

# *Environmental Management System*



*The Road to A Sustainable Future*

# Random Thoughts

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- ❖ Why EMS?
- ❖ What Does Sustainability Mean to You?
- ❖ Who is Responsible for EMS?
- ❖ Isn't This Just Another Environmental Program?
- ❖ I'm Not the EMS Officer
- ❖ Who Cares -- I'll Be Gone in 2 Years.
- ❖ This is the DPW's Mission
- ❖ BRAC 2005 and Beyond

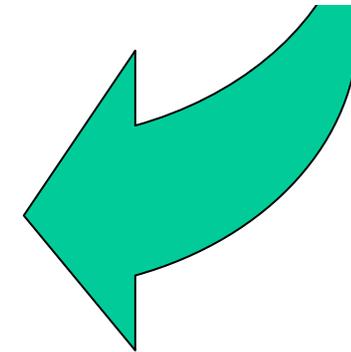


# WHY EMS

- ❖ Finite Resources
- ❖ Training Restrictions
- ❖ Encroachment
- ❖ Availability/Degradation of Training Lands
- ❖ NOV's –
- ❖ Enforcement Actions/Fines
- ❖ Mobilization/Deployment Considerations
- ❖ Mission Accomplishment
- ❖ Quality of Life
- ❖ It's the Right Thing to Do!



**METT-TCE**



***Environmental Consideration Should Be Second Nature***



# Sustainability

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## *What is sustainability?*

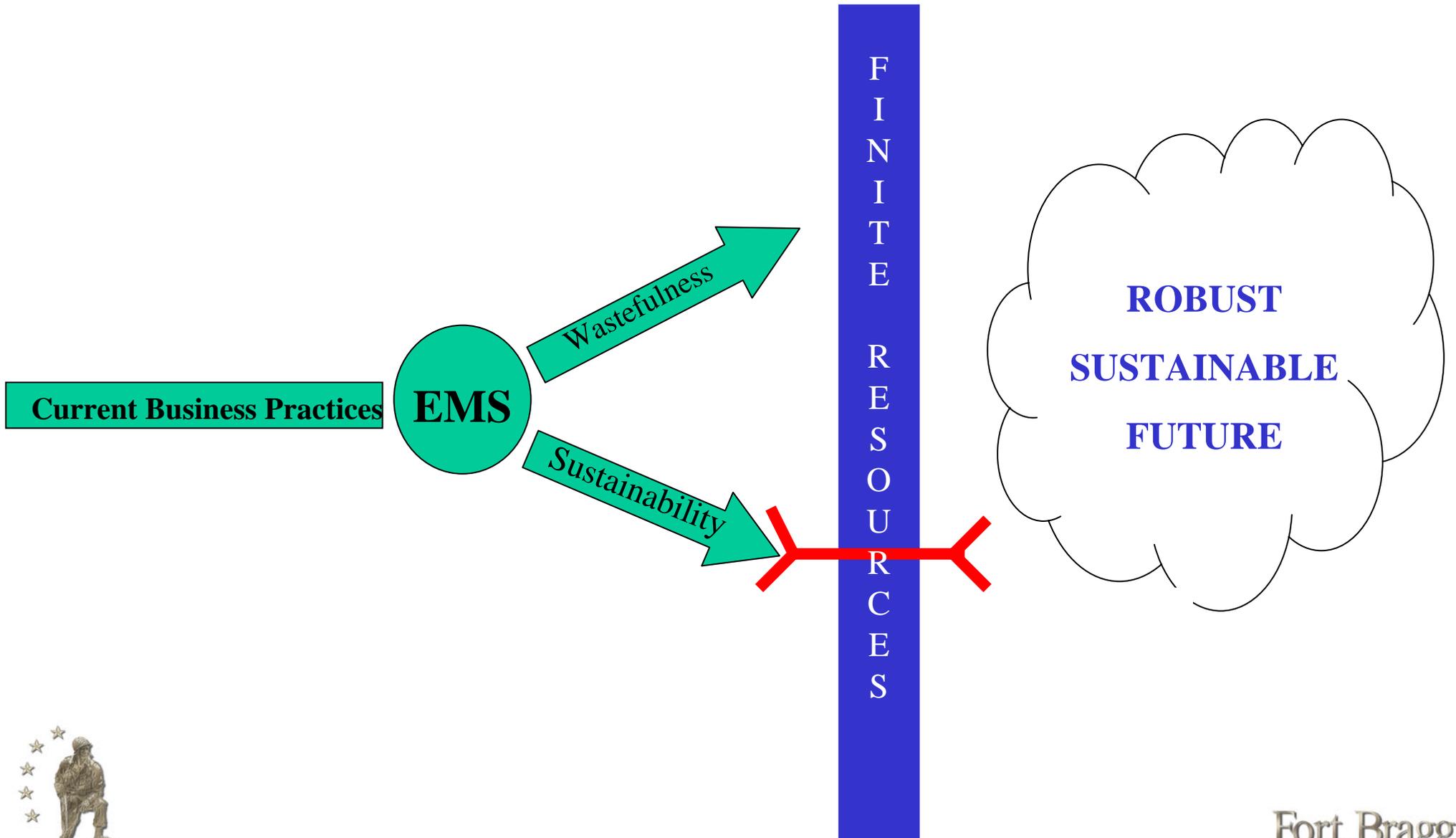
Sustainability is a **philosophy and approach** for meeting the needs of the present community without compromising the ability of future generations to meet their own needs.

## *What is sustainability to the military?*

A pro-active approach to ensure the **long-term viability** and integrity of the mission by **minimizing** resource needs, **reducing** environmental impacts, and **managing** resources while **providing** realistic training environments.



# EMS Decision Point



**Mission**

Training    Readiness    Quality of Life    Mobilization/Deployment    Growth & Development    Community Relations

Air Quality    Water    Energy    Waste    Infrastructure    Land

Training    Readiness    Quality of Life    Mobilization/Deployment    Growth & Development    Community Relations

**Mission**

# EMS -- Progress Against Goals

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- **Original Goal:**
  - integrate EMS into existing sustainability program using ISO 14001 standard
- **Actual:**
  - Education and buy-in of top management and process owners on applicability of using an EMS to accomplish sustainability.
  - EMS framework in place
    - Evaluated all installation core business practices
    - Most significant aspect – water quality
  - Incorporated into the Installation Sustainability Program



# EMS Top Management Involvement

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- **Garrison Commander**
  - Signed Environmental Policy
  - EMS is listed as one of the top 6 key processes in the Installation Strategic Plan
- **Core Business Process Owners – Business Center Directors & Sustainability Team leaders**
  - Attended awareness training
  - Identified Significant Aspects
  - Identified Operational Controls, Monitoring and Measuring Processes
  - Identified current training and gap analysis.
  - Developed corrective actions



# Fort Bragg SMS Policy

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## Sustainability Management System Statement

Fort Bragg, the Army's premier power projection platform, is charged with the mission to mobilize and deploy America's contingency forces. To support this critical mission, all military, civilian, and contracted personnel on Fort Bragg must comply with applicable laws and regulations while performing their duties in a manner that prevents pollution, conserves natural & cultural resources, and protects the environment. Fort Bragg is committed to protecting, sustaining, and enhancing both the human and natural capital that the installation and surrounding communities need to remain a vibrant region. In order to achieve these goals and continuously improve our environmental performance, Fort Bragg will establish, implement, and maintain an effective, integrated Sustainability Management System.

