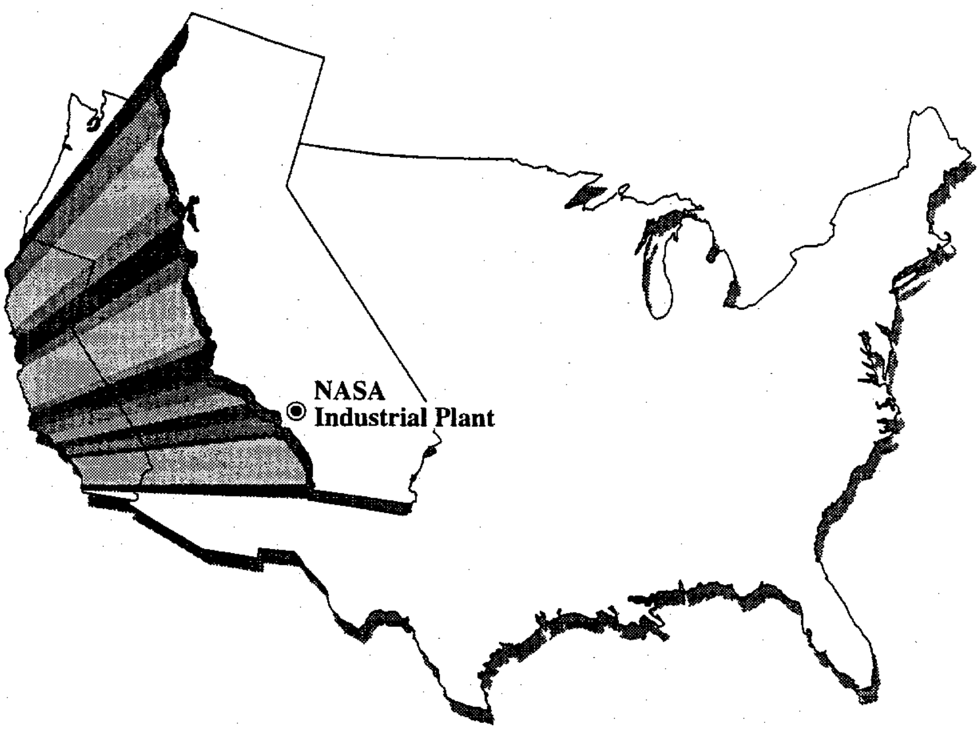
ENVIRONMENTAL ASSESSMENT
February 2000



DISPOSAL AND REUSE OF NASA INDUSTRIAL PLANT DOWNEY, CALIFORNIA

ENVIRONMENTAL ASSESSMENT FOR THE DISPOSAL AND REUSE OF NASA INDUSTRIAL PLANT DOWNEY, CALIFORNIA

FEBRUARY 2000

COVER SHEET
ENVIRONMENTAL ASSESSMENT
FOR THE DISPOSAL AND REUSE OF NASA INDUSTRIAL PLANT
DOWNEY, CALIFORNIA

a. Responsible Agency: National Aeronautics and Space Administration (NASA)

b. Proposed Action: Disposal of the NASA Industrial Plant, Downey, California

c. Written comments and inquiries regarding this document should be directed to: David Hickens, Johnson Space Center, 2101 NASA Road, Mail Code JJ12, Houston, Texas, 77058-3696; facsimile: (281) 483-3048

d. Designation: Environmental Assessment (EA)

e. Abstract: As a result of restructuring within Boeing North American in 1998, the NASA Industrial Plant in Downey, California, has been determined excess to the company's needs; therefore, the government has declared the property excess to its needs, and it will be available for disposal. The property is scheduled to be vacated by spring 2001. This EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of the disposal and reasonable reuse scenarios of the property. These reuse scenarios are conceptual in nature and were developed to cover a range of reasonable reuse possibilities for the property. NASA would have limited, if any, authority over redevelopment of the property after disposal occurs. The document includes an analysis of community setting, land use and aesthetics, transportation, utilities, hazardous materials and hazardous waste management, geology and soils, water resources, air quality, cultural resources, and environmental justice. Three reuse scenarios were examined: a Commercial/Industrial Scenario that involves the demolition of existing facilities and redevelopment as a commercial industrial park; a Commercial/Industrial Scenario that involves retaining some of the facilities for inclusion in the redevelopment as a commercial industrial park; and a Parks and Recreation Scenario that involves the demolition of the existing facilities and redevelopment as a community park and elementary school. All three reuse scenarios include a space exploration museum. The No-Action Scenario would entail no reuse of the property.

No potential environmental impacts are expected from the reuse scenarios, or the No-Action Scenario. Under both of the Commercial/Industrial Scenarios, increased traffic would reduce the level of service (LOS) on two roadway segments; however, the resulting LOS would remain as good operating conditions. Potential impacts from construction activities would be reduced through compliance with local requirements and use of standard construction practices. Increased air emissions would not adversely affect the current status of the respective pollutant standards in the South Coast Air Basin. Remediation of known contamination sites is, and will continue to be, the responsibility of NASA. Potential impacts from demolition or renovation of historic buildings would be reduced to nonadverse levels through mitigation measures developed through the Section 106 process.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

TABLE OF CONTENTS
(Continued)

TABLE OF CONTENTS
(Continued)

Page

TABLE OF CONTENTS
(Continued)

LIST OF TABLES

Page

LIST OF FIGURES

LIST OF ACRONYMS/ABBREVIATIONS

AADT	average annual daily traffic
ACM	asbestos-containing material
ADT	average daily traffic
AFP	Air Force Plant
AHERA	Asbestos Hazard Emergency Response Act
APE	Area of Potential Effect
AQMP	Air Quality Management Plan
BACT	best available control technology
BARCT	best available retrofit control technology
bgs	below ground surface
B.P.	Before Present
C	Celsius
CAA	Clean Air Act
CAAA	Clean Air Act Amendment
CAAQS	California Ambient Air Quality Standards
Cal EPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-,2-dichloroethene
CO	carbon monoxide
CPSC	Consumer Product Safety Commission
°	degree
DTSC	Department of Toxic Substances Control
EA	environmental assessment
EIS	Environmental Impact Statement
EMSCO	E.M. Smith Company
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ERC	emission reduction credit
F	Fahrenheit
FONSI	Finding of No Substantial Impact
gpd	gallons per day
HAP	hazardous air pollutant
HWCL	Hazardous Waste Control Law
I	Interstate
kg	kilogram
km	kilometer
kWH	kilowatt-hour
LOS	level of service
lpd	liters per day
µg/l	microgram per liter
$\mu g/m^3$	microgram per cubic meter

m^2	square meters
MACT	maximum achievable control technology
MCL	Maximum Contaminant Level
MOA	Memorandum of Agreement
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PHV	peak-hour volume
P.L.	Public Law
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
POL	petroleum, oil, and lubricants
ppm	parts per million
PRG	Preliminary Remediation Goals
PSD	Prevention of Substantial Deterioration
RACT	reasonably available control technology
RCRA	Resource Conservation and Recovery Act
RECLAIM	Regional Clean Air Incentives Market
ROI	region of influence
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SCAB	South Coast Air Basin
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCSL	Soil Cleanup Screening Level
SHEA	Safety, Health, and Environmental Affairs
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SO_X	sulfur dioxide
SO_2	sulfur dioxide
SR	State Route
SVE	soil vapor extraction
TCE	trichloroethene
TCP	Traditional Cultural Property
TSCA	Toxic Substances Control Act
TSP	total suspended particulates
U.S.C.	U. S. Code
UST	underground storage tank
V/C	volume to capacity

VOC	volatile organic compound
VPH	vehicles per hour
WWTP	wastewater treatment plant

1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

This environmental assessment (EA) examines the potential for environmental impacts as a result of the disposal and reuse of Parcels 1 and 2 of the National Aeronautics and Space Administration (NASA) Industrial Plant in Downey, California (Figure 1-1). This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code [U.S.C.] 4321 et seq.), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulation [CFR] Parts 1500-1508), and NASA policy and procedures (14 CFR Part 1216).

In August 1999, through letters to federal, state, and local agencies and officials, as well as interested groups and individuals, NASA provided notification that NEPA documentation was being prepared for the disposal and reuse action. Comments received, as well as experience with similar programs and NEPA requirements, were used to determine the nature and focus of the analysis to be accomplished.

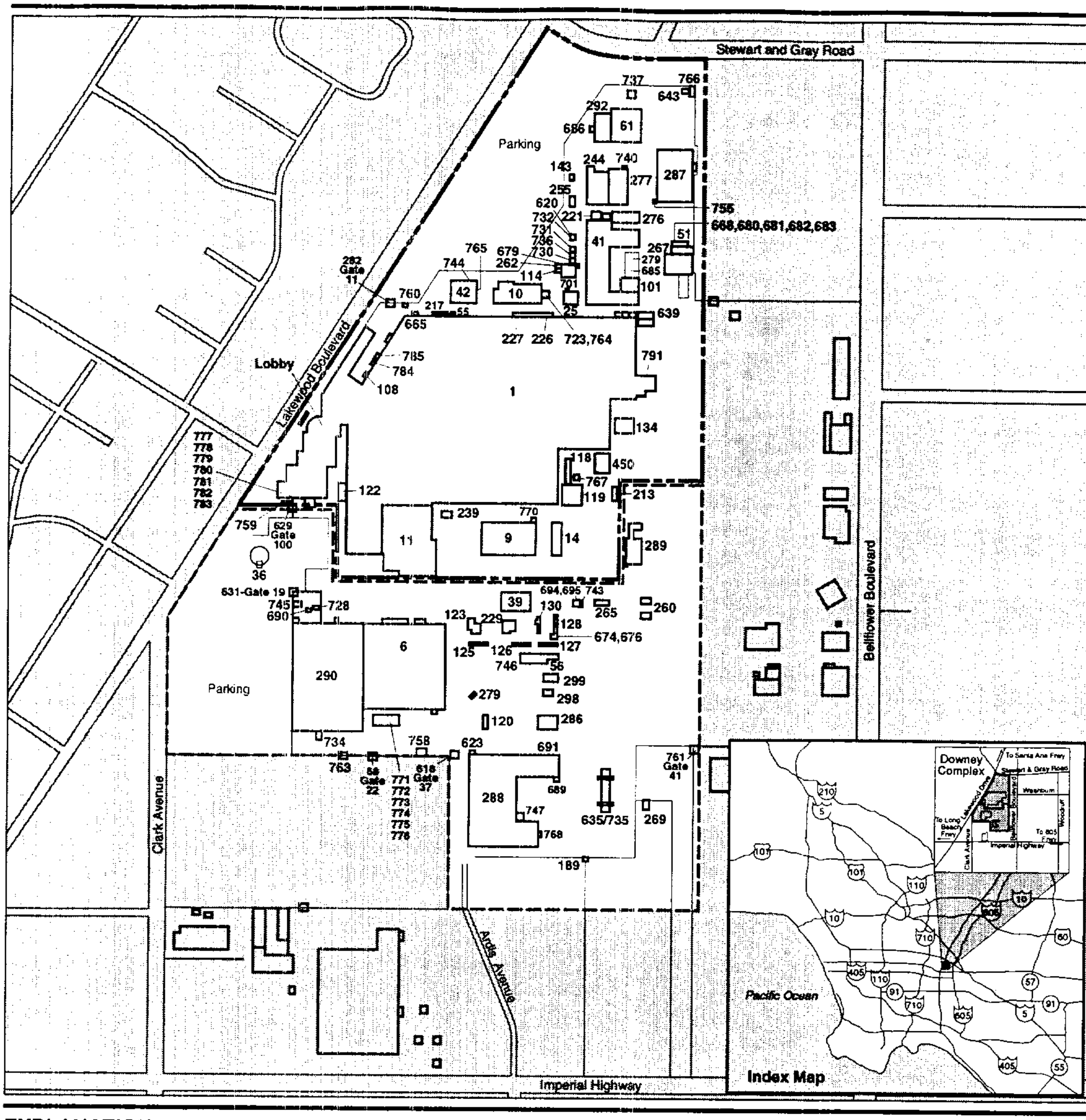
1.1 PURPOSE AND NEED

In 1992, NASA's Program Operational Plan contained budget directives to reduce real estate holdings. As a result, in 1993, the NASA Industrial Plant in Downey (through a baseline facility review) was declared excess to NASA's needs. At that time, the plant encompassed approximately 162 acres (66 hectares). For ease of transfer, the site was divided into six parcels, with Parcels 3, 4, 5, and 6 (68 acres [28 hectares]) being offered for immediate excess (Figure 1-2). Authority for excess of these four parcels was confirmed by Congress through the passage of legislation (Public Law [P.L.] 104-204) in September 1996, and the parcels have since been legally transferred to the city of Downey.

Initially, Parcels 1 and 2 (94 acres [38 hectares]) were retained for continued use by Boeing North American (Boeing) for the Space Shuttle Program. However, as a result of restructuring the company's technical and manufacturing assets in 1998, the NASA Industrial Plant is no longer needed for those operations. As a result, NASA has declared Parcels 1 and 2 excess to their needs as well; the property is expected to be vacated by Boeing and available for reuse by spring 2001.

1.2 LOCATION OF THE PROPOSED ACTION

The NASA Industrial Plant is within the city limits of Downey, Los Angeles County, California, approximately 15 miles (24 kilometers [km]) southeast of downtown Los Angeles. The plant is bounded by Lakewood Boulevard on the northwest, Clark Avenue on the west, Imperial Highway on the south, Stewart and Gray Road on the north, and Bellflower Boulevard on the east (see Figure 1-1). Immediately surrounding the plant are commercial, industrial, and residential areas; the area occupied by the NASA Industrial Plant is zoned light industrial.



EXPLANATION

Parcel 1

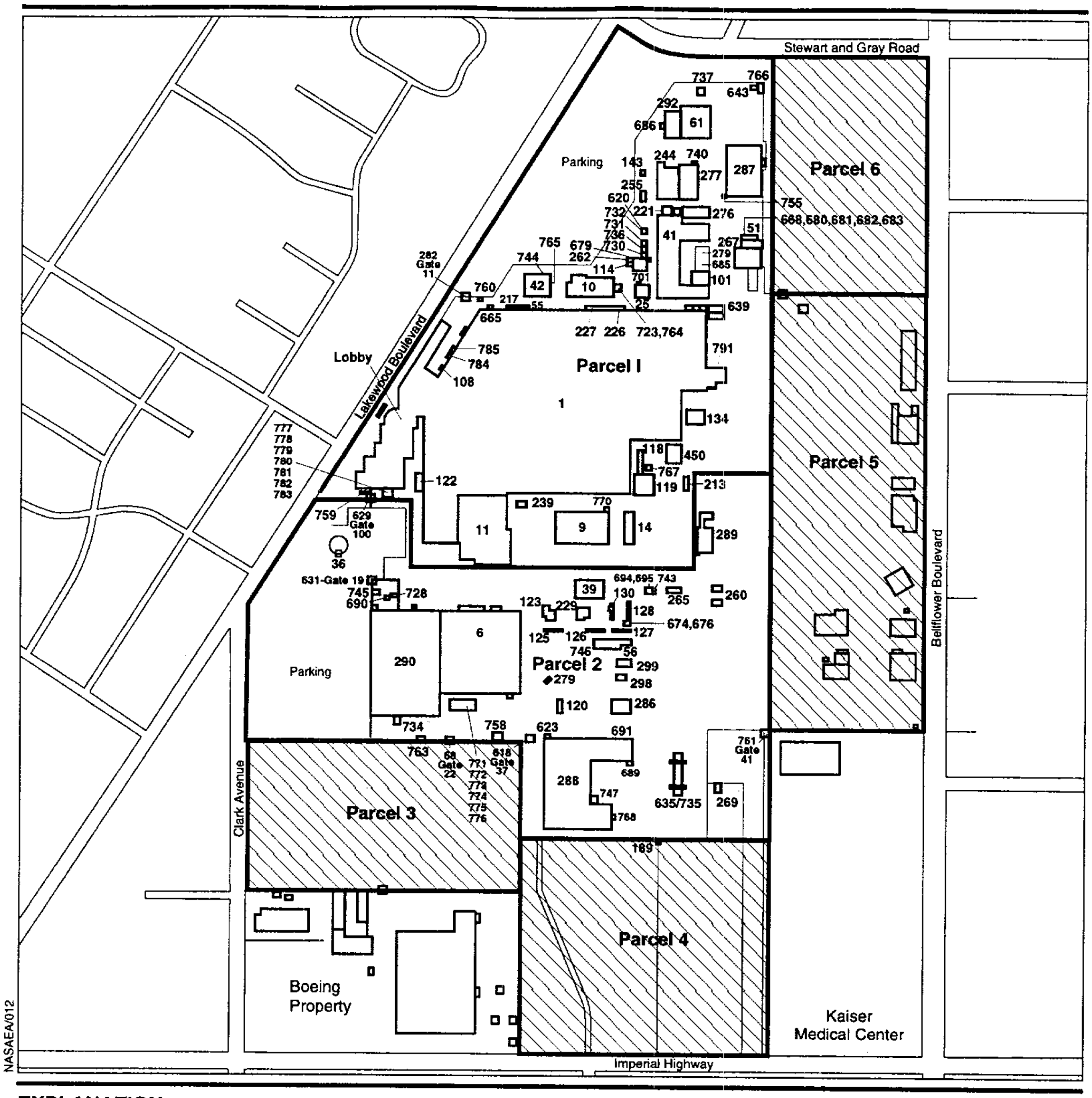
Parcel 2

288 Building Number

0 140 280 560 Feet

Regional Map

Figure 1-1



EXPLANATION

Parcel Boundary

Property Already Excessed

288 Building Number

0 140 280 560 Feet

Source: County of Los Angeles, 1997.

NASA Industrial Plant Parcels

Figure 1-2

1.3 DECISIONS TO BE MADE

This EA is to provide the NASA decision maker with the information required to understand the potential environmental consequences of the disposal and reuse of the NASA Industrial Plant to support the decision of whether to prepare an environmental impact statement (EIS) or a Finding of No Substantial Impact (FONSI).

1.4 SCOPE OF THE ENVIRONMENTAL REVIEW

This EA describes and addresses the potential environmental impacts of the activities associated with the disposal and reuse of the NASA Industrial Plant. Approximately 94 acres (38 hectares) are included in the planned disposal action. There are three possible disposal options that could occur for Parcels 1 and 2 at the NASA Industrial Plant: (1) disposal with restrictive covenants; (2) disposal without restrictive covenants; and (3) no disposal. In order to address a range of potential environmental impacts of disposal and reuse, three representative reuse scenarios and the No-Action Scenario were developed as examples of the possible disposal options.

Consistent with NASA policy and procedures and the CEQ regulations, the scope of analysis presented in this EA is defined by the potential range of environmental impacts that would result from implementation of the reuse scenarios. NASA and the federal government would have limited, if any, authority over redevelopment of the property after disposal occurs.

Under the Commercial/Industrial Scenario 1, the existing facilities at the NASA Industrial Plant would be demolished and the property redeveloped for commercial and light industrial uses. Under the Commercial/Industrial Scenario 2, some of the existing facilities at the NASA Industrial Plant would be retained and reused for commercial and light industrial uses. Under the Parks and Recreation Scenario, the existing facilities would be demolished and the property would be developed for recreational and public uses. Under the No-Action Scenario, the NASA Industrial Plant would be vacated and maintained under caretaker status.

The coastal zone management program, coastal barriers, wild and scenic rivers, and farmlands would not be affected by the disposal and reuse of the NASA Industrial Plant since none of these features is situated in the vicinity of the property. Adverse impacts are not anticipated; therefore, further assessment of these issues will not be considered in the EA.

Resources that have a potential for impact were considered in more detail in order to provide the NASA decision maker with sufficient evidence and analysis for determining whether or not additional analysis is required pursuant to 40 CFR Part 1508.9. The resources analyzed in more detail are socioeconomics, land use and aesthetics, transportation (roadways), utilities, hazardous materials management, hazardous waste management, asbestos, lead-based paint, soils and geology, water resources, air quality, cultural resources, and environmental justice.

Initial analysis indicated that implementation of the reuse scenarios would have no potential for either short- or long-term substantial impacts to airspace, air transportation, rail transportation, storage tanks, pesticide usage, polychlorinated biphenyls (PCBs), radon, medical/biohazardous waste, ordnance, noise, or biological resources. The reasons for not addressing these resources in detail are briefly discussed in the following paragraphs.

Airspace. There are no aircraft operations associated with the reuse scenarios; therefore, impacts to airspace would not be expected and are not analyzed in this EA.

Air Transportation. Impacts to air transportation associated with the reuse scenarios are not expected and are not analyzed in this EA.

Rail Transportation. Impacts to rail transportation associated with the reuse scenarios are not expected and are not analyzed in this EA.

Storage Tanks. Existing storage tanks will not be transferred with the NASA Industrial Plant. In the event that any storage tanks are installed during reuse, these tanks would be operated and managed by the property user in accordance with applicable state and federal regulations to ensure that releases do not occur and that accidental spills are cleaned up and addressed appropriately. Therefore, impacts from storage tanks are not expected and are not analyzed in this EA. Former storage tank locations (with evidence of a release) are discussed under Known Contamination Sites.

Pesticide Usage. Pesticide applications under the reuse scenarios would be conducted in accordance with applicable laws and label directions; therefore, impacts from pesticide usage are not expected and are not analyzed in this EA.

PCBs. All PCB-containing transformers and large-voltage capacitors have been removed and disposed of. Some small capacitors are still in service at the site; these capacitors are replaced as necessary, and the used capacitors are properly disposed of. Therefore, impacts from PCBs are not expected and are not analyzed in this EA.

Radon. The regional radon level has a predicted indoor screening level equal to or less than 4 picocuries per liter (U.S. Environmental Protection Agency [EPA]-recommended action level); therefore, impacts from radon are not expected and are not analyzed in this EA.

Medical/Biohazardous Waste. No medical/biohazardous waste would be generated under the reuse scenarios; therefore, impacts from medical/biohazardous waste are not expected and are not analyzed in this EA.

Ordnance. The reuse scenarios would not include the storage, use, or disposal of ordnance; therefore, impacts from ordnance are not expected and are not analyzed in this EA.

Noise. Noise generated from the proposed demolition and construction activities under the reuse scenarios would be intermittent and short term. Once operational, the reuse activities described in the reuse scenarios are not expected to generate a substantial amount of noise; therefore, impacts from noise are not expected and are not analyzed in this EA.

Biological Resources. Only landscape vegetation is present on the site, and no threatened and endangered species or sensitive habitats (including wetlands) have been identified on the property. Therefore, impacts to biological resources are not expected and are not analyzed in this EA.

1.5 APPLICABLE REGULATORY REQUIREMENTS

Representative federal permits, licenses, and entitlements that may be required of recipients of the NASA Industrial Plant property for the purpose of redevelopment are presented in Table 1-1. This table is presented for illustrative purposes only and does not include state and local permits, licenses, and entitlements that may be required.

1.6 ORGANIZATION OF THIS DOCUMENT

This EA is organized into the following chapters and appendices: Chapter 2.0 provides a description of the reuse scenarios. This chapter also provides a summary of the effects of the proposed project with respect to the local community and the natural environment. Chapter 3.0 presents the affected environment under current conditions. The results of the environmental analysis are presented in Chapter 4.0. Chapter 5.0 lists the organizations consulted during the preparation of the EA; Chapter 6.0 provides a list of the document's preparers; Chapter 7.0 is a list of individuals and organizations who were sent a copy of the EA; and Chapter 8.0 contains references. Appendix A contains agency letters regarding environmental conditions at the NASA Industrial Plant.

Table 1-1. Federal Permits, Licenses, and Entitlements Potentially Required for Reusers or Developers of NASA Industrial Plant Property
Page 1 of 2

Federal Permit, License, or Entitlement	Typical Activity, Facility, or Category of Persons Required to Obtain the Federal Permit, License, or Entitlement	Authority	Regulatory Agency
CAA Title V permit	Any major source; affected sources as defined in Title V of CAA; sources subject to Section 111 regarding New Source Performance Standards; sources of air toxics regulated under Section 112 of CAA; sources required to have new source or modification permits under Parts C or D of Title I of CAA; and any other source, such as hazardous waste pollutants, designated by U.S. EPA regulations.	Title V of CAA, as amended by the 1990 CAAA	U.S. EPA, California EPA, SCAQMD
NPDES permit	Discharge of pollutant from any point source into Waters of the United States, and discharges from areas of industrial activities.	Section 402 of CWA, 33 U.S.C. Section 1342	U.S. EPA, California EPA, RWQCB
Hazardous waste treatment, storage, or disposal facility permit	Owners or operators of a new or existing hazardous waste treatment, storage, or disposal facility	RCRA as amended, 42 U.S.C. Section 6901; 40 CFR Part 270	U.S. EPA, California EPA, DTSC
U.S. EPA identification number	Generators or transporters (off-site transport) of hazardous waste.	40 CFR Part 262.10 (generators); 40 CFR Part 263, Subpart B (transporters)	U.S. EPA
ARPA permit	Excavation and/or removal of archaeological resources from public lands or Native American lands and carrying out activities associated with such excavation and/or removal.	ARPA of 1979, 16 U.S.C. Section 470cc	National Park Service

Table 1-1. Federal Permits, Licenses, and Entitlements Potentially Required for Reusers or Developers of NASA Industrial Plant Property
Page 2 of 2

Federal Permit, License, or Entitlement	Typical Activity, Facility, or Category of Persons Required to Obtain the Federal Permit, License, or Entitlement	Authority	Regulatory Agency
NHPA	Federal agencies are required to consider impacts on historic properties resulting from any proposed activity.	35 CFR Part 800	National Park Service, Advisory Council on Historic Preservation, State Historic Preservation Officer

ARPA = Archaeological Resources Protection Act
CAA = Clean Air Act
CAAA = Clean Air Act Amendments
CFR = Code of Federal Regulations
CWA = Clean Water Act
DTSC = Department of Toxic Substances Control
EPA = Environmental Protection Agency
NHPA = National Historic Preservation Act
NPDES = National Pollutant Discharge Elimination System
RCRA = Resource Conservation and Recovery Act
RWQCB = Regional Water Quality Control Board
SCAQMD = South Coast Air Quality Management District
U.S.C. = U.S. Code

2.0 SCENARIOS INCLUDING THE PROPOSED ACTION

2.1 INTRODUCTION

There are three possible disposal options that could occur for Parcels 1 and 2 at the NASA Industrial Plant: (1) disposal with restrictive covenants; (2) disposal without restrictive covenants; and (3) no disposal. This section describes several reuse scenarios that have been developed as representative examples of the possible disposal options. These reuse scenarios are conceptual in nature and were developed to cover a range of reasonable reuse possibilities for the property. NASA would have limited, if any, authority over redevelopment of the property after disposal occurs.

The following conceptual reuse scenarios have been developed:

- The **No-Action Scenario** would result in the property being placed in caretaker status. The property would not be put to further use.

- The **Commercial/Industrial Scenario 1** focuses on utilizing Parcels 1 and 2 for a combination of retail and industrial business park uses; the existing facilities would be demolished. A Space Exploration Museum would also be constructed on the site. The types of activities include a retail center consisting of both large and small retailers, light manufacturing and assembly, and sales and distribution.

- The **Commercial/Industrial Scenario 2** is similar to the Commercial/Industrial Scenario 1 as it focuses on utilizing Parcels 1 and 2 for a combination of retail and industrial business park uses. However, several buildings would be retained, including those considered eligible for listing in the National Register of Historic Places (National Register), and would be converted to retail department stores, restaurants, and shops (Buildings 1, 10, 11, 25, 41, 42, and 108). In addition, Buildings 6, 36, 39, 123, 125, 126, 127, 128, 130, and 290 would be used for a Space Exploration Museum. Buildings 120 and 288 would be retained and used for manufacturing and assembly activities.

- The **Parks and Recreation Scenario** would include a public park, an elementary school, an outdoor recreation complex, and a Space Exploration Museum. The existing facilities on Parcels 1 and 2 would be demolished. The types of recreational activities proposed include picnicking and recreational sports (e.g., soccer, tennis, volleyball, softball, baseball).

In order to accomplish the impact analysis for disposal and reuse, several general assumptions were made. These assumptions include:

- On-site employment changes arising from implementation of each reuse scenario

- Land use designations consistent with the city of Downey General Plan

- Transportation and utility demands of each reuse scenario

- Full buildout of the various elements of each reuse scenario.

During the development of reuse scenarios addressed in the EA, NASA considered the compatibility of future land uses with current site conditions that may restrict reuse activities to protect human health and the environment. These conditions include potential contamination from past releases of hazardous substances and NASA's efforts to remediate the contamination. The NASA Industrial Plant remediation activities and other environmental studies may result in lease/deed restrictions that limit reuse options at certain locations within the property boundaries. Additionally, NASA may retain access rights to these sites to implement remediation (i.e., a temporary easement for access to monitoring wells and remediation equipment).

2.2 NO-ACTION SCENARIO

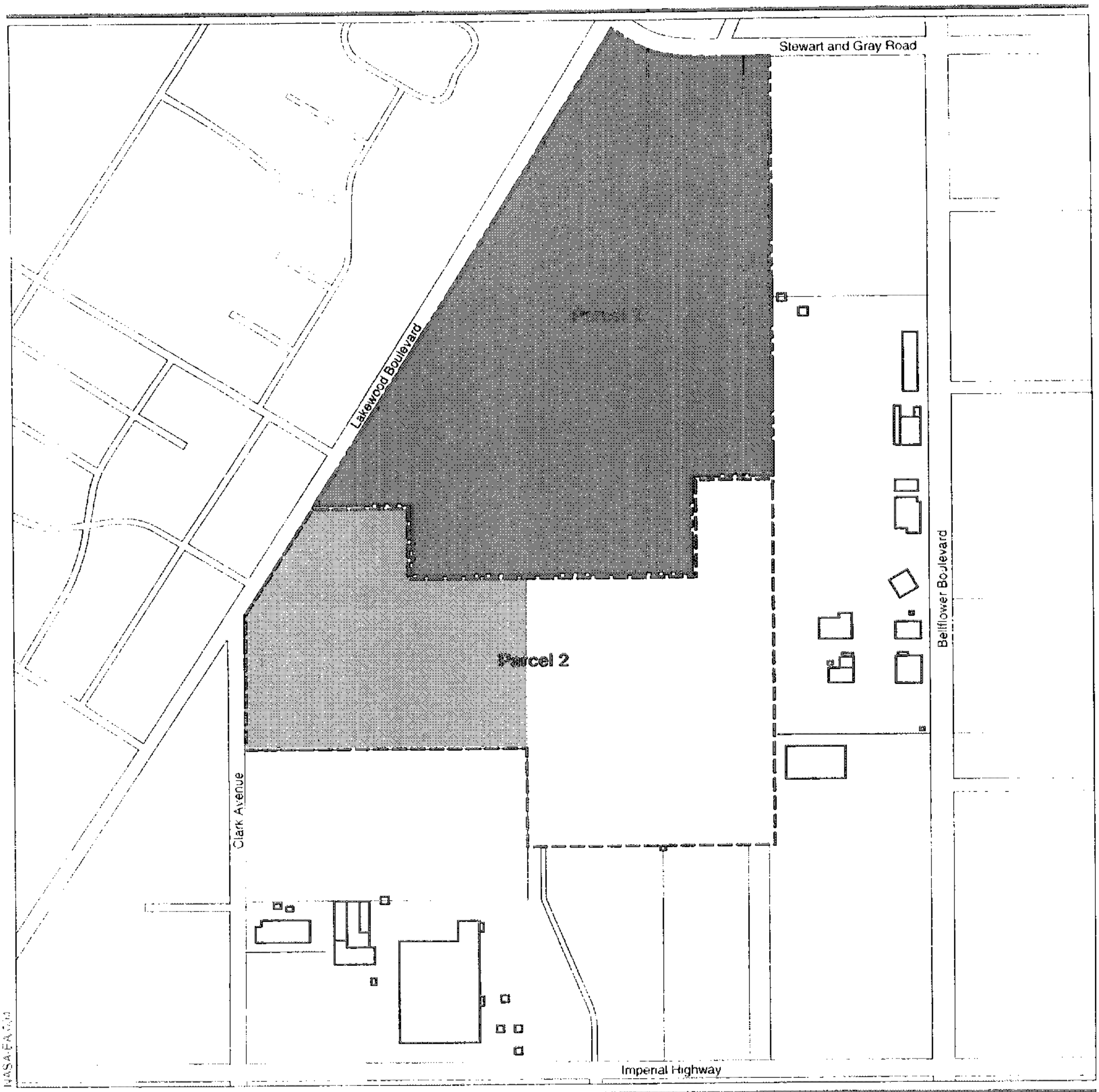
Under the No-Action Scenario, NASA would maintain the facilities in such a manner as to facilitate resumption of use in the future. The buildings and surrounding grounds would be maintained at minimum levels. Small quantities of hazardous materials would be used during preventative and regular facility maintenance and grounds maintenance activities. Utility usage and vehicle trips would be minimal, requiring a maximum of two employees to care for the grounds. No improvements would be made to the facilities or infrastructure.

