Chapter 6. Aesthetics

6.1 Overview

This chapter describes the visual character of ARC, the remaining areas of Moffett Field, the adjacent portions of the cities of Mountain View and Sunnyvale, and the views into and out of ARC. This chapter also includes a discussion of the regulatory framework applicable to visual resources and relevant plans, policies, practices, guidelines, and measures that address potential visual effects of operations and future development at ARC. The information presented in this chapter is based on the November 2009 NASA ARC ERD (NASA 2009), NADP EIS (Design, Community & Environment 2002), and other sources.

6.2 Regulatory Background

6.2.1 Federal Regulations

6.2.1.1 *National Environmental Policy Act*

NEPA requires federal agencies to include in their decision-making process appropriate and careful consideration of all environmental effects of a proposed action and of possible alternative actions. Measures to avoid or minimize the adverse effects of proposed actions and to restore and enhance environmental quality as much as possible must be developed and discussed where feasible.

6.2.2 Local Regulations

6.2.2.1 *Santa Clara County Tree Preservation and Removal Ordinance*

Santa Clara County's Tree Preservation and Removal Ordinance (County Code Division C16) was adopted to establish and maintain tree cover, protect property values, preserve aesthetic resources, prevent erosion, counteract air pollution, provide wind protection, maintain climatic balance, provide habitat, and to protect community and historic assets. The ordinance protects all qualified trees on both public and private land. Any tree that qualifies as a protected tree may not be removed without having first obtained a permit unless it is irreversibly diseased or dead, or if it represents a hazard. In order to obtain a permit, the applicant must submit plans that include a plan to replant trees of similar types, including native trees where the protected tree to be removed is a native (Santa Clara County Ordinance No. NS-1203.107, §1, 2-11-97).

6.3 Regional Setting

ARC is located along the southwestern edge of the San Francisco Bay in the northern portion of Santa Clara County, California (Figure 6-1). The City of Mountain View borders the center to the south and west, and the City of Sunnyvale borders it to the south and east (Figure 1-2).

6.4 Existing Site Conditions

This section describes the aesthetic character of ARC and the areas of Moffett Field not under NASA administration, and the adjacent portions of the cities of Mountain View and Sunnyvale. These areas have been divided into multiple visual units that correspond to the locations identified on Figure 6-1, Location of Visual Unit.[4]

Figure 6-1. Location of Visual Units

(Source: NASA 2009)

6.4.1 Visual Character of the Surrounding Area

This section describes the current visual character of the areas surrounding ARC in the cities of Mountain View and Sunnyvale. See Figure 6-1 for the location of specific visual units.

6.4.1.1 *Undeveloped Land to the West (Visual Unit 17)*

Immediately to the west of ARC is Stevens Creek. Stevens Creek is bordered by tall, mostly vegetated earthen levees. A narrow asphalt recreational trail runs along the top of the western levy. Toward the center of ARC's boundary, a long, narrow tree nursery abuts the creek. Together, the creek and the tree nursery create a natural/agricultural buffer zone between ARC and Mountain View, as shown in Figure 6-2.

[4] Numbering of visual units in this document corresponds to numbering of visual units in the NADP EIS.

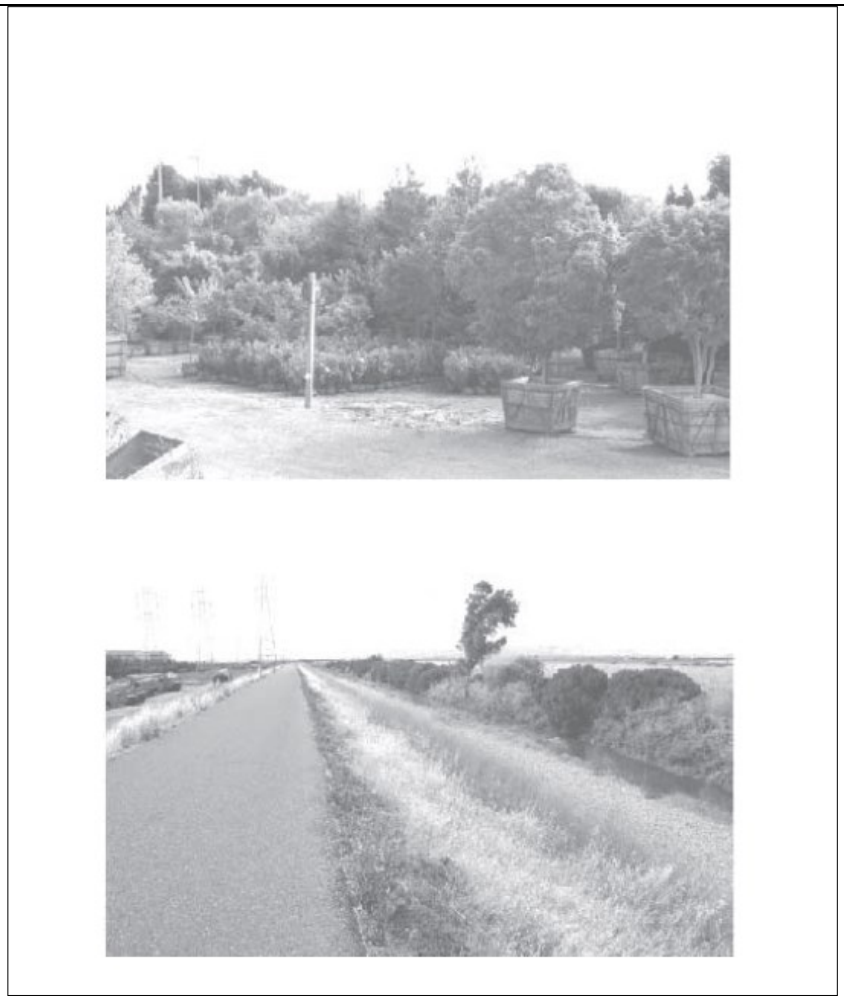

Figure 6-2. Visual Unit 17. Undeveloped Land to the West

(Source: NASA 2009)

6.4.1.2 *Office/Industrial Park to the Northwest (Visual Unit 18)*

Beyond the natural buffer strip in Visual Unit 17 is an office and light-industrial development characterized by predominantly two-story buildings in a mix of architectural styles, as shown in Figure 6-3. Most of the buildings are constructed of concrete, although there are a number of brick buildings and a few buildings faced with wood. In most cases, buildings are set back with parking lots adjacent to the street. Main building entrances are located generally away from these lots rather than facing the street. Most of the buildings date from the 1970s and 1980s, though there are some large new complexes of two- to three-story postmodern buildings, especially along Shoreline Boulevard and L'Avenida. Very little vacant land remains within the current boundaries of the developed area. Exterior wall and roof colors are generally neutral, though most of the new buildings have brightly colored accents.

Within this office/light-industrial visual unit, streets are landscaped, often with mature trees, and minor landscaping around buildings and within larger parking lots is common. Most of the area is visually shielded from ARC by a hedgerow of tall, bushy oleander and other similar plants.

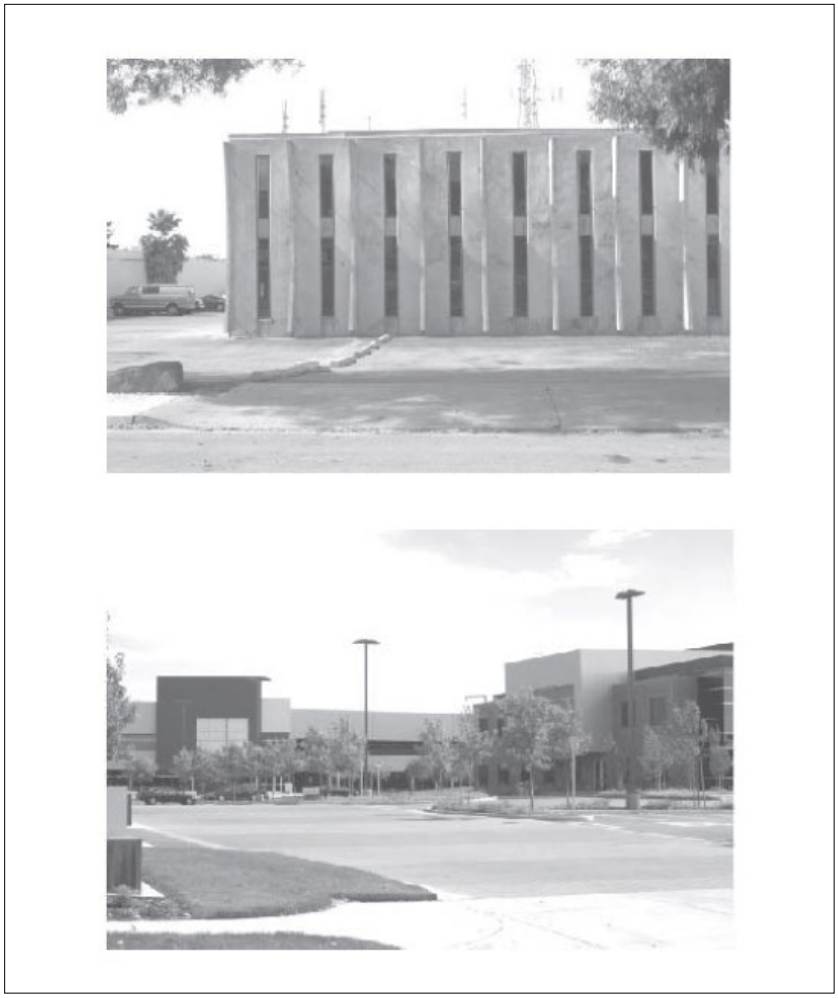

Figure 6-3. Visual Unit 18 Offices/Industrial Park to the Northwest

(Source: NASA 2009)