### Our Policy:

#### Sustainable Fort Bragg

The Right Way – obey environmental laws  
The Green Way – practice pollution prevention  
All The Way – keep improving.



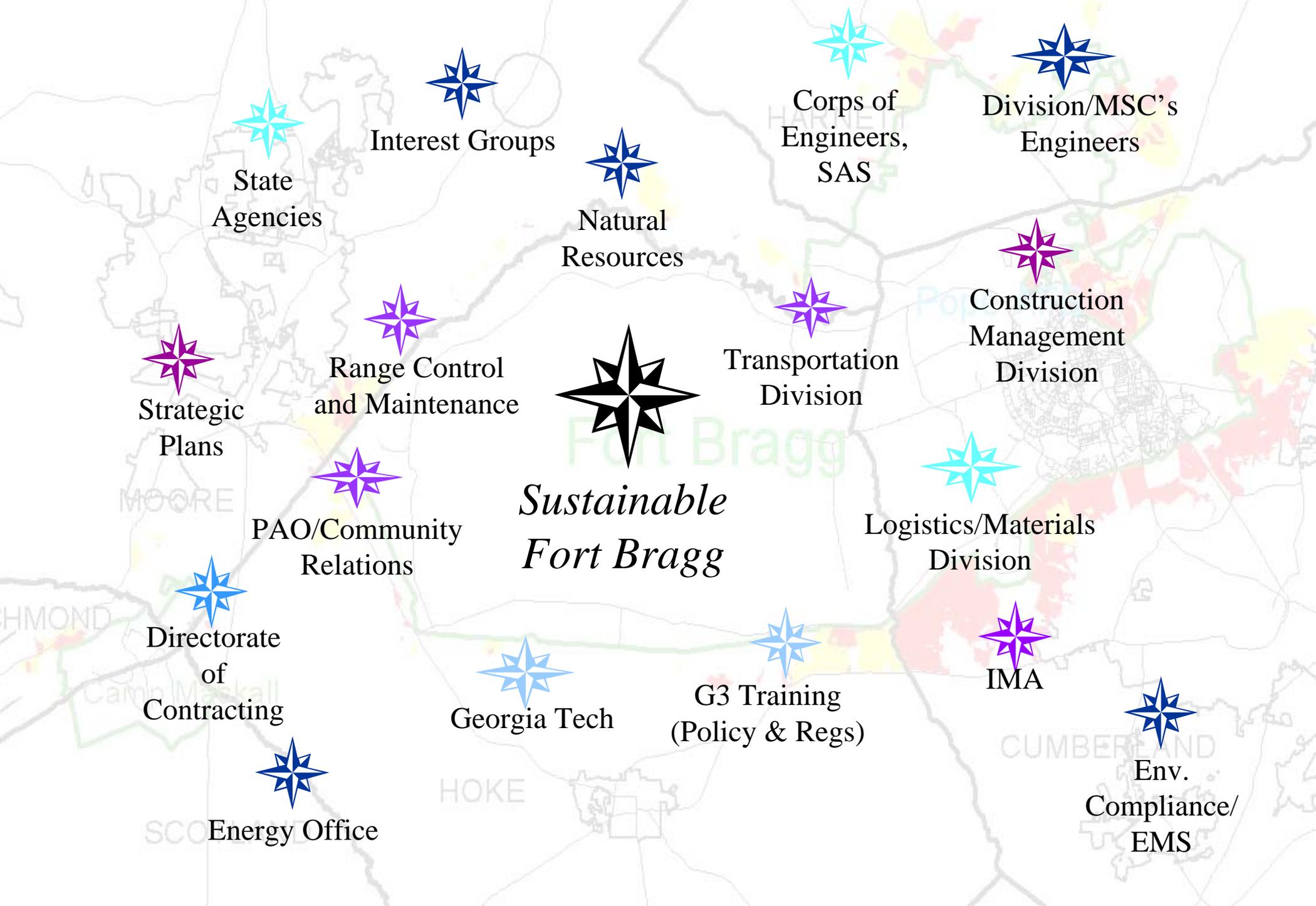
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AL AYCOCK  
COL, SF  
Garrison Commander

19 Sep 03



# EMS -- Integration of all Critical Activities



# EMS Project Highlights

## Aspects & Impacts Analysis

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1. **Cumulative-level analysis of 4 core business processes for significant impacts**
  1. **military training**
  2. **deployment**
  3. **infrastructure**
  4. **quality of life**
2. **Impacts prioritized with respect to effects on:**
  1. **mission**
  2. **community**
  3. **cost**
  4. **environment**

} definition of a sustainable installation
3. **Significant aspects derived from significant impacts**

