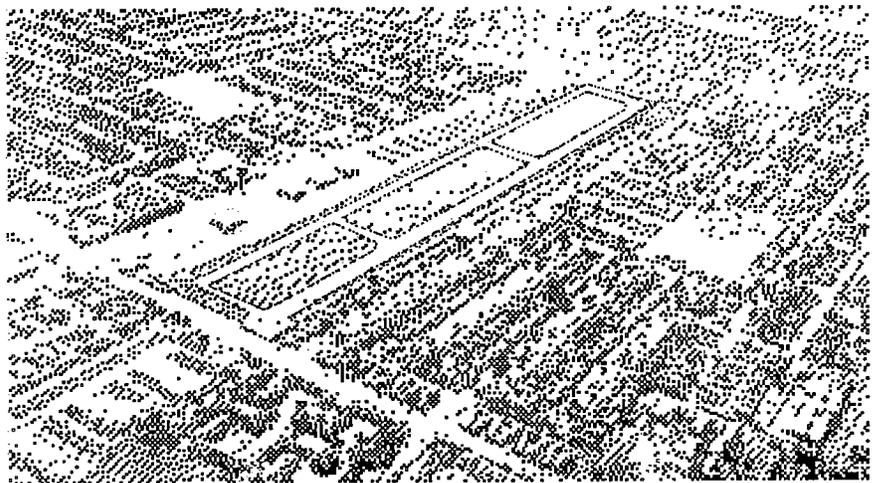


# COMPTON AIRPORT

## Master Plan Report

County of Los Angeles  
Compton, California



August 1991



Hodges & Shutt

# COMPTON AIRPORT

## Master Plan Report

County of Los Angeles  
Compton, California

Prepared  
by  
HODGES & SHUTT  
for the  
COUNTY of LOS ANGELES  
Department of Public Works  
Aviation Division

August 1991

---

**COUNTY OF LOS ANGELES**

**Board of Supervisors**

Michael D. Antonovich, Chairman  
Deane Dana  
Edmund D. Edelman  
Kenneth Hahn  
Gloria Molina

**Aviation Commission**

Lester E. Benson, Chairman  
Angelo R. Cardono, Vice Chairman  
Roger L. Persons, Secretary  
Clyde C. Bailey  
Donald J. Bohana  
Nini Cutter  
Jan Charles Gray  
James M. Woods

**Staff**

Ted A. Gustin, Chief, Aviation Division  
James H. Abing, Project Manager

EFFECTIVE APRIL 1, 1991, COMPTON AIRPORT IS OPERATED UNDER THE TERMS OF A MANAGEMENT SERVICES AGREEMENT BETWEEN THE COUNTY OF LOS ANGELES (OWNER) AND COMARCO, INC. (AGENT).

The preparation of this document was financed in part through a planning grant from the Federal Aviation Administration (FAA) as provided under Section 505 of the Airport and Airway Improvement Act of 1982, as amended. The contents of this report reflect the views of Hodges & Shutt, who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted herein, nor does it indicate that the proposed development is environmentally acceptable in accordance with Public Laws 91-190, 91-258, and/or 90-495.

# Table of Contents

Page  
No.

<b>1 – INTRODUCTION</b>	
STUDY BACKGROUND .....	1
CONTENTS OF THE PLAN .....	1
<b>2 – SUMMARY</b>	
OVERVIEW .....	3
PLAN DRAWINGS .....	4
BACKGROUND AND INVENTORY .....	5
AIRPORT ACTIVITY AND CAPACITY ANALYSIS .....	5
Historical Airport Activity .....	6
Activity Forecasts .....	6
Capacity Analysis .....	7
AIRFIELD DESIGN .....	8
Airfield Design Factors .....	8
Proposed Airfield Improvements .....	9
BUILDING AREA DEVELOPMENT .....	10
Design Considerations .....	10
Facility Requirements .....	11
LAND USE AND ENVIRONMENTAL ISSUES .....	13
Current and Projected Land Use Impacts and Compatibility Concerns .....	13
Land Use Controls and Impact Mitigation Techniques .....	13
FINANCIAL AND IMPLEMENTATION ISSUES .....	14
Capital Improvement Program .....	14
Financial Projection .....	18
Master Plan Adoption .....	18
Implementation .....	19
AVIATION MARKETING PROGRAM .....	19
Airport Role and User Characteristics .....	20
Aviation Marketing Opportunity Analysis .....	20
Aviation Marketing Plan .....	20
<b>3 – BACKGROUND AND INVENTORY</b>	
COMPTON AIRPORT .....	23
Location and Environs .....	23
Airport Development .....	23
Management and Operations .....	28
Aeronautical Services .....	29
Other Services .....	29
AERONAUTICAL SETTING .....	29
Area Airports .....	29
Area Airspace .....	31
COMMUNITY PROFILE .....	33
PREVIOUS AIRPORT PLANS AND STUDIES .....	33

**Table of Contents – Cont’d.**

	<b>Page No.</b>
<b>4 – AIRPORT ACTIVITY AND CAPACITY ANALYSIS</b>	
AIRPORT ROLE .....	35
Historical .....	35
Future .....	36
HISTORICAL AIRPORT ACTIVITY .....	37
Based Aircraft .....	37
Aircraft Operations .....	37
Distribution of Activity .....	39
Fuel Flowage .....	39
Airport Safety Record .....	39
BASED AIRCRAFT DEMAND FORECASTS .....	45
National and Regional Demand Factors .....	45
Specific Compton Airport Demand Factors .....	46
Other Based Aircraft Demand Forecasts .....	48
Based Aircraft Demand Conclusions .....	49
TRANSIENT AIRCRAFT PARKING DEMAND .....	49
AIRCRAFT OPERATIONS FORECASTS .....	50
Forecast Influences .....	50
National and Regional Forecasts .....	52
Operations Demand Conclusions .....	52
AIRFIELD CAPACITY ANALYSIS .....	53
Background .....	53
Hourly Capacity .....	53
Annual Capacity .....	53
Weighted Hourly Capacity .....	54
Annual Utilization .....	58
AIRFIELD CAPACITY CONCLUSIONS .....	58
Weighted Hourly Capacity .....	58
Annual Utilization .....	59
BUILDING AREA CAPACITY .....	59
Existing .....	59
Future .....	60
BALANCED CAPACITY .....	62
<b>5 – AIRFIELD DESIGN</b>	
DESIGN FACTORS .....	65
AIRPORT DESIGN STANDARDS .....	66
Airport Reference Code .....	66
Critical Aircraft .....	67
RUNWAY CONFIGURATION DESIGN	
REQUIREMENTS .....	68
Existing Parallel Runways Configuration .....	68
Single Runway Configuration .....	70
RUNWAY ORIENTATION DESIGN REQUIREMENTS .....	70
RUNWAY LONGITUDINAL DESIGN REQUIREMENTS .....	71
Runway Length .....	71

**Table of Contents — Cont'd.**

	<b>Page No.</b>
Object Free Areas .....	72
Runway Safety Areas .....	72
FAR Part 77 Approach Surfaces .....	72
Runway Protection Zones .....	73
Landing Threshold Locations .....	74
<b>RUNWAY LATERAL DESIGN REQUIREMENTS .....</b>	<b>75</b>
Separation Criteria .....	75
Land Acquisition Potential .....	76
<b>RUNWAY CONFIGURATION ALTERNATIVES .....</b>	<b>77</b>
Identification of Alternatives .....	77
Analysis of Alternatives .....	77
Recommended Runway Configuration .....	81
<b>RUNWAY ORIENTATION ALTERNATIVES .....</b>	<b>84</b>
<b>RUNWAY LONGITUDINAL ALTERNATIVES .....</b>	<b>84</b>
Runway End Configurations .....	84
Surface Gradient and Line-of-Sight .....	91
<b>RUNWAY LATERAL REQUIREMENTS .....</b>	<b>94</b>
Runway Width .....	94
Object Free Areas and Runway Safety Areas .....	94
Runway-to-Taxiway Separation .....	94
Building Restriction Line .....	95
Aircraft Hold Line .....	95
<b>TAXIWAY REQUIREMENTS .....</b>	<b>96</b>
Parallel Taxiways .....	96
Exit Taxiways .....	96
Entrance Taxiways .....	97
<b>OTHER AIRFIELD DESIGN ELEMENTS .....</b>	<b>98</b>
Pavement Strength .....	98
Marking .....	98
Lighting .....	99
Approach and Landing Aids .....	99
Runway Reconstruction .....	103
 <b>6 — BUILDING AREA DEVELOPMENT</b>	
<b>OVERVIEW .....</b>	<b>105</b>
<b>DESIGN FACTORS .....</b>	<b>106</b>
Compliance with FAA Airport Design Standards .....	106
Maximized Development and Use of the Airport's Available Building Area .....	106
Accommodation of Increased Helicopter Activity .....	107
Enhancement of Airport Safety and Security .....	107
Development Staging .....	107
<b>FACILITY REQUIREMENTS — SOUTH SIDE BUILDING AREA .....</b>	<b>108</b>
Terminal Area .....	108
Aircraft Fueling Facilities .....	109
Airfield Maintenance Facility .....	110
Fixed Base Operations Area .....	112

**Table of Contents – Cont’d.**

	<b>Page No.</b>
Aircraft Storage and Parking .....	112
Helicopter Operations .....	115
Airport Traffic Control Tower .....	120
<b>FACILITY REQUIREMENTS – NORTH SIDE BUILDING AREA .....</b>	<b>123</b>
Aircraft Storage Hangars and Tiedowns .....	123
Aircraft Washing Area .....	124
Owner-Performed Aircraft Maintenance Enclosure .....	124
<b>FACILITY REQUIREMENTS – OTHER .....</b>	<b>125</b>
Airport Perimeter Wall .....	125
Fencing, Gates, and Lighting .....	126
Airport Viewing Area .....	126
<b>BUILDING AREA CONFIGURATION ALTERNATIVES .....</b>	<b>127</b>
<b>BUILDING AREA STAGING PLAN .....</b>	<b>127</b>
<b>7 – LAND USE AND ENVIRONMENTAL ISSUES</b>	
<b>OVERVIEW .....</b>	<b>133</b>
<b>LAND USE COMPATIBILITY CONSIDERATIONS .....</b>	<b>133</b>
<b>CURRENT AND PROJECTED LAND USE IMPACTS AND COMPATIBILITY CONCERNS ..</b>	<b>134</b>
Noise Impacts .....	136
Hazards to Flight .....	136
Safety on the Ground .....	138
Overflight Impacts .....	138
<b>ESTABLISHED LAND USE COMPATIBILITY MEASURES .....</b>	<b>139</b>
<b>LAND USE CONTROLS AND IMPACT MITIGATION TECHNIQUES .....</b>	<b>140</b>
Airport Land Use Plan .....	140
Land Acquisition .....	142
Height Limitation .....	145
Overflight Areas .....	147
<b>ENVIRONMENTAL IMPACTS OF AIRPORT DEVELOPMENT .....</b>	<b>147</b>
<b>SUMMARY .....</b>	<b>148</b>
<b>8 – FINANCIAL AND IMPLEMENTATION ISSUES</b>	
<b>CAPITAL IMPROVEMENT PROGRAM .....</b>	<b>149</b>
Cost Estimates .....	149
Capital Funding Sources .....	149
Conclusions .....	152
<b>PRO FORMA FINANCIAL PROJECTION .....</b>	<b>152</b>
<b>FINANCIAL SUMMARY .....</b>	<b>153</b>
<b>MASTER PLAN ADOPTION AND IMPLEMENTATION ACTIONS .....</b>	<b>156</b>
Master Plan Adoption .....	156
Implementation .....	157

**Table of Contents – Cont'd.**

	<b>Page No.</b>
<b>9 –AVIATION MARKETING PROGRAM</b>	
INTRODUCTION .....	159
DISCUSSION .....	159
PRESENT AIRPORT OPERATIONAL ROLE AND AIRPORT USER GROUP CHARACTERISTICS .....	160
FUTURE AIRPORT OPERATIONAL ROLE AND AIRPORT USER GROUP CHARACTERISTICS .....	162
AVIATION MARKETING OPPORTUNITY ANALYSIS .....	163
AVIATION MARKETING PLAN .....	163
Aviation Marketing Actions – Compton Airport Based Aircraft Users .....	164
Aviation Marketing Actions – Compton Airport Transient Aircraft Users .....	166
Aviation Marketing Actions – Compton Airport Tenants and Concessionaires .....	168
Aviation Marketing Actions – Compton Airport Area Community-at-Large .....	169

**Appendices**

- A Chronology of Airport Development
- B Existing Airport Facilities
- C Summary of Airport User Survey Questionnaire
- D Acquisition of Additional Land Area
- E Initial Study – Environmental Checklist Form
- F Hangar Financing Options
- G References
- H Glossary

## LIST OF FIGURES

	<b>Page No.</b>	
1	Airport Layout Plan . . . . .	oversize
2	Data Sheet . . . . .	oversize
3	Airspace Plan . . . . .	oversize
4	Building Area Plan . . . . .	oversize
5	Vicinity Map . . . . .	26
6	Location Map . . . . .	27
7	Area Airspace . . . . .	32
8	Based Aircraft . . . . .	38
9	Aircraft Operations . . . . .	40
10	Annual Aviation Fuel Dispensed . . . . .	41
11	Airfield Design Issues and Opportunities . . . . .	ff 66
12	Runway Configuration Alternatives . . . . .	78
13	Runway End Configuration Alternatives . . . . .	92
14	Building Area Development . . . . .	ff 106
15	Terminal Building . . . . .	111
16	FAR Part 77 Transitional Surfaces . . . . .	ff 116
17	Airport Vicinity . . . . .	135
18	Airport Flight Tracks . . . . .	141
19	Runway Protection Zones . . . . .	143

ff = figure following page

## LIST OF TABLES

		Page No.
1	Proposed Airport Improvements .....	16
2	Airport Profile .....	24
3	Area Airports .....	30
4	Summary of Aircraft Accidents .....	42
5	Master Plan Airport Activity Forecasts .....	51
6	Weighted Hourly Capacity .....	55
7	Airfield Capacity Matrix .....	61
8	Building Area and Airfield Capacity Relationships .....	63
9	Airport Design Standards .....	69
10	Runway Configuration Alternatives Analysis .....	82
11	Runway Longitudinal Alternatives Analysis .....	86
12	Helicopter Operations Area Alternatives .....	118
13	Phase I Tower Establishment Ratio .....	121
14	Aircraft Storage Capacities .....	128
15	Airport Development Staging Plan .....	130
16	Land Uses in Runway Protection Zones .....	144
17	Pro Forma Financial Projection .....	154
18	Marketing Opportunity Analysis .....	ff 164

ff = figure following page

# 1

## **Introduction**

# **Introduction**

## **STUDY BACKGROUND**

Compton Airport is fairly typical of the nation's general aviation airports, in that it has seen little growth and, in some cases, a reduction in aeronautical activity during the last decade. This activity trend is consistent with the limited growth tendencies and aeronautical activity decreases that have characterized the nation's general aviation industry since the late 1970's. As the general aviation industry rebounds in the 1990's, particularly in the business and corporate aviation sector, Compton Airport can expect to see a modest increase in aeronautical activity, both in terms of aircraft operations and based aircraft.

In order to best determine its options and opportunities with respect to the accommodation of such future aeronautical activity at Compton Airport, the County of Los Angeles initiated this Airport Master Plan study. The County obtained a Federal Aviation Administration grant and engaged the firm of Hodges & Shutt to conduct the study.

The study was conducted in coordination with the staffs of the County of Los Angeles-Department of Public Works-Aviation Division, the Federal Aviation Administration, and the California Division of Aeronautics. In addition, key study findings and recommendations were reviewed with the Los Angeles County Aviation Commission at public meetings held throughout the course of the study. Valuable input was also contributed by the general public, airport users, and airport tenants.

## **CONTENTS OF THE PLAN**

The Master Plan Report consists of nine chapters plus a set of appendices.

A summary of the Master Plan's major conclusions and recommendations is presented in the following chapter (Chapter 2). Chapter 2 also contains the Airport Master Plan drawings.

Chapters 3 through 8 set forth the technical data and analyses involved in the development of the Master Plan. The individual subject areas addressed are: background and inventory; airport activity and capacity analysis; airfield design; building area development; land use and environmental issues; and financial and implementation issues. Chapter 9 presents an aviation marketing program that has been developed specifically to assist the County in achieving its operational and financial goals for Compton Airport.

The appendices contain supporting information and supplemental documentation.

# 2

## Summary

## Summary

### OVERVIEW

The Compton Airport Master Plan is a comprehensive assessment of the current status and future course of development of the Airport. A major objective of the Master Plan is to formulate a concise, readily implementable program to improve the overall operation, aircraft basing capacity, and financial status of the Airport. The Master Plan identifies the physical improvements and operational enhancements that are required to see the Airport through the 1990's and into the 21st Century.

- **Major Issues** – The physical limitations and practical constraints of the airport site pose numerous design issues which have been a primary focus of the Master Plan study. Among these issues are:
  - Evaluate the advantages and disadvantages of the closely-spaced parallel runway configuration.
  - Provide adequate Runway Safety Areas and Object Free Areas in accordance with FAA design standards.
  - Upgrade airport facilities, service levels, and approach aids.
  - Maximize beneficial use of available airport land area.
  - Increase aircraft basing capacity consistent with available land area and runway capacity.
  - Provide for additional aircraft storage hangar development.
  - Provide for safe, coordinated accommodation of both airplanes and helicopters.
  - Enhance overall airport and user security.

- Evaluate off-airport land use impacts and identify potential mitigation techniques.
- **Plan Time Frame** – The Master Plan covers a 20-year time frame. The emphasis, though, is on the first ten years of this period. Potential activity levels and facility needs during the later years are addressed primarily to give an indication of the long-term direction of airport development.
- **Future Revisions** – The airport plan drawings should be reviewed as necessary to assure that they continue to represent newly arising conditions and facility needs. It is recommended that the plan drawings be updated periodically to reflect new construction. A thorough review and updating of the Airport Master Plan should be accomplished within seven to ten years.

## PLAN DRAWINGS

The existing configuration and recommended future development of Compton Airport are graphically portrayed in three types of plan drawings:

- **Airport Layout Plan** – The Airport Layout Plan (ALP) is the most important of the airport plan drawings. An ALP adopted by the County of Los Angeles and approved by the Federal Aviation Administration is a prerequisite to FAA funding of airport improvement projects under the Airport Improvement Program. The Compton Airport Layout Plan and Airport Data Sheet are depicted in Figures 1 and 2 (oversize), respectively.
- **Airspace Plan** – The purpose of the Airspace Plan is to define and help protect the airspace essential to the safe operation of aircraft in the vicinity of the Airport. The criteria which define the limits of this airspace are established in Federal Aviation Regulation (FAR), Part 77, "Objects Affecting Navigable Airspace." The Airspace Plan for Compton Airport is shown in Figure 3 (oversize).
- **Building Area Plan** – The Building Area Plan shows details of the Airport's core areas (terminal area, tiedown locations, hangar sites, automobile parking, fixed base operations areas, etc.) not fully illustrated in the Airport Layout Plan. Figure 4 (oversize) illustrates Compton Airport's principal building area.

---

### Note To Reader

For the purposes of this report, the Airport Master Plan drawings (4 sheets - Figures 1, 2, 3, and 4) are presented in 24" x 32" blue-line folded format following the appendices.

---

## BACKGROUND AND INVENTORY

- **Location** – Compton Airport lies entirely within the City of Compton incorporated limits, approximately 10 miles south of the Los Angeles City Hall.
- **Historical Setting** – Compton Airport was originally established in 1924 and is the oldest continuously operating airport in the Los Angeles basin. In 1966, Los Angeles County acquired the Airport for public ownership and use. During the ensuing years, the County expended federal, state, and county funds in the development and improvement of the Airport and its service capabilities.
- **Management and Operations** – The Airport is owned by Los Angeles County and is administered by the County's Department of Public Works-Aviation Division. Since April 1991, the day-to-day operation and management of the Airport has been provided by COMARCO – a private management services firm working under contract to the County. COMARCO personnel provide all regular airport management, airport operations, maintenance services, and dispense all aviation fuel. The eight-member Los Angeles County Aviation Commission serves to advise the County Board of Supervisors regarding the operation and development of the County's five-airport system.
- **Aeronautical Services** – Four fixed base operators at Compton Airport offer a basic range of general aviation services to the flying public. These services include aircraft rental, flight and ground instruction, aircraft maintenance and repair, aircraft sales, aircraft painting, and air charter.
- **Aeronautical Setting** – Several large, complex metropolitan airports are located in the vicinity of Compton Airport. As a result, the Compton area airspace is very complex and highly regulated. Aircraft operating to/from Compton Airport must be equipped with appropriate avionics and must, in certain areas, be in radio contact with Air Traffic Control. Compton Airport is the only public-use airport in the Los Angeles basin that is not equipped with an airport traffic control tower.

## AIRPORT ACTIVITY AND CAPACITY ANALYSIS

- **Airport Role** – It is anticipated that the past, present, and future role of Compton Airport will remain essentially the same; that is, to serve the aeronautical needs of the personal, recreational, and small business aircraft user – both based and transient. Particularly noteworthy is the relatively high percentage (approximately 35%) of Compton Airport-based aircraft that are considered "enthusiast" aircraft (e.g., amateur-built, antiques, classic, sport, and warbird aircraft types).

Aircraft users desiring more sophisticated facilities (e.g., precision instrument approaches; long, high-strength runways; corporate-oriented fixed base operators; etc.) can readily avail themselves of nearby alternative airports such as Torrance Municipal, Long Beach, and Los Angeles International airports.

### Historical Airport Activity

- **Based Aircraft** – Compton Airport is similar to most of the nation's primarily general aviation airports in that it has experienced inconsistent, slow growth over the past 20 years. As of late 1990, an estimated 352 aircraft are based at the Airport. Approximately 22 of these aircraft are twin-engine fixed-wing airplanes and 4 are helicopters; the remainder of the based aircraft are single-engine fixed-wing airplanes.
- **Aircraft Operations** – An estimated 90,000 aircraft operations (take-offs and landings) took place at Compton Airport in 1990. It is estimated that over half of these operations were flight training-related (e.g., touch-and-go's).

### Activity Forecasts

- **Based Aircraft** – Despite the slowdown in nationwide general aviation activity, the Master Plan concludes that there is potential for modest continued growth of Compton Airport's based aircraft population. The level of growth will in large part be dependent upon the aircraft basing capacity of the Airport and the availability of aircraft storage hangars. The Master Plan projects a relatively modest growth rate for based aircraft – an average of 1.75% per year – bringing the total to 500 based aircraft in the year 2010. The large majority of these based aircraft (over 90%) will be single-engine fixed-wing airplanes.
- **Transient Aircraft** – Airport improvements, together with County airport marketing efforts, will contribute to increased demand for transient aircraft parking at Compton Airport. Some 20 spaces (versus 12 now designated) are projected to be needed to meet peak-period demand in 2010.
- **Aircraft Operations** – Aircraft operations are forecast to reach 156,000 annually in 20 years. Local flight training activity will continue to comprise a substantial portion of these operations.

## Capacity Analysis

- **Types of Capacity** – The three forms of capacity typically considered at general aviation airports are airfield, building area (or aircraft parking area), and environmental.
  - The airfield capacity of Compton Airport’s existing parallel runway system ranges between 294,000 aircraft operations per year (in the Airport’s existing configuration) to almost 400,000 operations per year (assuming a "drift-off" taxiway and a managed shift to off-peak periods).
  - The airfield capacity associated with the future single runway configuration ranges between 193,000 aircraft operations per year (with existing peaking characteristics) to over 400,000 operations per year (assuming optimum angled exit configuration and a managed shift to off-peak periods). In all cases, the capacity of the single runway configuration is more than adequate to accommodate projected operational demand through the 20-year planning period.
  - Given the physical constraints of the site, plus the need for land to accommodate taxiways, fixed base operations, and terminal area facilities in compliance with FAA design standards, the based and transient aircraft parking capacity of the Airport is ultimately limited to about 500 aircraft. Additional based aircraft could be accommodated if selected FAA design standards (e.g., aircraft parking limit and FAR Part 77 surfaces criteria) were relaxed and aircraft were more closely parked. However, due to surface congestion and safety considerations, such action is not recommended. The resultant building area capacity of the Airport is marginally sufficient to accommodate the projected 20-year demand for based and transient aircraft parking and aeronautical support facilities.
  - The environmental capacity of an airport is generally related to aircraft noise impacts and the relative noise sensitivity of the airport environs. Due to the nature of aircraft operations at Compton Airport, environmental capacity is not expected to be a significant constraint on airport development. However, measures to minimize noise-related conflicts between the Airport and its surroundings are, nonetheless, important.
- **Capacity Relationships** – The controlling capacity at Compton Airport is the limited availability of land for building area development. This limitation will ultimately constrain the number of aircraft that can be based or parked on the Airport. Airfield and environmental capacities are not expected to constrain airport activity and growth.

## AIRFIELD DESIGN

The airfield portion of Compton Airport is comprised of the runway/parallel taxiway system, the runway protection zones, and the required safety areas. In addition, those facilities and equipment generally associated with the airfield area (e.g., visual glide slope indicators, wind cones, etc.) are included as airfield design elements. The assessment of airfield design issues and alternatives, and the development of the recommended airfield configuration, were key factors considered in the formulation of the Master Plan for Compton Airport.

### Airfield Design Factors

- **Airport Reference Code** – The Master Plan analysis of airport role and aviation activity indicates that Compton Airport will continue to serve as a public-use airport capable of accommodating based and transient single-engine and light twin-engine general aviation aircraft. Accordingly, for design purposes Compton Airport is classified for the present and foreseeable future in the Airport Reference Code B-I (Small Airplanes/Visual Approach) category. This airport design category provides for the use and accommodation of virtually all single-engine and light twin-engine general aviation aircraft currently using the Airport or anticipated to use the Airport throughout the planning future.
- **Critical Aircraft** – The critical aircraft anticipated to use Compton Airport within the 20-year planning period are encompassed within Aircraft Approach Categories A and B, and Airplane Design Group I (Small Airplanes/Visual Approach). Such critical aircraft are defined as having a maximum certificated take-off weight of 12,500 pounds or less, a wingspan of less than 49 feet, and an approach speed of less than 121 knots.
- **Instrument Approach Potential** – Due to airspace complexity and airfield design considerations, it may be difficult to establish a viable instrument approach procedure, either precision or nonprecision, that fully meets FAA siting requirements and adequately serves the Airport. However, the option of establishing a nonprecision instrument approach procedure (e.g., NDB, VOR, LOC, LDA, SDF, LORAN-C, etc.) at Compton Airport should be preserved. A formal FAA aeronautical study will be required to determine the appropriate type of instrument approach and the approach/landing minimums. For airport master planning and design purposes, a "visual" (i.e., circling approach) classification has been assumed.
- **Specific Airfield Design Issues and Concerns** – The following site-specific issues and concerns were addressed as part of the Master Plan:

---

Typical aircraft encompassed within Airport Reference Code B-I (Small Airplanes) include:

- Cessna 172 Skyhawk
  - Rockwell 690A
  - Beechcraft Bonanza
  - Cessna Citation I
-

- Continue to emphasize the accommodation and servicing of general aviation aircraft – both personal/recreational aircraft users and business/corporate aircraft users.
- Maintain runway length consistent with ARC B-I (Small Airplanes) standards.
- Provide appropriate on-airport Object Free Areas and Runway Safety Areas.
- Properly identify and depict Runway Protection Zones (formerly Clear Zones).
- Provide for coordinated accommodation of both airplanes and helicopters.
- Provide enhanced visual and instrument approach aids.
- Maximize available area for development of aircraft storage hangars and tiedowns.
- Evaluate feasibility of acquiring additional land area.

### **Proposed Airfield Improvements**

- **Major Features** – A variety of airfield design alternatives were considered as part of the Master Plan study. The recommended plan for airfield development is depicted in Figures 1 and 2. The major features of the airfield design illustrated on the Airport Layout Plan include:
  - For the short- to mid-term, maintain "As-Is" parallel runways configuration and maximize existing aircraft basing capacity within available area.
  - Provide for appropriately sized Runway Safety Areas and Object Free Areas off each runway end. This action results in a published runway length of 3,670 feet.
  - Utilize entrance taxiway at each runway end to maximize utility and safety of the Airport.
  - Maintain existing physical locations of displaced thresholds at each runway end.
  - Improve Runway 7L-25R through installation of Medium-Intensity Runway Lights, Visual Glide Slope Indicators, and Runway End Identifier Lights.

- When warranted by based aircraft demand, close Runway 7R-25L and adjust airport operation consistent with a single runway configuration.
  - Establish new north and south side parallel taxiways with 150-foot separation from runway centerline. Provide holding bay/run-up pad at approach end of runway.
  - Expand aircraft basing capacity in compliance with FAA design/operational standards.
- **Cost** – The preliminary cost estimate for the airfield improvements identified in this Master Plan is \$6.3 million. Of this amount, \$2.6 million is eligible for federal funding under the Airport Improvement Plan.
  - **Engineering Design** – The above improvements represent a planning concept that is based upon Master Plan analysis and preliminary computations. It is anticipated that the final engineering design will utilize these planning concepts as a guide and generate refined design details and cost estimates.
  - **Construction** – Implementation of the proposed airfield design will entail substantial reconstruction of the runway surface. Project construction will necessitate the closure of Runway 7L-25R for a period of approximately four to six weeks. During this time, Runway 7R-25L would remain open and fully operational.

## BUILDING AREA DEVELOPMENT

The building area of an airport encompasses all of the airport property not required for airfield purposes (i.e., runway/taxiway system). At Compton Airport, the building area is located on both the north and south sides of the airfield. The primary public areas (e.g., terminal complex, fixed base operations, etc.) are located on the south side of the airfield.

### Design Considerations

- **Compliance with FAA Airport Design Standards** – All building area structures, fixed objects, and aircraft parking areas should be located so as to comply with FAA design standards. Many elements of Compton Airport's existing layout and design do not comply with current FAA design/operational standards. At Compton Airport, the appropriate present and future FAA design category is Airport Reference Code B-I (Small Airplanes/Visual Approach).

- **Maximize Development and Use of Building Area** – Analysis indicates that the cost of acquiring additional land to support Compton Airport operations is prohibitive at this time. The Airport is nearing its current aircraft basing capacity. To accommodate additional based aircraft, the space-inefficient, closely-spaced parallel runways could be replaced by a single runway configuration.
- **Accommodation of Increased Helicopter Activity** – The Airport is experiencing growth in based municipal services helicopter operations. It is an objective of the Master Plan to provide for the safe and coordinated use of the Airport by both airplanes and helicopters.
- **Enhancement of Airport Safety and Security** – At Compton Airport, the somewhat constrained land area available and congested urban environment require that appropriate attention be devoted to ensuring the continued safety and security of airport operations.
- **Terminal Area Development** – The County's recently constructed terminal building provides a beneficial focal point for public use of the Airport. The south side of the Airport now offers the public and transient aircraft user a comprehensive range of general aviation services.
- **Development Staging** – The staging of improvements to the building area must be well-timed and coordinated. The objective is to have a plan that is flexible enough to adapt to changes in type and pace of facility demands, is cost-effective, and also makes sense at each stage of development. At Compton Airport, all building area facilities and improvements must be compatible with both the present and future runway configurations.

## Facility Requirements

- **Airfield Configuration** – During the mid-range time frame (5-10 years), is recommended that the Airport's existing closely-spaced parallel runways system be replaced by a single runway based on the Runway 7L-25R alignment. This reconfiguration of the airfield will permit increased building area capacity in compliance with FAA design standards.
- **Aircraft Storage and Parking** – Demand for Compton Airport based aircraft hangar and tiedown facilities is projected to increase by an estimated 42% over the 20-year planning period, with the majority of this demand being for individual aircraft storage hangars. Sufficient area is available on the Airport to accommodate up to 130 new hangar units, provided that the parallel runway system is converted to the single runway configuration.
- **Terminal Area** – Early in the Compton Airport master planning process, the County identified a site for the new terminal/administration

building. The terminal/administration building was subsequently constructed in mid-1991. The selected location of the terminal building is considered optimum and is consistent with the overall existing and future configurations of the Airport. An adequate area for the parking of airport user automobiles is provided in front of the terminal building.

- **Aircraft Fueling Facilities** – An important consideration in the design and use of the new terminal area is the appropriate location and type of aircraft fueling facilities. Based upon the assessment of the Airport's role and aviation activity forecasts, it is recommended that the Airport's aircraft fueling facilities be initially oriented to service piston-powered aircraft with at least two grades of aviation gasoline. Ideally, these two grades of aviation gasoline would be 80 octane and 100 octane. As an alternative to 100, the Airport could offer 100LL octane aviation gasoline.

Also worthy of consideration is the potential for the Airport to store and dispense Jet-A fuel to the City of Compton Police Department turbine-powered helicopters based at Compton Airport. The Jet-A fuel would be most efficiently dispensed to the CPD helicopters and the occasional civilian or military turbine-powered aircraft through the use of refueler trucks.

In keeping with the County's established operational format at Compton and its other system airports, the "fuel island" configuration is retained. The future fuel island, with associated fuel-dispensing equipment and underground storage tanks, would be located approximately 50 feet northeast of the present island's location. This new location will provide more room for aircraft maneuvering in the fueling area.

- **Other Building Area Facilities** – The following facilities are identified as integral elements of the building area plan:
  - Airport Traffic Control Tower – Potential future site in the south central area of the Airport.
  - Owner-Performed Aircraft Maintenance Facility – Located adjacent to the aircraft washing facility in the northeast corner of the Airport. Alternatively, a facility could also be located in the Airport's northwest corner.
  - Airfield Maintenance Facility – Located in the southeast corner of the Airport, as at present.

## LAND USE AND ENVIRONMENTAL ISSUES

Compton Airport is located in the midst of an extensively developed urban area. This off-airport urban development is composed primarily of single- and multi-family residences, and commercial/industrial uses. Despite the potential for incompatibility and conflict between the Airport and certain of these off-airport land uses, the Airport and surrounding community have existed over the years in relative harmony.

### Current and Projected Land Use Impacts and Compatibility Concerns

- **Noise** – A limited analysis of noise contours was last performed for Compton Airport in 1972. Due to changes in aircraft operation levels and flight tracks over the ensuing years, it is strongly recommended that these contours be updated as an integral element of any future Los Angeles County Airport Land Use Plan. As noted above, aircraft noise is not currently a significant issue at the Airport, but nevertheless, its impact should be assessed and mitigative actions implemented.
- **Safety** – The most critical areas with regard to flight hazards are within the approaches to the Airport's runway. At Compton Airport, the extensive development of the land areas underlying the Airport's approaches has resulted in numerous buildings, antennas, pole lines, and trees that have the potential to be considered as obstructions and hazards to flight. The Master Plan recommends that action should be taken by the County and the City of Compton to ensure that no further obstructions or hazards to flight are permitted within the areas defined by FAR Part 77.
- **Overflight** – Compton Airport's overflight impacts are generally concentrated under the airport traffic pattern. Due to the nonstandard traffic pattern used for Runways 7L and 25R, the majority of aircraft overflights occur to the south side of the Airport. The resultant downwind leg of the traffic pattern overlies the commercial/industrial area bordering the north side of Highway 91. Historically, the Airport has received very few aircraft-related noise complaints from area residents. The few complaints which are received are usually associated with a distinct, atypical aircraft noise event as opposed to normal aircraft overflight operations.

### Land Use Controls and Impact Mitigation Techniques

- **Airport Land Use Plan** – The California State Legislature is currently reconsidering its requirement that the Los Angeles Regional Planning Commission prepare a comprehensive land use plan for each public-use airport in Los Angeles County. Irrespective of the State's ultimate

finding, it is strongly recommended that the County prepare a comprehensive land use plan for Compton Airport. This plan should identify specific land use impacts and compatibility concerns, and promulgate land use controls and impact mitigation actions. It is recommended that the comprehensive land use plan incorporate the land use compatibility measures identified in this Master Plan.

- **Land Acquisition** – Due to the intensive urban development which has taken place within the Airport’s Runway Protection Zones, purchase and/or conversion of these incompatible uses would be both impractical and very expensive. However, the County and City should endeavor to reverse or mitigate this existing land use incompatibility at every reasonable opportunity.
- **Height Limitation** – Numerous obstructions currently penetrate the FAR Part 77 approach surfaces for the Airport. Unless there is effective land use regulation and control, construction of new structures and obstructions could require further restrictions on airport operations. The prevention of further encroachments and incompatible land uses should be the highest priority of both Los Angeles County and the City of Compton.

It is recommended that the County and the City establish height limitations for the Airport environs that are primarily based upon the requirements of FAR Part 77. For the Airport’s Runway Protection Zones, it is suggested that the height limitations be based, at a minimum, upon the existing clearance plane for each runway’s displaced threshold.

## FINANCIAL AND IMPLEMENTATION ISSUES

The financial element of the Airport Master Plan addresses the timing of the proposed airport improvement projects, the estimated costs of these improvements, and the anticipated future airport revenues and expenses.

### Capital Improvement Program

- **Project Staging** – Generally, it is preferable to spread out the implementation of facility improvements to match forecast increases in airport activity. Compton Airport, however, is approaching the point where additional aircraft basing demand can only be accommodated by converting the existing parallel runway system to the single runway configuration. This reconfiguration will necessitate that a substantial expenditure of airport improvement funds be made in the mid-range time frame. Table 1 lists the airport improvements proposed in the

Master Plan and indicates the time period within which it is recommended they be implemented.

- **Short-Range Projects** — There are no major projects slated for construction in the short-range (within five years). However, a number of projects to enhance the safety and operation of the Airport are proposed:
  - Remark newly designated Object Free Areas, Runway Safety Areas, and entrance taxiways for all runways.
  - Install two supplemental lighted wind cones near runway touch-down zones.
  - Establish nonprecision instrument approach capability (e.g., NDB).
  - Fence and mark terminal area auto parking lot.

The bulk of the proposed improvements are programmed for the mid-range (5-10) years.

- **Costs** — The total estimated cost of the improvement projects identified in the Master Plan is approximately \$6.3 million. Of this amount, a significant proportion (\$4.1 million) is proposed for mid-range implementation.
- **Funding Sources** — It is proposed that the recommended airport improvements be funded through a combination of Federal Aviation Administration, California Division of Aeronautics, Los Angeles County, and private sources.
  - The FAA Airport Improvement Program is the largest single source of proposed funding. Nearly \$2.6 million of the total improvements are eligible for FAA grants. Some \$1.7 million of this amount is for mid-range projects, particularly the runway reconfiguration and parallel taxiway construction.
  - The anticipated Los Angeles County share of the improvement costs over the 20-year Master Plan period is approximately \$3.7 million. The major improvement requiring County funding is the replacement of the aircraft fuel storage and dispensing system. In addition, it is anticipated that the County will fund the construction of all new aircraft storage hangars — approximately 106 hangar units. Neither of these projects is eligible for FAA or state grants. However, both of these projects are eligible for a loan under the State's airport improvement loan program.

	Costs (in 1991 \$ values)			
	Total	Federal	State#	County
<b>Short-Range (0-5 Years)</b>				
<b>Airfield</b>				
• Remark newly-designated Object Free Areas, Runway Safety Areas, and entrance taxiways for all runways.	\$ 10,000	\$ 9,000	E	\$ 1,000
• Install two supplemental lighted wind cones near runway touchdown zones.	30,000	27,000	E	3,000
• Establish nonprecision instrument approach capability (e.g., NDB).	50,000	?	E	50,000
<b>Building Area</b>				
• Fence and mark enlarged terminal building automobile parking area.	30,000	27,000	E	3,000
Subtotals	\$ 80,000	\$ 23,000	\$---	\$ 57,000
<b>Mid-Range (5-10 Years)</b>				
<b>Airfield</b>				
• Overlay Runway 7L-25R.	\$ 175,000	\$ 157,000	E	\$ 18,000
• Install lighting systems on runway 7L-25R (MIRLs, VGSIs, and REILs).	200,000	180,000	E	20,000
• Close and remark Runway 7R-25L as taxiway. Pave runup areas and infield areas between former Runway 7R-25L and south apron.	900,000	810,000	E	90,000
• Remark north side parallel taxiway and install taxiway edge lights on south side. Slurry seal north side apron.	250,000	225,000	E	25,000
<b>Building Area</b>				
• Construct 53 T-hangar units on south apron. Install appropriate drainage system.	1,300,000	200,000	E	1,100,000
• Relocate north side tiedowns/portable T-hangars (approximately 35 units).	25,000	22,000	E	3,000
• Extend perimeter wall along airport's southwest side.	300,000	100,000	E	200,000
• Construct new aviation fueling facility (assumes no contaminated soil).	700,000	-0-	E	700,000
• Construct aircraft maintenance enclosure.	200,000	-0-	E	200,000
• Install controlled-access gate in FBO area.	20,000	18,000	E	2,000
• Install airport traffic control tower.	*	---	---	---
Subtotals	\$4,070,000	\$1,712,000	\$---	\$2,358,000

Table 1

**Proposed Airport Improvements**  
Compton Airport

	Costs (in 1991 \$ values)			
	Total	Federal	State#	County
<b>Long-Range (10-20 Years)</b>				
<b>Airfield</b>				
• Construct new south side parallel taxiway with appropriate drainage system and taxiway edge lighting.	\$ 520,000	\$ 468,000	E	\$ 52,000
• Construct five new exit taxiways.	60,000	54,000	E	6,000
<b>Building Area</b>				
• Construct 53 T-hangar units on south apron. Install appropriate drainage system.	1,300,000	200,000	E	1,100,000
• Relocate north side tiedowns/portable T-hangars (approximately 35 units).	25,000	22,000	E	3,000
• Expand terminal building (1,500 S.F.).	75,000	0	E	75,000
• Slurry seal south apron.	150,000	135,000	E	15,000
• Acquire automobile service station property.	*	---	---	---
Subtotals	\$2,120,000	\$ 869,000	---	\$1,251,000
<b>TOTALS:</b>				
Short-Range	\$ 80,000	\$ 23,000	---	\$ 57,000
Mid-Range	4,070,000	1,712,000	---	2,358,000
Long-Range	2,120,000	869,000	---	1,251,000
Master Plan Totals	\$6,270,000	\$2,604,000	---	\$3,666,000

Notes: # Availability of State funding (grants and loans) not determinable at this time. Eligibility is indicated by the letter "E".  
 \* To be determined through detailed analysis.