6.4.1.3 *Mobile Home Park to the West (Visual Unit 19)*

Toward the southern edge of the office/industrial area is a densely settled mobile home park on 15 hectares (37 acres), as shown in Figure 6-4. With a single exception, all of the homes are one-story and access roads are quite narrow. Some small-scale landscaping exists around individual units, and large palm trees at a few intersections. A dense oleander hedge borders the entire development.

Figure 6-4. Visual Unit 19 Mobile Home Park to the West

(Source: NASA 2009)

6.4.1.4 *North to San Francisco Bay (Visual Unit 20)*

To the north, ARC is bordered by the extensive open expanse of the former Cargill Salt Ponds, now USFWS refuge lands. To the northwest is Mountain View Shoreline Park.

6.4.1.5 *The Lockheed Martin Complex (Visual Unit 21)*

The Lockheed Martin Complex is directly east of ARC and flanks the majority of the airfield. Views are shown in Figure 6-5. This sprawling complex of office and heavy industrial buildings includes a wide variety of architectural styles, most of them quite plain and industrial in appearance. Heights vary from one to four stories. Large areas of the complex are fenced off for security purposes, and "no-trespassing signs" are prominently visible at all entrances. Large surface parking lots with minimal landscaping surround all the buildings. There are a few streets with trees, but no consistent pattern of vegetation. Moffett Towers, a group of high-rise glass exterior business offices, abuts the airfield at the northeast quadrant of Manila Drive and Enterprise Way.

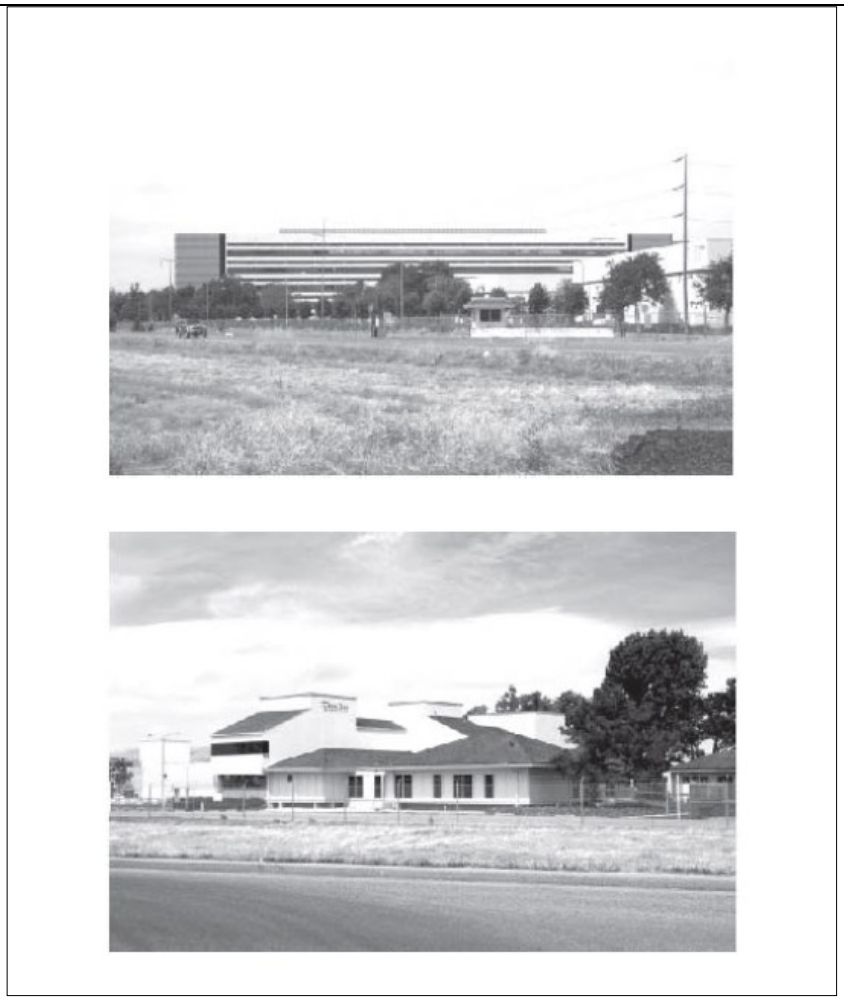

Figure 6-5. Visual Unit 21. The Lockheed Martin Complex

(Source: NASA 2009)

6.4.1.6 *Residential Neighborhood across U.S. Highway 101 (Visual Unit 22)*

U.S. Highway 101 is a formidable visual and physical barrier between ARC and the areas on the south side of the freeway. Views of the neighborhood and the sound wall are shown in Figure 6-6. The freeway is eight lanes wide in this area, and is bordered on the western end of ARC's southern edge by sound barriers on both sides. There are a number of different uses across Highway 101 in Mountain View and Sunnyvale. To the southwest is an older residential neighborhood with a variety of housing types ranging from multi-family two-story apartment complexes to duplexes to small, one-story detached single-family homes. Within the heart of the residential neighborhood, streets are wide with narrow sidewalks and mature trees on the front lawns of the houses.

Figure 6-6. Visual Unit 22. Residential Neighborhood across Highway 101

(Source: NASA 2009)

6.4.1.7 *Mixed-Use Strip across U.S. Highway 101 (Visual Unit 23)*

Along U.S. Highway 101 and Moffett Boulevard, a mixed-use strip that includes motels, restaurants, a mobile home park, a bar, and a gas station, as shown in Figure 6-7 borders the residential area described in Visual Unit 22. These commercial buildings are one to two stories tall in a variety of architectural styles. Many of the buildings are set back from the street with small parking lots in front.

Figure 6-7. Visual Unit 23. Mixed-Use Strip across Highway 101

(Source: NASA 2009)

6.4.1.8 *Whisman Industrial Area across U.S. Highway 101 (Visual Unit 24)*

Directly south of ARC in the area bordered by Middlefield, Ellis, and Whisman Streets is an expansive office and industrial park area, as shown in Figure 6-8. A variety of buildings are contained within this visual unit. These include several existing large-scale office complexes along Fairchild Drive, which are occupied by high tech companies such as Google, Locus, and Audience. Construction of the future 385,000-square-foot Samsung R&D campus is also underway near the junction of Fairchild Drive and Clyde Avenue, across U.S. Highway 101 from the ARC Airfield (City of Mountain View 2014). Buildings in this unit are generally two or more stories high and represent a variety of architectural styles. Parking is in large lots with generous landscaping.