2.3 COMMERCIAL/INDUSTRIAL SCENARIO WITH NO REUSE OF EXISTING FACILITIES

This reuse scenario (Commercial/Industrial Scenario 1) includes a 51-acre (21-hectare) retail center and a 43-acre (17-hectare) Industrial Business Park and Space Exploration Museum. Planning assumptions in the following areas were made in developing this reuse scenario:

- Land use parcelization and acreages
- Building demolition, retention, and new construction
- Projected employment and population
- Ground disturbance
- Project-carrying capacity and development buildout
- Projected utility use
- Projected circulation improvements and average daily traffic.

The retail center land use would be developed on Parcel 1 at the northern end of the NASA Industrial Plant (Figure 2-1); all buildings in Parcel 1 would be demolished. Access to the retail center would be provided from Stewart and Gray Road and Lakewood Boulevard. Retail sales stores would be constructed along the western side of the parcel. Types of retail activities would include major department stores and specialty retail outlets such as men's and women's apparel, sporting goods, jewelry shops, restaurants, grocery store, and



EXPLANATION

- Commercial
- Industrial
- Institutional
- Parcel 1
- Parcel 2

0 140 280 560 Feet

Commercial/Industrial Scenario 1

Figure 2-1

computer/electronic outlets. Restaurants and some specialty shops would be constructed on the eastern side of the parcel; a parking area would be constructed in the center of the parcel. This reuse scenario would result in approximately 500,000 gross square feet (46,450 square meters [m^2]) of retail space.

The 43-acre (17-hectare) Industrial Business Park with a Space Exploration Museum would be on the southern end of the site in Parcel 2 (see Figure 2-1). A 200,000-square-foot (18,580-m^2) Space Exploration Museum would be on the western portion of Parcel 2. Access to the museum would be provided on the northwestern corner of the parcel from Lakewood Boulevard. Parking for the museum would be provided on the western and northern sides of the museum area. The Industrial Business Park would be on the eastern and southern portions of the parcel. Access to the Industrial Business Park would be provided from Ardis Avenue. The buildings in Parcel 2 would be demolished, and new facilities would be constructed east and south of the museum to support additional manufacturing and assembly, and distribution and sales activities. Approximately 300,000 square feet (27,870 m^2) of additional facility space would be constructed on the site.

This reuse scenario would generate up to 870 jobs, depending on the buildout schedule for development of the site. Overall, approximately 1.734 million square feet (161,090 m^2) of building space would be demolished for construction of the retail center, industrial business park, and museum. Estimated tonnage of demolition materials is provided in Table 2-1. It is assumed that with demolition and construction of the new facilities and associated access roads and parking, the entire project area would be subject to ground disturbance. There would be no on-site residential population associated with this reuse scenario.

Table 2-1. Estimated Demolition Materials from Building Disposal (tons)

Material	Commercial/ Industrial Scenario 1	Commercial/ Industrial Scenario 2	Parks and Recreation Scenario	No-Action Scenario
Steel	6,282	810	6,282	0
Sheet Metal	3,891	900	3,891	0
Wood	2,640	210	2,640	0
Asphalt	74,991	74,991	74,991	0
Concrete	104,459	7,832	104,459	0
Brick	2,076	0	2,076	0
Miscellaneous	7,794	885	7,794	0
Total	202,133	85,628	202,133	0

Based on land use and employment projections, this reuse scenario would generate an average of 23,400 daily vehicle trips, with 1,650 trips occurring during the afternoon peak hour. Utility demand associated with reuse activities on the property would be as follows:

- Water - 87,000 gallons per day (gpd) (329,330 liters per day [lpd])
- Wastewater - 34,800 gpd (131,730 lpd)
- Solid waste - 4.5 tons per day
- Electricity - 77,000 kilowatt-hours (kWH) per day
- Natural gas - 220,000 cubic feet per day.

Traffic estimates and utility demands represent the increase over baseline conditions (i.e., the No-Action Scenario).

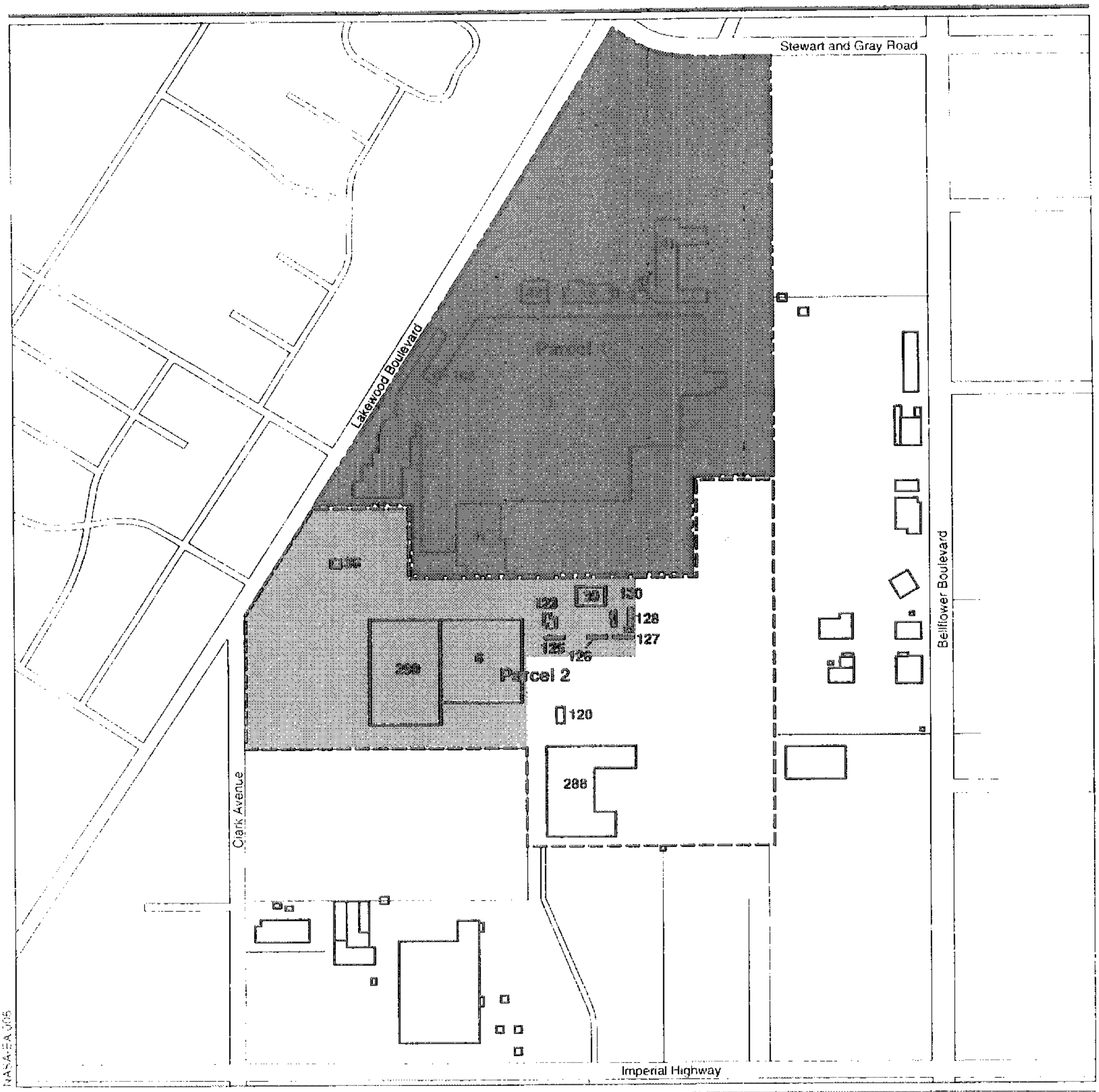
2.4 COMMERCIAL/INDUSTRIAL SCENARIO WITH REUSE OF SOME EXISTING FACILITIES

This reuse scenario (Commercial/Industrial Scenario 2) is similar to the Commercial/Industrial Scenario 1. Under this scenario, Buildings 1, 11, and 108 would be reconfigured to support two major retailers and several supporting retail shops and restaurants (Figure 2-2). In addition, Buildings 10, 25, 41, and 42 would be used as retail shops. The area north of Building 1 would be used for public and employee parking. The area on the eastern and southern sides of Building 1 would be used for delivery servicing of the retail establishments. Other buildings north, east, and south of Building 1 would be demolished. Types of retail activities would include major department stores and specialty retail outlets such as men's and women's apparel, sporting goods, jewelry shops, restaurants, and computer/electronic outlets. Building 10 would be converted into a family-style restaurant. Buildings 25 and 42 would be converted into specialty shops. Building 41 would be converted into an automobile servicing center. This reuse scenario would result in approximately 990,000 gross square feet (91,970 m^2) of retail space.

The 43-acre (17-hectare) Industrial Business Park and Space Exploration Museum would be similar to the Commercial/Industrial Scenario 1, except that Buildings 6, 36, 39, 123, 125, 126, 127, 128, 130, and 290 would be reused to support the Space Exploration Museum; Buildings 120 and 288 would be retained and used for light manufacturing and assembly (see Figure 2-2). The remaining buildings in Parcel 2 would be demolished. New facilities would be constructed east and south of the museum to support additional manufacturing and assembly, and distribution and sales activities. Approximately 200,000 square feet (18,580 m^2) of additional facility space would be constructed on the site.

Under this reuse scenario, full buildout and complete reuse of the property would likely take longer than under the other reuse scenarios as a result of activities required to convert existing facilities for commercial and industrial purposes. Reuse of existing facilities may actually be more costly than constructing a new facility for a specified purpose.

This reuse scenario would generate up to 870 jobs, depending on the buildout schedule for development of the site. Overall, approximately 199,000 square feet (18,490 m^2) of building space would be demolished for access, parking, and new construction; 1.535 million square feet (142,600 m^2) of building space would be retained. Nineteen eligible historic buildings (Buildings 1, 6, 10, 11, 25, 36, 39, 41, 42, 108, 120, 123, 125, 126, 127, 128, 130, 288, and 290) would be



EXPLANATION

- Commercial
- Industrial
- Institutional
- 39 Retained Building
- Parcel 1
- Parcel 2

0 140 280 560 Feet

Commercial/Industrial Scenario 2

Figure 2-2

retained. The remaining structures would be demolished. The estimated amount of demolition material that would be generated is shown in Table 2-1. It is assumed that with demolition and construction, approximately 40 of the 94 acres (16 of 38 hectares) would be subject to ground disturbance. There would be no on-site residential population associated with this reuse scenario.

Based on land use and employment projections, this reuse scenario would generate an average of 23,400 daily vehicle trips, with 1,650 trips occurring during the afternoon peak hour. Site access would be the same as that described under the Commercial/Industrial Scenario 1. Utility demand associated with reuse activities on the property would be as follows:

- Water - 87,000 gpd (329,330 lpd)
- Wastewater - 34,800 gpd (131,730 lpd)
- Solid waste - 4.5 tons per day
- Electricity - 128,000 kWH per day
- Natural gas - 360,000 cubic feet per day.

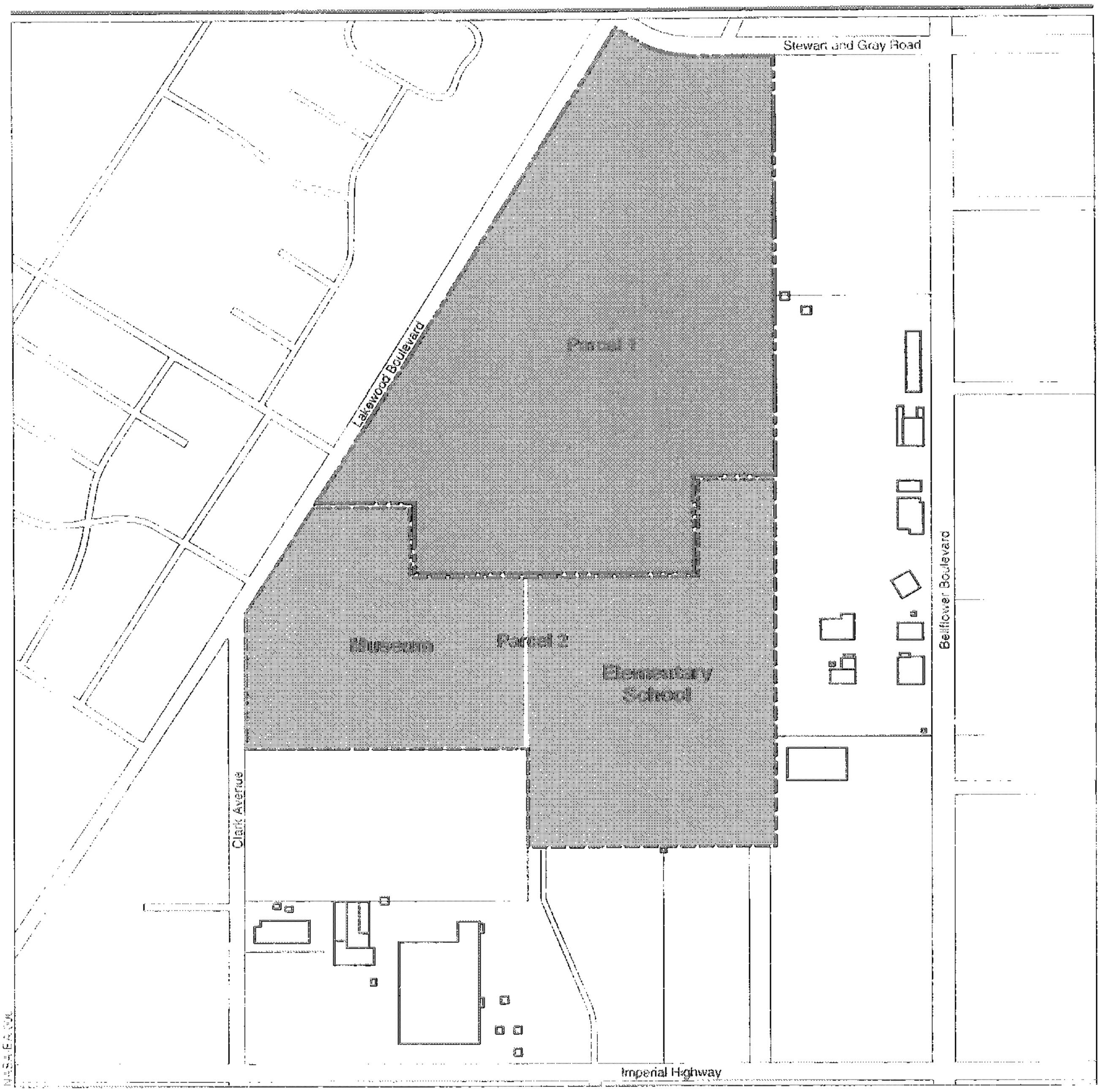
Traffic estimates and utility demands represent the increase over baseline conditions (i.e., the No-Action Scenario).

2.5 PARKS AND RECREATION SCENARIO

The Parks and Recreation Scenario includes a public park, an elementary school, an outdoor recreation complex, and a Space Exploration Museum (Figure 2-3). A 51-acre (21-hectare) public park would be in Parcel 1. The public park would include a 10,000-square-foot (929 m^2) picnic pavilion surrounded by softball fields, tennis courts, volleyball courts, and individual family picnic areas. In addition, the park would be lighted for evening functions and would include water and restroom facilities. Access to the park would be from Lakewood Boulevard. All of the facilities in Parcel 1 would be demolished.

The Space Exploration Museum would be constructed as discussed under the Commercial/Industrial Scenario 1. Access to the museum would be provided from Lakewood Boulevard. An elementary school would be constructed east of the Space Exploration Museum (see Figure 2-3). The elementary school would include a playground and outdoor athletic complex. Access to the school would be provided from Ardis Avenue.

The Parks and Recreation Scenario would generate up to 70 jobs, depending on the buildout schedule for development of the site. Overall, approximately 1.734 million square feet (161,090 m^2) of building space would be demolished for construction of the public park, Space Exploration Museum, and elementary school (see Table 2-1). It is assumed that with demolition and construction of the new facilities, associated access roads, and parking, the entire project area would be subject to ground disturbance. There would be no on-site residential population associated with this reuse scenario.



EXPLANATION

- Parks and Recreation
- Educational/Institutional
- Parcel 1
- Parcel 2

0 140 280 560 Feet

Parks and Recreation Scenario

Figure 2-3

Based on land use and employment projections, the Parks and Recreation Scenario would generate an average of 2,000 daily vehicle trips, with 300 trips occurring during the afternoon peak hour. Utility demand associated with reuse activities on the property would be as follows:

- Water - 135,000 gpd (511,030 lpd)
- Wastewater - 8,000 gpd (30,280 lpd)
- Solid waste - 1.5 tons per day
- Electricity - 16,000 kWH per day
- Natural gas - negligible.

Traffic estimates and utility demands represent the increase over baseline conditions (i.e., the No-Action Scenario).

2.6 REUSE SCENARIOS CONSIDERED BUT ELIMINATED FROM FURTHER STUDY

Reuse scenarios presented in this EA are based on information contained in the city of Downey Reuse Analysis (Sedway Group, 1999). No other formal reuse scenarios were available for consideration by NASA.

2.7 OTHER FUTURE ACTIONS IN THE REGION

Other actions within the region were evaluated to determine whether cumulative environmental impacts could result from implementation of the NASA Industrial Plant disposal action in conjunction with other past, present, or reasonably foreseeable future actions. Future actions in the region include construction and implementation of developments associated with local specific plans. Proposed commercial and industrial projects in the region were reviewed. A description of these projects is provided in Table 2-2. Due to the location of these development projects in relation to the NASA Industrial Plant, no cumulative impacts are anticipated from the disposal and reuse of the property.

Table 2-2. Proposed Development Projects in the Region

Project Name	Project Location	Development (square feet) [square meters]
Telecommunications Center and Kirk Paper	Downey at Imperial Highway	500,000 [46,450]
Fu Lyons	Downey at Firestone Boulevard	167,000 [15,510]
Coca Cola Expansion	Downey at Lakewood Boulevard and Cleta Street	N/A
O'Donnell Industrial Development	Downey at 105 Freeway and Imperial Highway	200,000 [18,580]
Stonewood Center Upgrade/ Addition	Downey at E. Firestone Boulevard	180,000 [16,720]
W. Firestone Center II	Downey at W. Firestone Boulevard	19,000 [1,765]
Krikorian Theatre Expansion	Downey at LaReina Street and Third Street	N/A
Holiday Inn Express and Anchor Restaurant	Downey at Lakewood Boulevard and Firestone Boulevard	115 rooms

N/A = not available

Source: Sedway Group, 1999.

2.8 COMPARISON OF ENVIRONMENTAL IMPACTS

A summary comparison of the influencing factors and environmental impacts, along with their potential mitigations for each biophysical resource affected by the reuse scenarios, is presented in Tables 2-3 and 2-4. Influencing factors are nonbiophysical elements such as population, employment, land use and aesthetics, transportation networks, and public utility systems that may directly affect the environment. Impacts to the environment are discussed in detail in Chapter 4.0.

Table 2-3. Summary of Reuse-Related Influencing Factors

	Commercial/Industrial Scenario 1	Commercial/Industrial Scenario 2	Parks and Recreation Scenario	No-Action Scenario[a]
Ground disturbance (acres)[hectares]	94 [38]	40 [16]	94 [38]	0
Direct employment	870	870	70	2
Building retention (1,000 square feet) [1,000 m^2]	0	1,472 [137]	0	1,734 [161]
Building demolition (1,000 square feet) [1,000 m^2]	1,734 [161]	262 [24]	1,734 [161]	0
New building construction (1,000 square feet) [1,000 m^2]	1,000 [93]	200 [19]	310 [29]	0
Traffic (total daily trips)	23,400	23,400	2,000	10
Increase in water demand (gpd) [lpd]	87,000 [329,330]	87,000 [329,330]	135,000 [511,030]	0
Increase in wastewater production (gpd) [lpd]	34,800 [131,730]	34,800 [131,730]	8,000 [30,280]	0
Increase in solid waste generation (tons/day)	4.5	4.5	1.5	0
Increase in electricity demand (kWH/day)	77,000	128,000	16,000	0
Increase in natural gas demand (cubic feet/day)	220,000	360,000	Negl.	0

Notes: Values shown represent increases/decreases over closure conditions as a result of implementing that reuse scenario.
(a) The No-Action Scenario values summarize influencing factors relative to the closure baseline conditions.
gpd = gallons per day
lpd = liters per day
m^2 = square meters
kWH = kilowatt-hours
Negl. = negligible

Table 2-4. Summary of Environmental Impacts and Suggested Mitigations from the Reuse Scenarios
Page 1 of 3

Resource Category	Commercial/Industrial Scenario 1	Commercial/Industrial Scenario 2	Parks and Recreation Scenario	No-Action Scenario
Local Community				
• Land Use and Aesthetics	• Impacts: Redevelopment of 94 acres (38 hectares).	• Impacts: Redevelopment of 94 acres (38 hectares).	• Impacts: Redevelopment of 94 acres (38 hectares).	• Impacts: No change in on-site land use.
• Transportation	• Impacts: Increase of 23,400 daily vehicular trips.	• Impacts: Increase of 23,400 daily vehicular trips.	• Impacts: Increase of 2,000 daily vehicular trips.	• Impacts: No change in site-related traffic.
• Utilities Use	• Impacts: Current systems would be able to accommodate demand.	• Impacts: Current systems would be able to accommodate demand.	• Impacts: Current systems would be able to accommodate demand.	• Impacts: No change in site-related utility use.
Hazardous Materials and Hazardous Waste Management				
• Hazardous Materials Management	• Impacts: Increase in types and quantities of materials used. Compliance with applicable regulations would preclude substantial impacts.	• Impacts: Increase in types and quantities of materials used. Compliance with applicable regulations would preclude substantial impacts.	• Impacts: Increase in types and quantities of materials used. Compliance with applicable regulations would preclude substantial impacts.	• Impacts: Materials used for caretaker activities will be managed in compliance with applicable regulations.
• Hazardous Waste Management	• Impacts: Increase in types and quantities of wastes generated. Compliance with applicable regulations would preclude substantial impacts.	• Impacts: Increase in types and quantities of wastes generated. Compliance with applicable regulations would preclude substantial impacts.	• Impacts: Increase in types and quantities of wastes generated. Compliance with applicable regulations would preclude substantial impacts.	• Impacts: Wastes generated by caretaker activities will be managed in accordance with applicable regulations.
• Known Contamination Sites	• Impacts: Remediation activities completed or continued as needed (i.e., long-term monitoring).	• Impacts: Remediation activities completed or continued as needed (i.e., long-term monitoring).	• Impacts: Remediation activities completed or continued as needed (i.e., long-term monitoring).	• Impacts: Remediation activities completed or continued as needed (i.e., long-term monitoring).

Note: Impacts are based on the changes from closure baseline conditions (No-Action Scenario) projected to occur as a result of implementing that reuse scenario.

Table 2-4. Summary of Environmental Impacts and Suggested Mitigations from the Reuse Scenarios

Resource Category	Commercial/Industrial Scenario 1	Commercial/Industrial Scenario 2	Parks and Recreation Scenario	No-Action Scenario
Hazardous Materials and Hazardous Waste Management (Continued)				
• Asbestos	• Impacts: Removal and disposal of asbestos in facilities to be demolished.	• Impacts: Removal and disposal of asbestos in facilities to be demolished. Remaining asbestos managed in accordance with applicable regulations to minimize potential risk to human health or the environment.	• Impacts: Removal and disposal of asbestos in facilities to be demolished.	• Impacts: Continued management of asbestos in accordance with NASA policy.
• Lead-Based Paint	• Impacts: Removal and disposal of lead-based paint in facilities to be demolished would be managed in accordance with applicable regulations. Potential exposure to lead-based paint in facilities constructed prior to or during 1978.	• Impacts: Removal and disposal of lead-based paint in facilities to be demolished would be managed in accordance with applicable regulations. Potential exposure to lead-based paint in facilities constructed prior to or during 1978.	• Impacts: Removal and disposal of lead-based paint in facilities to be demolished would be managed in accordance with applicable regulations. Potential exposure to lead-based paint in facilities constructed prior to or during 1978.	• Impacts: Facilities containing lead-based paint will be managed according to applicable regulations.
Natural Environment				
• Geology and Soils	• Impacts: Compliance with local requirements and standard construction practices would reduce the potential for impacts from construction activities.	• Impacts: Compliance with local requirements and standard construction practices would reduce the potential for impacts from construction activities.	• Impacts: Compliance with local requirements and standard construction practices would reduce the potential for impacts from construction activities.	• Impacts: No ground disturbance.
• Water Resources	• Impacts: Compliance with standard construction practices would reduce the potential for surface water impacts.	• Impacts: Compliance with standard construction practices would reduce the potential for surface water impacts.	• Impacts: Compliance with standard construction practices would reduce the potential for surface water impacts.	• Impacts: No ground disturbance. No change in water demand.

Note: Impacts are based on the changes from closure baseline conditions (No-Action Scenario) projected to occur as a result of implementing that reuse scenario.
NASA = National Aeronautics and space Administration

Table 2-4. Summary of Environmental Impacts and Suggested Mitigations from the Reuse Scenarios
Page 3 of 3

Resource Category	Commercial/Industrial Scenario 1	Commercial/Industrial Scenario 2	Parks and Recreation Scenario	No-Action Scenario
Natural Environment (Continued)				
• Air Quality	• Impacts: Increased air pollutant emissions during construction and operations would not delay regional progress toward attainment of any standard.	• Impacts: Increased air pollutant emissions during construction and operations would not delay regional progress toward attainment of any standard.	• Impacts: Increased air pollutant emissions during construction and operations would not delay regional progress toward attainment of any standard.	• Impacts: No change in site-related air emissions.
• Cultural Resources	• Impacts: No known archaeological, Native American, or paleontological resources. Potential adverse effects to buildings that are eligible for listing in the National Register. • Mitigations: Properties would be demolished to allow for redevelopment. SHPO would be consulted during development to establish acceptable mitigation measures.	• Impacts: No known archaeological, Native American, or paleontological resources. Potential adverse effects to buildings that are eligible for listing in the National Register. • Mitigations: Properties may be conveyed to non-federal owners with preservation covenants. SHPO would be consulted during development to establish acceptable mitigation measures.	• Impacts: No known archaeological, Native American, or paleontological resources. Potential adverse effects to buildings that are eligible for listing in the National Register. • Mitigations: Properties would be demolished to allow for redevelopment. SHPO would be consulted during development to establish acceptable mitigation measures.	• Impacts: No known archaeological, historical, Native American, or paleontological resources. • Mitigations: Preservation covenants for long-term maintenance and protection of identified historic properties would be developed.
• Environmental Justice	• No low-income or minority populations would be disproportionately affected.	• No low-income or minority populations would be disproportionately affected.	• No low-income or minority populations would be disproportionately affected.	• No low-income or minority populations would be disproportionately affected.

Note: Impacts are based on the changes from closure baseline conditions (No-Action Scenario) projected to occur as a result of implementing that reuse scenario.
National Register = National Register of Historic Places
SHPO = State Historic Preservation Officer

3.0 AFFECTED ENVIRONMENT

3.1 INTRODUCTION

This section describes the environmental conditions of the NASA Industrial Plant and its region of influence (ROI) as it is expected to be at the time of closure. It provides information to serve as a baseline from which to identify and evaluate environmental changes resulting from disposal and reuse. Based upon the nature of the property being considered for disposal and redevelopment, it was determined that the potential exists for the following resources to be affected: socioeconomics, land use and aesthetics, transportation (roadways), utilities, hazardous materials management, hazardous waste management, asbestos, lead-based paint, soils and geology, water resources, air quality, cultural resources, and environmental justice.

The ROI to be studied will be defined for each resource area affected by the reuse scenarios. The ROI determines the geographical area to be addressed as the Affected Environment. Although the property boundary for Parcels 1 and 2 at the NASA Industrial Plant may constitute the ROI limit for many resources, potential impacts associated with certain issues (e.g., air quality, water resources) transcend these limits.

The baseline conditions assumed for the purpose of analysis are the conditions projected at closure. Closure is scheduled to occur by the end of 2000. Therefore, 2000 was selected as the most descriptive year for the closure baseline. Impacts associated with disposal and/or reuse activities may then be addressed by comparing projected conditions under various reuses to closure conditions. A reference to preclosure conditions is provided in this document, where appropriate (e.g., air quality), in order to provide a comparative analysis over time. Data used to describe the preclosure reference point are those that depict conditions as close as possible to the closure announcement date. This will assist the decision maker, as well as federal and state agencies, in understanding potential long-term impacts in comparison to conditions that existed when the NASA Industrial Plant was active.

3.2 LOCAL COMMUNITY

The NASA Industrial Plant is situated within the city limits of Downey, Los Angeles County, California, approximately 15 miles (24 km) southeast of downtown Los Angeles (see Figure 1-1). Parcels 1 and 2 of the NASA Industrial Plant comprise 94 acres (38 hectares).