Source: Hodges & Shutt

Table 1 continued

## Proposed Airport Improvements Compton Airport

## Financial Projection

- **Summary** – Within recent years, Compton Airport’s operating revenues have exceeded its operating expenses by a modest margin. This has not always been the case in the past. This positive income trend is projected to continue throughout the five-year financial planning period and into the future. These airport funds – both income and retained earnings – will prove most useful in funding the County’s share of the proposed improvement program. It should be recognized, however, that the Compton Airport improvement program funding and cash flow requirements may, from time to time, necessitate the use of County airport system funds on an interim or supplemental basis. Through the use of such an in-house, self-financing approach, the improvement of the Airport can proceed in a timely and cost-effective manner.
  
- **Financial Recommendations** – The County should continue to aggressively develop all revenue resources and strictly control and minimize all operating expenses.
  - Airport rates and charges should be reviewed and adjusted on a regular basis to ensure that maximum reasonable revenue is generated consistent with the Airport’s role, facilities, and user demand.
  
  - Additional private and commercial aviation development on the Airport should be encouraged to bolster airport revenues and service offerings.
  
  - The ability of the Airport to accommodate based and transient aircraft within its designated service role should be maximized.

## Master Plan Adoption

- **Environmental Impact Documentation** – An Initial Study, prepared in accordance with California Environmental Quality Act (CEQA) guidelines, was performed as an integral part of this Master Plan. The Initial Study should be sufficient to enable preparation of a Negative Declaration allowing adoption of the Airport Master Plan.
  
- **Plan Review** – The County Aviation Commission, the Airport Land Use Commission, and the County Planning Commission each have certain review responsibilities with regard to the Airport Master Plan:
  - The Aviation Commission reviews the overall plan and makes recommendations regarding its adoption to the Board of Supervisors.

- The Airport Land Use Commission (the Los Angeles Regional Planning Commission) is required by state law to review the Master Plan prior to its adoption (PENDING).
- The County Planning Commission has responsibility for: (1) determining the consistency between the Airport Master Plan and the County General Plan; and (2) certifying the Negative Declaration.
- **Board of Supervisors** – The County Board of Supervisors has the ultimate responsibility for adoption of the Airport Master Plan.
- **Federal Aviation Administration** – Following adoption of the Master Plan, the FAA will formally review and approve the Airport Layout Plan drawings as the basis for future engineering design and grant eligibility of specific projects.

### Implementation

- **Project Funding** – Once the plan has been adopted and a decision has been made to proceed with implementation, the County should soon thereafter submit an Airport Improvement Program grant preapplication to the California Division of Aeronautics and the Federal Aviation Administration.
- **Engineering Design** – The County will need to arrange a contractual agreement with a qualified airport engineer to prepare the engineering designs for the proposed improvements. To assure continuity in design development, it is suggested that the agreement cover not just the immediate projects, but other major improvements proposed to be constructed over the next three to five years.
- **Environmental Impact Documentation** – To satisfy CEQA requirements, an environmental analysis may need to be performed with regard to the proposed runway reconfiguration and increase in aircraft parking capacity. There are no apparent requirements for preparation of a federal environmental document.

### AVIATION MARKETING PROGRAM

As an integral element of this Master Plan, a suggested program was developed to market the facilities, capabilities, and services of Compton Airport to both the general aviation community and the community-at-large. The purpose of this program is to improve the Airport's overall operating environment and financial position, encourage the development and growth of desired on-airport aviation businesses and concessions, and enhance user and public perceptions of the Airport and general aviation.

## **Airport Role and User Characteristics**

The Airport's primary role has historically been and will continue to be as a base of operations and destination for personal and recreational aircraft users. A high percentage of these personal and recreational aircraft are considered "enthusiast" aircraft (e.g., antique, experimental, and warbird aircraft types). In addition, greater use of the Airport can be expected in the future by the type of sophisticated, high-performance, single-engine airplanes most commonly operated by small businesses.

## **Aviation Marketing Opportunity Analysis**

Considerable capital and operating expenditures would be required at Compton Airport to attract and accommodate high-performance, multi-engine turbine-powered business/corporate aircraft on a regular basis. Accordingly, it is concluded that the primary market groups for Compton Airport are the personal and recreational aircraft user and small business aircraft user.

## **Aviation Marketing Plan**

To fully realize the County's operational and financial goals for Compton Airport, it is suggested that the following marketing-related actions be taken:

- Endeavor to satisfy the Airport's existing based and transient aircraft user groups.
- Attract additional based and transient aircraft users consistent with the Airport's stated operational role as a facility predominantly serving the personal/recreational aircraft user and small business aircraft user groups.
- Provide a positive airport environment that encourages the development and growth of desired on-airport aviation businesses and concessions.
- Promote the unique attributes and advantages of the Airport to the respective aircraft user groups, local businesses, and the community-at-large.

The Aviation Marketing Program as detailed in the Master Plan identifies a comprehensive listing of aviation marketing actions prepared specifically for application at Compton Airport. The listing differentiates between marketing actions related to based aircraft users, airport tenants and concessionaires, and the community-at-large, and offers specific suggestions

as to how the Airport can be most effectively marketed to its primary user groups and the general public.

The Aviation Marketing Program for Compton Airport as presented herein complements the Airport Master Plan in that for the Airport to achieve its projected aviation activity levels, a concerted marketing and facility improvement program will be required.



# 3

## **Background and Inventory**

## **Background and Inventory**

### **COMPTON AIRPORT**

A brief profile of Compton Airport's major features, air traffic environment, management/operational format, aeronautical services, and community setting is presented in Table 2. The accompanying paragraphs highlight a number of key points.

#### **Location and Environs**

Compton Airport is located in the central portion of the Los Angeles basin, approximately ten miles south of the Los Angeles City Hall (Figure 5). The Airport lies entirely within the City of Compton incorporated limits at an elevation of 97 feet above Mean Sea Level. Alondra Boulevard is the primary roadway serving the Airport (see Figure 6).

Most of the land surrounding the Airport consists of heavily urbanized development – both residential and commercial/industrial uses. Significant industrial development is occurring one mile south of Compton Airport along Highway 91 – a major east-west freeway.

The Airport is also well located with respect to Interstate Highways 110 and 710, as well as Interstate 105, presently under construction. A passenger station for the newly developed Los Angeles area light rail system – the "Blue Line" – is located approximately 1.5 miles' walking distance east of the Airport. There is no public transit service currently connecting the Airport with the Blue Line.

#### **Airport Development**

Compton Airport is the oldest continuously operating airport in the Los Angeles basin. Initial development of Compton Airport occurred in 1924. During Compton Airport's early years, the Airport was privately-owned

## MAJOR FEATURES

### *Property*

- Compton Airport encompasses approximately 77 acres of property owned by the County of Los Angeles.
- Airport property includes the parallel runway/taxiway system and the entire building area.
- None of the four Runway Protection Zones is located on airport property.
- The Airport holds no protective aeronautical easements.

### *Airfield*

- Runway 7R-25L – 3,670 feet long; 60 feet wide; asphalt pavement; lighted; VASI and REIL serving Runway 25L.
- Runway 7L-25R – 3,670 feet long; 60 feet wide; asphalt pavement; unlighted.
- Full-length parallel taxiways serve north and south sides of runway system with four entrance/exit/crossing taxiways.
- There are numerous penetrations of the Airport's FAR Part 77 approach and transitional surfaces.
- Rotating Beacon located in the southeast corner of the airfield.

### *Building Area*

- Split between the north and south sides of the parallel runway system.
- Aircraft parking and storage facilities:
  - 210 aircraft tiedowns (including 12 designated for transient aircraft).
  - 168 hangar units, a mix of fixed and portable types.
  - 60 parking spaces in Fixed Base Operations area.
- Major aviation-related buildings:
  - Administration/coffee shop/office building located in the southeastern portion of the Airport.
  - Three conventional Fixed Base Operations hangars on south side of the Airport with designated publicly-accessible automobile parking areas.
  - Airport operations/maintenance facilities (office, garage, and storage yard) located in southeast corner of airport property.
  - Aviation underground fuel storage and dispensing facilities located in terminal area.
  - Aircraft painting facility located in southside hangar complex (Hangar "P").
  - City of Compton Police Department helicopter operations facilities located in southside hangar complex (Hangar "P").
  - Airport users lounge/rest room facilities located in northside hangar area.
  - Aircraft washrack located in northeast corner of the Airport.

## AIR TRAFFIC PROCEDURES

### *Visual Procedures*

- Traffic pattern:
  - Pattern altitude 1,000 feet MSL (903 feet above Airport elevation).
  - Nonstandard right patterns for Runways 7L and 7R fixed-wing traffic.
  - Nonstandard left pattern for Runway 25R fixed-wing traffic.
  - Helicopters utilize a mid-field approach/departure procedure.
  - Prevailing wind direction favors Runways 25L and 25R.
- Nondirectional radio beacon – VFR use only (CPM-378 kHz).

Table 2

## Airport Profile

### Compton Airport

***Instrument Procedures***

- Instrument approach procedures are not presently authorized at Compton Airport.
- Aircraft are permitted to depart the Airport in accordance with Instrument Flight Rules.

***Airspace***

- Los Angeles TCA overlies the Airport at approximately 4,900-12,400 feet above Airport surface.
- Compton Airport is located within the Los Angeles 30 NM Mode C Requirement Area.
- Located within 5 miles of Compton Airport are ATA's for Long Beach, Torrance Municipal, and Hawthorne Municipal airports.

**MANAGEMENT AND SERVICES*****On-Site Supervision***

- COMARCO employees on duty 24 hours per day – 365 days per year.
- Additional administrative support available through County Aviation department.

***Fixed Base Operations***

- Four fixed base operators are located at the Airport.
- Services provided include: fixed-wing aircraft rental, flight and ground instruction, aircraft maintenance and repair, aircraft sales, pilot supplies, aircraft charter, and aircraft painting.

***Aviation Fuel Service***

- COMARCO dispenses all aviation fuel on the Airport.
- Available fuel grades are 80 (trial basis) and 100LL octane aviation gasoline.
- Fuel is dispensed at a fixed location (adjacent to terminal) and via refueler truck.

***Emergency Services and Security***

- On-site surveillance and security is provided by COMARCO airport staff.
- Local police and fire response provided by City of Compton.

**ENVIRONS*****Topography***

- Airport elevation – 97 feet above Mean Sea Level.
- Terrain is level in all quadrants.

***Design Temperature***

- Mean-maximum, hottest month: 82°F.

***Ground Access***

- Airport is located adjacent to Alondra Boulevard between Central Avenue and Wilmington Avenue.
- Airport is located one mile north of California Highway 91 and nearby Interstate Highways 110, 710, and 105 (under construction).
- Airport is served by four controlled-access gates – two off Alondra Boulevard, and one each off Central Avenue and Wilimington Avenue.

***Jurisdiction***

- Airport is located wholly within the City of Compton in the County of Los Angeles.

Source: Data compiled by Hodges & Shutt

Table 2 continued

**Airport Profile**  
Compton Airport

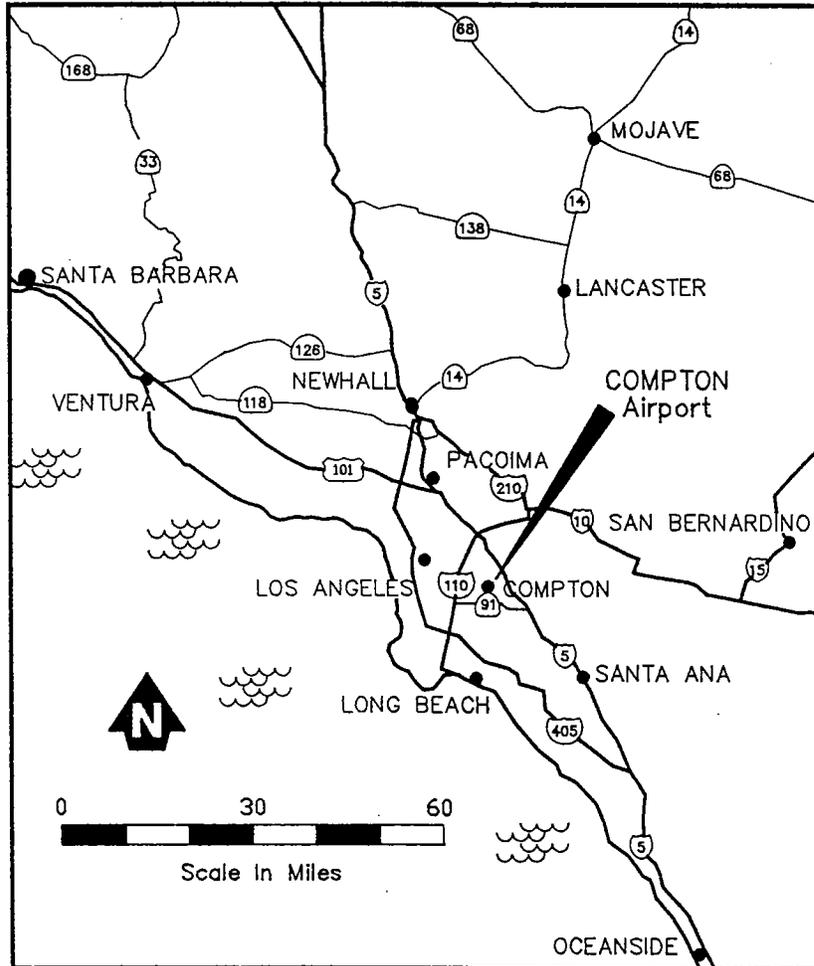


Figure 5

**Vicinity Map**  
Compton Airport

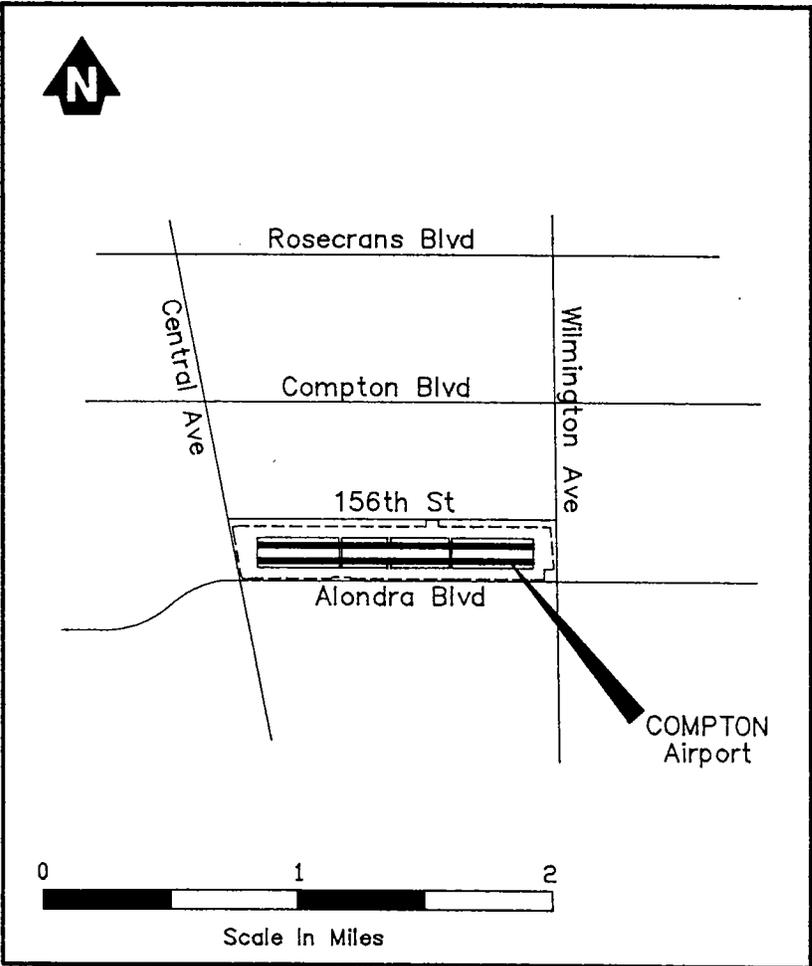


Figure 6

**Location Map**  
Compton Airport

and operated as a public-use facility. The Airport's first paved runway was oriented in a east-west direction and served primarily as a takeoff surface for small single-engine airplanes. The single paved runway was supplemented by two parallel turf runways, also oriented in an east-west direction.

In 1964, Valiant Investment purchased the Airport from its private owners and leased the facility to Los Angeles County for public operation and use. The County subsequently acquired the Airport in 1966 and expended federal, state, and County funds to further develop and improve the airport facilities and service capabilities. Additional detail regarding the chronology of Compton Airport development is presented in Appendix A.

The present Compton Airport occupies a 77-acre, rectangular site located adjacent to the north side of Alondra Boulevard between Central Avenue and Wilmington Avenue. The Airport is situated on level ground with no significant terrain features. The two parallel, 3,670-foot by 60-foot paved runways are oriented in a roughly east-west direction (070° – 250° magnetic) and are served by full-length parallel taxiways on the outer sides. Due to obstructions and safety considerations, a displaced threshold is located at each runway end. Building area development is situated on both the north and south sides of the airfield. All public terminal area facilities, fixed base operations hangars, and County airfield operations/maintenance facilities are located on the Airport's south side. In 1990, approximately 350 aircraft were based at the Airport and generated an estimated 90,000 takeoffs and landings.

An inventory of existing airport facilities is presented in Appendix B.

### **Management and Operations**

Compton Airport is owned by Los Angeles County. Administration of the Airport is the responsibility of the County's Department of Public Works – Aviation Division. Compton Airport is one of five general aviation airports owned by the County.

Since April 1991, the day-to-day management, operation, and development of the Airport have been provided by COMARCO – a private management services firm working under contract to the County. COMARCO operates all five County-owned airports under the terms of a 20-year operating agreement. Under these arrangements, the County retains administrative oversight responsibilities and COMARCO is responsible for the operation, maintenance, and development of the facilities.

An airport manager and supporting staff of seven COMARCO employees are normally stationed at the Airport. The on-site COMARCO airport personnel are further supported by COMARCO administrative and technical staff based throughout the County airport system. COMARCO airport personnel stationed at the Airport are responsible for airport management,

operations, and maintenance. In addition, COMARCO personnel dispense aviation fuel at the Airport. COMARCO personnel are present at the Airport on a 24-hour-per-day, 365-days-per-year basis.

The eight-member Los Angeles County Aviation Commission meets monthly to work with County staff and to advise the County Board of Supervisors regarding the operation and development of the County's airport system. All final policy decisions are the responsibility of the County Board of Supervisors.

### **Aeronautical Services**

The Airport's four fixed base operators and specialty operators offer basic general aviation services including aircraft rental, flight and ground instruction, aircraft maintenance and repair, aircraft sales, pilot supplies, aircraft charter, and aircraft painting. The above services are offered primarily in support of fixed-wing airplanes.

All fixed base operations services are conducted from dedicated conventional hangars. Tiedown space rental for both based and transient aircraft is provided by the County. The County also provides all individual aircraft storage hangars. As noted previously, aviation fuel (100LL octane and, on a trial basis, 80 octane) is dispensed by COMARCO personnel.

### **Other Services**

In addition to providing space on-airport for the above-noted services and capabilities, the Airport also leases ground area and hangar facilities to the City of Compton Police Department (CPD) Air Support Division and the Compton Unified School District. The Compton Police Department Air Support Division bases three helicopters at the Airport in support of area-wide police, emergency response, and community service activities. The Compton Unified School District facilities on-airport are utilized in support of the School District's FAA-certificated Airframe and Powerplant mechanic training programs.

## **AERONAUTICAL SETTING**

### **Area Airports**

High land values and extensive urban development limit the number of nearby airports. Table 3 lists the eight public-use airports located within 20 nautical miles of Compton Airport. It is anticipated that these eight airports will continue to serve as public-use aviation-related facilities

Airport	Location			Owner	Facilities <sup>2</sup>							Services <sup>3</sup>						
	Community	County	Direction <sup>1</sup>		Use	A/C	Rwys	Long	Surf	Lgt	Appr	Gas	Jet	Mntn	Rent	Food	CT	Psgr
Compton	Compton	Los Angeles	--	Pub	Pub	352	2	3,670	Asph	Yes	Vis	X	--	X	X	X	--	--
<b><u>WITHIN 20 NAUTICAL MILES OF COMPTON AIRPORT</u></b>																		
Burbank-Glendale-Pasadena	Burbank	Los Angeles	20 NW	Pub	Pub	327	2	6,902	Asph	Yes	Pre	X	X	X	X	X	X	X
El Monte	El Monte	Los Angeles	15 NE	Pub	Pub	525	1	3,995	Asph	Yes	NP	X	X	X	X	--	X	--
Fullerton	Fullerton	Orange	13 E	Pub	Pub	575	3	3,121	Asph	Yes	NP	X	X	X	X	X	X	--
Hawthorne	Hawthorne	Los Angeles	5 NW	Pub	Pub	307	1	4,956	Conc	Yes	NP	X	--	X	X	X	X	--
Long Beach	Long Beach	Los Angeles	7 SE	Pub	Pub	700	5	10,000	Asph	Yes	Pre	X	X	X	X	X	X	X
Los Alamitos	Los Alamitos	Orange	12 SE	Mil	Mil	--	--	--	--	--	--	--	--	--	--	--	--	--
Los Angeles	Los Angeles	Los Angeles	10 W	Pub	Pub	22	4	12,091	Conc	Yes	Pre	X	X	X	--	X	X	X
Santa Monica	Santa Monica	Los Angeles	15 NW	Pub	Pub	552	1	4,987	Asph	Yes	NP	X	X	X	X	X	X	--
Shepherd	Los Angeles	Los Angeles	13 NE	Pvt	Pvt	--	1	2,700	Asph	No	Vis	--	--	--	--	--	--	--
Torrance	Torrance	Los Angeles	7 S	Pub	Pub	756	2	5,000	Conc	Yes	Pre	X	X	X	X	--	X	--
<b><u>WITHIN 20-25 NAUTICAL MILES OF COMPTON AIRPORT</u></b>																		
Brackett	LaVerne	Los Angeles	25 NE	Pub	Pub	484	2	4,839	Asph	Yes	Pre	X	X	X	X	X	X	--
John Wayne	Santa Ana	Orange	22 SE	Pub	Pub	1035	2	5,700	Asph	Yes	Pre	X	X	X	X	X	X	X
Van Nuys	Van Nuys	Los Angeles	23 NW	Pub	Pub	960	2	8,001	Asph	Yes	Pre	X	X	X	X	X	X	X
Whiteman	Pacoima	Los Angeles	24 NW	Pub	Pub	665	1	3,725	Asph	Yes	Vis	X	--	X	X	X	X	--

<sup>1</sup> Distance (in Nautical Miles) and Direction from Compton Airport

<sup>2</sup> Facilities:  
 Rwys = Number of Runways  
 Long = Length of Longest Runway (feet)  
 Surf = Runway Surface (concrete/asphalt/turf/dirt)  
 Lgt = Runway Lighted (yes/no)  
 Appr = Approach Type  
 Pre = Precision  
 NP = Non-precision  
 Vis = Visual

<sup>3</sup> Services:  
 Gas = Aviation Gasoline  
 Jet = Jet Fuel  
 Mntn = Aircraft Maintenance  
 Rent = Aircraft Rental  
 Food = Restaurant  
 CT = Air Traffic Control Tower  
 Psgr = Scheduled Passenger Airline Service

Table 3

Area Airports  
 Compton Airport

throughout the 20-year master planning period. No new airports are expected to be developed within the subject area.

As the listing indicates, a number of these area airports are large, busy metropolitan airports serving complex, high-performance general aviation and air carrier aircraft. Fullerton Municipal, El Monte, Torrance Municipal, and Hawthorne Municipal airports serve somewhat the same general aviation markets as does Compton Airport. The nearest public-use airports to Compton are Long Beach, Hawthorne Municipal, and Torrance Municipal, each located approximately five miles from Compton Airport. All of these airports offer a wide range of sophisticated aviation services and capabilities and are oriented to serving high-performance general aviation aircraft.

### Area Airspace

The primary components of the airspace in the vicinity of Compton Airport are depicted in Figure 7. Not surprisingly, the airspace in the vicinity of Compton Airport is highly complex – typical of a major metropolitan area with numerous busy airports. The significant airspace features presently impacting Compton Airport operations include:

- **Controlled Airspace** – Overlies Compton Airport area at a height of 700 feet above the surface.
- **Los Angeles Terminal Control Area (TCA)** – Overlies Compton Airport between the altitudes of 5,000 feet and 12,500 feet Mean Sea Level (i.e., between 4,903 feet and 12,403 feet above the Airport's surface).
- **Los Angeles 30NM Mode C Requirement Area** – Compton Airport lies within this area and, as a result, virtually all aircraft operating to/from Compton Airport must be equipped with an operating Mode C transponder.
- **Long Beach Airport Traffic Area (ATA)** – Located approximately 1.5 nautical miles southeast of Compton Airport from the surface to 3,057 feet above Mean Sea Level. It can be anticipated that, at some point in the near future, an Airport Radar Service Area (ARSA) will be established serving Long Beach Airport.
- **Hawthorne Municipal Airport Traffic Area (ATA)** – Located approximately two nautical miles northwest of Compton Airport from the surface to 3,063 feet above Mean Sea Level.
- **Torrance Municipal Airport Traffic Area (ATA)** – Located approximately five nautical miles southwest of Compton Airport from the surface to 3,101 feet above Mean Sea Level.

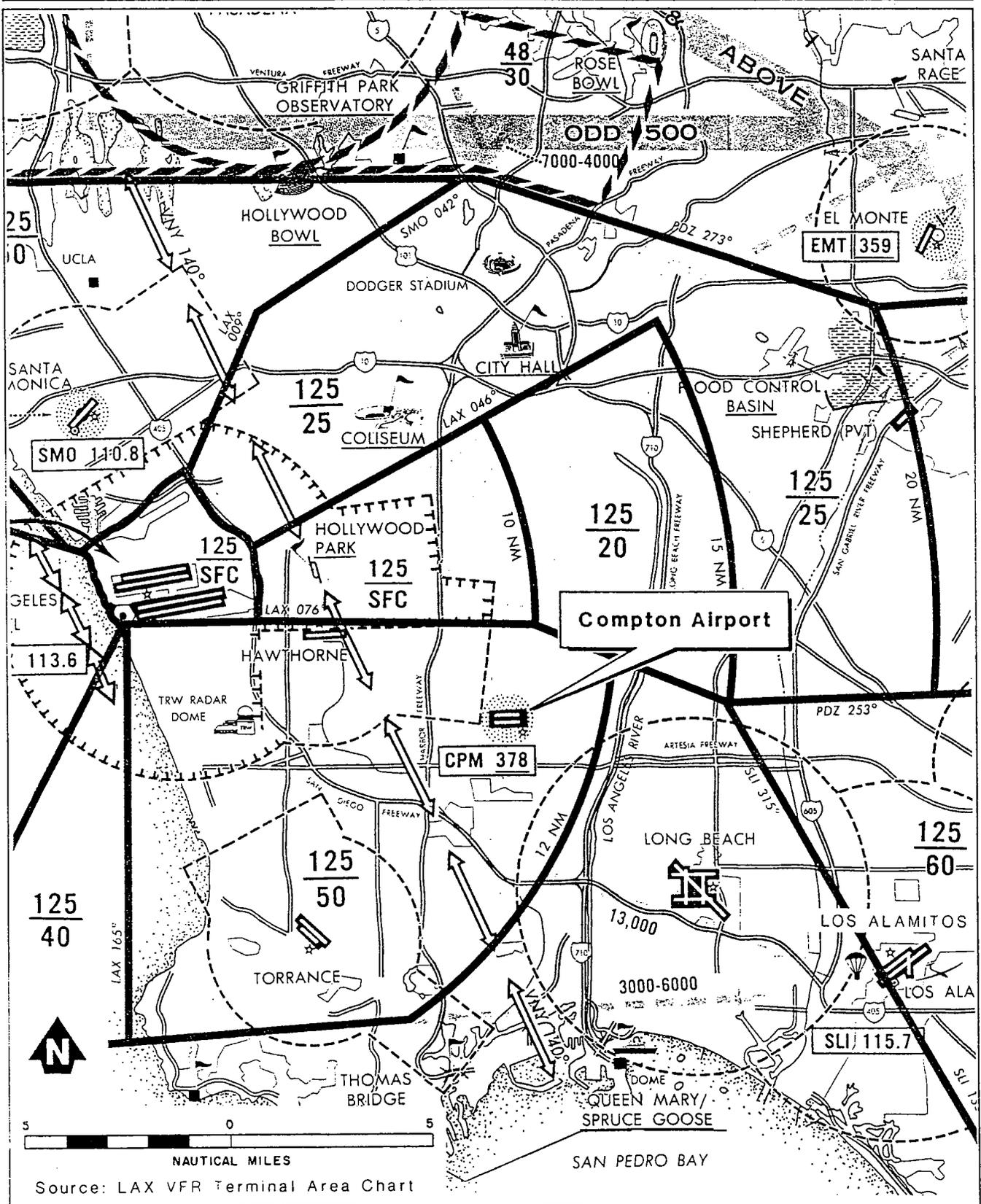


Figure 7

**Area Airspace**  
**Compton Airport**

Aircraft operating to/from Compton Airport must remain clear of the above-noted TCA and ATA's until communications have been established with Air Traffic Control and an air traffic clearance is received.

Compton Airport is not equipped with an airport traffic control tower. Compton is the only public-use airport in the Los Angeles basin without a control tower.

## **COMMUNITY PROFILE**

The area surrounding Compton Airport is comprised of high-density single- and multi-family residences and commercial/industrial development. A 4.5-acre public park is located adjacent to the Airport's southwest corner. In addition, several schools are located within two miles of the Airport. Much of the development in the area dates back to the 1950's and 1960's. The only relatively new development has been to the east and northeast of the Airport – primarily two-story residences.

## **PREVIOUS AIRPORT PLANS AND STUDIES**

Apart from its inclusion in regional and system-wide Los Angeles area airport studies, Compton Airport has not been the subject of any specific planning studies. However, in 1963, an analysis of site alternatives to Compton Airport's present location was conducted by the County. Although an alternative site was recommended, no action to relocate the Airport was ever taken.

The Airport's existing Airport Layout Plan (ALP) was prepared by the Los Angeles County Department of Public Works in August 1966. The existing ALP is superseded by the new ALP identified herein.

This Compton Airport Master Plan Report (1991) is the first comprehensive contemporary study of the Airport – its functional role, operations, configuration, and development.



# 4

## **Airport Activity and Capacity Analysis**

# Airport Activity and Capacity Analysis

## AIRPORT ROLE

### Historical

Compton Airport's principal operational role within the Los Angeles County regional airport system has historically been as a public-use airport for based and transient general aviation aircraft. The large majority of aircraft utilizing Compton Airport do so for personal, recreational, business, and flight training purposes.

Particularly noteworthy is the relatively high percentage (approximately 35%) of Compton Airport-based aircraft that are considered "enthusiast" aircraft. The "enthusiast" classification includes antique, classic, sport, amateur-built, and warbird aircraft types. This high percentage of Compton-based "enthusiast" aircraft may be attributable to the absence of a control tower at the Airport (i.e., no two-way communication radio is required), the relatively less complex airspace operating environment in the immediate vicinity of Compton Airport, the availability of small aircraft storage hangars, and the relatively lower cost of operating a private aircraft at Compton Airport (e.g., lower aircraft equipment costs, storage costs, and fuel costs) as compared with other airports in the central Los Angeles area.

In addition, the Airport has seen considerable use as a location for general aviation flight training activity – primarily full-stop takeoffs and landings (touch-and-go's are prohibited at the Airport by County regulation) – by both based and transient aircraft operators.

The Airport has also served the area air access needs of the local business community, particularly those businesses operating the same types of aircraft most commonly used for personal flying (i.e., single-engine and light twin-engine, piston-powered airplanes). The recent development of the nearby Highway 91 industrial corridor has contributed to much of this increased business and corporate aircraft activity.

Further contributing to the Airport's overall activity are increased operations by rotary-wing aircraft – generated by both based and transient helicopter operators. The majority of this rotary-wing aircraft activity is generated by the City of Compton Police Department – Air Support Division, which currently bases three active helicopters (two piston-powered Enstrom F-28's and one turbine-powered MD-500E) at Compton Airport.

## Future

---

*Personal/recreational flying* is defined as the use of aircraft by individuals (in their own or rented aircraft) for pleasure, recreational, or personal transportation not in furtherance of their occupation or company business.

*Business flying* is defined as the use of aircraft by pilots (not receiving direct salary or compensation for piloting) in connection with their occupation, their employer's business, or in the furtherance of private business.

*Corporate flying* is defined as the use of aircraft owned or leased, and operated by a corporation or business firm for the transportation of personnel or cargo and in furtherance of the corporation's or firm's business, and which are flown by professional pilots receiving a direct salary or compensation for piloting.

---

For the foreseeable future, it is anticipated that the operational role of Compton Airport will remain essentially the same as in the past. That is, the Airport will continue to serve as a base of operations and destination for primarily personal and recreational aircraft. Flight training operations will continue to contribute substantially to the Airport's overall activity. In addition, operators of business and corporate aircraft of the single-engine and light twin-engine class will make increasing use of Compton Airport as an alternate to the larger, more complex airports in the area (e.g., Los Angeles International Airport and Long Beach Airport). Due to the increasing cost and complexity of general aviation operations in urban areas, it can be anticipated that the Airport user population will experience a shift towards more highly utilized, better-equipped, more sophisticated general aviation aircraft in the next 5-10 years.

Supplementing this fixed-wing aeronautical activity at Compton Airport will be an increase in helicopter activity, particularly flight operations generated by the City of Compton Police Department helicopter unit and Compton Airport fixed base operators. Additional helicopter activity will be generated by local municipalities who choose to base their public-service (i.e., police, fire, emergency response, and community support) helicopters at Compton Airport.

Beyond the Master Plan's 20-year time frame, it can be anticipated that Compton Airport will continue to serve as an important public aeronautical facility for the central Los Angeles area. Although it is difficult to predict the specific role and use of the Airport beyond the year 2010, it can be anticipated that the Airport property and facilities will prove to be of considerable value and utility to the community in responding to future public air transportation needs.

## HISTORICAL AIRPORT ACTIVITY

### Based Aircraft

#### *Total Counts*

The number of aircraft based at Compton Airport increased between the years 1980 and 1988 – from a low count of 338 in 1980 to an all-time peak count of 467 in 1988. Since 1988, the number of based aircraft has declined to a current count of 352. Factors which have influenced this recent decline in based aircraft include the national and regional decreases in general aviation activity, particularly in the personal/recreational aircraft market segment, and the increasing complexity and costs associated with aircraft operations in high-density urban areas. Figure 8 illustrates the historical based aircraft count for the years 1970-1990 at Compton Airport.

#### *Type of Aircraft*

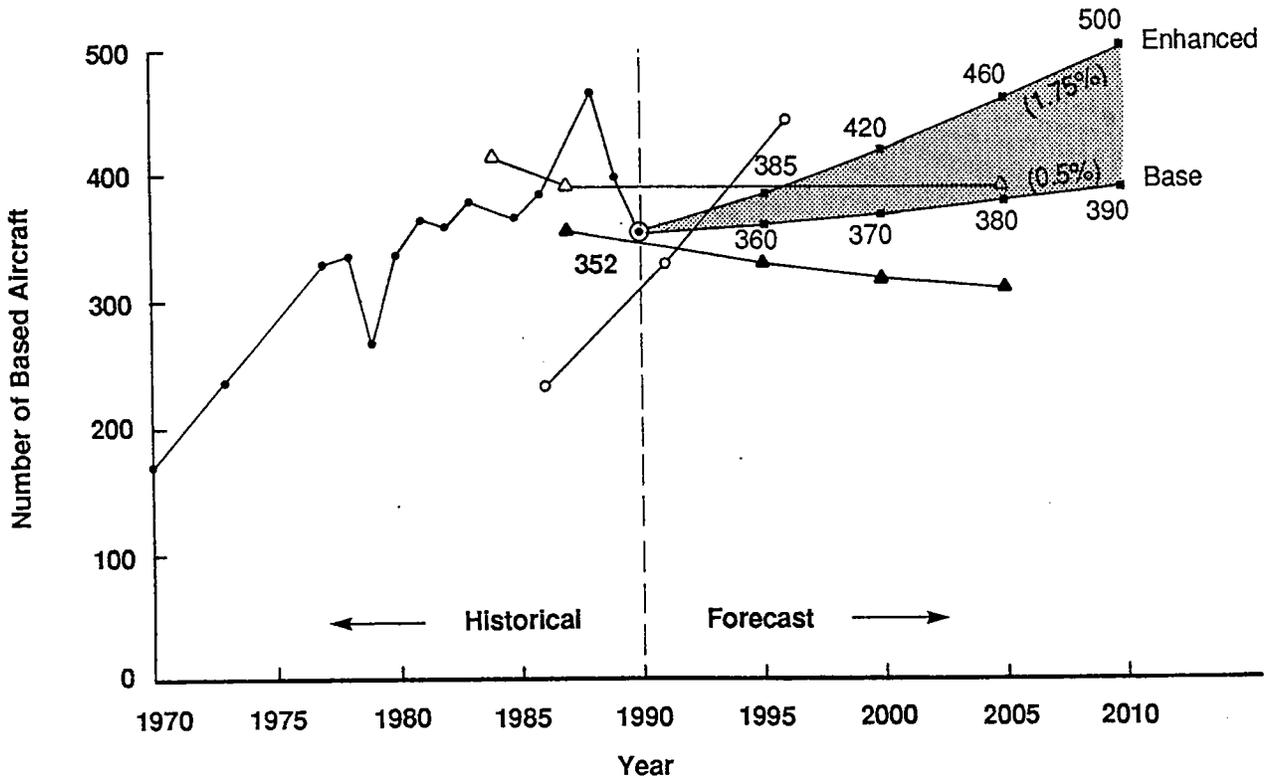
As is typical of most general aviation airports, the dominant type of aircraft based at Compton Airport is single-engine, propeller-driven, piston-powered airplanes – comprising 93% of the total. Twin-engine, propeller-driven, piston-powered airplanes based at the Airport comprise 6% of the total. The other 1% consists of helicopters. No turbine-powered fixed-wing airplanes are regularly based at the Airport.

#### *Ownership Distribution*

The based aircraft users of Compton Airport are predominantly Los Angeles County residents or businesses. According to the County's listing of based aircraft owners, 94% of the based aircraft are registered to owners from the Los Angeles County area, with 5% of the Airport's based aircraft registered to residents and businesses located in the City of Compton.

### Aircraft Operations

Estimates of annual aircraft operational activity at Compton Airport have been recorded by the County only since 1987. Prior to that period, no estimates of annual aircraft activity at Compton Airport were maintained. However, from the various sources which are available, it is possible to develop a useful estimate of past aircraft activity. Historical data listed in various FAA, state, and local sources indicates that total airport activity has remained relatively constant over the past three years. Prior to 1986, operational activity estimates were significantly higher than those of recent years. These higher estimates may be the result of overly optimistic



Key

- Airport Records
- ▲— California Aviation System Plan (1988)
- △— Southern California Association of Governments (1987)
- National Plan of Integrated Airport Systems (1986)
- Hodges & Shutt Forecast

Figure 8

Based Aircraft  
Compton Airport

assumptions regarding aircraft flight activity. The earlier estimates should be regarded as being somewhat higher than actual activity levels. Figure 9 illustrates the historical annual aircraft operations count for the years 1970-1990.

### **Distribution of Activity**

The historical distribution of operational activity (i.e., day/night, VFR/IFR, local/itinerant) cannot be determined from available records. However, airport management estimates that less than 10% of the total aircraft operations occur between sunset and sunrise. The large majority of operations at Compton Airport are conducted during daylight hours. This distribution is consistent with activity indices at comparable general aviation airports.

Since the Airport currently offers no instrument approach capability, virtually all of the operations are conducted in visual meteorological conditions. A small number of aircraft depart the Airport in instrument meteorological conditions en route to other airports.

A substantial portion of the Airport's operations are conducted for flight training or local purposes. It is estimated that the existing split between local (primarily flight training) and itinerant operations is 60%/40%.