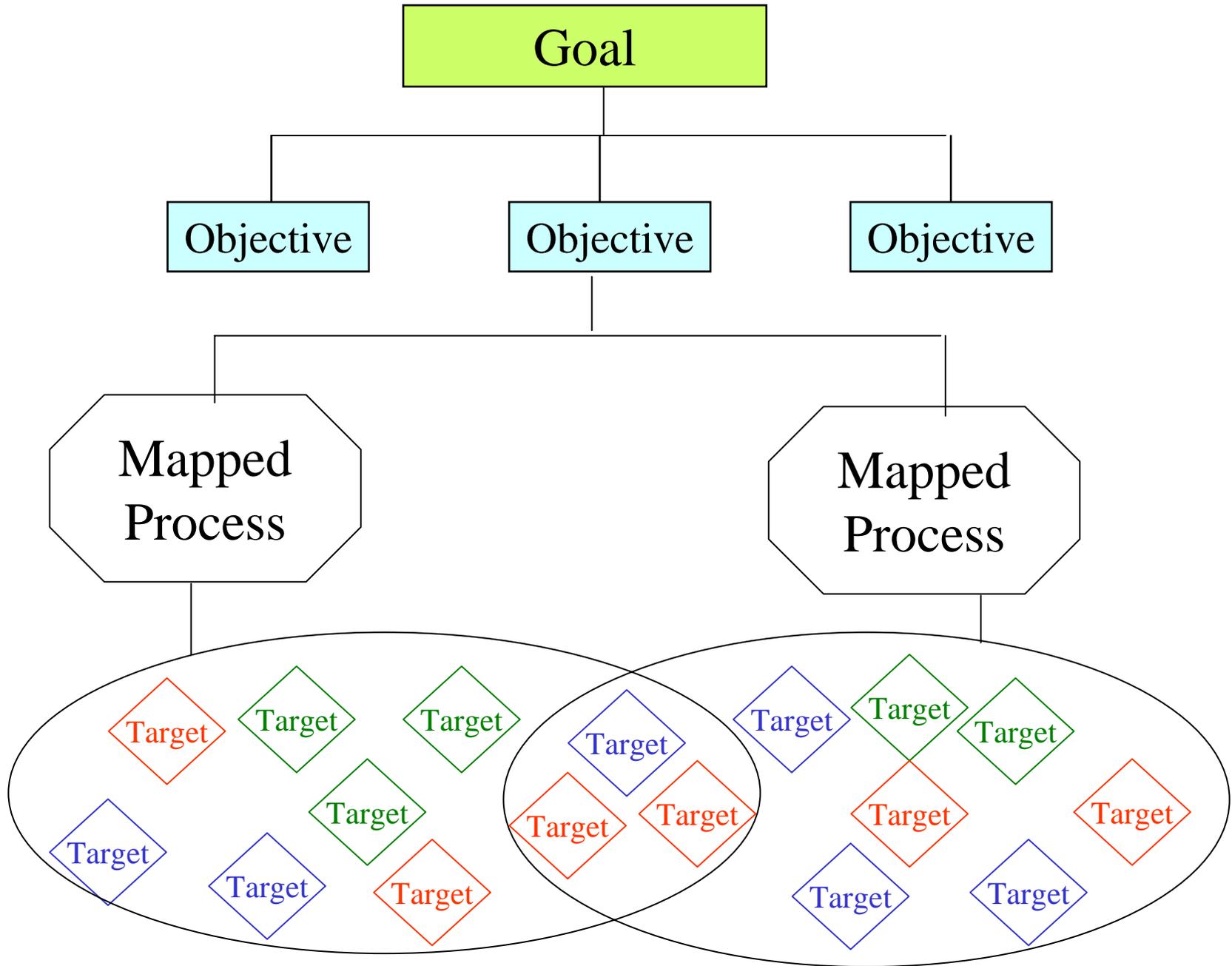


# Identify and Map Processes

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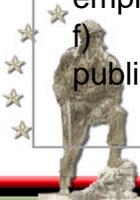
- Identify and map the processes associated with each objective
- Conduct gap analyses to determine **if**
  - A. The process is accurate;
  - B. The process is efficient and effective;
  - C. There are gaps in the process that require attention; and
  - D. There is an effective correction action process that is monitored by management





# EMS Project Highlights – Implementation Plan

ISO 14001 EMS Requirements	How requirement met	Responsibilities	Timeline
<p><b>4.2 Environmental policy</b>                      Top management shall define the organization's environmental policy and ensure that it</p> <p>a) is appropriate to the nature, scale and environmental impacts of its activities, products or services;</p> <p>b) includes a commitment to continual improvement and prevention of pollution;</p> <p>c) includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;</p> <p>d) provides the framework for setting and reviewing environmental objectives and targets;</p> <p>e) is <b>documented</b>, implemented and maintained and communicated to all employees;</p> <p>f) is available to the public.</p>	<p>Environmental Policy is within the Installation Strategic Plan. Attachment A contains the Installation's policy.</p> <p>The policy is embedded in contractual requirements and contractors are required to communicate the policy to their employees.</p> <p>The policy is available to installation employees and the public on the Fort Bragg web site at <a href="http://www.bragg.army.mil/sustainability/">http://www.bragg.army.mil/sustainability/</a>.</p> <p>It is also part of the in-processing sustainability brief given to new soldiers.</p> <p>It is distributed to all employees yearly via email.</p> <p>It is shown on Bragg TV once per year.</p> <p>Additional details delineating how the policy is communicated to all employees are included in the Training Procedure 001. (add on to the boiler plate – “ will comply and communicate the SMS environmental policy to employees”</p> <p>Place an article in the Paraglide, installation newspaper, after revisions are made.</p>	<p>SMS Rep.</p> <p>Atlanta contracting office/cover letter from GC- SMS Rep.</p> <p>Sustainability Planner</p> <p>Sustainability Trainer/Planner</p> <p>ITBC</p> <p>Env. Community Relations</p> <p>Sustainability Planner/SMS Coordinator</p> <p>Env. Community Relations</p>	<p>By: Mar 04</p> <p>By: May 04</p> <p>By: Oct 03</p> <p>Beginning: Mar 04</p> <p>By: Oct 03</p> <p>By: Oct 03</p> <p>Starting: Mar 04</p> <p>By: Dec 03</p>



# Benefits

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- Provided structure to all environmental programs
- Identified gaps in Integrated Strategic Sustainability Plan
- Highlighted the need for Process Data Mapping for Environmental Compliance.
- Continual improvement and environmental considerations in all decision/actions
- Significantly increased environmental awareness
- Integral component of internal audit program
- Facilitated cultural change



# Future Actions

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- Revalidate Goals – reevaluate significant aspects and impacts
- Ensure objectives support the significant aspects
- Map each process to include previously identified targets
- Identify process gaps and develop additional targets address gaps
- Assign ownership of targets to sustainability team members
- Ensure that compliance program's targets support sustainability (this is done through the Internal EPAS audit)
- Monitor progress through monthly EQCC meetings and quarterly reports to the Installation Senior Management Board.
- Sustainability will be audited through the annual Internal EPAS and tri-annual external EPAS.(Management Review)

Plan – Do – Check - Act



# Sustainability – The Bridge to An Enduring Installation

IRON MIKE  
IN HONOR OF  
AIRBORNE TROOPERS  
WHOSE COURAGE,  
DEDICATION, AND  
TRADITIONS MAKE THEM  
THE WORLD'S FINEST  
FIGHTING SOLDIERS



# Sustainability

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## *What is sustainability to Fort Bragg?*

A pro-active approach to ensure the long-term viability and integrity of the mission by minimizing resource needs, reducing environmental impacts, and managing resources while providing realistic training environments.



# A Little About Fort Bragg . .



- ❖ **Population**
  - ◆ Currently about 45,000 Soldiers and 10,000 civilians
  - ◆ Daytime Population – >145,000
- ❖ Simmons Army Airfield
- ❖ Pope Air Force Base
- ❖ Camp Mackall
- ❖ Artillery and Firing Ranges



# The Situation



# Resource Issues That Could Threaten the Mission

- ❖ Annual \$30 million bill for for electricity, natural gas and heating oil;
- ❖ Permitted operations that produce ~380 tons of regulated air pollutants/year;
- ❖ Cumberland County has exceeded 8-hour ozone levels and will soon be designated non-attainment;
- ❖ Generated over 218K tons of solid waste in FY00, over 350K tons in FY01 and 600K tons in FY02;
- ❖ Consumes over 3 billion gallons of water from the Little River each year;
- ❖ Discharges almost 2 billion gallons of treated effluent to the Little River annually; and
- ❖ Has an estimated 125,000 acre training shortfall.



# The Fort Bragg Legacy



**Fort Bragg is the world's premier  
power projection platform**

**Environmental challenges, if ignored, could  
impact our ability to train and deploy  
soldiers**



**How do we preserve the  
Fort Bragg legacy?**



**Mission**

Training    Readiness    Quality of Life    Mobilization/Deployment    Growth & Development    Community Relations

Air Quality    Water    Energy    Waste    Infrastructure    Land

Training    Readiness    Quality of Life    Mobilization/Deployment    Growth & Development    Community Relations

**Mission**

# Sustainable Ft. Bragg – A Meaningful Solution



**Based on an integrated approach that includes  
all stakeholders – military, civilian,  
communities, regulatory agencies....  
To achieve a meaningful consensus and  
ensure READINESS.**



# Engage Stakeholders at all Levels

- Military
- Family Members
- Employees (Gov/Contractor)
- Local/Regional Community
- County commissioners
- Mayors
- Town Managers
- Governor
- Regional planning committees
- EPA
- NCDENR - State regulators
- USFWS
- SREO
- Land Use Advisory Committee
- Universities/local schools
- USGS
- FORSCOM
- AEC
- USACE/CERL
- AEPI
- Research institutes
- DA
- DoD
- NC Sandhills Partnership
- NC Natural Heritage Program
- NC Park Service
- NC Forest Service
- Sandhills Area Land Trust
- Environmental Defense Fund
- Private Lands Initiative



