

# CNO Environmental Awards

## *Environmental Planning*

### NAVAL AIR ENGINEERING STATION, LAKEHURST, NJ

#### Introduction

Over the last five years, the Naval Air Engineering Station (NAES) has been actively pursuing new business initiatives, including not only Navy and DOD tenants, but other government agencies and private ventures as well. The NAES Business Development Office has successfully leased existing office and hangar space that provides over \$1M for building maintenance and repair, supplementing the limited base operations budget. Although these efforts have greatly improved the station's financial situation, there was concern over potential environmental impacts of these new tenants and their activities. Recognizing this, along with the potential for future growth issues regarding larger tenants requiring more land and building space, the Environmental Team was charged with developing a new Master Plan to form the basis for a comprehensive National Environmental Policy Act study of cumulative impacts. The Environmental Department, along with the Business Development Office, worked as a team in considering base zoning, environmental and man-made constraints, and operational issues.



#### Background

The NAES is the Shore-Station Management component of the Naval Air Warfare Center Aircraft Division Lakehurst. Collectively known as NAVAIR Lakehurst, the organization's navy mission is Aircraft Platform Interface, which is the safe effective operation of aircraft to, from, and on all aviation platforms. To accomplish this mission, Navy Lakehurst currently employs over 3400 civilian, military and contractor personnel. The station encompasses 7430 acres and contains 446 structures and 328 buildings. Facilities include two 5,000-foot operational runways, a 12,000-foot runway equipped with catapult and arresting gear, and five test tracks. Wetlands, grasslands and pine forests cover much of the base. The base has 87 surface acres of lakes and 2.5 miles of sizable streams with several miles of smaller watercourses. NAVAIR Lakehurst also includes 1,020 acres of wetlands and 1169 acres of grassland bird habitat.

Yellow flower in forefront is the Sickle-Leaved Golden Aster, a Pinelands Protected Plant, shown growing in the cracks of the asphalt of Mat 1, west of Hangar 1, which is listed on the National Register of Historic Places. Environmental and man-made constraints, such as protected species and historic preservation, shaped the development of the Station's new Vision Plan.

The station is located in the northeastern corner of the Pinelands National Reserve. The Pinelands is the most extensive undeveloped land tract of the Middle Atlantic Seaboard and consists of a delicately balanced ecosystem that covers the largest drinking water aquifer in the Northeast. Subsequently, the base operates not only under New Jersey's strict pollution standards, but also

under the Pinelands Comprehensive Management Plan that governs land use and provides more restrictive discharge limits.

To manage the increasing functions and operations, the station has a number of teams and offices responsible planning and oversight. Facilities planning responsibilities lie within the Public Works Department and NEPA analyses are performed by the Environmental Department. However, other groups responsible for portions of planning related activities include: the Business Development Office, the Executive Leadership Committee, the Model Installation Focus Group, the Facilities Space Management Board, the Shared Resource Focus Group, and the Program Management Office. While each of these teams has distinct responsibilities and areas of concern, it was apparent that an over-arching vision was required in order to assure the pursuit of consistent goals and objectives across the base.

NAVAIR Lakehurst established the Model Installation Focus Group (MIFG) in 2001 to oversee the direction of growth and activities on the base, including developing criteria for pursuit and selection of new tenants, both governmental and private. Current tenants include Navy, other DOD, NJ state agencies, and the local Vocational-Technical School, to name a few. While the original composition of the MIFG consisted of members representing the Command, Business Development Office, key Technical Departments, Human Resources, etc., it was soon recognized that environmental issues were often paramount in the decision process. Subsequently the team added the Director of the Environmental Department as an advisor.

When the notion of creating a new master plan for the station was introduced (to be renamed the Vision Plan), the station's Environmental Planner was also added as an advisor and was tasked with authoring the document in close coordination and consultation with all MIFG members. The Vision Plan for the base would be developed to allow for future growth while maintaining the capability to perform our core mission of Naval Aviation.

**The Model Installation Focus Group:**

Executive Officer  
Executive Director  
Business Development  
Business Development  
Comptroller  
Contracts Office  
Environmental Director  
Environmental Planning  
Facilities Planning/Management  
Human Resources  
Information Management  
Logistics Manager  
Operations Manager  
Program Management Office  
Prototyping and Manufacturing  
Test Site Director

Some concerns and questions that arose during the Vision Plan development were:

- 1) How would our plans be impacted by outside encroachment?
- 2) Would the NJ Pinelands Commission approve these projects?
- 3) How would our immediate station construction and repair projects fit in with the future vision?
- 4) Would our existing hangar space accommodate anticipated tenants?
- 5) Would our runways support planned programs and tenant activities?
- 6) Would the results of the new Integrated Natural Resource Management Plan (INRMP) and latest threatened/endangered (T/E) surveys impede or conflict with planned projects?