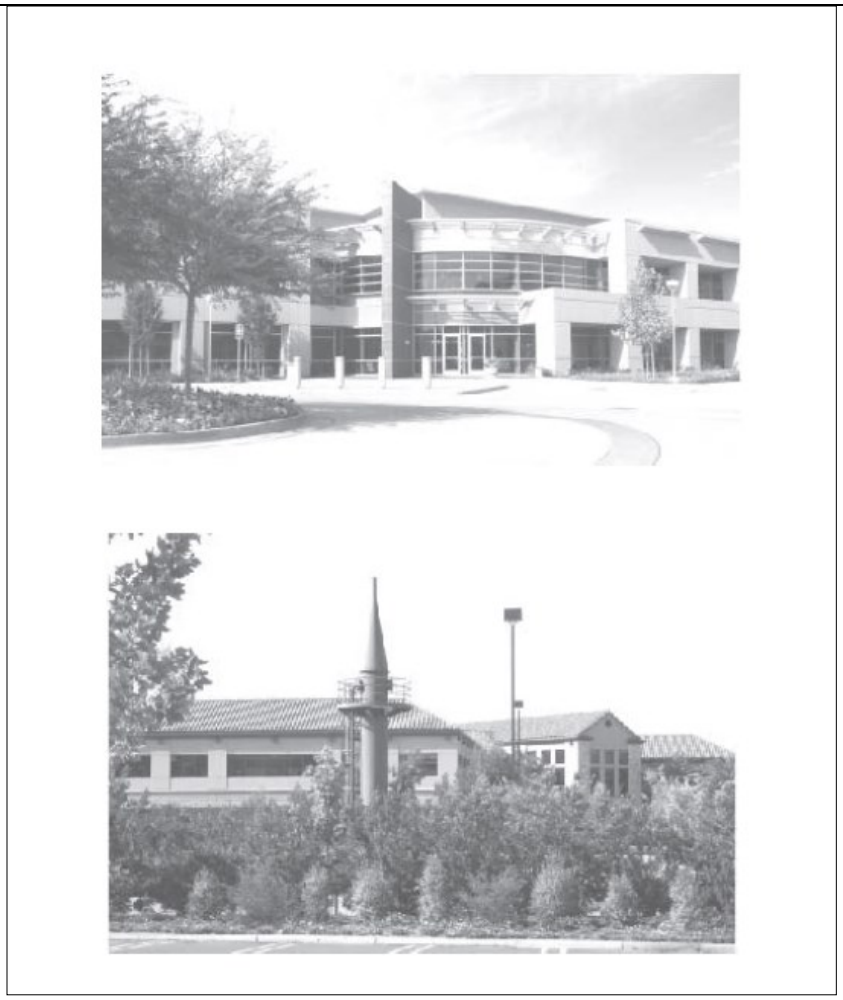

Figure 6-8. Visual Unit 24. Whisman Industrial Area across Highway 101

(Source: NASA 2009)

6.4.1.9 *The Sunnyvale Municipal Golf Course (Visual Unit 25)*

The Sunnyvale Municipal Golf Course, 14 hectares (35 acres) of which belong to ARC, is located to the southeast of ARC. Views are shown in Figure 6-9. This large green space provides a counterpoint to the development that surrounds it.

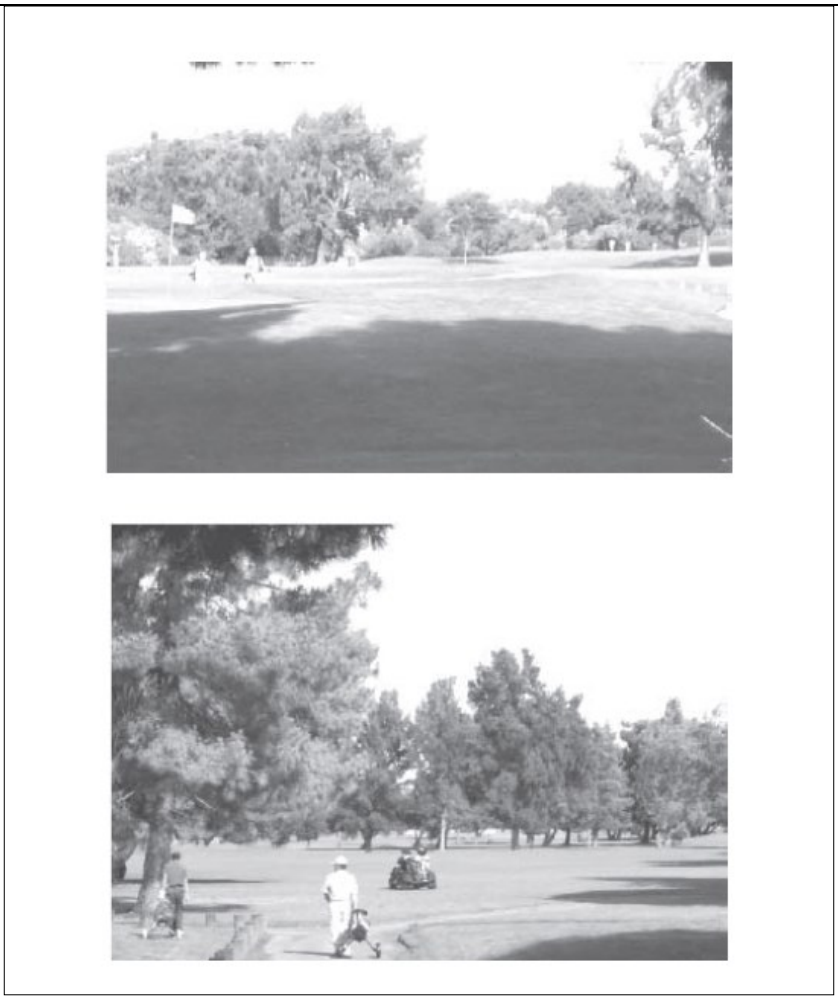

Figure 6-9. Visual Unit 25. The Sunnyvale Municipal Golf Course

(Source: NASA 2009)

6.4.2 Views into the NASA Ames Research Center

The essentially flat topography of ARC extends for miles around, so none of the areas abutting the center has a clear view of the facilities. Landscaping and development almost always obstruct lines of site into ARC. Only the tallest features are visible, even from the frontage road just across U.S. Highway 101.

Of the features visible from outside ARC, by far the most striking are the towering parabolic forms of the airship hangars, each of which is nine stories tall and encloses approximately 3 hectares (8 acres) of land. Hangar 1**,** the first hangar at Moffett Field, was completed in 1933 to house the dirigible named USS Macon. It is the primary landmark within ARC and the most visible part of it from the north and west. Hangars 2 and 3, on the opposite side of the airfield, were constructed during World War II to house the revitalized naval lighter-than-air program. They stand out strongly against the diked ponds that slope down to the Bay, and are especially visible from the Lockheed Martin complex and the eastern side of

ARC. The soaring forms of the three hangars against the backdrop of the Bay have made Moffett Field one of the most distinctive landscapes in the Bay Area for more than 60 years.

The wind tunnels are the other feature of ARC visible for long distances. Given their placement on the site, they are most visible from the northwest, although it is possible to get occasional glimpses of them from the residential neighborhood to the southwest of Moffett Field across U.S. Highway 101.

All of these features are visible from a distance from parts of the coastal hills to the west, the East Bay hills to the east, and the Mount Hamilton Range to the south.

6.4.3 Visual Character of NASA Ames Research Center

This section describes the existing visual character of each of the four planning areas within ARC. These planning areas include the NRP area, Ames Campus area, Bay View and North Bay View, and Eastside/Airfield. The area north of Bay View is also described below.

6.4.3.1 *NASA Research Park Area*

The NRP area is roughly triangular, and can be divided into a number of distinct visual units, each with its own character, landscaping, and typical uses. The discussion that follows describes each of these units individually. Figure 6-1 shows the location of the visual units within the NRP.

6.4.3.1.1 Western End of Shenandoah Plaza (Visual Unit 1)

The original plan for Shenandoah Plaza is clearly discernible and largely unchanged in this unit. Views are shown in Figure 6-10. The street grid still outlines a generous horseshoe-shaped central lawn surrounded by attractive historic Spanish Colonial Revival buildings, with their characteristic plain stucco walls, low-pitched red-tile roofs, and terra cotta ornamentation. The formal axis of the lawn sweeps eastward unchecked to the former administration building, pointing toward the immense streamlined form of Hangar 1. In addition to the lawn, the original design's rows of mature liquid amber trees have been preserved, and these two landscape elements combine to give the western end of Shenandoah Plaza a formal, park-like feel quite distinct from the surrounding landscape.

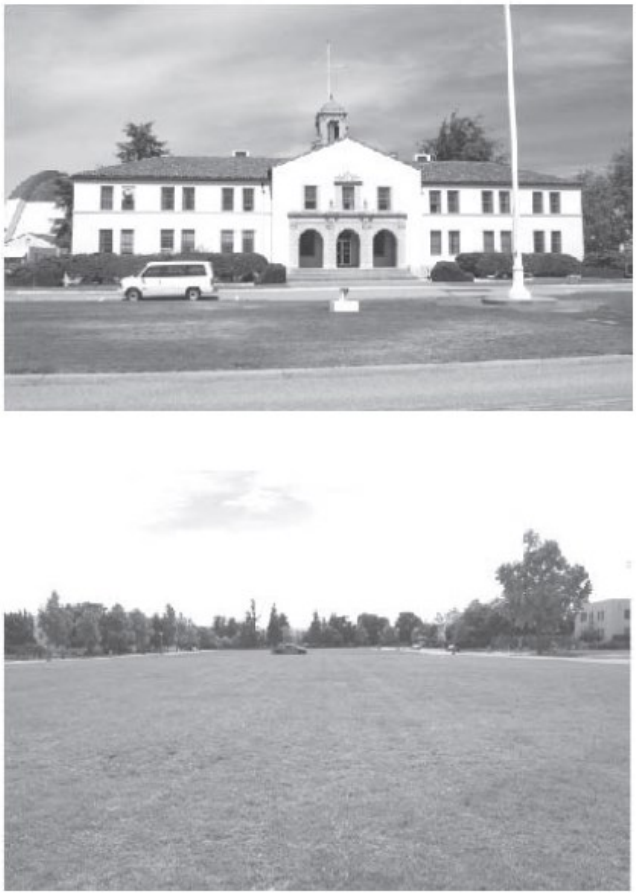

Figure 6-10. Visual Unit 1. Western End of Shenandoah Plaza

(Source: NASA 2009)

6.4.3.1.2 Eastern End of Shenandoah Plaza (Visual Unit 2)

In the eastern half of the Shenandoah Plaza area, the original site plan is much less clear. Views are shown in Figure 6-11. This area was originally designated as the industrial area of Shenandoah Plaza. Although historic original Spanish Colonial Revival structures remain, a large number of infill structures have been built in the stretch of land between the western end of Shenandoah Plaza and Hangar 1. These infill buildings are generally unobtrusive, but they are much smaller than the original buildings. They are predominantly used for storage and light industrial uses, and so are much more utilitarian in design than the historic structures. They are also placed more closely together. There are only minimal trees and landscaping in this unit. There is a small monument and plaza west of Building 3; the only other open spaces are a number of medium-sized parking lots.