# Sustainable Milestones

- 2000 ISSP initiated, baseline document developed
- Apr 01 First Installation Sustainability Conference
- Jul 01 Goal Teams Formed
- May 02 Working 5-year Resource Plan Completed
- Oct 02 Sustainable Sandhills Begins
- Feb 03 Sustainable Sandhills Kickoff Conference
- Feb 03 Revalidation of Sustainable Fort Bragg Vision & Goals
- Apr 03 Sustainable Sandhills Executive Committee Formed
- May 03 Sustainable Sandhills Training and Workshop
- June 03 Finalized 5-Year Resource Plan
- Aug 03 Sustainable Sandhills Conference
- Oct 03 Completed Funding Requests for Sustainable Fort Bragg Projects
- Dec 03 Sustainable Sandhills Leadership Council meeting



# A Challenge

**“Examine the baseline issues, determine the end-state we want to achieve, set aggressive, attainable, and quantifiable goals; and pull together teams that engage the right stakeholders to ensure Fort Bragg’s history of proud service to the nation, and the world, continues indefinitely.”**

*COL Addison Davis  
U.S. Army Fort Bragg  
Garrison Commander*



# Sustainable Fort Bragg Vision

- ❖ In order to maintain the Fort Bragg legacy and to continue to train troops to standard, it is necessary to integrate long-term sustainable planning into the day-to-day operations of the installation. Our vision is an installation that will:
  - ◆ Provide soldiers with the necessary training to ensure mission success without compromising local or regional environmental quality;
  - ◆ Be recognized as a world leader in practicing global citizenship and promoting sustainability values;
  - ◆ Continuously seek new technologies, share lessons learned, and promote the exchange of ideas with the region and communities;
  - ◆ Restore and protect these valuable assets for future generations, as nationally recognized stewards of significant cultural and natural resources; and
  - ◆ Be an integral part of a healthy and thriving region, where all enjoy a high quality of life and access to vital resources.



# Goals

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1. Reduce amount of water taken from Little River by 70% by 2025, from current withdrawals of 8.5 million gallons/day. (PWBC)
2. All water discharged from Fort Bragg will meet or exceed North Carolina state high quality water (HQW) standard, by 2025. (PWBC/RBC)
3. Landfill waste to be aggressively reduced toward 0 by 2025. (PWBC)
4. Meet minimum platinum standard for all construction by 2020 program, and renovate 25% of all existing structures to at least a bronze standard by 2020 (using the Sustainable Project Rating Tool – SPiRiT). (PWBC)
5. Adopt compatible land use laws/regulations with local communities by 2005. (PWBC/RBC)
6. Reduce energy use in accordance with Executive Order 13123. (PWBC)



# Goals (continued)

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7. Develop and implement an effective regional commuting program by 2015. (RBC/PWBC)
8. Reduce the use of both gasoline and diesel in the non-tactical fleet by 70 percent by 2015 and 99 percent by 2025. (RBC/PWBC)
9. Develop an integrated environmental education program for Fort Bragg, its surrounding communities and interested parties. (RBC)
10. Work towards 100% Environmentally Preferred Purchasing by 2025 for all purchases, including government purchase card, contract, and military requisition. (RBC/DOC)
11. Implement a scientifically-based conservation program for natural and cultural resources compatible with military readiness and training. (PWBC)

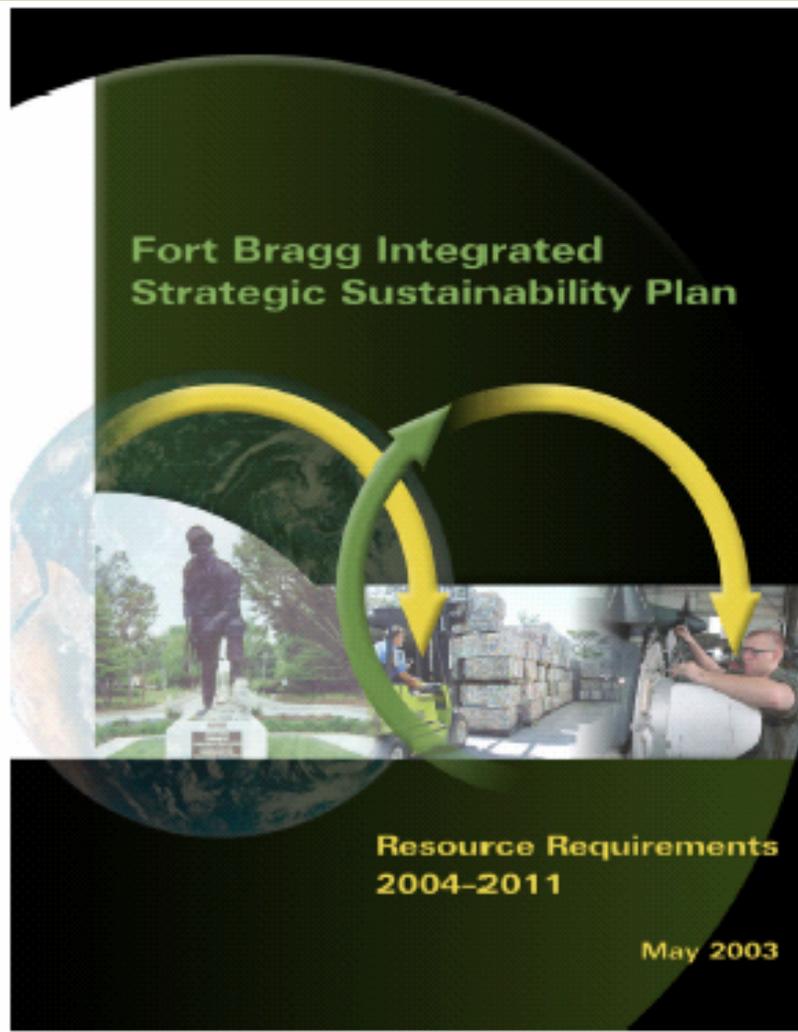


# Develop a Five Year Resource Plan

“People who attempt the difficult often attain the impossible.”



# Fort Bragg Integrated Strategic Sustainability Plan



**Resource Requirements  
2004-2011**

May 2003

# Fort Bragg Integrated Strategic Sustainability Plan

**Resource Requirements  
FY04-FY11**



Plan elements were coordinated with Fort Bragg Team Members during facilitated workshops in December 2002 and January 2003. Information collected during those workshops and prepared in previous meetings by team members was incorporated into Goal Summary and Objective Summary sheets. This information is presented in this document.



# Goal Details

## GOAL



**Goal 1: Reduce the amount of water taken from the Little River by 70 percent by 2025; and**  
**Goal 2: All water discharged from Fort Bragg will meet or exceed the North Carolina State High Quality Water (HQW) standard by 2025.**

### Challenge

Potential sources for Fort Bragg's water consumption have been steadily declining (both in quantity and quality) due to overuse. Contamination of regional water resources, particularly by sediments, is a critical concern to North Carolina because of the economic impacts associated with destruction of fish habitats, treatment of water to drinking quality, and the decrease of drinking water reservoir loading capacity. How can Fort Bragg reduce its dependence on these vulnerable sources and provide premium quality drinking water, as well as the "right" quality of water for other uses, without aggravating future regional water supply issues? How can Fort Bragg minimize the future costs and potential operational restrictions associated with water pollution, while improving regional water quality?