The topography of the NASA Industrial Plant and the surrounding area is generally flat with a slight, southward-sloping topography. The average elevation is approximately 100 feet (30 meters) above mean sea level. The climate in the local area is normally pleasant and mild throughout the year, and is characterized by mild, rainy winters and warm, dry summers. The average temperature ranges from 55 degrees (°) Fahrenheit (F) (13° Celsius [C]) in January to 70°F (21°C) in August. Average annual precipitation is 13.0 inches (33 centimeters) (Ruffner and Bair, 1985).

Access to the NASA Industrial Plant is provided via Imperial Highway on the south, Stewart and Gray on the north, Bellflower Boulevard on the east, and Lakewood Boulevard on the west (see Figure 1-1). Los Angeles International Airport, providing commercial passenger service and air cargo capabilities, is approximately 25 miles (40 km) to the west. Commuter rail service is available approximately 1 mile (1.5 km) south of the NASA Industrial Plant.

Installation Background

In the 1920s, prior to the area being developed, the NASA Industrial Plant property was part of the Hughan Ranch, which consisted of orange orchards and adjacent fields. In 1929, the property was purchased by a private entity that opened a small aircraft manufacturing facility and single-runway industrial airport. Since 1929, use of the NASA Industrial Plant property has expanded substantially three times. These periods of expansion occurred between 1939 and 1942 for increased aircraft production during World War II, between 1952 and 1957 to support early space and missile activities, and between 1959 and 1965 to support the Apollo program and later, the Space Shuttle Program. Current activities at the NASA Industrial Plant include design support for the next generation of missiles, customer-required shuttle modifications, and payload-cargo integration (National Aeronautics and Space Administration, 1999).

3.2.1 Community Setting

The region surrounding the NASA Industrial Plant is urban, with areas of industrial, commercial, and residential development. As of January 1999, approximately 2,800 workers were employed at the plant (National Aeronautics and Space Administration, 1999).

The development occurs near major highways in the city of Downey. The counties of Los Angeles and Orange are considered the ROI for the purpose of describing and analyzing direct employment effects for areas affected by disposal and reuse of the NASA Industrial Plant.

The city of Downey has been identified as the principal support community. Secondary employment effects are difficult to precisely predict, and due to the nature of the conceptual reuse scenarios, relatively minor effects are anticipated; therefore, they are excluded from the analysis.

The total employment in the ROI was estimated to be over 5 million jobs in 1998. Over the next 4 years, employment is expected to increase at an average of 1.6 percent annually. Because the ROI is large, the employment base is very diversified, and no single industrial sector dominates the regional economy. The largest employment sector in the ROI is services, principally comprising medical, educational, and general business activities.

Closure Baseline. The 2,800 employees estimated to be at the plant in 1999 would be relocated by spring 2001, leaving a caretaker staff of two employees.

It is estimated that local retail and services purchases by NASA Industrial Plant employees may decline by as much as $2.5 million per year. An additional decline of up to $2.5 million in purchases by Boeing North American of local goods and services from firms in Downey could also be experienced. Compared to economic activity in 1998, relocation of plant activities may cause a loss of up to $593,000 per year, primarily from the annual general fund of the city (Economic Research Associates, 1999).

A cumulative loss of approximately 10 to 12 percent demand for rooms in the three primary motor inns and suites in the city could result. Local business employment generated by the plant and plant visitors could decline by an estimated 35 to 45 jobs. The NASA facilities have been operating at a very low level of activity for several years; therefore, it is unlikely that significant utility sales are going to be lost (Economic Research Associates, 1999).

Relocation of NASA Industrial Plant activities to other locations in Anaheim, Seal Beach, and Huntington Beach does not represent an enormous commuting distance for employees who still reside in the city of Downey. Thus, a significant departure of city residents who worked at the plant to seek other residential locations would not be expected (Economic Research Associates, 1999).

3.2.2 Land Use and Aesthetics

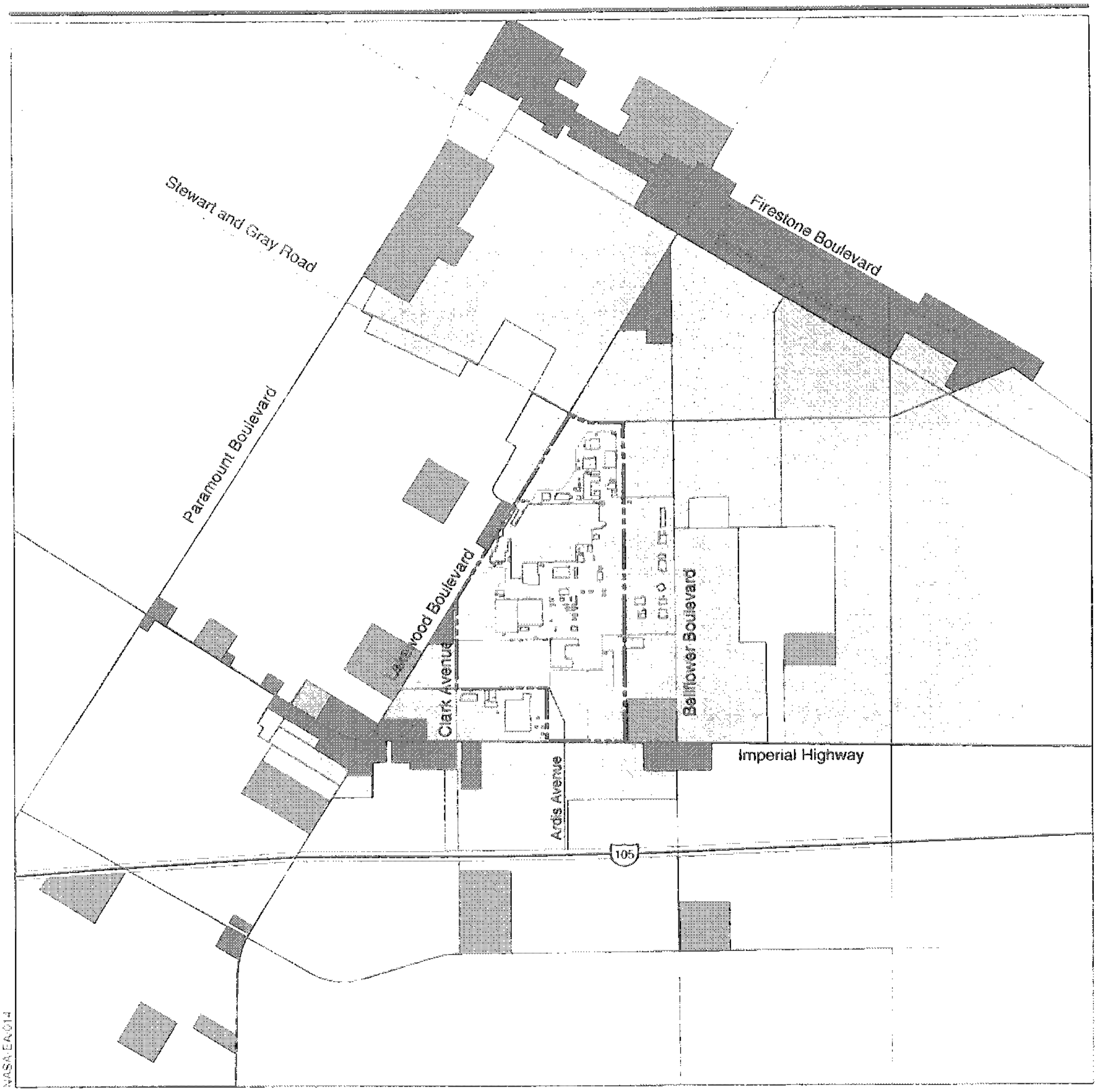
The NASA Industrial Plant (Parcels 1 and 2) contains approximately 94 gross acres (38 hectares) and is roughly bordered by Stewart and Gray Road on the north; Lakewood Boulevard and Clark Avenue on the west; perimeter fencing on the south (paralleling Imperial Highway); and perimeter fencing on the east (paralleling Bellflower Boulevard) (see Figure 1-1).

3.2.2.1 On-Site Land Use.

The NASA Industrial Plant currently consists of two parcels containing 123 buildings. NASA acquired the plant from the U.S. Air Force in 1964 to support the requirements of the Saturn Stage II and Apollo programs. The land presently occupied by the NASA Industrial Plant was a ranch until 1929, when it became a small-scale aircraft manufacturing plant. Over the next 20 years, the plant supported numerous aircraft manufacturing companies. The land was conveyed to the Air Force in 1953 and became known as Air Force Plant (AFP) 16. It was used to support various Air Force contracts for missile design and manufacturing efforts prior to supporting the Saturn Stage II development. The land is zoned for industrial and light manufacturing.

3.2.2.2 Adjacent Land Use.

The property is situated in a metropolitan area within the city of Downey. The immediate surroundings are commercial, industrial, and residential (Figure 3-1). Land use is primarily industrial east and south of the NASA Industrial Plant. There are single-family residents and multiple-family dwellings immediately adjacent to or within 1/4 mile (0.4 km) of the site. A Kaiser medical office facility occupies 20 acres (8.1 hectares) southeast of the site at the corner of Bellflower Boulevard and Imperial



EXPLANATION

- Project Area
- Interstate Highway
- Single-Family Residential
- Multi-Family Residential
- Commercial
- Industrial
- Institutional
- Parks

0 475 950 1900 Feet

On-Site and Adjacent Land Use

Figure 3-1

Highway. The area west of the NASA Industrial Plant is predominantly residential. West of Lakewood Boulevard there are single-family detached homes and retail businesses that serve local residents. There are several elementary and middle schools in the residential area north and west of the site.

3.2.2.3 Aesthetics.

Visual resources include natural and man-made features that give a particular environment its aesthetic qualities. Aesthetics are analyzed for the NASA Industrial Plant and surrounding adjacent property, visible both on and from the property. The analysis considers visual sensitivity, which is the degree of public interest in a visual resource and concern over adverse changes in the quality of the resource.

Most of the property, both on and visible from the plant, is characterized by a low visual sensitivity. The plant is a very large industrial site with one large building and numerous smaller buildings.

The one- and two-story buildings are surrounded by large, paved parking lots that extend to the perimeter of the site. The dominant visual character of the plant is Building 1, the main manufacturing facility. The area surrounding the plant was developed in the period during and following World War II. Although surrounding buildings are 30 to 50 years old, they are generally well maintained. The dominant visual character of the surrounding area is somewhat nondescript. None of the streets in the area, for example, makes either a strongly positive or negative impression. Areas of open space are limited and are generally adjacent to buildings or parking areas. Overall, the NASA Industrial Plant and adjacent land lack a strong visual identity.

3.2.3 Transportation

The ROI for the transportation analysis includes the existing principal road network in the immediate area surrounding the NASA Industrial Plant.

3.2.3.1 Roadways.

The evaluation of the existing roadway conditions focuses on capacity, which reflects the ability of the network to serve the traffic demand and volume. Capacity is stated in terms of vehicles per hour (VPH), and is the maximum number of vehicles that can be effectively processed by a segment of roadway or intersection during a 1-hour period. Roadway capacity is a function of several factors including the number of lanes, lane and shoulder width, traffic control devices (e.g., traffic signals), and the percent of usage by trucks. For two-lane roads, capacity analysis is conducted for both directions; for multi-lane highways, capacity analysis considers a single direction only.

To determine how well a section of roadway operates, capacity is compared with the volume of traffic carried by the section. These traffic volumes may be distinguished as (1) average annual daily traffic (AADT), the total two-way volume averaged for 1 full year; (2) average daily traffic (ADT), the total two-way traffic averaged for a period of time less than 1 year; and (3) peak-hour volume (PHV), the amount of traffic that occurs in the typical peak hour. ADT estimates are used in this report because no continuous count data are available for the road segments in the ROI.

PHV is compared to the roadway's hourly capacity and expressed in terms of level of service (LOS). The LOS scale ranges from A to F, with each level being defined by a range of volume-to-capacity (V/C) ratios. LOS values of A, B, and C are considered good operating conditions, where minor or tolerable delays are experienced by motorists. LOS values of D and E represent acceptable, but below average, conditions. LOS F represents an unacceptable situation of unstable stop-and-go traffic. Table 3-1 presents LOS designations and their representative V/C ratios for various roadway types. These levels are more fully described in the Highway Capacity Manual (Transportation Research Board, 1994).

Table 3-1. Road Transportation Levels of Service

LOS	Description	Criteria (V/C)	
		Multi-Lane Arterial	2-Lane Highway
A	Free flow with users unaffected by presence of other users of roadway	0-0.31	0-0.15
B	Stable flow, but presence of the users in traffic stream becomes noticeable	0.32-0.52	0.16-0.27
C	Stable flow, but operation of single users becomes affected by interactions with others in traffic stream	0.53-0.72	0.28-0.43
D	High density, but stable flow; speed and freedom of movement are severely restricted; poor level of comfort and convenience	0.73-0.86	0.44-0.64
E	Unstable flow; operating conditions at capacity with reduced speeds, maneuvering difficulty, and extremely poor levels of comfort and convenience	0.87-1.00	0.65-1.00
F	Forced breakdown flow with traffic demand exceeding capacity; unstable stop-and-go traffic	>1.00	>1.00

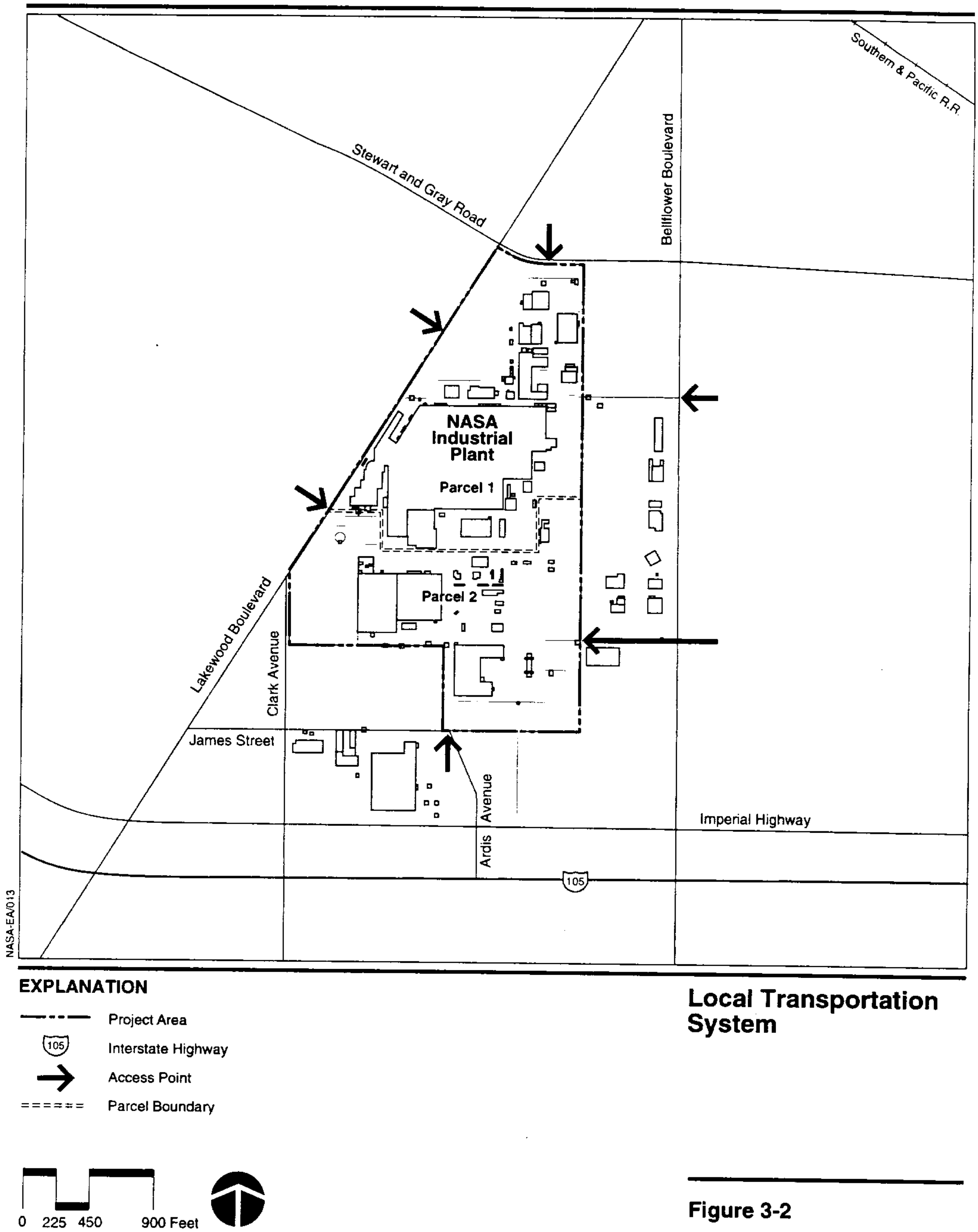
LOS = level of service
V/C = volume to capacity

Source: Compiled from Transporation Research Board, 1994.

Existing roads and highways within the ROI are described at two levels: (1) regional, representing the major links within the area of the NASA Industrial Plant, and (2) local, representing community roads.

Regional. The NASA Industrial Plant is approximately 15 miles southeast of downtown Los Angeles. Regional access to the NASA Industrial Plant is provided by three north-south freeways, Interstates (I-) 5, I-605, and I-710; and two east-west freeways, I-105 and State Route (SR) 91.

Local. Figure 3-2 identifies the primary local roads in the immediate vicinity of the NASA Industrial Plant. Imperial Highway, a six-lane divided road, runs east-west and provides access to I-605 to the east and I-710 to the west of the plant. Bellflower Boulevard, a four-lane arterial, runs north–south parallel to the eastern boundary of the property, and connects to Lakewood Boulevard to the north and Imperial



Local Transportation System

Figure 3-2

Highway to the south. Bellflower Boulevard provides access to I-105 south of the NASA Industrial Plant. Lakewood Boulevard, a four-lane divided road, runs northeast-southwest adjacent to the western boundary of the property and connects to Imperial Highway and I-105 south of the plant. Clark Avenue, a four-lane street, runs north-south adjacent to the western boundary of the plant, and connects with Lakewood Boulevard to the north and Imperial Highway to the south. Stewart and Gray Road, a four-lane road, runs east-west adjacent to the northern boundary of the property between Lakewood and Bellflower boulevards.

Access to the NASA Industrial Plant is available from Lakewood Boulevard, Stewart and Gray Road, Bellflower Boulevard, and Imperial Highway (see Figure 3-2). From Lakewood Boulevard, access is provided at the intersection of Lakewood Boulevard and Clark Avenue and north of Building 1. There are two access points from Bellflower Boulevard, one from Stewart and Gray Road, and one from Imperial Highway at a median break opposite Ardis Avenue.

Preclosure Reference. Capacity analyses were assessed for the key local roadways. All segments in the ROI currently operate at LOS C or better during the peak hour.

Closure Baseline. No measurable decrease in traffic in the vicinity of the NASA Industrial Plant would occur upon closure (Table 3-2). The LOS at closure for key roadways in the ROI is not expected to change from preclosure conditions.

3.2.4 Utilities

The existing utilities for the NASA Industrial Plant and surrounding area include water supply, wastewater, solid waste, and energy (electricity and natural gas). The ROI for utilities includes the service areas of each utility provider servicing the plant and local community. The major attributes of utility systems in the ROI are processing, distribution, storage capacities, average daily consumption, peak demand, and related factors required to make a determination of the adequacy of such systems to provide services in the future.

3.2.4.1 Water Supply.

The water supply ROI consists of the NASA Industrial Plant and the area served by the city of Downey. The plant obtains potable water for domestic and industrial uses from the city of Downey. Average daily consumption in 1998 at the NASA Industrial Plant was approximately 114,000 gpd (431,530 lpd). Water consumption at the NASA Industrial Plant will decrease as the drawdown of personnel occurs. Water demand is expected to be minimal at closure.

3.2.4.2 Wastewater.

The Los Coyotes Wastewater Treatment Plant (WWTP) provides primary, secondary, and tertiary treatment for 37 million gallons (140 million liters) of wastewater per day. The WWTP serves a population of approximately 370,000 people including the NASA Industrial Plant and the city of Downey. The

Table 3-2. Peak-Hour Traffic Volumes and LOS on Key Roads

Road	Capacity (VPH)	Traffic (PHV)[a]	Level of Service (LOS)
Lakewood Boulevard north of Stewart and Gray Road	6,000	2,750	B
Lakewood Boulevard between Stewart and Gray Road and north access point (Building 1)	6,000	2,950[b]	B
Lakewood Boulevard between north and south access point	6,000	3,000[b]	B
Lakewood Boulevard between south access point and Imperial Highway	6,000	3,100	C
Lakewood Boulevard south of Imperial Highway	6,000	2,800	B
Imperial Highway west of Lakewood Boulevard	6,000	2,900	B
Imperial Highway between Lakewood Boulevard and Clark Avenue	6,000	3,100	C
Imperial Highway between Clark Avenue and Ardis Avenue	6,000	3,600	C
Imperial Highway between Ardis Avenue and Bellflower Boulevard	6,000	3,700	C
Imperial Highway east of Bellflower Boulevard	6,000	2,600	B
Bellflower Boulevard south of Imperial Highway	4,000	2,200	C
Bellflower Boulevard between Imperial Highway and Stewart and Gray Road	4,000	1,100[b]	B
Bellflower Boulevard between Stewart and Gray Road and Lakewood Boulevard	4,000	800	A
Stewart and Gray Road east of Bellflower Boulevard	4,000	1,450	B
Stewart and Gray Road between Bellflower Boulevard and Lakewood Boulevard	4,000	1,900	B
Stewart and Gray Road west of Lakewood Boulevard	4,000	1,700	B

Notes: (a) 10 percent of ADT. ADT provided by city of Downey.
(b) Estimated from data provided by city of Downey.
PHV = peak-hour volume
VPH = vehicles per hour

Los Coyotes WWTP is operated by the Los Angeles County Sanitation District Wastewater System.

The NASA Industrial Plant discharged 9.62 million gallons (36.4 million liters) to the Los Coyotes WWTP in 1998, an average daily wastewater flow of 26,500 gpd (100,310 lpd), which is estimated to be less than 0.1 percent of the wastewater discharged within the ROI.

As the drawdown of plant personnel proceeds, wastewater flows will decrease. Wastewater flow is expected to be minimal at closure.

3.2.4.3 Solid Waste.

The NASA Industrial Plant generated approximately 2.5 tons of solid waste per day in 1998. Of this, approximately 2.2 tons per day were recycled. The remaining 0.3 ton per day was disposed of in the Puente Hills Landfill, which has an intake of 12,000 tons per day. The Puente Hills Landfill conditional use permit expires in 2003 and will need to be renewed to continue operations beyond that date. The anticipated design life for this landfill is through 2014. Solid waste generated at the NASA Industrial Plant is taken off site by a commercial hauler.

California's Integrated Solid Waste Management Act of 1989 (Assembly Bill 939) requires a 25-percent reduction in the amount of solid waste disposed of in landfills by 1995 and a 50-percent reduction by 2000.

Solid waste generation by the plant at closure is expected to be minimal.

3.2.4.4 Energy.

The ROI for energy consists of the local service area of Southern California Edison (SCE) and the Southern California Gas Company.

Electricity

SCE provides electrical power to the city of Downey and the NASA Industrial Plant. The NASA Industrial Plant electrical power consumption averaged 170,000 kWH per day in 1998.

As the drawdown of plant personnel proceeds, consumption of electricity for the plant will decrease. Consumption of electricity at closure is expected to be minimal.

Natural Gas

Natural gas is supplied to the city of Downey and the NASA Industrial Plant by the Southern California Gas Company. The NASA Industrial Plant natural gas consumption averaged 170,000 cubic feet per day in 1998.

As the drawdown of plant personnel proceeds, natural gas consumption for the plant will decrease. Natural gas consumption at closure is expected to be minimal.

3.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Hazardous materials and hazardous waste management activities at the NASA Industrial Plant are governed by specific environmental regulations. For the purpose of the following analysis, the term hazardous waste or hazardous materials will mean those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9601 et seq., as amended, and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901-6992, as amended. In general, this includes substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health, welfare, or the environment when released. The state regulations must be as stringent as federal regulations, and are outlined in the California Code of Regulations (CCR) Title 22, Section 30.

Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations specified in Title 49 CFR, Hazardous Materials Transportation Act.

Disposal of nonhazardous waste, including wastewater and nonhazardous solid waste, is discussed in Section 3.2.4.

The ROI encompasses all geographic areas that are exposed to the possibility of a release of hazardous materials or hazardous waste. The NASA Industrial Plant, Parcels 1 and 2, is the ROI for hazardous materials and hazardous waste management and for known contaminated sites. Specific geographic areas affected by past and current hazardous waste operations, including cleanup activities, are presented in detail in the following sections.

3.3.1 Hazardous Materials Management

Hazardous material is a broad term for substances that may be hazardous because of quantity, concentration, or physical or chemical characteristics and that pose a present or potential hazard to human health and safety or to the environment if a release occurs. Oxidizers and substances that are flammable, combustible, corrosive, reactive, radioactive, or toxic are considered hazardous.

The most commonly utilized hazardous materials at the NASA Industrial Plant include acids; adhesives; aerosols; batteries; compressed gases; corrosives; degreasers; fluxes; hydraulic fluids; motor fuels; paints; petroleum, oil, and lubricants (POL); solders; solvents; and thinners.

Material Safety Data Sheets (MSDSs) provide a summary of important health, safety, and toxicological information for specific chemicals on the ingredients of a product. An inventory of MSDSs for all hazardous materials is maintained by the Safety, Health, and Environmental Affairs (SHEA) Department. In addition, each workplace that utilizes or stores hazardous materials has an MSDS for each chemical used at that location.

The SHEA Department at the NASA Industrial Plant maintains a Hazardous Materials Business/Contingency Plan. The plan identifies storage locations of hazardous materials and hazardous waste, specific hazardous substance inventories, and personnel responsibilities and training requirements. The plan also provides facility-specific spill prevention and response procedures. This plan is updated annually in compliance with the Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. Section 11001 et seq.

Closure Baseline. At closure, only the caretaker would be using hazardous materials on the property. The caretaker would be responsible for managing these materials in accordance with federal, state, and local regulations to protect employees from occupational exposure to hazardous materials, and to protect the public health and the surrounding community. This would include adhering to the EPCRA requirements set forth under the Superfund Amendments and Reauthorization Act (SARA), Title III, of 1986.

The caretaker would be responsible for the safe storage and handling of hazardous materials used in conjunction with preventative and regular facility maintenance and grounds maintenance activities. Hazardous materials may include paint, thinner, solvents, corrosives, pesticides, and miscellaneous materials associated with vehicle and machinery operation (i.e., motor oil and fuel). These materials would be delivered to the plant in compliance with the federal Hazardous Materials Transportation Act under 49 CFR.

3.3.2 Hazardous Waste Management

Hazardous waste currently generated during normal operations at the NASA Industrial Plant is defined as hazardous under the U.S. EPA implementing regulations, Title 40 CFR Parts 261-265, and the CCR Title 22, Division 4, Chapter 30. Additionally, the California EPA (Cal EPA), Department of Toxic Substances Control (DTSC), is responsible for implementing the California Hazardous Waste Control Law (HWCL), which is found in Section 25100 et. seq., of the California Health and Safety Code, and under the state hazardous waste regulations under CCR Title 22. Used oil is also regulated as a hazardous waste under California's Management of Used Oil Act (Senate Bill 86).

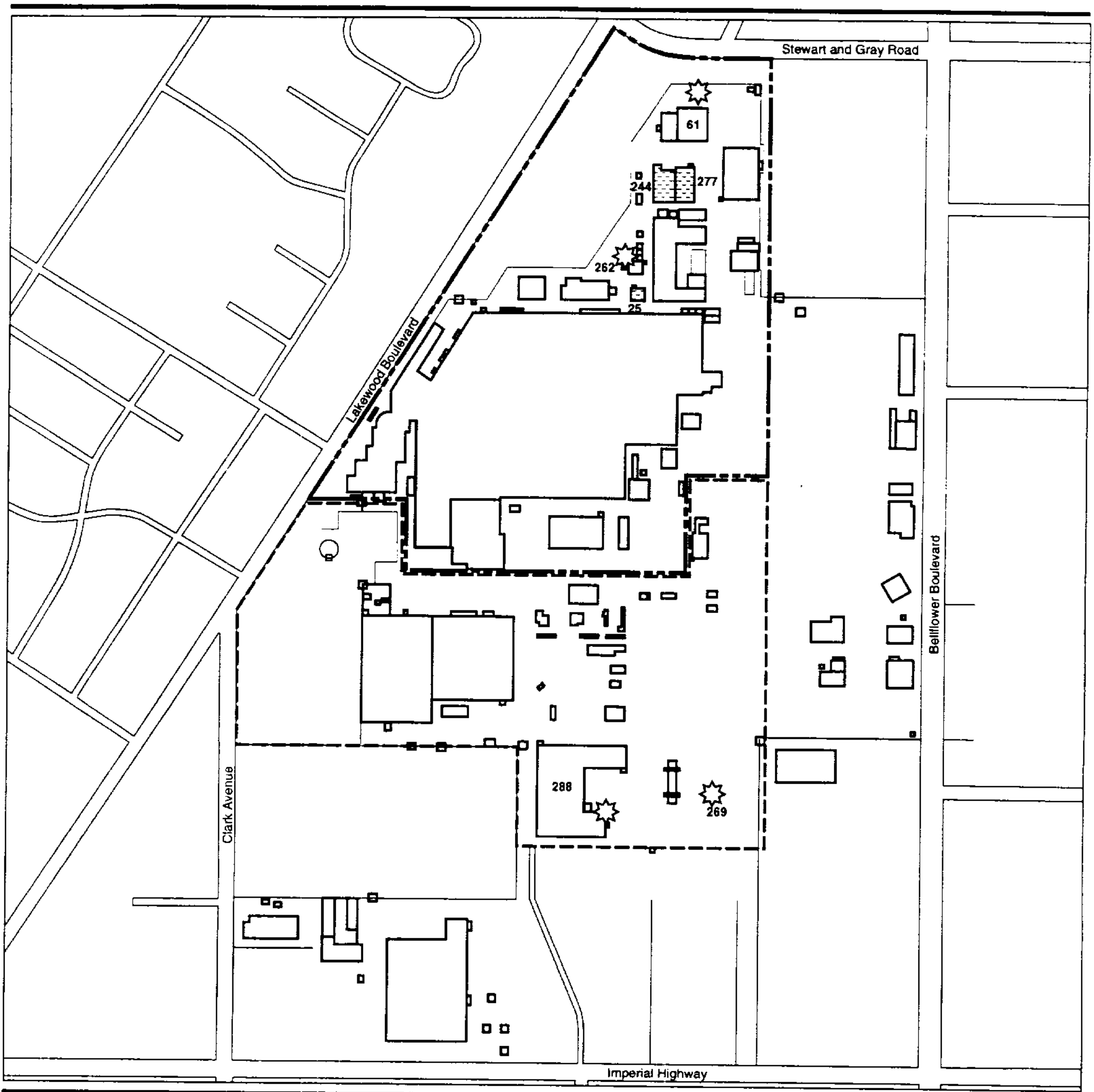
Management of hazardous waste in accordance with CCR Title 22 at the NASA Industrial Plant is the responsibility of the SHEA Department. The NASA Industrial Plant has been classified as a California large-quantity generator (U.S. EPA identification numbers CA 7800019419 and CAD 982433229), generating more than 100 kilograms (kg) of hazardous waste per month.