There were many environmental elements that needed to be addressed in the new plan that the former Master Plan did not cover. For example, the 1988 Master Plan did not show well-head protection areas, grassland bird habitat, the latest unexploded ordnance caution areas, the latest threatened and endangered species locations, the Pineland's 300-foot wetland buffer areas or the results of the base's 1994 Cultural Resources Survey which included a proposed "Lighter-Than-Air" Historic District.

What is unique about the station's approach to generating the Vision Plan was the decision to let the Environmental Team author the document. Although the Environmental Team is known for its firm stance on protecting the environment, the base leadership also recognized that the team has demonstrated the keen ability to balance mission requirements with conservation and environmental compliance. The base leadership understood that the Environmental Team would produce a fair, un-biased Vision Plan that would provide for sustainable development.



Above: Original Bachelor Officers Quarters, Circa 1920.  
Below: Original Fire Station, Circa 1921.  
These structures are typical of those comprising a proposed "Lighter-Than-Air" Historic District at NAES.



## Environmental Planning Summary

The previous land-use plan at the station, the NAES Master Plan, was written in 1988. Over the last 14 years, the Navy mission of the base has remained essentially the same, although many new tenants have been added, with more expected in the future. The influx of tenants along with the need to evaluate potential encroachment around the base made it apparent that we needed a new and comprehensive plan for sustaining and/or expanding our mission. The revised plan, now called the Vision Plan, would address our mission and sustainable development goals over a 20-year horizon.

The station's Geographic Information System was initiated by the Environmental Department in 1992 and while still residing in Environmental, now encompasses all environmental, building, road, utility, and zoning information for the base. The GIS is the ultimate tool for land-use planning and as the primary users of this tool, the Environmental Department was the logical candidate to lead the development of the new Vision Plan. Besides providing a framework for logical development, the new Vision Plan would provide a basis for determining cumulative impacts under the National Environmental Policy Act (NEPA).

The Vision Plan was developed to incorporate environmental factors from the beginning of the planning process rather than dealing with potential constraints as an afterthought. The Environmental Department, in consultation with the MIFG, Public Works, and base leadership, ensured that both environmental and manmade constraints (such as wetlands, wetland buffers, floodplains, T&E habitat, contaminated sites, aircraft safety zones, ordnance safety arcs and historical sites) would shape the revised zoning and development plan at the base.

## Important Issues And Challenges

**New Jersey Pinelands National Reserve:** First and foremost, the station is located in the NJ Pinelands, where development is strictly reviewed towards conformance with the Pinelands Comprehensive Management Plan (CMP). The NJ Pinelands Commission reviews all private and public development projects and ensures that water resources, critical habitat and the historical setting of the Pinelands are preserved. Although roughly one-third of the base's property is heavily developed, the western two-thirds are primarily forested. Under the CMP, federal installation master plans must: 1) delineate areas of critical ecological importance, 2) provide an existing land use map, 3) provide a future land use map, and 4) provide status of major ongoing or planned construction projects.

**Integrated Natural Resources Management Plan:** While the Vision Plan was being developed, the base's Integrated Natural Resource Management Plan (INRMP) was also being written and finalized. During the INRMP process, a new wetlands delineation was conducted and the latest threatened and endangered species information was collected. Since each plan would rely heavily on the other, the plans were developed with constant communication between their respective authors. In particular, land preservation schemes and identification of ecologically critical areas were performed collaboratively.

**Field Training requests:** In 2001 the Air Force Ground Combat Readiness Squadron (GCRS) requested the ability to perform field training at Lakehurst in conjunction with air drops in our Drop Zone. This request included "war games" in wooded areas leading up to and around the Drop Zone. Since the mission of the station is largely research and development, the base did not have a designated field-training site. The Vision Plan needed to address the AF training requests (and similar Navy, Marine Corp and Army training requests) in a way that protected the environment and did not interfere with the station's primary mission activities.

It was quickly determined that a Vision Plan for the base should be developed that would allow for future growth while maintaining the capability to perform our core mission of Naval Aviation. The Vision Plan would be a major update to, as well as supersede, the 1988 Master Plan.