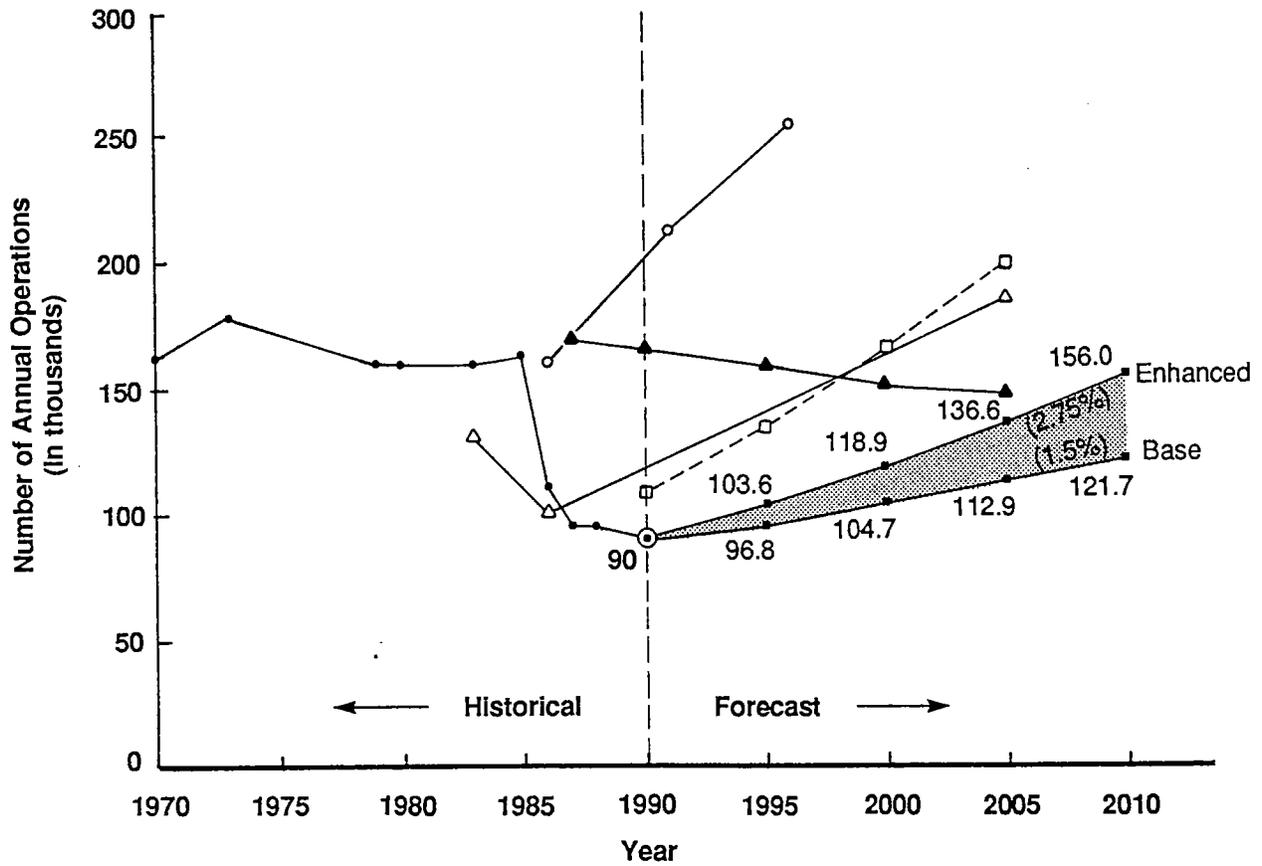
### **Fuel Flowage**

As depicted in Figure 10, County records for the period 1985 through 1990 indicate that Airport aviation fuel flowage (and, indirectly, aircraft operations) has decreased slightly over the past five years. This finding is consistent with the historical record of both based aircraft and annual operations.

### **Airport Safety Record**

A review of an airport's historical safety record can provide valuable insight into the location of airport hazards and the need for physical or operational improvements to mitigate those hazards. Data from Airport records and the National Transportation Safety Board (NTSB) reveals that a total of 17 aircraft accidents occurred at Compton Airport between the period January 1979 through October 1990. A summary of these accidents is presented in Table 4.

Four of the accidents involved a collision with the airport security fence and perimeter wall located approximately 70 feet and 90 feet, respectively, from the end of the runway pavement. Of these four accidents, three were determined by the NTSB to be the result of the pilots' misjudgment



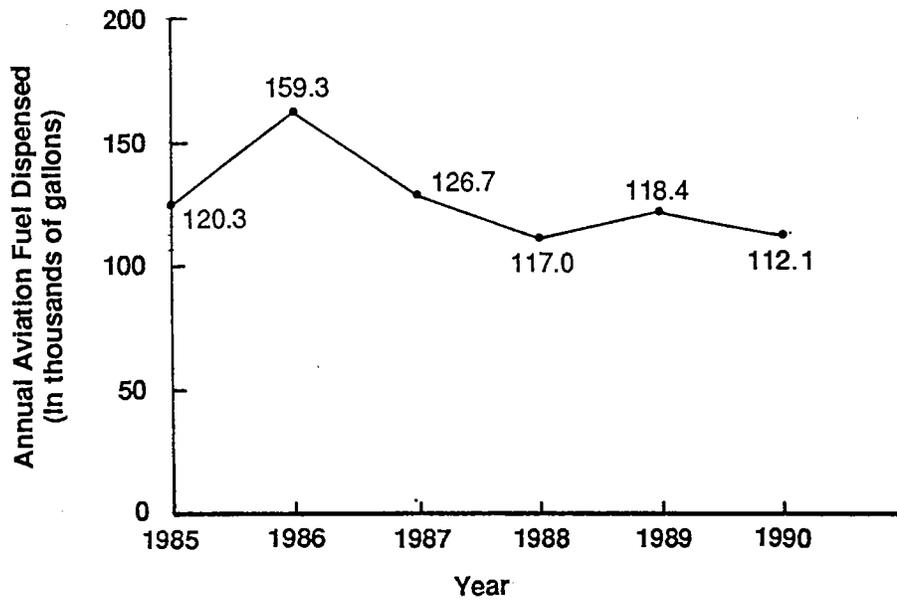
**Key**

- Airport Estimates
- ▲— California Aviation System Plan (1988)
- △— Southern California Association of Governments (1987)
- National Plan of Integrated Airport Systems (1986)
- Terminal Area Forecast (1990)
- Hodges & Shutt Forecast

Figure 9

**Aircraft Operations**

Compton Airport



Source: Airport Records

Figure 10

**Annual Aviation Fuel Dispensed**  
Compton Airport

Date: January 1979 through October 1990	2/10/79 Bellanca 14-13	9/16/79 Cessna 150	9/16/79 Cessna 150	2/13/80 Piper PA-23	3/8/81 Cessna 152
<b>Phase of Operation</b>					
Stationary/taxiing					
Takeoff - run					
Takeoff - initial climb	X				
Landing - in traffic pattern					
Landing - in final approach		X	X		X
Landing - touchdown/roll out				X	
Other					
<b>Nature of Impact</b>					
Hard landing/gear up/ground loop/etc.					
Undershoot/overshoot				X	
Collision with objects				X	
Forced landing					
Uncontrolled descent/impact	X				
Collision between aircraft in flight		X	X		X
Other (fence/wall)					
<b>Location of Impact</b>					
On/adjacent to runway	X			X	
Runway/Protection Zone					
In approach zone		X	X		
On airport property					
Off airport					
<b>Causes/Factors</b>					
Pilot - improper operation of controls		X	X		
Pilot - failure to see/avoid objects				X	X
Pilot - inadequate preflight procedures	X				
Fuel exhaustion					
Mechanical failure					
Adverse wind/weather					
Other					
<b>Miscellaneous Conditions</b>					
Time (local)	1605	1040	1040	1330	1340
Visibility (S.M.)					
Student pilot		X	X		
Injuries (yes/no)	NO	NO	NO	YES	YES
Fatalities (yes/no)	YES	NO	NO	NO	NO
Other					

**Table 4**

**Summary of Aircraft Accidents  
Compton Airport**

Date: January 1979 through October 1990	3/8/81 Cessna 172N	11/6/81 Cessna 210L	4/02/83 Piper PA-28-140	10/23/83 Ercoupe 415-C	8/10/84 Piper PA-28-181	1/13/85 Piper PA-38-112
<b>Type of Aircraft</b>						
<b>Phase of Operation</b>						
Stationary/taxiing						
Takeoff - run		X				
Takeoff - initial climb				X		
Landing - in traffic pattern						
Landing - in final approach	X					X
Landing - touchdown/roll out			X		X	
Other						
<b>Nature of Impact</b>						
Hard landing/gear up/ground loop/etc.						
Undershoot/overshoot			X			
Collision with objects		X	X		X	
Forced landing				X		
Uncontrolled descent/impact						
Collision between aircraft in flight	X					X
Other (fence/wall)		X	X		X	
<b>Location of Impact</b>						
On/adjacent to runway		X	X		X	
In clear zone						
In approach zone						
On airport property				X		
Off airport						
<b>Causes/Factors</b>						
Pilot - improper operation of controls						
Pilot - failure to see/avoid objects	X		X			
Pilot - inadequate preflight procedures				X		
Fuel exhaustion				X		
Mechanical failure		X				
Adverse wind/weather					X	X
Other						
<b>Miscellaneous Conditions</b>						
Time (local)	1340	0840	0640	1120	1232	1045
Visibility (S.M.)			10	4	12	40
Student pilot					X	X
Injuries (yes/no)	YES	YES	YES	NO	YES	YES
Fatalities (yes/no)	NO	NO	NO	YES	NO	NO
Other						

Table 4 continued

**Summary of Aircraft Accidents**  
Compton Airport

Date January 1979 through October 1990	1/20/85 Mooney M20A	4/05/85 Cessna 152	6/06/85 Cessna 152	7/01/86 Cessna 320	7/12/88 Piper PA-22-150	7/16/88 Piper PA-28-140
<b>Type of Aircraft</b>						
<b>Phase of Operation</b>						
Stationary/taxiing						
Takeoff - run						
Takeoff - initial climb					X	X
Landing - in traffic pattern						
Landing - in final approach			X			
Landing - touchdown/roll out	X	X		X		
Other						
<b>Nature of Impact</b>						
Hard landing/gear up/ground loop/etc.	X	X		X		
Undershoot/overshoot						
Collision with objects	X	X	X		X	
Forced landing			X			
Uncontrolled descent/impact						X
Collision between aircraft in flight						
Other (fence/wall)		X				
<b>Location of Impact</b>						
On/adjacent to runway	X	X		X		
Runway Protection Zone			X			
In approach zone						
On airport property						X
Off airport					X	
<b>Causes/Factors</b>						
Pilot - improper operation of controls	X	X				X
Pilot - failure to see/avoid objects						
Pilot - inadequate preflight procedures					X	
Fuel exhaustion			X			
Mechanical failure				X	X	
Adverse wind/weather						
Other						
<b>Miscellaneous Conditions</b>						
Time (local)	1030	1145	1808	2200	1855	1615
Visibility (S.M.)	10	3	7	20	7	15
Student pilot	X	X			X	X
Injuries (yes/no)	NO	NO	NO	NO	YES	YES
Fatalities (yes/no)	NO	NO	NO	NO	YES	YES
Other						

Table 4 continued

## Summary of Aircraft Accidents Compton Airport

and inappropriate operation of their aircraft. The fourth accident was the result of an undetermined powerplant failure and subsequent aborted takeoff.

Although this represents a relatively high number of accidents, there are no findings or indications that airport facilities or operational procedures contributed to any of the accidents. One of the factors which influences this high number of accidents is the high percentage of personal, recreational, and flight training operations that characterize the bulk of Compton Airport's aeronautical activity.

## BASED AIRCRAFT DEMAND FORECASTS

Current and future demand for based aircraft parking space, both in hangars and tiedowns, at Compton Airport is influenced by a variety of factors. Some of these are national or regional in character, others are specific to Compton Airport. Each of these demand factors needs to be considered in the development of based aircraft forecasts for the Airport.

### National and Regional Demand Factors

National and regional influences on local based aircraft demand are significant in that they are external influences, beyond the direct control of the Airport. Among these influences are:

- **Aircraft Ownership Trends** – The current nationwide pattern of limited growth in the general aviation fleet is one of the strongest influences on future based aircraft demand in the Southern California region. Only 8% as many aircraft were built in the U.S. in 1989 as in 1978. Many reasons have been cited for this trend:
  - The high cost of new aircraft, partially due to high product liability costs.
  - High aircraft operational and maintenance costs.
  - Airspace and airport operational restrictions in metropolitan areas.
  - The complexity of aircraft and of flight regulations.
  - The lack of simple, efficient, and comfortable new aircraft.

Although some recovery is projected over the next five to ten years, it is expected to be very slow. Current Federal Aviation Administration forecasts indicate that the nation's active general aviation fleet will grow at an annual rate of only 0.5% over the next 12 years (FAA – 1990). Active single-engine, piston-powered aircraft are projected to decline at an annual rate of approximately 0.1% during the next five years and then maintain a zero growth rate through the year 2000. The strongest area of growth is in business and corporate aircraft,

especially sophisticated turbine-powered aircraft. This latter group is projected to increase by 54% over the next 12 years, compared to the expected zero growth rate in personal and recreational type aircraft. These national figures vary somewhat by region. The FAA forecasts for the Western-Pacific region indicate that the growth in based aircraft will be relatively strong, with a growth rate nearly double that of the country as a whole. Even so, the general aviation rate of growth will be very modest.

The obvious consequence of these conditions is that, for any particular airport to have a significant increase in based aircraft, it must attract more business and corporate aircraft, or it must gain additional personal and recreational based aircraft from other airports. This can result from changes in the relative advantages of one airport over another or the closure of an airport.

- **Regional Aircraft Growth Trends** — The number of aircraft based within the Southern California region decreased by approximately 1% between 1984 and 1987. The Southern California Association of Governments (SCAG) forecasts that the number of aircraft based in the SCAG region will increase at an annual rate of 1% for the next 18 years (SCAG - 1987). This overall forecast was broken down into two categories:
  - Urban Core Airports, airports at full capacity and busy, are forecast to lose based aircraft over the next eight years, and then hold even for the remaining ten years. Compton Airport is classified by SCAG as an "Urban Core Airport."
  - Fringe and Remote Airports, airports with excess capacity and not as busy, are projected to grow slowly over the next several years, accelerating to a growth rate of 2% per year from 1995 to 2005.

### Specific Compton Airport Demand Factors

The remaining demand influences partially overlap the above regional factors, but are more specific to the conditions existing at Compton Airport.

- **Airport Role** — As noted above, the growth potential of Compton Airport's primary user group — personal and recreational use aircraft — is projected to be very limited. High aircraft operational costs and increasing airspace complexity may cause some marginal personal and recreational aircraft users to dispose of their aircraft or relocate them to other, less costly and less complex facilities.
- **Facilities and Services Available** — Existing facilities and services at Compton Airport, particularly runway length and approach instrumentation, are somewhat below average compared to other public airports

in the central Los Angeles area. This is judged to have negative implications with respect to forecasting future demand potential. Due to physical limitations, there is only a modest opportunity to improve Compton's relative attractiveness to users of sophisticated, high-performance business and corporate aircraft.

- **Demand for Hangar Space** – Increasingly more sophisticated and expensive equipment is being added to aircraft. Thus, more owners are seeking hangar storage space for their aircraft. Compton Airport currently has 166 T-hangar units. It is anticipated that any significant increase in the number of based aircraft will be driven in part by the availability of additional aircraft storage hangars.
  
- **Airspace/Equipment Complexity** – Compton Airport is located within the 30-nautical-mile Mode C requirement arc associated with Los Angeles International Airport. Most aircraft operating in the vicinity of Compton Airport are required by federal regulation to be equipped with a Mode-C altitude-reporting transponder (only aircraft originally certificated without electrical systems are exempt). This recent requirement has caused some owners of non-Mode C equipped aircraft to relocate to airports beyond the 30-nautical-mile Mode C arc. In addition, the Los Angeles Terminal Control Area (TCA) overlies Compton Airport at an elevation of 5,000 feet MSL (approximately 4,900 feet above airport elevation). This complex multi-layered airspace configuration undoubtedly has caused some aircraft owners to relocate their aircraft to outlying, less complex airports. It can be anticipated that the airspace structure and operating requirements in the vicinity of Compton Airport will become increasingly more complex and restrictive in the years ahead. Potential changes in FAA airspace allocations could result in Compton Airport being further encroached upon by a reconfigured Hawthorne Municipal Airport Traffic Area (ATA), a newly-formed Long Beach Airport Radar Service Area (ARSA), and, at some point in the future, a "Super TCA" encompassing much of the Los Angeles Basin airspace.
  
- **Nearby Airports** – Los Angeles International, Long Beach, Torrance Municipal, and Hawthorne Municipal Airports are located within 10 nautical miles of Compton Airport, creating a highly competitive aviation environment. All four of these airports are well-equipped public-use airports capable of serving a wide variety of sophisticated general aviation piston and turbine-powered aircraft, particularly those users operating business and corporate class aircraft. The availability of such sophisticated nearby facilities has influenced Compton Airport in two significant ways. Owners of high-performance and well-equipped aircraft generally prefer one of Compton's competitor airports due to the availability of longer runways, instrument approach capability, and multiple ground services. Users of low-performance and less well-equipped aircraft view Compton Airport as a relatively low-cost alternative to the larger, more complex airports.

- **Proximity to Nearby Industry** – Growth of the nearby Highway 91 industrial corridor will have a positive effect on Compton's aeronautical activity. Small business and corporate aircraft desiring easy access to the Highway 91 industrial corridor may choose, runway length and approach instrumentation permitting, to operate to/from Compton Airport.
- **Public-Service Helicopter Activity** – Due to the scarcity of suitable helicopter basing areas in the Los Angeles basin, it is anticipated that one or more municipalities will choose to base their public-service helicopters at Compton Airport. These based helicopters have the potential to generate a considerable number of operations at the Airport.
- **User Perceptions** – Many aircraft users perceive Compton Airport to be a less-than-desirable location for operating or basing an aircraft. User concerns regarding security, personal safety, and the absence of viable ground transportation options are seen as negative growth factors.
- **Marketing Efforts for Compton Airport** – A marketing program for Compton Airport has been prepared as an integral element of this master planning effort. Continuous efforts to market the Airport's facilities, services, and capabilities will significantly influence an increase in the number of based aircraft.

### Other Based Aircraft Demand Forecasts

Federal, state, and regional forecasts provide another view of possible future based aircraft demand at Compton Airport. Figure 8 provides a graphic comparison of various based aircraft forecasts for Compton Airport versus historic activity levels. As can be seen, the various forecasts start from different base year counts and project varying rates of growth. The rapid growth projected by the NPIAS forecast in 1986 was consistent with the general aviation aircraft forecast expectations prevalent at the time. The more recent SCAG (1987) and CASP (1988) forecasts project no growth and a loss of based aircraft, respectively, over the next 15 years.

It must be recognized, however, that each of these forecasts is developed in a top-down manner; that is, the forecasts are first determined for the respective geographic area, then allocated to sub-areas and ultimately to individual airports. Particularly at the federal and state levels, little attention is given to the localized conditions that may influence future activity changes at a specific airport.

## Based Aircraft Demand Conclusions

Despite the projected slow growth trend in national and regional general aviation activity, the Master Plan concludes that there is potential for modest growth of Compton Airport's based aircraft population – both fixed-wing and rotary-wing aircraft. This assumes that the Airport's facilities and services are improved, instrument approach capability is established, additional hangar space is provided, and the County/COMARCO effectively market the Airport.

Depicted in Figure 8 is the Master Plan forecast range of future based aircraft for Compton Airport. The "Enhanced" forecast represents the based aircraft activity that could be realized if the region's general aviation market improves and the above noted actions are taken. The "Enhanced" forecast anticipates a 1.75% annual increase in the Airport's based aircraft population. The "Base" forecast represents the based aircraft activity that could be realized if the region's general aviation market stagnates and the Airport continues to operate with minimal improvements. The "Base" forecast anticipates a 0.5% annual increase in the Airport's based aircraft population.

For the purposes of this Master Plan, the "Enhanced" demand forecast is the appropriate choice. By endeavoring to design and configure the Airport to adequately accommodate the maximum anticipated demand (i.e., the "Enhanced" forecast), maximum facility development flexibility is ensured. At the same time, this forecasting approach does not require facility development until such time as it is warranted by actual user demand. The resultant Master Plan forecasts of based aircraft are depicted in Figure 8 and are summarized in Table 5.

The timing of new development should be set to stay just slightly ahead of actual demand. Construction too far in advance of demand provides no near-term return on the investment. Lack of new facility development, on the other hand, may result in fewer based aircraft at the Airport than the forecasts indicate.

## TRANSIENT AIRCRAFT PARKING DEMAND

The demand for transient aircraft parking positions at the Airport is influenced by a combination of factors, including those mentioned above with respect to based aircraft, and those discussed subsequently which affect aircraft operations. The Master Plan forecasts project that peak transient aircraft parking demand will increase by approximately 60% over the 20-year planning period, a rate slightly greater than that projected for based aircraft growth. Much of this future growth in transient aircraft demand is associated with the Airport's recently developed user amenities (e.g.,

terminal building, coffee shop, etc.) and will be somewhat dependent upon the County's implementation of an effective marketing program.

## AIRCRAFT OPERATIONS FORECASTS

### Forecast Influences

As with based aircraft, the number of aircraft operations at a general aviation airport is influenced both by national and regional conditions and by various circumstances specific to each airport. Major influences impacting the Compton Airport aircraft operations forecast include:

- **National Trends** – The factors which determine general aviation operations levels nationally will also be the overriding influences locally. Unlike the essentially flat forecast of active based aircraft, FAA forecasts project a small increase in the number of hours flown by the general aviation fleet over the next decade. A slight rise in the average number of operations per aircraft can consequently be anticipated. Annual use of turbine-powered aircraft is expected to increase more rapidly than that of piston-powered aircraft.
- **Number and Type of Based Aircraft** – The minor shift toward proportionately more complex single-engine and multi-engine airplanes at the Airport will tend to push operations upward more rapidly than the rate of based aircraft growth. Typically, such aircraft are used more frequently and thus generate more operations per aircraft.
- **Availability of Services** – Compton Airport's facilities and services are primarily focused to attract the personal and recreational aircraft operator and small business aircraft operator. Such facilities and services include general aviation-oriented fixed base operators, a coffee shop, available single-unit storage hangars, and a somewhat less complex operating environment than at competitive area airports.
- **Flight Training** – Flight training is currently a significant generator of aircraft operations at Compton Airport. One primary reason for this is that Compton Airport has less complex airspace and a somewhat less complex operating environment than nearby alternative airports. Flight training activity at Compton Airport is expected to increase in the future.
- **Extent of Transient Aircraft Use** – Additional facilities and amenities at Compton Airport will generate increased transient aircraft activity, thereby increasing total aircraft operations. In addition, more transient aircraft operators will use Compton Airport as an alternative means of accessing the central Los Angeles area.

	Historical		Projected		
	1990	1995	2000	2005	2010
<b>BASED AIRCRAFT</b>					
<b>Aircraft Types</b>					
Single-Engine	326	355	386	422	458
Twin-Engine	22	24	26	28	30
Helicopters	4	6	8	10	12
<i>Total</i>	352	385	420	460	500
<b>Storage Demand</b>					
On Tiedowns	111	100	100	100	125
In Storage Hangars	178	210	240	270	275
At FBO Facilities	63	75	80	90	100
<i>Total</i>	352	385	420	460	500
<b>TRANSIENT AIRCRAFT</b>					
<b>Parking Demand at Peak Periods</b>	12	14	16	18	20
<b>ANNUAL AIRCRAFT OPERATIONS</b>					
<b>Aircraft Mix</b>					
Single-Engine	81,000	92,900	113,200	121,000	137,000
Twin-Engine	6,000	6,900	8,000	9,400	11,000
Helicopters	3,000	3,800	4,900	6,200	8,000
<i>Total</i>	90,000	103,600	118,900	136,600	156,000
<b>Type of Operation</b>					
Local (90% training)	54,000	59,700	65,400	71,700	78,000
Itinerant	36,000	43,900	53,500	64,900	78,000
<i>Total</i>	90,000	103,600	118,900	136,600	156,000
<b>Average Operations per Based Aircraft</b>					
Local	154	155	156	156	156
Itinerant	102	114	127	141	156
<i>Total</i>	256	269	283	297	312
Sources: Historical data provided by County of Los Angeles Department of Public Works. Forecasts by Hodges & Shutt.					

Table 5

**Master Plan Airport Activity Forecasts**  
Compton Airport

- **Business Aircraft and Helicopter Activity** – As noted in the previous section on based aircraft demand, both business aircraft activity and helicopter activity at Compton Airport are projected to increase in the years ahead. This additional based and transient activity will contribute to an increase in aircraft operations at the Airport.
- **Instrument Operations** – The future availability of a nonprecision instrument approach serving the Airport would have a positive effect on Compton's forecast activity.

### National and Regional Forecasts

Federal, state, and regional forecasts provide aircraft operations forecasts for Compton Airport. A comparison of these federal, state, and regional forecasts is shown in Figure 9. As with the forecasts of based aircraft, the various forecasts of operations are somewhat contradictory. The NPIAS, SCAG, and TAF forecasts project relatively moderate rates of growth, whereas the CASP forecast projects a decrease in aircraft operations.

### Operations Demand Conclusions

Continued growth in annual aircraft operations at Compton Airport is anticipated. As noted previously, this growth in operations will be generated by the increase in based and transient aircraft (fixed-wing and rotary-wing), continued high levels of flight training activity (by based and transient aircraft), and greater utilization of aircraft by Compton-based active aircraft users. The rate of growth in Compton Airport annual operations is somewhat higher than the rate of growth of based aircraft, due to a projected increase over time in the average utilization of aircraft.

The percentage split between local (primarily flight training) operations and itinerant operations is projected to shift over the 20-year planning period from a current value of 60% local/40% itinerant to a year 2010 value of 50% local/50% itinerant. This shift is influenced by: 1) the increased use of the Airport by transient aircraft operators for access to the central Los Angeles area; and 2) the greater utilization of based aircraft for transportation purposes beyond the local area.

Depicted in Figure 9 is the Master Plan forecast range of future annual aircraft operations for Compton Airport. The "Enhanced" forecast represents the annual operations that could occur if the region's general aviation market improves and the above noted conditions are realized. The "Enhanced" forecast anticipates a 2.75% annual increase in the Airport's level of aircraft operations. The "Base" forecast represents those annual operations that could occur if the region's general aviation market stagnates and the Airport continues to operate with minimal improvements.

The "Base" forecast anticipates a 1.5% annual increase in the Airport's level of aircraft operations.

For the purposes of this Master Plan, the "Enhanced" demand forecast is the appropriate choice. Use of the "Enhanced" forecast for Master Plan projections permits maximum flexibility in the future design, development, and operation of the Airport. The resultant forecasts of annual aircraft operations are depicted in Figure 9 and are summarized in Table 5.

## AIRFIELD CAPACITY ANALYSIS

### Background

Airfield capacity is the maximum number of aircraft movements (takeoffs and landings) that can be accommodated in a given period of time under a specific set of conditions related to:

- Runway configuration and use
- Mix of aircraft types
- Arrival/departure ratio
- Availability and location of runway exits and related taxiway system
- Percentage of training (touch and go) activity
- Other factors such as runway conditions (e.g., wet or dry), pilot performance, and air traffic control procedures

The following discussion is based upon the FAA's most current capacity methodology as set forth in FAA Advisory Circular 150/5060-5 *Airport Capacity and Delay*. This is the first known application of this methodology to Compton Airport. There are two measures of airfield capacity that are of interest, the Hourly Capacity and the Annual Capacity.

---

Annual Service Volume (ASV) is defined by the following formula:

$$ASV = WHC \times AU$$

Where,

ASV = Annual Service Volume in annual operations

WHC = Weighted Hourly Capacity

AU = Annual Utilization

---

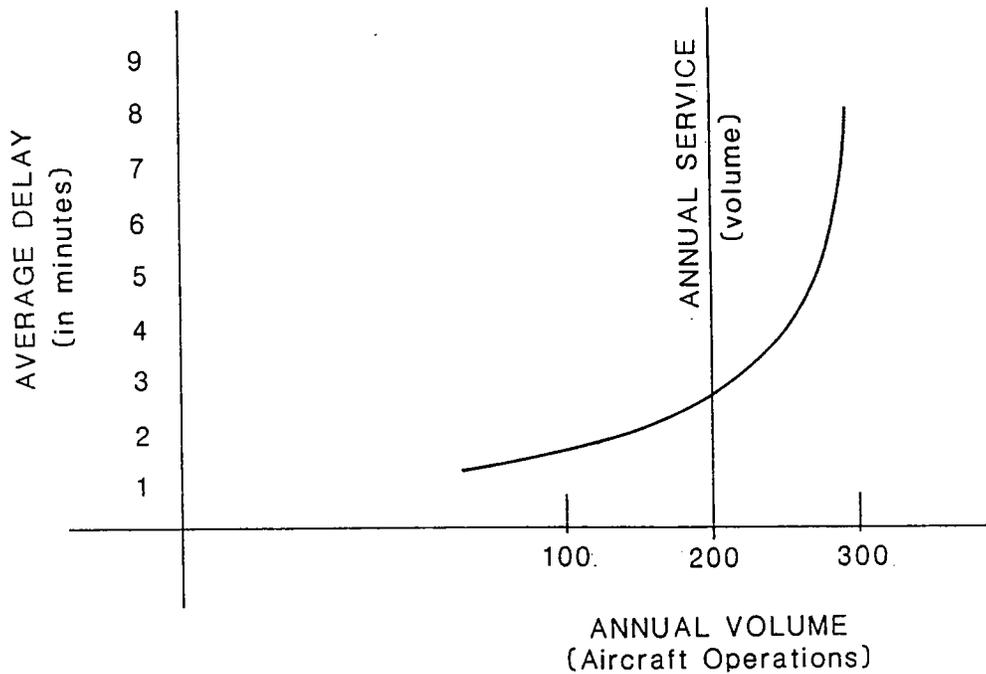
### Hourly Capacity

Hourly Capacity is the number of operations a runway system can physically accommodate in an hour. Capacity varies widely under various operating conditions (e.g., percentage of arrivals and runway configuration).

### Annual Capacity

The concept used to measure Annual Capacity in the FAA methodology is Annual Service Volume (ASV). This concept is based upon the observed phenomenon that, at a certain level of activity, the average delay to aircraft during the year will increase rapidly with relatively small increases

in aircraft operations, thereby causing levels of service on the airfield to deteriorate. The phenomenon is illustrated below:



Delay to aircraft is defined as the difference between the actual time it takes an aircraft to operate on a airfield and the time it would take the aircraft to operate without interference from other aircraft on the airfield

The level at which delay begins to increase rapidly is defined as the Annual Service Volume (ASV). As a general rule, when annual operations are equal to ASV, average delay to each aircraft throughout the year is on the order of one to four minutes.

### Weighted Hourly Capacity

The Weighted Hourly Capacity (WHC) is the average Hourly Capacity of the airfield considering the percentage of time the various runway configurations are used and the respective hourly capacity of these configurations. Table 6 contains the formula for calculating WHC. The Hourly Capacity is developed for each distinct combination of identified parameters below.

This value is an average hourly capacity for all operating conditions (runway configuration, weather, etc.) weighted to reflect the percentage of the year that operations are carried out under each set of conditions. Also, because the average delay per operation rises rapidly whenever activity exceeds hourly capacity, greater weight is applied to the lower capacities. The specific formula for calculating weighted hourly (CS) capacity is:

$$CS = \frac{(P_1 \times C_1 \times W_1) + (P_2 \times C_2 \times W_2) + \dots + (P_n \times C_n \times W_n)}{(P_1 \times W_1) + (P_2 \times W_2) + \dots + (P_n \times W_n)}$$

where,

$P_1, P_2, \dots, P_n$  = the percentage of the year that operations are conducted under conditions 1, 2, . . . N.

and

$C_1, C_2, \dots, C_n$  = the hourly capacity for conditions 1, 2, . . . N.

and

$W_1, W_2, \dots, W_n$  = a weighing factor applied to capacities less than the capacity of the predominant operating condition.

Table 6

**Weighted Hourly Capacity**  
Compton Airport

- **Runway Configuration** – Compton Airport offers two equal-length parallel runways (7L/25R and 7R/25L) separated by 200 feet. The FAA has two standards for parallel runway separation: one for planning (currently 700 feet); the other for air traffic control handling of independent, simultaneous visual operations (300 feet for single-engine and 500 feet for twin-engine aircraft). The implication for Compton Airport is that its two runways are not capable of supporting simultaneous operations; the two runways acting together create more airfield capacity than a single runway but not twice as much.

There are also two directions in which the runways can be operated, to the west and to the east. The two directions are treated as separate configurations reflecting the relative differences in exit location with respect to the landing threshold.

For airfield capacity calculation purposes, three alternative future runway configurations were evaluated:

- The existing parallel runway configuration
- A single runway using one of the two existing runway centerlines
- A single runway using a new centerline, located between the two existing runways

The second configuration represents two separate alternatives from a facility/building area layout standpoint; the relative merits are discussed elsewhere in this report. From an airfield capacity perspective, however, they are essentially equivalent and can be treated as a single alternative.

- **Runway Exits** – During landing, aircraft spend varying lengths of time on the runway, depending upon the number and location of exits. The average runway occupancy time affects the spacing between operations and, therefore, the Hourly Capacity. At Compton Airport, three exit scenarios were evaluated: (1) existing; (2) optimum use of angled exits with widened fillets; and (3) a continuous drift-off exit system similar to that employed at the El Monte Airport.
- **Aircraft Mix** – Aircraft mix affects capacity because different aircraft types have different approach/departure speeds and separation criteria. The FAA classifies aircraft into four categories: A, B, C, and D. The following tabulation gives criteria and typical aircraft for the two categories relevant to Compton Airport:

**Aircraft Mix**

<i>Aircraft Category</i>	<i>Criteria</i>	<i>Types of Aircraft</i>
A	Single-engine aircraft weighing 12,500 lbs. or less	Cessna 150/172 Piper 140/180 Beechcraft Bonanza
B	Twin-engine aircraft weighing 12,500 lbs. or less	Cessna 310 Piper Seneca Cessna Citation I

The current and projected aircraft mix at Compton Airport is estimated to be 95% Category A aircraft and 5% Category B aircraft.

- **Training Activity (Touch-and-Go)** – A "touch-and-go" is a landing practice maneuver whereby an aircraft touches down, slows to exit speed, and then accelerates to a takeoff without ever exiting the runway. This maneuver produces two operations (one landing and one takeoff) while occupying the runway only slightly longer than a regular takeoff or landing. Touch-and-go operations are currently prohibited by County ordinance at Compton Airport. Accordingly, the effect of touch-and-go operations on Compton's airfield capacity is not considered in this analysis.
- **Percentage of Arrivals** – The percentage of all aircraft that are arrivals has an important effect on airfield capacity. Separation standards are greater between arriving aircraft than between departing aircraft and, with a few exceptions, the greater the percentage of arrivals, the less the capacity. Available data suggests that Compton Airport operates consistently within the 40-60% arrival range, thus requiring no adjustment for capacity calculation purposes.
- **Airspace** – Compton Airport's location in the Los Angeles Basin raises the issue of airspace-related capacity constraints. Compton Airport lies under a 5,000-foot MSL floor of the Los Angeles Terminal Control Area (TCA) and just outside the Airport Traffic Area (ATA) for three controlled airports (Hawthorne Municipal, Long Beach, and Torrance Municipal). The complexity of the airspace structure around Compton Airport is such that it may substantially constrain the implementation and utilization of an instrument approach procedure at the Airport. This limitation has a relatively minor effect on airfield capacity at the present time due to the Airport's relatively unsophisticated, VFR-only fleet mix. In the future, the Airport's role is expected to shift marginally toward electronically more sophisticated IFR-capable aircraft. As

this occurs, instrument approach procedure constraints will reduce the Airport's Annual Service Volume on the order of 3% to 5%.

### Annual Utilization

The second part of the Annual Service Volume equation concerns Annual Utilization (AU), a factor that expresses traffic peaking characteristics at an airport. To illustrate, an Hourly Capacity of 100 might otherwise imply an Annual Capacity of 876,000 operations (100 hourly operations times 8,760 hours in a year). This, of course, would not be the case, as there are hours of the day and days of the year when aircraft do not operate. Furthermore, even during the hours when aircraft operate, the demand can be expected to fluctuate. The Annual Utilization factor is itself constructed of two variables that reflect airport activity patterns:

$$AU = \text{Daily Ratio} \times \text{Hourly Ratio} = \frac{\text{Annual Movements}}{\text{Peak Hour Movements}}$$

Simply stated, the Daily Ratio is a value that expresses the number of days (each equivalent to the peak day) it would take to represent a year's traffic. The Hourly Ratio is a value that expresses the number of hours (each equivalent to the peak hour) it would take to represent a peak day's traffic. The more even the traffic flow is, the higher the Annual Utilization will be.

## AIRFIELD CAPACITY CONCLUSIONS

### Weighted Hourly Capacity

Based on the above mentioned assumptions and the methodology set forth in FAA Advisory Circular 150/5060-5, the Weighted Hourly Capacity for Compton Airport, with its existing parallel runway/exit configuration, is 145 operations per hour. A maximum effort to improve the exit configuration (two additional exits and widened fillet radii for all exits) for capacity purposes would increase the Weighted Hourly Capacity to approximately 155 operations per hour.

The FAA provides no explicit methodology for assessing the impact of the continuous "drift-off" taxiway concept in terms of increased runway capacity. Based upon discussions with air traffic controllers experienced with the "drift-off" configuration and an abbreviated queuing analysis, it is the consultant's judgement that a Weighted Hourly Capacity of 125 operations per hour could be achieved with a continuous "drift-off" taxiway system serving a single runway.

## **Annual Utilization**

### ***Existing***

Available peaking data at Compton Airport suggests a current Annual Utilization factor of 2,030 based upon a Daily Ratio of 325 and an Hourly Ratio of 6.25.

### ***Future***

As peak periods become congested, it is expected that an increased percentage of operations will occur during off-peak periods. This will produce an increase in Annual Utilization at the Airport and therefore increase Annual Capacity. There is some practical limit to the extent that operations can be expected to naturally move to the off-peak periods. Theoretically, it is possible to reduce peaking even further through operational policies and increased tenant awareness. The effect of such an approach was also evaluated.

### ***Summary***

As can be inferred from the number of variables and assumptions described in the preceding text, there is no single value which can be used to completely describe the various capacities of Compton Airport. The operational capacity of the Airport depends primarily on the ultimate runway/exit configuration selected and on the degree to which operations can be shifted to off-peak periods.

Table 7 indicates the range of capacity values for the different planning assumptions. This data indicates that the current airfield capacity is around 294,000 annual operations, with a peak-hour capacity of 145 operations. The future airfield capacity ranges between approximately 193,000 annual operations (single runway with no exit improvements and a natural shift to off-peak periods) to over 400,000 annual operations (parallel runways with angled exit enhancements and a managed shift to off-peak periods) with a peak-hour capacity of 95-155 operations.

## **BUILDING AREA CAPACITY**

### ***Existing***

Compton Airport consists of some 77 acres, of which approximately 47 acres are devoted to the existing runway/taxiway system and 30 acres are within the existing building area.

Virtually all of the airport land area is developed. Approximately 90% (27 acres) of the 30 acres within the existing building area is presently utilized. Preliminary analysis indicates that there is the potential of some 400 or more aircraft parking spaces within the existing building area, continuing the existing general configuration and density. These figures equate to an average development density of 13.3 aircraft spaces per building area acre. Findings from numerous other general aviation airports reveal an average development density of 8.0 total (based and transient) aircraft spaces per acre, with nearly all airports falling between 7.0 and 9.0. Compton Airport is, therefore, relatively densely utilized in this regard. This high-density level is the result of closely-spaced aircraft parking positions and the Airport's lack of adherence with current FAA airport design standards.

## **Future**

Complete utilization of the Airport's entire available building area will be required if the Airport is to accommodate the maximum number of based and transient aircraft. Three significant design factors influence the ultimate building area capacity of Compton Airport. These factors are identified below and are analyzed in greater detail in the following chapters.

### ***Parallel Runway System versus a Single Runway***

The Airport's present closely-spaced parallel runway configuration is very inefficient from an airport land use perspective, in that its excessive land area requirement is not commensurate with its modest added runway capacity. A portion of the land area devoted to the parallel runway system might better be utilized to achieve airport dimensional compliance with FAA design standards and to accommodate additional based and transient aircraft.

### ***Acquisition of Additional Airport Property***

The scope of this master plan study included the investigation of possible land acquisition for two purposes: (1) Runway Protection Zone and/or (2) building area expansion. It should be noted that the acquisition of adjacent private property for the purposes of building area expansion will be difficult to justify on a benefit/cost basis alone. The imputed value of land used for aircraft storage purposes is typically far less than the land values associated with other urban uses.

### ***FAA Design Standards***

The Airport, as presently configured, does not meet many significant FAA design standards. If practical, any major development or reconfiguration of the Airport should be accomplished in a manner which meets or

Runway Configuration			Exit Configuration			VFR Hourly Capacity	Peaking			Annual Service Volume
Existing Parallel Runways	Single Runway		Existing	Optimum Angled	Drift Off	Aircraft Operations	Existing	Natural Shift	Managed Shift	Airfield Operations
	Existing Centerline	New Centerline								
X			X			145	X			294,000
								X		333,000
									X	384,000
X				X		155	X			315,000
								X		356,000
									X	410,000
	X		X			95	X			193,000
								X		218,000
									X	252,000
	X			X		105	X			213,000
								X		242,000
									X	278,000
		X	X			110	X			223,000
								X		253,000
									X	291,000
		X			X	125	X			254,000
								X		287,000
									X	331,000

Table 7

**Airfield Capacity Matrix**  
Compton Airport

exceeds FAA design standards. This is particularly important as airport activity and complexity increases in the future.

## **BALANCED CAPACITY**

A relatively direct relationship exists between airfield capacity and building area capacity. The key link is the aircraft utilization rate, which is measured in terms of the average number of operations per based aircraft. Table 8 examines this relationship at Compton Airport. It concludes that full development of the acreage currently available for building area use would result in an operational level well within the airfield's existing capacity. This assumes that the existing parallel runway configuration is retained. However, this scenario does not provide sufficient building area to accommodate anticipated based aircraft demand.

The Master Plan projects a demand for up to 500 based aircraft at the Airport by the year 2010. Aircraft activity will generate an estimated 156,000 annual operations in the year 2010. The capacities of the airfield and building areas will be adequate to accommodate this projected demand in a balanced manner, only if the existing parallel runway system is replaced by a single runway configuration. This capacity relationship is balanced, in that the ultimate aircraft basing capacity of the Airport will generate slightly less annual operations than the Airport's airfield capacity.

Due to the nature of aircraft operations at Compton Airport, environmental capacity is not expected to be a significant constraint on airport development.