Waste generated by plant activities in 1994 consisted of approximately 78,600 pounds (35,650 kg) of sump waste; 16,900 pounds (7,670 kg) of process solution; 129,100 pounds (58,560 kg) of oil/coolant; 87,600 pounds (39,735 kg) of debris; 5,800 pounds (2,630 kg) of paint/thinner; and 2,700 pounds (1,225 kg) of sulfuric acid. Hazardous waste is collected at accumulation points situated at four locations (Facilities 61, 262, 269, and 288) throughout Parcels I and II (Figure 3-3). All waste generated is disposed of off site or recycled.

Closure Baseline. At closure, hazardous wastes generated by plant operations will have been collected from all designated accumulation areas and disposed of off site at a permitted facility in accordance with RCRA. Hazardous waste generated by the caretaker would be tracked to ensure proper identification, storage, transportation, and disposal. The plant closure would not affect the remediation and closure activities of known contamination sites. Such activities would continue in accordance with appropriate regulations to protect human health and the environment. Remedial activities could continue past the closure date.

3.3.2.1 Known Contamination Sites.

NASA has established a process to evaluate past hazardous materials storage areas and any potential releases, to control the migration of contaminants, and control potential hazards to human health and the environment. Ongoing activities at identified contaminated sites may delay or limit some proposed land uses at or near those sites. Future land uses by the recipients on a site-specific level may be, to a certain extent, limited by the severity of contamination or level of remediation effort. Reasonably foreseeable land use constraints are discussed in this EA. Regulatory review will also ensure that any site-specific land use limitations are identified and considered.



EXPLANATION

Hazardous Waste Accumulation Point

Known Contamination Site

Parcel 1

Parcel 2

288 Building Number

0 140 280 560 Feet

Known Contamination Sites and Hazardous Waste Storage Locations

Figure 3-3

The closure of the NASA Industrial Plant will not affect ongoing remediation activities. These activities will continue in accordance with federal, state, and local regulations to protect human health and the environment, regardless of the disposal decision. NASA will retain any necessary interests (e.g., easements) in order to perform operations and maintenance on all remediation systems. The U.S. EPA must provide concurrence that all remedial activities have been completed or that an approved remedial action plan is in place pursuant to the requirements of CERCLA 120(h)(3).

Contaminated Site Descriptions. The following sections provide descriptions of the sites on Parcels 1 and 2 that have been investigated as part of the NASA Industrial Plant remediation effort. Figure 3-3 provides site locations.

Parcel 1. Soil samples from 12 soil borings had detectable concentrations of volatile organic compounds (VOCs). Detectable concentrations of VOCs were also identified in groundwater hydropunch borings.

Soil sample data obtained from Parcel 1 suggest that shallow soil samples (approximately 5 to 10 feet below ground surface [bgs]) across the area are affected with low concentrations of chlorinated solvents, such as methylene chloride, acetone, and tetrachloroethene (PCE). Except for two locations (near Building 25 and inside Building 244), VOC concentrations did not exceed the respective Preliminary Remediation Goals (PRGs) for residential and industrial soils that have been developed by the U.S. EPA. In another area east of Building 277, VOC concentrations were below the PRGs but exceeded the Soil Cleanup Screening Level (SCSL) for PCE (Foster Wheeler, 1999).

Building 25. Found on a 1942 drawing, eight underground storage tanks (USTs) (three 1,000-gallon waste oil USTs and five existing larger USTs) were used to store wastewater, paint, mineral spirits, and other hydrocarbons. Building 25 was used at that time for painting and solvent storage. Sometime thereafter, the building was used for miscellaneous equipment storage. A geophysical investigation performed in the area revealed the location of the suspected USTs. In addition, the top of one of the USTs was exposed during excavation of a limited area.

Building 244. Elevated concentrations of VOCs have been identified adjacent to a sump situated inside the western half of Building 244. This portion of the building was used for chemical mill operations in the late 1950s and early 1960s. Numerous aboveground chemical processing tanks were situated in this area; overflow from these tanks may have discharged to a floor ditch that ultimately drained into the sump. These operations ceased in the mid-1970s. The area is currently vacant, except for the sump, which is filled with sediment and covered with a metal plate. The horizontal and vertical distribution of affected soils at this site has been partially determined. A soil vapor extraction (SVE) test was performed to evaluate SVE as a remedial option at the site. A site assessment workplan has been submitted to and approved by the Regional Water Quality Control Board (RWQCB).

Building 277. Elevated concentrations of VOCs have been identified adjacent to a sump east of Building 277. The sump consists of five compartments that receive overflow from chemical processing operations in Buildings 276 and 277. Discharges from that sump were eventually treated at the wastewater treatment unit at Building 299. A workplan for additional assessment has been submitted to and approved by the RWQCB.

Groundwater. Groundwater samples collected beneath Parcel 1 and Parcel 2 had detectable concentrations of trichloroethene (TCE). Based on the presumed groundwater gradient and the absence of TCE in shallow soil samples below the site, it appears that TCE may originate from an off-site, upgradient source. TCE and cis-1,2-dichloroethene (cis-1,2-DCE) concentrations in groundwater exceed the California Primary Drinking Water Standards, Maximum Contaminant Levels (MCLs). The first water-bearing zone beneath Parcels 1 and 2 is not used for drinking water. However, under the California Water Code, this shallow groundwater is still considered to have a beneficial use.

Parcel 2. Soil samples from four soil borings had detectable concentrations of VOCs. Detectable concentrations of VOCs were also identified in groundwater at two hydropunch borings. Soil sample data in Parcel 2 did not exceed the U.S. EPA PRGs or the RWQCB SCSLs. Based on the soil data, additional characterization of soils within Parcel 2 was not recommended. Hydropunch groundwater samples obtained southwest of Building 280 and south of Buildings 6 and 290 had detectable VOC concentrations. TCE and cis-1,2-DCE concentrations exceeded their respective MCLs. These compounds may have been used as solvents during the course of operations in Buildings 6 and 290.

3.3.3 Asbestos

Asbestos-containing material (ACM) and ACM abatement is regulated by the U.S. EPA, the Occupational Safety and Health Administration (OSHA), the Cal EPA, and the California Division of Occupational Safety and Health. Emissions of asbestos fiber into the ambient air are regulated in accordance with Section 112 of the Clean Air Act (CAA), which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP regulations address the demolition or renovation of buildings containing ACM. The Toxic Substances Control Act (TSCA), 15 U.S.C. Section 2601 et seq., and the Asbestos Hazard Emergency Response Act (AHERA), P.L. 99-519, and P.L. 101-637 provide the regulatory basis for handling ACM in kindergarten through 12th grade school buildings. The AHERA and OSHA regulations cover worker protection for employees who work near or abate ACM. California regulates ACM under the California Health and Safety Code Section 25915 et seq.

Renovation or demolition of buildings with ACM has the potential to release asbestos fibers into the air. Asbestos fibers could be released due to disturbance or damage from various building materials such as pipe and boiler insulation, acoustical ceilings, sprayed-on fireproofing, and other material used for soundproofing or insulation. There are two primary categories that describe ACM. Friable ACM is defined as any material containing more than 1 percent asbestos (as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, polarized light microscopy) that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM is any material that contains more than 1 percent asbestos but does not meet the rest of the criteria for friable ACM.

The current NASA policy is to manage ACM in place. ACM is removed when a potential exists for a release of asbestos fibers that could affect human health or the environment. Asbestos abatement projects are conducted by licensed asbestos abatement contractors, and abatement records are maintained by the SHEA Department.

An asbestos survey was conducted in 1986; results were presented in an Asbestos Survey Report (Baker Consultants, 1986). The report provides a record of the type and location of asbestos identified during the survey. The survey identified ACM in Buildings 1, 3, 4, 6, 9, 11, 14, 41, 56, 61, 119, 128, 229, 239, 244, 246, 276, 286, 287, 288, 289, 290, 299, 305, and 999. No ACM was identified in Buildings 10, 19, 20, 120, 134, 260, 265, 298, 303, and 639. Table 3-3 provides a summary of asbestos survey results and a description of the ACM within buildings surveyed for asbestos.

3.3.4 Lead-Based Paint

Human exposure to lead has been determined to be an adverse health risk by agencies such as OSHA and the U.S. EPA. Sources of exposure to lead are through dust, soils, and paint. Waste containing levels of lead exceeding a maximum concentration of 5.0 milligrams per liter, as determined using the U.S. EPA Toxic Characteristic Leaching Procedure, which simulates the leaching behavior of landfill waste, is defined as hazardous under 40 CFR Part 261 and Title 22, Chapter 11, Section 66261.24 of the CCR. In 1973, the Consumer Product Safety Commission (CPSC) established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the Consumer Product Safety Act (P.L. 101-608, as implemented by 16 CFR Part 1303), the CPSC lowered the allowable lead level in paint to 0.06 percent. The Act also restricted the use of lead-based paints in nonindustrial facilities.

The NASA Industrial Plant has no high-priority facilities (e.g., housing, elementary schools); therefore, no lead-based paint surveys have been conducted. Many of the buildings at the NASA Industrial Plant were constructed prior to 1978 and are likely to contain lead-based paint. The soils surrounding these buildings may also contain lead due to weathering and peeling of paint over the years.

3.4 NATURAL ENVIRONMENT

This section describes the affected environment for natural resources: geology and soils, water resources, air quality, and cultural resources.

3.4.1 Geology and Soils

Geology and soils include those aspects of the natural environment related to the earth that may affect or be affected by the proposed disposal and reuse action. These features include physiography, geologic units and their structure, the presence/availability of minerals and related natural resources, the potential for natural hazards, and soil conditions and capabilities. Water resources, which are related to geology and soils, are described in Section 3.4.2.

Table 3-3. Summary of Asbestos Survey Information

Facility Number	ACM Identified
1	Pipe insulation, pipe fitting insulation, ceiling insulation, gasket
3	Pipe fitting insulation
4	Pipe insulation, fume hood, gasket
6	Pipe insulation, pipe fitting insulation, ceiling insulation, transite wall, hangar brackets
9	Floor tile
10	No ACM identified
11	Pipe insulation, pipe fitting insulation, floor tile
14	Pipe insulation, floor tile
19	No ACM identified
20	No ACM identified
41	Ceiling insulation, gasket, duct connectors, floor tile
56	Test chamber insulation, gasket
61	Pipe insulation, pipe fitting insulation, gasket
119	Cooling tower
120	No ACM identified
128	Pipe insulation
134	No ACM identified
229	Gasket
239	Pipe fitting insulation
244	Boiler insulation, gasket
246	Gasket
260	No ACM identified
265	No ACM identified
276	Hydraulic press
286	Heater line
287	Pipe insulation, pipe fitting insulation, tank insulation, gasket
288	Pipe fitting insulation, vacuum chamber insulation
289	Pipe fitting insulation
290	Floor tile
298	No ACM identified
299	Vent line fittings
303	No ACM identified
305	Pipe fitting insulation, ceiling panels
639	No ACM identified
999	Wall insulation, gasket

ACM = asbestos-containing material
Source: Baker Consultants, 1986.

In general, the ROI for geology is the regional geologic setting (to provide context) and specific features on the property (to determine impacts). The ROI for soils is the NASA Industrial Plant.

3.4.1.1 Geology.

Physiography. The NASA Industrial Plant is situated in the 480-square-mile (1,240-square-km) coastal plain of Los Angeles County, extending from the Santa Monica Mountains to the north, to the Orange County border to the south and east, and south and west to the Pacific Ocean. The coastal plain primarily comprises coalescing alluvial fans forming a gently dipping surface extending from the mountains to the ocean. The NASA Industrial Plant is situated along the western portion of the coastal plain at a surface elevation of approximately 100 feet (30 meters) above mean sea level. The topography is relatively flat, sloping to the south at a gradient of approximately 15 feet per mile (3 meters per km) (Foster Wheeler, 1999).

Geology. The NASA Industrial Plant is situated within the Los Angeles Basin, a physiographic basin underlain by a deep structural depression. The Los Angeles Basin, which extends from the Santa Monica Mountains on the north to the Pacific Ocean on the south and west, is divided into four primary structural blocks defined along major faulting or flexure in the basement rocks. The NASA Industrial Plant is situated within the Central Block of the Los Angeles Basin, which is a wedge-shaped block approximately 55 miles (89 km) long, trending to the southeast and bounded on the northwest, southwest, and northeast by fault systems. The predominant structural feature in the Central Block is a northeast-trending synclinal trough underlying the central portion of the block (Foster Wheeler, 1999).

The Los Angeles Basin has been the site of discontinuous sediment deposition since late Cretaceous time. Deposits typically consist of stream channels, coalescing alluvial fans, and floodplain sediments (Foster Wheeler, 1999).

Mineral Resources. No substantial mineral deposits have been identified on the NASA Industrial Plant.

Natural Hazards. The NASA Industrial Plant is in Seismic Hazard Zone IV (International Conference of Building Officials, 1991). Seismic Hazard Zone IV is characterized by areas likely to sustain major damage from earthquakes, and corresponds to intensities of VIII or higher on the Modified Mercalli Scale. Structures designed (and other buildings upgraded) to meet current Uniform Building Code design standards generally tend to withstand effects of most earthquakes. Some buildings at the NASA Industrial Plant may not meet current Uniform Building Code design standards due to their age. There are several active faults in the vicinity of the NASA Industrial Plant. They include the Santa Monica-Raymond fault to the northwest; the Newport-Inglewood fault to the southwest; and the Whittier-Elsinore fault zone to the northeast. Other seismic-related hazards include the potential for liquefaction and seismically induced dynamic settlement of soils.

3.4.1.2 Soils.

The NASA Industrial Plant is on the Coastal Plain in an area designated as the Downey Plain, which consists of a large area of recent alluvial deposition. Soil characteristics are typically reddish or brown, deeply weathered soil formed prior to recent time. In some areas, the soil and the surface that it forms can be in its original position. However, in many areas, the soil and the underlying sediments have been warped, folded, faulted, and at least partially eroded away. In other areas, this deeply weathered soil has been downwarped and covered with younger alluvial material (Rockwell International, 1980).

Any potential for soil contamination on the NASA Industrial Plant is addressed in Section 3.3.2.1, Known Contamination Sites.

3.4.2 Water Resources

Water resources include those portions of the natural environment related to surface water and groundwater. These water considerations include drainage/runoff, permanent surface water features, drinking water quality, water quality effects associated with effluent and nonpoint source (storm water runoff), National Pollutant Discharge Elimination System (NPDES) requirements, floodplains, water supply capacity (surface or groundwater), and aquifer characteristics. Existing water contamination is considered as part of the hazardous materials and hazardous waste management analysis (see Section 3.3).

The ROI for surface water is the drainage system/watershed in which the NASA Industrial Plant is situated; the ROI for groundwater is the local aquifer(s).

3.4.2.1 Surface Water.

In accordance with state requirements, a Storm Water Pollution Prevention Plan has been prepared for the NASA Industrial Plant. This plan identifies Best Management Practices that are implemented to reduce storm water pollution. This plan also identifies surface water flow directions, storm drains, and sampling locations. There are 11 storm water drains on the NASA Industrial Plant. Discharge from the storm drain system ultimately flows into the San Gabriel River approximately 1.5 miles (2 km) to the east, which discharges into the Pacific Ocean. Surface water samples collected at the NASA Industrial Plant after storm events indicate that storm water quality is in compliance with state permit requirements (Foster Wheeler, 1999).

The site is situated between two surface water channels that flow across the coastal plain south toward the Pacific Ocean. The San Gabriel River is approximately 1.5 miles (2 km) to the east, and the Los Angeles River is approximately 2 miles (3 km) to the west. The NASA Industrial Plant is situated in an area of special flood hazard, which results from decertification of a previously accredited flood protection system. This flood protection system is in the process of being restored to provide a 100-year or greater level of flood protection (Federal Emergency Management Agency, 1988).

3.4.2.2 Groundwater.

The NASA Industrial Plant is underlain by approximately 30 to 50 feet (9 to 15 meters) of fine-grained sediments comprising primarily silty clays and clayey silts. Shallow groundwater beneath the NASA Industrial Plant is approximately 45 to 65 feet (14 to 20 meters) bgs. These sediments are underlain by the Gaspur Aquifer, which has been used as a source of water supply; however, production wells are typically screened in deeper aquifers. This water is not currently used as a potable drinking water source. Deeper aquifers beneath the NASA Industrial Plant include, in order of increasing depth, the Exposition, Gage, Jefferson, Lynwood, and Silverado aquifers. The base of the Silverado Aquifer extends to a depth of between

600 and 650 feet (180 to 200 meters) bgs. Regional groundwater flow is generally to the south (Foster Wheeler, 1999).

Three water wells are near the NASA Industrial Plant. These wells include:

- The city of Downey Well No. 30, which is situated approximately 500 feet (150 meters) to the southwest. This is a domestic water supply well that draws water from approximately 390 feet (120 meters) bgs, 525 feet (160 meters) bgs, and 600 feet (180 meters) bgs.

- Observation well 1577F, which is situated approximately 500 feet (150 meters) to the west. This well is for monitoring only and draws water from approximately 100 feet (30 meters) bgs.

- Groundwater well 1157D (observation only), which is situated approximately 500 feet (150 meters) to the west. No information was available on the depth of this well (Foster Wheeler, 1999).

3.4.2.3 Water Quality.

Drinking water is supplied to the NASA Industrial Plant by the city of Downey. This water system is tested in accordance with state and federal drinking water regulations.

Results of water quality data from the city of Downey (1989 to 1994) indicated that analytes were below their respective detection limits, except for TCE, which was detected in 1993. The TCE concentration of 0.6 microgram per liter (μg/l) is slightly above the detection limit of 0.5 μg/l but below the state of California Primary Drinking Water MCL of 5.0 μg/l (Foster Wheeler, 1999).

3.4.3 Air Quality

Air quality in a given location is described by the concentration of various pollutants in the atmosphere, generally expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$). Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The significance of a pollutant concentration is determined by comparing it to federal and state ambient air quality standards. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare with a reasonable margin of safety. The federal standards are established by the U.S. EPA and termed the National Ambient Air Quality Standards (NAAQS). The state standards are established by the California Air Resources Board (CARB) and are termed the California Ambient Air Quality Standards (CAAQS). The NAAQS and CAAQS are presented in Table 3-4.

The main criteria pollutants of concern in this EA are ozone, carbon monoxide (CO), nitrogen oxides (NO_x), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and particulate matter equal to or less than 10 microns in diameter (PM_{10}). NO_x include all oxide species of nitrogen. Although not specifically regulated under NAAQS, NO_x are of

Table 3-4. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards(a,c)	National Standards(b) Primary(c,d)	National Standards(b) Secondary(c,e)
Ozone	1-hour	0.09 ppm (180 μg/m³)	0.12 ppm (235 μg/m³)	Same as primary standard
	8-hour	--	0.08 ppm (157 μg/m³)	Same as primary standard
Carbon monoxide	8-hour	9 ppm (10,000 μg/m³)	9 ppm (10,000 μg/m³)	--
	1-hour	20 ppm (23,000 μg/m³)	35 ppm (40,000 μg/m³)	--
Nitrogen dioxide	Annual	--	0.053 ppm (100 μg/m³)	Same as primary standard
	1-hour	0.25 ppm (470 μg/m³)	--	--
Sulfur dioxide	Annual	--	0.03 ppm (80 μg/m³)	--
	24-hour	0.04 ppm (105 μg/m³)	0.14 ppm (365 μg/m³)	--
	3-hour	--	--	0.5 ppm (1,300 μg/m³)
	1-hour	0.25 ppm (655 μg/m³)	--	--
PM_{25}	Annual Mean	No separate state standard	15 μg/m³	Same as primary standard
	24-hour	No separate state standard	150 μg/m³	Same as primary standard
PM_{10}	Annual	30 μg/m³ (f)	50 μg/m³ (g)	Same as primary standard
	24-hour	50 μg/m³	150 μg/m³	Same as primary standard
Sulfates	24-hour	25 μg/m³	--	--
Lead	30-day	1.5 μg/m³	--	--
	Quarterly	--	1.5 μg/m³	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 μg/m³)	--	--
Vinyl chloride	24-hour	0.010 ppm (26 μg/m³)	--	--
Visibility reducing particles(h)	8-hour (10 a.m. to 6 p.m., Pacific Standard Time)	In a sufficient amount to produce an extinction coefficient of 0.23 per km due to particles when the relative humidity is less than 70% CARB Method V.	--	--

Notes: (a) California standards for ozone, carbon monoxide, sulfur dioxide (1 hour and 24 hour), nitrogen dioxide, PM_{10}, and visibility-reducing particles are values that are not to be exceeded. The sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.

(b) National standards, other than ozone and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year, with maximum hourly average concentrations above the standards, is equal to or less than one.

(c) Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (ºC) and a reference pressure of 760 millimeters (mm) of mercury. All measurements of air quality are to be corrected to a reference temperature of 25ºC and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

(d) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

(e) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of pollutant.

(f) Calculated as geometric mean.

(g) Calculated as arithmetic mean.

(h) This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range when relative humidity is less than 70 percent.

CARB = California Air Resources Board
μg/m³ = micrograms per cubic meter
PM_{10} = particulate matter equal to or less than 10 microns in diameter
ppm = parts per million

Source: California Air Resources Board, 1999.

concern because of their potential contribution to ozone formation. Only that portion of total NO_x that is measurable as NO_2 is subject to the NAAQS. The previous NAAQS for particulate matter was based upon total suspended particulate (TSP) levels; these standards were replaced in 1987 by ambient standards based only on the PM_{10} fraction of TSP.

The U.S. EPA has revised the NAAQS. The new standards for ozone and particulate matter were published in the Federal Register on July 18, 1997. The new particulate standards are for particulates less than 2.5 microns in diameter ($PM_{2.5}$). The new ozone standard is 0.08 ppm, or 157 $\mu g/m^3$, based on the 3-year average of the fourth highest 8-hour average. The previous 1-hour standard remains in effect until the area reaches attainment.

Airborne emissions of lead are not addressed in this EA because there are no known lead emission sources included in the reuse scenarios. Lead concentrations are monitored in a number of high-population-density areas throughout the state, and all sites meet the 30-day mean California standard of 1.5 $\mu g/m^3$ and the quarterly primary and secondary national standards of 1.5 $\mu g/m^3$.

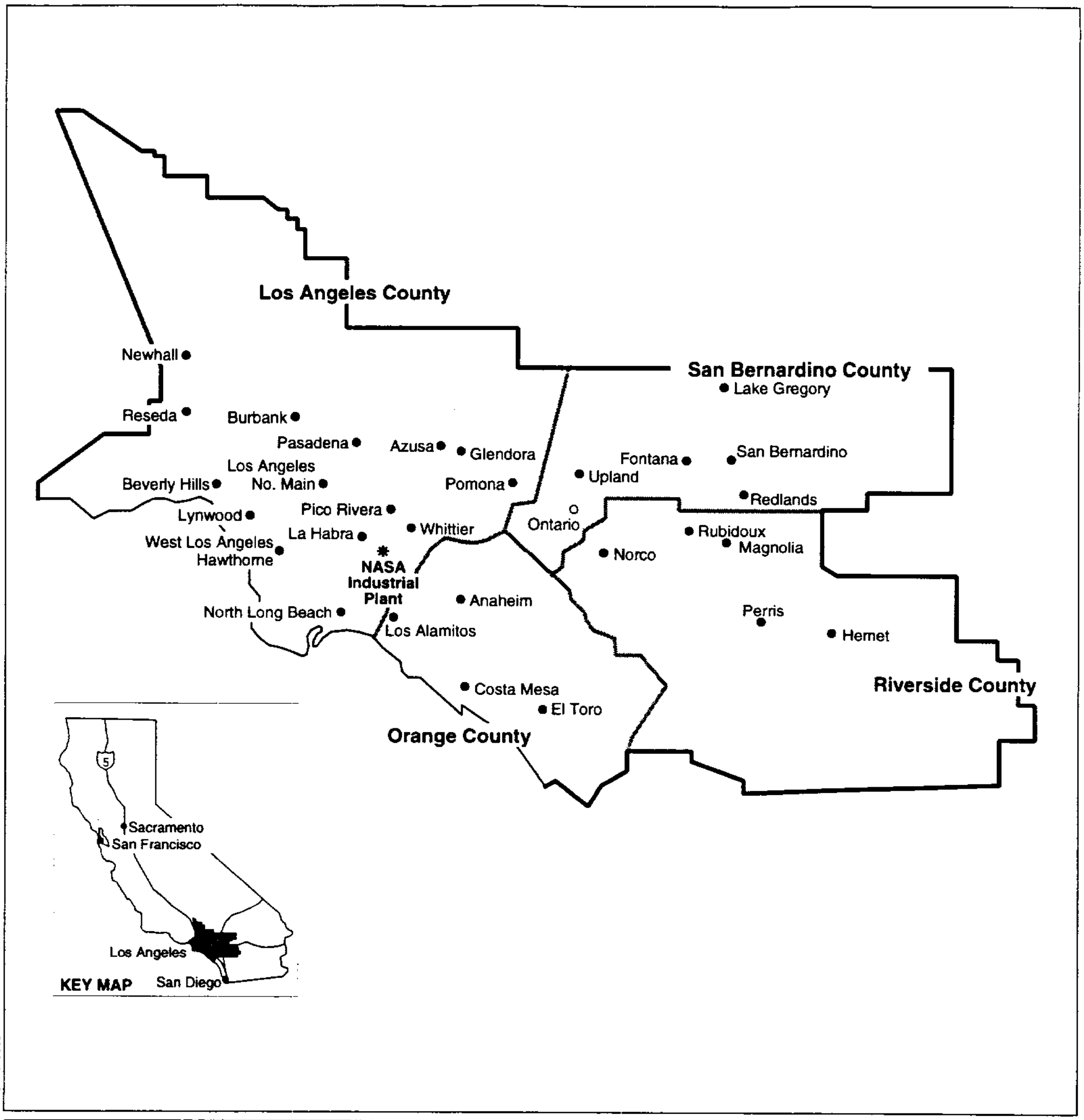
The existing air quality of the affected environment is defined by air quality data and emissions information. Air quality data are obtained by examining records from air quality monitoring stations maintained by the South Coast Air Quality Management District (SCAQMD). Information on pollutant concentrations measured for short-term (24 hours or less) and long-term (annual) averaging periods is extracted from the monitoring station data in order to characterize the existing air quality background of the area.

Emission inventory information for the ROI was obtained from the SCAQMD, the CARB, and from the NASA Industrial Plant. Inventory data are separated by pollutant and reported in tons per year in order to describe the baseline conditions of pollutant emissions in the area.

3.4.3.1 Regulatory Framework.

According to U.S. EPA guidelines, an area with air quality better than the NAAQS is designated as being in attainment; areas with worse air quality are classified as nonattainment areas. A nonattainment designation is given to a region if the primary NAAQS for any criteria pollutant is exceeded at any point in the region for more than 3 days during a 3-year period. Pollutants in an area may be designated as unclassified when there is a lack of data from which the U.S. EPA can form a basis of attainment status. An area designated as unclassified is assumed to be in attainment. The CARB designates areas of the state that are in attainment or nonattainment of the CAAQS. An area is in nonattainment for a pollutant if its CAAQS has been exceeded more than once in 3 years.

Downey is in the South Coast Air Basin (SCAB) (Figure 3-4), which has been designated by both the U.S. EPA and the CARB as being in attainment of the NAAQS and CAAQS for SO_2 and NO_2 (SCAB was redesignated to NO_2 attainment on July 24, 1998) but nonattainment for ozone, CO, and PM_{10}. According to the federal classification, the SCAB is designated as being in the "extreme" ozone



EXPLANATION

- ● Gaseous pollutant or multipollutant monitoring site
- ○ Particulate sampling only

0 10 20 30 Miles

Source: Modified from California Air Resources Board, 1990

South Coast Air Basin

Figure 3-4

nonattainment category (ozone concentrations greater than 0.28 ppm). An area designated as "extreme" is subject to a number of special requirements, including provisions for use of reasonably available control technology (RACT) on all major sources, vapor recovery and motor vehicle inspection and maintenance programs, emission offsets, transportation control measures, and reductions in VOCs. Areas with classifications other than "extreme" are subject to less stringent requirements. Attainment for extreme ozone classification areas must be achieved by November 15, 2010.

The SCAB is also designated as in "serious" nonattainment for the federal CO standards. An area designated as serious for CO (ambient concentrations greater than 16.4 ppm) must implement various special requirements including use of oxygenated fuels, an enhanced motor vehicle inspection and maintenance program, attainment demonstration plans, and implementation of transportation control measures. Attainment of the CO NAAQS is required by 2000.

The SCAB was designated as in serious PM_{10} nonattainment because the currently proposed state implementation plan (SIP) for the SCAB projects nonattainment of the 24-hour PM_{10} NAAQS in 2000 and nonattainment of the annual PM_{10} NAAQS in 2006. These projections exceed the "moderate" PM_{10} attainment deadline of December 31, 1994.

The SIP is the vehicle by which states demonstrate adherence to the NAAQS. The SIP must contain specific measures to attain this goal for areas currently designated as nonattainment. The 1990 CAA Amendments (CAAA) established interim milestones to ensure reasonable further progress toward achievement of the NAAQS for ozone. The CAAA require interim reductions in VOC emissions. In all but "marginal" ozone nonattainment areas, the 1990 CAAA requires that states submit a 1996 Rate-of-Progress Plan that explains how VOC emissions will be reduced by 15 percent from the adjusted base-year inventory over a period of 6 years. Extreme nonattainment areas must further reduce VOC emissions by an average of 3 percent per year for the 3-year period after 1996 or until the air quality standard is achieved.

A plan must be submitted to accomplish this additional 3-percent-per-year reduction after 1996 and to achieve attainment of the NAAQS by 2010. The SCAQMD revised the 1994 Air Quality Management Plan (AQMP) in 1997. The 1997 AQMP was to establish a 1993 baseline and "backcast" historic emissions in order to analyze the effectiveness of existing and future control measures, and demonstrate the region's rate of progress.

Emission reduction requirements necessary to attain the NAAQS are achieved by rules and measures incorporated into the SIP. Emission reduction requirements and rule effectiveness are accounted for in projecting emissions for the various reuse scenarios discussed in Section 4.4.3, Air Quality.

The SCAB is designated by the CARB as an "extreme" nonattainment area for ozone under the CAAQS. The designation "extreme" is given to an area if its ozone design-day value concentration is greater than 0.20 ppm. The design-day value is defined as the fourth highest pollutant concentration recorded in a 3-year period. Extreme nonattainment areas such as the SCAB are required by the California Clean Air Act

(CCAA) to implement new emission control measures. These control measures include indirect and area source control programs, application of best available retrofit control technology (BARCT) to existing stationary sources, consideration of transportation control measures, and substantial use of low-emission motor vehicles by operators of motor vehicle fleets.

