

Fairchild Joint Land Use Study

Compatibility Issues

What are Compatibility Issues?

Compatibility, in relationship to military readiness, can be defined as the balance or compromise between community needs and interests and military needs and interests. The goal of compatibility planning is to promote an environment where both entities can coexist successfully.

A number of factors influence whether community and military plans, programs, and activities are compatible or in conflict. There exists a list of 24 compatibility factors that apply to all Joint Land Use Studies, which are used to characterize local issues (see text box at the bottom of this page). These compatibility factors have been divided into three broad categories: man-made, natural resource, and competition for scarce resources; as seen below, and are defined on the following pages.

In addition to describing existing and potential compatibility issues, this list can be used in the future to assist in reviewing plans, programs, or development proposals and related applications.

Man-Made

- 1 Land Use
- 2 Safety Zones
- 3 Vertical Obstruction
- 4 Local Housing Availability
- 5 Infrastructure Extensions
- 6 Anti-Terrorism / Force Protection
- 7 Noise
- 8 Vibration
- 9 Dust / Smoke / Steam

- 10 Light and Glare
- 11 Alternative Energy
- 12 Air Quality
- 13 Frequency Spectrum
- 14 Public Trespassing
- 15 Cultural Sites
- 16 Legislative Initiatives
- 17 Interagency Coordination

Natural Resources

- 18 Water Quality / Quantity
- 19 T & E Species
- 20 Marine Environments

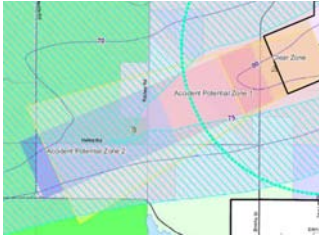
Competition for Scarce Resources

- 21 Scarce Natural Resources
- 22 Land, Air and Sea Spaces
- 23 Frequency Spectrum Capacity
- 24 Ground Transportation Capacity

1 Land Use

The basis of land use planning relates to the government's role in protecting the public's health, safety, and welfare. Local jurisdictions' general plans and zoning ordinances can be the most effective tools for avoiding or resolving land use compatibility issues. These tools ensure the separation of land uses that differ significantly in character. Land use separation also applies to properties where the use of one property may impact the use of another. For instance, industrial uses are often separated from residential uses to avoid impacts related to noise, odors, lighting, and so forth.

2 Safety Zones



Safety zones are areas in which development should be more restrictive in terms of use and concentrations of people due to the higher risks to public safety. Issues to consider include aircraft accident potential zones, weapons firing range safety zones, and explosive safety zones.

3 Vertical Obstructions

Vertical obstructions are created by buildings, structures, or other features that may encroach into the navigable airspace used by military operations (aircraft approach, transitional, inner horizontal, outer horizontal, and conical areas, as well as military training routes), presenting a safety hazard to both the public and military personnel and potentially impacting military readiness.



4 Local Housing Availability

Local housing availability addresses the supply and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel, and the supply of military family housing provided by the base.

5 Infrastructure Extensions

This factor covers the extension or provision of infrastructure (roads, sewer, water, etc.). Infrastructure plays an interesting role in compatibility. On the positive side, infrastructure can enhance the operations of the installation by providing needed services, such as sanitary sewer treatment capacity and transportation systems. Infrastructure can also be an encroachment issue if enhanced or expanded infrastructure could encourage growth into areas near the installation that would not be compatible with current or future missions.

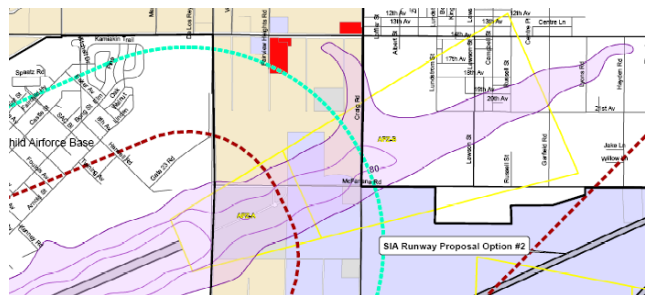
6 Antiterrorism / Force Protection

Antiterrorism/Force Protection (AT/FP) relates to the safety of personnel, facilities, and information on an installation from outside threats. Methods to protect the base can impact off-installation uses.