<u>Factor</u>	<u>Data</u>
<b><i>Development Potential with Existing Closely-Spaced Parallel Runway System as the Constraint</i></b>	
Total building area acreage available	30
Development density (aircraft spaces/acre)	13.3
Aircraft parking capacity	400
Aircraft utilization rate (average operations per based aircraft)	250-350
Resulting airfield demand	100,000-140,000
<b><i>Development Potential with Single Runway as the Constraint (Existing exits, natural peaking shift)</i></b>	
Runway capacity	218,000-253,000
Aircraft utilization rate (average operations per based aircraft)	250-350
Resulting based aircraft capacity	620-1,010
Development density (aircraft spaces/acre)	13.3
Building area acreage required	47-76
<b><i>Development Potential with Single Runway as the Constraint (Improved exits, managed peaking shift)</i></b>	
Runway capacity	278,000-331,000
Aircraft utilization rate (average operations per based aircraft)	250-350
Resulting based aircraft capacity	795-1,325
Development density (aircraft spaces/acre)	13.3
Building area acreage required	59-100

Table 8

**Building Area and Airfield Capacity Relationships**  
Compton Airport



# 5

## **Airfield Design**

# Airfield Design

## DESIGN FACTORS

---

In this chapter, the technical factors and requirements which influence the design of the airfield system are first identified. Various alternative airfield configurations are then reviewed and a recommended airfield development plan presented. The airfield system includes the runways and taxiways and related approach and landing aids.

---

As identified in the previous analyses of aviation activity and airport role, the present and future operational role for Compton Airport is to serve as a public-use airport capable of accommodating based and transient, single-engine and light twin-engine, fixed-wing and rotary-wing, general aviation aircraft. Such aircraft are primarily used for personal, recreational, and business purposes and represent the large majority of aircraft presently using the Airport.

In consideration of this operational role, four key design factors have been identified which largely shape the future development and operation of the Airport. These design factors are:

- Provide adequate airfield facilities and services consistent with the Airport's role, user demand, and available resources — both financial and physical.
- Maximize the effective utilization of available airport property for aviation support activities and aircraft storage.
- Wherever feasible, bring the Airport into compliance with applicable FAA airport design standards and recommendations.
- Ensure that acceptable levels of airport operational safety and land use compatibility are maintained through appropriate approach zone protection and control.

In addition to these four key design factors, a number of significant airfield design issues and opportunities have been identified which require consideration in the formulation of the Master Plan. Figure 11 graphically summarizes these important design considerations. The remainder of this chapter addresses these airfield design factors, issues, and opportunities.

---

The FAA has established standards for the design and construction of public-use, general aviation airports. These standards have been developed to assist airport sponsors and operators in the appropriate planning, development, operation, and maintenance of aviation facilities.

---

## AIRPORT DESIGN STANDARDS

It should be noted that early in the preparation of this Master Plan, the FAA revised its airport design standards. Although most of the established guidelines remain the same, some are now considered to be "recommendations" rather than "standards." Also, certain previous criteria are given greater emphasis, some new criteria are added, and the terminology for others has been changed. These updated standards and recommendations are documented in Advisory Circular 150/5300-13 *Airport Design*. The Compton Airport Master Plan has been prepared in accordance with these new FAA design standards and recommendations.

### Airport Reference Code

Development of a long-range plan for Compton Airport's runway and taxiway system first requires that the appropriate runway classification and associated design standards be determined. In this regard, the FAA has established a coding system, the Airport Reference Code (ARC), to relate airport design criteria to the operational and physical characteristics of the aircraft intended to operate at the Airport.

The code has two components relating to the Airport's design aircraft. The first component, depicted by a letter (A-E), is the Aircraft Approach Category and relates to aircraft approach speed – an operational characteristic. The second component, depicted by a Roman numeral (I-VI), is the Airplane Design Group and relates to airplane wingspan – a physical characteristic. Generally, the aircraft approach speed component applies to runways and runway-related facilities. The airplane wingspan component primarily relates to separation criteria involving taxiways and taxi-lanes.

Airport design first requires selecting the appropriate Airport Reference Code and then applying the associated airport design criteria. In addition, the type of instrument approach and airspace operating environment are considered in the determination of the applicable airport design standards.

At Compton Airport, these design factors are characterized as follows:

- **Aircraft Types** – At the present time, the Airport is predominantly used by single-engine and light twin-engine aircraft that fall within Aircraft Approach Categories A and B (approach speeds less than 91 knots and 121 knots, respectively) and Airplane Design Group I (airplanes with wingspans of less than 49 feet). Furthermore, the large majority of these aircraft weigh 12,500 pounds or less (maximum certified takeoff weight) and are classified for airport design purposes by the FAA as "Small Airplanes." The anticipated future usage of the Airport also falls within these design categories.

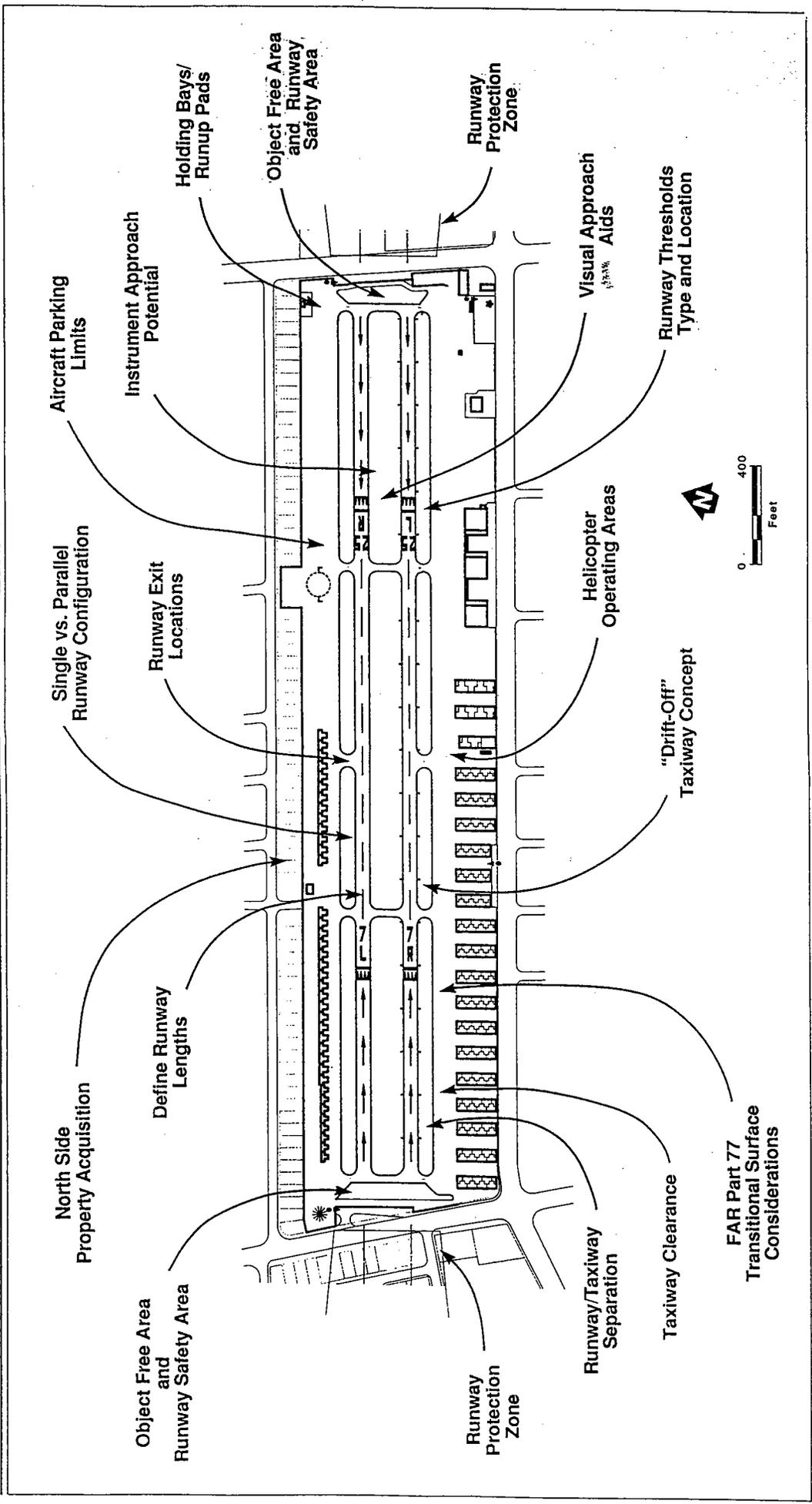


Figure 11

- **Instrument Approach Potential** – Compton Airport does not presently offer instrument approach capability. Due to airspace complexity and airfield design considerations, it may be difficult to establish a viable instrument approach procedure, either precision or nonprecision, that fully meets FAA siting requirements and adequately serves the Airport. However, the option of establishing a nonprecision instrument approach procedure (e.g., NDB, VOR, LOC, LDA, SDF, LORAN-C, etc.) at Compton Airport should be preserved. Existing and future obstructions to air navigation, both on Airport property and in the vicinity of the Airport, may preclude the attainment of "straight-in" instrument landing minimums at Compton Airport. However, the Airport may still qualify for a nonprecision instrument approach that terminates in a "visual" (i.e., "circling") maneuver to a landing. A formal FAA aeronautical study will be required to determine the appropriate type of instrument approach and the approach/landing minimums. For airport master planning and design purposes, a "visual" approach classification has been assumed. Due to prevailing wind and airspace utilization considerations, it is anticipated that any such instrument approach procedure would be oriented to principally serve the Runway 25 system.

Table 9 compares the FAA design standards for an Airport Reference Code B-I (Small Airplanes/ Visual) airport with Compton Airport's existing dimensions. As can be seen, there is little correlation between the Airport's existing dimensions and current Airport Reference Code B-I (Small Airplanes/ Visual) airport design standards. This is not unusual for an older, well-established airport such as Compton. FAA design standards have evolved over the years, resulting in this apparent present lack of dimensional correlation.

### Critical Aircraft

Under most circumstances, an airport should be designed to the highest set of standards needed to accommodate the critical aircraft likely to use the facility on a regular basis in the future. This objective must be balanced against the costs – both in dollars and in the loss of opportunity to better utilize available land – of implementing a higher set of standards. The critical aircraft anticipated to use Compton Airport within the 20-year planning period are encompassed within Aircraft Approach Categories A and B, and Airplane Design Group I (Small Airplanes/Visual). Such critical aircraft are defined as having a maximum certificated takeoff weight of 12,500 pounds or less, a wingspan of less than 49 feet, and an approach speed of less than 121 knots. Examples of such aircraft include: Cessna 150, Beechcraft Bonanza, Piper Aerostar, Rockwell 690, Beechcraft King Air B100, and the Cessna Citation I – a small corporate jet.

The FAA classifies an airport that is designed, constructed, and maintained to serve airplanes in Aircraft Approach Categories A and B as a Utility airport. More specifically, a Basic Utility – Stage II airport. In addition,

due to the extensive current and projected future use of helicopters at the Airport, it is appropriate that a critical helicopter be identified for design purposes. In this regard, the Bell 206L "Long Ranger", with a rotor diameter of 37 feet and a maximum takeoff weight of 4,150 pounds, is suggested as the critical helicopter for Compton Airport design purposes.

Given these factors, it is recommended that Compton Airport be designed in general accordance with Airport Reference Code B-I (Small Airplanes/Visual) standards. Specific implications of this recommendation are discussed in the following sections.

## **RUNWAY CONFIGURATION DESIGN REQUIREMENTS**

The most significant airfield design issue currently facing Compton Airport is the question of whether to maintain the operational viability of the two existing closely-spaced parallel runways, or convert the airfield to a single runway configuration. Factors to be considered in this analysis include:

- Capacity of the respective runway/taxiway systems and associated building areas to accommodate future aeronautical demand — both aircraft operations and based aircraft.
- Capability of the various runway/taxiway configurations to conform with FAA design standards and recommendations.
- Costs (both capital and maintenance) associated with maintaining two parallel runways versus the costs of converting to a single runway configuration.
- Safety and environmental considerations.
- Operational considerations such as desirability of having a secondary runway in reserve to facilitate primary runway closure.
- Availability of off-airport land area for airport expansion purposes — particularly the strip of residentially developed land bordering the Airport's north side.

### **Existing Parallel Runways Configuration**

The distance between the existing parallel runways centerlines is 200 feet. At this distance, aircraft operations on one runway are highly interrelated with aircraft operations on the other runway. Aircraft cannot safely operate on both runways simultaneously or independently. The FAA

---

For the purposes of this discussion, the use of the term "runway" refers to either the existing parallel runways system or a single runway.

---

	<u>FAA Design Standards<sup>a</sup></u>	<u>Existing Dimensions</u>
	Airport Reference Code B-1 (Small Airplanes/Visual Approach)	Runways 7L-25R/7R-25L
Pavement Strength	12,500 lbs.	12,500 lbs.
Runway:		
– Length	3,300 ft. <sup>b</sup>	3,670 ft. <sup>c</sup>
– Width	60 ft.	60 ft.
Taxiway:		
– Width	25 ft.	20ft.
Object Free Area:		
– Length	300 ft.	100 ft.
– Width	250 ft.	250 ft.
Runway Safety Area:		
– Length	240 ft.	100 ft.
– Width	120 ft.	250 ft.
Runway Centerline to:		
– Parallel Runway Centerline	700 ft. <sup>d</sup>	200 ft.
– Taxiway Centerline	150 ft.	105 ft.
– Aircraft Parking Area	125 ft.	140 ft.
– Hold Line	125 ft.	100 ft.
Building Restriction Line:		
– North Side	370 ft. <sup>e</sup>	150 ft.
– South Side	370 ft. <sup>e</sup>	200 ft.
Taxiway Centerline to:		
– Fixed or Movable Object	45 ft.	35 ft.
– Parallel Taxiway Centerline	69 ft.	N/A
Taxilane Centerline to:		
– Fixed or Movable Object	40 ft.	25 ft.
– Parallel Taxilane Centerline	64 ft.	N/A

<sup>a</sup> Source: FAA Advisory Circular 150/5300-13, "Airport Design" (1989)

<sup>b</sup> Runway length appropriate for a Basic Utility-Stage II airport (former design standard). New FAA design standards do not define specific runway lengths.

<sup>c</sup> Total pavement length as published.

<sup>d</sup> For simultaneous VFR operations.

<sup>e</sup> Assumes a 35-foot-high structure; dimension is an FAA recommendation, not a standard.

Table 9

## Airport Design Standards

### Compton Airport

recommends a parallel runway centerline to parallel runway centerline minimum distance of 700 feet for simultaneous operations in visual meteorological conditions.

### Single Runway Configuration

If a single runway configuration were to be established at Compton Airport, FAA design standards, as identified in Table 9, would apply. Potentially, the single runway would be served on both sides by parallel taxiways. The minimum recommended runway centerline to parallel taxiway centerline dimension is 150 feet. The principal alternative single runway airfield configurations include:

- Retain Runway 7R-25L and close Runway 7L-25R.
- Retain Runway 7L-25R and close Runway 7R-25L.
- Construct a new single Runway 7-25 and close the existing Runways 7R-25L and 7L-25R.

An analysis of the existing parallel runways configuration versus the various single runway configuration alternatives is presented in the "Runway Configuration Alternatives" section of this chapter.

## RUNWAY ORIENTATION DESIGN REQUIREMENTS

Wind direction is a primary design factor influencing runway orientation. Additional runway orientation design factors include terrain, area airspace interaction, existing airport configuration, and adjacent off-airport land development.

Ideally, a runway should be aligned with the prevailing wind. In some cases, more than one runway may be necessary to provide the desired level of wind coverage — 95% coverage at 13 knots (15 m.p.h.) crosswind component. This level of wind coverage takes into account various factors influencing aircraft operations, as well as the economics of providing the desired coverage. When a runway cannot provide at least 95% wind coverage, either widening of the primary runway or providing a crosswind runway should be considered.

There is no on-site recorded wind data available for Compton Airport. However, wind data is available for a nearby location — 21718 South Alameda Street. For planning purposes, this nearby wind data, presented in the form of a wind rose, can be considered to be applicable to Compton Airport. The wind rose is presented in graphic form on the Airport Layout Plan (see Chapter 2 — Figure 1).

The airfield design implications associated with this level of wind coverage are discussed in the "Runway Orientation Alternatives" section of this chapter.

## **RUNWAY LONGITUDINAL DESIGN REQUIREMENTS**

The longitudinal requirements of a runway's design involve more than just the runway's length. Other design components to be considered include: Object Free Areas, Runway Safety Areas, FAR Part 77 approach surfaces, Runway Protection Zones (formerly known as "Clear Zones"), and landing threshold locations.

### **Runway Length**

Within the recent past, FAA design standards identified recommended lengths for runways intended to serve small airplanes with approach speeds of 50 knots or more. For the types of aircraft Compton Airport is now serving and is anticipated to be serving in the future, these former FAA design standards indicated a runway length of 3,000 feet (at Compton Airport's 82°F. mean daily maximum temperature and 97-foot airport elevation). This runway length corresponds with the FAA's Basic Utility—Stage II airport design classification.

The recently revised FAA design standards do not recommend specific runway lengths. Rather, the FAA suggests that the determination of the appropriate runway length be based upon a site and user-specific assessment of airplane operational characteristics. The Airport's existing published runway length of 3,670 feet exceeds the requirements of virtually all airplanes now operating at the Airport or anticipated to regularly operate there in the future. However, the existing runway length does not provide for Object Free Areas and Runway Safety Areas that fully meets current FAA design standards. If necessary, the runway could be shortened a small amount without seriously affecting the operating capabilities of the airplanes expected to use the Airport. Such shortening of the runway may be required to adequately provide for Object Free Area and Runway Safety Area requirements, and approach slope clearances.

---

An *Object Free Area* is a two-dimensional ground area surrounding the runway end. The Object Free Area clearing standard precludes parked airplanes and objects, except objects whose location is fixed by an aeronautical function. This designated area is newly defined in the revised FAA airport design standards.

---

## Object Free Areas

None of the four runway ends is currently configured with an Object Free Area that fully satisfies FAA design standards. The Object Free Area should extend a minimum of 300 feet beyond the end of the runway pavement at a width of 250 feet. This area should be under the direct control of the Airport.

At the approach end of Runways 7L and 7R, the existing runway pavement comes within 70 feet of the 6-foot-high chain-link fence paralleling the west side interior airport access road – 230 feet less than the specified design standard.

At the approach end of Runways 25L and 25R, the 6-foot high chain-link fence paralleling the east side interior airport access road is located approximately 50 feet from the physical end of the existing runway pavement – 250 feet less than the specified design standard.

In addition, interior airport access roads, cinder block walls, public streets, power lines, light poles, trees, and structures are located within the current Object Free Areas of all runways.

## Runway Safety Areas

None of the four runway ends currently has a Runway Safety Area which complies with FAA design standards. The Runway Safety Areas should extend a minimum of 240 feet beyond the end of the runway pavement at a width of 120 feet.

The chain-link fences noted above are located approximately 50-70 feet from the end of the runways' pavement – 170-190 feet less than the specified design standard. In addition, airport access roads, cinder block walls, public streets, power lines, light poles, trees, and structures are located within the current Runway Safety Areas of all runways.

## FAR Part 77 Approach Surfaces

For a runway expected to serve only small airplanes (i.e., 12,500 pounds or less) in visual conditions, FAA design standards and Federal Aviation Regulations specify a trapezoidal approach surface which is 5,000 feet long, 250 feet inner width, and 1,250 feet outer width. If the runway is expected to serve only small airplanes with nonprecision instrument approach capability (visibility minimums greater than 3/4-mile), the approach surface dimensions become 5,000 feet long, 500 feet inner width, and 2,000 feet outer width. The approach surface begins on the runway's primary surface, 200 feet from the end of the runway pavement,

---

A *Runway Safety Area* is a cleared, drained, graded, and preferably turfed area symmetrically located about the runway which, under normal conditions, is capable of supporting aircraft rescue and fire-fighting equipment and of accommodating the occasional passage of aircraft without causing major damage to the aircraft. The area must be free of objects, except ones whose function requires their location in the Runway Safety Area, in which case they must be installed on frangible supports.

---

and slopes upwards at a ratio of 20:1. Ideally, no objects should penetrate the approach surfaces or their contiguous 7:1 slope transitional surfaces.

In the airfield's present configuration, Central Avenue, with its cinder block wall, lies just inside the Runway 7L-25R/7R-25L system primary surface. In addition to the road and wall, there are several more obstructions in the Runways 7L and 7R primary and approach surfaces, such as a chain link fence, internal airport access road, power lines, street light poles, trees, and structures. A pole-mounted tennis court light (elevation  $137 \pm$  feet MSL or  $40 \pm$  feet above the runway elevation) located at the approach end of the primary surface is the controlling obstruction within the Runways 7L/7R approach surface.

Similarly, Wilmington Avenue, a cinder block wall, chain-link fence, internal airport access road, street light poles, trees and structures are obstructions within the Runways 25L and 25R primary and approach surfaces. The controlling obstruction within the Runways 25L/25R approach surface is a tree (elevation  $115 \pm$  feet MSL or  $18 \pm$  feet above the runway elevation) located along the east side of Wilmington Avenue.

Objects determined by the FAA to be obstructions to air navigation must be removed or the runway threshold appropriately relocated or displaced. Accordingly, these controlling obstructions are key determinants in establishing the location of the runways' thresholds.

## Runway Protection Zones

---

The FAA defines a *Runway Protection Zone* as a trapezoidal area at ground level, beyond the runway end, under the control of the airport authorities, for the purpose of protecting the safety of approaches and keeping the area clear of the congregation of people. The Runway Protection Zone begins at the end of each primary surface and is centered upon the extended runway centerline. The term "Runway Protection Zone" has replaced the formerly used term "Clear Zone."

---

The FAA recommends that an airport operator have sufficient control, by means of outright ownership or avigation easements, over property lying within Runway Protection Zones to assure the safety of aircraft approaches and to keep the area clear of congregations of people. Runway Protection Zones are located relative to the runway pavement ends and do not take into account any threshold displacements. The dimensions of the Runway Protection Zone applicable to Compton's existing configuration (i.e., Small Airplanes/Visual) are: 1,000 feet in length, 250 feet inner width, and 450 feet outer width. The inner portion of the zone begins at the end of the primary surface (i.e., 200 feet beyond the end of the runway pavement). For an airport intended to serve small airplanes with a nonprecision instrument approach (visibility minimums greater than 3/4-mile), the Runway Protection Zone dimensions increase to 1,000 feet in length, 500 feet inner width, and 800 feet outer width.

Due to the existing closely-spaced parallel runway configuration and resultant overlapping of Runway Protection Zones, the current dimensions of the Runway Protection Zones serving Runways 7L/7R and 25L/25R are 1,000 feet in length, 450 feet inner width, and 650 feet outer width.

In the Airport's current configuration, no significant part of any Runway Protection Zone is located on airport property, nor does the Airport presently hold any easements over these off-airport areas. It should be noted that the Clear Zones depicted on Compton Airport's existing Airport Layout Plan (dated August 1966) are incorrectly located with respect to the runway pavement ends.

### Landing Threshold Locations

When structures, trees, poles, roads, or other objects in the approach area penetrate the overlying approach surface and cannot be eliminated, relocation or displacement of the runway landing threshold may be necessary. Relocation of a runway threshold results in a reduction of available runway length. Displacement of a runway threshold, however, permits some added operational flexibility in terms of defining runway length available for takeoff and landing.

As a rule, establishment of displaced thresholds is discouraged. The preferred solution is to remove the offending obstruction. Where shortening of the runway would not significantly affect aircraft operations, relocation of the runway end to eliminate the displaced threshold should be considered.

If the runway threshold is displaced, the minimum amount of displacement can be determined by an FAA-defined threshold location plane which, for a visual or nonprecision (visibility one mile or greater) approach, begins at the runway threshold and slopes upward at 20:1. Objects can thus penetrate the FAR Part 77 approach surface, but not require displacement of the landing threshold. A minimum of 15 feet threshold location plane clearance is required over public roads such as Central Avenue and Wilmington Avenue.

It should be emphasized that the threshold locational criteria noted above provides the minimum approach clearance acceptable to the FAA. It is not necessarily the most desirable or appropriate for all airports. More typically, the runway threshold is established on the basis that there are no obstructions penetrating the 20:1 approach surface, as defined in Federal Aviation Regulation Part 77. The greater measure of approach clearance provided by this latter criteria serves to significantly enhance the safety and utility of aircraft operations — particularly during aircraft landing operations at night.

At Compton Airport, the Runways 7L and 7R landing thresholds are presently displaced 895 feet from the runway end of pavement. The Runways 25L and 25R landing thresholds are presently displaced by 860 feet. These existing threshold displacement distances are considerably greater than that distance required to satisfy minimum FAR Part 77 obstruction clearance criteria. It appears that the respective locations of the

existing threshold displacements were based upon an incorrect interpretation of the clear zone locations as depicted in the 1986 Airport Layout Plan. In addition, the added displacement distance may have been established to maximize the vertical distance between aircraft on final approach to the Airport and adjacent noise-sensitive land uses.

The above noted existing threshold displacements result in the following published runway lengths:

	Runways 7L & 7R	Runways 25L & 25R
Take Off Run Available (TORA)	3,670 feet	3,670 feet
Landing Distance Available (LDA)	2,775 feet	2,810 feet

It should again be emphasized that the existing published runway lengths noted above do not provide Object Free Areas and Runway Safety Areas that comply with current FAA design standards.

Recommendations as to the appropriate longitudinal design of the runway system are identified in the "Runway Longitudinal Alternatives" section of this chapter.

## RUNWAY LATERAL DESIGN REQUIREMENTS

### Separation Criteria

As noted previously, the parallel runways at Compton Airport have a centerline to centerline separation dimension of 200 feet. The minimum separation dimension recommended by the FAA for independent VFR parallel runways is 700 feet – considerably more than Compton's existing runway separation. As a result, aircraft operations on one of Compton's runways are highly interrelated with aircraft operations on the other runway. In general, aircraft cannot safely operate on both runways simultaneously or independently.

In addition, the existing configuration of the Airport does not conform with current FAA design standards and recommendations regarding runway centerline to parallel taxiway centerline separation, primary surface area, Aircraft Parking Limit setbacks, Building Restriction Lines, and FAR Part 77 transitional surface clearances. As noted previously, Table 9 compares the appropriate FAA design standards with existing Airport dimensions.

Although Compton Airport has operated for many years with considerably less runway/taxiway lateral separation than specified by current FAA airport design standards, such continued noncompliance cannot be encouraged. With the projected future increases in Airport-based aircraft and operations, the necessity of the Airport meeting FAA dimensional standards will become more pronounced.

### **Land Acquisition Potential**

Significant in this analysis of runway design requirements is the question of the need and practicability of acquiring off-airport land area to permit Airport expansion. Of particular interest in this regard is the rectangular parcel of residentially developed land bordering the Airport's northern property line. The potential availability and use of this parcel in large part influences the analysis of runway configuration alternatives, building area capacity, and overall airport development.

A discussion paper focusing on this specific study issue was prepared as part of this master planning process. The discussion paper, entitled "Acquisition of Additional Land Area," is presented in Appendix D. This analysis concluded that the subject residential land area cannot be feasibly acquired by the County at this time. The option of acquiring the subject land area should, however, be preserved for future consideration. Accordingly, the potential near-term availability of the residential strip of land bordering the Airport's northern property line is not considered to be a determining factor in the analysis of airfield configuration alternatives or future airport building area development.

If parcels of land become vacant or cleared (due to fire, earthquake, etc.) in the residential strip along the Airport's north side or within the Runway Protection Zones, the County should consider acquisition of those particular parcels at that time. Such acquisition would be consistent with FAA standards and requirements, and, therefore, the acquisition would be eligible for FAA grant funding. This option should remain open and aggressively pursued if determined to be politically acceptable to the local community.

A number of other noncontiguous parcels in the vicinity of Compton Airport were considered as to their possible acquisition value for airport expansion purposes. It was determined that none of the parcels could be feasibly acquired at this time. However, it is suggested that the County remain receptive to contiguous land acquisition opportunities as may occur from time to time in the future.

---

The following portion of the Master Plan focuses on alternative design concepts and recommended improvements to the airfield system to accommodate future demand and to bring the Airport into general compliance with FAA design standards.

---

## RUNWAY CONFIGURATION ALTERNATIVES

### Identification of Alternatives

As noted previously, there are four basic runway configuration alternatives that deserve special consideration as part of the Master Plan. These alternative configurations are:

- **Alternative A** — Retain existing parallel runway/taxiway system (i.e., Runways 7R-25L and 7L-25R).
- **Alternative B** — Retain Runway 7R-25L and close Runway 7L-25R.
- **Alternative C** — Retain Runway 7L-25R and close Runway 7R-25L.
- **Alternative D** — Construct a new single Runway 7-25 and close Runways 7R-25L and 7L-25R.

The four alternative runway configurations are depicted in Figure 12. Variations of each of these alternative runway configurations were explored as part of the master plan study analysis. However, only those alternatives that substantially satisfied the stated design requirements are identified herein.

### Analysis of Alternatives

In selecting the desired alternative, the following decision factors were considered. The selected alternative should:

- Enhance airport operational safety and utility.
- Reflect an appropriate balance between future user demand and required airfield capacity.
- Comply with FAA design standards and recommended dimensional criteria.
- Maximize the availability of land area for building development and aircraft parking/storage.
- Be cost-effective and affordable to the user group.
- Reflect an appropriate balance between future user demand and required airfield capacity.

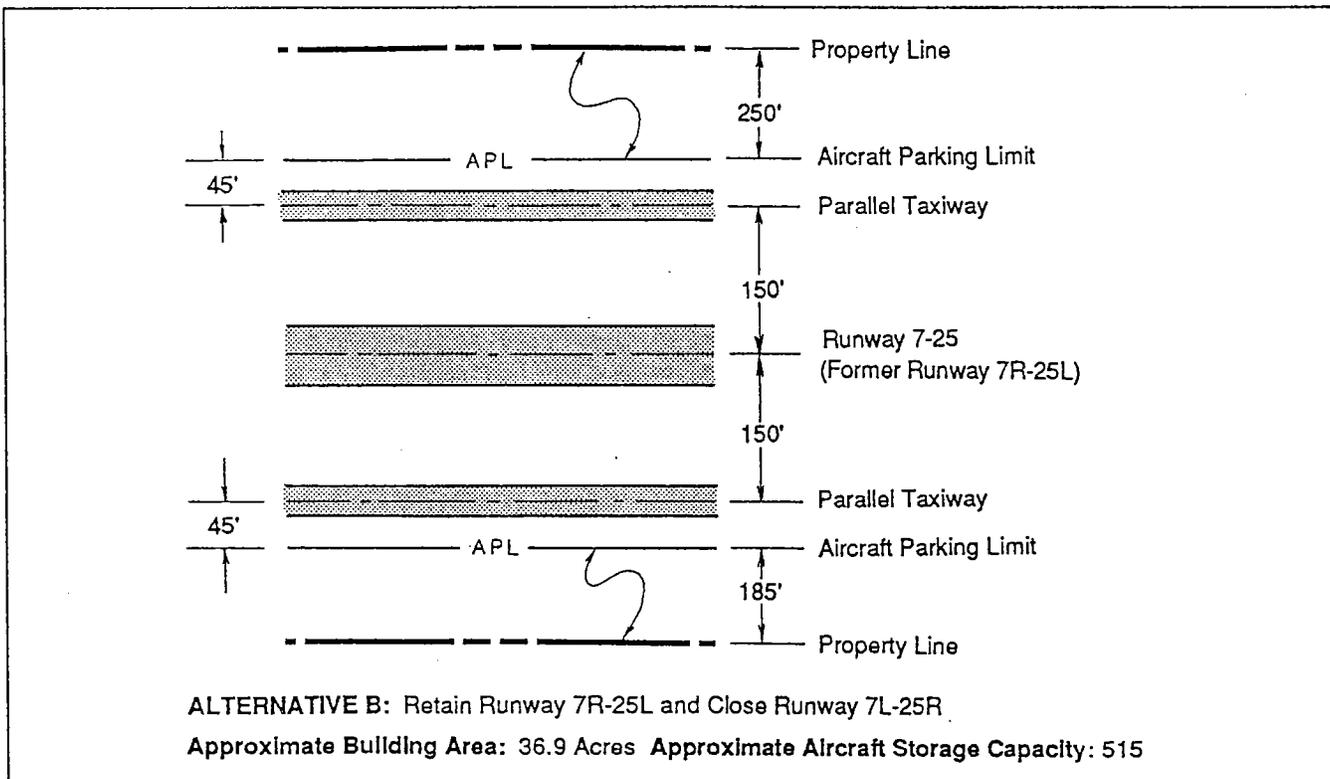
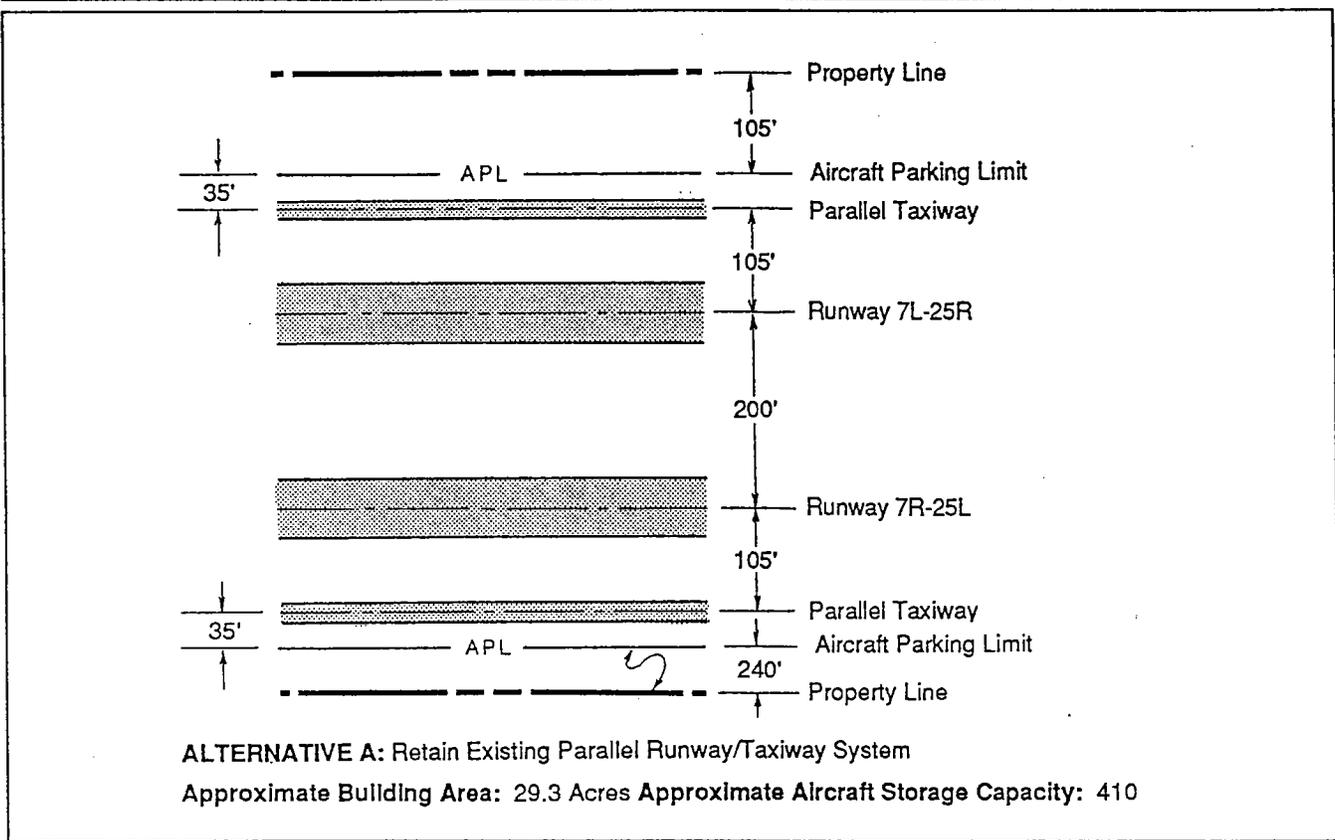
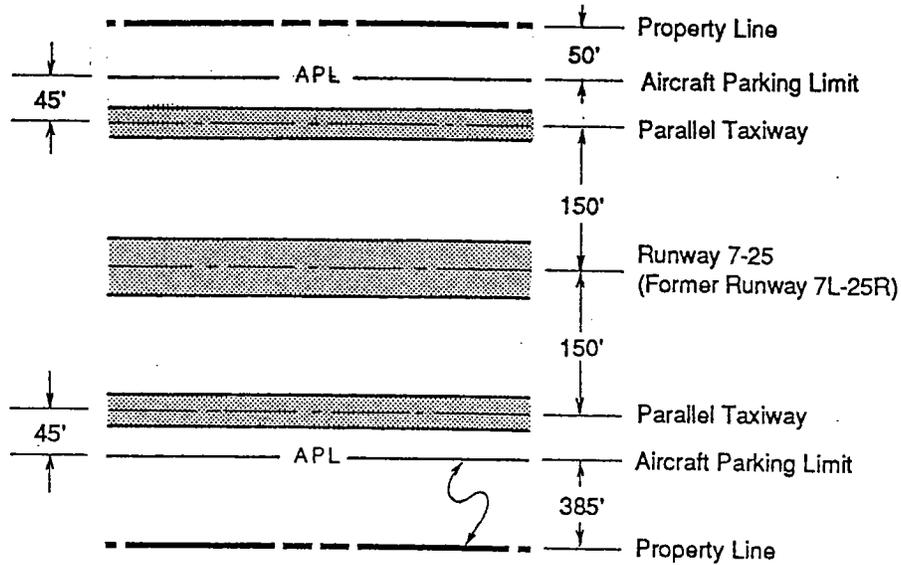


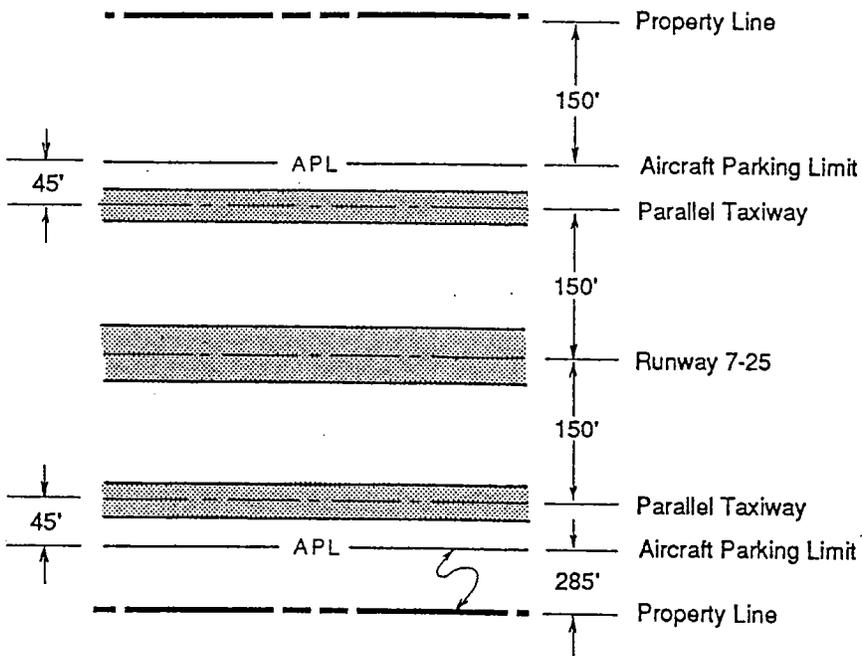
Figure 12a

## Runway Configuration Alternatives

Compton Airport



**ALTERNATIVE C:** Retain Runway 7L-25R and close Runway 7R-25L  
 Approximate Building Area: 36.9 Acres Approximate Aircraft Storage Capacity: 515



**ALTERNATIVE D:** Construct a new single Runway 7-25 and close runways 7L-25R and 7R-25L  
 Approximate Building Area: 36.9 Acres Approximate Aircraft Storage Capacity: 515

Figure 12b

## Runway Configuration Alternatives

Compton Airport

- Accommodate a "circling" (i.e., visual) nonprecision instrument approach capability.
- Be environmentally acceptable.
- Facilitate the transition between the existing airport configuration and the ultimate airport configuration.
- Be flexible with respect to the potential role of the Airport beyond the 20-year planning time frame.

An overview of the relative advantages and disadvantages associated with each of the four alternative runway configurations is presented in Table 10.

As was indicated in the Chapter 2 analysis of future aeronautical demand (i.e., based aircraft and operations) versus airfield capacity (i.e., aircraft storage area and runway/taxiway capacity), Compton Airport is essentially "land poor." Towards the middle of the 20-year planning period, demand for aircraft storage positions will exceed the available aircraft storage capacity. Runway/taxiway capacity, either in the Airport's existing parallel runway configuration or in a single runway configuration, is more than sufficient to accommodate projected operational demand through the 20-year planning period.

As a result, the emphasis on future development of Compton Airport should be to maximize the accommodation of based aircraft. Due to the limited airport property available (77 acres), maximization of the Airport's based aircraft capacity requires that the relatively space-inefficient parallel runways configuration be ultimately replaced by a more space-efficient single runway configuration. Utilization of the single runway configuration enables approximately 100 additional aircraft to be based at the Airport. This number assumes that all available aircraft parking positions are utilized. The reduction in runway capacity resulting from the shift from a closely-spaced parallel runways configuration to a single runway configuration is minimal and of no significant operational consequence. As noted in Chapter 4, the single runway configuration offers more than adequate capacity to accommodate the Airport's projected 20-year operational demand.

It should be noted that the ultimate aircraft basing capacities indicated for runway configuration Alternatives B, C, and D (see Figure 12) reflect the following FAA dimensional standards:

- 150-foot separation between runway centerline and parallel taxiway centerline; and
- 45-foot separation between parallel taxiway centerline and Aircraft Parking Limit.

A reduction in these dimensions to match the Airport's existing dimensions (i.e., 105 feet and 35 feet, respectively), would enable an additional 130 aircraft to be based at the Airport under Alternatives B, C, and D. However, due to the intensity, density, and complexity of future aircraft operations at Compton Airport, such a reduction in dimensional standards is not recommended.

### **Recommended Runway Configuration**

Given the design requirements and decision factors noted above, the optimum future runway configuration is judged to be Alternative C. The primary reason for the selection of Alternative C is that this configuration maximizes the amount of developable area on the terminal/fixed base operations side of the runway while meeting FAA dimensional standards. In addition, this alternative offers certain cost efficiencies in the phasing and construction of the runway/parallel taxiway system.