The CCAA also includes some additional requirements that can substantially affect control strategy selection. These additional requirements are to (1) reduce emissions of nonattainment pollutants and their precursors at a rate of 5 percent per year (an exception to the 5-percent-per-year reduction requirement is allowed if all feasible measures to control emissions and an expeditious implementation schedule are considered in the attainment planning process); (2) ensure no net increase in mobile emissions after 1997; (3) achieve an average vehicle ridership during peak commute hours of 1.5 persons per vehicle by 1999; (4) reduce population exposure to severe nonattainment pollutants (i.e., ozone and CO for the SCAB) according to a prescribed schedule; and (5) rank control measures by cost effectiveness and implementation priority.

The SCAQMD developed the 1994 AQMP to meet the requirements of the CCAA. The 1994 AQMP is designed to demonstrate attainment of both federal and state ambient air quality standards. As part of the 1994 AQMP, facilities in the SCAB that emit more than 4 tons per year of VOCs, NO_x, or sulfur oxides (SO_x) are subject to Phase II of the SCAQMD's Regional Clean Air Incentives Market (RECLAIM) program for NO_x and SO_x, and the new RECLAIM program for VOCs. Under the RECLAIM program, facilities can use the most cost-effective means available to reduce emissions. Instead of the previous practice whereby the SCAQMD applied specific command and control rules to each piece of equipment, RECLAIM subsumes a number of these rules and gives source owners more flexibility by requiring them to reduce their overall facility emissions each year by whatever methods they choose. If a facility reduces more than the required amount in a given year, emission reduction credits (ERCs) can be earned that can be sold on the open market. Likewise, a facility falling short of its annual emission reduction target can purchase credits from other sources in the basin. In return for giving facilities greater flexibility, the program includes strict monitoring requirements, including real-time measurements of emissions for the largest emitters to ensure compliance with the rules.

In addition to SIP requirements, new or modified major stationary sources in the area of the NASA Industrial Plant are also subject to Prevention of Substantial Deterioration (PSD) review to ensure that these sources are constructed without substantial adverse deterioration of the clean air in the area (SO_2, in particular). Emissions from any new or modified source must be controlled using best available control technology (BACT). The air quality impacts in combination with other PSD sources in the area must not exceed the maximum allowable incremental increases identified in Table 3-5. Certain national parks and wilderness areas are designated as Class I areas, where any appreciable deterioration in air quality is considered substantial. Class II areas are those where moderate, well controlled industrial growth could be permitted. Class III areas allow for greater industrial development. The area surrounding the NASA Industrial Plant is designated by the U.S. EPA as

Table 3-5. Maximum Allowable Pollutant Concentration Increases under PSD Regulations

Pollutant	Averaging Time	Maximum Allowable Increment ($\mu g/m^3$) Class I	Class II	Class III
Nitrogen dioxide	Annual	2.5	25	50
Sulfur dioxide	Annual	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700
PM_{10}	Annual	4	17	34
	24-hour	8	30	60

Note: Class I areas are regions in which the air quality is intended to be kept pristine, such as national parks and wilderness areas. All other lands are initially designated Class II. Individual states have the authority to redesignate Class II lands as Class III to allow maximum industrial use.
$\mu g/m^3$ = micrograms per cubic meter
PM_{10} = particulate matter equal to or less than 10 microns in diameter
PSD = Prevention of Substantial Deterioration

Source: Title 40 CFR Parts 51 and 52, as revised August 12, 1996.

Class II. The San Gabriel Wilderness Area, the nearest Class I area, is approximately 26 miles north of the project site.

Prior to the 1990 CAAA, federal regulation of hazardous air emissions was very limited. Section 112, as amended in 1990, requires the U.S. EPA to regulate a greatly expanded list of hazardous air pollutants (HAPs). After identifying and listing regulated HAPs and their sources, the U.S. EPA must promulgate emission standards that are equivalent to maximum achievable control technology (MACT). Final U.S. EPA regulations that will control HAP emissions from most medium and large sources, and require adoption of costly control measures, are expected by 2000.

3.4.3.2 Region of Influence.

The ROI for the air quality analysis is defined by both the areal extent of potential local and regional ambient air quality impacts and the air control district(s) that would be affected by the new emission sources.

Ambient Air Quality ROI. Identifying the ambient air quality ROI requires knowledge of the pollutant types, source emission rates and release parameters, the proximity relationships of project emission sources to other emission sources, and local and regional meteorological conditions. For inert pollutants (all pollutants other than ozone, its precursors, and NO_2), the ambient air quality ROI is generally limited to an area extending a few miles downwind from the source.

The ambient air quality ROI for ozone and NO_2 may extend much farther downwind than the ROI for inert pollutants. In the presence of solar radiation, the maximum effect of precursor emissions on ozone levels usually occurs several hours after emission and, therefore, many miles from the source. Likewise, oxidation of nitric oxide (NO) to NO_2 can take hours to occur. Ozone and its precursors transported into or from other regions can also combine with local emissions to produce high local ozone concentrations. Ozone concentrations are generally the highest during the summer months and coincide with periods of maximum solar radiation. Maximum ozone concentrations tend to be regionally distributed because precursor emissions are homogeneously dispersed in the atmosphere.

The ROI for emissions of ozone precursors and NO_2 from the reuse-related construction and operational activities would primarily be the existing airshed surrounding the NASA Industrial Plant (i.e., the SCAB). This basin includes Orange County and the nondesert portions of Los Angeles, San Bernardino, and Riverside counties (see Figure 3-4). The CARB has determined that, at times, pollutants may be transported from the SCAB into the South Central Coast Air Basin, the San Diego Air Basin, or the Southeast Desert Air Basin (California Air Resources Board, 1989). Therefore, depending on the condition of wind speed, duration, and direction, the ROI can, at times, include one of these other air basins. The ROI for emissions of the inert pollutants (CO, SO_2, and PM_{10}) is limited to the more immediate area of the NASA Industrial Plant.

Regulatory ROI. The CAA, as amended, dictates that project emission sources must comply with the air quality standards and regulations that have been established by federal, state, and county regulatory agencies. These standards and regulations focus on (1) the maximum allowable ambient pollutant concentrations resulting from project emissions, both separately and combined with other surrounding sources, and (2) the maximum allowable emissions from the project. The regulatory ROI includes the jurisdictional region of the SCAQMD, which is responsible for establishing emission limits and control measures to reach or maintain the air quality standards in the SCAB.

3.4.3.3 Regional Air Quality

Preclosure Reference. The SCAQMD currently operates air quality monitoring stations throughout the SCAB (see Figure 3-4). The monitoring stations nearest to the NASA Industrial Plant that monitor one or more of the pollutants of concern are in Los Angeles, Pico Rivera, and Lynwood.

The SCAB is in nonattainment for ozone, CO, and PM_{10}. However, only the 1-hour ozone standard, 8-hour CO, and the annual and 24-hour PM_{10} standards have been exceeded at the three monitoring stations in the vicinity of the NASA Industrial Plant from 1996 through 1998. The NAAQS for 1-hour ozone was exceeded 10 days in 1998, while the CAAQS for ozone was exceeded 31 days. State and federal 8-hour CO standards were exceeded at only one of these three monitoring stations from 1996 through 1998. State annual PM_{10} standards were exceeded in each of the years 1996 through 1998. The 24-hour PM_{10} CAAQS was exceeded 11 days in 1998. The SCAB was redesignated to NO_2 attainment on July 24, 1998, due to no violations of the NAAQS for NO_2 in 3 years. The monitoring data shown in Table 3-6 are assumed to represent preclosure air quality conditions in the vicinity of the NASA Industrial Plant.

Table 3-6. Existing Air Quality in NASA Industrial Plant Vicinity, 1998

Pollutant/Station	Averaging Time	Max Concentration (in ppm)	Number of Days Exceeded Standard	
			Federal	State
Ozone				
Pico Rivera	1-hour	0.183	10	31
Nitrogen Dioxide				
Los Angeles - N. Main St.	Annual	0.039	0	0
	1-hour	0.170	0	0
Carbon Monoxide				
Lynwood	8-hour	13.34	11	12
Sulfur Dioxide				
Los Angeles - N. Main St.	24-hour	0.006	0	0
	Annual	0.001	0	0
PM_{10}				
Los Angeles - N. Main St.	Annual (arithmetic)	38 $\mu g/m^3$	0	-
	Annual (geometric)	34 $\mu g/m^3$	-	66
	24-hour	80.0 $\mu g/m^3$	0	11

ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
PM_{10} = particulate matter equal to or less than 10 microns in diameter

Closure Baseline. It can reasonably be assumed that pollutant concentrations caused by the NASA Industrial Plant at closure would be less than those concentrations resulting from operational activities under preclosure conditions due to the reduction of sources associated with normal operational activities (i.e., all current activities would be reduced or eliminated). The closure would also reduce the number of motor vehicles operating on the property to only those associated with caretaker personnel.

3.4.3.4 Air Pollutant Emission Sources

Preclosure Reference. Preclosure (1998) emission inventories for the NASA Industrial Plant and the SCAB are presented in Table 3-7. These emissions are based on inventory calculations for on-site sources and on- and off-plant motor vehicle sources. The primary on-site emission sources include motor vehicles, boilers, generators, and other identifiable area sources.

The most recent emission inventory representative of preclosure conditions in the SCAB was compiled in 1996 (Air Resources Board, 1998). Mobile source emissions (from both on- and off-road sources) account for 55 percent of the VOCs and 87 percent of the NO_x emissions in the SCAB. On-road mobile sources alone contribute about 46 percent of the total VOC and 65 percent of the total NO_x emissions, and almost 70 percent of the total CO emissions. Of stationary sources (point and area sources), they play a major role in SO_x emissions and account for 42 percent of the SO_x emissions in the SCAB.

Table 3-7. Preclosure (1998) Emissions Inventory at the NASA Industrial Plant (tons per year)

Emission Source[a]	NO_x	CO	SO_x	PM_{10}	VOC
NASA Industrial Plant					
Total Site-Related Emissions	3.65	neg.	neg.	neg.	1.23
ROI (SCAB)[a]	401,500	2,299,500	28,105	171,550	401,500

Note: (a) Data obtained from Appendix of the Emission Inventory - 1996, State of California Air Resources Board, October 1998.

CO = carbon monoxide
neg. = negligible
NO_x = nitrogen oxides
PM_{10} = particulate matter equal to or less than 10 microns in diameter
ROI = region of influence
SCAB = South Coast Air Basin
SO_x = sulfur oxides
VOC = volatile organic compound

Closure Baseline. The site-related emissions for the NASA Industrial Plant at closure would be negligible. The reduction in site-related emissions from preclosure conditions reflects the loss of both direct and indirect sources due to reduced on-site activities, reduced heating and power requirements, and the reduction in employees associated with the site at the time of closure. Approximately two personnel would be associated with continuing caretaker activities. Heating and power requirements to maintain the buildings in caretaker status would be minimal. Prior to property disposal, the existing air permits would be transferred to the city or terminated.

3.4.4 Cultural Resources

Cultural resources are prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. For ease of discussion, cultural resources have been divided into three main categories: prehistoric and historic archaeological resources, historic buildings and structures, and traditional resources.

For this analysis, the ROI is synonymous with the Area of Potential Effect (APE), as defined by regulations implementing the National Historic Preservation Act (NHPA). The ROI for the analysis of cultural resources at the NASA Industrial Plant includes all areas within the boundary of Parcels 1 and 2, roughly bordered by Stewart and Gray Road on the north; Lakewood Boulevard and Clark Avenue on the west; perimeter fencing on the south (paralleling Imperial Highway); and perimeter fencing on the east (paralleling Bellflower Boulevard).

Numerous laws and regulations require federal agencies to consider the effects of a proposed project on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the federal agency proposing the action, and prescribe the relationship among other involved agencies (e.g., State Historic Preservation Office [SHPO] and the Advisory Council on Historic Preservation). The primary law governing the treatment of cultural resources is the NHPA, which requires a federal agency to consider potential impacts on historic properties from any proposed undertaking.

Only those potential historic properties determined to be substantial under cultural resources legislation are subject to protection or consideration by a federal agency. Substantial cultural resources, either prehistoric or historic in age, are referred to as "historic properties."

In compliance with the NHPA, NASA has initiated the Section 106 review process with the California SHPO regarding the potential disposal and reuse of the NASA Industrial Plant.

3.4.4.1 Prehistoric and Historic Archaeological Resources.

The NASA Industrial Plant is situated in Los Angeles County, in an area that has supported a cultural resources chronology that extends into the past for over 10,000 years. There are several chronological frameworks that were developed for use in Southern California (Moratto, 1984; Wallace, 1978; Warren, 1968). These frameworks were developed for coastal and desert zones and provide the following generalized chronology: Lake Mojave Period (ca. 12,000-8000 Before Present [B.P.]); Pinto Period (ca. 8000 to 5000 B.P.); Gypsum Period (ca. 5000 to 1200 B.P.); Saratoga Springs Period (1200-750 B.P.); and Protohistoric Period (750 B.P.-Historic) (Godlberg and Arnold, 1988; Macko Archaeological Consulting, 1993).

European exploration of the area began in the 1760s, and Spanish colonization began around 1784 with the establishment of ten missions, including the San Gabriel Mission and a church in Los Angeles (Quinn, 1973). By the mid-1800s, most of the mission lands had been transferred into secular ranchos with most of the Downey area included in a land grant awarded to Manuel Nieto. Upon Nieto's death, the property was divided into six ranchos, including the Santa Gertrudes rancho (Quinn, 1973). Several farms and ranches, including the Hughan Ranch, operated in the Downey area between 1880 and the 1930s. In March 1929, E.M. Smith constructed a small aviation plant and airfield on land purchased from the Hughan Ranch at the present-day location of the NASA Industrial Plant.

In August 1999, a records search was performed by the Archeological Information Center at the University of California, Los Angeles, to identify any prehistoric or historic archeological resources within Parcels 1 and 2 of the NASA Industrial Plant. Records indicate that several areas in the vicinity of the plant have been previously surveyed for archaeological resources. None of these was conducted within Parcels 1 and 2; however, two of the investigations were conducted within 1/2 mile (0.8 km) of the plant (Rosen, 1975; Mason, 1997). No prehistoric or historic archaeological resources were identified during either investigation. In addition, there are no archaeological properties listed in the National Register, no California Historical Landmarks, no California Points of Historical Interest, nor any City of Los Angeles Cultural Monuments situated within 1 mile (1.6 km) of the NASA Industrial Plant.

3.4.4.2 Historic Buildings and Structures.

The NASA Industrial Plant has been an important element of the history of Downey since 1929. The following provides a brief history of the area.

Pre-1929 Early Downey: Purchase of the Hughan Ranch. The land on which the city of Downey is situated was originally part of the Santa Gertrudes land grant awarded to Jose Manuel Perez Nieto in 1784. Upon his death in 1804, the land was bequeathed to his four children, who later divided the parcel into six ranchos: Los Alamitos, Santa Gertrudes, Los Cerritos, Los Coyotes, Los Bolsas, and Palo Alto. Rancho Santa Gertrudes was awarded to Josefa Cota Nieto and encompassed what are now the cities of Norwalk and Downey (Quinn, 1973).

The rancho was sold to Lemuel Carpenter in 1843, but due to financial constraints, it was sold at a sheriff's auction to John Gately Downey and James McFarland in 1859. By 1873, Downey City was a "community in blueprint" (Quinn, 1973). Agriculture continued to be the primary focus of the local economy through the end of the nineteenth century, when tourism began to bring countless "Easterners" to the state.

Early Aircraft Production. In 1917, the city was suddenly confronted with the reality of World War I. Many of its young men went off to the European front, with a number of them joining the fledgling aviation branch of the Army Air Corps. Upon their return, many of these wartime aviators played leading roles in the establishment of early aircraft industries, which ultimately led to the founding of air mail service, commercial airlines, and the more sophisticated combat planes of World War II. The local climate, which permitted easy year-round flying conditions, also attracted daredevil pilots, enthusiasts, and innovators to Southern California, transforming it into the hub of the new airplane industry by 1929.

Among these was E.M. Smith, who purchased a 73-acre tract of land in Downey for the construction of a small aviation plant and airfield, and organized the E.M. Smith Company (EMSCO) Aircraft Corporation to manufacture aircraft. However, due to the Great Depression, EMSCO never reached its potential, and the facility was leased to Champion Aircraft Corporation in 1932.

Champion's goal was to produce safe, two-seater planes that were affordable for the masses. Within 7 months, the plant was forced to change hands again. The facility was taken over by Curtiss Manufacturing Company, which had plans for producing trucks and buses, in addition to airplanes. Within 5 months, the plant was re-leased to Security National Aircraft Corporation.

Security National Aircraft Corporation attempted to develop a small plane market rivaling the automobile. However, the economy continued to dampen success, and the plant was then sold to Baker Oil Tools Company, which, it is believed, merely used the plant buildings for storage through 1936.

Subsequently, the Aviation Manufacturing Corporation (later, Consolidated Vultee Aircraft Corporation, then, Convair) leased the plant for manufacturing the V-11 attack bomber, Vultee Basic Trainers, B-24 "Liberators," and LARK short-range, surface-to-air missiles. By 1945, the production of military aircraft began to wane, and was replaced with research and development of long-range missile systems; this activity evolved into the Atlas Project.

Missile Research And Development. In 1950, North American Aviation purchased the Downey site, transferring it to the Air Force in 1953. It became known as AFP 16. North American remained at the plant under contract, developing the Navajo missile and experimenting with scenario sources of power, including atomic energy, and developing the chemical milling process. The Navajo Program was cancelled in 1957 and was replaced with the Hound Dog Air-to-Ground Missile Program and the development of the Little Joe Launch Vehicle. Eventually, research was begun on space-related concepts.

1961-1972: The Race for Space. Following President Kennedy's 1961 directive for placing a man on the moon before the end of the decade, NASA established two primary programs, the Saturn and the Apollo. Two major contracts for the development of the Saturn S-II and the Project Apollo Spacecraft Development Program were awarded to North American in 1961, establishing Downey as the industrial center for America's lunar mission. The following year, NASA established the Resident Apollo Spacecraft Office to assure successful manufacture and testing of the modules. In 1964, AFP 16 was transferred to NASA, and the facility was renamed NASA Industrial Plant, Downey. In 1967, North American merged with Rockwell Standard Corporation and was renamed North American Standard Corporation, and later, Rockwell International.

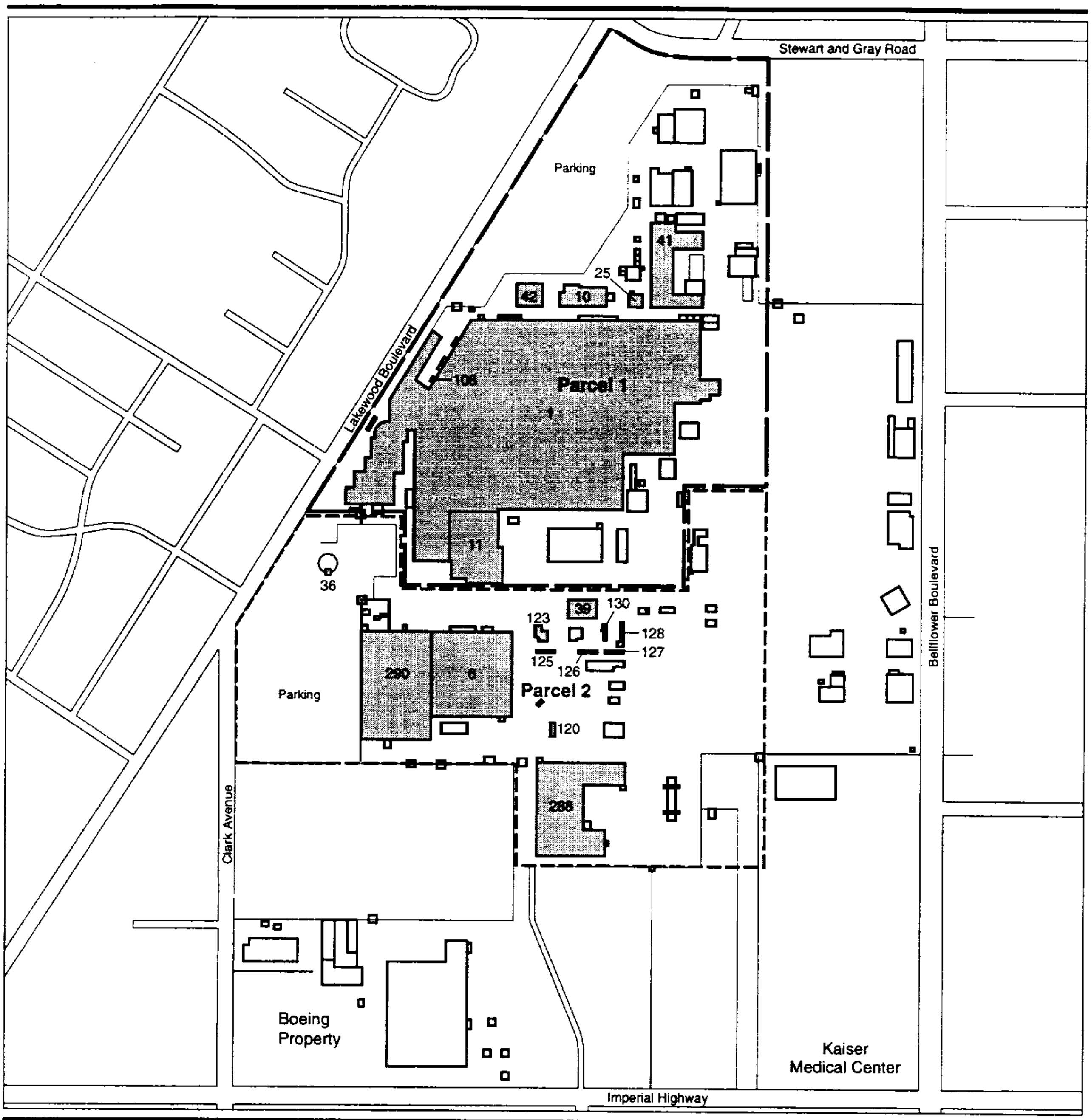
1972-1999: The Space Shuttle Orbiter Program. In 1972, NASA initiated a program to develop a national space transportation system, the central element of which would be the Space Shuttle Orbiter, and awarded one of the major contracts to Rockwell. Rockwell also developed modifications to the Apollo modules.

In 1996, Rockwell's aerospace and defense businesses were sold to Boeing. Current activities at the NASA Industrial Plant include design support for the next generation of missiles, customer-related shuttle modifications, and payload-cargo integration.

An inventory and evaluation of all 124 buildings and structures within Parcels 1 and 2 has been conducted, and a determination of eligibility has been prepared. Nineteen buildings and structures have been determined eligible for inclusion in the National Register, and the SHPO has concurred; these are Buildings 1, 6, 10, 11, 25, 36, 39, 41, 42, 108, 120, 123, 125, 126, 127, 128, 130, 288, and 290 (Figure 3-5) (see Appendix A).

3.4.4.3 Traditional Resources.

Traditional resources can include archaeological sites, burial sites, ceremonial areas, caves, mountains, water sources, plant habitat or gathering areas, or any other natural area important to a culture for religious or heritage reasons. Substantial traditional resources sites (called Traditional Cultural Properties [TCPs]) are subject to the same regulations and are afforded the same protection as other types of historic properties. To date, no TCPs have been identified within the boundary of the NASA Industrial Plant. However, to ensure that any concerns relating to the disposal and reuse of the NASA Industrial Plant are adequately considered, consultation with local Native American groups will be initiated. The SHPO and the California Native



EXPLANATION

Parcel 1

Parcel 2

Historic Building

0 140 280 560 Feet

Source: County of Los Angeles, 1997.

NASA Industrial Plant Historic Buildings

Figure 3-5

American Heritage Commission have been contacted to identify the most appropriate groups for consultation.

3.5 ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898, Environmental Justice, was issued by the President on February 11, 1994. Objectives of the EO, as it pertains to this disposal and reuse document, include development of federal agency implementation strategies and identification of low-income and minority populations potentially affected because of proposed federal actions. Accompanying EO 12898 was a Presidential Transmittal Memorandum referencing existing federal statutes and regulations to be used in conjunction with EO 12898. One of the items in this memorandum was the use of the policies and procedures of the NEPA. Specifically, the memorandum indicates that.

> Each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA 42 U.S.C. Section 43231, et seq.

Although an environmental justice analysis is not mandated by NEPA, NASA has directed that NEPA will be used as the primary mechanism to implement the provisions of the EO.

3.5.1 Demographic Analysis

Although EO 12898 provides no guidelines for determination of concentrations of low-income or minority populations, the demographic analysis provides information on the approximate locations of low-income and minority populations in the area potentially affected by the disposal action. Potential environmental impacts from the reuse scenarios would occur on and in the immediate vicinity of the NASA Industrial Plant.

Demographic information from the U.S. Bureau of the Census was used to extract data on low-income and minority populations within 1 mile of the NASA Industrial Plant. The census reports both ethnicity and household income status. Poverty status (used in this EA to define low-income status) is reported for families with median household incomes below poverty level ($16,530 for a family of four in 1998). Minority populations included in the census are identified as Hispanic; Asian or Pacific Islander; Black; or other (e.g., American Indian, Eskimo or Aleut).

The 1998 estimated median household income for families within 1 mile of the NASA Industrial Plant is $40,190; this implies that households within 1 mile of the plant are not indicative of low-income populations (U.S. Census Bureau, 1998). The 1998 census estimates for ethnic populations within 1 mile of the NASA Industrial Plant are as follows: 44 percent Hispanic, 10 percent Asian/Pacific Islander, 3 percent Black, and less than 1 percent other; the remaining 43 percent are classified as non-Hispanic white.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter describes the potential environmental consequences associated with the reuse scenarios. To provide the context in which potential environmental impacts may occur, discussions of potential changes to the local communities, including population, land use and aesthetics, transportation, and utility services are included. In addition, issues related to current and future management of hazardous materials and waste are discussed. Impacts to the physical and natural environment are evaluated for geology and soils, water resources, air quality, and cultural resources. An environmental justice analysis was conducted to examine potential disproportionately high and adverse impacts to low-income and minority populations. These impacts may occur as a direct result of disposal and reuse activities, or as an indirect result of changes within the local communities. Possible mitigation measures to minimize or eliminate any adverse environmental impacts are also presented.

Cumulative impacts result from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively substantial actions taking place over a period of time" (Council on Environmental Quality, 1978). Section 2.6 summarizes other future projects planned within the region.

Means of mitigating environmental impacts that may result from implementation of the reuse scenarios by property recipients are discussed as required by NEPA. Potential mitigation measures depend on the particular resource affected. In general, however, mitigation measures are defined in the CEQ regulations as actions that include:

- Avoiding the impact altogether by not taking an action or certain aspect of the action
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments.

Mitigation measures that are clearly required by law or standard industry practices are generally considered to be part of the reuse scenarios and are taken into account in the description of impacts projected for each resource area. Such measures include those NASA has the power to implement, those the property recipients would have the power to implement, those discretionary mitigations or choices available to other governmental bodies (e.g., zoning, permit conditions), or lease and deed restrictions available to a possible primary recipient of the property.

Since most potential environmental impacts would result directly from reuse by others, NASA typically would not be responsible for implementing such mitigations. Full responsibility for these suggested mitigations, therefore, would be borne primarily by future property recipients or local government agencies.

Reuse scenarios are defined for this analysis on the basis of (1) plans of local communities, and (2) general land use planning considerations to provide a broad range of reuse options. Reuse scenarios considered in this EA must be sufficiently detailed to permit environmental analysis. Initial concepts and plans are taken as starting points for scenarios to be analyzed. Available information on any reuse scenario is then supplemented with economic, demographic, transportation, and other planning data to provide a reuse scenario for analysis.

These reuse scenarios are conceptual in nature and were developed to cover a range of reasonable reuse possibilities for the property. NASA would have limited, if any, authority over redevelopment of the property after disposal occurs.

4.2 LOCAL COMMUNITY

This section provides a discussion of potential socioeconomic effects of the disposal and reuse of the NASA Industrial Plant in Downey, California.

4.2.1 Community Setting

Socioeconomic effects are addressed only to the extent that they are interrelated with the biophysical environment. Thus, discussion includes key direct employment effects of the reuse scenarios. Secondary effects are difficult to precisely predict, and due to the nature of the conceptual reuse scenarios, relatively minor effects are anticipated; therefore, they have been excluded from the analysis.

This analysis recognizes the potential for community impacts arising from "announcement effects" stemming from information regarding the plant's disposal or reuse. Such announcements may affect community perceptions and, in turn, could have important local economic effects. Changes associated with announcement effects, while potentially important, are highly unpredictable and difficult to quantify and otherwise speculative. Therefore, such effects are excluded from the quantitative analysis in the study and are not included in numeric data present in this report.

Reuse activities at the site under both Commercial/Industrial Scenarios would increase employment by up to 870 direct jobs at full buildout. Under the Parks and Recreation Scenario, direct employment would increase by up to 70 jobs.

Two employees would remain on site under the No-Action Scenario to conduct caretaker activities.

Under closure conditions, it is projected that the total employment in the ROI would increase by approximately 1.6 percent each year. Under all scenarios, there would be no in- or outmigration. It is assumed that the ROI would have a large enough employment base to accommodate the proposed changes in employment at the site. With no in- or outmigration, there would be no population effects. Therefore, the ROI employment and population projections are not expected to change substantially as a result of disposal and reuse.

4.2.2 Land Use and Aesthetics

This section provides a discussion of the reuse scenarios relative to land use, planning, and zoning to determine potential impacts in terms of land use and aesthetics.

4.2.2.1 Commercial/Industrial Scenario 1.

The Commercial/Industrial Scenario I would be consistent with the city of Downey's general plan and zoning designations for retail and industrial development. The city of Downey would ensure that reuse of the plant is consistent with building standards such as densities, open space requirements, and building height.

Site-specific planning would incorporate appropriate design and landscaping techniques to avoid incompatibilities; therefore, proposed land uses would be compatible with surrounding existing and planned development.

Increased landscaping within the plant area and new landscaped parking lots within the retail, museum, and industrial business areas would improve the visual sensitivity of the plant property.

Mitigation Measures. No substantial impacts to land use or aesthetics are anticipated; therefore, no mitigation measures would be required.

4.2.2.2 Commercial/Industrial Scenario 2.

The Commercial/Industrial Scenario 2 would be consistent with the city of Downey general plan and zoning designations for industrial development. The city of Downey would ensure that new development is consistent with building standards such as densities, open space requirements, and building height.

Site-specific planning would incorporate appropriate design and landscaping techniques to avoid incompatibilities; therefore, proposed land uses and development would be compatible with surrounding existing and planned development.

Reuse of the plant property under this reuse scenario would result in building configurations similar to those that presently exist. However, increased landscaping within the plant area and new landscaped parking lots would improve the visual sensitivity of the plant property.