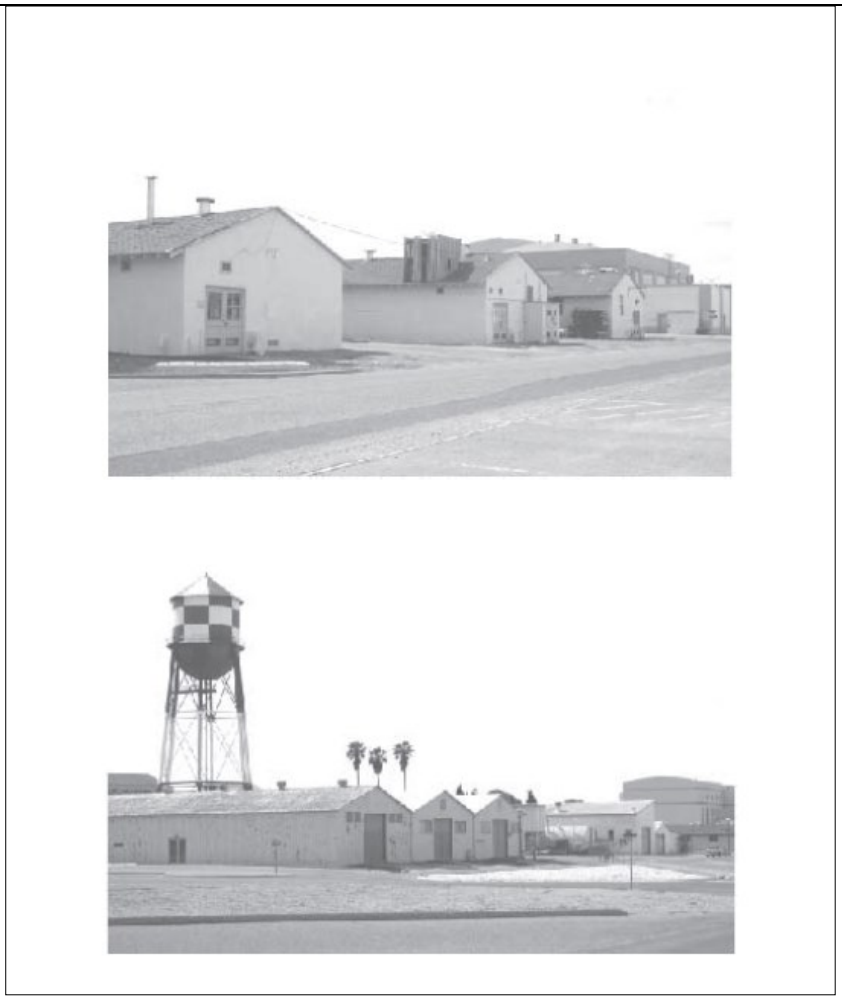

Figure 6-11. Visual Unit 2. Eastern End of Shenandoah Plaza

(Source: NASA 2009)

6.4.3.1.3 Southeastern Perimeter of the NASA Research Park Area (Visual Unit 3)

The outer perimeter of the southern part of the NRP area, as shown in Figure 6-12, is characterized by sizeable open areas: the undeveloped land alongside the airfield that supports a small burrowing owl population; the undeveloped land between Cody Road and the new light rail station; the open expanse of asphalt of the former CANG motor pool lot; and the broad turf area of the athletic fields that abut U.S. Highway 101. Unlike in Shenandoah Plaza, these open spaces are not formally landscaped, nor are they the central organizing features of the built environment around them. They do contribute to the NRP area's less built-up feel, and allow views east to the hangars and west to the coastal hills.

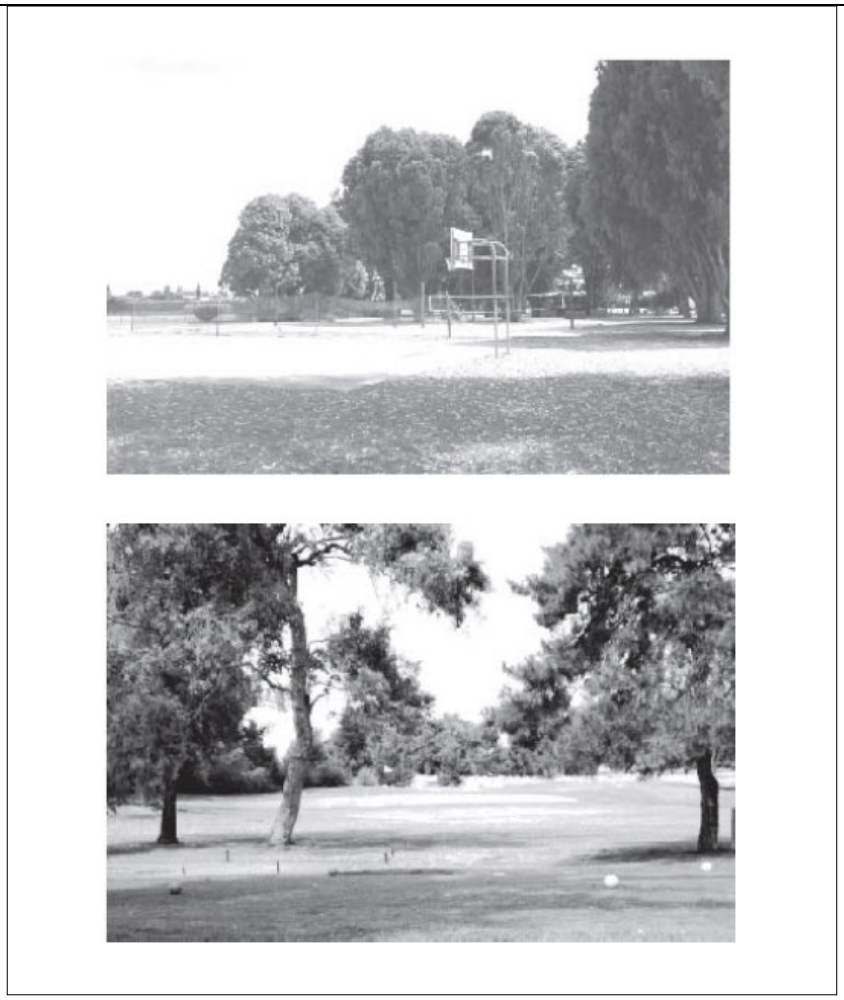

Figure 6-12. Visual Unit 3. Southeastern Perimeter of the NASA Research Park Area

(Source: NASA 2009)

6.4.3.1.4 The Barracks (Visual Unit 4)

A roughly "L"-shaped group of former barracks that is characterized by a dense clustering of bar-shaped buildings makes up the fourth visual unit in the NRP area. Typical barracks are shown in Figure 6-13. The line of barracks that runs north-south is two stories tall and covered with white stucco. The buildings along the east-west arm of the "L" are three-story, gray concrete block structures with access from an outside corridor that runs the length of each building on each floor. These buildings are normally used as short-term housing for students, reservists, and visitors. Both sets of buildings are typical of the plain, functional style characteristic of most military architecture. Each of the barracks buildings is surrounded by open lawn. Streets and parking lots in this visual unit are edged with mature trees.

