Community and Mission

An Army installation provides economic benefits to the local community through direct employment and income (military and civilian staff), procurement of materials and supplies in the local region, and through "multiplier" effects of those monies re-circulated in the economy. This economic activity encourages community growth and development. Growth of communities around Fort Carson and Piñon Canyon results in mission impacts—construction near the installation boundaries demands larger safety buffers on-post, in turn reducing the amount of land available for training. Similarly, training close to the community will result in the mission impacting the community (e.g., noise concerns).

Growth also impacts natural resources that are critical to the mission. Increased transportation, which coincides with growth, impacts regional air quality. Increased demand for clean water may ultimately reduce availability and impact the mission. Growth may infringe upon wildlife habitats making conservation difficult. Decreased habitat outside of the fence line may result in concentrations of endangered or threatened species inside the fence line, resulting in impacts on training. The long-term sustainability of Fort Carson is inextricably linked to the sustainability of its surrounding communities.

Growth vs. Development

Alan AtKisson's book Believing Cassandra illustrates the difference between "Growth" and "Development," stating that "…Growth means increases in *quantity*, and Development means improvements in *quality*, and that is the critical distinction between these two words in the pages that follow.

1) *There are limits to Growth.* The Earth is a closed system, and it can support only a finite number of human beings. The limits to Growth include limitations in land and soil for food production; available water; renewable resources such as trees and fish; industrial resources such as oil; social stability; and the capacity of Nature to absorb our wastes. Unless Growth ceases, one or all of these limits will be crossed, resulting in a series of worsening "shocks to the system" and potentially a full-fledged collapse, as human beings struggle with each other and Nature to protect their lives and their livelihoods. Mountains of scientific evidence suggest that some limits have already been crossed. Given these conditions, Growth cannot continue much longer.

2) *There are no limits to Development.* The way we live can always be made better; more beautiful, more inventive, more creative, more efficient, more fulfilling. Technologies can be radically and continuously improved. Humans can learn, change, adapt, and evolve, often with astonishing rapidity. We can repair most of the damage we have caused, restore some of what has been lost, and reinvent the systems on which we depend for survival. We have transformed ourselves and our civilizations many times in the past, at both large scales and small; we are doing so now; and we will do so over and over again. Since there is no limit on humanity's capacity to evolve, Development can go on virtually forever.

Navigating this critical transition, away from "Growth equals Development" and toward "Development without Growth" is the great challenge of our generation, and must become humanity's fundamental project for the early twenty-first century."

AtKisson, Alan. 1999. Believing Cassandra, Chelsea Green Publishing Company, White River Junction, VE.

Key Sustainability Considerations

Water Consumption – Water is used for many different purposes including residential needs, industrial processes, and landscape irrigation. A huge issue for Colorado Springs is trans-basin diversion of water from the Western Slope. As Western Slope communities grow, water availability will lessen. Minimizing consumption will ensure that adequate supply is available for all area residents. Furthermore, the excess water put back into Fountain Creek (from sewage treatment) is doing considerable damage to this major waterway through the region.

Water Pollution – Clean water is also critical to a sustainable community. As water moves across and through the land, it transports natural (soils and sediments) and manmade pollutants (oil, munitions residues, and chemicals) to lakes, rivers, wetlands, coastal waters, and underground aquifers. Further, wastewater treatment discharges also impact surface waters.

Noise – As communities grow around the installation boundaries, noise from training becomes a greater concern for residents in close proximity to the installation. Given development patterns, Fort Carson must mitigate noise concerns and impacts without further compromising the mission or reducing usable training lands.

Development – As communities build up to the fence line, the safety buffer must be expanded effectively reducing usable training lands. New weapon systems have greater range and require additional area for realistic training. Further, Transformation may require additional land for training.

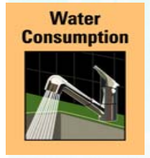
Transportation – Regional air quality issues can constrain military training activities such as those requiring use of smokes and obscurants. Participation in regional planning can support efforts to maintain and improve regional air quality as well as provide additional transportation options for soldiers, civilian staff, and their families.

Regional Planning – Balancing the well-being and economy of the community with the Fort Carson mission will require sound, regional land use planning that considers current and future mission as well as growth desired by the community.