To facilitate the implementation of this single runway configuration, the following development plan is suggested:

- Maintain the existing parallel runways/taxiway configuration until such time as:
  - Aircraft basing demand approaches currently available space; or
  - Significant maintenance or rehabilitation is required on the runway or runway lighting system.
- In the interim, configure all improvements (hangars, tiedowns, facilities, etc.) so as to be consistent with both the present and future airfield configurations.
- When appropriate, reconstruct and light Runway 7L-25R. Close Runway 7R-25L.
- Initially, utilize the northern portion of the former Runway 7R-25L as a parallel taxiway.
- Relocate tiedowns and T-hangars on the north side of the new Runway 7-25 so as to comply with the 150-foot runway centerline to parallel taxiway centerline separation and the 45-foot parallel centerline taxiway to Aircraft Parking Limit.
- When required to accommodate based aircraft demand, construct a new south-side parallel taxiway with a runway centerline to parallel taxiway centerline separation of 150 feet and a parallel taxiway centerline to Aircraft Parking Limit separation of 65 feet.

**Alternative A – Retain Existing Parallel Runways/Taxiway System**

**ADVANTAGES**

- Maximizes value of sunk capital development costs associated with existing runway/taxiway system.
- Permits some measure of increased user operational flexibility and enhanced runway capacity.
- User group familiar and comfortable with existing configuration.
- Permits use of secondary runway as "back-up" if primary is closed for maintenance or accident recovery.
- Substandard runway–taxiway separation enhances aircraft storage capacity.

**DISADVANTAGES**

- Does not conform to current FAA design standards regarding parallel runway separation, parallel taxiway separation, Building Restriction Lines, and Aircraft Parking Limit.
- Demand/capacity projections do not indicate need for parallel runways.
- Inefficient use of limited building area.
- High maintenance cost associated with two runways.
- Nonstandard traffic pattern and procedures.
- Potential for aircraft flightpath conflict on approach/departure.
- If FAA's 150-foot runway–taxiway separation is applied, a substantial reduction in aircraft storage capacity results (loss of 100+ aircraft parking positions).

**Alternative B – Retain Runway 7R–25L and Close Runway 7L–25R**

**ADVANTAGES**

- Meets current FAA design standards.
- Increases available aircraft storage area on north side of runway.
- Maintains value of sunk capital development costs associated with retained Runway 7R–25L.
- Runway 7R–25L is currently considered as the Airport's primary runway (i.e., lighted and adjacent to terminal/FBO area).
- Lower maintenance costs than with two runways.
- Less user operational confusion – particularly for transient users.
- Simplified traffic pattern.

**DISADVANTAGES**

- Marginally less runway capacity than with closely-spaced parallel runways.
- No "back-up" runway is available if single runway is closed for maintenance or accident recovery.
- Decreases available aircraft storage area on south side of runway.
- Limits expansion potential in busy terminal and FBO areas.

Table 10

**Runway Configuration Alternatives Analysis  
Compton Airport**

**Alternative C – Retain Runway 7L–25R and Close Runway 7R–25L****ADVANTAGES**

- Meets current FAA design standards.
- Increases available area on south side of runway for aircraft storage, terminal facilities, and FBO development.
- Maintains value of sunk capital development costs associated with retained Runway 7L–25R (including recent improvements).
- Lower maintenance costs than with two runways.
- Less user operational confusion – particularly for transient users.
- Simplified traffic pattern.

**DISADVANTAGES**

- Marginally less runway capacity than with closely-spaced parallel runways.
- No "back-up" runway is available if single runway is closed for maintenance or accident recovery.
- Decreases available aircraft storage area on north side of runway.
- To maximize storage capacity on north side of runway, existing north side T-hangars would have to be relocated.
- Somewhat shifts pattern overflight impact areas.
- Runway 7L–25R is currently considered the Airport's secondary runway (i.e., no lighting and distant from terminal and FBO areas).

**Alternative D – Construct a New Runway 7–25 and Close Runways 7R–25L and 7L–25R****ADVANTAGES**

- Meets current FAA design standards.
- Increases available area on both sides of runway for aircraft storage and terminal/FBO development.
- Lower maintenance cost than with two runways.
- Less user operational confusion – particularly to transient users.
- Simplified traffic pattern.
- Lower maintenance costs than with two runways.

**DISADVANTAGES**

- High initial capital cost to construct entirely new runway.
- Marginally less runway capacity than with closely-spaced parallel runways.
- No "back-up" runway is available if single runway is closed for maintenance or accident recovery.

Table 10 continued

**Runway Configuration Alternatives Analysis**

Compton Airport

## RUNWAY ORIENTATION ALTERNATIVES

As part of the Master Plan study, the orientation of Compton Airport's existing runway system and the need for a crosswind runway were explored. This analysis concluded that the existing orientation of the runway system is satisfactory and a crosswind runway is neither required nor feasible at Compton Airport. This conclusion is based upon consideration of the following factors:

- As noted previously, FAA design criteria recommends that when a runway's orientation cannot provide at least 95% (at 13 knots/15 m.p.h.) wind coverage, either widening of the primary runway or providing a crosswind runway be considered. Available wind data indicates that the crosswind coverage for Compton's Runway 7-25 system is 95.4% and is thus satisfactory for the runways' existing orientation.
- The physical configuration of Compton Airport and its environs does not permit the feasible, cost-effective development of a crosswind runway. The cost of acquiring the additional property required to accommodate a crosswind runway would be prohibitive.
- The analysis of aircraft incidents and accidents has indicated no significant trend of aircraft departing the lateral confines of the existing runway surface.
- Airport users have not expressed an operational need for a crosswind runway at Compton Airport.

## RUNWAY LONGITUDINAL ALTERNATIVES

---

This discussion of runway end configurations focuses on the appropriate location of the physical end of the runway pavement and the siting of the landing threshold.

---

### Runway End Configurations

When physical barriers and/or controlling obstructions, particularly ones which cannot readily be eliminated, occur a short distance beyond the runway ends, tradeoffs often must be made in the design of the airfield components. Such is the case at Compton Airport. At the west end of the Airport, Central Avenue must, for all practical purposes, be regarded as a fixed barrier — relocation of the road would make sense only if other feasible airfield design options were not available.

Similarly, Wilmington Avenue, at the Airport's east end, represents the same kind of constraint. County acquisition of adjacent properties and relocation of the roads is an alternative; however, the high cost of land acquisition, road relocation, and obstruction removal, combined with the

limited availability of funding, are the principal impediments to such action. In addition, there would be significant impacts related to traffic circulation, land use, and neighborhood boundaries.

In addition, physical obstructions penetrating the runway approach zones (e.g., roads, street light poles, structures, and trees) significantly influence the location of the landing thresholds.

To effectively address these physical constraints, while maximizing airfield utility, four alternative configurations were considered for each runway end.

- **Alternative I** – Locate the Runway Protection Zone substantially on existing airport property.
- **Alternative II** – Relocate the runway threshold to a point which provides 20:1 FAR Part 77 approach surface clearance over existing obstructions.
- **Alternative III** – Displace the runway threshold to a point which provides 20:1 threshold location plane clearance over existing obstructions.
- **Alternative IV** – Displace the runway threshold to a point which permits the utilization of 3,000 feet of runway surface for aircraft landing purposes (i.e., Landing Distance Available is 3,000 feet). Provide for maximized approach slope clearance over permanent obstructions.
- **Alternative V** – Maintain the existing location of the runway threshold displacements.

In all of the above alternatives, it is suggested that the physical ends of the runway pavement be located to provide the Object Free Area and Runway Safety Area lengths as specified in the FAA airport design standards. The permanent object that defines the outer extent of each runway's Object Free Area is the 6-foot-high chain-link fence that parallels the interior airport access road at each runway end.

The runway ends at Compton Airport are very similar in terms of their common design issues and physical constraints. Therefore, it is reasonable to suggest that all runway ends be configured in a similar manner. That is, the most advantageous alternative configuration should be adopted for all runway ends. The selected runway end configuration is applicable to both the existing parallel runways configuration and the future single runway configuration.

Table 11 describes the advantages and disadvantages of the longitudinal design alternatives common to the runway ends. Also described are the advantages and disadvantages associated with the existing runway ends configuration.

**"As is" Runway Ends Configuration — As shown on the August 1966 Airport Layout Plan.**

**ADVANTAGES**

- "As is" condition — users are familiar with configuration and perceived operational limitations.

**DISADVANTAGES**

- Fosters incorrect user perception of available runway length.
- Fosters incorrect perception that acquisition of additional Runway Protection Zone property or Control easements is unnecessary.
- Runway Protection Zones, Object Free Areas, and Runway Safety Areas do not comply with current FAA design standards.
- Available runway lengths incorrectly designated.
- Nonstandard runway pavement marking.

**Alternative I — Locate Runway Protection Zone substantially on existing airport property.**

**ADVANTAGES**

- Runway Protection Zone is located substantially on existing airport property. No additional land acquisition and/or control easements are required.
- Runway Protection Zone land uses are consistent with FAA criteria.
- Object Free Area and Runway Safety Area are located on airport property and are consistent with FAA criteria.

**DISADVANTAGES**

- Results in minimum available runway length (approximately 1,650 feet TORA and LDA).
- Substantially reduced airfield capacity and utility.
- May be subject to very low FAA funding priority due to increased runway length and utility.

**Alternative II — Relocate the runway threshold to a point which provides 20: FAR Part 77 approach surface clearance over permanent obstructions.**

**ADVANTAGES**

- Object Free Area and Runway Safety Area are located on airport property and are consistent with FAA criteria.
- Satisfies FAA design standard with respect to Part 77 approach surface clearance.

**DISADVANTAGES**

- A substantial portion of the Runway Protection Zone is located off airport property. Land acquisition and/or control easements recommended in this off-airport area.
- Results in reduced available runway length (approximately 3,190 feet TORA and 2,645-2,800 feet LDA).
- Substantially reduced airfield capacity and utility.

Table 11

**Runway Longitudinal Alternatives Analysis**  
Compton Airport

**Alternative III – Displace the runway threshold to a point which provides 20:1 threshold location plane clearance over existing obstructions.**

**ADVANTAGES**

- Object Free Area and Runway Safety Area are located on airport property and are consistent with FAA criteria.
- Configuration increases available LDA runway lengths to 3,100-3,300 feet.
- "Entrance" taxiway (optional) offers added unofficial takeoff/landing distance.

**DISADVANTAGES**

- A substantial portion of Runway Protection Zone is located off airport property. Land acquisition and/or control easements recommended in this area.
- Minimum approach slope clearance over residential areas underlying approaches.

**Alternative IV – Displace the runway threshold to a point which permits the utilization of 3,000 feet of runway surface for aircraft landing purposes (i.e., Landing Distance Available). Provide for maximized approach slope clearance over permanent obstructions.**

**ADVANTAGES**

- Runway lengths, particularly LDA, meet or exceed standards.
- Object Free Area and Runway Safety Area are located on airport property and are consistent with FAA criteria.
- "Entrance" taxiway (optional) offers added unofficial takeoff/landing distance.

**DISADVANTAGES**

- A substantial portion of the Runway Protection one is located off airport property. Land acquisition and/or control easements recommended in this off-airport area.
- Reduces approach slope clearance over residential areas underlying approaches.
- Extensive obstruction removal required to achieve a clear 20:1 approach slope.

**Alternative V – Maintain the existing location of the runway threshold displacements.**

**ADVANTAGES**

- Maintains approximate existing runway lengths (TORA and LDA).
- Provides additional approach clearance over residential areas underlying approaches.
- Does not encourage a change in the operational role of airport or nature of aircraft activity.
- Object Free Area and Runway Safety Area are located on airport property and are consistent with FAA criteria.
- "Entrance" taxiway (optional) offers added unofficial takeoff/landing distance.

**DISADVANTAGES**

- A substantial portion of the Runway Protection Zone is located off airport property. Land acquisition and/or control easements recommended in this off-airport area.
- LDA length is 420-475 feet less than the FAA standard of 3,000 feet.

Table 11 continued

**Runway Longitudinal Alternatives Analysis**  
Compton Airport

A key factor in assessing the desirability of each alternative is the runway length associated with each runway end configuration – both takeoff length and landing length. When it is not feasible to design and build a runway to conventional FAA design standards, the FAA permits the use of Declared Distances standards. The use of this concept requires prior FAA approval through the Airport Layout Plan. In such cases, portions of the runway must be declared unavailable for certain aircraft uses and operational computations. The two Declared Distances potentially applicable to Compton Airport are:

- Take Off Run Available (TORA) – The length of runway available for takeoff, normally the distance from the start of takeoff to the stop end of the runway. In most cases, TORA is the same as the published runway length. TORA computations generally include the length of runway between the runway approach end start of pavement and the displaced threshold.
- Landing Distance Available (LDA) – The length of runway available for landings, normally measured from the displaced or relocated threshold to the stop end of the runway. However, at locations where the Runway Safety Area length at the far end of the runway is substandard, the LDA is the distance from the threshold to where the standard Runway Safety Area length would begin.

The runway lengths which would result from each of the four runway end alternatives are indicated below. Configurations which provide at least 3,000 feet of runway length (TORA and LDA) at Compton Airport are best. Configurations offering greater or lesser runway length may be desirable provided that their associated advantages outweigh their disadvantages.

**Runway Length Analysis**

Runway End Configuration Alternative	Approximate Runway Length (in Feet)			
	Runways 7L & 7R		Runways 25L & 25R	
	TORA	LDA	TORA	LDA
Existing – "As Is" Runway Configuration (OFA not in compliance)	3,670	2,775	3,670	2,810
Existing – "As Is" Runway Configuration (OFA in compliance)	3,190	2,525	3,190	2,580
I – Runway Protection Zones On-Airport	1,650	1,650	1,650	1,650
II – Relocate Runway Thresholds to Provide 20:1 Part 77 Clearance	3,190	2,645	3,190	2,880
III – Displace Runway Thresholds to Provide 20:1 Threshold Location Plane Clearance	3,190	2,845	3,190	3,080
IV – Displace Runway Thresholds to Achieve 3,000' Landing Distance Available (requires extensive obstruction removal)	3,190	3,000	3,190	3,000
V – Maintain Existing Location of Displaced Thresholds	3,190	2,525	3,190	2,580

In addition to runway length, the following factors require consideration in the selection of the appropriate runway longitudinal design alternative:

- A relocated or displaced threshold cannot be avoided at either end of the runways unless the runways are significantly shortened or a substantial number of obstructions are removed or relocated. Neither course of action is deemed practical.
- The existing "as is" runway end configuration should be modified as soon as practical to provide for appropriately-sized Object Free Areas and Runway Safety Areas. This action will reduce the runways' current published length of 3,670 feet by approximately 480 feet.
- The parcels located off-airport immediately beyond both ends of the runways are devoted to extensive residential and commercial use. Areas suitable for controlled emergency landings are very limited in the Airport's approach zones. If feasible, consideration should be given to preserving available open areas to facilitate aircraft in distress in making emergency landings within approach zones.

Given the design requirements and planning objectives outlined above, it is recommended that Alternative V – Maintain the existing location of displaced thresholds and locate the respective ends of runway pavement to provide for the required Object Free Areas and Runway Safety Areas – be implemented. This alternative runway end design is recommended for the following reasons:

- The resultant TORA and LDA lengths exceed and fall only slightly short, respectively, of the FAA runway length standard applicable to this category of airport (i.e., Basic Utility – Stage II).
- The proposed displaced threshold locations permit greater than standard threshold location plane clearance over existing objects and obstructions in the approach zones. This added clearance (27:1 clear approach slope for Runway 7 system and 38:1 clear approach slope for Runway 25 system) enhances operational safety and serves to mitigate aircraft noise impacts on residential uses located beneath the approach surfaces.
- The future runway lengths (TORA and LDA) are slightly less than the existing runway lengths, thus serving the same category and type of aircraft as at present. The future runway configuration will not encourage a change in the operational role of the Airport or the type of aircraft using the Airport.
- From an environmental impact perspective, the ultimate runway length and threshold locations will be the same as at present. Thus, the runway's impact on adjacent properties will not be significantly

different than the present. This factor should significantly reduce the need for extensive environmental documentation.

The recommended design results in a published runway length of 3,190 feet, with Declared Distances as follows:

<i>Runways</i>		<i>Approximate Length (in Feet)</i>	
<u>Existing</u>	<u>Future</u>	<u>TORA</u>	<u>LDA</u>
7L & R	7	3,190	2,525
25L & R	25	3,190	2,580

The TORA length is 190 feet longer than the Basic Utility – Stage II standard (i.e., 3,000 feet) and the LDA length is 420–475 feet shorter than the Basic Utility – Stage II standard.

Specific changes at each runway end include:

- The respective runway ends (i.e., end of available runway pavement) should be established 300 feet from the chain-link fence bordering the interior airport access road. This modification to the existing runways' ends should be accomplished as soon as practical. This action is identified as the "Interim" configuration on the Airport Layout Plan.
- The remaining pavement between the former runway end and the new runway end should be removed, marked with chevrons, and maintained as an overrun/blast pad or, preferably, marked and maintained as part of the entrance taxiway. The length of the entrance taxiways cannot be used in calculating official or declared runway distances (i.e., TORA and LDA), but it is nonetheless available for use by accelerating or decelerating aircraft.
- The thresholds of future Runways 7 and 25 should be displaced by approximately 665 feet and 610 feet, respectively, from the new ends of the runway pavement. This is the same physical location of the displaced thresholds as at present.
- The County should endeavor to acquire or obtain control easements over the areas within the Runway Protection Zones. The subject of land acquisition and aeronautical easements is discussed in greater detail in Chapter 7.
- Obstructions remaining within approach areas should be reviewed by the FAA to determine the requirement for hazard marking and lighting.
- The TORA and LDA distances should be published for the information of all airport users.

The recommended future runway end configuration is depicted in Figure 13. Also depicted in Figure 13 are the existing and interim runway end configurations.

Due to the constantly changing status of obstructions in the Airport's approach zones, it is strongly recommended that a precise survey (location and elevation) of existing objects and obstructions be conducted. This survey information should be updated from time to time to ensure its continued accuracy and validity. The County, through negotiations with area property owners, may be able to somewhat ameliorate the impact of the obstructions through object removal or mitigation. In addition, numerous nonpermanent obstructions (e.g., trees, bushes, etc.) could be topped or removed, thus further enhancing the safety of aircraft approach/departure operations.

### **Surface Gradient and Line-of-Sight**

FAA airport design standards are established for runway surface gradient and line-of-sight. These standards are established to allow airfield design flexibility without adversely affecting aircraft operational safety. Surface gradient and line-of-sight are closely interrelated.

#### ***Surface Gradient***

At Compton Airport, the existing runway approach end elevations are:

- Runway 7L - 97.57 feet MSL
- Runway 25L - 83.52 feet MSL
- Runway 7R - 97.02 feet MSL
- Runway 25R - 82.52 feet MSL

These runway end elevations result in an existing effective longitudinal runway gradient of approximately 0.4% – well within the Aircraft Approach Categories A and B design standard maximum of 2.0%. Any new runway reconstruction at the Airport should, by the nature of the flat terrain involved, result in an effective runway gradient that is well within the FAA design standard maximum of 2.0%.

#### ***Line-of-Sight***

FAA standards state that an acceptable runway profile is one that permits any two points five feet above the runway centerline to be mutually visible for the entire runway length. However, if the runway has a full-length parallel taxiway, the runway profile may be such that an unobstructed line-of-sight exists from any point five feet above the runway centerline to any other point five feet above the runway centerline for one-half the runway length.

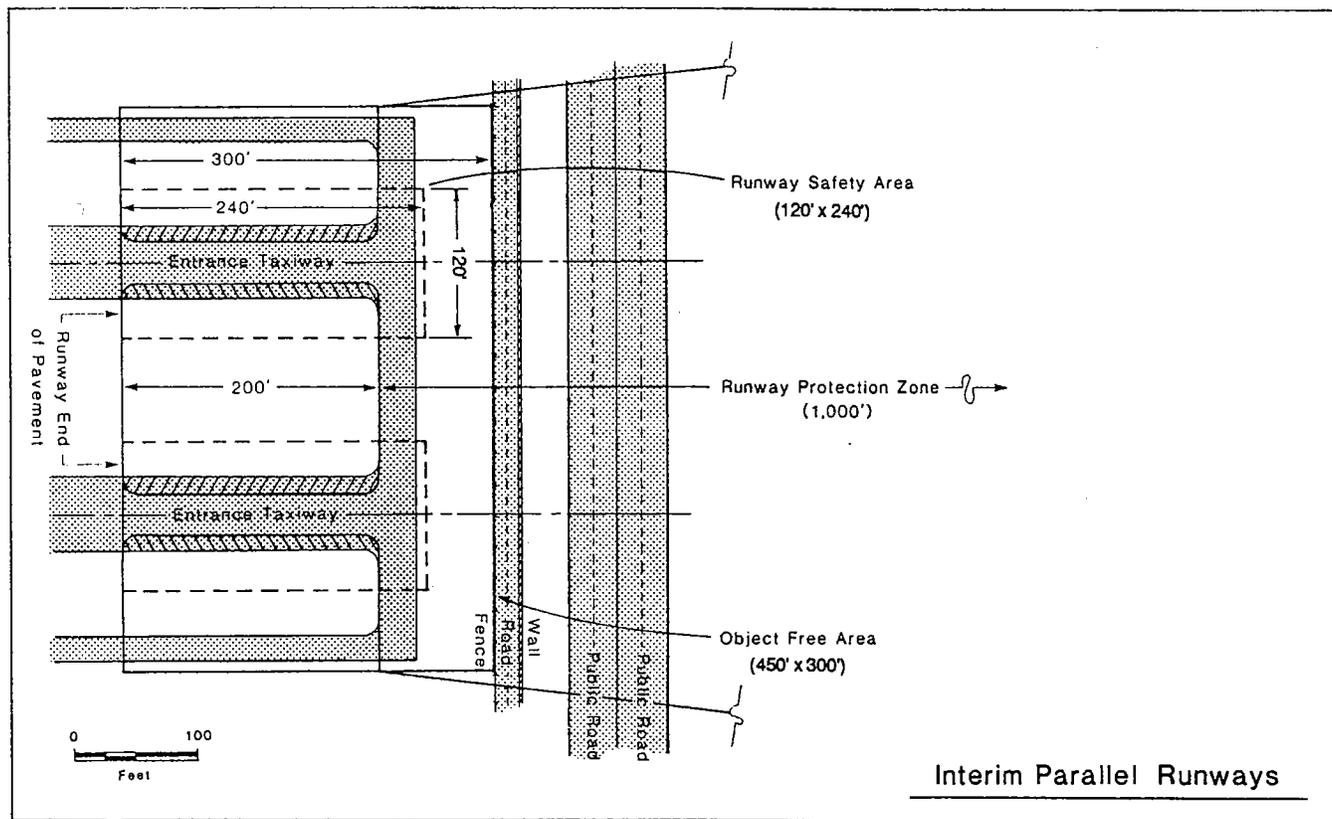
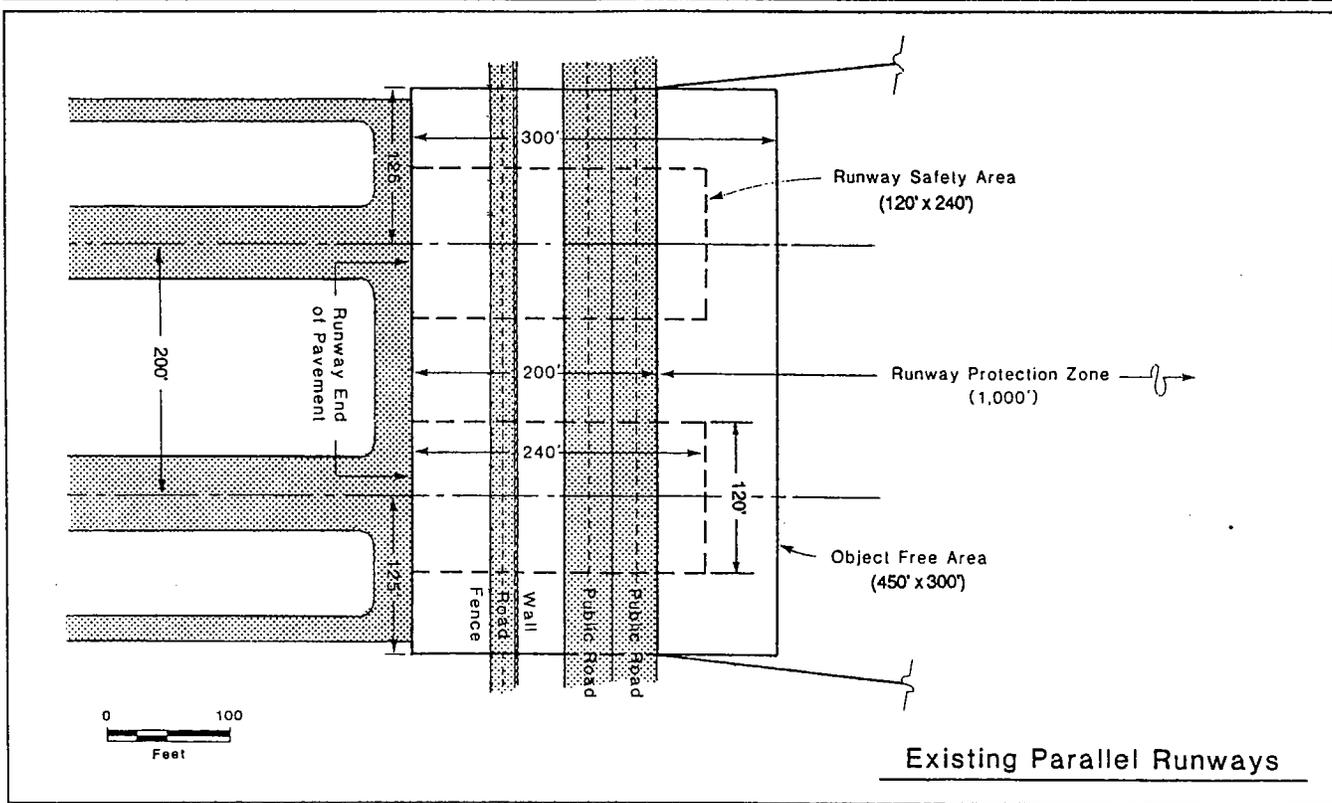
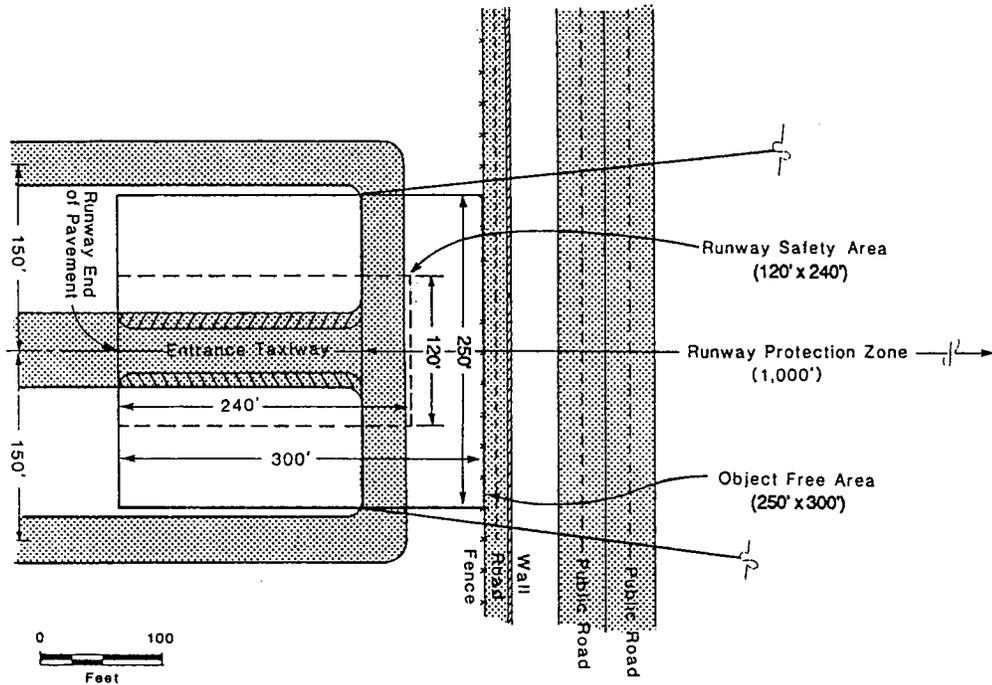


Figure 13a

### Runway End Configuration Alternatives Compton Airport



Ultimate Single Runway

Figure 13b

**Runway End Configuration Alternatives**  
Compton Airport

At Compton Airport, the existing runways' profiles easily meet the FAA's line-of-sight standard over their entire length. The Runway 7-25 system line-of-sight is therefore satisfactory. No corrective action is required or appropriate. As noted above, any new runway reconstruction at the Airport should, by the nature of the relatively level terrain involved, result in an acceptable line-of-sight along the entire length of the runway.

## **RUNWAY LATERAL REQUIREMENTS**

Table 9 identifies the standards for distances to facilities, objects, and structures located laterally from the runway. In a number of important respects, the existing airfield configuration does not comply with current FAA lateral standards. Noncompliance items include: Object Free Area, Runway Safety Area, runway to taxiway centerline separation, Building Restriction Line, Aircraft Hold Line, Aircraft Parking Limit, and Part 77 transitional surfaces.

### **Runway Width**

Compton Airport's existing runway width is 60 feet. The FAA design standard for an airport such as Compton – Airport Reference Code B-I (Small Airplanes/Visual) – recommends a width of 60 feet. Due to the absence of any significant runway crosswind component or other operational requirement, the 60-foot width is judged to be satisfactory for both present and future use.

### **Object Free Areas and Runway Safety Areas**

As noted in the discussion of runway longitudinal requirements, none of the Airport's existing Object Free Areas and Runway Safety Areas meets current FAA standards. The width standards for an Object Free Area and Runway Safety Area appropriate to Compton Airport are 250 feet and 120 feet, respectively. The existing and ultimate runway configurations as depicted in the Airport Layout Plan provide for adequately-sized Object Free Areas and Runway Safety Areas.

### **Runway-to-Taxiway Separation**

At Compton Airport, the appropriate FAA standard separation distance between the runway centerline and parallel taxiway centerline is 150 feet. This dimension is considerably greater than the Airport's existing 105-foot runway/taxiway separation distance. It is recommended that the standard 150-foot distance be implemented when the runway/taxiway system is reconstructed.

## **Building Restriction Line**

The new FAA design guidelines recommend that the Building Restriction Line (BRL) encompass the Runway Protection Zones, areas required for airport traffic control tower clear line-of-sight, and all airport areas with less than 35-foot clearance under the FAR Part 77 surfaces. This is an FAA design recommendation, not a strict standard. As applied to Compton Airport, the most restrictive aspect of this recommendation is that the BRL encompass all airport areas with less than 35-foot clearance under the FAR Part 77 surfaces. The resultant BRL would be located approximately 370 feet from the runway centerline, thereby encompassing virtually all of the existing airport structures along the runways' north and south sides and substantially eliminating a major portion of the Airport's facility development area. A 370-foot BRL on the Airport's north side would also encompass a significant portion of the off-airport residences located along the south side of 156th Street.

In light of the type of aircraft using the Airport (i.e., small general aviation aircraft operating in predominantly visual conditions), it is not unreasonable to allow aviation-related structures to be developed as close to the runway as permitted by FAR Part 77 transitional surfaces criteria. On this basis, a 15-foot-high hangar structure could be located as close as 230 feet from the runway centerline and a 20-foot-high structure could be located as close as 265 feet from the runway centerline. Furthermore, hangars and other structures could be developed that penetrate the runway's Part 77 transitional surfaces. Such penetrations, while not desirable, may be necessary to accommodate hangar demand. This is particularly applicable with respect to hangars located along the Airport's north perimeter wall. The FAA's review and approval of any such penetrations would be required prior to construction.

The existing close-in hangars paralleling the north and south sides of Runways 7L-25R/7R-25L do not comply with these FAR Part 77 standards. As part of the FAA's approval of the Airport Layout Plan, a formal FAA airspace review of these penetrations will be required to accurately assess the airspace impact of the penetrations and determine corresponding hazard mitigation requirements.

## **Aircraft Hold Line**

In accordance with FAA design standards appropriate to Compton Airport, no fixed or movable object should be situated closer than 125 feet from the runway centerline. Therefore, the appropriate runway/taxiway hold line location is 125 feet from the runway centerline. This hold line should be clearly marked at all runway/taxiway intersections.

---

A *taxiway* is a defined path established for the taxiing of aircraft from one part of an airport to another. A *taxilane* is that portion of the aircraft parking area used for access between taxiways and aircraft parking positions. Taxiways and taxilanes serving the internal building area are discussed in Chapter 6 – Building Area Development.

---

## TAXIWAY REQUIREMENTS

### Parallel Taxiways

The proper design of the future north and south side parallel taxiways is a key factor in the efficient development and utilization of the Airport. Due to the limited airport land area available for development, the parallel taxiway system significantly influences the Airport's overall design and operation.

Previous sections of this chapter established 150 feet as the desired separation distance between the runway centerline and parallel taxiway centerline. As noted, this dimension is 45 feet greater than the existing separation dimension of 105 feet.

The existing parallel taxiways are approximately 20-foot wide, with 35-feet of separation between the taxiway centerline and the Aircraft Parking Limit. The Airplane Design Group I standard taxiway width is 25 feet, with a taxiway centerline to Aircraft Parking Limit separation of 45 feet. Due to airfield congestion and the proximity of aeronautical support areas, it is recommended that 35 feet be established as the taxiway width for both future parallel taxiways at Compton Airport. Further, it is recommended that the future Aircraft Parking Limit be established 45 feet from the north side parallel taxiway centerline and 65 feet from the south side parallel taxiway centerline. This additional clearance on the south side permits added flexibility and safety in the operation and maneuvering of aircraft and vehicles on the ground, particularly in the vicinity of the busy terminal and fixed base operations areas.

The parallel taxiways should extend the full length of the runway pavement, including access to the entrance taxiway at each runway end. A holding bay/runup pad – large enough to accommodate two or three small airplanes – should be provided near the end of each parallel taxiway. Consideration should be given in siting these holding bays to the effects of prop wash/jet exhaust on persons, aircraft, and facilities located near the runup areas. In addition, off-airport trees located in the vicinity of the runways' approach ends, particularly Runways 25L and 25R, should be topped or removed. These trees substantially interfere with the ability of pilots awaiting departure to see arriving aircraft on short/low final approach.

### Exit Taxiways

Three mid-field exit taxiways currently serve each runway. The general locations of these mid-field exit taxiways appear adequate for the types of aircraft currently using the facility. The precise location of each exit

taxiway may be slightly adjusted in the future as necessary to align them with runway thresholds and principal building area taxilanes and to enhance runway capacity.

In response to user input, the width of the three mid-field exit taxiways has been established at 50 feet, with relatively generous fillets. This greater-than-standard width will permit increased user safety during high wind conditions and will somewhat enhance runway capacity by expediting the clearing of aircraft from the runway.

As part of this analysis, the possible use of high-speed exit taxiways was explored. While such taxiways have the potential to slightly decrease runway clearing times and marginally increase capacity, there is insufficient area available between the runway and parallel taxiway to properly configure a high-speed exit taxiway. Therefore, all exit taxiways at Compton Airport are of the standard 90° configuration.

For the longer term, however, the airfield design may provide sufficient flexibility to permit the implementation of a "drift-off" taxiway system. A "drift-off" taxiway permits landing airplanes to exit the runway in an expeditious manner at virtually any point along the full length of the runway. Such a taxiway system could prove desirable if future operational demand requires increased runway capacity. Utilizing a "drift-off" taxiway system to expedite runway clearing has the potential to increase runway capacity and utility. The future implementation and use of the "drift-off" taxiway system should be carefully coordinated with FAA and airport traffic control tower representatives. It is suggested that no airport development action be taken that would physically preclude the future implementation of the "drift-off" taxiway concept at Compton Airport.

### **Entrance Taxiways**

As an operational enhancement, it is suggested that entrance taxiways be established at each runway end. While such entrance taxiways are not recognized by the FAA as contributing to runway length calculations (i.e., TORA and LDA), the added length they provide does contribute to enhanced levels of aircraft operational safety and efficiency. In addition, the entrance taxiway pavement effectively controls surface erosion, acts as an overrun/blast pad, and permits an alternate means of accessing each runway end.

## OTHER AIRFIELD DESIGN ELEMENTS

### Pavement Strength

As noted earlier, the present and future operational role of Compton Airport is to serve general aviation aircraft having maximum certificated weights of 12,500 pounds or less. Therefore, it is recommended that all primary airfield operating surfaces (e.g., runways, taxiways, aprons, and ramps) be designed and constructed to accommodate an aircraft wheel-loading of 12,500 pounds for single-wheel configuration landing gear.

As is typical at general aviation airports such as Compton, large, heavy refueler trucks may exceed this wheel-loading limit. Therefore, prior to operating refueler trucks on airfield surfaces, it is suggested that a determination be made as to the suitability of such operations and their impact on airfield pavement surfaces.

### Marking

#### *Runways*

The existing runway marking scheme consists of a centerline, edge stripes, runway designation numbers, and displaced threshold markings at both runway ends. Such markings are characterized as "Basic" by the FAA. These markings are consistent with the visual nature of the Airport's operations. The markings are in good condition. Adjustments to this marking scheme to reflect proposed airfield changes (i.e., nonprecision instrument approach, displaced thresholds, entrance taxiways, lead-in striping, etc.) are indicated on the Airport Layout Plan.

#### *Taxiways*

The parallel taxiways and exit taxiways are currently marked by centerline stripes, building area side lead-in stripes, and, in some locations, runway hold lines. Due to the configuration of the parallel taxiway, the hold lines at the existing runway ends are marked at a position approximately 100 feet laterally from the runway centerline. Current FAA design standards specify a minimum distance of 125 feet for runways serving aircraft in Aircraft Approach Categories A and B. Currently, there are no hold line markings on the mid-field runway exit taxiways.

Appropriate hold line markings should be located at all runway/taxiway crossings. In some locations, the use of taxiway edge striping is recommended to better differentiate the taxiway from similar-appearing contiguous surfaces.

### **Other**

The notation "COMPTON-EL.97" appears in large block letters on the pavement near the Airport's segmented circle. While such marking may be desirable from a user perspective, it is not required by the FAA and may be confusing to transient aircraft operators, particularly when taxiing at night on the north side parallel taxiway.

### **Lighting**

The existing runway lights on Runway 7R-25L are of medium-intensity and are well used but in operable condition. Nonetheless, it is recommended that these lights be replaced by a new Medium-Intensity Runway Lighting system serving Runway 7L-25R when Runway 7L-25R is reconstructed. An automated runway light activation system (photocell/timer) and/or pilot-activated system are recommended as energy-saving measures.

To aid in the nighttime movement of aircraft on the taxiways, a partial taxiway lighting system is desirable. Taxiway edge lights are desirable for all entrance and exit taxiways and along the runway-side edge of the parallel taxiways. To supplement these lights, taxiway centerline reflectors and/or edge reflectors are desirable.

### **Approach and Landing Aids**

#### ***Instrument Approach Capability***

Compton Airport is not presently served by an instrument approach. The Airport is considered a "visual" facility and all arrival operations must be conducted in accordance with Visual Flight Rules and procedures. Aircraft may depart the Airport in accordance with either Visual or Instrument Flight Rules and procedures, as appropriate. Aircraft departing the Airport under instrument conditions are handled by Los Angeles Departure Control.

Compton Airport, however, is equipped with a low-frequency, nondirectional radio beacon (COMPTON NDB – 378 kHz). This beacon is for VFR-use-only and is considered to be of significant value to pilots in locating the Airport at night and under conditions of restricted visibility. The beacon's transmitting antenna wire is presently suspended between the north ends of T-Hangar Buildings F and G. It is recommended that this older-style antenna wire be upgraded and the antenna relocated so that it does not potentially interfere with operating aircraft.

Over the years, users of Compton Airport have suggested that some form of instrument approach capability be established at the Airport. Such

capability would permit authorized users to approach the Airport in less than visual meteorological conditions. In addition, such instrument approach capability would facilitate the safe and efficient arrival of authorized users in marginal visual meteorological conditions.

Considering the operational role of the Airport, its physical layout, and its location within the Los Angeles airspace complex, it is likely that any instrument approach procedure established at Compton Airport would be of the "nonprecision" type. Examples of nonprecision instrument approaches include: NDB, VOR, LOC, LDA, SDF, and LORAN-C. As noted previously, the Airport's configuration and the presence of obstructions to air navigation may preclude the attainment of "straight-in" instrument approach minimums. However, the Airport may still qualify for a nonprecision instrument approach which terminates in a visual or circling maneuver to a landing.

Since an operational low-frequency nondirectional beacon (COMPTON NDB) is already located on the Airport, it is suggested that this VFR-use-only beacon be upgraded and established as the FAA-authorized nonprecision instrument approach serving Compton Airport. Formal FAA review and analysis will be required to determine the exact procedure and minimums associated with such an approach.

Many aircraft operators view the NDB approach procedure as the most basic and least desirable form of instrument approach. The NDB's main advantage is its low cost of installation and operation. As an alternative to the NDB approach procedure, one or more of the other nonprecision instrument approach procedures could be established at Compton Airport. Of particular interest in this regard is the newly-emerging instrument approach capability based on LORAN-C navigational equipment.

As far as is practical, the airfield configuration and facilities identified in the Master Plan have been designed in accordance with the FAA standards and specifications for a "visual" category airport capable of accommodating a "circle-to-land" nonprecision instrument approach.

### ***Airport Rotating Beacon***

The Airport's rotating beacon is mounted on a dedicated pole in the southeast corner of the Airport. Its location and function appear satisfactory for both the present and future.

---

*Visual Glide Slope Indicator (VGSI)* is the generic term for the group of airport visual landing aids which includes Visual Approach Slope Indicators (VASI), Precision Approach Path Indicators (PAPI), and Pulsed Light Approach Slope Indicators (PLASI). When FAA funding pays for this equipment, whichever type receives the lowest bid price will be installed, unless the airport owner wishes to pay the difference for a more expensive unit.

