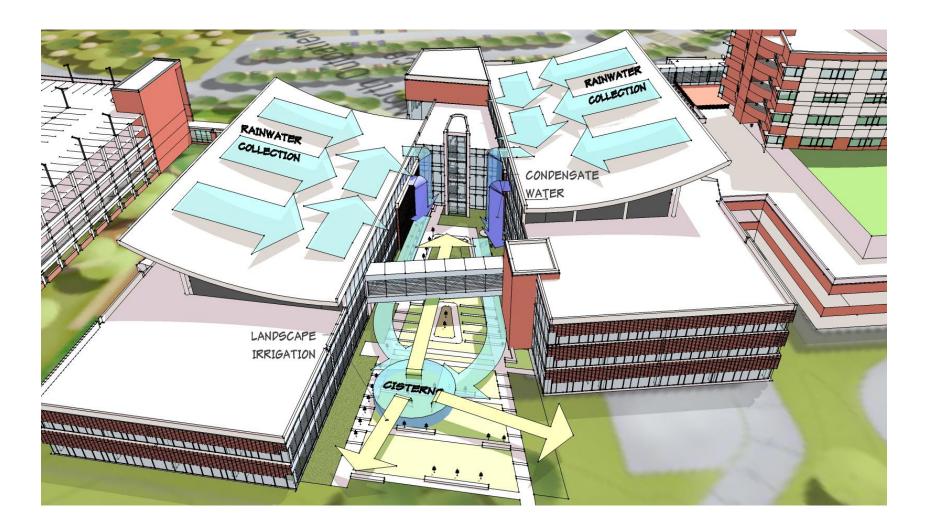


## **Elegant Designs**





## **Fort Belvoir Community Hospital**





## Wing Construction





#### **Structural and Non-Structural LID Controls**





## Eagle's Wings as of 8 Jun 10





## **OACSIM LID Projects**

- APG
  - ARL Compound Parking Lot
  - ARL UAV Runway, Pad, Rainwater Harvesting and Parking Lot
- Fort AP Hill
  - Beaverdam Pond Parking Lot
  - Game Check/Visitor Center Parking Lot

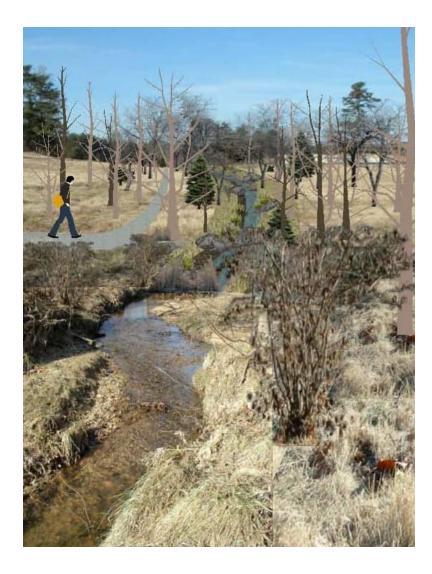
## Fort Meade

- Clinic Parking Lot & Drainage Channel
- Stream Daylighting w/Wetlands



## **Stream Day-Lighting**







# **QUESTIONS?**

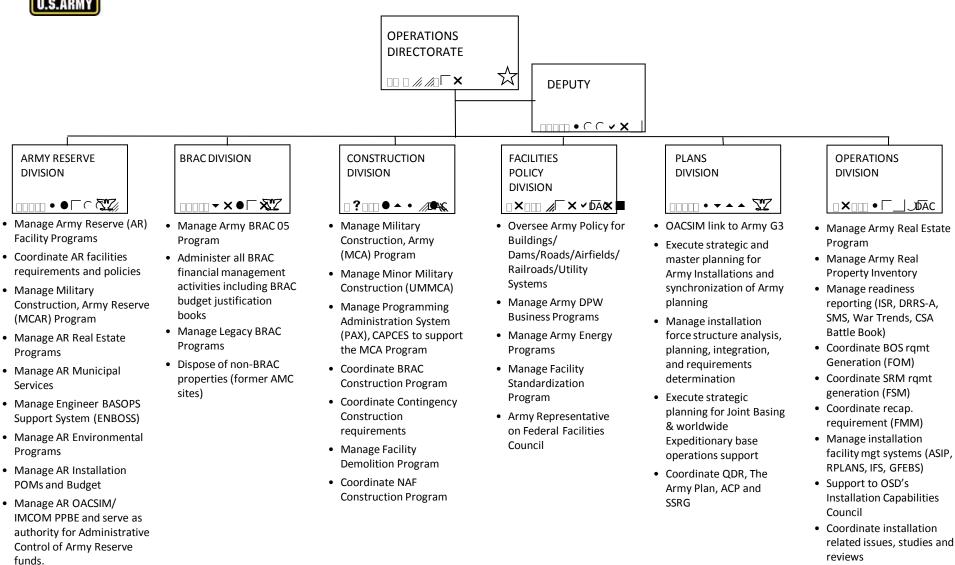


Low Impact Development incorporates "proven" storm water management principles and technologies into project planning and design in order to manage storm water as close to where the precipitation lands as possible. This is done to maintain or restore the pre-development hydrology of the site, reduce runoff volume and peak runoff rates, and reduce the potential transport of pollutants to receiving waters.

- Cisterns/rain barrels
- Rain gardens
- Bio-retention cells
- Soil amendments
- Reforestation
- Permeable pavement (asphalt, concrete, pavers, or blocks)
- Grass swales and bio-swales
- Green roofs



#### **Operations Directorate, OACSIM**



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