### Where is Fort Bragg today?

- Fort Bragg's primary drinking water source is the Little River, part of the Cape Fear River Basin.
- All water currently used in the containment area (except one of the two golf courses) is potable water drawn from the Little River.

- Fort Bragg's water consumption has increased 30 percent without an increase in population.
- Fort Bragg does not have a formal water conservation program to monitor real-time demand, to optimize distribution systems, to educate the public, and to control peak consumption.
- Fort Bragg does not have all the data needed to quantify our water sources.
- A severe regional drought in 2002 caused a significant decrease in the Little River, and as a result, the installation purchased water from city of Fayetteville to meet mission and quality of life requirements.
- The water treatment plant (WTP), which was built in 1918 and upgraded in 2000, has a plant capacity of 36 million gallons/day.
- Fort Bragg's drinking water distribution system contains 650 million linear feet of pipe/line.
- Fort Bragg's wastewater treatment plant (WWTP) was built in the 1990s and rebuilt in 1991. It currently operates at a maximum daily flow of 2.5 million gallons/day and discharges approximately 5.3 million gallons/day to the Little River, which is one mile downstream of the drinking water treatment plant.
- The WWTP has a history of non-compliance with its National Pollutant Discharge Elimination System (NPDES) Permit.

## Challenges

## Current Conditions

Fort Bragg Integrated Strategic Sustainability Plan:  
Resource Requirements – FY04-FY11

May 2003

I-1



# Expected Future Challenges

- The WWTP serves a population of 68,000, and it collects and treats sewage from the cantonment area (11,670 acres), Simmons Army Airfield, and Pope Air Force Base.
- The wastewater collection system contains over 2 million linear feet of pipeline and 10 major lift stations.
- The capture and treatment of storm water was not part of the design of the WWTP.
- The amount of storm water generated by the installation and its impacts on the environment are currently unknown.
- Unless intercepted, all storm waters ultimately enter surface waters that lead to the Little River (a major drinking water source), drinking water storage lakes, and eventually the Cape Fear River.
- Sedimentation caused by the erosion of soils, the overuse of land due to military training, and construction activities is a significant pollutant. Soil erosion causes significant damage and incurs repair costs in various areas throughout the installation.
- Fort Bragg operated under an administrative order issued by North Carolina Department of Environment and Natural Resources (NCDENR) from February 1994 to September 2000, which required the installation to remediate highly eroded areas (drip zones) and to submit erosion control plans for construction sites.

## What are Fort Bragg's future challenges?

- An adequate supply of clean water is becoming an increasing concern in the state and a priority area for the NCDENR. As a result, Fort Bragg will see increased regulatory and public scrutiny placed on water protection programs throughout the state.
- North Carolina has proposed a project for inter-basin transfer to divert water from

## Water Resources

- Upper Cape Fear River Basin to Neuse River Basin in support of enormous urban growth.
- Loss of capacity from Little River may necessitate the development of ground water sources for drinking water; however, the Upper Hicklenobel Aquifer is considered to be polluted beyond drinking water limits.
- Privatization of Fort Bragg water systems may cause an increase in price of water as rates are commercialized.
- Pushing the filter creates 450,000 gallons per day of backwash that are currently sent to the wastewater treatment plant.
- New barracks design includes individual bathrooms, which will increase water consumption.
- If the Total Maximum Daily Load (TMDL) requirements or discharge limits change with respect to the Little River, the WWTP will need to meet the more stringent limits.
- The WWTP currently operates at 68 percent capacity and is estimated to reach 77 percent capacity in 3 years. At 80 percent capacity, Fort Bragg may be required to conduct an engineering study and submit the study to the NCDENR.

## How will Fort Bragg achieve its strategic goal?

Specific objectives to protect and enhance our water resources are:

**Objective 1:** Develop and implement a comprehensive water resources management program (quality and quantity).

1. **Target:** Complete an integrated water resources management plan by 2005.
2. **Target:** Characterize watershed in urban areas and ranges by 2007.
3. **Target:** Develop a balanced water inventory to identify available water sources; its intended uses; quality and quantity needed; and its cost by 2008.

# How Will You Reach the Goal?

## Objective

## Targets

Fort Bragg Integrated Strategic Sustainability Plan:  
Resource Requirements – FY04-FY11

May 2003

I-2



# Objective Details



**Goal 1:** Reduce the amount of water taken from the Little River by 70 percent by 2025.

**Goal 2:** All water discharged from Fort Bragg will meet or exceed the North Carolina state high quality water (HQPW) standard by 2025.

**Team Leader:** Craig Lamb, Water Quality  
David Hains, Water Supply

**1.0 Objective 1:** Develop and implement a comprehensive water resources management program (quality and quantity).

**1.1 Objective POC:** TBD

**1.2 Resources Required:**

Estimated Cost Over FY04 (FY04-FY11)									
Project	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	Total
1	0	\$200,000	\$400,000	\$400,000	\$710,000	\$600,000	\$600,000	\$600,000	\$3,110,000
2	\$400,000	\$400,000	\$400,000	\$400,000	\$100,000	\$0	\$0	\$0	\$1,600,000
3	0	\$0	\$0	\$0	\$0	\$0	\$0	0	\$0
4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>TOTAL</b>	<b>\$400,000</b>	<b>\$1,140,000</b>	<b>\$1,200,000</b>	<b>\$800,000</b>	<b>\$1,060,000</b>	<b>\$600,000</b>	<b>\$600,000</b>	<b>\$600,000</b>	<b>\$7,300,000</b>

Funding will be used to procure the following:

- 1 FTE to support development and implementation of preventative erosion sediment program.
- 2 ONISE Interns to provide monitoring, to support characterization of the water resources, to maintain GIS data layers, and to support the objective generally.

Fort Bragg Integrated Strategic Sustainability Plan:  
Resource Requirements – FY04-FY11  
A-1

1. Provides detailed information on PROJECTS

2. Continuity between program managers

3. Easily transferred to EPR's, 1391's etc....



# Identify & Execute Early Successes



“...Vision doesn’t wait for something bad to happen, it pursues something desirable...It doesn’t stave off defeat, it opens the way to success.”