---

### ***Visual Glide Slope Indicators***

A two-box Visual Approach Slope Indicator (VASI) is sighted at the approach end of Runways 25L and 25R. To significantly enhance operational safety and assist in the reduction of noise impacting properties underlying the runway approaches, the installation of an additional VGSI at the approach end of Runway 7 (future) is highly recommended. To further enhance operational safety by providing an added margin of clearance over existing obstacles in the runway approaches and to reduce noise impacts, it is recommended that consideration be given to establishing the VGSI's visual glide path at a higher-than-normal angle (e.g., up to 3.9 degrees), as opposed to the standard 3.0-degree glide path.

### ***Runway End Identifier Lights***

Although not required to augment an instrument approach procedure, Runway End Identifier Lights (REIL's) are presently installed on Compton Airport's Runway 25L. For the future, it is recommended that both ends of the primary runway (i.e., Runway 7-25) be equipped with REIL's. REIL's at both runway ends will significantly aid pilots in locating the runway ends, particularly at night and under the conditions of restricted visibility that are characteristic of the Airport's urban environs. REIL's will also assist pilots in quickly locating the Airport within the heavily-trafficked central Los Angeles airport complex. Because of the nearby presence of residences and businesses, a special study is suggested to determine appropriate ways of mitigating REIL flash annoyance that could potentially impact off-airport land uses.

### ***Segmented Circle and Wind Cone***

FAA airport design standards suggest that the Airport be equipped with a segmented circle and wind cone. A wind tee is not required by the FAA. A segmented circle with appropriate traffic pattern indicator markings, wind tee, and wind cone is presently located in an open area on the Airport's northern side. These facilities are lighted and in good condition.

The ultimate location of the segmented circle and wind cone is significant in that its placement will impact the efficient development and use of the already constrained apron area. The segmented circle and wind cone should be located in a readily visible area that is subject to typical winds. The segmented circle and wind cone should not interfere (physically or visually) with aircraft operating on the parallel taxiway. The only viable ultimate location for the segmented circle and wind cone is in the vicinity of the former airport traffic control tower site. While not an optimum location from a wind exposure perspective, this location minimizes the circle's impact on the use of the north side parallel taxiway. Supplemental wind indicators, as noted below, can provide pilots with additional wind information near the runway touchdown zones.

### ***Supplemental Wind Indicators***

The Airport is not presently equipped with supplemental wind indicators. It is recommended that supplemental wind indicators (e.g., lighted wind cones) be installed near the touchdown zone of each runway end. Suggested locations are indicated on the Airport Layout Plan.

### ***Radio Communications***

The Airport does not presently make use of the UNICOM radio communication system for ground-to-air advisories. Aircraft operating in the Compton Airport traffic pattern utilize the Common Traffic Advisory Frequency of 122.9 (MULTICOM) to advise each other as to their respective locations and intentions. As the Airport increases in activity and complexity, it is suggested that this informal MULTICOM traffic advisory system be supplanted by ground-based UNICOM advisory service and/or an airport traffic control tower.

### ***Automated Weather Observing System***

Official weather observations are not currently taken at Compton Airport. Neither the airport staff nor fixed base operations personnel are presently certified or equipped to provide such observations. Pilots desiring an official weather observation for the Compton Airport area must use the observations taken at nearby Long Beach, Torrance Municipal, or Hawthorne Municipal airports.

To provide Compton Airport users with more complete and accurate local weather information, the County has budgeted funds to equip the Airport with an Automated Weather Observing System (AWOS). The proposed AWOS installation at Compton Airport will permit real-time dissemination for weather observations to both airport users and interested parties (e.g., local community, news media, National Weather Service, Civil Defense, etc.). The AWOS system consists of various environmental sensors (anemometer, barometer, temperature/dew point indicator, cloud height, surface visibility, etc.), a data processor, a voice synthesizer, and a radio transmitter. A 20-30 second weather information message is transmitted continuously on an assigned aeronautical radio frequency. Typically, AWOS data can also be accessed by telephone.

As part of the Master Plan, an analysis of potential sites for the location of the AWOS sensing equipment was conducted. This analysis indicated that there is no readily developable site, either on- or off-airport, that fully complies with the AWOS siting criteria identified in FAA Order 6560.20. Accordingly, a special study will be required to site the AWOS equipment at Compton Airport. The established siting criteria will have to be adjusted to permit the siting of the AWOS in a less than optimum location. AWOS sites to be considered should include:

- The former airport traffic control tower site on the Airport's north side.
- On top of a suitable structure (e.g., FBO hangar, terminal building, etc.).

It should be noted that the siting of the AWOS may result in the loss of numerous, already-limited aircraft parking positions, or otherwise further constrain airport development.

### **Runway Reconstruction**

To accomplish all of the runway and taxiway improvements noted above, it will be necessary to close Runway 7L-25R for certain periods of time. Through coordinated construction engineering and scheduling, it is possible to keep the Airport fully operational and available to both fixed-wing and rotary-wing aircraft during the 4-6 week runway reconstruction period. Such coordination should be accomplished as an integral element of the runway reconstruction engineering design process.



# 6

## **Building Area Development**

---

## Building Area Development

### OVERVIEW

The building area of an airport encompasses all of the airport property not devoted to runways, major taxiways, required airspace and surface protection areas, and other airfield-related functions. Facilities and services typically found in a public-use general aviation airport building area include:

- Based aircraft tiedown and hangar space
- Transient aircraft parking – fixed-wing and helicopter
- Terminal area facilities – airport administration/operations offices, pilot briefing/flight planning area, passenger waiting area, rest rooms, public telephone, etc.
- Fuel storage and dispensing equipment – fuel island and/or refueler trucks
- Fixed base operations facilities – multi-service and specialized
- Access roads and vehicle parking
- Security/perimeter fencing and access gates, lighting, and signing

Also common, particularly at busy general aviation airports, are:

- Airport traffic control tower
- Airfield maintenance facility
- Aircraft washing area
- Owner-performed aircraft maintenance enclosure
- Public airport viewing area
- Aviation support facilities such as commercial/industrial buildings, coffee shop/restaurant, etc.

This chapter examines the various factors and considerations that affect the siting and development of future building area facilities at Compton Airport and alternative ways of accommodating projected demand. The chapter concludes with a staging plan for development of the recommended building area improvements.

## **DESIGN FACTORS**

Many design factors influence the planning and subsequent development of an airport's building area. Figure 14 graphically summarizes the key issues and opportunities associated with the design and development of the Compton Airport building area. For discussion purposes, these design factors can be grouped into the following five categories:

- Compliance with FAA Airport Design Standards
- Maximized Development and Use of the Airport's Available Building Area
- Accommodation of Increased Helicopter Activity
- Enhancement of Airport Safety and Security
- Development Staging

A summary discussion of each of these five factor categories follows.

### **Compliance with FAA Airport Design Standards**

Structures, fixed objects, and aircraft parking areas must be located certain minimum distances from runways and taxiways. These distances are specified by FAA airport design standards. As noted in Chapter 5-Airfield Design, the appropriate present and future design category for Compton Airport is Airport Reference Code B-I (Small Airplanes/Visual). Accordingly, the following FAA design criteria are recommended for future application at Compton Airport:

- Runway centerline to parallel taxiway centerline separation of 150 feet.
- Runway centerline to aircraft Hold Line dimension of 125 feet. This dimension influences the placement of aircraft holding bays/runup pads.
- North side parallel taxiway centerline to Aircraft Parking Limit (APL) separation of 45 feet.
- South side parallel taxiway centerline to Aircraft Parking Limit (APL) separation of 65 feet.

### **Maximized Development and Use of the Airport's Available Building Area**

As noted in the previous chapter, acquisition of additional land area to permit expansion of the Airport does not appear to be economically feasible during the 20-year planning period. Therefore, the development

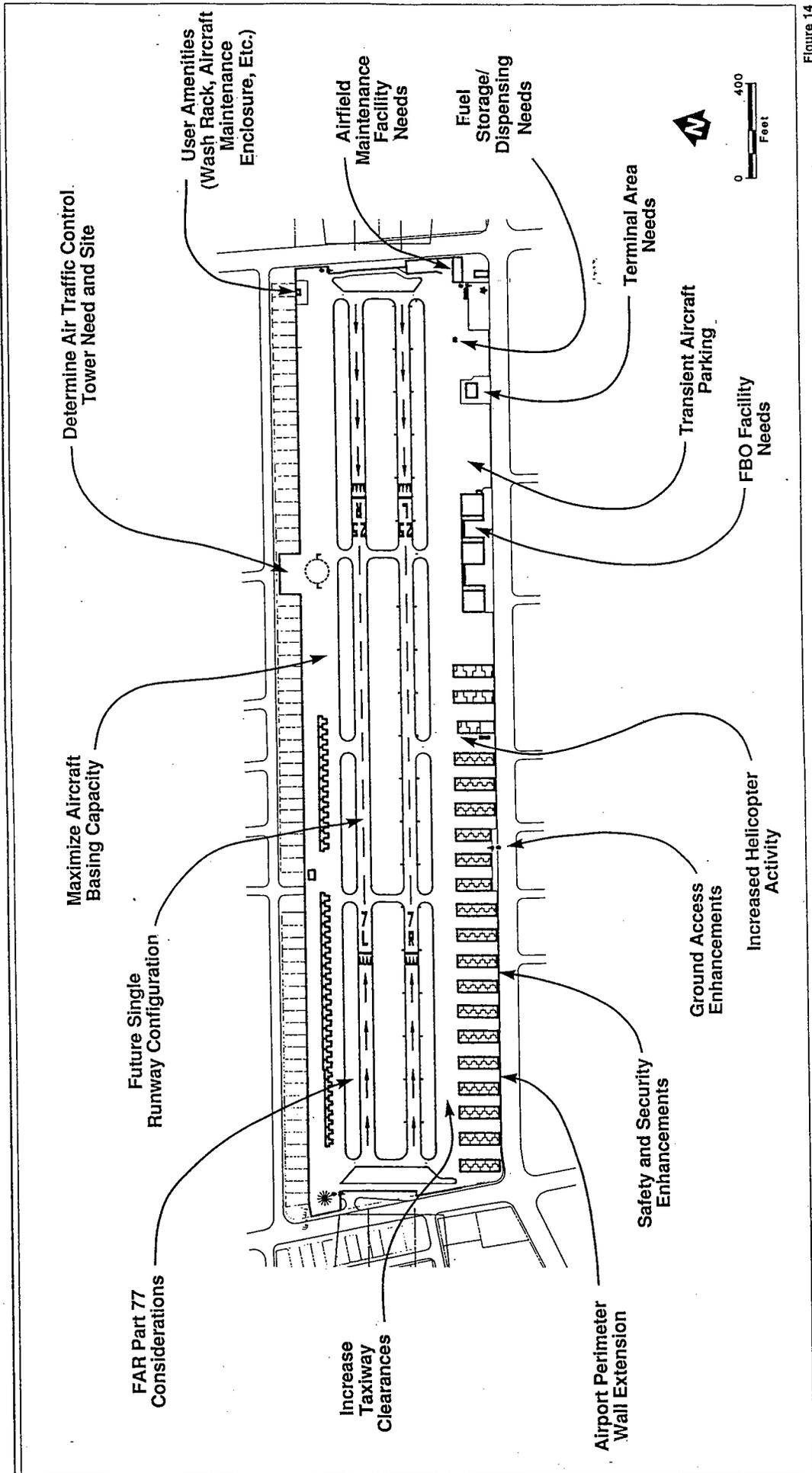


Figure 14

and use of the Airport's available building area must be maximized if the Airport is to accommodate its forecast demand. In addition, Airport activity forecasts indicate that during the mid-point of the 20-year planning period, aircraft basing demand requirements will necessitate the conversion of the airfield from a parallel runway configuration to a single runway configuration. Any development and use of the building area must be accomplished in a manner that is consistent with both the present and future airfield configurations.

### **Accommodation of Increased Helicopter Activity**

A relatively recent and growing element of the Airport's aeronautical activity is the increased use of helicopters by Airport-based municipal services agencies. At present, the City of Compton Police Department bases three helicopters at Compton Airport. It is anticipated that other area municipal agencies will choose to base their helicopters at the Airport. This increased helicopter activity and associated facility requirements must be provided for in the building area plan. In addition, the aerial interaction of fixed-wing aircraft and helicopters in the Airport traffic pattern and on the ground must be carefully considered in the layout of the Airport's airfield and building area.

### **Enhancement of Airport Safety and Security**

Of primary importance to any airport's development and use is the need to enhance operational safety and security. High levels of safety and security benefit both the users of the airport as well as the citizens living in the vicinity of the airport. At Compton Airport, the somewhat constrained land area available for airfield and facility development requires that considerable attention be given to ensuring the continued safety and security of Airport operations. With regard to airfield safety, adequate Object Free Areas, Runway Safety Areas, and runway setbacks must be provided. Suitable perimeter fencing/walls, controlled access gates, and area lighting will be necessary to provide for adequate levels of user security. All of these actions must be accomplished in a manner which provides for maximum development and utilization of the Airport.

### **Development Staging**

Another important factor in the preparation of a building area plan is the timing of future development. The objective is to have a plan that is flexible enough to adapt to changes in type and pace of facility demands, is cost effective, and also makes sense at each stage of development. Sometimes, the best location for facilities needed in the short term may conflict with the optimum long-range plan. Additionally, a staging plan that requires removal of old facilities or construction of new ones before

they are clearly necessary can be costly. At Compton Airport, the most significant factor in the staging of building area development will be the future conversion of the airfield from the present parallel runway configuration to a single runway configuration. All facilities and improvements in the building area must be compatible with both the present and future airfield configurations.

## **FACILITY REQUIREMENTS - SOUTH SIDE BUILDING AREA**

The southern half of Compton Airport has historically served as the focus for public and commercially-oriented building area development. This development includes terminal facilities, airport administrative/operational offices, airfield maintenance facilities, aircraft fueling facilities, fixed base operations hangars, and public auto parking. It is anticipated that this area emphasis will continue throughout the 20-year planning period.

### **Terminal Area**

The master plan analysis indicates that the southeast section of the Airport is the optimum location for continued development of the public terminal area and related facilities and services. The factors considered in the selection of this location include:

- Terminal area is readily visible to general public and airport users.
- Terminal area is located adjacent to primary area access roads (e.g., adjacent to Alondra Boulevard). This location permits easy ground access.
- Terminal area is located adjacent to runway/taxiway system (i.e., adjacent to south parallel taxiway). This location permits easy aircraft access.
- There is a substantial existing commitment to terminal development in that area.
- Clear developable space is available for expansion.
- Terminal area is adjacent to fixed base operations area.
- Utilities are readily available.
- Terminal area is remote from incompatible off-airport uses such as single-family residences.

- Other sections of the Airport are either heavily committed to other uses (e.g., permanent T-hangar structures along the Airport's southwest side), or do not lend themselves to terminal development and use (e.g., poor vehicular access to north side building area).

In mid-1991, the County constructed a 2,880 square foot modular terminal building on the site identified in the Airport Layout Plan (see Chapter 2-Figure 1). This new building provides space for the following functions:

- Airport-user lounge, lobby, and deck
- Coffee shop/kitchen/office/storage
- Airport administrative offices (3)
- Public rest rooms and telephones
- Public airport viewing area

The terminal building floor plan is depicted in Figure 15. The modular building has been designed to permit phased expansion as may be required by future demand. It is anticipated that the new structure, as presently configured, will be adequate for the initial half of the 20-year planning period. Sufficient space should be provided in the terminal area for a 50% expansion of the terminal building in the latter part of the planning period.

### **Aircraft Fueling Facilities**

An important consideration in the design and use of the new terminal area is the appropriate location and type of aircraft fueling facilities. As indicated in Chapter 4-Airport Activity and Capacity Analysis, the large majority of aircraft operations at the Airport will be generated by single-engine and light twin-engine piston-powered general aviation aircraft. Turbine-powered aircraft will comprise only a small portion of the Airport's overall activity.

Accordingly, it is recommended that the Airport's aircraft fueling facilities be initially oriented to servicing piston-powered aircraft with at least two grades of aviation gasoline. Ideally, these two grades of aviation gasoline would be 80 octane and 100 octane. As an alternative, the Airport could offer 100LL octane aviation gasoline and a suitable grade of automotive fuel (i.e., MOGAS). Low octane gasolines (e.g., 80-octane AVGAS and MOGAS) should prove very attractive to the users of the Airport operating older recreational and enthusiast types of aircraft. It is recommended that a survey of Airport users be conducted to determine the demand for low octane gasoline.

Also worthy of consideration is the potential for the Airport to store and dispense Jet-A fuel to the City of Compton Police Department's (CPD) turbine-powered helicopters based on the Airport. To provide this capability, a third storage tank or dedicated refueling truck would be required for the Jet-A fuel. The Jet-A fuel would be most efficiently dispensed to

the CPD helicopter and the occasional civilian or military turbine-powered aircraft through the use of refueler trucks. A third product tank could be located with the Airport's aviation gasoline tanks or it could be located in a separate area closer to CPD's helicopter operations. Typically, a single-location fueling facility is less costly to develop and operate than a multiple-location fueling facility.

A variety of alternative locations for the Airport's aircraft fueling facilities were considered. Ideally, the fueling facilities should be located in an area readily accessible by taxiing aircraft and bulk fuel delivery trucks. In addition, the facilities should be located in the vicinity of the terminal building/airport administrative offices to permit effective cross-utilization of airport operational personnel and to enhance the safety and security of fueling operations. The existing location of the fueling facilities (underground storage tanks and fuel dispensing island) adequately satisfies these siting objectives. An alternative site, to the west side of the new terminal building, is also suitable and has the advantage of being somewhat closer to the fixed base operations area. In addition, the west side site would permit the continued operation of the existing fueling facilities while replacement facilities were being constructed. The west side site has the primary disadvantage that it would require the relocation of an estimated 20 aircraft parking positions from the west to east side of the terminal building. These parking positions would then be located a considerable distance (approximately 800 feet) from the fixed base operations area.

For the purposes of this master plan, the Airport's future aircraft fueling facilities are depicted as remaining essentially where they are presently located. The future fuel island has been relocated slightly to the north (approximately 50 feet) to permit more efficient utilization of the available apron area. In keeping with the County's established operational format, a "fuel island" configuration is depicted. The fuel island configuration offers the added benefit that 24-hour access, credit card-activated, self-fueling capability can be made available if so desired by the airport operator. The fuel island, with associated fuel dispensing equipment and underground storage tanks, should be located as shown on the Airport Layout Plan in the immediate vicinity of the terminal building/airport administrative offices and transient aircraft parking area. If justified by demand, refueler trucks could be utilized to supplement the fuel island facilities.

### **Airfield Maintenance Facility**

A dedicated facility is required to accommodate airfield maintenance services and equipment storage. The site should be well-located with respect to both airfield and roadway access. In addition, the County has expressed a preference for an airfield maintenance facility that is located in the vicinity of the terminal building and/or aircraft fueling facility. This collocation would permit the cross-utilization of County airport operations and maintenance personnel, as well as offering some security benefits.

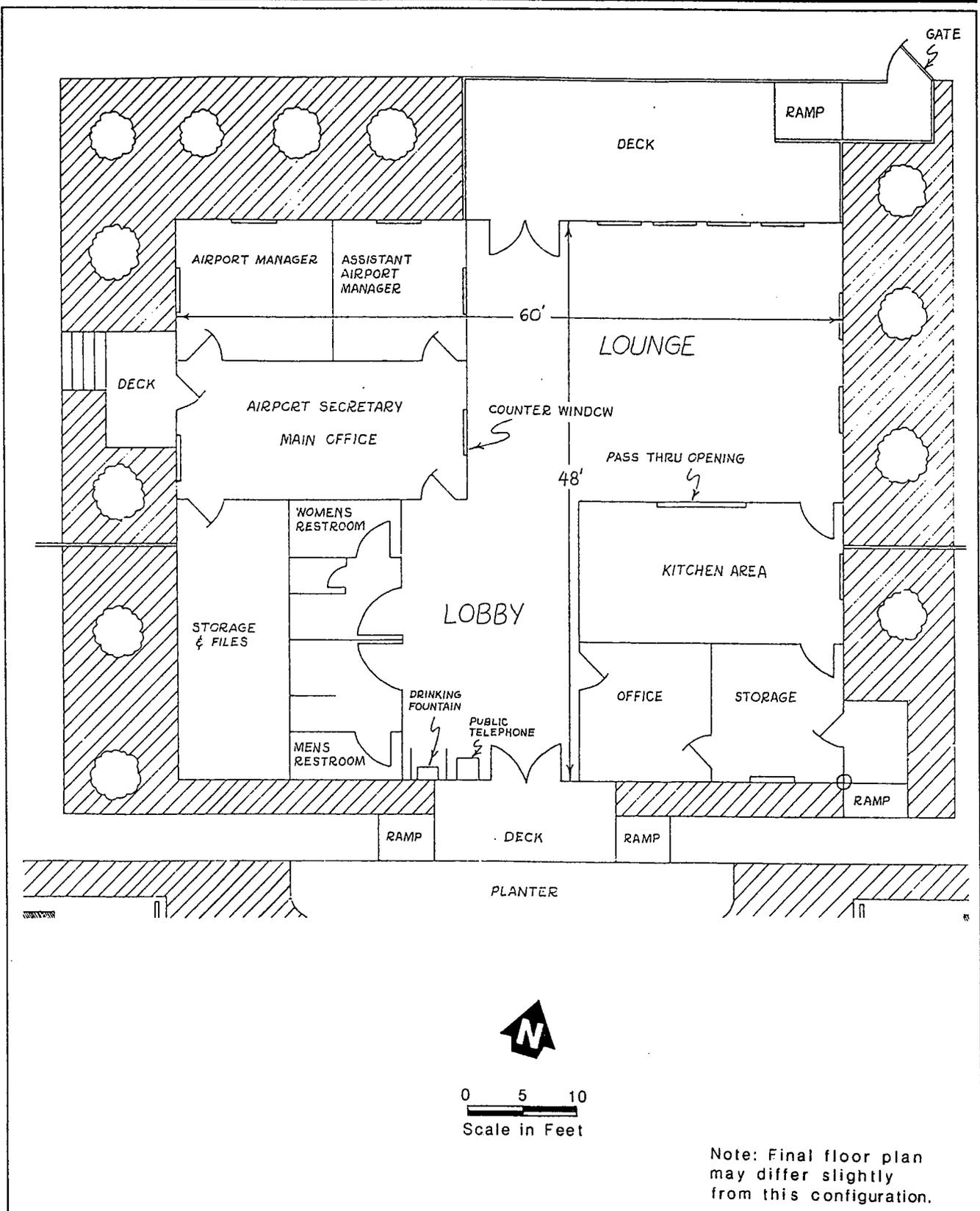


Figure 15

Terminal Building  
Compton Airport

As aircraft access to the facility is not required, a site located apart from the Airport's prime aircraft operating areas might be acceptable.

The existing airfield maintenance facilities are well located in this regard. Although the present facilities are somewhat oversized for current airfield maintenance needs, the excess capability can be leased out for revenue-producing activities. For example, the office portion of the maintenance building could be used for an aeronautical-related activity such as an aircraft insurance broker's office or supplemental office/storage area for the terminal building.

To permit the possible future expansion of the auto parking area in the vicinity of the terminal and airfield maintenance facility, it is suggested that the County acquire the auto service station in the northwest corner of the Alondra Boulevard and Wilmington Avenue intersection. The acquisition of such an old auto service station with underground fuel storage tanks is potentially fraught with economic and environmental liabilities. Any such acquisition should be based on a careful analysis of the associated cost/benefit implications and potential liabilities.

### **Fixed Base Operations Area**

The Airport's three fixed base operators (FBO) are currently grouped in one area — the Airport's south central side. The existing FBO facilities (three 8,000 square foot conventional hangars with attached offices/shops) are in good condition and are well located on the Airport. Adequate parking for aircraft and customer vehicles is available adjacent to the hangars. It is anticipated that the existing three FBO hangars and attached offices/shops will prove adequate to accommodate FBO development needs over the 20-year planning period. Additional aircraft parking area in front of the FBO hangars is desirable to accommodate projected increases in aircraft size and numbers.

### **Aircraft Storage and Parking**

As discussed in Chapter 4 — Airport Activity and Capacity Analysis, demand for based aircraft hangars and tiedown facilities at Compton Airport is projected to increase by an estimated 40% over the 20-year planning period. Aircraft owner surveys indicate that the large majority of these aircraft would be stored under cover if suitable hangar space is available. In addition, tiedown positions, both taxi-thru and tail-to-tail configurations, should continue to be provided in sufficient numbers to accommodate based and transient aircraft demand.

### ***Hangar Type and Size***

There are 126 T-type fixed hangar units, one painting booth hangar, and three conventional storage hangars (FBO hangars) presently located on the Airport's south side. As noted previously, it is anticipated that demand for additional aircraft storage hangars will increase at Compton Airport. It is suggested that future hangar development reflect: (1) user demand; (2) physical siting and locational considerations; (3) based aircraft capacity considerations; and (4) funding resources.

The sizing of hangars can best be determined through a survey of potential hangar users. Aircraft type, airframe dimensions, the nature of hangar use (i.e., aircraft storage only versus workshop capability), facility siting considerations, availability of adequate utilities (specifically water and electricity), and market price largely determine the range of hangar sizes required to satisfy demand. Experience indicates that mid- to larger-sized individual storage hangars are highly preferred by users. T-hangars, whether portable or fixed, are most efficient in terms of apron area utilization. Rectangular or "box-type" hangar units are preferred by many aircraft users but require more apron area for siting and are thus more expensive to rent. Frequently, rectangular or "box-type" hangars can be used most advantageously along airport property boundaries or in areas where taxiway access is only available on one side of the hangar complex. Such sites exist along the Airport's north perimeter wall. Large conventional storage hangars are typically used by fixed base operations or corporations operating several aircraft.

### ***Hangar Location and Timing***

In general, multiple-unit T-type fixed hangar development is more efficient on large, level rectangular sites that can be committed to long-term hangar use. Portable T-hangars offer more siting flexibility and can be located incrementally in smaller areas. In addition, the relative ease with which portable hangars can be relocated permits them to be sited in areas of the Airport that may be required in the long-term for an alternative use. At some airports, private development of portable T-hangars is encouraged to permit individuals the opportunity to own their hangars. This approach is frequently used at airports that are financially unable to fund hangar construction using internal resources.

Another hangar layout factor is the orientation of the buildings. Whenever practical, hangars should be oriented so the prevailing winds do not blow directly on the hangar doors. This orientation minimizes debris accumulation in the hangars and makes hangar door operation less difficult under windy conditions. At Compton Airport, strong prevailing winds are not a significant factor in orienting hangar buildings. Rather, the configuration of the existing buildings and the location of taxiway and taxilanes more directly influence hangar orientation.

The timing of hangar development should be based upon user demand, land availability, funding resources, and overall airport development staging requirements. The hangar development plan must have sufficient flexibility to adjust to actual future requirements. Sites should be identified for more hangar units than are expected to be required. The layout, though, should allow for incremental development with construction in advance of demand being as limited as possible. Due to the anticipated high future demand for additional hangar space, it is recommended that readily developable sites within the building area be identified and reserved for future hangar development. In the interim, prime hangar sites can be used as aircraft tiedown aprons to maximize Airport revenues and service levels. It should be noted, however, that the FAA AIP grant requirements generally do not permit hangars to be developed on tiedown aprons funded by AIP grants.

### *Hangar Access*

Aircraft storage hangars and based aircraft tiedown positions are best located in areas of the Airport that require controlled or restricted access. By restricting public access to such areas, both safety and security are significantly enhanced. Only aircraft owners, pilots, passengers, and authorized individuals would be permitted within the restricted area. This is the manner of security presently in effect at Compton Airport. Such control can be accomplished through the use of fencing/walls, controlled gates, signs, and surveillance. By providing a suitable number of well-located controlled access gates, authorized vehicular and personnel access to the aircraft hangar and tiedown areas can be assured. The four controlled access gates currently in use at the Airport are well-located and offer adequate user and emergency access to the airfield and building areas. It is suggested, however, that one additional controlled access vehicle gate be provided in the southwest corner of the FBO area. This gate will facilitate authorized user access to the south side hangar area, helicopter operations area, and future airport traffic control tower.

Taxiway access from the aircraft storage and parking areas to the runway/parallel taxiway system and within the building area is also very important. Dead-end taxilanes and circuitous routings should be avoided whenever possible. Alternative taxiway routings configured to minimize head-to-head traffic should be provided, particularly in high-volume areas. In addition, breaks in the hangar rows should be provided to permit aircraft, vehicles, and personnel enhanced access between taxilanes. At Compton Airport, the need to maximize aircraft basing capacity within a very constrained land area substantially limits what can be reasonably accomplished in this regard. The desirability of such alternative taxiway routings and hangar breaks must be balanced against the resultant loss in useable hangar capacity.

### ***Tiedown Areas***

An estimated 125 tiedown positions (based aircraft and FBO parking) are projected to be required by the end of the 20-year planning period. This number is the same as the approximately 111 tiedown positions currently in use on the Airport, and reflects the projected increase in the availability and use of aircraft storage hangars.

Large, appropriately-oriented tiedown areas are preferable in that they permit simpler fencing, lighting, and access. However, due to the limited land available at Compton Airport, tiedown positions can also be used to make maximum efficient use of small or odd-shaped apron areas. In addition, paved areas of the Airport can be used for interim aircraft tie-downs until such time as the area is needed for another use such as hangar development or fixed base operations facilities.

In general, it is preferable for tiedowns to be oriented into the strongest winds. This arrangement minimizes potential aircraft upset or control surface deflection damage. Although the lack of consistently strong winds at Compton Airport makes this factor somewhat less significant, it is desirable for tiedowns to face west or east, wherever practical.

### ***Hangar/Tiedown Area Siting Considerations***

At Compton Airport, limited land availability and FAA design criteria combine to constrain hangar and tiedown area development opportunities. Figure 16 depicts the impact of FAA design criteria (e.g., FAR Part 77 surfaces and Aircraft Parking Limit) on future hangar and tiedown area development. Ideally, all hangars should be sited so as not to penetrate the runway's Part 77 transitional surfaces. However, some penetration may be desirable and acceptable to the FAA based on a facility-specific assessment of need and impacts. Such penetration may be appropriate for hangar development along the Airport's north perimeter wall.

### **Helicopter Operations**

Helicopter operations are playing an increasing role in Compton Airport's overall activity. Master plan projections indicate that helicopter activity will continue to increase in the years ahead – both in terms of based helicopters and helicopter operations. As noted in Chapter 4, the bulk of this helicopter activity will be generated by public-service helicopters operated by agencies such as the City of Compton Police Department and other nearby communities. In addition, helicopters operated by the Airport's fixed base operators, area businesses and corporations, and transient helicopter operators will contribute to this increased activity.

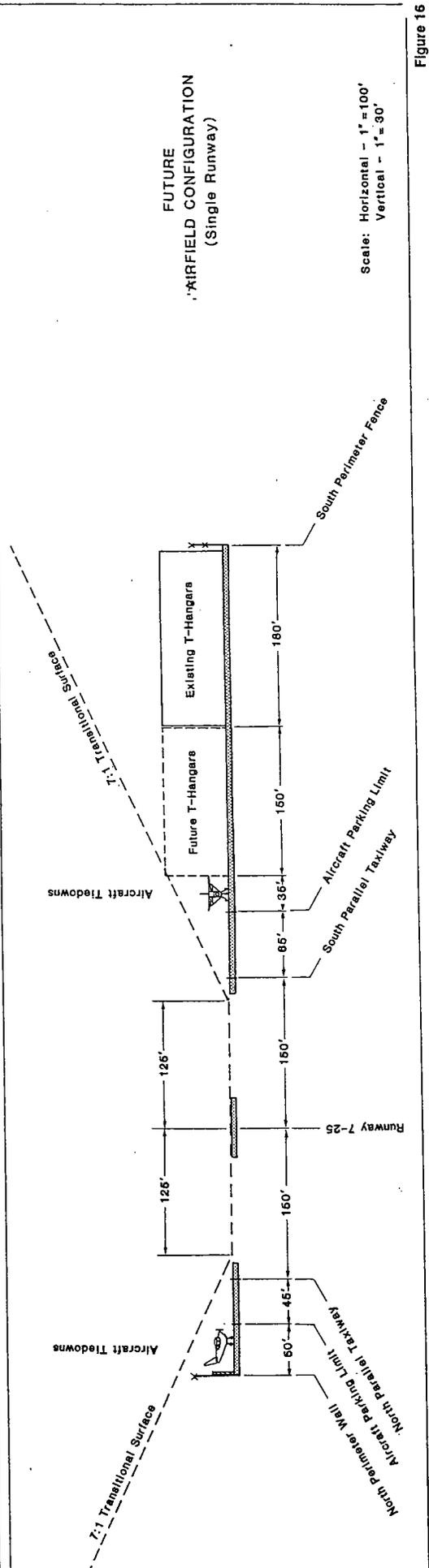
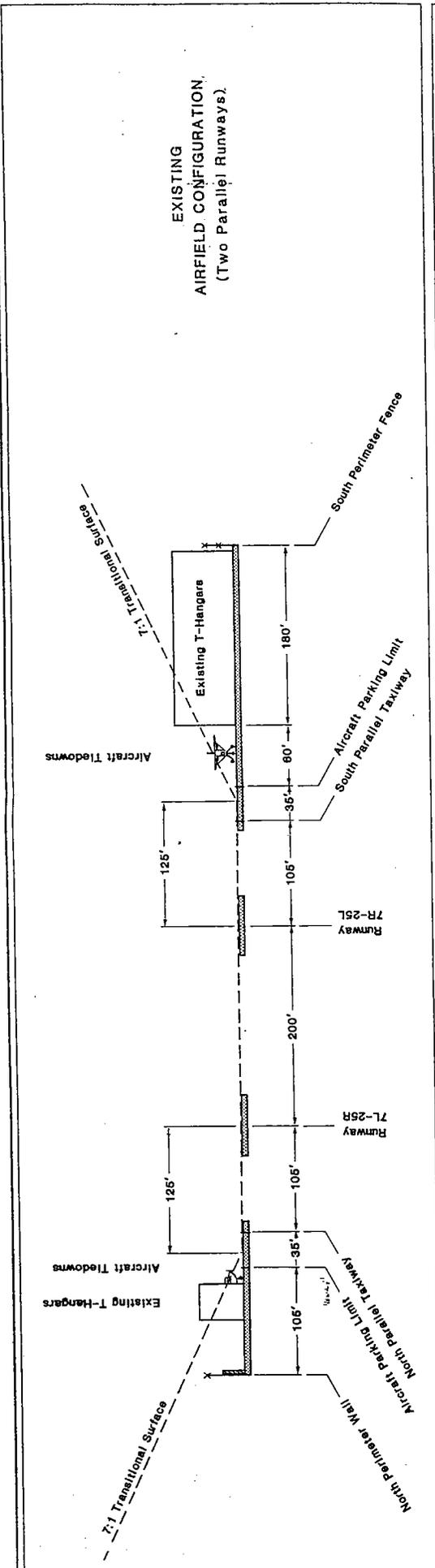
Ideally, helicopter operations should be located away from fixed-wing aircraft operations. Helicopters and airplanes are somewhat incompatible

in that while they share the same airspace, they do so at different speeds and in different flight regimes. In addition, the downwash from a helicopter's rotor blades has the potential to upset nearby fixed-wing aircraft and raise dust, dirt, and debris. For these reasons, it is generally desirable to locate all helicopter activity in one location — generally apart from fixed-wing aircraft activity. As an example, FAA design standards suggest that a helipad at a tower-controlled airport be located at least 400 feet from the runway centerline if independent operations are to be permitted.

At Compton Airport, land constraints do not permit a high level of operational separation. By physical necessity, helicopters and airplanes must share the Airport's facilities and airspace. This requires a measure of facility compromise and user coordination to jointly operate in a safe and efficient manner. Such compromise and coordination has been successfully utilized in the past at the Airport and it is anticipated that future shared use of the Airport can be beneficially accommodated in much the same manner. However, strict operational procedures (e.g., designated traffic patterns, approach/departure corridors, traffic position reporting, user awareness, etc.) will be required to safely and efficiently accommodate this activity.

Helicopter activity is currently concentrated on the Airport's south central side. This location, while not optimum from a planning and operational perspective, represents the best available location on the Airport. The factors contributing to this conclusion include:

- Near center of runway/taxiway system — permits helicopters to more safely and efficiently fit in with fixed-wing aircraft traffic pattern.
- Central location enables helicopters to utilize runway/taxiway corridors for low-level approaches and departures (i.e., facilitates translational lift operations).
- Remote from terminal area and fixed base operations area — minimizes rotor downwash impacts.
- Remote from noise-sensitive single-family residents (i.e., predominantly those to the north side. of the Airport).
- Existing commitment to helicopter facilities in that area.
- Space and facilities are available to accommodate based helicopter needs (i.e., utilize existing area T-hangars and former paint hangar for helicopters).
- Proximate to primary area access roads and visible to public (i.e., enhances Airport security and presence in the local community).
- Location within controlled area facilitates enhanced security and safety.



Scale: Horizontal - 1"=100'  
Vertical - 1"=30'

Figure 16

- Utilities are readily available.

The principal disadvantage of this centralized location is the proximity of the helicopter operating area to the primary south side parallel taxiway and adjacent fixed-wing aircraft hangar areas. This proximity will necessitate that helicopter and fixed-wing aircraft operations be dependent upon each other and operationally interrelated. While this interdependency is not generally desirable, it represents an operational compromise required by the Airport's constrained land area. When the Airport is reconfigured into a single runway configuration, approximately 100 feet of additional apron depth will be available for expansion of the helicopter operating area. To provide additional room for the accommodation of helicopter ground operations, two or three of the existing T-hangar buildings in the south central area could be removed or relocated. This action would facilitate the use of the airspace overlying the Alondra Boulevard right-of-way as a helicopter approach/departure corridor.

To facilitate business and personal helicopter users' access to the terminal building, transient helicopter parking pads could be located in the apron area between the aircraft fueling facility and the airfield maintenance facility. All based helicopter users should be encouraged to hangar/tiedown their helicopters in the vicinity of the established south central helicopter operating area.

Alternative locations for helicopter operations and facility development were considered as part of this analysis. These alternative locations included:

- In the southeast corner of the Airport
- To the east side of the fixed base operations area
- On the north side of the Airport
- In the northeast corner of the Airport — across Wilmington Avenue from the proposed City of Compton Police Department neighborhood station
- Off-airport adjacent to the Airport's northern boundary

The alternative location in the southeast corner of the Airport received special consideration as part of the master planning process. This area has been identified in the past as being a possible location for concentrated helicopter operations. An analysis of the advantages and disadvantages associated with these two alternative locations (i.e., south central site and southeast site) is provided in Table 12.

A study team of airport planners, experienced helicopter operations specialists, and FAA air traffic control representatives contributed to this analysis of helicopter operations facility siting alternatives. This analysis concluded that the south central location is superior to all other on-airport alternative locations. Development of the south central area for concentrated helicopter operations is depicted in the Airport Layout Plan (see Chapter 2-Figure 1).

**South Central Location**

**ADVANTAGES**

- Offers unobstructed helicopter acceleration/deceleration corridors for translational lift requirements
- Minimizes counter-flow operations between helicopters and airplanes landing/departing on Runways 25L and 25R
- Reduces potential for mid-air conflict in vicinity of Runways 25L and 25R (touchdown zones)
- Well located with respect to fixed-wing activity – on the ground and in the air
- Continues existing traffic patterns and operating procedures (known and accepted by users)
- Unobstructed helicopter acceleration/deceleration corridors permit helicopters to gain/lose altitude over Airport property, as opposed to over neighboring residential areas
- Remote from busy public-use facilities (i.e., terminal and transient parking aprons) and fueling areas
- Continues existing helicopter use
- Room available for future helicopter facility expansion
- Police may prefer this more secure, less visually obvious location

**DISADVANTAGES**

- Site is adjacent to southside parallel taxiway and T-hangar areas
- Displaces some fixed-wing aircraft from T-hangars
- Existing T-hangars not specifically designed to accommodate helicopters
- Indirect vehicular access (no direct public access)
- Airport users and local residents/businesses might prefer police activity in a more visually obvious location on the Airport

**Table 12**

**Helicopter Operations Area Alternatives  
Compton Airport**

**Southeast Location**

**ADVANTAGES**

- Makes beneficial use of existing airfield maintenance garage/office
- Site is remote from T-hangar areas
- Frees up south central portion of hangar complex for fixed-wing aircraft storage
- Direct vehicle access off Alondra Boulevard
- Provides visible security presence in new terminal area

**DISADVANTAGES**

- Potential for conflict between helicopters and airplanes in traffic pattern (particularly in Runways 25L and 25R touchdown zones)
- Potential for counter-flow operations between helicopters and airplanes landing/departing on Runways 25L and 25R
- Immediately adjacent to Runway 25L airplane runup area
- Helicopters would overfly adjacent residential areas at relatively low altitudes (noise, safety, steep approach/departure requirement)
- Helicopters could not readily overfly runway and taxiway areas for approach/departure operations
- Numerous close-in obstructions in southeast corner of Airport
- Helicopter operations and resultant rotor blast and rotor strike hazard in close proximity to public-use area (i.e., terminal, transient parking apron) and fueling facilities
- Airfield maintenance facilities would have to be relocated to a less desirable location on the Airport
- Would involve a lot of hover back-taxiing to access southeast corner site
- Little room available for future expansion of helicopter area
- Police might prefer a more secure, less visually obvious location

Table 12 - Continued

**Helicopter Operations Area Alternatives**  
Compton Airport

## **Airport Traffic Control Tower**

Compton Airport is the sole remaining public-use airport in the Los Angeles basin that is not equipped with an operating airport traffic control tower. The possibility of establishing such a facility at the Airport has been discussed from time to time over the past several years. A number of years ago, an area of land on the Airport's north side was acquired by the County for the siting of an airport traffic control tower. However, the control tower was never installed.