Key Facts

Economic Impact:	**$1.3B/yr***
***(salaries, purchases, military retirees)**	
Colorado Springs Pop. Growth:	**27.5% (1990-2000)**
Pueblo Population Growth:	**15.0% (1990-2000)**
Fort Carson Water Use/Cost:	**1.06B gallons/$1.6M**
Rainfall:	**10-16 inches/yr**
Average Fort Carson Commute:	**12,750 miles/yr/person**
Noise Complaints at Base:	**5-12/yr**

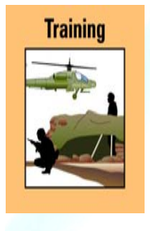
Realm of Possibilities



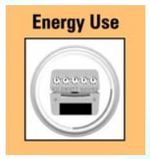
- **Composting Toilets:** Self-contained toilets that produce a compost product and do not require hook-up to any sanitary sewer.
- **Xeriscaping:** Landscaping, which uses native plant species adapted to the soil and water conditions of the region, will require significantly less irrigation water than non-native plants.
- **Irrigation Meters:** Moisture meters can indicate when watering is needed.
- **Greywater Recycling:** Wastewater from sinks and showers can be diverted without treatment for non-potable uses (e.g., landscaping).

- **Low Impact Development:** Development techniques can be implemented to minimize impervious areas and the resulting generation of storm water and potential for contamination of water bodies by storm water.
- **Green Roofs:** Roofs that are covered with any number of plant species absorb rainwater rather than allowing it to become a storm water discharge.
- **Porous Pavement:** Porous pavement can be installed to enhance groundwater recharge and minimize the generation of storm water that must be managed.

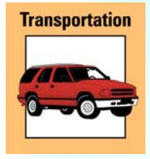
- **Living Machines:** These structures, which look like greenhouses, use bacteria, plants, snails, and fish to treat sewage and other wastewaters. They offer better, more stable treatment at the same cost as traditional sewage treatment.
- **Constructed Wetland:** Constructed wetlands can be made between a sewage treatment plant outfall and a surface water discharge to provide better protection for the downstream drinking water source.



- **Private Lands Initiative:** The Nature Conservancy, U.S. Fish and Wildlife Service, FORSCOM, and private landowners are working together to preserve green areas just outside the fence line, providing a buffer area.
- **Night Training:** Training in the winter months to simulate night situations can decrease noise complications after 2200 hours and its environmental impacts.
- **Virtual Training:** The next generation of virtual training will incorporate unprecedented realism and give soldiers the ability to experience complex combat scenarios without impacting the community or environment.
- **Joint Land Use Study (JLUS):** A Joint Land Use Study may be useful for Fort Carson. At Fort Bragg, for example, the JLUS identifies the current lad uses for property surrounding Fort Bragg and Pope Air Force Base and, in conjunction with local communities planners, to make recommendations for future zoning ordinances, or deed/title disclosures that would encourage compatible land uses.



- **Microscopic Energy Systems:** Researchers are developing micro-sized energy systems that are manufactured similarly to computer chips. Microscopic heat exchangers, evaporators, condensers, gas absorbers, or turbines, for example, can be put into HVAC and process equipment can yield very high efficiencies with minimal pollution.
- **Drain Water Heat Recovery:** The latent heat in drain water is captured to “preheat” cold water before it is sent through a conventional water heater.
- **Solar, Wind, and Geothermal:** These alternative sources, especially when implemented at a regional scale, will reduce costs and environmental impacts for Fort Carson and the surrounding communities.



- **Fuel Cell Vehicles/Alternative Fuel Vehicles (AFVs):** These vehicles use alternative energy sources and, if used in place of conventional petroleum-based vehicles, will improve air quality for the region.
- **Hypercar:** Through technology, it is the most energy efficient vehicle including composite materials, an aerodynamic design, and a hybrid-electric or fuel cell propulsion system. Gas efficiency may exceed 200mpg.

- **Locally Manufactured Products:** The use of locally manufactured products minimizes the distance products are shipped, thereby reducing harmful air emissions and saving fuel. In addition, the purchase of these products stimulates local economies, providing better, more vibrant communities around the installation.
- **Green Bullet and Green Missile:** This DoD initiative eliminates the use of hazardous materials in the manufacturing process and in the final ammunition product.

Community Well-being

Challenge: Preserve and enhance the well-being of individuals at Fort Carson and throughout the region. How can Fort Carson…

- Help stabilize and protect regional water resources and systems?
- Eliminate, minimize, or reduce noise impacts on communities and residents?
- Ensure compatible land use practices?
- Conserve land and associated native plant and animal species on a regional basis?
- Help preserve the social and economic vitality of communities?
- Create and nurture partnerships and strong ties with federal, state and local regulators, civic groups, tribes, and other stakeholders?
- Champion and participate in regional sustainability and quality of life initiatives?

Population Change 1956-1999