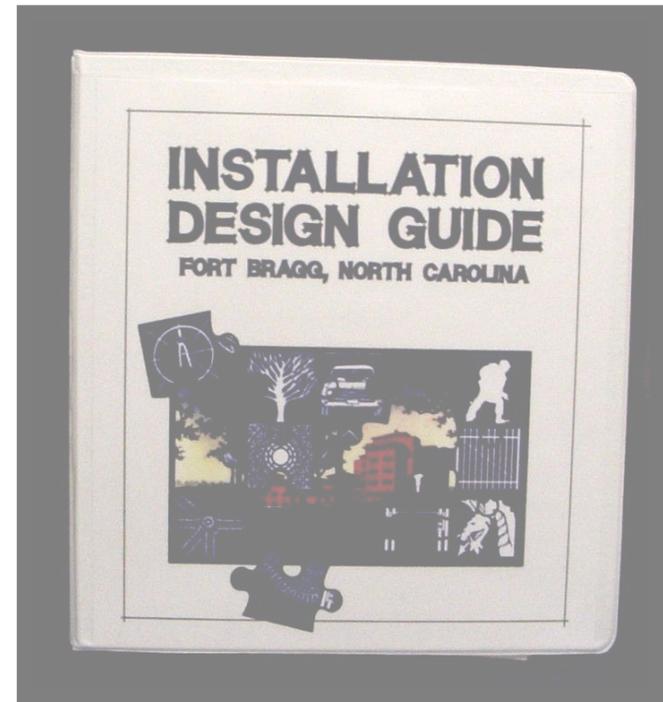
*-Daniel Quinn*



# Early Successes

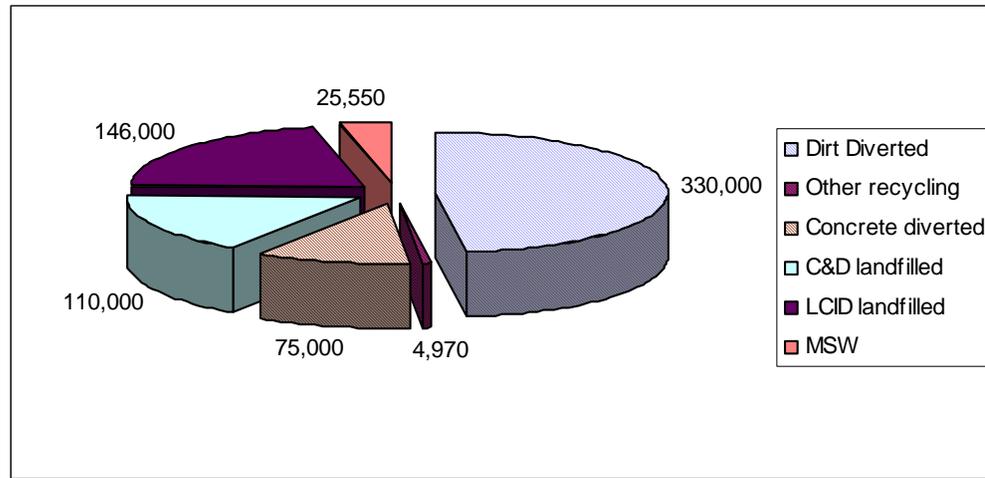
## Sustainable Design Team:

- ❖ Updated the Installation Design Guide to reflect Sustainable Design Standards.
  - ◆ Completed Sept 2003.
- ❖ Demonstration project using Sustainable Design Standards for storm water and pervious pavement management in FY 2002-03.
  - ◆ Design-bid-build... construction awarded Sept 03, construction begins 08 Dec 03
- ❖ Low Impact Development Workshop – June 2003
  - ◆ Demonstration Project resulting from workshop



# Early Successes

- ❖ Waste Management Team: Landfill diversion for FY02 & FY03 was ~**59%** due to concrete grinding, soil reclamation, and curb-side recycling.



# Early Successes

## Water Supply Team:

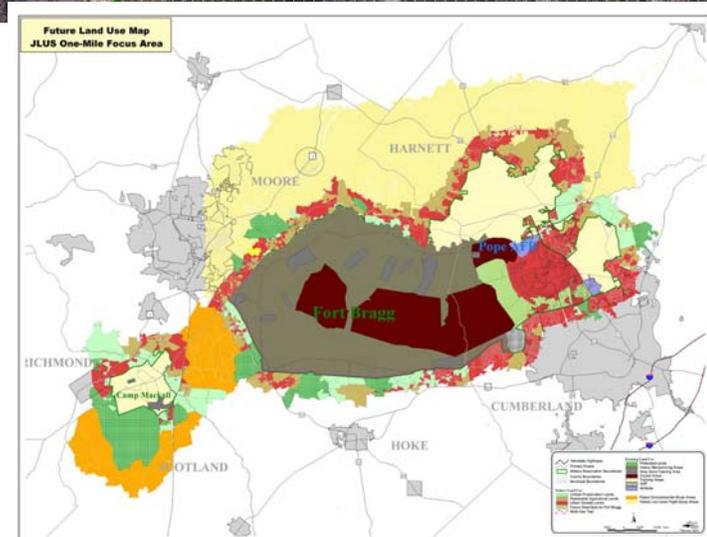
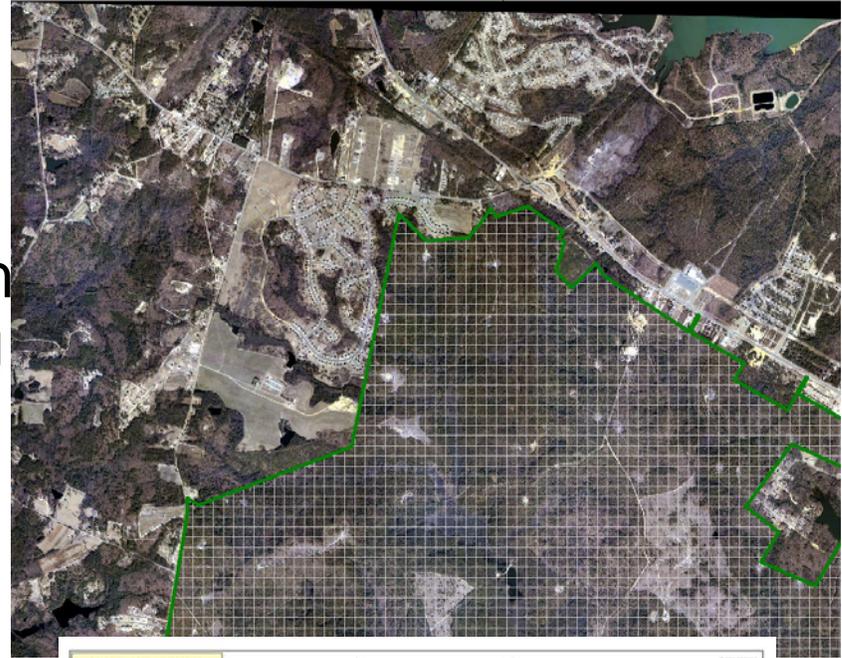
- ❖ Initiated feasibility study for reclaiming treated wastewater in a non-potable irrigation system in FY01;
  - ◆ Began preliminary system design in FY02;
- ❖ Reduced Potable Water Consumption by 30% in 2002.



# Early Successes

## Land Use Team:

- ❖ Predictive modeling for future land-use along the installation boundary to support on-going Joint Land Use Study and future land use decisions.
- ❖ Development of a 6-county (and Fort Bragg) GIS for use by all county and municipality planners to assist in land-use decisions and target conservation opportunities.
- ❖ 25-Year Predictive Modeling with Fort Future and CERL



Fort Bragg/Pope Air Force Base Proposed Future Land Use Map



2000

Ammunition Dump

Military  
Boundary Line

Reilly Road

New elementary school  
and residential development

Fort Bragg



St. Mere Eglise Drop Zone

2000

Military Boundary Line

US 401



# Early Successes

## Transportation/Air Quality Team

- ◆ Converted Range Control Vehicles to B20 (20% biodiesel);
- ◆ Implementation of an internal bus system to support mobilized reservists
- ◆ Participated in Early Action Compact with Cumberland County, NC DENR and EPA