As part of this master plan, the need for a control tower at Compton Airport was explored. The Federal Aviation Administration, the federal agency responsible for funding the construction and operation of virtually all public airport traffic control towers, specifies minimum operational activity levels that airports must exceed in order to qualify for establishment of a federally-sponsored control tower. Generally speaking, the FAA requires that the benefits to be realized from the establishment and operation of the control tower must exceed the cost to the government.

The initial test currently used by the FAA to identify potential control tower sites is called the Phase I Tower Establishment Ratio. This test and its application to Compton Airport operational counts is presented in Table 13. It should be noted that the FAA is presently reviewing its criteria for the establishment and discontinuance of airport traffic control tower facilities. It is anticipated that any new criteria will be based upon a life-cycle assessment of costs (capital and operating) and benefits (safety and efficiency). This approach is substantially the same as at present.

As noted in Table 13, on the basis of present and future operational counts alone, Compton Airport does not meet the minimum operational activity levels needed to qualify for a control tower. However, the FAA provides that an airport may be exempted from meeting the Phase I test and be considered a candidate for establishment of a control tower because of other special factors. In this case, a site-specific analysis must be performed and adequate justification presented. The site-specific analysis should include, but not be limited to:

- Assurance that factors unique to the location, such as weather and topography, are properly accounted for.
- Impact on adjacent facilities.
- Operational factors which cannot otherwise be accounted for by the benefit-cost analysis.
- Potential use of the site to provide capacity and training relief for a hub airport.

**PHASE I TEST FORMULA**

Use the following ratio sum derived from the latest annual operation counts:

(a) Let.

- AC = Air Carrier Operations
- AT = Air Taxi Operations
- GAI = General Aviation Itinerant Operations
- GAL = Military Itinerant Operations
- MI = Military Itinerant Operations
- ML = Military Local Operations

(b) Then.

$$\frac{AC}{38,000} + \frac{AT}{90,000} + \frac{GAI}{160,000} + \frac{GAL}{280,000} + \frac{MI}{48,000} + \frac{MLL}{90,000}$$

is the Phase 1 Establishment Ratio Sum. If this sum is greater than or equal to one, then the site becomes a candidate for tower establishment.

**AS APPLIED TO COMPTON AIRPORT OPERATIONS**

**Present Operations (Year 1990)**

$$\frac{0}{38,000} + \frac{500}{90,000} + \frac{36,000}{160,000} + \frac{54,000}{280,000} + \frac{0}{48,000} + \frac{0}{90,000} = .42$$

**Future Operations (Year 2010)**

$$\frac{0}{38,000} + \frac{1,000}{90,000} + \frac{78,000}{160,000} + \frac{78,000}{280,000} + \frac{0}{48,000} + \frac{0}{90,000} = .78$$

Table 13

**Phase I Tower Establishment Ratio**  
Compton Airport

- The possibility of significant changes in traffic activity attributable to unique local conditions.
- Military requirements.

Of particular interest and application at Compton Airport are the first three analysis factors. Any analysis of the need and justification for a federally-sponsored control tower at Compton Airport should consider the following special factors:

- The airspace in the vicinity of the Airport is among the most complex in the world. Controlled Airspace, Terminal Control Areas, Airport Radar Services Areas, Airport Traffic Areas, Victor Airways, TCA-Controlled Transition Routes, Instrument Approach Routes, Control Zones, and VFR flyways are all located in the immediate vicinity of Compton Airport. Individually and together, these airspace components directly impact Airport operations. It is anticipated that this airspace environment will become increasingly more complex in the years ahead.
- Compton Airport's proximity to Los Angeles International Airport (8 statute miles), Hawthorne Municipal Airport (5 statute miles), Long Beach Airport (6 statute miles), and Torrance Municipal Airport (7 statute miles). All of these airports generate considerable VFR and IFR aircraft activity that has the potential to interact with aircraft operating to/from Compton Airport.
- Marginal VFR flight conditions, generally due to urban smog, are prevalent in the central Los Angeles basin. Low in-flight visibility and cloud ceilings strain the practical utility and safety of the "see and be seen" visual flight concept.
- Nonstandard traffic patterns (i.e., right-hand patterns for Compton's Runways 7L and 7R and left-hand pattern for Runway 25R) are in use at Compton Airport as a result of the Airport's proximity to Los Angeles International Airport and Hawthorne Municipal Airport instrument approach routes. The nonstandard patterns concentrate flight activity to the south of the Airport and increase the potential for inadvertent "head-to-head" aircraft operations on the downwind leg.

Consideration of these special factors indicates that a control tower may be warranted at Compton Airport at some point within the 20-year planning timeframe. Accordingly, a suitable site for the installation of an airport traffic control tower is indicated on the Airport Layout Plan. The proposed site is centrally located on the south side of the airfield, offers satisfactory line-of-sight over all airfield operational areas, and does not visually interact with neighboring residential areas. It should be noted that the preferable site from an operational point of view — the previously acquired site on the Airport's north side — is not considered viable due to the local residential community's negative reaction. The exact siting, timing and manner of implementation of the control tower should be

determined through a special detailed analysis similar to that recently performed to justify establishment of the airport traffic control tower at Whiteman Airport.

## **FACILITY REQUIREMENTS - NORTH SIDE BUILDING AREA**

Due to space constraints and operational considerations, the majority of the building area development and use will occur on the Airport's south side. The Airport's north side, due to its shallow depth, lack of viable ground access, and proximity to residential uses, offers somewhat less potential for extensive future development and use.

The north side of the Airport can, however, be beneficially used for the following aviation support purposes:

- Compliance with airfield design setbacks and FAR Part 77 surfaces.
- Location for north side parallel taxiway – provides aircraft access to north side building area and reduces congestion on south side parallel taxiway.
- Location for based aircraft storage – primarily tiedowns and enclosed storage in portable T-hangars and portable rectangular/box-type hangars.
- Location for based aircraft pilot's lounge/rest rooms, aircraft washing area, owner-performed aircraft maintenance enclosure, and segmented circle/wind cone.

### **Aircraft Storage Hangars and Tiedowns**

There are 38 T-type portable hangars presently located on the Airport's north side. In addition, there are approximately 100 available tiedown positions – 85 of which are presently in use.

The shallow depth of the future north side building area (i.e., associated with the single runway configuration) only allows the development of a single row of tiedown and/or aircraft storage hangars. Tiedowns offer the most aircraft storage capacity per lineal foot and are the most flexible in terms of future facility use modification. Hangars, if installed in this area, would most beneficially be of the rectangular/box-type to permit maximum utilization of available space. The hangars should be placed facing south with the hangars' back walls approximately 10 feet from the Airport's north perimeter wall. This distance is required to meet local fire codes and to discourage persons from using the hangar roofs as a vaulting

platform from the perimeter wall. Approximately 60 45-foot x 40-foot rectangular/box-type hangars can be accommodated in this area. Occasional breaks in the line of hangars will be necessary to permit inspection, cleaning, and fire response to the alley created between the rear of the hangars and the perimeter wall.

It should be noted that siting of hangars along the north side perimeter wall may require a design standards waiver from the FAA, due to the hangars' penetration of the Runway 7-25 7:1 transitional surface (see Figure 16). The decision as to the allocation of tiedowns and hangars in this area should be determined on the basis of user demand, cost/benefit considerations, and airport operational needs.

### **Aircraft Washing Area**

Typical of seaside urban areas, Compton Airport's atmospheric environment is hard on aircraft. Airborne salt, moisture, dust, dirt, and chemical pollutants combine to quickly weather, age, and deteriorate aircraft airframes, instruments, and powerplants. Frequent washing of aircraft is required to slow the deleterious effects of these caustic agents. An aircraft washing area, equipped with a multi-trap water/oil separator, has been established in the northeast corner of the Airport. It is recommended that this facility be retained in this area and expanded, if necessary, in the future to accommodate demand. Due to this area's proximity to the future Runway 25 holding bay/runup pad, operational procedures may be required to mitigate the effects of runup propeller blast impacting aircraft washing area users.

### **Owner-Performed Aircraft Maintenance Enclosure**

It is suggested that a site for an owner-performed aircraft maintenance enclosure be provided in the north side building area. The site should be large enough to accommodate one to two aircraft within one or more enclosures. In addition, the site should have electrical service, be accessible by aircraft owner vehicles, and be separate from fixed base operations areas. A site in the vicinity of the aircraft washing area is preferable. An alternative site is in the northwest corner of the Airport near the Compass Rose. The enclosure should be an all-metal, three-sided, covered shed with electrical outlets, overhead lighting skylights, workbench, oil waste disposal tank, and fire extinguishers. It is recommended that airport management establish well-defined operating policies and scheduling procedures covering the operation and use of this facility.

## FACILITY REQUIREMENTS — OTHER

The following additional support facilities are suggested for development or improvement within the Compton Airport building area.

### Airport Perimeter Wall

Approximately 60% of the Airport's perimeter is equipped with a 7-foot-high cinder block wall. This wall serves two primary purposes — it enhances the security and safety of the Airport and the adjacent residential uses, and it ameliorates aircraft noise impacts on adjacent off-airport land uses.

Extension of the wall along Alondra Boulevard to completely enclose the Airport has been proposed from time to time. The advantages and disadvantages of such action are as follows:

- Advantages
  - Enhances airport security and safety
  - Ameliorates aircraft noise impacts on adjacent off-airport land uses
  - Diminishes visual impact of airport
  - Reduces effect of winds and gusts on nearby aircraft
- Disadvantages
  - Potential to be an eyesore due to graffiti on the outer wall surface
  - Citizens may perceive the perimeter wall as further isolating the Airport from the local community
  - Somewhat limits fire response access
  - Has potential to restrict public view and access to fixed base operators and terminal area facilities

The Airport Layout Plan depicts the future extension of the airport perimeter wall from the edge of the southwestern-most T-hangar building to the southwestern corner of the fixed base operations area. A fenced gap in the wall near the intersection of Alondra Boulevard and Central Avenue is provided to permit vehicular line-of-sight at the intersection. It is suggested that there be no wall in the vicinity of the fixed base operations area and the terminal area. This will facilitate public view and access to these commercial areas.

## **Fencing, Gates, and Lighting**

The Building Area Plan identifies the security fencing, gates, and lighting requirements appropriate to this category of general aviation airport. The first level of security preparedness serves to prevent unauthorized personnel and vehicles from inadvertently accessing aircraft movement areas and hazardous operating areas (e.g., fuel storage/dispensing facilities, airfield maintenance facility, etc.). The second level of security preparedness seeks to prevent the determined effort of unauthorized personnel and vehicles from gaining access to secured areas of the Airport. This level of security is appropriate for much of Compton Airport's airfield and building areas.

Typically, security preparedness at this second level requires the use of the following security equipment and techniques:

- Extensive chain link fencing/walls – airport perimeter and terminal area
- Controlled access gates – vehicle and personnel
- Warning and advisory signage
- Vehicular identification program
- Airport-user awareness
- Ramp and facility lighting
- Surveillance personnel and patrols

To facilitate authorized user access to the Airport's south side building area (particularly the aircraft storage hangars, helicopter operations area, and future airport traffic control tower), an additional controlled access vehicle gate is suggested for the southwest corner of the fixed base operations area.

## **Airport Viewing Area**

A highly desirable enhancement to any general aviation airport is the provision of a publicly accessible airport viewing area. By providing local citizens and aviation enthusiasts with a comfortable vantage point to observe airport and aircraft activity, interest and support for the Airport are encouraged. Compton Airport presently offers two excellent locations for public viewing of Airport activity. These locations are: (1) the elevated platforms between the fixed base operations hangars; and (2) the observation deck on the airside of the new terminal building. These two locations should be adequate for public viewing purposes.

## **BUILDING AREA CONFIGURATION ALTERNATIVES**

A number of alternative building area development configurations were identified and explored as part of the master plan study. The various alternatives were carefully assessed by the consultant and County staff with respect to the design factors, development issues and opportunities, and facility requirements identified in this chapter.

This analysis of alternatives resulted in the selection of the optimum building area development plan depicted in the Airport Master Plan drawings (see Chapter 2-Figure 4). A tabular description of the aircraft storage capacities associated with the optimum building area development plan is presented in Table 14. The selected configuration facilitates the orderly and cost-effective transition between the existing airport configuration and the ultimate 20-year configuration. In addition, the selected building area configuration permits a significant measure of flexibility in accommodating aeronautical demand and adjusting to future changes in general aviation service requirements.

## **BUILDING AREA STAGING PLAN**

The building area development staging plan, as recommended in this Master Plan, is based upon the following planning and design objectives:

- Address, in an expeditious manner, those building area elements that are required to enhance operational and public safety (e.g., provide adequate Object Free Areas and Runway Safety Areas).
- Coordinate building area modifications with runway/taxiway system improvements, as required (e.g., anticipate future conversion of airfield from parallel runway system to single runway configuration).
- Anticipate the requirement for building area improvements on the basis of demand and not merely the passage of time (e.g., flexibility in the development of new aircraft storage hangars).
- Implement, in a cost-effective and coordinated manner, the reconfiguration and improvement of the building area.
- Minimize, to the extent practical, inconvenience and disruption to airport user and tenant activities.

Described in Table 15 is the recommended staging plan for the coordinated implementation of airfield and building area improvements. As noted previously, the scheduling of these improvements should be based

	Year 1990 (Existing)	Year 2010 (Proposed)
Transient Parking Positions (Terminal Area)		
• Tail-to-Tail	20	20
• Taxi-Thru	5	5
• Helicopter	2 <sup>1</sup>	2
Based Tiedown Positions		
• Tail-to-Tail	130 <sup>2</sup>	100
• Taxi-Thru	20	0
• Helicopter	1	2
Based Aircraft Stored in Hangar Units		
• T-Type <sup>3</sup>	158	292
• Rectangular/Box-Type <sup>3</sup>	3	4
Aircraft Storage Positions (Fixed Base Operators)		
• Parking/Tiedown	24	60
• Hangared	15 <sup>1</sup>	15
	-----	-----
TOTAL	379	500
 <b>NOTES:</b>		
1.	Estimated – no spaces specifically designated.	
2.	111 spaces presently in use.	
3.	Includes 25% multiple aircraft storage factor.	

Table 14

**Aircraft Storage Capacities**  
Compton Airport

upon anticipated demand and not merely the passage of time. Variations in staging are possible as may be required by changing demand characteristics and/or the Airport's financial condition.

The capital cost estimates associated with the building area improvements are identified in Chapter 8 – Financial and Implementation Issues.

**Short-Range (0–5 Years)**

- Complete initial development of new terminal building and support facilities. Fence and mark automobile parking area.
- Establish appropriately configured Object Free Area and Runway Safety Area for each existing runway end. Remark existing runway ends to reflect appropriate entrance taxiways.
- Install supplemental lighted wind cones (2).
- Develop additional aircraft tiedowns and portable aircraft storage hangars in available locations as depicted on the Airport Layout Plan. It should be anticipated that some of these facilities will have to be relocated when the ultimate single runway configuration is implemented.
- Endeavor to make existing hangars in the vicinity of the central helicopter operations area available for helicopter operations and storage.
- Establish nonprecision instrument approach capability.

**Mid-Range (5–10 Years)**

- Rehabilitate, as necessary, pavement surface of Runway 7L–25R.
- Install Medium Intensity Runway Lights, Visual Glide Slope Indicators, and Runway End Identifier Lights on Runway 7L–25R.
- Close Runway 7R–25L and convert north edge of former Runway 7R–25L into a full-length parallel taxiway serving the new Runway 7–25. Designate appropriate holding aprons/runup areas.
- Develop additional aircraft storage hangars adjacent to existing south side hangars, as required by demand.
- Relocate north side tiedowns and hangars to permit establishment of new north side parallel taxiway.
- Establish new north side parallel taxiway with 150-foot separation from Runway 7–25 centerline.
- Extend airport perimeter wall along the Airport's southwest side.
- Construct new fueling facility in terminal area.
- Construct aircraft maintenance enclosure.
- Install new controlled-access vehicle gate in FBO area.
- Establish airport traffic control tower (if required).

**Table 15**

**Airport Development Staging Plan**

**Compton Airport**

**Long-Range (10–20 Years)**

- Construct new south side parallel taxiway with 150-foot separation from Runway 7–25 centerline.
- Construct new exit taxiways serving Runway 7-25.
- Develop additional aircraft storage hangars, as required by demand.
- Expand terminal building and support facilities to satisfy demand.
- Acquire automobile service station land in northwest corner of Alondra Boulevard and Wilmington Avenue. Utilize area for airport-support.

Table 15 continued



# 7

## **Land Use and Environmental Issues**

---

# Land Use and Environmental Issues

## OVERVIEW

Over the years, extensive urban development has occurred in the area surrounding Compton Airport. This off-airport urban development is primarily composed of single- and multi-family residences, and commercial/industrial uses (see Figure 17). Despite the potential for incompatibility and conflict between the Airport and certain of these off-airport land uses, particularly the single- and multi-family residential uses, the Airport and surrounding community have coexisted over the years in relative harmony. To maintain and improve upon this positive relationship between the Airport and its neighbors, further land use incompatibility must be avoided and, where practical, existing land use incompatibility mitigated.

This chapter of the master plan study examines the nature and extent of off-airport land use impacts related to Compton Airport operations. Established compatibility preservation measures are then reviewed. Following these sections is a discussion of airport-specific land use compatibility concerns and proposed impact mitigation actions. An Initial Study of airport environmental impacts, prepared in accordance with the California Environmental Quality Act, is presented in Appendix E.

## LAND USE COMPATIBILITY CONSIDERATIONS

The principal land use impacts and compatibility considerations associated with the operation of a busy general aviation airport, such as Compton Airport, fall into the following four major categories:

- **Noise Impacts** – Usually perceived as the most significant adverse impact of airport activity. Noise impacts can be defined in terms of average noise exposure levels and maximum single-event or intermittent noise levels. Average noise exposure levels are generally

described in terms of noise contours. The descriptor used in California to measure noise generated by airport activities is the Community Noise Equivalent Level (CNEL). Single-event or intermittent noise levels are related more to individual aircraft overflights and are described in terms of decibel levels, which are adjusted to reflect the normal range of human sound perception (dBA).

- **Hazards to Flight** – Hazards to flight are physical obstructions to the navigable airspace (e.g., tall objects) and include other land use characteristics that could affect flight safety (e.g., distracting lights, smoke, electromagnetic interference, birds attracted by certain activities, and the availability of suitable emergency landing areas underlying close-in approach/departure zones).
- **Safety on the Ground** – The objective in providing safety on the ground is to reduce the risk of damage or injury to persons or property on the ground in the event of an aircraft accident. The issue of safety is most critical within the approaches to an airport where aircraft are maneuvering below standard traffic pattern altitude (usually 1,000 feet above airport elevation). This impact is difficult to address because of the very low probabilities involved.
- **Overflights** – A more extensive, but less well defined impact relates to aircraft overflights and established air traffic patterns. Aircraft overflights generally extend beyond the typically defined noise contours and safety impact zones. Overflight impacts are often characterized as annoying. The degree of annoyance can vary widely, according to the listener's subjective viewpoint, but is generally related to the frequency of occurrence, altitude, time of day, and visual impact of overflights.

## CURRENT AND PROJECTED LAND USE IMPACTS AND COMPATIBILITY CONCERNS

---

Noise impact mitigation techniques typically include pilot awareness/education, flight track adjustments, aircraft type restrictions, airport operating hours restrictions, and airfield configuration modifications.

---

The impact that airport operations may potentially have upon surrounding land uses is determined by the configuration of the airfield and associated flight patterns, the type and volume of air traffic, and by the underlying land uses. In this regard, it is anticipated that Compton Airport will, for the next 10-15 years, continue its present role as a parallel-runway, public-use airport catering to single- and multi-engine general aviation aircraft weighing less than 12,500 pounds. During the latter part of the 20-year planning period, it is projected that the existing parallel runway configuration will be supplanted by a single runway based on the present alignment of Runway 7L-25R. The Airport's traffic mix is not expected to be significantly different from the present. The 20-year Master Plan forecast projects only a modest increase in the level of airport activity. The nature

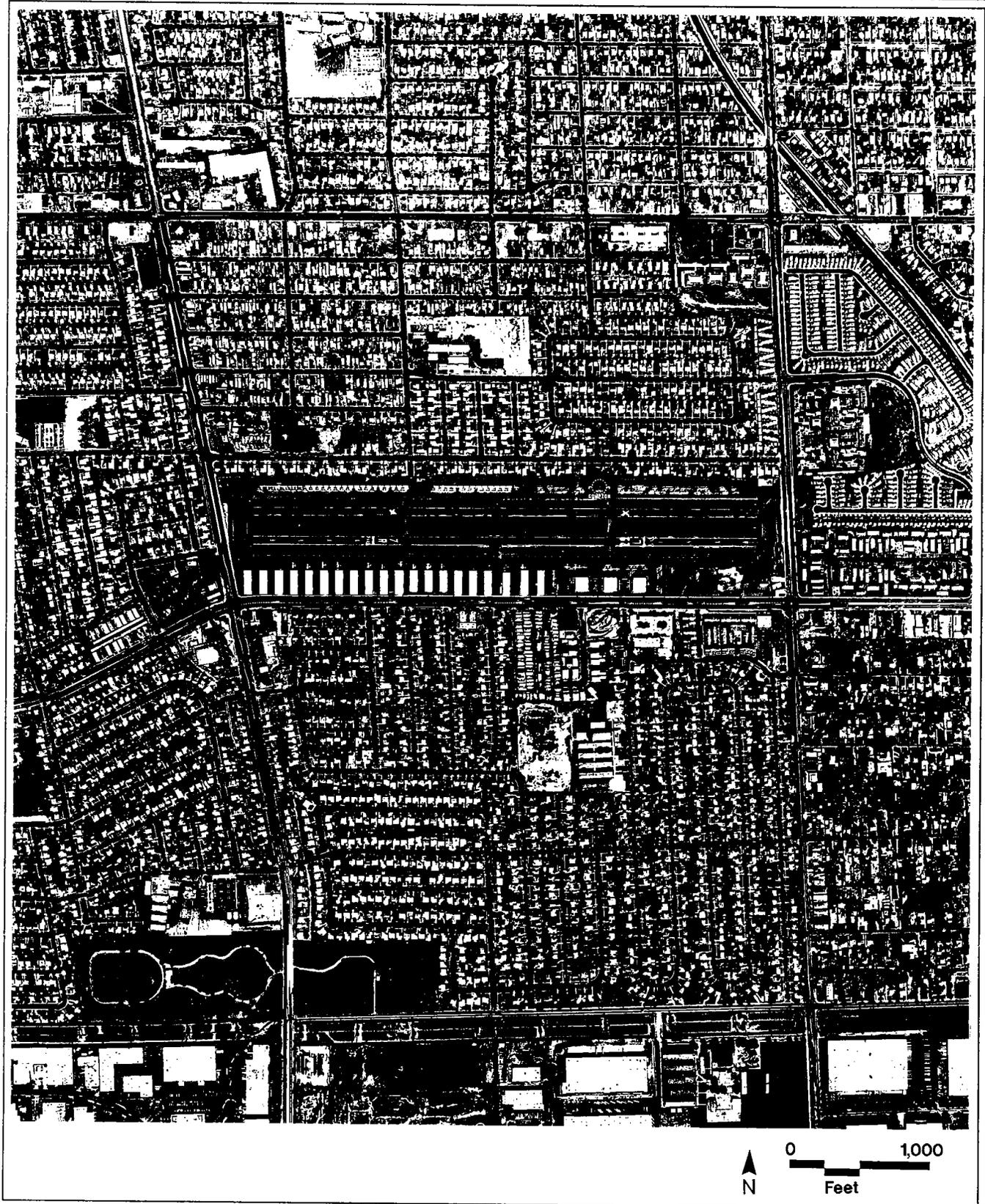


Figure 17

**Airport Vicinity**  
Compton Airport

and extent of the current and projected impacts associated with aircraft operations at Compton Airport are summarized below.

### **Noise Impacts**

Noise can be described as an unwanted or disruptive sound. Two basic elements determine whether a sound is perceived as disruptive: (1) characteristics of the sound itself; and (2) the human activity taking place when the sound occurs. The type of human activity is a factor in determining the disruptiveness of a noise. A noise which may intrude upon one type of activity may be acceptable with respect to another. Various studies have been performed to determine the decibel level at which noise will interfere with a given activity. This information has been used to establish relationships between acceptable or unacceptable noise levels and specific types of land uses.

At the time of this Master Plan study, comprehensive CNEL noise contours had not as yet been prepared for Compton Airport. A limited analysis of noise contours at Compton Airport was performed in 1972. This analysis, prepared by the Northrup Corporation for the Los Angeles County Board of Supervisors, identified only the 70 CNEL noise contour for the years 1972, 1975, and 1980. It is strongly recommended that new CNEL noise contours be generated to reflect present operating conditions, as well as projected future operating conditions. CNEL noise contours for Compton Airport – both for present and future activity levels – should be generated as an integral element of any upcoming Los Angeles County Airport Land Use Plan. The resultant noise contours can then be utilized to more accurately identify and define the extent of noise impact and to develop appropriate noise impact mitigation actions.

### **Hazards to Flight**

As noted previously, two types of potential hazards to flight operations are of concern: (1) physical obstructions to the navigable airspace; and (2) other land use characteristics that can affect flight safety. Physical obstructions to navigable airspace can include trees, pole lines, buildings, antennas, and terrain. Other land use characteristics that may affect flight safety include: visual hazards such as distracting lights, glare, and sources of smoke; electronic interference with aircraft instruments or radio communications; uses which may attract flocks of birds; and the availability of suitable emergency landing areas in the Airport's close-in approach and departure zones. To safeguard an airport's present and future safety and utility, such potential hazards to flight operations must not be permitted to be established within the vicinity of the airport.

The Federal Aviation Administration has established standards that identify and define potential hazards to flight. Standards for the identification of

maximum allowable heights for structures and other objects are set forth in Part 77 of the Federal Aviation Regulations and, to a certain extent, Advisory Circular 150/5300-13, "Airport Design." Limiting the height of objects and structures in the vicinity of an airport to below those heights indicated by Part 77 surfaces provides an ample margin of safety for normal aircraft operations. Deviation from the Part 77 standards does not necessarily imply a safety hazard. It does mean, though, that the offending objects must be evaluated by the Federal Aviation Administration. In its evaluation, the FAA will indicate if the offending object is or is not an obstruction to air navigation. If it is an obstruction, the FAA may suggest removal, obstruction lighting, aircraft flight path modification, airport operation restriction, or some other form of impact mitigation. The actual mitigation action is the responsibility of the airport owner or local land use controlling agency. The FAA has no power to directly require that the obstruction be removed or its impact mitigated.

The most critical areas with regard to flight hazards are within the approaches to the Airport's runways. The approaches are defined by imaginary surfaces which slope upwards from a point near the physical end of the runway. The imaginary surfaces for Compton Airport are illustrated in the Airspace Plan developed as part of this Master Plan (see Chapter 2 – Figure 3).

At Compton Airport, the extensive development of the land areas underlying the Airport's Part 77 approach surfaces has resulted in numerous buildings, antennas, fences, poles, walls, trees, and streets that have the potential to be considered as obstructions and hazards to flight. Of particular concern in this regard is the Compton Courts Complex building located approximately 4,200 feet northeast of the Airport. This tall 13-story structure (approximately 156 feet above ground level) penetrates the Airport's FAR Part 77 horizontal surface and is considered an obstruction to air navigation. As such, this structure should be appropriately marked/lighted as an obstruction and noted on airport operational/traffic pattern diagrams.

FAA design standards permit the establishment of a displaced threshold to ameliorate the effects of obstructions in the Part 77 approach surfaces. This is the design rationale utilized in part to locate the displaced thresholds for Compton Airport. Accordingly, it is recommended that the Airport's runway threshold displacements be maintained as at present to ensure adequate approach clearance over existing obstructions. The Airport's existing displaced threshold locations provide greater threshold plane clearance (i.e., approximately 26:1 for Runways 7L and 7R and approximately 38:1 for Runways 25L and 25R) than that required by FAA design standards (i.e., a minimum of 20:1).

Action should be taken by the County and the City of Compton to ensure that no further obstructions or hazards to flight are permitted within the areas defined by FAR Part 77. The specific means are discussed in subsequent sections of this chapter.

## Safety on the Ground

The approach zones are the most critical areas of the airport environs in terms of the risks to people and structures on the ground. The lower altitude of aircraft within the approach zones presents greater risks because pilots have less opportunity to recover from unexpected occurrences or make an emergency landing if one becomes unavoidable. At altitudes less than 500 feet above the ground, only moderate turns are advisable and the choice of emergency landing area is essentially limited to what lies ahead. Above this altitude, recovery or at least fairly wide discretion in choice of landing sites is possible. An emergency landing on the runway normally can be accomplished when the aircraft is flying in the traffic pattern at the designated traffic pattern altitude (approximately 1,000 feet above the airport elevation).

The other areas of interest in this regard are along the most common flight tracks for aircraft approaching and departing the airport. Accidents occur relatively infrequently in these areas, however, and the probability of occurrence in any given location is substantially less than within the approach zones.

## Overflight Impacts

Compared to the preceding airport land use compatibility considerations, the annoyance factor of airport activity is more subtle and subjective. Overflight impacts arise in locations where neither noise nor safety is measurably a significant factor – the noise of aircraft overflights seldom disrupts people's activities and the risk of an aircraft accident is statistically very low. Moreover, the degree of perceived annoyance varies widely from individual to individual, even though the definable impacts may be similar.

Each individual's unique reaction to aircraft overflights may result from a combination of noise and safety concerns with fear being a subtle element of the equation. Although people generally do not fear aircraft noise itself, they may be fearful of an aircraft crashing on their property, and it is primarily the noise that creates their awareness that aircraft are overhead. The extent to which different individuals react to overflight appears to be strongly influenced by their understanding of how airplanes fly, their attitude towards aviation, their knowledge of when and how often overflights occur, as well as by the actual noise levels, time of day, and the altitude of the aircraft.

A policy implication of this impact is the importance of public education. Owners of property near an airport should be made aware of the nature and extent of the airport's activities and the community's plans for future airport development. The identification of common flight paths and the

distribution of aircraft activity are therefore important factors in the analysis of land use compatibility and application of mitigative techniques.

Compton Airport's overflight impacts are generally concentrated along the typical flight tracks as shown in Figure 18. It is important to recognize, however, that overflight impacts can also occur in any part of the airport vicinity where aircraft fly at or below the standard traffic pattern altitude (1,000 feet above the Airport) while approaching or departing the runway.

Due to prevailing winds from the west, the highest level of aircraft activity at Compton Airport is on Runways 25L and 25R. Compton Airport operational personnel estimate that 90% of the takeoffs and landings occur on Runways 25L and 25R and 10% occur on Runways 7L and 7R. Runways 25L and 25R are formally designated as the calm/preferential runways. The current availability of VASI and REIL visual approach aids serving Runway 25L further encourages use of Runway 25L — particularly during hours of darkness.

Generally speaking, larger aircraft (e.g., twin-engine and small jet aircraft) will approach or depart the runway in a straight line or a wide pattern, while the approach and departure patterns utilized by smaller aircraft are more likely to remain within one mile of the Airport's runway. The Airport's non-standard (i.e., right-hand traffic pattern serving Runways 7R and 7L) results in virtually all of the Airport's pattern traffic being located to the south side of the Airport.

Historically, the Airport has received very few aircraft-related noise complaints from area residents. The few complaints which are received are usually associated with a distinct, atypical event (e.g., unusually loud aircraft departure at night).

## **ESTABLISHED LAND USE COMPATIBILITY MEASURES**

Local land use plans, as well as municipal zoning ordinances and community planning policies, are the principal means used to protect most general aviation airports from incompatible surrounding development. Compton Airport is owned and operated by the County of Los Angeles. However, it is the City of Compton which has the authority over land use in the area surrounding the Airport. Therefore, the City of Compton is principally responsible for the regulation of land use to assure the safe and compatible development of property in the vicinity of Compton Airport.

In 1963, the City of Compton adopted the Compton General Plan. This plan suggested appropriate definitions, locations, and dimensions for land

uses in the vicinity of Compton Airport. The 1963 plan concluded that existing physical limitations at the Airport necessitated the relocation of the Airport to a new site in the southern area of the City. However, action to relocate the Airport was never taken. The Compton General Plan is currently being reviewed and extensively revised by the City of Compton.

The existing, and admittedly out-of-date, Compton General Plan does not specifically consider airport compatibility in its designation of land uses. As a result, intensive incompatible development (i.e., high-density residential uses) has surrounded the Airport. Little land remains available for further development and the likelihood of achieving the desired level of land use compatibility is now very limited.

It is recommended that the new Compton General Plan (currently being revised) be formatted in a manner which permits the adoption of the findings and recommendations which will result from the Compton Airport element of the Los Angeles County Airport Land Use Plan.

## **LAND USE CONTROLS AND IMPACT MITIGATION TECHNIQUES**

In the light of the factors noted above, several land use compatibility concerns impacting Compton Airport and its environs must be addressed. Appropriate land use controls are required. The City of Compton is the local agency empowered by the State to ensure that appropriate land use controls are implemented in the vicinity of the Airport. Most important is the need to ensure that further incompatible development does not occur within the Airport's two Runway Protection Zones (RPZ) and approach/transitional corridors. Additional concerns involve aircraft overflight of areas located beneath the airport traffic pattern.

### **Airport Land Use Plan**

State law requires that every California county where there is a public-use airport must establish an Airport Land Use Commission (ALUC). State law currently designates the Los Angeles Regional Planning Commission as the ALUC for Los Angeles County. Legislation enacted in 1989 (Senate Bill 255-Bergeson) mandates the preparation of an airport land use compatibility plan for each airport located in Los Angeles County. This legislative requirement will result in the development of a "comprehensive land use plan" for the area around Compton Airport. Although this requirement is currently being reviewed by the state legislature, it is anticipated that an airport land use compatibility plan for Compton Airport may be prepared by the County at some point in the future.

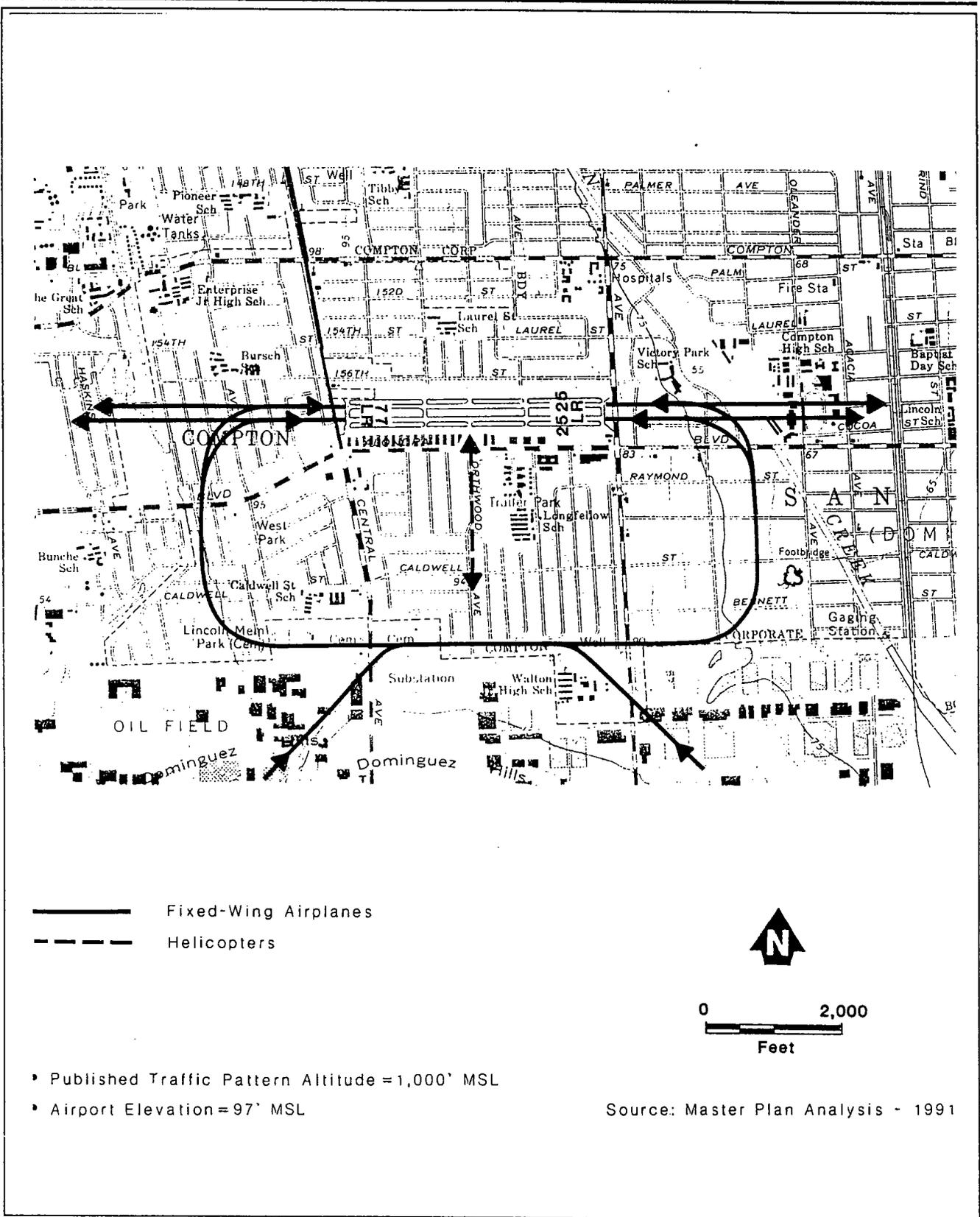


Figure 18

**Airport Flight Tracks**  
 Compton Airport

ALUC's have authority only over new development within an airport's environs. ALUC's planning authority is further limited by the ability of cities and counties to override the ALUC's recommendations. The limited amount of additional development possible in Compton Airport's environs diminishes the potential value of an ALUC comprehensive land use plan. However, it is recommended that the comprehensive land use plan for Compton Airport incorporate the land use compatibility measures identified in the Airport Master Plan.

### **Land Acquisition**

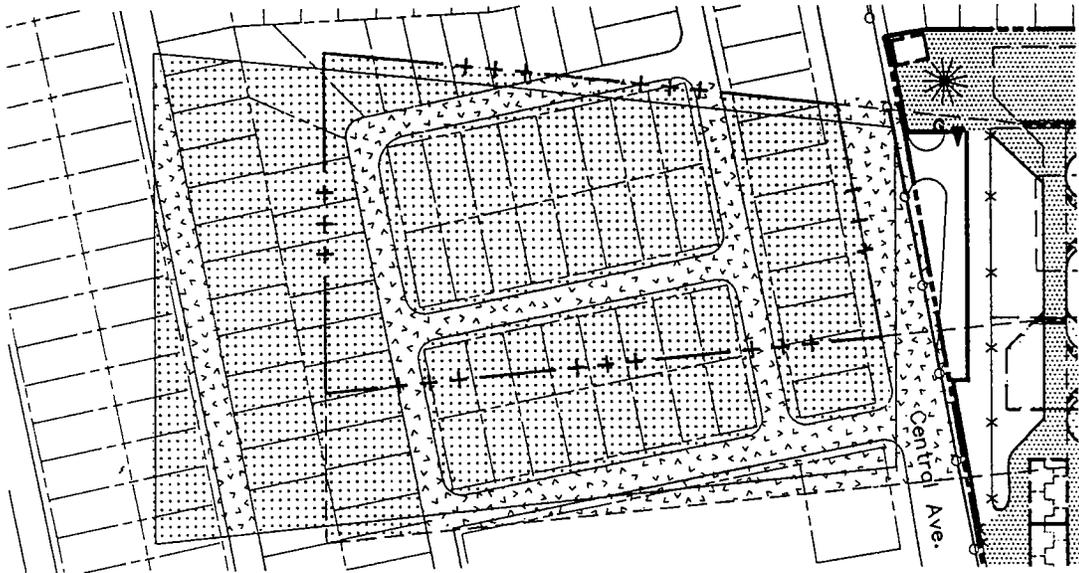
A relatively small portion of the land area encompassed by the Airport's two existing Runway Protection Zones is located within airport property (see Figure 193). The ownership of the land area encompassed by Compton's present and future Runway Protection Zones is identified in Table 16. The privately-owned land area within the Runway Protection Zones is composed of a mixture of residential and commercial/industrial use. The allocation of these uses is also identified in Table 16.

Virtually all of the private development within the Runway Protection Zones is incompatible with FAA and State guidelines. Noise, safety on the ground, safety of flight operations, and the requirement for height limits on structures and trees all contribute to this incompatibility. The residential land uses within both Runway Protection Zones are particularly undesirable in light of the high volume of aircraft overflying these areas at relatively low altitudes.

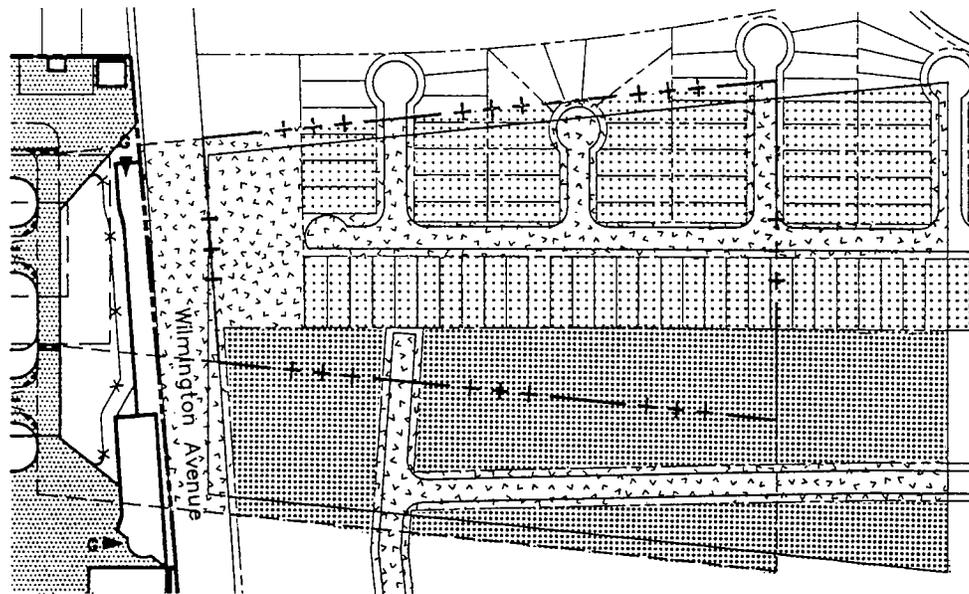
The fact is, however, that all of these land uses, including the residential development, have coexisted with Compton Airport operations for many years. No major problems have arisen and few complaints have been expressed by residents and users of these areas. The County's decision to provide greater than standard clearance in the approach zones has undoubtedly contributed to this positive coexistence.