Mitigation Measures. No substantial impacts to land use or aesthetics are anticipated, and no mitigation measures would be required.

4.2.2.3 Parks and Recreation Scenario.

The Parks and Recreation Scenario would require some modifications to the city of Downey general plan and zoning regulations to redesignate portions of the plant from industrial to parks and recreation. The city of Downey would ensure that new development is consistent with building standards such as densities, open space requirements, and building height.

Site-specific planning would incorporate appropriate design and landscaping techniques to avoid incompatibilities; therefore, proposed land uses and development would be compatible with surrounding existing and planned development.

Reuse of the plant property under this reuse scenario would result in increased open space and landscaping within the plant area, which would improve the visual sensitivity of the property.

Mitigation Measures. No substantial impacts to land use or aesthetics are anticipated, and no mitigation measures would be required.

4.2.2.4 No-Action Scenario.

Under the No-Action Scenario, existing perimeter fencing would separate the vacated property from surrounding existing and planned development. Visual sensitivity of the plant property would decrease slightly as the small areas of landscaped open space would be maintained at minimal levels. In addition, abandoned facilities would have a higher likelihood for vandalism. No substantial impacts are expected.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.2.3 Transportation

The effects of the reuse scenarios on the roads within the ROI are presented in this section. Reuse-related effects on roadway traffic were assessed by estimating the number of trips generated by each land use type considering employees and service vehicles associated with on-site activities for each reuse scenario. Daily trips were distributed on the roadway network using existing travel patterns for commuters. Traffic impacts were determined based on the LOS changes for each of the key roadways. Analyses were conducted for each reuse scenario and the No-Action Scenario.

4.2.3.1 Commercial/Industrial Scenario 1.

The major traffic generators would be the employees, visitors, customers, and related service activities associated with the retail center, museum, and industrial business center. Traffic generated on the project site and distributed on the roads within the ROI as a result of the reuse is estimated to be 1,650 vehicles during the afternoon peak hour. Table 4-1 presents the projected PHV and resulting LOS for the Commercial/Industrial Scenario 1 for 1999 (closure) and at full build-out on key road segments.

Table 4-1. Peak-Hour Traffic Volumes and LOS on Key Roads - Commercial/Industrial Scenarios 1 and 2

Roadway	Segment	Capacity	1999 (PHV)	LOS	Full build-out (PHV)	LOS
Lakewood Boulevard	North of Stewart and Gray Road	6,000	2,750	B	3,000	B
Lakewood Boulevard	Stewart and Gray Road and north access point (Building 1)	6,000	2,950	B	3,600	C
Lakewood Boulevard	North and south access point	6,000	3,000	B	3,700	C
Lakewood Boulevard	South access point and Imperial Highway	6,000	3,100	C	3,800	C
Lakewood Boulevard	South of Imperial Highway	6,000	2,800	B	3,300	C
Imperial Highway	West of Lakewood Boulevard	6,000	2,900	B	3,050	B
Imperial Highway	Lakewood Boulevard and Clark Avenue	6,000	3,100	C	3,400	C
Imperial Highway	Clark Avenue and Ardis Avenue	6,000	3,600	C	3,900	C
Imperial Highway	Ardis Avenue and Bellflower Boulevard	6,000	3,700	C	4,000	C
Imperial Highway	East of Bellflower Boulevard	6,000	2,600	B	2,700	B
Bellflower Boulevard	South of Imperial Highway	4,000	2,200	C	2,300	C
Bellflower Boulevard	Imperial Highway and Stewart and Gray Road	4,000	1,100	B	1,200	B
Bellflower Boulevard	Stewart and Gray Road and Lakewood Boulevard	4,000	800	A	800	A
Stewart and Gray Road	East of Bellflower Boulevard	4,000	1,450	B	1,750	B
Stewart and Gray Road	Bellflower Boulevard and Lakewood Boulevard	4,000	1,900	B	2,100	B
Stewart and Gray Road	West of Lakewood Boulevard	4,000	1,700	B	1,900	B

LOS = level of service
PHV = peak-hour volume

Under the Commercial/Industrial Scenario 1, the LOS on two segments on Lakewood Boulevard would be reduced from LOS B to LOS C. All other road segments are expected to operate at the same LOS as experienced at closure. No substantial impacts are expected.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.2.3.2 *Commercial/Industrial Scenario 2.*

Potential traffic impacts would be the same as those discussed under the Commercial/Industrial Scenario 1 and shown in Table 4-1.

4.2.3.3 *Parks and Recreation Scenario.*

The major traffic generators would be the employees, visitors, and related service activity associated with the public park, museum, and elementary school. Traffic generated on the project site and distributed on the roads within the ROI as a result of the Parks and Recreation Scenario is estimated to be 300 vehicles during the afternoon peak hour. Table 4-2 presents the projected PHV and resulting LOS for the Parks and Recreation Scenario for 1999 (closure) and at full build-out on key road segments.

Table 4-2. Peak-Hour Traffic Volumes and LOS on Key Roads - Parks and Recreation Scenario

Roadway	Segment	Capacity	1999 (PHV)	LOS	Full build-out (PHV)	LOS
Lakewood Boulevard	North of Stewart and Gray Road	6,000	2,750	B	2,750	B
Lakewood Boulevard	Stewart and Gray Road and north access point (Building 1)	6,000	2,950	B	3,050	B
Lakewood Boulevard	North and south access point	6,000	3,000	B	3,100	B
Lakewood Boulevard	South access point and Imperial Highway	6,000	3,100	C	3,200	C
Lakewood Boulevard	South of Imperial Highway	6,000	2,800	B	2,900	B
Imperial Highway	West of Lakewood Boulevard	6,000	2,900	B	3,000	B
Imperial Highway	Lakewood Boulevard and Clark Avenue	6,000	3,100	C	3,200	C
Imperial Highway	Clark Avenue and Ardis Avenue	6,000	3,600	C	3,700	C
Imperial Highway	Ardis Avenue and Bellflower Boulevard	6,000	3,700	C	3,800	C
Imperial Highway	East of Bellflower Boulevard	6,000	2,600	B	2,650	B
Bellflower Boulevard	South of Imperial Highway	4,000	2,200	C	2,250	C
Bellflower Boulevard	Imperial Highway and Stewart and Gray Road	4,000	1,100	B	1,100	B
Bellflower Boulevard	Stewart and Gray Road and Lakewood Boulevard	4,000	800	A	800	A
Stewart and Gray Road	East of Bellflower Boulevard	4,000	1,450	B	1,500	B
Stewart and Gray Road	Bellflower Boulevard and Lakewood Boulevard	4,000	1,900	B	1,950	B
Stewart and Gray Road	West of Lakewood Boulevard	4,000	1,700	B	1,750	B

LOS = level of service
PHV = peak-hour volume

Under the Parks and Recreation Scenario, all road segments are expected to operate at the same LOS as experienced at closure. No substantial impacts are expected.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.2.3.4 No-Action Scenario.

Traffic associated with the No-Action Scenario would include only that generated as a result of caretaker activities at the NASA Industrial Plant. In the absence of any reuse of the plant under this scenario, plant roads would no longer be used except by caretaker personnel, and there would not be any contribution to the PHV on the surrounding road network. No substantial impacts are expected.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.2.4 Utilities

Direct changes in future regional utility demand for the reuse scenarios were estimated by applying estimated utility consumption rates based on land use projections for the types of land use expected to be included with each reuse scenario. Since there is no inmigration projected with any of the scenarios, the sole impact on the utility systems from reuse would be from on-site activities.

4.2.4.1 Commercial/Industrial Scenario 1.

The activities anticipated under this reuse scenario are within the city of Downey's general plan policy implementation, and therefore would not create utility demands greater than those expected from implementation of the general plan.

Water consumption for this reuse scenario is expected to be approximately 87,000 gpd (329,330 lpd), which is approximately 75 percent of the water consumption experienced at the plant in 1998. Therefore, no substantial impacts to the water supply system are anticipated.

Wastewater will contribute approximately 34,800 gpd (131,730 lpd) to the ROI, which is approximately 31 percent more than the daily discharge by the plant in 1998. However, the contribution of this reuse scenario will be less than 1 percent of the regional wastewater treatment and would not cause a substantial impact to the wastewater treatment system.

Solid waste generation is estimated at 4.5 tons per day, which is approximately 2 tons per day more than that generated by the plant in 1998. This reuse scenario is expected to recycle approximately 80 percent of the solid waste generated, which will result in approximately 1 ton per day being disposed of at the Puente Hills Landfill.

Building demolition would create approximately 202,133 tons of solid waste (Table 4-3). Over 88 percent of the material is concrete or asphalt, which would be stockpiled and recycled for use as construction materials. The remaining

Table 4-3. **Estimated Demolition Materials from Building Disposal (tons)**

Material	Commercial/ Industrial Scenario 1	Commercial/ Industrial Scenario 2	Parks and Recreation Scenario	No-Action Scenario
Steel	6,282	810	6,282	0
Sheet Metal	3,891	900	3,891	0
Wood	2,640	210	2,640	0
Asphalt	74,991	74,991	74,991	0
Concrete	104,459	7,832	104,459	0
Brick	2,076	0	2,076	0
Miscellaneous	7,794	885	7,794	0
Total	202,133	85,628	202,133	0

22,683 tons of solid waste would consist of drywall, wood, roofing materials, sheet metal, structural steel, and glass. It is expected that over 50 percent of the bulk materials would be recycled. The wood materials would be chipped and reused as a fuel or mulch. Sheet metal, structural steel, and glass would be sold as scrap. Miscellaneous building materials such as electric wire, outlet boxes, metallic tubing, light fixtures, pipe, plumbing fixtures, and heating systems would be salvaged and reused or sold as scrap. Even though an aggressive recycling program would be used, it would be impractical to accomplish complete source separation, and approximately 50 percent, or 11,000 tons, of the building materials would require disposal in the Puente Hills Landfill. Building material disposal would occur over a 2-year period at a rate of approximately 15 tons per day. This amount of disposal is less than 1 percent of the total daily disposal at the Puente Hills Landfill. The overall impact to the landfill is minimal; therefore, no substantial impacts are expected.

The Commercial/Industrial Scenario 1 is expected to use approximately 77,000 kWH of electricity and 220,000 cubic feet of natural gas each day. These consumption rates are comparable to the consumption of energy for the NASA Industrial Plant in 1998; therefore, no substantial impacts are expected.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.2.4.2 Commercial/Industrial Scenario 2.

The activity levels anticipated under the Commercial/Industrial Scenario 2 are similar to those expected from the Commercial/Industrial Scenario 1. The consumption rate for each utility is within the city of Downey's general plan policy implementation. Utility consumption for the Commercial/Industrial Scenario 2 would not create utility demands greater than those expected from implementation of the general plan. Water consumption for this reuse scenario is expected to be the same as for the Commercial/Industrial Scenario 1. Wastewater and solid waste disposal would also be the same as that of the Commercial/Industrial Scenario 1, except for the amount of solid waste generated from building demolition. Building demolition under the Commercial/Industrial Scenario 2 would create approximately 85,628 tons of building debris (see Table

4-3). Over 95 percent of the material is concrete or asphalt, which would be stockpiled and recycled for use as construction materials. The remaining 2,805 tons of solid waste would consist of drywall, wood, roofing materials, sheet metal, structural steel, and glass. It is expected that over 50 percent of the bulk materials would be recycled.

Because the reconfiguration of existing buildings under this scenario would result in larger gross square footage of facility space, electrical and natural gas consumption is expected to be slightly greater than for the Commercial/Industrial Scenario 1. However, no substantial impacts are expected for the on-site utility systems or for the ability of the local utility providers to supply utility services.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.2.4.3 Parks and Recreation Scenario.

The activity levels anticipated under the Parks and Recreation Scenario are less than those expected from the Commercial/Industrial Scenarios. The utility use under the Parks and Recreation Scenario would not create utility demands greater than those expected from implementation of the city of Downey's general plan. The disposal of building demolition materials would be the same as discussed under the Commercial/Industrial Scenario 1. No substantial impacts are anticipated.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.2.4.4 No-Action Scenario.

Under the No-Action Scenario, utility use would be minimal in comparison to other reuse scenarios. The disuse of the on-site utility systems could result in their degradation over the long term. However, no substantial impacts are expected for the on-site utility systems or for the ability of the local utility providers to supply utility services.

Mitigation Measures. Because no substantial impacts have been identified, no mitigation measures would be required.

4.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

The potential impacts of existing contaminated sites on the various reuse options and the potential for environmental impacts caused by hazardous materials and hazardous waste management practices associated with the reuse scenarios are addressed in this section. Hazardous materials and hazardous waste, known contamination sites, asbestos, and lead-based paint are discussed within this section.

NASA is committed to the remediation of contamination at the NASA Industrial Plant from past activities. NASA would continue to coordinate any remediation activities after closure. Delays or restrictions in disposal and reuse of property may occur due to continued remedial actions occurring after property disposal.

Regulatory standards and guidelines have been applied in determining the impacts caused by hazardous materials/waste. The following criteria were used to identify potential impacts:

- Accidental release of friable asbestos or lead-based paint during demolition or modification of a structure
- Generation of 100 kg (or more) of hazardous waste or 1 kg (or more) of an acutely hazardous waste (California Health and Safety Code Chapter 6.95, Section 25532) in a calendar month, resulting in increased regulatory requirements
- Any spill or release of a reportable quantity of a hazardous material
- Exposure of the environment or public to any hazardous material through release or disposal practices.

4.3.1 Commercial/Industrial Scenario 1

4.3.1.1 Hazardous Materials Management.

Hazardous materials would be utilized during construction and demolition activities. The construction contractor would be responsible for following applicable regulations for the management of hazardous materials.

The hazardous materials likely to be utilized for retail and light manufacturing and assembly activities under this reuse scenario include adhesives, aerosols, batteries, corrosives, degreasers, hydraulic fluids, motor fuels, paints, POL, sealants, solvents, and thinners. The types and quantities of hazardous materials used would be less than those used by NASA prior to closure. The quantity of hazardous materials utilized under this reuse scenario would increase over the baseline conditions at closure due to redevelopment for retail and industrial/business park uses. The specific chemical compositions and exact use rates are not known.

If the Commercial/Industrial Scenario 1 were implemented, the property recipient would be responsible for the management of hazardous materials according to applicable regulations and would have to comply with the EPCRA, which requires that local communities be informed of the use of hazardous materials. Management of hazardous materials would be in accordance with applicable regulations, and no substantial impacts would result.

4.3.1.2 Hazardous Waste Management.

During construction and demolition activities, hazardous waste would be generated. The construction contractor would be responsible for following applicable regulations for the management of hazardous waste and for proper off-site disposal (including demolition debris).

Hazardous waste under this reuse scenario would be generated from the hazardous materials and the processes that utilize these materials. Generated waste would include batteries, paints, POL, solvents, and thinners.

Activities associated with the Commercial/Industrial Scenario 1 would lead to an increase in the amount of hazardous waste generated compared to the closure baseline. This increase would occur largely because of light manufacturing and assembly activities. However, hazardous waste would not create any substantial impacts if managed in accordance with applicable regulations. In addition, the property recipient would be required to obtain the appropriate permits for generation, storage, and disposal of hazardous waste.

Once the responsibilities of hazardous waste management are allocated to the new property owner/operator, proficiency with handling and spill responses for those substances is required by OSHA regulations (Title 29 CFR). Management of hazardous waste would be in accordance with applicable regulations, and no substantial impacts would result.

4.3.1.3 Known Contamination Sites.

Coordination and management of remediation activities at the NASA Industrial Plant will continue. The type of development that is appropriate for property adjacent to or over a contaminated site may be limited because of the risk posed by contaminants at the site to human health and the environment. The risk posed by contaminated sites is measured by a risk assessment associated with the types of contaminants present at a site and the potential means by which the public and the environment may be exposed to them.

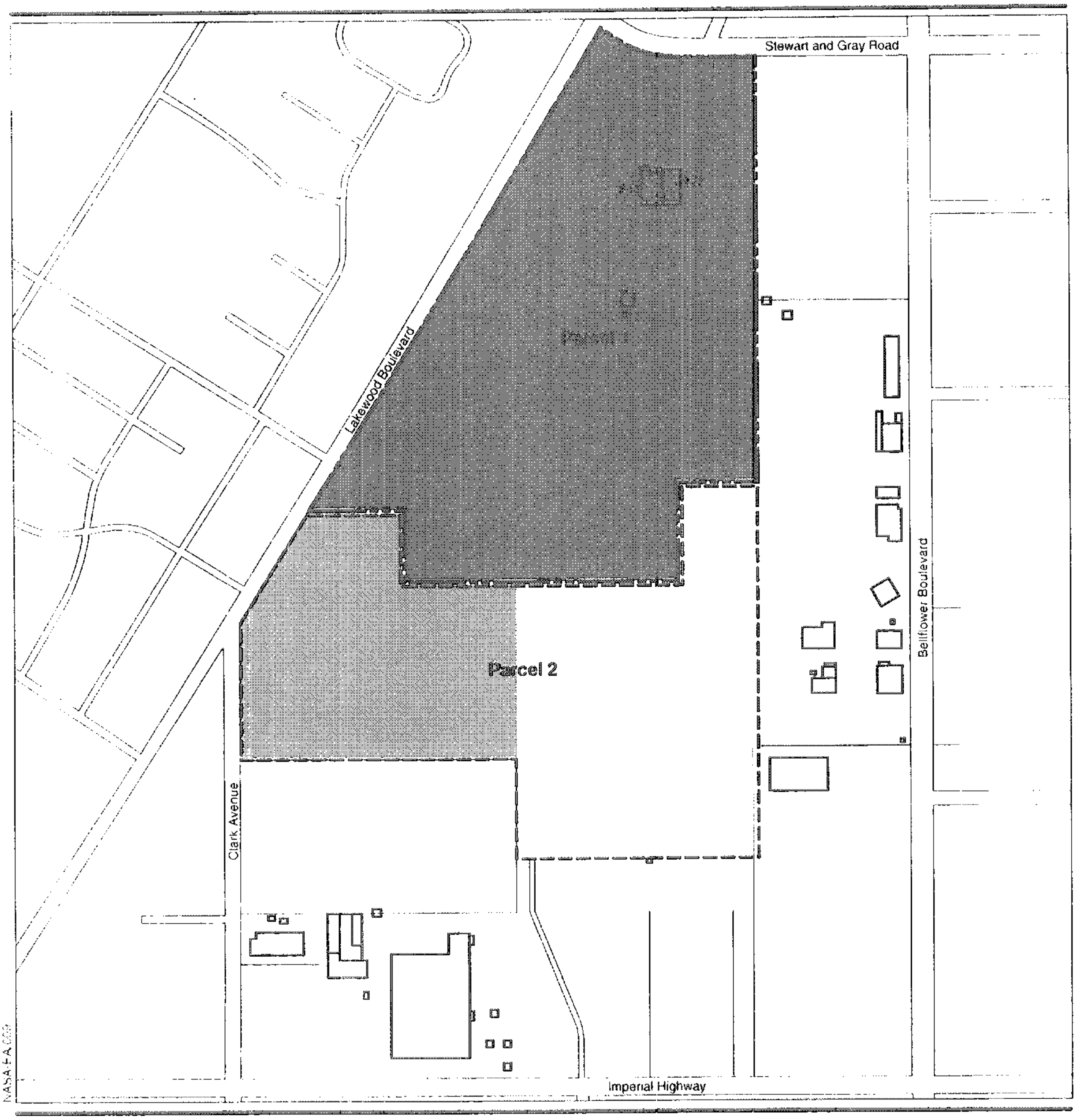
Reuse of some property may be restricted by the extent and type of contamination and by current and future remediation activities (Figure 4-1). Based on the results of remedial investigations, NASA may, where appropriate, place limits on land reuse through deed restrictions on conveyances or use restrictions on leases. NASA may also retain right of access to inspect monitoring wells or conduct other remedial activities.

4.3.1.4 Asbestos.

Demolition of existing structures with ACM would occur with redevelopment. Such activities would be subject to applicable federal, state, and local regulations to minimize the potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of implementation of the Commercial/Industrial Scenario 1. Property recipients would be advised, to the extent known, of the type, condition, and amount of ACM within any real property conveyed.

4.3.1.5 Lead-Based Paint.

The Commercial/Industrial Scenario 1 would involve demolition of existing structures that may contain lead-based paint. Notification would be provided to



EXPLANATION

Commercial
Industrial
Institutional
Known Contamination Site
Parcel 1
Parcel 2

0 140 280 560 Feet

Known Contamination Sites - Commercial/ Industrial Scenario 1

Figure 4-1

property recipients of the possible presence of lead-based paint in facilities constructed prior to or during 1978. Demolition activities would be subject to applicable federal, state, and local regulations to minimize potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of implementation of the Proposed Action.

4.3.1.6 Mitigation Measures.

Because the property recipient would be required to comply with applicable federal, state, and local regulations regarding use, storage, and handling of hazardous substances and demolition of structures potentially containing ACM and/or lead-based paint, these activities would not result in substantial environmental impacts, and no mitigation measures would be required. The cleanup of contaminated sites is an ongoing process that will continue regardless of property reuse.

4.3.2 Commercial/Industrial Scenario 2

4.3.2.1 Hazardous Materials Management.

Management of hazardous materials would be the same as discussed for the Commercial/Industrial Scenario 1. No substantial impacts are expected.

4.3.2.2 Hazardous Waste Management.

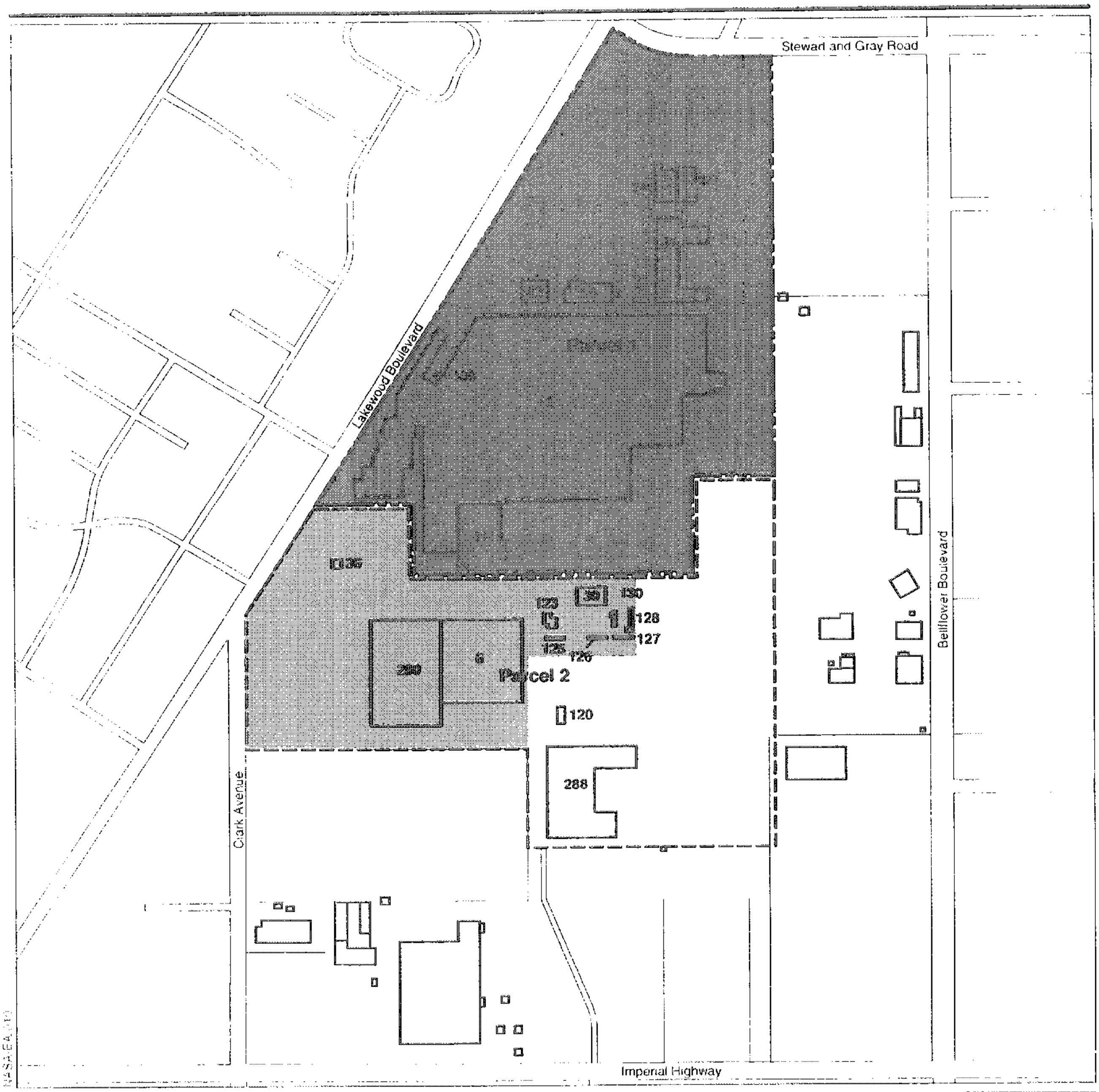
Management of hazardous waste would be the same as discussed for the Commercial/Industrial Scenario 1. No substantial impacts are expected.

4.3.2.3 Known Contamination Sites.

Coordination and management of remediation activities at the NASA Industrial Plant will continue. The known contaminated sites within the Commercial/ Industrial Scenario 2 are shown on Figure 4-2. Potential impacts as a result of the remediation activities under this reuse scenario would be similar to those described under the Commercial/Industrial Scenario 1.

4.3.2.4 Asbestos.

Demolition and/or renovation of existing structures with ACM would occur with redevelopment. The square footage of facilities identified for demolition under the Commercial/Industrial Scenario 2 is considerably less than under the other Commercial/Industrial Scenario. Therefore, the amount of ACM removal and disposal would be less than for similar activities under Commercial/Industrial Scenario 1. Demolition and construction activities would be subject to applicable federal, state, and local regulations to minimize the potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of these activities. Property recipients would be advised, to the extent known, of the type, condition, and amount of ACM within any real property conveyed.



EXPLANATION

Commercial

Industrial

Institutional

39 Retained Building

Known Contamination Site

Parcel 1

Parcel 2

0 140 280 560 Feet

Known Contamination Sites - Commercial/ Industrial Scenario 2

Figure 4-2

4.3.2.5 Lead-Based Paint.

Demolition and/or renovation of existing structures potentially containing lead-based paint would occur with redevelopment. Notification would be provided to property recipients of the possible presence of lead-based paint in facilities constructed prior to 1978. The square footage of facilities identified for demolition under the Commercial/Industrial Scenario 2 is considerably less than under the other Commercial/Industrial Scenario. Therefore, the amount of lead-based paint removal and disposal would be less than for similar activities under the Commercial/Industrial Scenario 1. Demolition and construction activities would be subject to all applicable federal, state, and local regulations to minimize the potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of these activities.

4.3.2.6 Mitigation Measures.

Because the property recipient would be required to comply with applicable federal, state, and local regulations regarding use, storage, and handling of hazardous substances, and demolition/renovation of structures potentially containing ACM and/or lead-based paint, these activities would not result in substantial environmental impacts, and no mitigation measures would be required. The cleanup of contaminated sites is an ongoing process that will continue regardless of property reuse.

4.3.3 Parks and Recreation Scenario

4.3.3.1 Hazardous Materials Management.

The hazardous materials likely to be utilized for recreational activities under the Parks and Recreation Scenario include fertilizers, pesticides, and motor fuels. The quantities of hazardous materials used would be less than those used by NASA prior to closure. The quantity of hazardous materials utilized under the Parks and Recreation Scenario would increase over the baseline conditions at closure due to redevelopment for recreational uses. The specific chemical compositions and exact use rates are not known.

The property recipient would be responsible for the management of hazardous materials according to applicable regulations and would have to comply with the EPCRA, which requires that local communities be informed of the use of hazardous materials. Management of hazardous materials would be in accordance with applicable regulations, and no substantial impacts would result.

4.3.3.2 Hazardous Waste Management.

During construction and demolition activities, hazardous waste would be generated. The construction contractor would be responsible for following applicable regulations for the management of hazardous waste and for proper off-site disposal (including demolition debris).

Hazardous waste generated under the Parks and Recreation Scenario would be minimal because the hazardous materials would be used in process (e.g., application of fertilizer does not result in waste generation). Generated waste would include used fertilizer and pesticide containers.

Activities associated with the Parks and Recreation Scenario would lead to a slight increase in the amount of hazardous waste generated compared to the closure baseline. This increase would occur largely because of grounds maintenance activities for recreational facilities. However, hazardous waste would not create any substantial impacts if managed in accordance with applicable regulations.

4.3.3.3 Known Contamination Sites.

Coordination and management of remediation activities at the NASA Industrial Plant will continue. The known contaminated sites within the Parks and Recreation Scenario are shown on Figure 4-3. Potential impacts as a result of the remediation activities under this scenario would be similar to those described under the Commercial/Industrial Scenario 1.

4.3.3.4 Asbestos.

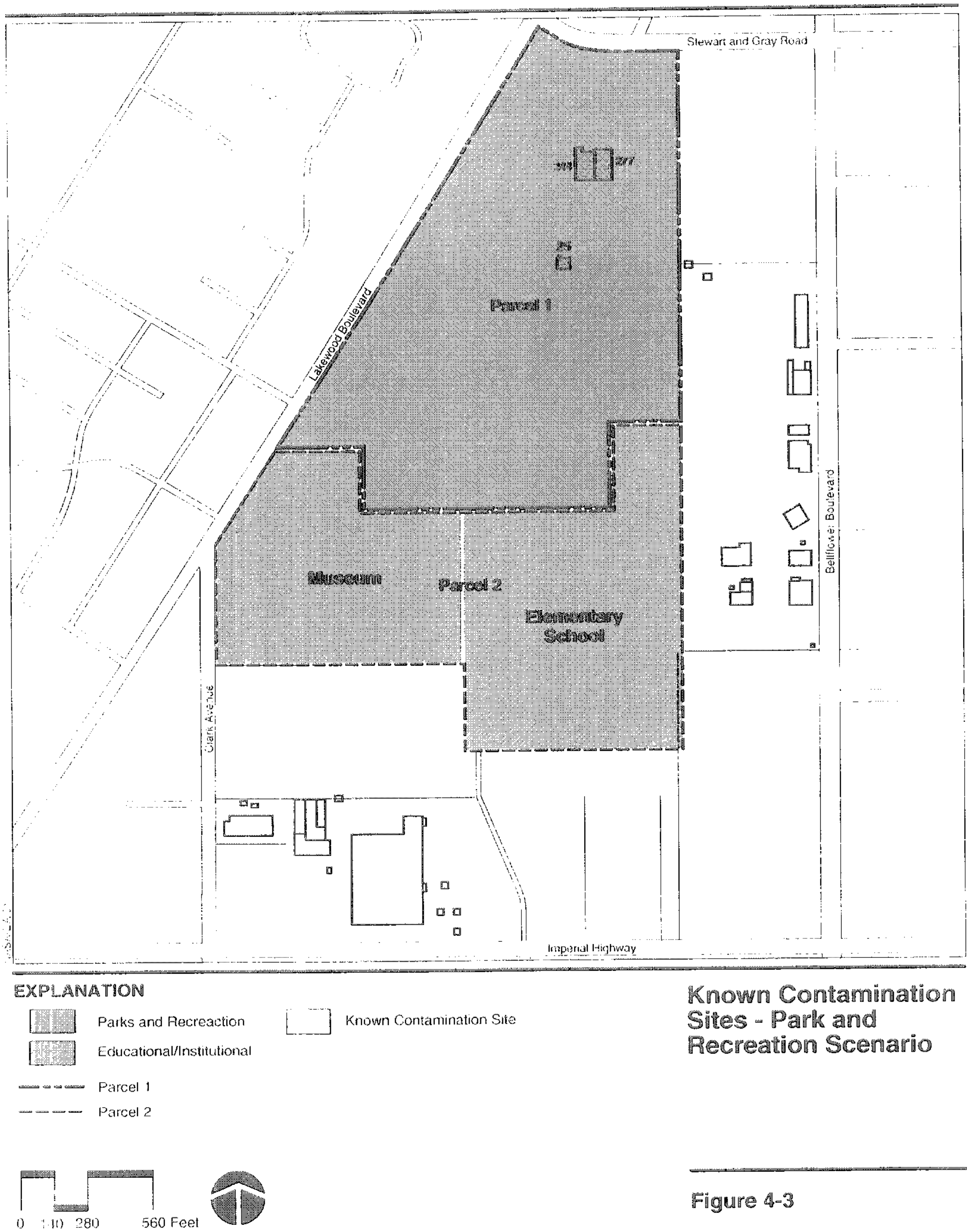
Demolition of existing structures with ACM would occur with redevelopment. Such activities would be subject to applicable federal, state, and local regulations to minimize the potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of implementation of the Parks and Recreation Scenario. Property recipients would be advised, to the extent known, of the type, condition, and amount of ACM within any real property conveyed.

