



Challenge

Facility construction, operation, maintenance, and demolition at Fort Campbell are costly and produce many environmental impacts, but are vital to providing good quality of life. How can Fort Campbell provide infrastructure that meets the needs of users, and reduces overall costs, environmental impacts, waste, and dependence on non-renewable energy sources?

Fort Campbell 25-Year Goals for Infrastructure

Given this challenge, attendees of the Fort Campbell Installation Sustainability Workshop, which convened on 9-11 September 03, developed the following long-range goals:

Final Goal #1: No adverse impact to the quality of water resources due to point and non-point sources on Fort Campbell; efficient use of existing water resources.

Final Goal #2: Sustainable buildings and infrastructure that meet mission requirements.

The primary issues and goals discussed in the Infrastructure working group are described below. This information will be helpful in developing the short-term objectives and five-year plans needed to reach the long-range goals.

Breakout Group Membership

Facilitator: Ron Webster

Recorder: Elizabeth Keysar

Name	Organization
Jeff Atkins	Fort Campbell, PWBC, Infrastructure Team Leader
Bill Baggett	Fort Campbell, PWBC, HAZMAT
Tessa Bayshore	Fort Eustis, Sustainability Planner
Karl Brooks, SSG	Fort Campbell, PSBC
Phil Butler	Fort Campbell, ITBC
Frank Coghill	Fort Campbell, PSBC
Dave Epperly	Fort Polk, Construction Management
Tim Feathers	CDM
Michelle Hanson	CERL
Lacey Hardin	TDEC
Terry Hazle	Redstone Arsenal, Environmental
Ken Eisele	Fort Rucker, Environmental



Patty Lockard	Fort Campbell, PWBC, Environmental Div
John McHennon	CH2MHill
Scott McNab	Actus Lend-Lease, RCI Contractor
Linda Rice	Fort Eustis
Ralph Scruggs	160th SOAR, Engineering
Gary Sewell	Fort Campbell, PWBC, Utilities Branch
Phil Taylor	Fort Campbell, CABC, MWR
Doug Warnock	ODEP/HQDA
Wanda Watkins	Fort Campbell, PWBC, Housing
Fred Williams	Fort Campbell, PWBC, Infrastructure Co-Team Leader
Tracey Williams	Anniston Army Depot, Engineering
Arlin Wright	Fort Campbell, PWBC, Utilities/Privatization

List of Issues and Potential Responses to Issues

Building Construction and Use

- ?? Fort Campbell needs to design and construct low impact buildings; the current practice results in buildings that are resource intensive to operate (for electric, water use, and wastewater).
- ?? Current construction is not energy efficient.
- ?? Fort Campbell needs to implement green building concepts into facility design.
- ?? Building materials need to be recyclable and from renewable resources.
- ?? Fort Campbell needs to remove old energy hogs and replace with “smart” high-energy efficiency buildings.
- ?? Fort Campbell needs more structures for living space, storage, and aircraft operations.
- ?? Antiquated facilities at Fort Campbell are expensive to use and maintain.
- ?? There is a problem with indoor air quality.

Energy

- ?? Fort Campbell is too dependent upon fossil fuels for energy.
- ?? High levels of energy use is partly due to the inability to measure all individual utility users; Fort Campbell needs to know the amount used and meet reduction goals.
- ?? High fuel use in mobile sources is a problem.
- ?? Fort Campbell consumes high levels of energy from a few sources.
- ?? Fort Campbell needs to increase energy conservation and use alternate sources.
- ?? Fort Campbell needs to secure and implement renewable energy sources.
- ?? Fort Campbell needs cost-efficient energy systems.
- ?? There is a lack of energy conservation programs.
- ?? Energy use and costs continue to increase, and there are no viable alternate sources.
- ?? The increase in equipment movement poses a problem for Fort Campbell.



?? Natural gas shortages in the future will cause higher prices.

Finite Land Resources

- ?? Fort Campbell needs more training space; more land is needed.
- ?? Fort Campbell needs improved management of training land and siting of new projects on non-training land.
- ?? Unexploded munitions and impact areas need to be cleaned.
- ?? There are impacts resulting from the increase of troops stationed at Fort Campbell.
- ?? There are impacts related to equipment movement (energy, noise, etc.).
- ?? There is limited space for new facilities.

Management

- ?? Fort Campbell has an aging workforce and a decreasing knowledge base.
- ?? Fort Campbell needs to consider privatization versus liability.
- ?? There has been a transition from government-owned/government-operated to government-owned, contractor-operated.
- ?? Contract management and control issues are problems.
- ?? There needs to be better coordination of work for infrastructure contractors – they need to understand how they impact the environment.
- ?? The change of commanders alters planning priorities.
- ?? There are increasing construction costs.
- ?? Funding is not based on life-cycle costs.