**New Jersey Army National Guard:** While developing the Vision Plan, the station was already in negotiations with the NJ Army National Guard (NJARNG) to provide approximately 150 acres adjacent to Fort Dix for a new Consolidated Logistics and Training Facility (CLTF). Similarly, the station was negotiating with the Aviation Component of the NJARNG for their relocation to our West Field Hangar within the next five years. These projects were not addressed by the previous Master Plan and would generate a series of cumulative impacts. The new Vision Plan needed to address these projects and its subsequent impacts.



Tanks operated by the 254<sup>th</sup> regiment of the NJ Army National Guard currently occupy a former aircraft hangar at NAES. The Guard has plans to construct a new facility and move their operations to a 150-acre site on the Station's western boundary, adjacent to Fort Dix.

**Regional Shore Infrastructure Planning (RSIP):** In September 2000, NAVFACINST 11010.45 was promulgated outlining the Navy's policy of Comprehensive Regional Planning. This instruction emphasizes the use of regional plans over activity master plans to optimize resources, reduce costs, and improve efficiency in all shore infrastructures. The new base Vision Plan would need to identify station goals for the future that would support the overall NAVAIR regional planning process.

## Accomplishments

### 2002 NAES VISION PLAN

The purpose of the Vision Plan is to present a 20-year vision for land and facilities utilization at NAVAIR Lakehurst and articulate the planning goals, objectives and principles for future development and conservation.

The Plan is intended to ensure logical and efficient use of facilities and real estate assets as well as to guide activity growth and change. The plan will be used as a decision-making tool by all echelons of Navy personnel, both military and civilian. The plan serves as a guide in channeling resources to improve productivity and readiness through the acquisition of new facilities, the maintenance and use of existing facilities, and the disposal of obsolete facilities.

In order for the plan to remain viable, it will be updated every five years to reflect changes made necessary through mission or workload changes. Though it was only approved in September 2002, already the Vision Plan has resulted in a number of success stories.

## Developable Parcels Map

The developable parcels map was generated as a result of the new Vision Plan and is an important planning tool that indicates which sites on the base are the most amenable to new construction. These parcels have little to no man-made or environmental constraints, are generally close to existing utilities, and in some cases include previously developed sites.

The parcels map was created to readily identify parcels that would not be constrained by: wetland buffers, flood plains, explosive safety arcs, grassland habitat, threatened/endangered species, and contaminated sites.

The parcels are categorized into three levels. Level 1 is an area preferred over the others for new construction. These areas are un-forested, previously disturbed or built upon and have no constraints. Level 2 areas consist of upland forest and do not have any known threatened or endangered species inhabiting the area. Level 2 areas are to be used when there are no Level 1 areas that will meet a specific need. Level 3 areas are areas where future development is anticipated but has not been initiated. Level 3 areas may be used if a project of more importance to the Command would make better use of the space. The Developable Parcels map identified roughly 300 acres of land suitable for development. Well-head protection maps and zoning maps are used in conjunction with the Developable Parcels map when determining the location of a new building or activity.

The maps and associated database information are maintained current, enabling the Facilities Space Management Board to manage the continually shrinking facilities maintenance budget to focus attention on key areas. It also provides the Model Installation Focus Group with a tool to quickly identify potential places to host activities requested. These maps remain living documents, continually adjusted to reflect changing capabilities and requirements.

## Military Readiness



Soldiers with the Air Force 421<sup>st</sup> Ground Combat Readiness Squad train at the Station's new field training site. The site was selected to contain operations to prevent interference with other base functions, while minimizing environmental impact.

In August 2002, the Air Force Phoenix Readiness class set up operations at the NAES Field Training Area, less than 200 yards from the West Field Runway. The exercise simulates receiving and processing airlift drops in a bare-base environment as part of the Air Mobility Warfare Center's Phoenix Readiness course. The move to operations with running aircraft is a historical first for the course, which teaches students throughout the Department of Defense integrated expeditionary combat support. The 39 students participating in operations at NAES Lakehurst comprised the forward-deployed Tanker Airlift Control Element portion of the course. Their mission was to receive simulated, humanitarian relief for later distribution by 350 other Phoenix Readiness students making up 421<sup>st</sup> Air Expeditionary Group, located 12 miles away on a bare-base on Fort Dix. Phoenix Readiness has always been based on real world scenarios. However, conducting operations with

actual aircraft reinforces their training and places the students in a learning environment unequaled throughout the Air Force. The two-week course teaches contingency operations to a combination of 25 different mission support career fields, from all branches of the military. Ultimately the Air Force would like to perform all the training elements at Lakehurst, which would bring approximately 350 to 400 students at the base per event. The Vision Plan's Environmental Impact Statement will evaluate the potential impacts of this future training alternative.