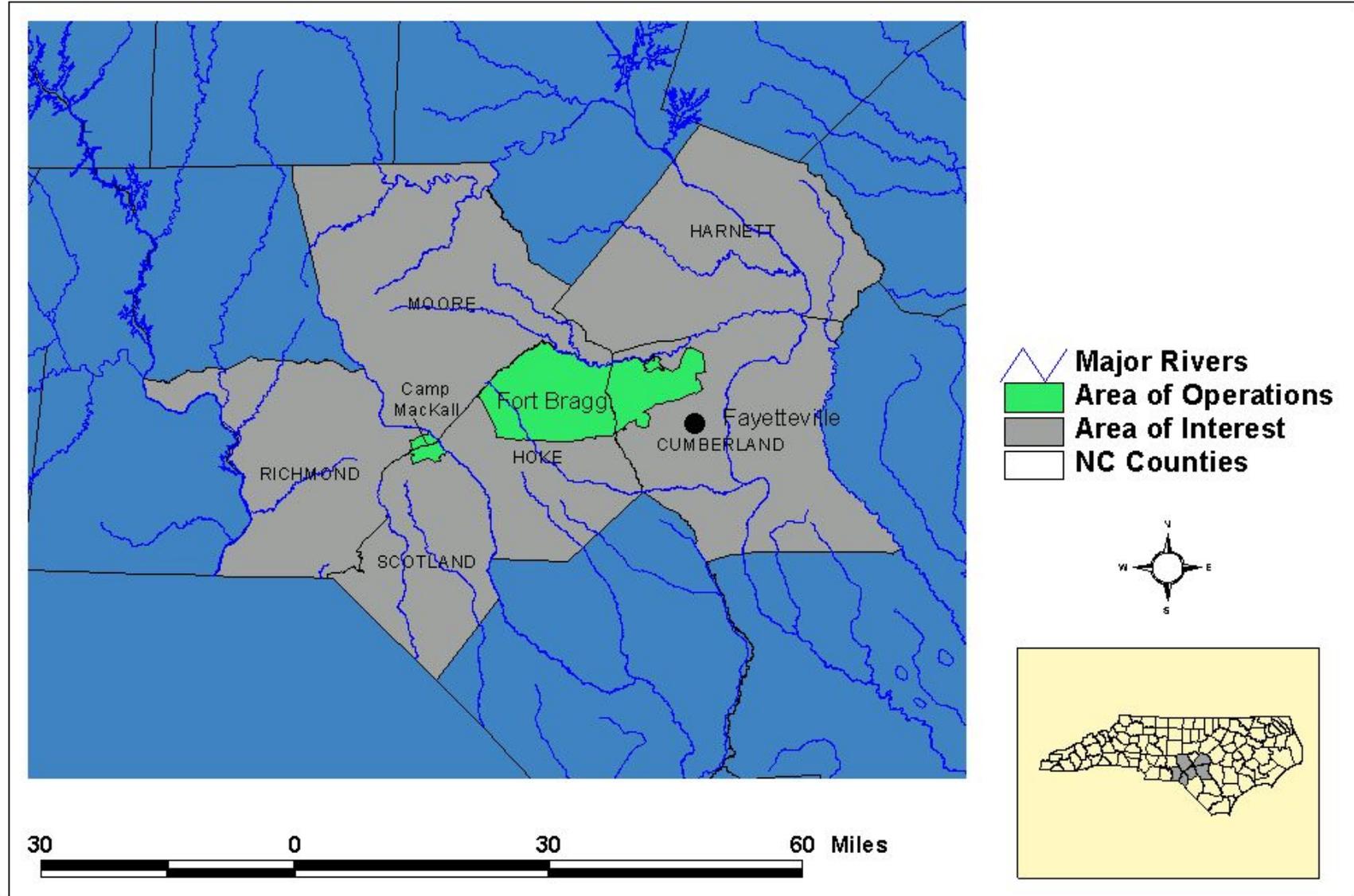
# Early Successes

- ❖ Sustainable Design Team:
  - ◆ SPiRiT Training and Workshop for Engineer Project Managers;
  - ◆ Inclusion of SPiRiT requirements into all RFP's beginning in FY03;
  - ◆ First “Gold” facility under construction; 36,000+ square foot Golden Knights facility



# SUSTAINABLE SANDHILLS

## Area of Operations / Area of Interest

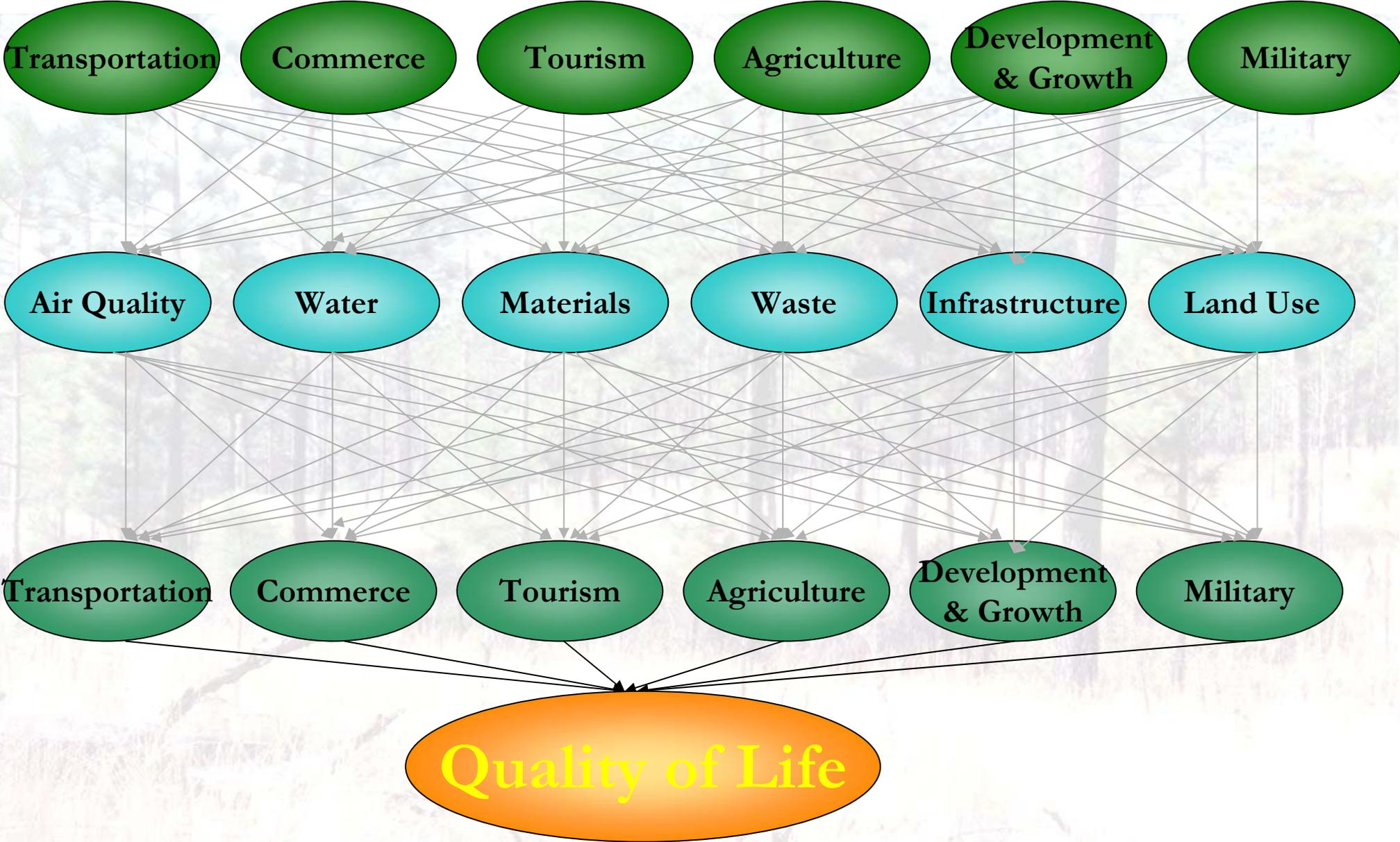


# VISION

The Sandhills of North Carolina is a thriving, viable and prosperous region that balances environmental, economic, military and social needs for all in the region. Sustainable Sandhills ensures that this region is sustainable, responding to current needs while not compromising the capacity of future generations to meet their needs.