4.3.3.5 Lead-Based Paint.

The Parks and Recreation Scenario would involve the demolition of existing structures that may contain lead-based paint. Notification would be provided to property recipients of the possible presence of lead-based paint in facilities constructed prior to or during 1978. Demolition activities would be subject to applicable federal, state, and local regulations to minimize potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of implementation of the Parks and Recreation Scenario.

4.3.3.6 Mitigation Measures.

Because the property recipient would be required to comply with applicable federal, state, and local regulations regarding use, storage, and handling of hazardous substances, and demolition of structures potentially containing ACM and/or lead-based paint, these activities would not result in substantial environmental impacts, and no mitigation measures would be required. The cleanup of contaminated sites is an ongoing process that will continue regardless of property reuse.



Known Contamination Sites - Park and Recreation Scenario

Figure 4-3

4.3.4 No-Action Scenario

Facility and grounds maintenance (e.g., painting, pest control) would be the primary activities that would involve hazardous materials. Under the No-Action Scenario, the caretaker would manage all hazardous materials and hazardous waste in accordance with applicable regulations.

4.3.4.1 Hazardous Materials Management.

Hazardous materials would be used in preventive and regular maintenance activities and grounds maintenance. The materials used for these activities would include motor fuels, POL, pesticides, paints, and thinners. The caretaker would be responsible for hazardous materials handling training, as well as hazardous materials communication requirements of the EPCRA and OSHA regulations. Quantities of hazardous materials stored and utilized at the site would be similar to those used at closure. No substantial impacts are expected.

4.3.4.2 Hazardous Waste Management.

With the exception of facilities used by caretaker personnel, all accumulation points and satellite accumulation points would be closed. The amount of hazardous waste generated would be similar to the amount generated at closure. The small amount of hazardous waste that would be generated under the No-Action Scenario may enable the caretaker to become an exempt, small-quantity generator. The caretaker would be required to comply with applicable RCRA and state hazardous waste regulations. No substantial impacts are expected.

4.3.4.3 Known Contamination Sites.

Ongoing investigations and remedial activities would be continued by NASA and its remediation contractors. The caretaker would support the utility requirements for these contractors and provide security for the contaminated areas.

4.3.4.4 Asbestos.

Potential impacts from ACM under the No-Action Scenario would be minimal. Vacated buildings would be secured to prevent contact with ACM. Management of ACM in occupied facilities would be accomplished to protect human health. Such activities would be subject to applicable federal, state, and local regulations to minimize the potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of these activities.

4.3.4.5 Lead-Based Paint.

Potential impacts from lead-based paint under the No-Action Scenario would be minimal. Vacated facilities would be secured to prevent entry. Occupied facilities would be maintained to prevent exposure to lead-based paint. Such activities would be subject to applicable federal, state, and local regulations to minimize the potential risks to human health and the environment. Consequently, no substantial impacts would occur as a result of these activities.

4.3.4.6 Mitigation Measures.

Under the No-Action Scenario, the caretaker would be responsible for the management of hazardous materials and hazardous waste. Caretaker personnel would be responsible for complying with federal, state, and local regulations regarding use, storage, and handling of hazardous substances and the maintenance of structures with ACM and lead-based paint. Contingency plans developed to address spill response would be less extensive than those required for any of the reuse scenarios. Implementation of such procedures could effectively mitigate any potential impacts associated with the No-Action Scenario.

4.4 NATURAL ENVIRONMENT

This section describes the potential environmental effects of the reuse scenarios on the natural resources of geology and soils, water resources, air quality, and cultural resources on the NASA Industrial Plant and in the surrounding region.

4.4.1 Geology and Soils

The potential environmental effects of the reuse scenarios on the local geology and soils have been analyzed based on review of published literature. Geology and soils would be affected primarily during ground-disturbing activities, where local soil profiles could be altered. Most of the soil impacts would be short term. Disturbed soils would remain relatively stable in the long term because they would be overlain by facilities or pavement, or managed in accordance with the Natural Resources Conservation Service recommendations to minimize erosion. Soil contamination from hazardous materials/waste is discussed in Section 4.3, Hazardous Materials and Hazardous Waste Management.

4.4.1.1 Commercial/Industrial Scenario 1.

Effects of the Commercial/Industrial Scenario 1 on the regional geology and soils would be minimal and would result primarily from ground disturbance associated with facility construction, demolition, and infrastructure improvement. These activities could alter the soil profiles and local topography.

Use of sand and gravel resources (i.e., for construction material and concrete) for new facilities and roadways would not be expected to substantially reduce the availability of these materials from local supplies. Sand and gravel deposits of economic interest are not known or expected to be present at the NASA Industrial Plant. The Commercial/Industrial Scenario 1 is not expected to cause any impacts to potential mineral resources and would not cause any irreversible or irretrievable loss of resources.

Under the Commercial/Industrial Scenario 1, 94 acres (38 hectares) of land would be disturbed. Ground-disturbing activities would increase the potential for soil erosion. Various measures are available to minimize erosion problems associated with wind and water, especially during ground-disturbing activities. The following measures may be useful in limiting erosion:

- Addition of protective covering, such as mulch, straw, plastic, netting over the mulch or straw, or combinations of the above

- Use of sandbags as diverting techniques or silt fences and sediment basins to reduce wind/water erosion of slopes, partially graded streets, and graded building pads

- Revegetation of slopes and open areas as soon as practical with seeded wood-base mulch

- Limiting the amount of area disturbed and the length of time slopes and barren ground are exposed

- Retaining as much tree cover adjacent to exposed ground as possible for use as natural wind breaks.

Effects from soil disturbance and erosion are considered to be short term because exposed areas would be covered by pavement or landscaping, thus reducing the erosion potential. After the construction phase, the most effective long-term erosion control could be accomplished by keeping soils under vegetative cover and planting wind breaks. After construction, soils underlying facilities and pavements would not be subject to erosion. Soil erosion measures would be implemented by the property recipients or their development contractor. The effectiveness and cost of the above measures would depend on the wind, soil type, slope, and type of material used to reduce erosion. The above measures for reducing soil erosion are all considered effective depending on the site characteristics. Effective measures for reducing soil erosion on level areas could include limiting the amount of area disturbed and length of time the barren area is exposed.

The project site would be subject to seismic hazards such as ground shaking, subsidence, and liquefaction. Any new facility construction would have to comply with Uniform Building Code design standards to reduce the potential for property damage, thereby minimizing the potential impacts of seismic hazards. Property recipients would be notified that the property is within a special flood hazard zone that is in the process of being restored to a 100-year or greater level of flood protection.

As discussed in Section 4.3, Known Contamination Sites, ongoing studies and restorations of contaminated soil would continue as required. Because the specific decisions within the Commercial/Industrial Scenario 1 would be designed to prevent interference with these activities, no impacts to remediation of soil contamination would be expected.

Mitigation Measures. Compliance with local requirements and standard construction practices would preclude the need for mitigation measures for potential soil erosion during construction activities. Compliance with the Uniform Building Code design standards would minimize potential effects from seismic activity.

4.4.1.2 Commercial/Industrial Scenario 2.

Effects of the Commercial/Industrial Scenario 2 on the regional geology and soils would be similar to those discussed under the other Commercial/Industrial Scenario, except less land would be disturbed (40 acres [16 hectares]) and some existing structures would be retained for reuse.

The site would be subject to seismic hazards such as ground shaking, subsidence, and liquefaction. The integrity of the existing buildings would need to be assessed by the new owner to determine the need for any structural upgrades required by the local ordinances prior to occupancy. Engineering design for new facilities would be required to minimize the potential for public safety hazards and property damage. Structural upgrades of some existing facilities may be required to reduce the risk of structural failure during a seismic event. Property recipients would be notified that the property is within a special flood hazard zone that is in the process of being restored to a 100-year or greater level of flood protection.

Mitigation Measures. Potential mitigation measures would be similar to those discussed under the Commercial/Industrial Scenario 1.

4.4.1.3 Parks and Recreation Scenario.

Effects of the Parks and Recreation Scenario on the regional geology and soils would be similar to those discussed under the Commercial/Industrial Scenario 1. Under the Parks and Recreation Scenario, 94 acres (38 hectares) of land would be disturbed. Effects from soil disturbance and erosion are considered to be short term because exposed areas would be covered by pavement or landscaping, thus reducing the erosion potential.

The site would be subject to seismic hazards such as ground shaking, subsidence, and liquefaction. Engineering design for new facilities would be required to minimize the potential for public safety hazards and property damage. Property recipients would be notified that the property is within a special flood hazard zone that is in the process of being restored to a 100-year or greater level of flood protection.

Mitigation Measures. Potential mitigation measures would be similar to those discussed under the Commercial/Industrial Scenario 1.

4.4.1.4 No-Action Scenario.

The No-Action Scenario would result in no substantial impacts to the geology and soils of the property or the surrounding region. The construction activities associated with this scenario would be minimal or nonexistent and would be restricted to facility and grounds maintenance.

Mitigation Measures. No mitigation measures would be required.

4.4.2 Water Resources

The following section describes the potential environmental effects on water resources as a result of the reuse scenarios. Ground-disturbing activities could alter soil profiles, which, in turn, could temporarily alter water flow patterns.

4.4.2.1 Commercial/Industrial Scenario 1

Surface Water. Under the Commercial/Industrial Scenario 1, soils would be compacted during facility construction, renovation, and demolition, and overlain by asphalt, asphaltic concrete, vegetation, or buildings, creating impervious surfaces that may cause increased storm water runoff to local storm sewers and sewage systems. However, since the majority of the NASA Industrial Plant is already covered with impervious material, any increase in storm water runoff would be minimal. Storm water discharge (nonpoint source) from the property may contain fuels, oils, and other residual contaminants that could degrade surface water resources. Because no surface water resources are situated near the NASA Industrial Plant, substantial impacts from demolition and redevelopment activities are not expected.

The project would be subject to NPDES permit requirements for storm water discharges during the construction period and for the duration of operation. This provision is contained in the NPDES Permit Application Regulations for Storm Water Discharge issued by the U.S. EPA as a final rule on November 16, 1990. Oil/water separators and/or sumps could be installed to improve water quality prior to discharge to a storm water drainage system.

Control measures to reduce impacts from surface water runoff would be similar to those discussed for soil erosion (see Section 4.4.1.1), and primarily apply to construction-related activities.

The effectiveness and cost of these control measures would be based on the amount and distribution of site development, characteristics of existing surface water runoff adjacent to the site, and the combination of specific control measures used. Protective covering would be effective during construction activities. The use of grass to stabilize soils and reduce runoff would be effective in the long term but would be more costly and less effective than protective covering in the short term.

Groundwater. Under the Commercial/Industrial Scenario 1, there would be no substantial impacts to groundwater resources. On-site demand is expected to be approximately 87,000 gpd (329,330 lpd), which is a decrease of approximately 27,000 gpd (102,200 lpd) from the preclosure (1998) demand. The current production capacity of the local water purveyor would be adequate to meet the anticipated demands of reuse. Local groundwater supplies would be sufficient to meet projected water demands.

Ongoing studies of contaminated groundwater near the NASA Industrial Plant would continue as required; specific decisions within this scenario would be designed to prevent interference with these activities. No impacts to the investigation and/or remediation of groundwater contamination would be expected.

Mitigation Measures. Compliance with local requirements and standard construction practices would preclude the need for mitigation measures for potential surface water runoff during construction activities.

4.4.2.2 Commercial/Industrial Scenario 2

Surface Water. The types of impacts associated with water resources under this scenario would be similar to those discussed under the other Commercial/Industrial Scenario. No major changes to drainages would result from reuse construction. An NPDES permit would be required for construction and operation activities.

Groundwater. Under the Commercial/Industrial Scenario 2, there would be no substantial impacts to groundwater resources. On-site demand would be approximately 87,000 gpd (329,330 lpd), which is a decrease of approximately 27,000 gpd (102,200 lpd) from the preclosure (1998) demand. The current production capacity of the local water purveyor would be adequate to meet the anticipated demands of reuse. Local groundwater supplies would be sufficient to meet projected water demands. Other effects on groundwater would be similar to those described for the other Commercial/Industrial Scenario.

Mitigation Measures. Compliance with local requirements and standard construction practices would preclude the need for mitigation measures for potential surface water runoff during construction activities.

4.4.2.3 Parks and Recreation Scenario

Surface Water. The types of impacts associated with water resources under this reuse scenario would be similar to those under the Commercial/Industrial Scenario 1. No major changes to drainages would result from reuse construction. An NPDES permit would be required for construction and operation activities.

Groundwater. Under the Parks and Recreation Scenario, there would be no substantial impacts to groundwater resources. On-site demand would be approximately 135,000 gpd (511,030 lpd), which is an increase of approximately 21,000 gpd (79,490 lpd) over the preclosure (1998) demand. The current production capacity of the local water purveyor would be adequate to meet the anticipated demands of reuse. Local groundwater supplies would be sufficient to meet projected water demands. Other effects on groundwater would be similar to those described for the Commercial/Industrial Scenario 1.

Mitigation Measures. Compliance with local requirements and standard construction practices would preclude the need for mitigation measures for potential surface water runoff during construction activities.

4.4.2.4 No-Action Scenario.

The No-Action Scenario would have beneficial effects on surface and groundwater quality because there would be limited operations. Water demands for caretaker personnel and activities would be minimal and could be met by existing supply systems. No substantial impacts are expected.

Mitigation Measures. No mitigation measures would be required.

4.4.3 Air Quality

Air quality impacts would occur during construction and operation activities associated with the reuse scenarios for the NASA Industrial Plant. Construction impacts would occur from fugitive dust and combustive emissions during construction activities. Operational impacts would occur from (1) mobile sources, such as on-site vehicles and personal commute travel, and (2) stationary sources, such as storage tanks and generators.

The methods selected to analyze impacts depend on the type of emission source being examined. The analysis involved estimating the amount of fugitive dust emitted during grading, excavation, and demolition activities and the combustive emissions associated with construction equipment and worker vehicles. Analysis for source emissions during the operations phase consisted of calculating emissions from vehicles, point sources, and area sources associated with each scenario. These emissions were then evaluated to determine how they would affect the region's ability to reach or maintain the CAAQS and NAAQS.

Air quality emissions are calculated through 2020 (20 years after closure). The effects of the 1990 CAAA, such as electric and other low-emission vehicle ownership percentages, cannot be accurately predicted very far into the twenty-first century. The uncertainties of long-range population and traffic projections, future CAA changes, and the complex interaction of meteorology with emission inventories make emission projections beyond 10 years very speculative.

The following assumptions were made in estimating the effects of the reuse scenarios:

- The CARB-approved EMFAC7G Model was used to generate emission factors for on-road vehicles. The CARB-recommended default values were used whenever possible.
- The emission factors from SCAQMD California Environmental Quality Act (CEQA) Guidelines for construction-related activities were used to calculate the emissions.
- Emissions from activities and operations for the different scenarios associated with reuse are assumed to be proportional to the square footage of land use types. The associated emission factors from CEQA Guidelines were also applied.

Except for CO, new pollutant emissions in an attainment area are prevented from creating a nonattainment condition by federal PSD regulations. The PSD regulations limit the allowable ambient impact of NO_2, PM_{10}, and SO_2 emissions from new or modified major stationary sources to specific increments. These increments were designed to prevent new or modified sources from causing substantial degradation of an area's air quality. For PSD purposes, major stationary sources are generally defined as those sources that emit more than 100 tons per year of an attainment pollutant. PSD is not expected to apply at the NASA Industrial Plant since no new major stationary sources are anticipated as part of the reuse actions. New sources such as solvent cleaning machines, storage tanks, or generators, which may be required as part of the reuse actions, would be subject to the applicable rules and regulations and permitting requirements of the SCAQMD. However, as indicated in the previous assumptions, no substantial new reuse-related sources have been assumed for this analysis.

Section 176(c) of the CAA provides that a federal agency cannot support an activity in any way unless the federal agency determines that activity will conform to the purpose of a U.S. EPA-approved SIP for attaining and maintaining the NAAQS. This means that federally supported or funded activities will not (1) cause or contribute to any new violation of any standard; (2) increase the frequency or severity of any existing violation of any standard; or (3) delay the timely attainment of any standard or any required interim emission reductions or other milestones in any area. In accordance with Section 176(c), the U.S. EPA promulgated the final conformity rule for general federal actions on November 30, 1993, which is codified as 40 CFR Part 51 Subpart W and 40 CFR Part 93 Subpart B. SCAQMD adopted similar regulations for conformity in their 1994 AQMP.

Under the existing rule, conformity determinations are not required for actions that would result in either no emissions increase or an emission increase that is clearly de minimis. Such actions are defined to include actions similar to those considered in this EA: transfers of land, facilities, title, and real properties through an enforceable contract or lease agreement in which the delivery of the deed is required to occur promptly after a specific reasonable condition is met (such as meeting the remedial action requirements of CERCLA), and in which the federal agency does not retain continuing authority to control emissions associated with the lands, facilities, title, or real properties. As such, it is not necessary for NASA to prepare a conformity determination for disposal of the NASA Industrial Plant property. However, federal agencies would be required to comply with the conformity regulations and, if necessary, prepare conformity determinations prior to implementing federal actions associated with reuse of the property.

Based on the emission analyses, the direct and indirect emissions for the reuse scenarios described in Chapter 2.0 would remain below the de minimis emission thresholds and, therefore, would not be subject to a written conformity determination.

4.4.3.1 *Commercial/Industrial Scenario 1*

Construction. Fugitive dust would be generated during demolition activities associated with the Commercial/Industrial Scenario 1. Water application during ground-disturbing activities could reduce fugitive dust emissions by at least 50 percent (U.S. Environmental Protection Agency, 1985). Decreasing the time period during which newly graded sites are exposed to the elements would further reduce fugitive dust emissions. Implementation of these measures would reduce air quality effects from construction activities. Emissions from demolition activities were calculated according to the methods of the SCAQMD's CEQA Handbook. Total PM_{10} emissions were estimated at an average of 7.9 tons per year during the demolition/construction period. The impact of these PM_{10} emissions would cause elevated, short-term concentrations at receptors close to the demolition areas. However, the elevated concentrations would be temporary and would fall off rapidly with distance. Emissions of VOCs, NO_x, CO, and, PM_{10} from demolition/construction activities and workers' travel were estimated to be 9.3 pounds per day, 136 pounds per day, 30 pounds per day, and 66 pounds per day, respectively, during the construction period. Impacts from these emissions would be temporary and insubstantial.

Operation. A summary of reuse-related operational emissions for the Commercial/Industrial Scenario 1 is presented in Table 4-4. Reuse-related emissions comprise emissions from both direct and indirect sources associated with reuse of the property. The direct sources include such on-site sources as generators, storage tanks, boilers, and on-site vehicle miles traveled. Indirect sources are the vehicle miles traveled by employees or customers commuting to and from the site.

Table 4-4. Operational Emissions Associated with the Commercial/Industrial Scenario 1 (tons/year)

Pollutant	NASA Industrial Plant Preclosure 1998	Reuse-Related Emissions Full Build-Out
VOCs	1.23	6.7
NO_x	3.65	83.9
CO	neg.	176.8
PM_{10}	neg.	3.1

CO = carbon monoxide
neg. = negligible
NO_x = nitrogen oxides
PM_{10} = particulate mater equal to or less than 10 microns in diameter
VOC = volatile organic compound

Potential impacts to air quality as a result of operational emissions from the Commercial/Industrial Scenario 1 were evaluated in terms of two spatial scales: regional and local. The regional-scale analysis considered the potential for total reuse-related emissions to cause or increase the severity of nonattainment status of the region for any pollutant as indicated by large increases in the regional pollutant inventories (CO, PM_{10}, and VOC emissions). The local-scale analysis evaluated the potential for emissions to cause or contribute to an exceedance of any NAAQS in the immediate vicinity of the station. If one of these conditions were to occur, the reuse scenario would have an adverse impact on air quality.

Regional Scale. Emissions of criteria pollutants from the Commercial/Industrial Scenario 1 are greater than emissions that would be associated with closure of the NASA Industrial Plant and those that occurred under preclosure conditions. However, it is expected that the Commercial/Industrial Scenario 1 would not affect the regional progress of reaching attainment of any standard. The following paragraphs summarize the results of the regional-scale impact analysis on a pollutant-by-pollutant basis.

Ozone Precursors. Table 4-4 provides a comparison of emission estimates for the NASA Industrial Plant (preclosure) and the Commercial/Industrial Scenario 1. Table 4-4 also shows that NO_x and VOC emissions would increase above preclosure levels. NO_x emissions would increase by 80.25 tons per year, and VOC emissions would increase by 5.47 tons per year. This net increase is associated with motor vehicles from commuter traffic and customers' and visitors' trips to and from the site. These emissions represent total direct and indirect vehicular traffic emissions associated with the Commercial/Industrial Scenario 1, and do not represent the total net increase in the traffic emissions in the SCAB. Because no inmigrant population is expected under the Commercial/Industrial Scenario 1, it is expected that reuse-related traffic has been accounted for in regional forecasts. Therefore, emissions of ozone precursors would not present a net increase in the regional traffic-related emission budget. The reuse-related emissions are not expected to delay the regional progress toward attainment of the ozone standard.

NO_2, CO, and PM_{10}. Table 4-4 provides a means to compare emissions from the Commercial/Industrial Scenario 1 to 1998 NASA Industrial Plant preclosure emission levels. All NO_x emissions in Table 4-4 are assumed to convert to NO_2 emissions on a regional basis. Direct reuse-related NO_2, CO, and PM_{10} emissions would be greater than or equal to preclosure emission levels. As mentioned above, the primary source of emissions is total vehicular traffic emissions. These emissions would not represent new emissions to the region since there would be no new inmigrants associated with the reuse scenario.

Local Scale. Reuse-related emissions associated with the Commercial/Industrial Scenario 1 would be greater than emissions prior to closure. However, ambient background concentrations of NO_x and CO would be reduced from preclosure conditions primarily due to more stringent tailpipe exhaust standards that govern emissions from later model vehicles. Background concentrations of VOCs would also be reduced in response to more stringent tailpipe exhaust standards and fuel volatility standards. In addition, Title IV requirements to reduce acid rain would reduce ambient background concentration of NO_2. Because of the decreases in ambient background concentrations, local air quality impacts would be expected to be similar to or less than preclosure conditions and would not exceed any of the NAAQS.

Mitigation Measures. Project impacts associated with the Commercial/Industrial Scenario 1 would not be substantial; therefore, mitigation of impacts would not be required.

4.4.3.2 Commercial/Industrial Scenario 2

Construction. Fugitive dust would be generated during demolition and construction activities associated with the Commercial/Industrial Scenario 2. Water application during ground-disturbing activities could reduce fugitive dust emissions by at least 50 percent (U.S. Environmental Protection Agency, 1985). Decreasing the time period during which newly graded sites are exposed to the elements would further reduce fugitive dust emissions. Implementation of these measures would reduce air quality effects from construction activities. Total PM_{10} emissions were estimated at an average of 5.3 tons per year during the 20-year demolition/construction period. The impact of these PM_{10} emissions would cause elevated, short-term concentrations at receptors close to the demolition areas. However, the elevated concentrations would be temporary and would fall off rapidly with distance. Emissions from construction equipment and workers' travel for VOCs, NO_x, CO and PM_{10} were estimated to be 8.5 pounds per day, 124 pounds per day, 27 pounds per day, and 44 pounds per day, respectively, during the construction period. Impacts from these emissions would be temporary and insubstantial.

Operation. Table 4-5 summarizes the results of the reuse-related operational emission calculations associated with the Commercial/Industrial Scenario 2.

Table 4-5. Operational Emissions Associated with the Commercial/Industrial Scenario 2 (tons/year)

Pollutant	NASA Industrial Plant Preclosure 1998	Reuse-Related Emissions Full Build-Out
VOCs	1.23	6.7
NO_x	3.65	88.2
CO	neg.	177.5
PM_{10}	neg.	3.2

CO = carbon monoxide
neg. = negligible
NO_x = nitrogen oxides
PM_{10} = particulate mater equal to or less than 10 microns in diameter
VOC = volatile organic compound

Regional Scale. For evaluation of regional-scale impacts from the Commercial/Industrial Scenario 2, the effects that reuse-related air emissions would have on the air quality attainment status of the SCAB were considered. Even though emissions of NO_x, VOCs, CO, and PM_{10} would increase over preclosure conditions, the increase in emissions would not affect the regional progress of reaching attainment of any standard. The following paragraphs summarize the results of the regional-scale impact analysis on a pollutant-by-pollutant basis.

Ozone Precursors. Table 4-5 shows that total reuse-related emissions of NO_x and VOCs would increase by 84.55 tons per year and 5.47 tons per year over preclosure conditions, respectively. The majority of these emissions are from vehicular traffic sources. These emissions represent total vehicular traffic emission for this reuse scenario. These emissions have already been accounted for in the regional emission projections and would not represent a net increase in the region. No adverse impacts to attainment of the ozone standard are expected.

NO_2, CO, and PM_{10}. Table 4-5 provides a means to compare emissions from the Commercial/Industrial Scenario 2 to 1998 NASA Industrial Plant preclosure emission levels. All NO_x emissions in Table 4-5 are assumed to convert to NO_2 emissions on a regional basis. Direct reuse-related NO_2, CO, and PM_{10} emissions would be greater than preclosure emission levels. As mentioned above, the primary source of emissions is total vehicular traffic emissions. These emissions would not represent new emissions to the region since there would be no new inmigrants associated with the Commercial/Industrial Scenario 2.

Local Scale. Reuse-related emissions of NO_2, CO, and PM_{10} associated with the Commercial/Industrial Scenario 2 would be greater than preclosure condition emissions. With the phase-in of more stringent tailpipe exhaust standards for later-model automobiles and the implementation of reduced fuel volatility standards being promulgated by the U.S. EPA, the ambient background concentration of CO, NO_2, and VOCs would be reduced from that of preclosure conditions. In addition, Title IV requirements to reduce acid rain would reduce ambient background concentration of NO_2. Reuse-related emissions from the Commercial/Industrial Scenario 2 would be similar to those that will occur under the other Commercial/Industrial Scenario, and would have no adverse impact on local air quality as discussed above. The ambient concentrations of CO, NO_2, SO_2, and VOCs are expected to decrease from current levels.

Mitigation Measures. Project impacts associated with the Commercial/ Industrial Scenario would not be substantial; therefore, mitigation of impacts would not be required.

4.4.3.3 Parks and Recreation Scenario

Construction. Fugitive dust would be generated during demolition and construction activities associated with the Parks and Recreation Scenario. Water application during ground-disturbing activities could reduce fugitive dust emissions by at least 50 percent (U.S. Environmental Protection Agency, 1985). Decreasing the time period during which newly graded sites are exposed to the elements would further reduce fugitive dust emissions. Implementation of these measures would reduce air quality effects from construction activities. Total PM_{10} emissions were estimated at an average of 7.1 tons per year during the demolition/construction period. The impact of these PM_{10} emissions would cause elevated, short-term concentrations at receptors close to the demolition areas. However, the elevated concentrations would be temporary and would fall off rapidly with distance. Emissions from construction equipment and associated construction workers' travel for VOCs, NO_x, CO, and PM_{10} were estimated to be

2.2 pounds per day, 32.8 pounds per day, 7.1 pounds per day, and 58.8 pounds per day, respectively, during the construction period. Impacts from these emissions would be temporary and insubstantial.

Operation. Table 4-6 summarizes the results of the reuse-related operational emission calculations associated with the Parks and Recreation Scenario.

Table 4-6. Operational Emissions Associated with the Parks and Recreation Scenario (tons/year)

Pollutant	NASA Industrial Plant Preclosure 1998	Reuse-Related Emissions Full Build-Out
VOCs	1.23	0.6
NO_x	3.65	8.5
CO	neg.	16.8
PM_{10}	neg.	0.3

CO = carbon monoxide
neg. = negligible
NO_x = nitrogen oxides
PM_{10} = particulate mater equal to or less than 10 microns in diameter
VOC = volatile organic compound

Regional Scale. For evaluation of regional-scale impacts from the Parks and Recreation Scenario, the effects that reuse-related air emissions would have on the air-quality attainment status of the SCAB were considered. Even though emissions of NO_x, VOCs, and SO_2 would increase over preclosure conditions, the increase in emissions would not affect the regional progress of reaching attainment of any standard. The following paragraphs summarize the results of the regional-scale impact analysis on a pollutant-by-pollutant basis.

Ozone Precursors. Table 4-6 shows that total reuse-related emissions of NO_x would increase by 4.85 tons per year, and VOCs would decrease by 0.63 ton per year over preclosure conditions, respectively. Most of these emissions are from vehicular traffic sources. These emissions represent total vehicular traffic emission for this reuse scenario. These emissions have already been accounted for in the regional emission projections and would not represent a net increase in the region. No adverse impacts to attainment of the ozone standard are expected.