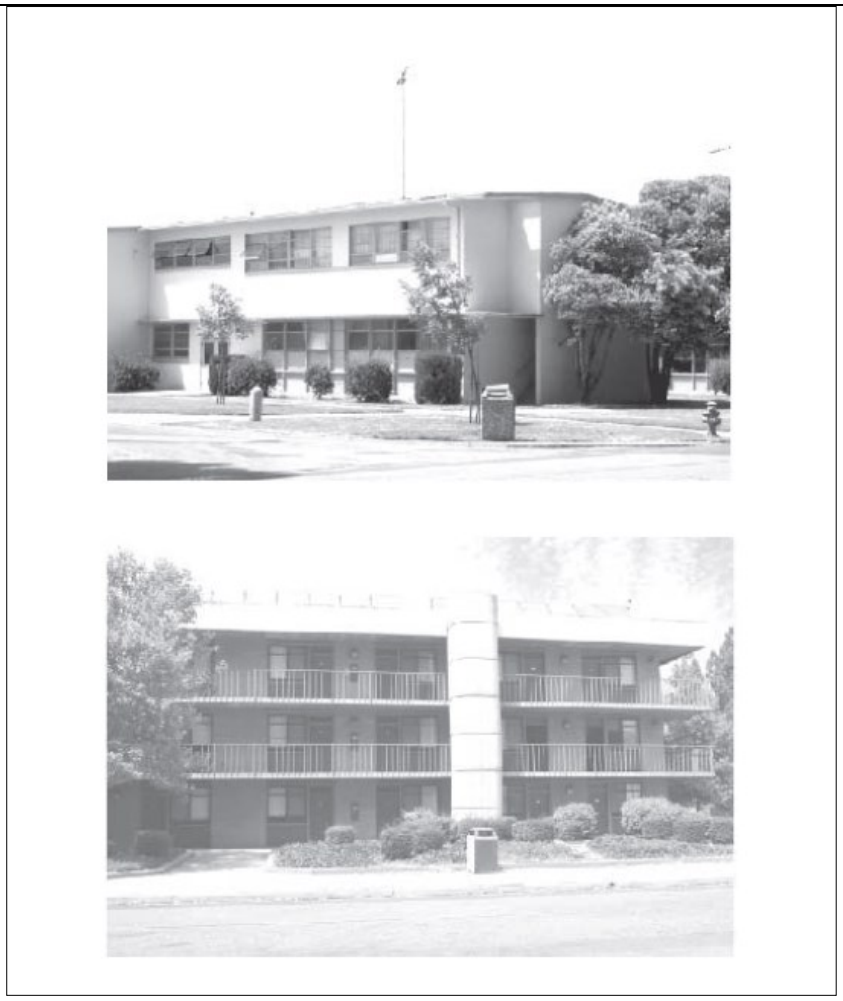

Figure 6-13. Visual Unit 4. The Barracks

(Source: NASA 2009)

6.4.3.1.5 Exchange Area (Visual Unit 5)

The various buildings are associated with the Defense Commissary Agency. The Commissary and the Navy Exchange are large, plain, architecturally undistinguished one-story buildings. Each is surrounded by a large parking lot with no internal landscaping, as shown in Figure 6-14. There are no historic buildings in this unit, and very little landscaping. Some undeveloped land remains, but most open space is covered in asphalt.

Figure 6-14. Visual Unit 5. Exchange Area

(Source: NASA 2009)

6.4.3.1.6 Main Entry (Visual Unit 6)

With the exception of the historic gate house and iron fence, all of the buildings within this unit are modern and do not contribute to the Shenandoah Plaza Historic District, as shown in Figure 6-15. Much of this unit consists of a large parking area and a dome-shaped facility that currently houses the ARC Visitor Center. The Visitor Center was formerly part of a larger complex of Space Camp facilities, most of which have been demolished. There is no significant landscaping within this visual unit.

Figure 6-15. Visual Unit 6. Main Entry

(Source: NASA 2009)

6.4.3.2 *Ames Campus Area (Visual Unit 7)*

To the northwest of the NRP area is the Ames Campus area, NASA's original base of operations at Moffett Field. Views are shown in Figure 6-16. The Ames Campus area is densely developed with almost 100 laboratory and office buildings on 95 hectares (234 acres) of land. Most of the buildings are utilitarian, unpainted concrete office and lab buildings constructed in the 1940s and 1950s. The majority of these buildings are two stories tall, though there are a few one-story structures and a smaller number of taller three- to four-story buildings. In addition to the concrete structures, numerous temporary trailers house offices. Perhaps the most striking features of the built landscape within the Ames Campus area are the wind tunnel complexes, some of which tower up to 25 meters (80 feet) above the ground. Their gigantic, unusual shapes give a distinctly industrial feel and an entirely different scale to this visual unit. Within the Ames Campus area, streets are generally wide with generous planting strips on each side and allées of mature street trees,

often plane trees. Parking lots are generally narrow and skirt the edges of buildings. Where larger parking lots occur, there is significant interior landscaping.

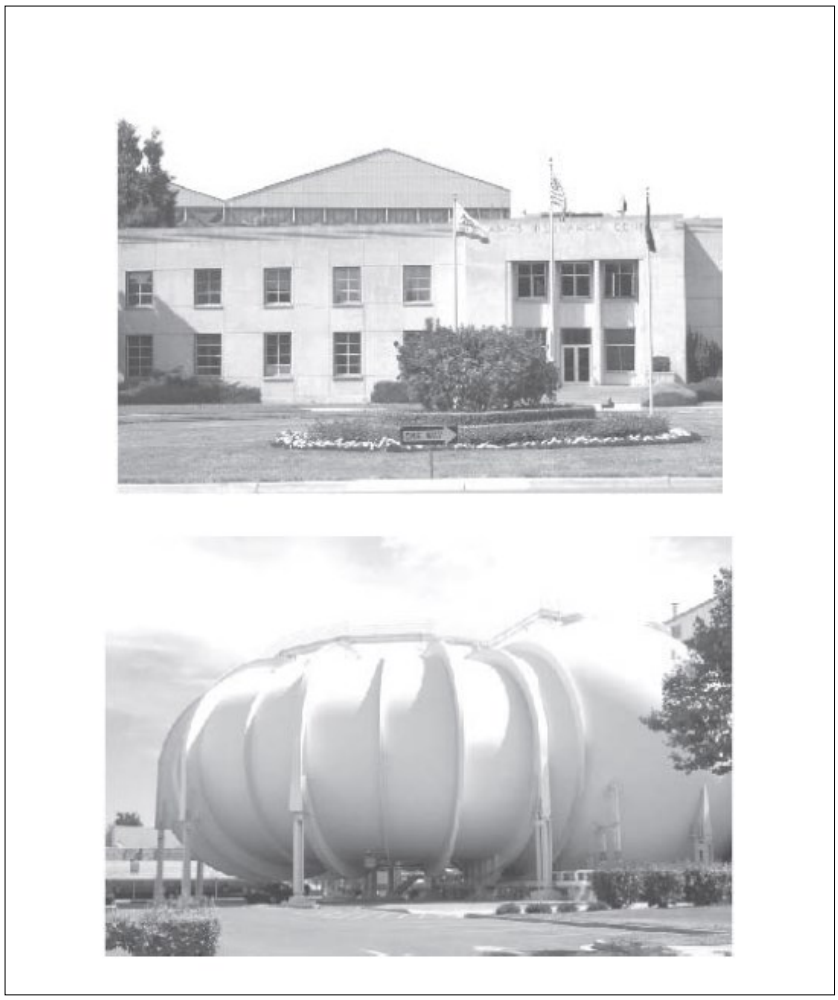

Figure 6-16. Visual Unit 7. Ames Campus Area

(Source: NASA 2009)

6.4.3.3 *Bay View and North of Bay View (Visual Unit 8)*

Visual Unit 8 sits within the 100-year floodplain and is skirted by 4-meter (12-foot)-high earthen berms along Stevens Creek to the west and the airfield to the east. Facilities here are limited to the 12-meter (40-foot)-tall steel frame of the OARF and a few small one- or two-story concrete structures housing telecommunications equipment. In addition, approximately 42 acres of leased property in Bay View Parcels 1, 2, and 4 is currently under development for Google's Bay View campus. The property is under lease to PV, a wholly-owned subsidiary of Google, pursuant to a 2008 Enhanced Use Lease between PV and NASA. Development of the Bay View area was evaluated in the NADP EIS, for which a ROD was signed in November 2002.

The northern portion of Visual Unit 8 consists of the Eastern and Western Diked Marshes, low open areas of wetlands bordered by roads. The dominant features of this visual unit are the expanse of low vegetation, and views across it to the development off Shoreline Drive in Mountain View, the Ames Campus area, and the airfield. Views are shown in Figure 6-17.

Figure 6-17. Visual Unit 8. Bay View and North of Bay View

(Source: NASA 2009)

6.4.3.4 *Storm Water Retention Pond (Visual Unit 9)*

Visual Unit 9 is located northwest of the airfield and north of the diked marshes. Views are shown in Figure 6-18. North Perimeter Road and the security fence divide views from the latter. There are a few small structures along the southern edge, but the main features of this visual unit are a border of upland vegetation along North Perimeter Road and wide expanses of water in the SWRP, the western portion of which is owned by the MROSD. There are also views across the road and pond to the East Bay Hills.