Water Supply

- ?? There is a lack of secure/alternate water supply sources.
- ?? There is a need for long-term water supply to meet changing mission requirements.
- ?? Fort Campbell needs to reduce water use and water waste.
- ?? Fort Campbell needs to address short-term water requirements to address drought events.
- ?? Water safety is a concern. Fort Campbell needs to secure a drinking water source.

Wastewater and Water Pollution

- ?? There are impacts from water pollution and the discharge of polluted water on and off post.
- ?? Wastewater plant efficacy and capacity are concerns.
- ?? Stormwater infiltration poses problems for Fort Campbell.
- ?? Fort Campbell currently focuses on treating wastewater, rather than reducing the amount generated.
- ?? Water pollution from point and non-point sources is a concern.
- ?? Industrial stormwater pollution is an issue.

Operating in Two States

- ?? Regional social infrastructure is complicated by the fact Fort Campbell is located in two states.
- ?? There is difficulty in maintaining compliance with two sets of State statutes.



?? There needs to be centralized regulations from the two States.

Air Quality

- ?? The non-attainment status in the region for PM 2.5, ozone, and hazardous air pollutants poses problems for Fort Campbell.
- ?? Fort Campbell needs to convert to water-based, low- or no-HAP solvents.
- ?? Fort Campbell has dust issues (PM 2.5).
- ?? There are air quality impacts on Fort Campbell and the surrounding communities.

Transportation

- ?? There are traffic congestion and road network problems.
- ?? The installation roadways need to be upgraded.
- ?? There is a lack of traffic planning to integrate on-post conditions/mission needs with the needs of the surrounding community; Fort Campbell has a poor interface with the surrounding community.
- ?? There are conflicts in air and ground transportation between Fort Campbell and the community.

Construction and Demolition Debris

- ?? The deconstruction of WWII wood buildings is expensive and generates C&D waste.
- ?? Liability concerns prohibit salvage rights to demolition and renovation firms.
- ?? Fort Campbell needs better ways to dispose of or re-use C&D debris.
- ?? Designers do not consider life cycle cost effectiveness.

Utilities

- ?? Evolving technologies outpace the ability of infrastructure to adapt.
- ?? Army Transformation requires communication upgrades.
- ?? Utility system shortfalls constrain growth and flexibility.
- ?? Fort Campbell needs to consider the reliability and ease of maintaining utility infrastructure.
- ?? Fort Campbell needs to keep up with utility MCA projects.
- ?? Providing utilities is a high cost.
- ?? Fort Campbell needs to incorporate into MCA projects a plan to expand current utilities to meet projected facility expansions.
- ?? An expanded and improved Installation Design Guide is needed.

Initial Goals and Proponents Developed

Initial Strategic Goal 1

- ?? **Goal:** Integrate planning, decision-making and implementation in support of long-term objectives that are adaptive to mission and command changes.
- ?? **Issue:** Frequent change in mission negatively impacts ongoing initiatives; poor coordination amongst installation directorates, contractors, and subcontractors results in inefficient and unsustainable outcomes



- ?? **Desired End State:** Policy for continuous sustainability planning to include coordination and oversight of implementation and a program to capture and document implementation
- ?? **Metrics:** Installation Status Report ongoing; Strategic Readiness System in development
- ?? **Timeframe:** SRS in place and active 2006
- ?? **Proponent Organization:** PPTO

Initial Strategic Goal 2

- ?? **Goal:** Efficient utilization of existing and future land resources to support mission requirements in coordination with surrounding communities.
- ?? **Issue:** Finite land resources and inefficient land use limit growth options
- ?? **Desired End State:** Land resources managed to meet current and future mission requirements
- ?? **Metrics:** Unit/Installation Status Report/SRS
- ?? **Timeframe:** 2006-08
- ?? **Proponent Organization:** GC

Initial Strategic Goal 3

- ?? **Goal:** Reduce per capita potable water consumption by 50% and preserve the quality of existing supply.
- ?? **Issue:** Lack of reliable long-term water resources to accommodate future expansion
- ?? **Desired End State:** Dependable, reliable, high quality drinking water source based on comprehensive water management planning.
- ?? **Metrics:** Gallons/person/day potable water use
- ?? **Timeframe:** 2028
- ?? **Proponent Organization:** PWBC

Initial Strategic Goal 4

- ?? **Goal:** Zero discharge from point sources; no net impact from non-point sources.
- ?? **Issue:** Wastewater generation and disposal; water pollution from point and non-point sources; wastewater plant efficiency and capacity issues
- ?? **Desired End State:** Zero discharge from point sources; no net impact from non-point sources
- ?? **Metrics:** NPDES, gallons per day discharge
- ?? **Timeframe:** 100% reduction by 2028
- ?? **Proponent Organization:** PWBC

Initial Strategic Goal 5

- ?? **Goal:** Preserve regional air quality, maintain attainment status, and eliminate Fort Campbell HAP releases.
- ?? **Issue:** Air quality degradation constraining mission activities; regional air quality impacting Fort Campbell activities
- ?? **Desired End State:** Regional air quality attainment
- ?? **Metrics:** EPA air quality standards; Fort Campbell HAP releases



?? **Timeframe:** Continuous for attainment; 2028 for Fort Campbell releases

?? **Proponent Organization:** GC

Initial Strategic Goal 6

?? **Goal:** All facilities are designed, planned, renovated, and constructed to be sustainable.