# Quality of Life



# The Desired End States and Strategies

## Air Team

Desired End State: **To “AIR” is human: We need and desire excellent health, green transportation choices, preservation of natural resources, and a thriving economy.**

- ❖ **Strategy #1** - Air quality awareness campaign
- ❖ **Strategy #2** - Sustainable transportation
- ❖ **Strategy #3** - Create and preserve more green space
- ❖ **Strategy #4** - Coordinated economic development groups



# The Desired End States and Strategies

## Land Use Team

Desired End State: **In a Sustainable Sandhills, land use is the intentional, harmonious integration of the natural and built environment ensuring environmental integrity and supporting a flourishing economy, vibrant communities and a high quality of life.**

- ❖ **Strategy #1 (Science):** Establish a program to analyze and report the current and future land use conditions, policies, laws, and practices that affect sustainability in the Sandhills.
- ❖ **Strategy #2 (Management):** Establish a multi-stakeholder Sustainable Sandhills Regional Group with responsibility for developing and implementing a regional land use plan.
- ❖ **Strategy #3 (Support):** Gain public and private support and involvement for sustainable land use practices



# The Desired End States and Strategies

## Energy Team

Desired End State: **The Sustainable Sandhills offers an excellent quality of life through reliable, affordable, and renewable energy.**

- ❖ **Strategy #1:** Develop regionally based alternative energy sources.
- ❖ **Strategy #2:** Develop conservation incentives to maximize resource efficiency.
- ❖ **Strategy #3:** Modify distribution systems and infrastructure to support emerging technologies.



# The Desired End States and Strategies

## Materials Use and Waste Team

Desired End State: **Zero Waste -- Leave No Trace**

- ❖ **Strategy #1:** Implement programs to achieve waste reduction toward the ultimate goals of zero waste.
- ❖ **Strategy #2:** Institute a comprehensive public education and outreach program that incorporates the Sustainable Sandhills Zero Waste concept/logo.
- ❖ **Strategy #3:** Recruit and foster local businesses offering sustainable products and services for the region.



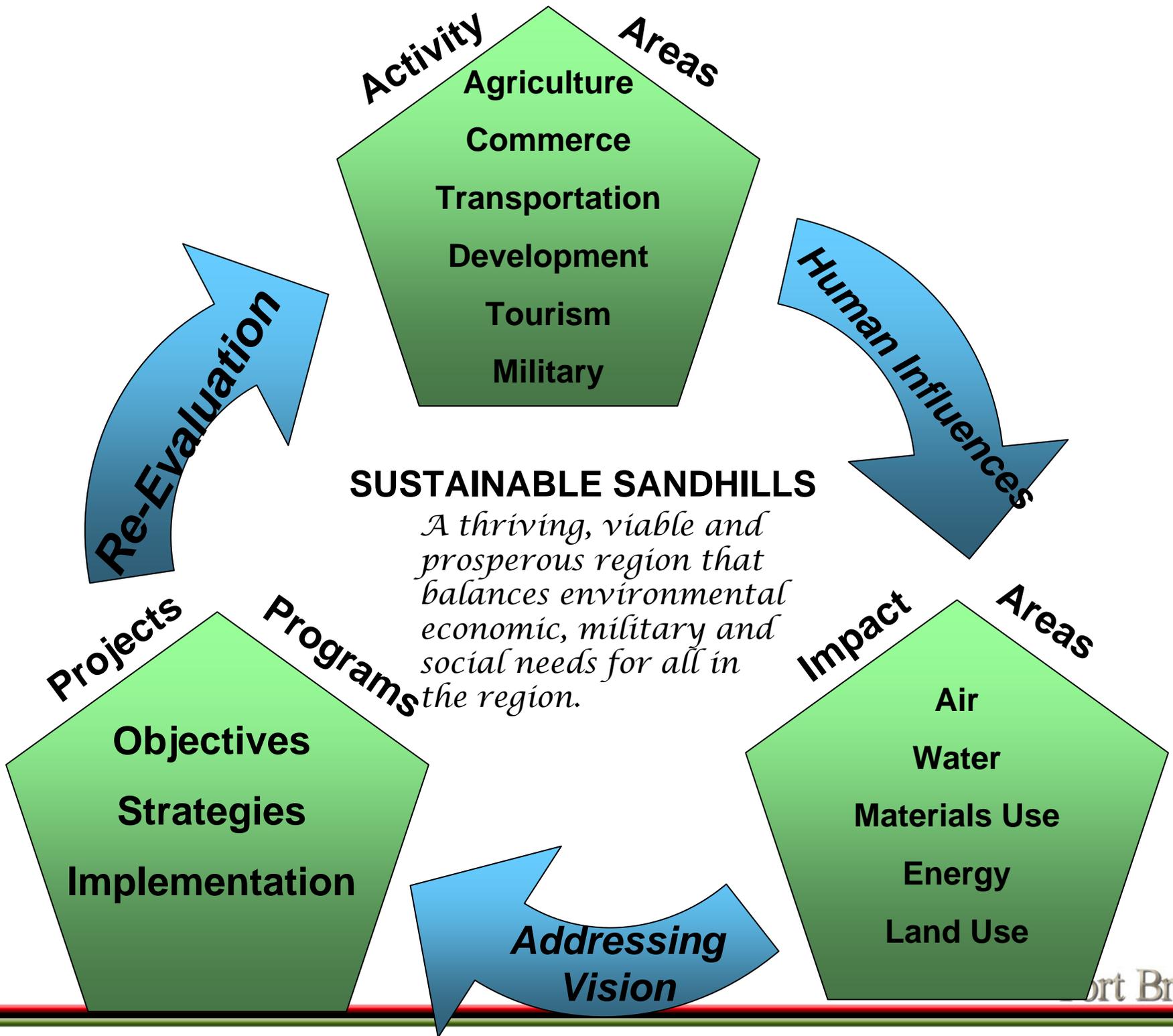
# The Desired End States and Strategies

## Water Team

Desired End State: **Regional Community Committed to Valuing, Protecting, and Enhancing Water Quality and Quantity for the future**

- ❖ **Strategy #1:** Develop Awareness/Education Programs
- ❖ **Strategy #2:** Develop and Implement a Comprehensive Regional Drinking Water, Wastewater, and Storm water Master Plan
- ❖ **Strategy #3:** Create Innovative Incentives and Mechanisms to Encourage Low-impact Development and Cleaner Industries





A person is shown in silhouette, walking through a doorway. The doorway is brightly lit, creating a strong contrast with the dark interior. The person is captured in mid-stride, moving from the dark into the light. The overall mood is one of transition and courage.

We must walk consciously only part way  
toward our goal,  
and then  
leap in the dark to our success.

*Henry David Thoreau*



*The Center of the Center of the Universe*