Figure 6-18. Visual Unit 9. Storm Water Retention Pond

(Source: NASA 2009)

6.4.3.5 *Eastside/Airfield*

This section describes the current visual character of the Eastside/Airfield development area. The Eastside/Airfield area is roughly triangular and is bordered by the airfield to the west, the Lockheed Martin complex to the east, and the former Cargill Salt Ponds to the north.

6.4.3.5.1 The Airfield (Visual Unit 10)

The airfield is an open expanse of concrete and grass median strips consisting of the airfield and the undeveloped land adjacent to its southern end, as shown in Figure 6-19. The two runways are 60 meters (200 feet) wide, and 2,800 meters (9,200 feet) and 2,500 meters (8,100 feet) long, respectively. The airfield divides the built-up western portion of ARC from the far less developed northeastern portion, and allows expansive views across ARC to Hangars 2 and 3 and the San Francisco Bay.

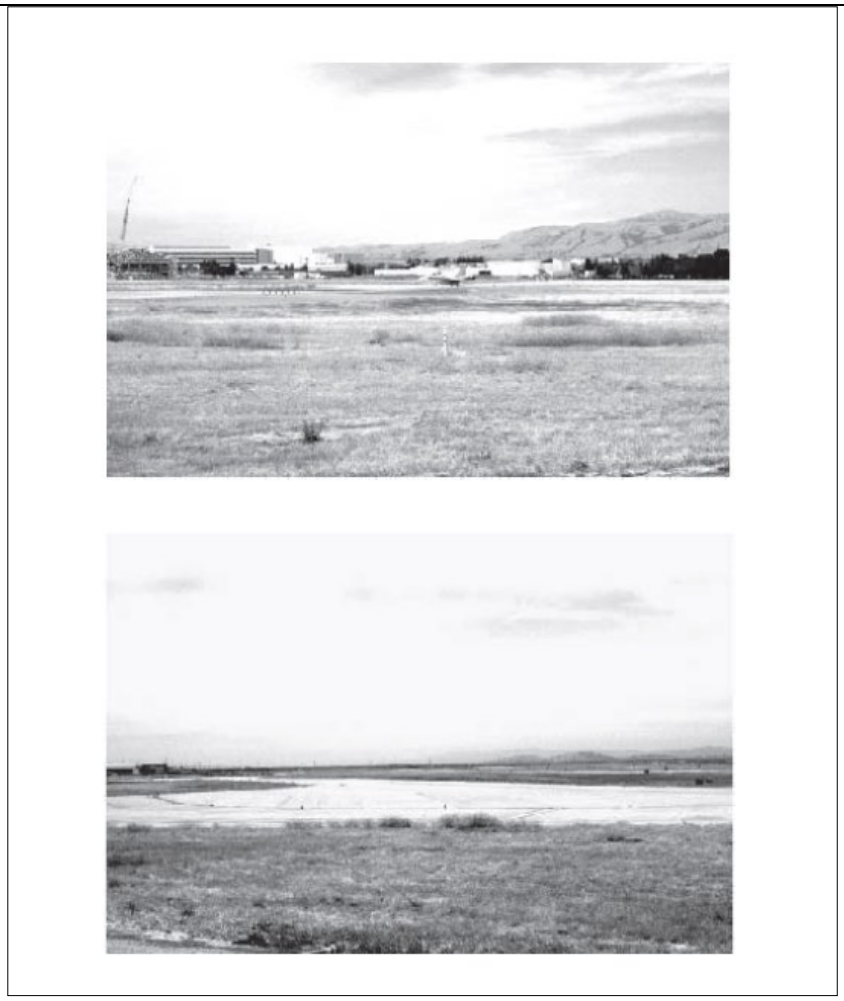

Figure 6-19. Visual Unit 10. The Airfield

(Source: NASA 2009)

6.4.3.5.2 California Air National Guard Area (Visual Unit 11)

The CANG area (shown in Figure 6-20) is roughly triangular in shape, with its two long sides delineated by Macon Road to the east and East Patrol Road to the northeast. The short, southern end of the triangle runs roughly parallel to the end of the runways. The area has buildings with adjacent land adequate for CANG to consolidate and construct mission essential facilities. Trees are numerous on the land, grass areas are sprinkled, medians have been landscaped, and land awaiting development has been left in its natural form. Open land is either airfield safety zones, identified for future facilities, burrowing owls, recreation, or restricted areas necessary to maintain security.

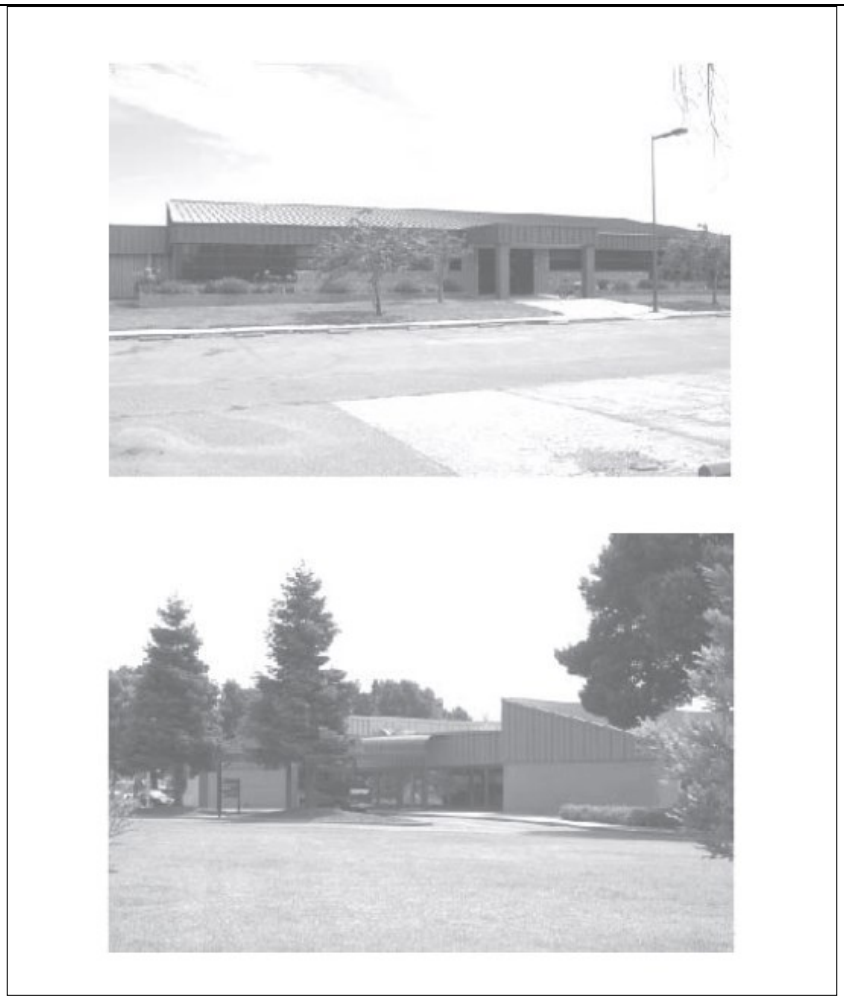

Figure 6-20. Visual Unit 11. California Air National Guard Area

(Source: NASA 2009)

6.4.3.5.3 Hangars 2 and 3 (Visual Unit 12)

The hangar area is bordered by the CANG area to the south, Macon Road to the east and north, and the airfield to the west. It is almost entirely paved, and the dominant visual feature is the elegant parabolic form of the two historic hangars, as shown in Figure 6-21. There are also a number of small, architecturally undistinguished buildings housing maintenance and repair facilities. There are usually a number of military planes and helicopters on the pavement adjacent to the hangars.