?? **Issue:** Facilities are not planned and constructed based on life cycle costs; inefficient energy and water use; high maintenance costs; poor indoor air quality

?? **Desired End State:** Green buildings, renovations reflect green building standards

?? **Metrics:** LEED, SPiRiT Rating systems

?? **Timeframe:** Platinum for all new construction by 2028

?? **Proponent Organization:** PWBC

Initial Strategic Goal 7

?? **Goal:** 100% diversion of C&D waste from landfill

?? **Issue:** Construction and demolition waste; limited landfill space

?? **Desired End State:** Optimal reuse of excess buildings, including re-use, deconstruction, and recycling

?? **Metrics:** Generation/diversion ratio

?? **Timeframe:** 2028

?? **Proponent Organization:** PWBC

Initial Strategic Goal 8

?? **Goal:** 100% diversion of municipal solid waste from landfill

?? **Issue:** Solid waste generation; limited landfill space

?? **Desired End State:** Zero waste disposed of to landfills

?? **Metrics:** Generation-to-diversion ratio

?? **Timeframe:** 2028

?? **Proponent Organization:** PWBC

Initial Strategic Goal 9

?? **Goal:** All Fort Campbell government-owned, non-tactical vehicles and energy sources converted to renewable fuel sources.

?? **Issue:** Dependence on fossil fuels; energy use and prices increasing

?? **Desired End State:** Fort Campbell converts to renewable, decentralized fuel and energy sources

?? **Metrics:** % of total energy from fossil fuels

?? **Timeframe:** 100% renewable by 2028

?? **Proponent Organization:** GC

Initial Strategic Goal 10

?? **Goal:** Fully functional and supported utility network that provides for future expansion.

?? **Issue:** Utility system shortfalls, resource limitations



- ?? **Desired End State:** Utility infrastructure is adequate to meet current and future needs
- ?? **Metrics:** Installation Status Report (initial); SRS (long term)
- ?? **Timeframe:** 2028
- ?? **Proponent Organization:** PWBC

Final Goals and Team Members

Final Infrastructure Goal #1

No adverse impact to the quality of water resources due to point and non-point sources on Fort Campbell; efficient use of existing water resources.

- **Issue:** Wastewater generation and disposal; water pollution from point and non-point sources; wastewater plant efficiency and capacity issues
- **Desired End State:** Pollution-free discharges from point sources; no net impact from non-point sources; eliminate sediment loss from training; reduce per capita potable and non-potable water usage; ensure sustained quality of water supply resources; implement a water quality management plan that includes off-post issues; Watershed Management Plan
- **Metrics:** Stream quality; groundwater quality; gallons per day water usage
- **Timeframe:**
 - ?? Fort Campbell streams off EPA 303(d) list by 2015
 - ?? Reduction in water consumption
 - ?? Unconstrained use of water resources by 2028
- **Proponent Organization:** PWBC
- **Team Members:**
 - ?? CH2MHill
 - ?? Environmental Division
 - ?? Utilities Branch
 - ?? State and Federal Agencies
 - ?? ITAM/G3
 - ?? Fire Department
 - ?? RCI Contractor
 - ?? Corps of Engineers



Final Infrastructure Goal #2

Sustainable buildings and infrastructure that meet mission requirements.

- **Issue:** Facilities are not planned and constructed based on life cycle costs; inefficient energy and water use; high maintenance costs; poor indoor air quality; lack of emphasis on master planning
- **Desired End State:** All facilities (including ranges and utilities) are planned, sited, designed, renovated, and constructed to be sustainable and to meet mission requirements; renovations reflect green building standards; effective comprehensive master planning process; development is in accordance to the Installation Master Plan; interactive and effective Integrated Planning Board
- **Metrics:** LEED, SPiRiT Rating systems
- **Timeframe:** Platinum for all new construction by 2028
- **Proponent Organization:** PWBC
- **Team Members:**
 - ?? Unit Representatives
 - ?? PSBC, Fire/Security
 - ?? Environmental Division
 - ?? Corps of Engineers
 - ?? ITBC
 - ?? RBC
 - ?? CABC
 - ?? Construction Contractors
 - ?? G3
 - ?? Tenant Agency