### **Identifying Land Use Conflicts**

The new Vision Plan, even in its draft form, has already averted potential land use conflicts. Under the base's current force-protection security status, parking has been moved away from major buildings. To remedy the removal of parking spaces, plans were put forth to create new compliant parking lots. One suggested parking area was to be placed where a new Army Recruiting building is planned. By having the Vision Plan map of new projects, this and other potential land use conflicts were eliminated at the earliest project stages. Similarly, some of the "developable parcels" were used for the creation of parking, reinforcing the idea that these areas are to be used first to avoid environmental and operational conflicts.

The Vision Plan also helped select an environmentally more suitable location for a new 20,000 square foot combined structural/aircraft fire rescue station building. The previous Master Plan had planned to place this structure near our runways, which was logical from an operational view, but it would also be located within 300 feet of a wetland. Under NJ Pinelands regulations, construction within these 300-foot wetland buffers is generally prohibited unless expensive studies are conducted to demonstrate no significant impact to the wetland. The new Vision Plan showed areas where this building could be constructed to meet operational emergency response requirements yet not conflict with environmental constraints. The Environmental Assessment for the project is complete and the preferred alternative site will not have any wetlands issues, avoiding approximately \$50-100K in further environmental studies.

### **Grassland Habitat Preservation**

The base has extensive open field and grassland communities due to our many runway clearzones and our parachute drop zone. While artificially created, these large expanses of fields are uncommon in the NJ Pinelands and provide habitat for several migratory grassland birds that are listed as threatened or endangered within the state. The new Vision Plan not only outlines which areas are current critical habitat, but also zoned potential future grassland habitat areas as potentially constrained. Potential habitat is characterized as areas that are currently grassy fields, but which contain enough isolated and random trees that provide perches to predatory birds or they are fields that are mowed frequently enough to preclude habitation and nesting. Through a combination of tree removal and a new mowing regime these areas can be converted to prime habitat to provide a mitigation strategy for future projects such as the proposed Air Force C-17 Assault Landing Zone. By reserving these areas as potentially constrained, the station can also ensure it meets our commitment of creating 124 acres of grassland bird habitat under the EPA Performance Track by 2005.

### **Cost Savings**

By writing the Vision Plan in-house, the station saved approximately \$80K when compared to the cost of contracting the document. Additionally, the on-site knowledge and close coordination with

the Business Development Office and MIFG helped create a document that required very little rework between drafts.

## LESSONS LEARNED

As the military becomes more integrated with increasing joint-service operations, NAES has had the challenge of integrating new missions within its fence-line. It has been learned the station needs to continually update its planning documents in order to stay current with DOD initiatives and programs. By taking a pro-active approach to future development and outlining our developable land in advance of specific programs, the base is poised to achieve significant cost savings and work effort when bringing in new tenants and programs in the future. The base will also avoid potential mission conflicts, conform to NJ Pinelands regulations and continue to meet its environmental goals under the new Vision Plan.

## COMMUNITY INVOLVEMENT

Encroachment is one of the largest challenges facing the operations at military bases across the country. While the base benefits in some ways by being located in the NJ Pinelands where development is severely limited, the base is still facing new encroachment issues. The new Vision Plan outlines the station's goals for mission expansion that can then be shared with the local planning boards and town officials. By making them aware of our mission goals, local towns can consider issues like aircraft noise and future traffic levels into their development approval process.

The Vision Plan will be the basis for an Environmental Impact Study. The scoping hearing will be conducted in early 2003. The EIS process will allow local citizens, community groups, environmental groups, and other state and federal agencies to voice their concerns about the station's development plans. Issues that may be of interest to the public include: noise, traffic, water allocation, open space preservation and wetlands protection.

## BENEFIT TO THE NAVY

Since its development, the Vision Plan has been used to provide the majority of NAES infrastructure information for the NAVAIR Regional Shore Infrastructure Planning team. By having all necessary planning information in one place, we were able to provide read-ahead material to the RSIP team prior to their Fall 2002 visit to the station and allowed the team to focus more on the planning aspect of the visit instead of rote data gathering.

The Vision Plan helped identify assets at Lakehurst that were underutilized and which could be shared with other Navy and DoD programs. The potential for further financial offset of our operations and maintenance budget are significant and will benefit the Navy considerably through cost sharing.

Lastly, the Vision Plan reduces sprawl by steering construction in and around currently densely developed areas. This in turn will reduce the cost of construction and base operations through shorter utility runs, use of existing roads and reduced driving distances. This approach also preserves open space for wildlife, and maintains natural buffers around our testing facilities to reduce noise impacts on employees and the outside community.