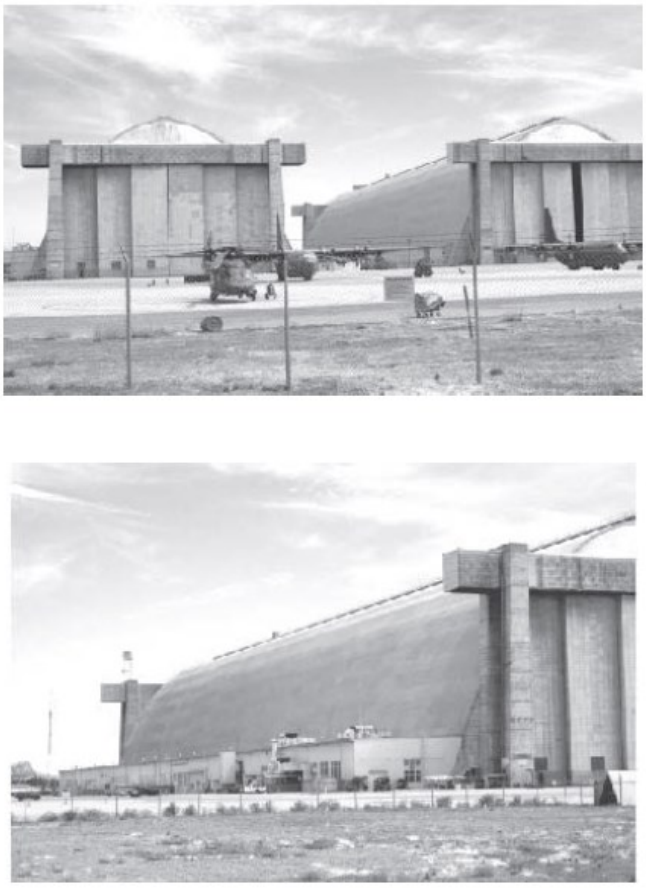

Figure 6-21. Visual Unit 12. Hangars 2 and 3

(Source: NASA 2009)

6.4.3.5.4 The Golf Course and Munitions Bunkers (Visual Unit 13)

East Patrol Road to the southeast, the USFWS ponds to the north, and the airfield and hangar areas to the west border the golf course. Views are shown in Figure 6-22. The tree-lined fairways of the golf course and raised mounds of the munitions bunkers characterize the area. It is also home to a second parking area for recreational vehicles, and an electrical station. The golf course is skirted by undeveloped ruderal land.

Figure 6-22. Visual Unit 13. The Golf Course and Munitions Bunkers

(Source: NASA 2009)

6.4.4 Visual Character of the Remainder of Moffett Field

This section describes the visual character of the areas of Moffett Field not under NASA administration, and thus outside ARC: the Wescoat Village and former Orion Park military housing areas.

6.4.4.1 *Wescoat Village Military Housing Area (Visual Unit 14)*

The Wescoat Village military housing area is tucked into a roughly triangular area between the barracks area, U.S. Highway 101, and the U.S. Space Camp compound. Views are shown in Figure 6-23. Wescoat Village has three distinct neighborhoods. The westernmost area consists of two-story wooden duplexes with attached carports. Exterior walls are painted white and are not ornamented. Roofs are low-pitched with reddish-brown shingles. Groups of three duplexes are clustered onto "U"-shaped courts that extend off the central curvilinear road, which ends in a cul-de-sac. Each building is surrounded by open expanses

of lawn, the primary feature of the landscape. There are also a few mature trees in front of each building.

The central housing area, along Berry Drive, is part of the Shenandoah Plaza Historic District. These nine Spanish Colonial Revival residences are military officers' housing. All exterior walls are stucco-painted dark beige. There is minimal ornamentation around doors and windows; the buildings are quite plain. Roofs are low-pitched and covered in red tiles. Each house has an enclosed garage connected by an arcaded breezeway. Houses are placed symmetrically along a curvilinear road that ends in a large cul-de-sac with a broad oval green at its center.

The easternmost housing area is much larger than the other two. Here, white two-story wooden buildings are divided into four-plexes with shared carports. Each unit has its own front patio with a wooden fence shielding it from view. Again, buildings are arranged in clusters off a central, curvilinear road. Instead of ending in a cul-de-sac, the main road continues to connect to South Perimeter Road and the southern edge of ARC.

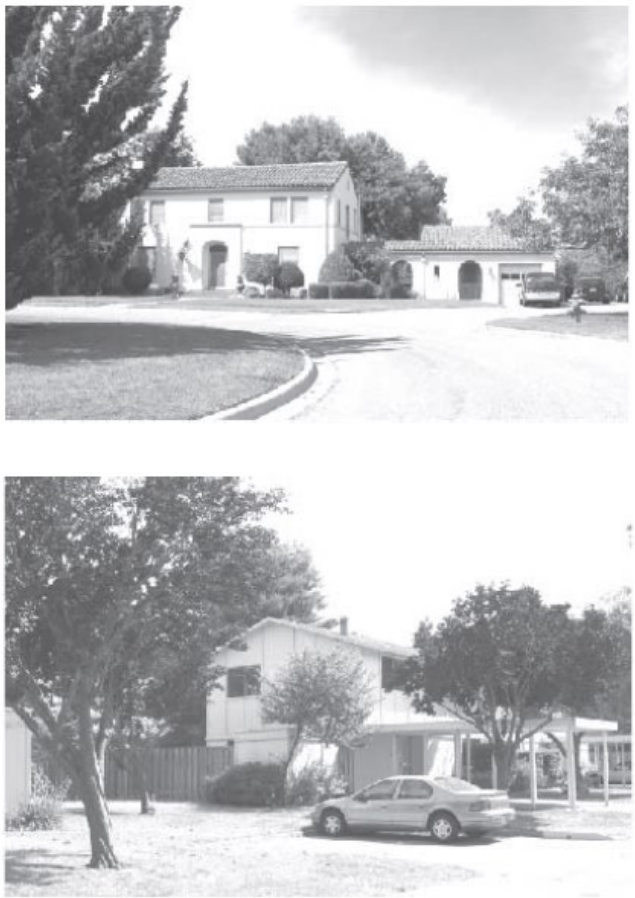

Figure 6-23. Visual Unit 14. Wescoat Village Military Housing Area

(Source: NASA 2009)

6.4.4.2 *The Former Orion Park Military Housing Area (Visual Unit 15)*

This visual unit is made up of the Armed Forces Reserve Center Complex, the Army Reserve Regional Readiness Sustainment Command Headquarters, an organizational maintenance shop, two storage buildings, and a fitness center (USACE 2007). Construction of these buildings was completed in 2008-9 following demolition of the Orion Park housing facilities.

6.4.4.3 *Military Office and Hotel Buildings (Visual Unit 16)*

This visual unit is made up of military-associated uses: the Navy Lodge and the San Jose Military Entrance Processing Center. Views are shown in Figure 6-24. This area resembles Visual Unit 5, with isolated buildings set in large parking lots. The buildings are plain stucco and concrete aggregate, and their primary decoration comes from banks of windows, which accent the buildings' vertical or horizontal character.

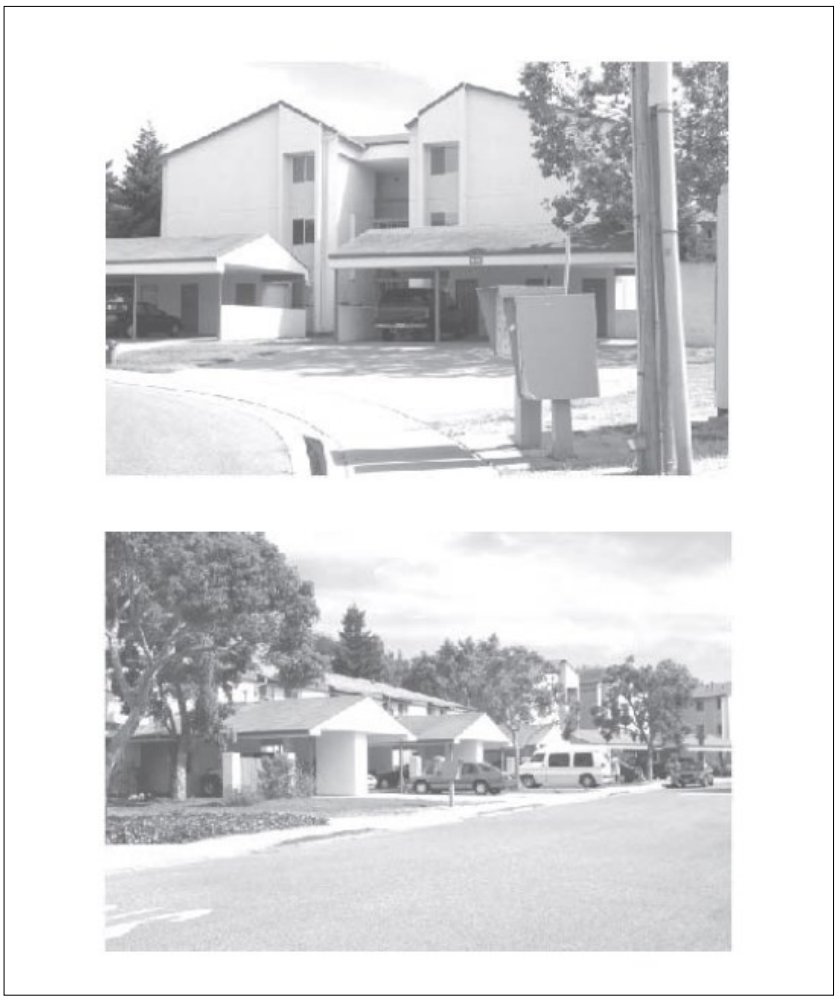

Figure 6-24. Visual Unit 16. Military Office and Hotel Buildings

(Source: NASA 2009)

6.4.5 Protected Trees

To establish which trees at ARC qualify as protected trees under Santa Clara County's Heritage Tree Ordinance, NASA surveyed the entire ARC during summer 2001. The Wescoat Village and former Orion Park military housing areas were not surveyed because they are not under NASA control. The survey identified trees in all of the planning areas except the Bay View area.