NO_2, CO, and PM_{10}. Reuse-related emissions of NO_2 would increase by 6.3 tons per year over preclosure conditions. This increase represents a negligible increase in the SCAB NO_2 emissions. However, more stringent tailpipe exhaust standards and Title IV requirements to reduce acid deposition will cause an overall reduction in regional NO_2 emissions. The reuse-related increase in NO_2 emissions would, therefore, not be sufficient to affect the NO_2 attainment status of the region. Emissions of reuse-related CO would increase by 16.8 tons per year from preclosure levels, and emissions of PM_{10} would increase by 0.3 ton per year. Reuse-related emissions of CO and PM_{10} would not produce any adverse air quality impacts or affect the current attainment status.

Local Scale. Reuse-related emissions of NO_2, SO_2, CO, and PM_{10} associated with the Parks and Recreation Scenario would be greater than preclosure condition emissions. With the phase-in of more stringent tailpipe exhaust standards for later-model automobiles and the implementation of reduced fuel volatility standards being promulgated by the U.S. EPA, the ambient background concentration of CO, NO_2, and VOCs would be reduced from that of preclosure conditions. In addition, Title IV requirements to reduce acid rain would reduce ambient background concentration of NO_2. Reuse-related emissions from the Parks and Recreation Scenario would be similar to those that occurred under preclosure conditions, and would have no adverse impact on local air quality because increased emissions would be small fractions of the baseline SCAB inventories, and ambient concentrations of CO, NO_2, and VOC are expected to decrease from current levels.

Mitigation Measures. Project impacts associated with the Parks and Recreation Scenario would not be substantial; therefore, mitigation of impacts would not be required.

4.4.3.4 No-Action Scenario.

Due to the low level of emissions produced from caretaker activities under the No-Action Scenario, no substantial air quality impacts would occur.

Mitigation Measures. Mitigation measures would not be required.

4.4.4 Cultural Resources

Potential impacts have been assessed by (1) identifying types and possible locations of reuse activities that could directly or indirectly affect cultural resources, and (2) identifying the nature and significance of cultural resources in potentially affected areas.

4.4.4.1 Commercial/Industrial Scenario 1

Prehistoric and Historic Archaeological Resources. Although the plant has not been surveyed for archaeological resources, surveys of areas in the vicinity of the ROI have been conducted, and no prehistoric or historic archaeological properties have been identified. In addition, the entirety of Parcels 1 and 2 has been extensively developed (i.e., facilities, parking lots, roadways) and heavily disturbed from previous construction and operational use; therefore, it is unlikely that intact archaeological resources would be found. No substantial impacts on archaeological properties from the Commercial/Industrial Scenario 1 are expected. Consultation with the SHPO has been initiated.

Although no archaeological properties are expected within the ROI, the potential for unexpected discovery of these types of resources is always a possibility. As such, if cultural remains (particularly, human remains) are unexpectedly encountered during the course of redevelopment activities, all activities will cease in the immediate vicinity, and the SHPO will be consulted through the on-site Project Manager. Subsequent actions would follow the guidance provided in

36 CFR Part 800-11 and the Native American Graves Protection and Repatriation Act.

Historic Buildings and Structures. The Commercial/Industrial Scenario 1 calls for the demolition of all buildings and structures at the NASA Industrial Plant. The California SHPO indicates that 19 buildings are eligible for listing in the National Register (Appendix A). Because demolition of a historic property would constitute an adverse effect under the NHPA, mitigation measures would be required.

Traditional Resources. There are no known TCPs or other traditional resources present within the ROI. Consultation with appropriate Native American groups will be conducted during the NEPA and NHPA process. No substantial impacts are expected.

Mitigation Measures. There would be no impacts to prehistoric or historic archaeological resources, or traditional resources, from implementation of the Commercial/Industrial Scenario 1. Therefore, no mitigation measures would be required.

Mitigation measures designed to reduce adverse effects to the 19 buildings that are eligible for listing in the National Register (from demolition or other types of modification) to nonadverse levels may include, but are not limited to:

- Transfer of the parcels with preservation covenants
- Preservation in place of all or a portion of the buildings
- Historic American Building Survey/Historic American Engineering Record recordation
- Preparation of an Oral History Study
- Preparation of a comprehensive history of the facility
- Development of a virtual tour of the complex
- Development of an educational program (including study units and associated instructional support materials) for the Downey school system to foster awareness of the plant and its impact on the city and on the history of American aircraft/aerospace.

Consultation with the SHPO will be conducted pursuant to Section 106 of the NHPA and its implementing regulations (36 CFR Part 800), and a Memorandum of Agreement (MOA) may be developed to document acceptable mitigation measures.

4.4.4.2 Commercial/Industrial Scenario 2

Prehistoric and Historic Archaeological Resources. Potential effects on prehistoric and historic archaeological resources under the Commercial/Industrial

Scenario 2 would be the same as those described under the Commercial/ Industrial Scenario 1.

Historic Buildings and Structures. The Commercial/Industrial Scenario 2 would retain the 19 buildings and structures identified as eligible for listing in the National Register. These buildings and structures would require modification for reuse activities. Under the NHPA, modification of a National Register property has the potential to adversely affect historic properties. Therefore, mitigation measures would be required.

Traditional Resources. Potential effects on traditional resources would be the same as those described under the Commercial/Industrial Scenario 1.

Mitigation Measures. There would be no impacts to prehistoric or historic archaeological resources, or traditional resources, from implementation of the Commercial/Industrial Scenario 2. Therefore, no mitigation measures would be required.

Mitigation measures for historic buildings would be similar to those described under the Commercial/Industrial Scenario 2. In addition, since the buildings that are eligible for listing in the National Register will remain and have the potential to be modified, preservation/protection of any character-defining elements may be required. Therefore, the following additional mitigation measures may also be necessary:

- Preparation of Historic Structures Reports for all buildings prior to any alterations
- Rehabilitation of the extant buildings according to the Secretary of the Interior's Standards
- Design of new buildings in conformance with the Secretary of the Interior's Standards for New Construction, compatible in size, scale, and massing to the industrial core.

4.4.4.3 Parks and Recreation Scenario

Prehistoric and Historic Archaeological Resources. Potential effects on prehistoric and historic archaeological resources under the Parks and Recreation Scenario would be the same as for those described under the Commercial/ Industrial Scenario 1.

Historic Buildings and Structures. The Parks and Recreation Scenario calls for the demolition of all buildings and structures at the NASA Industrial Plant. Potential effects on historic properties from implementation of the Parks and Recreation Scenario would be the same as for those described under the Commercial/Industrial Scenario 1.

Traditional Resources. Potential effects on traditional resources would be the same as for those described under the Commercial/Industrial Scenario 1.

Mitigation Measures. Mitigation Measures would be the same as for those described under the Commercial/Industrial Scenario 1.

4.4.4.4 No-Action Scenario

Prehistoric and Historic Archaeological Resources. Under the No-Action Scenario, buildings and structures on Parcels 1 and 2 would be placed under caretaker status; no demolition or other construction activities would occur. No archaeological properties are known to exist within the ROI, and the unexpected identification of these types of resources would not be likely; therefore, no substantial impacts on prehistoric or historic archaeological resources would be expected.

Historic Buildings and Structures. There would be no effect on cultural resources resulting from the implementation of the No-Action Scenario if the property remains under federal jurisdiction. NASA would maintain the buildings and structures to prevent deterioration and to retain any historic character.

Traditional Resources. Potential effects on traditional resources under the No-Action Scenario would be the same as for those described under the Commercial/Industrial Scenario 1.

Mitigation Measures. No effect on cultural resources would result from implementation of the No-Action Scenario because the NASA Industrial Plant will remain under federal jurisdiction. NASA would ensure that a minimal level of maintenance is accomplished to prevent deterioration of historic structures.

4.5 ENVIRONMENTAL JUSTICE

The analysis conducted for this EA included a review of influencing factors (local community resources), and a discussion of resulting impacts associated with hazardous materials and hazardous waste management, and the natural environment. Local community resources (e.g., community setting, land use and aesthetics, transportation, utilities) have been identified as influencing factors only, and therefore, would not have disproportionately high and adverse human health and environmental effects on low-income and minority populations.

Based upon the analysis conducted for this EA, it was determined that activities associated with the reuse scenarios would not have substantial effects on any of the resources analyzed in this EA: hazardous materials management, hazardous waste management, asbestos, lead-based paint, soils and geology, water resources, air quality, and cultural resources. Therefore, no disproportionately high and adverse impacts to low-income and minority populations would be expected.

4.6 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

There would be no unavoidable adverse environmental effects from implementation of the reuse scenarios if appropriate mitigation measures described in this EA are implemented.

4.6 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

There would be no unavoidable adverse environmental effects from implementation of the reuse scenarios if appropriate mitigation measures described in this EA are implemented.

4.7 COMPATIBILITY OF THE REUSE SCENARIOS WITH OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL LAND USE PLANS AND POLICIES

The reuse scenarios promote NASA's intention to cooperate with communities and other federal agencies, whenever possible, for reuse of excess property. The reuse scenarios would be consistent with the city of Downey's general plan and zoning designations and are compatible with adjacent off-site land uses.

4.8 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

The reuse scenarios would not affect the long-term productivity of the environment since no substantial environmental impacts are anticipated and natural resources would not be depleted.

4.9 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Implementation of the reuse scenarios would not result in an irreversible or irretrievable commitment of resources.

4.10 CUMULATIVE ENVIRONMENTAL CONSEQUENCES

Cumulative impacts result from "the incremental impact of actions when added to other past, present, and reasonable foreseeable future actions, regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively substantial actions taking place over a period of time" (Council on Environmental Quality, 1978).

The potential impacts from the reuse scenarios are short term and not substantial, and are not expected to contribute to cumulative impacts. In addition, cumulative impacts from planned future development projects in the region are not anticipated due to their location with relation to the NASA Industrial Plant.

THIS PAGE INTENTIONALLY LEFT BLANK

5.0 CONSULTATION AND COORDINATION

The federal, state, and regional/local agencies contacted during preparation of this EA are listed below:

FEDERAL

National Aeronautics and Space Administration
U.S. Environmental Protection Agency, Region 9
U.S. Fish and Wildlife Service

STATE

California Department of Fish and Game
California Environmental Protection Agency
California State Historic Preservation Office
South Coast Air Quality Management District

REGIONAL/LOCAL AGENCIES

City of Downey

Boeing North American

THIS PAGE INTENTIONALLY LEFT BLANK

6.0 LIST OF PREPARERS AND CONTRIBUTORS

Wen B. Huang, Staff Air Quality Engineer II, Earth Tech
B.S., 1992, Atmospheric Science, National Taiwan University, Taiwan
M.S., 1996, Environmental Engineering, University of Southern California, Los Angeles
Years of Experience: 5

David Jury, Project Environmental Professional, Earth Tech
B.A., 1988, Geography, California State University, Long Beach
Years of Experience: 11

Paige Peyton, Senior Cultural Resources Manager, Earth Tech
B.A., 1987, Anthropology, California State University, San Bernardino
M.A., 1990, Anthropology, California State University, San Bernardino
Years of Experience: 14

Heather Puckett, Staff Historian, Earth Tech
B.A., 1994, History, Mississippi State University, Starkville
M.A., 1995, History, Mississippi State University, Starkville
Years of Experience: 4

Carl Rykaczewski, Project Environmental Professional, Earth Tech
B.S., 1981, Environmental Resource Management, Pennsylvania State University, University Park
Years of Experience: 11

Wayne Snowbarger, Senior Environmental Professional, Earth Tech
B.S., 1970, Civil Engineering, Colorado State University, Fort Collins
M.S., 1975, Civil Engineering, Purdue University, West Lafayette, Indiana
Years of Experience: 26

Andrea Urbas, Project Cultural Resources Specialist, Earth Tech
B.S., 1979, Architecture, University of Illinois, Urbana-Champaign
M.Arch., 1981, Architecture, Kansas State University, Manhattan
M.B.A., 1987, University of Phoenix, Phoenix, Arizona
Years of Experience: 20

THIS PAGE INTENTIONALLY LEFT BLANK

7.0 DISTRIBUTION LIST

Federal Agencies

U.S. Environmental Protection Agency
Region 9
Federal Facilities Division
75 Hawthorne Street
Mail Code H-9-1
San Francisco, CA 94105

U.S. Department of the Air Force
HQ AFCEE/ERD
3207 North Road
Brooks AFB, TX 78235-5363

U.S. Department of the Interior
Fish and Wildlife Service
Ecological Services
Carlsbad Field Office
2730 Locker Avenue West
Carlsbad, CA 92008

U.S. Department of the Interior
Fish and Wildlife Service
3310 El Camino Avenue, Suite 130
Sacramento, CA 95821-6340

U.S. General Services Administration
Property Disposal Division - 9PR
450 Golden Gate Avenue, 4th Floor
San Francisco, CA 94102-3400

National Aeronautics and Space Administration
Johnson Space Center
2101 NASA Road, Mail Code JJ12
Houston, TX 77058-3696

National Aeronautics Space Administration
Washington, DC 20546-0001

State Agencies

State Water Resources Control Board
901 P Street
Sacramento, CA 95814

California Environmental Protection Agency
Department of Toxic Substances Control
700 Heinz Avenue, #200
Berkeley, CA 94710-2737

Acting State Historic Preservation Officer
Office of Historic Preservation
Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001

State of California Clearinghouse
Governor's Office
1400 Tenth Street, Room 121
Sacramento, CA 95814

Local Agencies

City of Downey Planning Department
11111 South Brookshire Drive
Downey, CA 90241-7018

City of Downey
Economic Development Program
11111 South Brookshire Drive
Downey, CA 90241-7018

Downey Historical Society
10710 Wiley Burke Avenue
Downey, CA 90241

South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Los Angeles County Department of Public Works
Environmental Programs Division
900 South Fremont Avenue
Alhambra, CA 91803

Other

Aerospace Legacy Foundation
9700 Jersey Street, #182
Santa Fe Springs, CA 90670

Boeing
Safety, Health, and Environmental Affairs
12214 Lakewood Boulevard
Mail Code AE-72
Downey, CA 90242-2693

Libraries

Downey Public Library
11121 Brookshire Drive
Downey, CA 90241

Huntington Beach Central Library
7111 Talbert Avenue
Huntington Beach, CA 92648

THIS PAGE INTENTIONALLY LEFT BLANK

8.0 REFERENCES

Baker Consultants, 1986. Rockwell International, Downey Complex, Downey, California, Asbestos Survey Report, July.

Boeing North American, 1995. Hazardous Waste Management Source Reduction Plan and Performance Report for NASA Industrial Plant – Space Systems Division, Downey California, September.

Boeing North American, 1997. Asbestos Control, March.

Boeing North American, 1998a. Permitted Annual Emissions Summary, AQMD 97-98 Annual Emission Inventory.

Boeing North American, 1998b. Permitted Equipment.

Boeing North American, 1998c. Facility Permit to Operate, South Coast Air Quality Management District.

Boeing North American, 1999. Home City of Downey Employees, July.

California Air Resources Board, 1989. Proposed Identification of Districts Affected by Transported Air Pollutants which Contribute to Violations of the State Ambient Air Quality Standard for Ozone, Meteorology Section, Modeling and Meteorology Branch, Technical Support Division, October.

California Air Resources Board, 1990. California Air Quality Data – Data Summary 1991 Air Quality Data, Gaseous and Particulate Pollutants, Technical Support Division, Sacramento.

California Air Resources Board, 1998. Emission Inventory, 1996, Technical Support Division, Emission Inventory Branch, October.

California Air Resources Board, 1999. Air Quality Standards and Area Designation Maps, June.

Council on Environmental Quality, 1978. Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.

County of Los Angeles, 1997. City of Downey, NASA Exhibit Map, January.

Economic Research Associates, 1999. Estimates of Economic and Fiscal Impacts at Closure of the NASA/Boeing Plant Facilities at Downey, California, February.

Federal Emergency Management Agency, 1998. Flood Insurance Rate Map, City of Downey. California, Los Angeles County, July.

Foster Wheeler, 1999. Environmental Baseline Survey – Parcel II, NASA Downey Industrial Facility, Downey, California, June.

Goldberg, S.K., and J.E. Arnold, 1988. Prehistoric Sites in the Prado Basin, California: Regional Context and Significance Evaluation.

Institute of Transportation Engineers, 1995. Traffic Engineering Handbook.

International Conference of Building Officials, 1991. Uniform Building Code.

Macko Archaeological Consulting, 1993. National Register Eligibility Determinations for Historic Resources Along the Proposed AT&T Lightguide System, Victorville to Bakersfield, California. Prepared for the Lilburn Corporation, San Bernardino, California.

Mason, R.D. (Chambers Group, Inc.), 1997. Cultural Resources Records Search and Literature Review Report for a Pacific Bell Mobile Services Telecommunications Facility: LA261-11 in the City of Downey, California.

Moratto, M.J., 1984. California Archaeology. Academic Press, Orlando and London.

National Aeronautics and Space Administration, 1999. Preliminary Final Historic Buildings and Structural Inventory and Evaluation, National Aeronautics and Space Administration Industrial Plant, Parcels I and II, Downey, California, July.

Quinn, C.R., 1973. History of Downey: The Life Story of a Pioneer Community, And of the Man who Founded it - California Governor John Gately Downey - From Covered Wagon to the Space Shuttle.

Rockwell International, 1980. Rockwell International, Downey Facility, Environmental Resources Document, December.

Rockwell International, 1994. Memo regarding PCB status, July.

Rosen, M.D., 1975. Evaluation of the Archaeological Resources and Potential Impact of the Proposed Construction of Route 105 Freeway from El Segundo to Norwalk.

Ruffner, J., and F. Bair, 1985. Weather of U.S. Cities, Second Edition.

Sedway Group, 1999. Final Report, Reuse Analysis of 160-Acre NASA Site, February.

South Coast Air Quality Management District, 1993. CEQA Air Quality Handbook, April.

Transportation Research Board, 1994. Highway Capacity Manual, third edition, National Research Council Special Report 209, National Academy of Science, Washington DC.

U.S. Census Bureau, 1998. Demographics Information, City of Downey, California, November.

U.S. Geological Survey, 1988. Probabilities of Large Earthquakes Occurring in California on the San Andreas Fault, by the California Working Group on California Earthquake Probabilities, Open File Report 88-398, Menlo Park.

Wallace, W.J., 1978. Post-Pleistocene Archaeology, 9000 to 2000 B.C. In Handbook of North American Indians, Vol. 8: California, edited by R.F. Heizer, pp. 25-36. Smithsonian Institution, Washington, DC.

Warren, C.N., 1968. Cultural Tradition and Ecological Adaptation on the Southern California Coast. Eastern New Mexico University Contributions in Anthropology 1(3):1-15.

APPENDIX A

AGENCY LETTERS AND CERTIFICATIONS

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
2101 NASA Road 1
Houston, Texas 77058-3696

Reply to Attn of JA131-99-035H

SEP 03 1999

Mr. Daniel Abeyta
Acting State Historic Preservation Officer
Office of State Historic Preservation
Department of Parks and Recreation
P. O. Box 942896
Sacramento, CA 94296-0001

SUBJECT: Section 106 Consultation - Environmental Assessment for the Disposal and Reuse of the Downey Industrial Plant, City of Downey, Los Angeles County, California

The National Aeronautics and Space Administration (NASA) is preparing an Environmental Assessment (EA) for the disposal and reuse of Parcels I and II of the Downey Industrial Plant, City of Downey, Los Angeles County, California. The two parcels encompass 97.7 acres and are bounded by Stewart and Gray Road on the north, Lakewood Boulevard and Clarke Avenue on the west, and a property fence line on the south and east (Enclosures 1 and 2). The parcels consist largely of industrial buildings and structures, streets, sidewalks, parking lots, and other paved areas. Other than a small landscaped area at the western edge of the parcels (along Lakewood Boulevard), there is essentially no open space or vegetation.

In accordance with Sections 106, 110, and 111, of the National Historic Preservation Act (as amended), and the National Environmental Policy Act, NASA is initiating early consultation with your office, to assist with the identification of known or potential historic properties that may be present within the area of potential effects (APE) described above (i.e., the entirety of Parcels I and II). Because the parcels are essentially devoid of any open, undisturbed land, NASA anticipates very low likelihood for the presence of prehistoric or historic archaeological resources or traditional cultural properties; however, we are requesting a review of your archaeological survey and site records to ensure the future protection of any currently unidentified sites. In addition, NASA would appreciate your providing a list of Native American groups and other groups or individuals that might be interested in the disposal and reuse of these parcels. The California Native American Heritage Commission and the Archaeological Information Center at the University of California, Los Angeles, are being contacted concurrently.

Additionally, NASA has undertaken a study to identify historic buildings and structures within the APE. A copy of this study - *Preliminary Final Historic Buildings and Structures Inventory and Evaluation National Aeronautics and Space Administration Industrial Plant Parcels I and II, Downey, California* (Earth Tech, Inc., July 1999) - was provided to your office on August 13, 1999, for review and comment. We anticipate that our consultation with you regarding this report will provide the information needed for our analysis of potential historic buildings and structures in the EA.

Thank you for your assistance in our early efforts to identify historic properties within the APE of the Downey Industrial Plant. If you have any questions, please contact David Hickens at 281-483-3120 or by e-mail at dhickens@EMS.JSC.NASA.GOV, or Melody Nation at 281-483-3152 or by e-mail at mnation@EMS.JSC.NASA.GOV.

Sincerely,

Original Signed By:
WILLIAM W. PARSONS

William W. Parsons
Director, Center Operations

Enclosures

cc:
AL/J. Kemp
JA161/M. Nation

✓Mr. Dave Jury
Earth Technology, Inc
1461 Cooley Drive
Colton, CA 92324

Mr. Phil Nicolay, Project Manager
Earth Technology, Inc.
100 West Broadway, Suite 5000
Long Beach, CA 90802

STATE OF CALIFORNIA – THE RESOURCES AGENCY

GRAY DAVIS, Governor

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
P.O. BOX 942896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@mail2.quiknet.com

December 15, 1999

REPLY TO: NASA980612A

William B. Parsons, Director, Center Operations
Lyndon B. Johnson Space Center
National Aeronautics and Space Administration
2101 NASA Road 1
HOUSTON TX 77058-3696

Re: Final Historic Buildings and Structures Inventory and Evaluation, National Aeronautics and Space Administration Industrial Plant, Parcels I and II, Downey, Los Angeles County.

Dear Mr. Parsons:

Thank you for submitting to our office your November 15, 1999 letter and copy of the report entitled "Final Historic Buildings and Structures Inventory and Evaluation, National Aeronautics and Space Administration (NASA) Industrial Plant (NIP) Parcels I and II, Downey, California ("the Report"). The Report is submitted as partial fulfillment of the consultation process set forth in 36 CFR 800, regulations effective June 17, 1999 implementing Section 106 of the National Historic Preservation Act. The Report also is being submitted to address issues contained in our letter of September 20, 1999 in which we commented on the "Preliminary Final Historic Buildings and Structures Inventory and Evaluation" (July 1999) (PFHBSIE). In our letter we stated that the determinations of eligibility for historic properties evaluated in the PFHBSIE were preliminary pending receipt of the additional documentation to be contained in the newly submitted Report. The information contained in the Report appears to have adequately addressed the issues raised in our letter.

NASA is seeking our final comments on its determination of the eligibility of 124 buildings, structures, and objects located on Parcels I and II for inclusion on the National Register of Historic Places (NRHP) in accordance with 36 CFR 800, regulations effective June 17, 1999 implementing Section 106 of the National Historic Preservation Act. Our review of the documentation contained within the Report leads us to concur with NASA's determination that the following properties are eligible for inclusion on the NRHP under the criteria established by 36 CFR 60.4:

Parcels I and II

Building No. 1 – Criteria A, B, and C
Building No. 6 – Criteria A, B and Criterion Consideration G
Building No. 10 – Criteria A and B
Building No. 11 – Criteria A and B
Building No. 25 – Criterion A

Building No. 36 – Criterion A
Building No. 39 – Criteria A and B
Building No. 41 – Criterion A
Building No. 42 – Criterion A
Building No. 108 – Criterion A
Building No. 120 – Criterion A
Building No. 123 – Criterion A
Building No. 125 – Criterion A

Building No. 126 – Criterion A
Building No. 127 – Criterion A
Building No. 128 – Criterion A
Building No. 130 – Criterion A
Building No. 288 – Criteria A, B, and Criterion Consideration G
Building No. 290 – Criteria A, B, and Criterion Consideration G

Those eligible structures constructed prior to 1945 appear to have strong associations with either of the following significant historical events:

- The development of the pre-World War II aircraft design and construction industry in Downey as it developed under the E.M Smith Company (EMSCO), Vultee Aircraft Inc., and the Consolidated Vultee Corporation (Convair).

- The development of World War II-era military aircraft as designed and constructed by Convair.

Those eligible structures constructed after 1945 appear to have strong associations with either of the following significant historical events:

- The research and development of surface-to-surface guided missile systems (Navaho Program – 1953-1964), and air-to-surface missile systems (Hound Dog AGM Program – 1958-1963).

- The NASA-administered Saturn S-II Program, Project Apollo Spacecraft Development Program, and Skylab space program (1961-1975), all under contract to North American Aviation Inc./North American Rockwell Corporation.

- The men and astronauts of the Apollo and Space Shuttle space exploration programs in the period dating from 1961 to the present.

- The subassembly, manufacture, and testing component of the space shuttle orbiters for the Space Shuttle Orbiter Program (1972-1999).

We are pleased to note that additional information was provided in the Report on the association of Buildings 1, 6, 288, and 290 with the activities of the astronauts and support personnel of the Apollo and Space Shuttle Orbiter space exploration programs. Information on the impact these men and women had on the mission and physical evolution of portions of these structures appears to confirm their eligibility under Criterion B.

We agree that the Kaufmann portion of Building 1 is eligible under Criterion C as the work of Gordon B. Kaufmann, a prominent Southern California architect noted for the design of notable commercial and industrial structures in the Los Angeles area in the period dating from 1925 to 1949. The Kaufmann portion of the building appears to have retained a significant level of integrity of design, workmanship, and materials associated with the Art Moderne style as designed by Kaufmann, with few modifications needed for changes in the aircraft/aerospace industry.

Those structures eligible under Criterion Consideration G (Buildings 6, 288, and 290) were all integral structures in the Apollo and Space Shuttle Orbiter programs. The buildings housed a number of program functions including research and testing, telemetry control, computer software development and operation, service and command module assembly, and environmental testing for modules, fuel cells and other components of the Apollo and Space Shuttle programs.

We again reiterate that none of the other remaining, structures, and objects surveyed in Parcels I and II are eligible for inclusion on the NRHP under any of the criteria established by 36 CFR 60.4. The structures have no strong associations with significant historical events or persons, nor are they exceptional examples of architectural or engineering design or function. We also concur with NASA's preliminary determination that none of the structures located within Parcels 3, 4, 5, and 6 of the NIP are eligible for inclusion on the NRHP under any of the criteria established under 36 CFR 60.4.

We have noted that Chapter 5 of the Report contains information on potential mitigation options that may be considered by NASA and the City of Downey to reduce any potential adverse effects on historic properties that may result from the implementation of the undertaking. We will not comment on any such options until documentation on the intended direction of the undertaking and its effects on historic properties have been provided to our office for review and comment. We are encouraged, however, by the variety of options that may be considered, and hope that NASA and the City of Downey can increase the number of available opportunities to incorporate historic preservation into the overall implementation of the undertaking.

Thank you again for seeking our comments on your project. If you have any questions, please contact staff historian Clarence Caesar at (916) 653-8902.

Sincerely,

Daniel Abeyta, Acting
State Historic Preservation Officer

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
2101 NASA Road 1
Houston, Texas 77058-3696

Reply to Attn of: JA131-99-034H

SEP 0 . 1999

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

SUBJECT: Environmental Assessment for the Disposal and Reuse of the Downey Industrial Plant, City of Downey, Los Angeles County, California

The National Aeronautics and Space Administration (NASA) is preparing an Environmental Assessment (EA) for the disposal and reuse of Parcels I and II of the Downey Industrial Plant, City of Downey, Los Angeles County, California. The two parcels encompass 97.7 acres and are bounded by Stewart and Gray Road on the north, Lakewood Boulevard and Clarke Avenue on the west, and a property fence line on the south and east (Enclosures 1 and 2).

In order to ensure that potential public concerns are addressed during the preparation of the EA, NASA would appreciate your providing a list of Native American groups or individuals who might have interest in the Downey parcels and/or in the disposal and reuse process.

Thank you for your assistance. If you have any questions, please contact Mr. David Hickens at 281-483-3120 or by e-mail at dhickens@EMS.JSC.NASA.GOV.

Sincerely,

Original Signed By:
WILLIAM W. PARSONS

William W. Parsons
Director, Center Operations

Enclosures

cc:
AL/J. Kemp
JA161/M. Nation

✓Mr. Dave Jury
Earth Technology, Inc
1461 Cooley Drive
Colton, CA 92324

Mr. Phil Nicolay, Project Manager
Earth Technology, Inc.
100 West Broadway, Suite 5000
Long Beach, CA 90802

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
2101 NASA Road 1
Houston, Texas 77058-3696

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Reply to Attn of: JA131-99-033H

AUG 19 1999

Mr. Pete Sorensen
Field Supervisor
U.S. Fish and Wildlife Service
2730 Loker Avenue West
Carlsbad, CA 92008

Subject: Information Request for Disposal and Reuse of NASA Industrial Plant, 12214 Lakewood Boulevard, Downey, California

In supporting the National Aeronautics and Space Administration's (NASA) decision-making process involving disposal and reuse of the NASA Industrial Plant in Downey, California, an Environmental Assessment (EA) to analyze environmental impacts of reuse actions and alternatives for the disposal of the site is being prepared. Potential reuse plans may include renovation of installation facilities and new construction; however, due to the developed nature of the site, no sensitive habitats or listed species are expected to be found on the site so there seems to be little potential to impact sensitive biological resources. In fact, all vegetation at the site is landscaped and only occurs in narrow strips between parking lots and near buildings.

Pursuant to the Endangered Species Act and the National Environmental Policy Act, we are requesting your concurrence regarding no potential impact to sensitive biological resources and/or into this planning process in the following areas:

a. Federal listed threatened, endangered, candidate, and proposed to be listed species potentially occurring in the vicinity of the installation
b. State listed threatened, endangered, candidate, and special concern species potentially occurring in the vicinity of the installation
c. Sensitive habitats such as jurisdictional wetlands, nesting areas, and special communities/associations which may occur in the vicinity of the installation
d. Organizations (such as local universities and their Natural Sciences departments, local Audubon Society, local biological organizations, etc.) and individuals (professors, specialists, etc.) who are knowledgeable about the biota in the project areas.

Your cooperation and input into this planning process is greatly appreciated. Should you need additional information on the project, contact me at 281-483-3120, or our environmental support contractor, Phil Nicolay, Earth Technologies, at 562-951-2058, or Dave Jury at 909-424-1919.

Sincerely,

for

David Hickens
Lead, Environmental Office

cc:

Mr. Phil Nicolay
Earth Tech
100 West Broadway, Suite 5000
Long Beach, CA 90802

Mr. Dave Jury
Earth Tech
1461 East Cooley Drive, Suite 100
Colton, CA 92324

THIS PAGE INTENTIONALLY LEFT BLANK