7 Noise

Defining noise from a technical perspective, sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. More simply stated, sound is what we hear. As sounds reach unwanted levels, this is referred to as noise.

The central issue of noise is the impact, or perceived impact, on people, animals (wild and domestic), and general land use compatibility. Exposure to high noise levels can have a significant impact on human activity, health, and safety.



8 Vibration

Vibration is an oscillation or motion that alternates in opposite directions and may occur as a result of an impact, explosion, noise, mechanical operation, or other change in the environment. Vibration may be caused by military and civilian activities.

9

Dust / Smoke / Steam

Dust is the common term used to describe the suspension of particulate matter in the air. Dust (and smoke) can be created by fire (controlled burns, agricultural burning), ground disturbance (agricultural operations, grading), industrial activities, or other similar processes. Dust becomes a compatibility issue if sufficient in quantity to impact flight operations (such as reduced visibility or equipment damage).

10

Light and Glare



This factor refers to man-made lighting (street lights, airfield lighting, building lights) and glare (direct or reflected light that disrupts normal vision).

Light sources from commercial, industrial, and residential uses at night can cause excessive glare and illumination, which impacts the use of military night vision devices and air operations. Conversely, high intensity light sources generated from a military area (such as ramp lighting) may have a negative impact on the adjacent community.

11

Alternative Energy Development

Alternative energy refers to sources, such as solar, wind, or biofuels that can be used to replace or supplement traditional fossil-fuel sources, as coal, oil, and natural gas. Alternative energy development could pose compatibility issues related to glare (solar energy) or vertical obstruction (wind generation). Other alternative energy developments, such as biofuels, have no typical compatibility issues, and would be judged for compatibility on a case-by-case basis.



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Air Quality

Air quality is defined by a number of components that are regulated at the federal and state level. For compatibility, the primary concerns are pollutants that limit visibility, such as particulates, ozone, and potential non-attainment of air quality standards that may limit future changes in operations at the installation.

13

Frequency Spectrum Impedance and Interference

Frequency spectrum impedance and interference refers to the interruption of electronic signals by a structure (impedance) or the inability to distribute/receive a particular frequency because of similar frequency competition (interference).

14

Public Trespassing

This factor addresses public trespassing, either purposeful or unintentional, onto a military installation. The potential for trespassing increases when public use areas are in close proximity to the installation.

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Cultural Resources

Cultural resources may prevent development, apply development constraints, or require special access by Native American tribes groups or regulatory authorities.

16

Legislative Initiatives

Legislative initiatives are federal, state, or local law and regulations that may have a direct or indirect effect on a military installation to conduct its current or future mission. They can also constrain development potential in areas surrounding the installation.



17 Interagency Coordination

Interagency coordination relates to the level of interaction on compatibility issues between military installations, jurisdictions, land and resource management agencies, and conservation authorities.

18 Water Quality / Quantity

Water quality/quantity concerns include ensuring adequate water supplies of good quality for use by the base and surrounding communities as the area develops.

19 Threatened & Endangered Species

A **threatened** species is one that may become extinct if measures are not taken to protect it. An **endangered** species is one that has a very small population and is at greater risk of becoming extinct. Many species that become extinct never make it to the endangered species list. The presence of threatened and endangered species may require special development considerations and should be included early in planning processes to ensure compatibility with military missions and economic development.

20 Marine Environments

Regulatory or permit requirements protecting marine and ocean resources can cumulatively affect the military's ability to conduct operations, training exercises, or testing in the marine environment.

21 Scarce Natural Resources

Pressure to gain access to valuable natural resources (such as oil, gas, minerals, and water resources) located on military installations, within military training areas, or on public lands historically used for military operations can impact resource utilization and military operations. The military manages or uses land, air, and sea space to accomplish testing, training, and operational missions. These resources must be available and of a sufficient size, cohesiveness, and quality to accommodate effective training and testing.

22 Land, Air, and Sea Spaces

For airspace, the military and civilian air operations can compete for limited space, especially when the airfields are in close proximity to each other. Use of this shared resource can impact future growth in operations for all users.

23 Frequency Spectrum Capacity

In a given area, the frequency spectrum is a limited resource. Frequency spectrum capacity is critical for maintaining existing and future missions installations. This is also addressed from the standpoint of consumer electronics.

24 Ground Transportation Capacity

This factor addresses ground transportation capacity on highways and other local roads.