6.4.5.1 *Ames Campus Area*

In the Ames Campus area, protected trees are primarily located along streets or in planting strips in parking lots. Some areas house trees planted alongside existing buildings. Finally, there are a small number of protected trees clustered in the undeveloped area south of the administration building.

6.4.5.2 *NASA Research Park Area*

Within the NRP area, the location of protected trees is not as regular as in the Ames Campus area. Within the Shenandoah Plaza Historic District, there are comparatively few protected trees, which for the most part are clustered in open space areas or grouped near buildings. The only areas where trees line a roadway are along Clark Memorial Drive, the entrance road, and a small strip along South Akron Road in front of Building 20. In the remainder of the NRP area, protected trees primarily line the edges of roads and parking lots, or are clustered around buildings. There are a few open areas adjacent to the athletic fields along U.S. Highway 101 and next to the Navy Exchange, where trees are more loosely grouped.

6.4.5.3 *Eastside/Airfield Area*

In the Eastside/Airfield area, protected trees are limited to the golf course, and the southernmost of the areas currently occupied by CANG.

6.5 Environmental Requirements

NASA has identified the following environmental plans, policies, practices, guidelines, and measures that address potential visual effects of operations and future development at ARC.

6.5.1 NASA Procedural Directive 8500.1, NASA Environmental Management

Per NPD 8500.1, it is NASA policy to: maintain compliance with all applicable federal, state, and local environmental requirements; to incorporate environmental risk reduction and sustainable practices to the extent practicable throughout NASA's programs, projects, and activities; and to consider environmental factors throughout the life cycle of programs, projects, and activities (as defined in NPD 7120.4, *NASA Engineering and Program/Project Management Policy*, and related documents), including planning, development, execution, and disposition activities. Examples of environmental factors include consideration of environmental impacts as required by the NEPA and NHPA; the proposed use of hazardous

materials; the potential for waste generation; the need to acquire necessary permits, waivers, and authorizations; and the use of environmentally-preferable materials and processes wherever practicable.

6.5.2 Ames Procedural Requirements 8500.1, Ames Environmental Procedural Requirements

APR 8500.1 sets forth general procedural requirements to ensure compliance with applicable federal, state, and local environmental laws; regulations and EOs; and NASA policies and procedures. Organizational directors, division chiefs, branch chiefs, section heads, supervisors, managers, and CORs are responsible for planning, designing, constructing, managing, operating, and maintaining facilities in conformance with applicable regulatory directives, and should obtain environmental review from the Environmental Management Division early in project planning consistent with NASA's NEPA implementing procedures (NPR 8580.1A and EO 12114), NASA policies and procedures for programs and projects (NPR 7120), and NASA regulations related to environmental quality (14 CFR 1216). Program and project managers should coordinate with the Environmental Management Division in a timely manner to ensure that any new or modified programs, projects, and activities comply with regulatory requirements.

6.5.3 Ames Policy Directive 8822.1, NASA Research Park Design Review Program

APD 8822.1 establishes specific policies, responsibilities, and procedures for the Design Review Program for all proposed projects within the NRP and Bay View areas. As part of the Program, the Architecture and Planning Review addresses and implements the applicable land use and design measures included in the NRP and Bay View design guides (discussed below) and the NADP EIS. The Environmental Review, performed by the Environmental Management Division, also addresses all preliminary environmental issues, including aesthetic issues, as they relate to development under the NADP.

New development projects in the NRP and Bay View areas should be coordinated through the NRP Design Review process during conceptual design (before building design or prior to 50 percent completion of the schematic design phase) to ensure that they meet all applicable land use and design requirements. Completion of an Environmental Checklist in coordination with the Environmental Management Division is also required during Design Review, as it will determine if additional environmental studies or approvals will be required before proceeding with the project.

6.5.4 Ames Environmental Work Instructions

Ames's EWIs, which replace the previous Ames Environmental Handbook (APR 8800.3), set forth requirements to ensure that programs, projects, and activities at ARC comply with applicable federal, state, and local laws; regulations and EOs; and NASA policies and procedures. Each EWI lists relevant regulatory authorities and documents, assigns individual and organizational responsibilities within ARC, and identifies specific requirements applicable to the work being performed.

The following EWIs are relevant to operations and future development at ARC with the potential to impact aesthetic resources.

- EWI 12, Public Involvement
- EWI 14, NEPA and Environmental Justice
- EWI 16, Cultural Resources Management (Under review)
- EWI 18, Environmental Requirements for Construction Projects (Under review)

6.5.5 Ames Design Guides

Site and building design at ARC is guided by the NASA Research Park Design Guide (DMJMH+N and EDAW 2001) and Bay View Design Guide (NBBJ 2012). The purpose of these guides is to ensure that new buildings constructed under the NADP would stylistically complement the existing buildings in the Ames Campus and Eastside/Airfield. In addition to general planning concepts concerning open space, circulation, and infrastructure, both guides includes numerous design concepts. Currently, there are no design guidelines, height limits, and setback requirements for the Ames Campus and Eastside/Airfield areas.

6.5.6 Ames Landscaping Management Policies and Practices

NASA has established a number of landscaping management policies and practices as discussed in other resource chapters in this document and as summarized below.

- Through its storm water pollution prevention and water pollution control programs for construction, demolition, and excavation projects, NASA ensures implementation of construction practices at ARC that minimize adverse water quality effects on natural habitats.
- New landscaping at ARC is to be designed with native species, and any imported soil used for landscaping or erosion-control structures that contain hay or other dried plant material must be certified as weed-free.
- NASA places restrictions on any construction equipment operating within 76 meters (250 feet) of jurisdictional wetlands or other sensitive habitats in the Bay View area to prevent the spread of invasive weeds. To minimize impacts on wetland habitats, construction is to be avoided in the jurisdictional wetlands along the northern boundary of the Bay View area and within 61 meters (200 feet) of these wetlands. Fill activities and other disturbances are to be minimized in jurisdictional wetlands elsewhere.
- NASA ARC has an active mulching program that accepts landscape trimmings generated at ARC. The program dramatically reduces the volume of green waste material sent to landfills.
- To reduce dependency on potable water, the Moffett Field Golf Course is currently using reclaimed water for irrigation. NASA also plans to use the Navy's treated groundwater for irrigation in the NRP area to reduce demand for potable supply.

- Two native gardens have been established at ARC, one west of N-269 and the other north of N-235. Both gardens contain a large variety of native plants.

6.5.7 NASA Ames Development Plan Final Programmatic Environmental Impact Statement

The NADP EIS identifies the following mitigation measures to address potential visual impacts from build out of NADP Mitigated Alternative 5.

6.5.7.1 *Mitigation Measure AES-1*

NASA and its partners would develop design guidelines for the Bay View, Ames Campus and Eastside/Airfield areas in order to ensure that new buildings would stylistically complement the existing buildings in the Ames Campus and Eastside/Airfield. Design guidelines for the Bay View area would include setback requirements for Stevens Creek and Western Diked Marsh, and would ensure harmonious design.

6.5.7.2 *Mitigation Measure AES-2*

The visual effect of NRP Parcel 6 housing would be mitigated through a combination of landscaping, screening and overall design.

6.5.7.3 *Mitigation Measure AES-3*

In order to prevent the obstruction of key views of the hangars and the wind tunnels in Ames Research Center from the areas of Mountain View and Sunnyvale across Highway 101, buildings in the NRP area would be carefully sited to preserve view corridors through the new development, especially from the Whisman Street corridor.

6.5.7.4 *Mitigation Measure AES-4*

As the site plan for new development in the Bay View area was developed, NASA and its partners would design the new street layout to preserve view corridors through the new development to the North of Bay View area and the salt ponds.

6.5.7.5 *Mitigation Measure AES-5*

NASA and its partners would use height limits and site layout to preserve view corridors from the Stevens Creek Trail through new development in Bay View to the historic hangars and to the San Francisco Bay.

6.5.7.6 *Mitigation Measure AES-6a*

Where possible, NASA and its partners would carefully site any development so as to preserve the protected trees.

6.5.7.7 *Mitigation Measure AES-6b*

Where it is not possible to preserve protected trees in place, NASA and its partners would develop a revegetation plan consistent with the requirements of the Santa Clara County Tree Preservation and Removal Ordinance.