The Airport has been fortunate in that the proliferation of objects and obstructions (e.g., trees, utility poles, structures, etc.) in the vicinity of the Airport has not significantly diminished the safety or utility of airport operations. However, it is recommended that this relatively unregulated approach be replaced by appropriate off-airport height and hazard control measures.

The most direct means of eliminating incompatible uses — in this case, principally residential uses — is to acquire them. However, affordable housing is limited in the Compton area. Any action directed toward acquisition and removal of existing residences would likely be politically difficult to implement. In addition, the cost of acquiring private properties within the Runway Protection Zones would undoubtedly be substantial and very difficult to justify on a cost/benefit basis. Conversion of residential properties to nonresidential use by means of rezoning and/or



RUNWAYS 7L, 7R, and 7 (Future)



RUNWAYS 25R, 25L, and 25 (Future)



- |   |                           |   |            |
|---|---------------------------|---|------------|
|  | Single-Family Residential |  | Public Use |
|  | Multi-Family Residential  |   |            |

Source: On-site Inventory

Figure 19

## Runway Protection Zones Compton Airport

Property Ownership	EXISTING		FUTURE	
	Runways 7L and 7R	Runways 25L and 25R	Runway 7	Runway 25
Airport	0 Acres ( 0%)	0 Acres ( 0%)	1.3 Acres (16.4%)	.9 Acres (11.2%)
Municipal	3.2 Acres (21.6%)	3.6 Acres* (23.9%)	3.2 Acres (40.1%)	2.8 Acres* (35.6%)
Private	11.7 Acres (78.4%)	11.3 Acres (76.1%)	3.5 Acres (43.5%)	4.3 Acres (53.2%)
<b>TOTAL</b>	<b>14.9 Acres 100%</b>	<b>14.9 Acres 100%</b>	<b>8.0 Acres 100%</b>	<b>8.0 Acres 100%</b>

Private Property Use	EXISTING		FUTURE	
	Runways 7L and 7R	Runways 25L and 25R	Runway 7	Runway 25
Single-Family Residential	11.7 Acres (100%)	5.4 Acres (47.9%)	3.5 Acres (100%)	2.8 Acres (65.1%)
Multi-Family Residential	0 Acres ( 0%)	5.9 Acres (52.1%)	0 Acres ( 0%)	1.5 Acres (34.9%)
Commercial/Industrial	0 Acres ( 0%)	0 Acres ( 0%)	0 Acres ( 0%)	0 Acres ( 0%)
<b>TOTAL</b>	<b>11.7 Acres 100%</b>	<b>11.3 Acres 100%</b>	<b>3.5 Acres 100%</b>	<b>4.3 Acres 100%</b>

\*Includes vacant lot adjacent to east side of Wilmington Avenue.

Table 16

**Land Uses in Runway Protection Zones  
Compton Airport**

acquisition and resale would be impractical and expensive because there are no current or anticipated market forces to support such a change. Importantly as well, there is no obviously urgent need for action and the other measures proposed herein should be effective in preventing new approach obstructions and incompatible uses. Given these present circumstances, a major program to acquire and remove incompatible uses within the Runway Protection Zones appears infeasible for the foreseeable future.

Nonetheless, despite the lack of current problems, the residential land uses within the Airport's Runway Protection Zones must be judged incompatible with aviation activities. Ultimately, this land should be converted to compatible uses. The County and City should endeavor to reverse or mitigate this existing land use incompatibility at every reasonable opportunity. Although no specific actions to accomplish this objective are presently recommended, the circumstances should be reevaluated whenever the Airport Master Plan, ALUC Plan, and General Plan are updated.

### **Height Limitation**

As noted earlier, numerous objects (e.g., buildings, antennas, pole lines, fences, walls, trees, and streets) penetrate the existing and future Part 77 surfaces for Compton Airport. To maintain adequate clearances for landing aircraft, the runway thresholds have been displaced at each end. Unless there is effective regulation, construction of new structures could require further displacement of the thresholds, effectively shortening the runway length available for landing aircraft. In addition, obstructions located near the departure end of the runway are a very real operational and safety consideration for aircraft taking off. Accordingly, preventing further obstructions from being developed should be the highest priority of both Los Angeles County and the City of Compton.

### ***Approach Surfaces***

If FAR Part 77 approach surfaces were used to strictly determine where all structures are to be permitted, there would be two alternative means of eliminating objects which penetrate the surfaces:

- Remove all structures which penetrate the approach surfaces associated with the proposed new runway end locations. This would require the acquisition and demolition of numerous residences, removal of several trees, and relocation of roads, utility poles, and perimeter walls; or
- Relocate the physical runway ends – not merely the thresholds – so that existing objects do not penetrate Part 77 surfaces. This would

require shortening the runway to a total useable length of just 2,440 feet.

Neither of these alternatives is judged to be practical. As was discussed previously, the former would be expensive, and socially and politically disruptive. The latter would eliminate most of the utility of the Airport and could compromise operational safety.

Alternately, Part 77 surfaces could be applied only to **new** structures; existing structures would be permitted to remain. Since most of the parcels adjacent to the Airport are fully developed, this would restrict further development on a few parcels without significantly benefiting the Airport.

The most reasonable approach would be to not permit any structure or activity to be developed in the area beneath the Part 77 approach zones that would result in further large congregations of people or penetrate the runway's existing threshold clearance plane.

For existing Runways 7L and 7R and future Runway 7, it is suggested that no objects be permitted to penetrate a surface that begins at the displaced threshold, is 250-foot-wide at its inner point, 5,000-foot in length, 1,250-foot-wide at its outer point, with a slope of 26:1. Similarly, for existing Runways 25L and 25R and future Runway 25, it is suggested that the same dimensioned surface be established, but with a slope of 38:1. It is further suggested that the pole lines, light poles, and trees located in the public rights-of-way associated with Central and Wilmington Avenues be removed or relocated to mitigate their impact on airport operations and safety.

Implementation and enforcement of this standard would ensure that the effective length of the runway would not be further reduced or aircraft operating safety compromised.

Trees constitute a significant number of the objects which penetrate the Part 77 approach surfaces. It is, therefore, essential that the growth of the trees be surveyed on a regular basis and, when necessary, the trees should be topped or removed. Los Angeles County should work with the City of Compton and adjacent property owners to develop a mutually acceptable program for tree height control. The residents and land owners of the affected properties in the approaches should be contacted early in the process to request their participation and cooperation in any tree height control program. Easements may be required in these areas to permit the required action.

### ***Transitional Surfaces***

The transitional surfaces defined by FAR Part 77 are intended to identify the areas adjacent to the runway and approaches which should remain

free of objects. Numerous objects (e.g., light poles, structures, etc.) penetrate the 7:1 transitional surfaces on both sides of the runway. It is feasible that some of these penetrations can be mitigated by object removal or relocation. A formal FAA airspace review of these penetrations will be required to determine which penetrations are significant and the appropriate mitigation response.

### **Overflight Areas**

Very few complaints are received regarding aircraft operations at Compton Airport. As long as this general acceptance by the surrounding community continues, it is not recommended that an aggressive buyer awareness program be undertaken. It could easily have the reverse of the intended effect. Los Angeles County should continue to monitor the number and location of complaints. Airport staff should continue to respond to individual complaints in a timely manner. If a pattern of complaints emerges, the staff should meet with the citizens concerned to determine how their concerns can be addressed and, hopefully, resolved.

## **ENVIRONMENTAL IMPACTS OF AIRPORT DEVELOPMENT**

As an integral element of this planning effort, an Initial Study of the environmental impacts associated with implementation of the Compton Airport Master Plan was prepared. This Initial Study was conducted in accordance with California Environmental Quality Act guidelines and requirements. It is included herein as Appendix E.

Both the temporary and permanent impacts of the proposed construction and the long-term effects of the increased airport use are considered. The principal physical impacts will result from the modest earthwork and new pavement associated with the relocation of the south parallel taxiway and expansion of the building area facilities. Standard engineering design and construction methods are capable of adequately mitigating the potential erosion, water quality, and other similar types of impacts. Given previous intensive development in the area, no impacts on endangered species are anticipated, nor should there be any impact on potential historical or archaeological artifacts.

Increased use of the Airport will produce some additional noise and safety impacts, as addressed earlier in this chapter. The future single runway configuration will result in the concentration of all approach/departure flight paths along the existing Runway 7L-25R alignment. These impacts are not projected to have a significant effect on surrounding land uses. Land use control actions recommended herein will serve to eliminate most potential future compatibility problems.

## **SUMMARY**

Compton Airport is an important public air transportation resource serving the citizens and businesses of the Compton area and the greater Los Angeles metropolitan region. If this vital general aviation airport is to survive and improve, it is essential that the City of Compton and Los Angeles County work closely together to prevent further incompatible development in the Airport's vicinity.

It is recommended that the height/hazard control actions and land use compatibility measures identified herein be incorporated in all applicable planning studies and zoning ordinances. The anticipated ALUC airport land use compatibility plan to be developed by Los Angeles County should expand upon and definitively address the land use issues and mitigation recommendations identified in this Master Plan.

# 8

## **Financial and Implementation Issues**

---

# Financial and Implementation Issues

## CAPITAL IMPROVEMENT PROGRAM

### Cost Estimates

Table 1 in Chapter 2 sets forth cost estimates (based upon 1991 dollar values) for proposed airport development at Compton Airport over the next 20 years. The estimates are tabulated in three stages (0-5 years, 5-10 years, and 10-20 years) consistent with the anticipated project implementation sequence. It must be emphasized that the developmental costs presented in Table 1 have been estimated on an order-of-magnitude basis for preliminary planning and programming purposes only. Specific project analysis and detailed engineering design will be required at the time of project implementation to provide more refined and up-to-date estimates of developmental costs. As presented in Table 1, the Master Plan projects a total Capital Improvement Program cost of approximately \$6.3 million over the 20-year planning period.

### Capital Funding Sources

There are a variety of sources from which funding and financing for publicly-owned airport facilities and improvements can be obtained. These sources include federal grants, state grants and loans, airport sponsor self-funding, and private investment.

#### *Federal Grants*

The most common source of federal aid for airport facilities is currently the Airport Improvement Program (AIP) administered by the Federal Aviation Administration. Re-established in 1987, the AIP is the latest evolution of a program originally authorized by Congress in 1946 as the Federal Aid to Airports Program (FAAP).

The AIP is based upon a trust fund concept, allocating aviation-generated tax revenues for specified airport facilities on a local matching share basis. The program currently provides for 90% federal participation and 10% local participation on eligible airport projects in the state of California. Historically, the local match requirement has ranged as high as 50%. Whether the relatively generous 90% federal share will continue beyond the current legislation's expiration in 1992 is not certain.

Although the AIP is designed specifically for public airport improvement, there are other federal programs which can also be applied to airport needs. The federally-funded Economic Development Administration Program and the State and Local Fiscal Assistance Act of 1972, as amended, have also been used on a limited basis to fund airport facilities not otherwise eligible for AIP grants. As it is relatively difficult for public airports such as Compton Airport to qualify for these special federal funding programs, these resources have not been considered in the formulation of Master Plan funding alternatives.

### ***State Grants and Loans***

The California Aid to Airports Program (CAAP), administered by the State Division of Aeronautics, is similar to the federal AIP grant program inasmuch as the state program provides airport development funds on a matching share basis, which is currently 90% state and 10% local. The state grants are allocated through the California Transportation Commission and are governed by the priorities set forth in the State Transportation Improvement Program (STIP).

Typically, the state grant program has concentrated on construction of airfield improvements that primarily benefit general aviation users. However, funding opportunities within this program are somewhat limited at present due to state funding constraints. An airport improvement project submitted for a CAAP grant faces substantial statewide competition for limited funds.

The State Division of Aeronautics also administers an Annual Grant Program through which all public airports in the state receive \$5,000 per year to be used for grant eligible projects. Funds received must be kept in a Special Aviation Account and, with permission from the Division of Aeronautics, can be accumulated for up to five years toward a large capital project. The funds can also be used as part of a local match for a federal grant.

One other funding source available from the California Division of Aeronautics is the State Airport Loan Program. This program was established to allow public airport owners the opportunity to borrow funds at lower than commercial interest rates for use on specified revenue-generating projects and as the local share of FAA grant-funded projects. In the past,

the most common use of these loans was for hangar construction. More recently, the primary use has been for the local share of an FAA grant.

Due to recent changes in the State's taxing authority, additional State monies may soon be available to supplement these State airport development funding programs.

### ***Airport Sponsor Self-Funding***

At large, publicly-owned airports, this source of funding typically involves the issuance of general obligation bonds or revenue bonds. General obligation bonds are backed by the full faith and credit of the issuing government agency. General obligation bonds are usually limited by a restriction or cap placed on the issuing governmental agency's indebtedness. Revenue bonds are secured by the pledge of revenue from one or more airport facilities. A special disadvantage of revenue bonds is the coverage requirement that net operating revenue exceed debt service by a stipulated ratio. Additionally, the fixed underwriting costs and complexities of a bond sale generally dictate their use for larger scale projects only. For Compton Airport, the costs and restrictions associated with the issuance of general obligation bonds or revenue bonds combine to make such sources impractical for use in funding airport capital projects.

At publicly-owned airports the size and character of Compton Airport, airport sponsor self-funding is principally provided by a combination of airport-generated income and retained earnings and the airport sponsor's internal financial resources (i.e., Los Angeles County Aviation Division general funds). Funding of airport improvements and providing the local share for grants-in-aid from these sources is the simplest and most economical method because direct interest costs are eliminated.

In the specific case of Compton Airport, operating revenues are significant and operating expenses are modest. The Airport is fully capable of supporting its operational and maintenance costs and contributing a significant surplus for use in funding necessary airport capital improvements. In addition, the County may find it necessary and/or desirable to use County Aviation Division general fund resources to provide supplemental funding or interim financing for airport capital development. Potentially, as airport activity increases, this form of sponsor funding can be supplanted by a funding program based entirely upon federal and state grants, airport-generated income, and private investment.

### ***Private Investment***

Private sector investment is an important source of funding for such airport facilities as fixed base operations and aircraft storage hangars. Los Angeles County can continue to enhance the Airport's attractiveness to private investors by promoting the Airport, improving its facilities, and expanding its service offerings. By maintaining a prudent lease policy and

enforcing reasonable development standards, additional private investment can be attracted to the Airport. In this manner, the County can shift the burden of financing certain facility development to the tenant while increasing the asset value of the Airport, thereby adding to the Airport's attractiveness and revenue-producing capability.

The most common sources of funding for private sector development are commercial lending institutions and insurance companies. In the case of private development on public lands, these types of financing may be difficult and expensive to obtain because the borrower can encumber only the improvements as loan collateral, not the underlying publicly owned land. These conditions necessitate close attention to leasing policies and tenant contract negotiations. It is essential that agreements be reached with the tenants which provide for adequate airport revenues and facility development, while encouraging private investment and satisfying the tenant's borrowing requirements. Specifically, the lease term must be sufficient to allow reasonable investment amortization over the period of the agreement.

On occasion, private gifts and contributions are a source of funding for certain airport improvements. Often, the private contribution facilitates the development of public airfield improvements that jointly benefit both the private and public sectors.

## **Conclusions**

As noted previously, the proposed Capital Improvement Program will total \$6.3 million over the projected 20-year period, with \$80,000 of this total to be applied toward projects in the initial five-year period. Assuming that full funding is available from AIP and/or CAAP grants and that private funds are invested as anticipated, the County's share over the 20-year planning period will be about \$3.7 million. It is anticipated that the County's share will be funded through a combination of Compton Airport funds (income and retained earnings) and County Aviation Division funds.

## **PRO FORMA FINANCIAL PROJECTION**

A ten-year projection of operating revenues, operating expenses, and net income for Compton Airport is set forth in Table 17. These values are intended as an initial guide for financial planning purposes. It is recommended that the County periodically update and revise this financial projection to correspond with future information.

The projection focuses on the first five years of the planning period. All data is presented in 1991 dollar values; no attempt is made to adjust for

future inflation. The projection values set forth in Table 17 are based upon the following factors and specific planning assumptions:

- Aviation activity at Compton Airport – both based and annual operations – will increase as anticipated by the Master Plan forecasts (See Chapter 4-Table 5).
- All revenue and expense categories will track the activity levels and facility development scenarios identified in previous chapters.
- Airport management will continue to review and adjust all rates and charges on an annual basis consistent with demand and airport role. As a minimum, the rates and charges should track the Consumer Price Index to maintain constant value.
- Eligible capital improvements will be financed to the maximum extent possible with Federal Aviation Administration Airport Improvement Program funds and State of California grant/loan program funds, with the County's share coming from airport income and retained earnings, and County Aviation Division funds.
- No major capital expenditures other than those identified in this report will be required during the forecast period.
- All T-hangar development will be constructed as demand warrants and will be funded by the County. Corporate hangars and FBO facilities will be financed by the private sector. Comparative advantages and disadvantages of other hangar financing options are discussed in Appendix F – Hangar Financing Options.

## **FINANCIAL SUMMARY**

As can be seen in Table 17, Compton Airport's projected income and retained earnings should be adequate to fund the sponsor's share of the Capital Improvement Program costs associated with the short-range (i.e., five-year) financial planning period. This is not surprising in that the major portion (\$6.2 million or approximately 98.7%) of the Airport's 20-year Capital Improvement Program local share requirement occurs beyond the initial five-year period. It is anticipated that the cumulative income generated by the Airport will also be sufficient to fund the sponsor's share of all capital improvements identified in the Master Plan. However, due to possible cash flow considerations, supplemental funding and/or interim financing will be required to provide for the timely and cost-effective implementation of the Airport Capital Improvement Program.

ALL VALUES ARE 1991 DOLLARS x 1,000

	<u>Actual<sup>1</sup></u>		<u>Projected<sup>2</sup></u>			
	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
<b><u>Operating Revenues</u></b>						
Rentals	755.8	769.0	782.5	796.2	810.1	824.3
Fuel Sales	198.8	204.3	209.9	215.7	221.6	227.7
Miscellaneous	<u>3.3</u>	<u>3.4</u>	<u>3.4</u>	<u>3.5</u>	<u>3.5</u>	<u>3.6</u>
<b>Total Operating Revenues</b>	957.9	976.7	995.8	1,015.4	1,035.2	1,055.6
<b><u>Operating Expenses</u></b>						
Salaries/Employee Benefits	319.8	322.6	325.4	328.3	331.1	334.0
Supplies and Materials	<u>285.7</u>	<u>289.6</u>	<u>293.6</u>	<u>297.6</u>	<u>301.7</u>	<u>305.9</u>
<b>Total Operating Expenses</b>	605.5	612.2	619.0	625.9	632.8	639.9
<b>Total Operating Income (Loss)</b>	352.4	364.5	376.8	389.5	402.4	415.7
<b>Less Administrative Overhead</b>	<u>123.6</u>	<u>124.7</u>	<u>125.8</u>	<u>126.9</u>	<u>128.0</u>	<u>129.1</u>
<b>Net Income (Loss)</b>	228.8	239.8	251.0	262.6	274.4	286.6
<b>Cumulative Income (Loss)</b>	---	468.6	719.6	982.2	1,256.6	1,842.22

Table 17

**Pro Forma Financial Projection**  
Compton Airport

## ALL VALUES ARE 1991 DOLLARS x 1,000

		<u>Projected<sup>2</sup></u>			
	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
<b><u>Operating Revenues</u></b>					
Rentals	838.7	853.3	868.3	883.5	899.0
Fuel Sales	233.9	240.4	247.0	253.8	260.8
Miscellaneous	<u>3.7</u>	<u>3.7</u>	<u>3.8</u>	<u>3.8</u>	<u>3.9</u>
<b>Total Operating Revenues</b>	1,076.3	1,097.4	1,119.1	1,141.1	1,163.7
<b><u>Operating Expenses</u></b>					
Salaries/Employee Benefits	337.0	340.0	342.9	345.9	348.9
Supplies and Materials	<u>310.1</u>	<u>314.4</u>	<u>318.7</u>	<u>323.1</u>	<u>327.5</u>
<b>Total Operating Expenses</b>	647.1	654.4	661.6	669.0	676.4
<b>Total Operating Income (Loss)</b>	429.2	443.0	457.5	472.1	487.3
<b>Less Administrative Overhead</b>	<u>130.2</u>	<u>131.4</u>	<u>132.5</u>	<u>133.7</u>	<u>134.9</u>
<b>Net Income (Loss)</b>	299.0	311.6	325.0	338.4	352.4
<b>Cumulative Income (Loss)</b>	1,842.2	2,153.8	2,478.8	2,817.2	3,169.6

**Notes:**

1. The Actual 1990 revenue and expense figures shown above are from the Los Angeles Department of Public Works – Aviation Enterprise Actual Revenue/Expense Budget for Fiscal Year 1989/90 – Compton Airport. Effective 4/1/91, COMARCO assumed managerial and operational responsibility for the Airport and instituted a revised budgeting/accounting/reporting format that differs somewhat from the County format used herein.
2. The projections set forth herein were prepared by Hodges & Shutt as part of this Master Plan and reflect the operational factors and planning assumptions identified in the accompanying text.
3. Totals may vary in some cases due to rounding off.

Table 17 continued

**Pro Forma Financial Projection**  
Compton Airport

As noted above, over the course of the 20-year planning period, it is anticipated that Compton Airport operating income will be adequate to support the proposed Capital Improvement Program. The Airport's fiscal condition could be improved by further reducing expenses or increasing revenues. Operating expenses are already relatively modest, however, and a significant reduction in expenses may not be achievable. Airport revenues could be enhanced by developing new sources of airport-related revenue or by increasing rates charged to airport lessees, permittees, and users. Caution must be exercised, however, in establishing higher rates at the Airport. A reasonable balance must be sought between the need for a financially viable airport, the continuation of subsidies to the private sector, and general aviation market conditions. In this regard, Compton Airport's rates and fees structure should be established in a manner which permits the County to safely operate and improve the Airport while attracting the Airport's target user groups – personal/recreational aircraft users and small corporate/business aircraft users desiring general aviation air transportation access to the central Los Angeles area.

## **MASTER PLAN ADOPTION AND IMPLEMENTATION ACTIONS**

In order for the County to proceed with adoption of the Airport Master Plan and implementation of the first-phase improvement projects, a variety of state and federal environmental and other review or permit actions must be completed. The major steps in this process are as follows:

### **Master Plan Adoption**

- **Environmental Impact Documentation** – As part of this Master Plan, an Initial Study assessing the potential environmental impacts associated with the construction and long-term use of the proposed airport improvements has been prepared in accordance with California Environmental Quality Act (CEQA) guidelines (see Appendix E). It is anticipated that this Initial Study will be sufficient to enable preparation of a Negative Declaration allowing adoption of the Master Plan. More substantial environmental documentation may be necessary in accordance with state guidelines (CEQA) before the major projects proposed in the plan can be implemented (see below). No Federal Aviation Administration environmental review is required for adoption of the Master Plan.
- **County Aviation Commission** – The Aviation Commission has participated in the preparation of the Airport Master Plan through discussions held at regular Commission meetings. The Commission should review

the completed draft Master Plan Report and pass its recommendations along to the County Board of Supervisors.

- **Airport Land Use Commission** – State law requires that an airport master plan be referred to the appropriate county airport land use commission (ALUC) to determine if the master plan is consistent with the commission's plan. The Los Angeles Regional Planning Commission is currently the designated ALUC in Los Angeles County. Recent changes in state aeronautics law as it pertains to the ALUC in Los Angeles County, together with the lack of locally adopted airport land use plans, lend uncertainty to this review process. Nevertheless, it is suggested that the Regional Planning Commission be given the opportunity to review and comment upon the Compton Airport Master Plan.
- **County Planning Commission** – Action by the County Planning Commission may be required for two purposes: (1) to determine the consistency between the Airport Master Plan and the County General Plan; and (2) to certify a Negative Declaration.
- **Board of Supervisors** – The County Board of Supervisors has the ultimate responsibility for adoption of the Airport Master Plan. The Board's action should follow established County procedures regarding public hearings, public notification, etc.
- **Federal Aviation Administration** – On-going coordination has been maintained with the FAA throughout the Master Plan study and the agency will receive the draft plan for informal review. Following the County's adoption of the Master Plan, the FAA will conduct a formal internal coordination and review of the Airport Layout Plan drawings. After any necessary technical revisions are made, the FAA will then approve the Airport Layout Plan as the basis for the engineering design and grant eligibility of specific projects. The FAA's approval of the plan is not a commitment to the future funding of any given project.

## **Implementation**

- **Proposed Projects** – As described elsewhere in this report, several of the proposed airport improvements are programmed for early implementation. These projects include the establishment of appropriately configured Object Free Areas and Runway Safety Areas for each runway end; completion of the new terminal building and support facilities; and installation of additional aircraft storage hangars. The bulk of the capital-intensive airport improvements (e.g., upgrading Runway 7L-25R, new fueling facility, and airport traffic control tower) are programmed to occur during the mid-range (5-10 year period).
- **Project Funding** – The County should assess the availability and timing of local funds that can be committed to the proposed airport improvements. Once a decision is made to proceed with specific

projects, an Airport Improvement Program grant preapplication should be submitted to the California Division of Aeronautics with a copy to the Federal Aviation Administration as soon as possible.

- **Engineering Design** – The Airport Master Plan Report and Airport Layout Plan drawings serve only as the starting point for the more detailed engineering design work necessary for actual construction of the proposed improvements. After the Master Plan has been adopted and a decision has been made to construct the proposed projects, the County should proceed in a timely manner to arrange a contractual agreement with a qualified airport engineer. To assure a continuity in design development, it is suggested that the agreement cover not just the immediate projects, but other major improvements proposed to be constructed over the next three to five years.
- **Environmental Impact Documentation** – To satisfy CEQA requirements, an environmental analysis may need to be performed with regard to the proposed runway reconstruction and increase in aircraft parking capacity. There is no apparent requirement for preparation of a federal environmental document. The projects proposed in the Master Plan do not meet the Federal Aviation Administration criteria indicating the need for an Environmental Assessment and they are therefore regarded as Categorically Excluded from federal environmental review.
- **State Airport Permit** – The proposed modifications to the runway configuration may require that the Airport Permit issued by the California Division of Aeronautics be amended. The need for this action should be reviewed with the State.
- **Airspace Review** – Before work is conducted on or near the airport runway, a "Notice of Proposed Construction" must be submitted to the Federal Aviation Administration for their review and comment.

9

**Aviation  
Marketing  
Program**

---

# Aviation Marketing Program

## INTRODUCTION

Over the past decade, the nation's general aviation industry has been in a tailspin. The industry has experienced significant decreases in aircraft production and sales, new pilot starts, active pilot certificates, and aircraft usage. Only within the past year have general aviation activity indices reflected a modest turnaround — a nationwide resurgence of interest in the advantages and efficiencies of the general aviation air transportation system.

In an affirmative response to these challenging market conditions, the County of Los Angeles directed the airport master plan consultant, Hodges & Shutt, to develop a program for marketing the facilities, capabilities, and services of Compton Airport to both the general aviation community and the community-at-large. The resultant program has been developed with the goal of improving the Airport's overall operating environment and financial position, encouraging the development and growth of desired on-airport aviation businesses and concessions, and enhancing user and public perception and understanding of the Airport and general aviation.

## DISCUSSION

The aviation marketing program for Compton Airport is presented in four sections. The first section describes the Airport's present operational role and user group characteristics. The second section draws upon the findings and conclusions of the Master Plan to project the Airport's future operational role and user group characteristics. In the third section, the opportunities, limitations, and potential responses associated with the marketing of the Airport are identified and explored. The fourth section, entitled Aviation Marketing Plan, presents a detailed listing of specific aviation marketing actions recommended for implementation at Compton Airport.

This program has been prepared in a manner which encourages regular review and updating by the County. As the general aviation market environment evolves, it is recommended that this program be reviewed and adjusted to reflect changes in aviation market conditions, user needs, and airport service requirements.

## **PRESENT AIRPORT OPERATIONAL ROLE AND AIRPORT USER GROUP CHARACTERISTICS**

Since its establishment in 1924, Compton Airport's principal operational role has been as a base location for personal, recreational, and business aircraft users living and working in the central Los Angeles area. In addition, the Airport has served as an important area air access point for transient aircraft users — particularly those users desiring a less complex and less expensive operating environment.

Of particular note is the relatively high percentage (approximately 35%) of aircraft based at Compton Airport that are considered "enthusiast" aircraft. The enthusiast aircraft classification includes antique, classic, sport, amateur-built, and warbird aircraft types.

Supplementing the above noted fixed-wing aircraft activity is the relatively recent increase in helicopter activity occurring at the Airport. Within recent years, the Airport has experienced increased helicopter operations by both private and public operators. Contributing substantially to this increased activity are the three helicopters based at the Airport and operated by the City of Compton Police Department — Air Support Division.

The large majority of aircraft based at the Airport are single-engine piston-powered airplanes. Of the 350 aircraft based at Compton Airport in 1990, 94% are single-engine airplanes, 5% are twin-engine airplanes, and 1% are helicopters. This mix of based aircraft has remained essentially the same over the past several years.

The predominant use of Compton Airport by both based and transient personal, recreational, and business aircraft users operating single-engine airplanes is largely the result of the following factors:

- Limited facilities and services are available at Compton Airport to attract and accommodate business and corporate users operating sophisticated, high-performance, piston- and turbine-powered, multi-engine aircraft. Aeronautical facilities and services generally desired by business and corporate aircraft users but not available at Compton Airport include a precision instrument approach, runway length of 5,000 feet or greater, a variety of ground transportation options, and corporate aircraft oriented fixed base operators.

- Availability of nearby well-equipped public-use airports (e.g., Los Angeles International, Long Beach, Torrance Municipal, and Hawthorne Municipal) that offer the sophisticated airport facilities and services desired by business and corporate aircraft operators. These airports are well positioned to serve the same market area as Compton Airport.
- Availability of hangars suitable for storage of personal, recreational, and business aircraft types.
- Compton Airport offers lower aircraft operating and storage costs than nearby airports.
- High area demand for airport facilities and services suitable for personal and recreational aircraft use. There is no airport comparable to Compton located in the central Los Angeles area.
- The absence of an air traffic control tower at Compton Airport is seen by some small aircraft users as an attribute. On the other hand, most operators of sophisticated, high-performance aircraft view the absence of an air traffic control tower as detrimental.
- The general perception by aircraft users that Compton Airport is not as secure as other area airports. This security interest is of particular concern to corporate aircraft operators.

Over the past five years, Compton Airport based aircraft activity has fluctuated substantially — from a count of 365 aircraft in 1985, to a high of 467 aircraft in 1988, to a current count of 350 in 1990. Annual operations counts are estimated to have remained in the 90,000 range. During this period, there has been no appreciable change in the Airport's operational role. The Airport continues to serve primarily as a base location for central Los Angeles area personal, recreational, and business aircraft users. If any trend has been apparent, it has been a slight shift towards greater use of Compton Airport — both based and transient activity — by sophisticated, high performance, single-engine aircraft (e.g., Beechcraft Bonanza, Cessna P-210, Piper Malibu, etc.) and public-service helicopters (e.g., City of Compton Police Department). This increased use of Compton Airport by sophisticated business and corporate aircraft may be in part attributable to the recent development of the nearby Highway 91 industrial corridor.

Nearby competitive public-use airports located within 10 nautical miles of Compton Airport include Los Angeles International Airport (LAX), Long Beach Airport (LGB), Torrance Municipal Airport (TOA), and Hawthorne Municipal Airport (HHR). The respective locations of these airports are depicted in Chapter 3-Figure 7. All of these facilities are well-equipped public-use airports capable of serving a wide range of sophisticated general aviation piston and turbine powered aircraft. Typically, only the more

sophisticated corporate aircraft make use of Los Angeles International Airport.

## **FUTURE AIRPORT OPERATIONAL ROLE AND AIRPORT USER GROUP CHARACTERISTICS**

As indicated in Chapter 4, the Master Plan does not envision any substantial change in the future operational role of the Airport or in the Airport's future user group characteristics. Accordingly, it is anticipated that Compton Airport's future operational role will be substantially the same as its present operational role — a base location for central Los Angeles area personal, recreational, and business aircraft users. It can be anticipated that the Airport will see increased utilization by business and small corporate aircraft. Aircraft types typical of this use category include high-performance single-engine airplanes (e.g., Beechcraft Bonanza, Cessna P210, Piper Malibu, etc.), light to medium twin-engine piston and turboprop-powered airplanes (e.g., Cessna 414, Beechcraft Baron, Piper Aerostar, Beechcraft King Air, etc.), and occasional light corporate jets (e.g., Cessna Citation, Beech 400, Lear 31, etc.). Such business and small corporate aircraft users, while they could better be accommodated at nearby Long Beach, Torrance Municipal, and Hawthorne Municipal airports, might be attracted to Compton Airport because of its more convenient location and lower use costs.

In addition, it can be anticipated that the airspace in the vicinity of Compton Airport will become increasingly complex and aircraft operating requirements more restrictive. Accordingly, marginal general aviation aircraft users may seek alternative, less complex airports in outlying areas. Aircraft remaining at Compton Airport will be relatively well-equipped and more regularly utilized.

Supplementing this fixed-wing aeronautical activity at Compton Airport will be an increase in helicopter activity, particularly flight operations generated by the City of Compton Police Department helicopter unit, Compton Airport fixed base operators, and business/corporate helicopter operators. Additional helicopter activity will be generated by local municipalities who choose to base their public-service (i.e., police, fire, emergency response, and community support) helicopters at the Airport.

The principal Airport user groups identified above — personal, recreational, and business aircraft users and public-service helicopter operators — can be allocated into "based" and "transient" use categories depending upon the nature of the users' activity. Airport activity records indicate that the predominant users of Compton Airport are its based clientele. Transient aircraft operations represent a relatively small portion of Compton's activity. A significant percentage of Compton's transient operations are believed to be generated by flight training aircraft which are based at

nearby airports such as Long Beach, Torrance Municipal, and Hawthorne Municipal. Such aircraft prefer to use Compton Airport due to its less complex operating procedures, lower traffic activity levels, and more homogeneous air traffic mix.

## **AVIATION MARKETING OPPORTUNITY ANALYSIS**

As part of this aviation marketing program, an analysis of aviation marketing opportunities at Compton Airport was prepared. This analysis indicates that there are opportunities, limitations, and appropriate responses associated with the use of the Airport by each principal airport user group. These factors are identified in Table 18.

This analysis suggests that considerable capital and operating expenditures would be required at Compton Airport to attract and accommodate high-performance multi-engine business and corporate airplanes on a regular basis. These expenditures would include the substantial reconfiguration of the airfield (lengthened and strengthened runway, increased dimensional setbacks, and expanded aircraft parking areas) and the installation of an instrument approach. Considerable airport basing capacity would have to be sacrificed to accommodate such operations. This finding further supports the conclusion that the primary market groups for Compton Airport are the personal, recreational, and business aircraft user.

## **AVIATION MARKETING PLAN**

As stated at the outset, the goals of this aviation marketing program are: (1) To improve the Airport's overall operating environment and financial position; (2) to encourage the development and growth of desired on-airport aviation businesses and concessions; and (3) to enhance user and public perception and understanding of the Airport and general aviation. To fully realize these goals, it will be necessary to accomplish the following marketing tasks:

- Endeavor to satisfy the Airport's existing based and transient aircraft user groups.
- Attract additional based and transient aircraft users consistent with the Airport's stated operational role as a facility predominantly serving the personal, recreational, and business aircraft user groups.
- Provide for increased use of the Airport by public-service helicopter operators.

- Provide a positive airport environment that encourages the development and growth of desired on-airport aviation businesses and concessions.
- Promote the attributes and advantages of the Airport to the respective aircraft user groups, local businesses, and the community-at-large.

A comprehensive listing of aviation marketing actions has been prepared specifically for use at Compton Airport. The listing is presented in four sections to differentiate between marketing actions related to based aircraft users, transient aircraft users, airport tenants and concessionaires, and the community-at-large.

### **Aviation Marketing Actions – Compton Airport Based Aircraft Users**

The following actions should be considered in marketing Compton Airport to its based aircraft users:

- Emphasize and promote desire to be "best general aviation airport in region" and "general aviation gateway to the central Los Angeles area". Cater to personal, recreational, and business aircraft users operating single-engine and light twin-engine aircraft.
- Provide adequate physical plant (runways, taxiways, aprons, etc.) as identified in the Airport Master Plan.
- Adequately maintain appearance and serviceability of all airport facilities and structures.
- Provide adequate approach instrumentation and lighting consistent with airport operational role and user requirements.
- Establish a fee schedule which reflects the operational role of the Airport and the Airport's somewhat limited facilities, amenities, and capabilities.
- Do not "over-design" or "over-build" facilities unnecessarily increasing capital and operating costs.
- Offer an "open-door" management policy and effectively communicate with airports users.
- Have a "suggestion box" and respond to suggestions through an airport newsletter.

Principal Airport User Group	Opportunities	Limitations	Responses
<b>Based Personal, Recreational, and Business Users</b> <i>(Single-engine and light twin-engine aircraft/ fixed-wing and rotary-wing)</i>	<ul style="list-style-type: none"> <li>- Predominant existing airport service role</li> <li>- Adequate existing infrastructure</li> <li>- No nearby comparable competition</li> <li>- Outside of TCA and ARSA</li> <li>- Proximity to user population</li> <li>- Less costly than LGB, TOA, and HHR</li> <li>- Small T-hangers available</li> <li>- FBO's cater to light aircraft</li> <li>- Lower cost fuel and storage</li> <li>- Homogeneous air traffic mix</li> <li>- Low noise impact</li> <li>- Less traffic congestion</li> <li>- Considerable "enthusiast" aircraft</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of IFR approach</li> <li>- Limited hangar availability</li> <li>- Complex area airspace and operating procedures</li> <li>- Aircraft must be Mode C equipped</li> <li>- Security concerns</li> <li>- Negative user perception of area</li> </ul>	<ul style="list-style-type: none"> <li>- Pursue installation of IFR approach</li> <li>- Increase availability of hangars</li> <li>- Improve airport and enhance services</li> <li>- Offer "self-service fueling" to lower fueling costs</li> <li>- Cater to personal, recreational, and business aircraft users</li> <li>- Upgrade security</li> </ul>
<b>Transient Personal, Recreational, and Business Users</b> <i>(Single-engine and light twin-engine aircraft/ fixed-wing and rotary-wing)</i>	<ul style="list-style-type: none"> <li>- Above Opportunities plus:</li> <li>- Possible to avoid TCA and ARSA penetration</li> <li>- Coffee shop/snack bar available</li> </ul>	<ul style="list-style-type: none"> <li>- Above Limitations plus:</li> <li>- Limited ground transport options</li> <li>- Attractive nearby alternatives (LGB, TOA, and HHR)</li> </ul>	<ul style="list-style-type: none"> <li>- Above Responses plus:</li> <li>- Provide rental car availability</li> <li>- Market Compton Airport attributes</li> </ul>
<b>Based and Transient Business and Corporate Users</b> <i>(Complex and turbine aircraft/fixed-wing and rotary-wing)</i>	<ul style="list-style-type: none"> <li>- Proximity to central LA area businesses</li> <li>- Lower cost fuel and storage charges</li> <li>- Less traffic congestion than at alternatives - LGB, TOA, and HHR</li> <li>- Excellent freeway access</li> </ul>	<ul style="list-style-type: none"> <li>- Above Limitations plus:</li> <li>- Inadequate runway length and weight-bearing capacity</li> <li>- Lack of corporate aircraft oriented FBO's and service amenities</li> <li>- Potential for noise problems</li> <li>- Need to significantly adjust facility configuration to accommodate larger/ faster corporate aircraft</li> <li>- Competing with nearby LGB, TOA, and HHR</li> <li>- Lack of air traffic control tower</li> </ul>	<ul style="list-style-type: none"> <li>- Above Responses plus:</li> <li>- Extend runway and increase weight-bearing capacity of airfield (\$\$)</li> <li>- Encourage development of corporate aircraft oriented FBO's and service amenities</li> <li>- Build corporate aircraft-sized hangars</li> <li>- Develop noise abatement program</li> <li>- Reconfigure airfield to accommodate larger/faster corporate aircraft users.</li> <li>- Cater to business/corporate aircraft users.</li> <li>- Establish ATC tower</li> </ul>
<b>Public-Service Helicopter Operators</b>	<ul style="list-style-type: none"> <li>- Existing airport service role</li> <li>- Positive community perception</li> <li>- Less complex airspace</li> <li>- Lower cost fuel and storage</li> <li>- Presence enhances airport security</li> </ul>	<ul style="list-style-type: none"> <li>- Mix of fixed-wing and rotary-wing aircraft</li> <li>- No air traffic control tower</li> <li>- Constrained helicopter facility development area</li> <li>- Constrained airfield operational area</li> <li>- Potential for noise problems - especially during late night/early morning operations</li> </ul>	<ul style="list-style-type: none"> <li>- Establish procedures to coordinate fixed- and rotary-wing aircraft operations</li> <li>- Establish air traffic control tower</li> <li>- Provide for a dedicated helicopter facility development area</li> <li>- Establish defined noise abatement approach and departure paths for helicopter operations</li> </ul>

- Establish rules/regulations, insurance requirements, and operating procedures in a manner which reasonably encourages as well as controls on-airport aviation activity.
- Encourage infrequent/inactive aircraft to relocate to less active areas of the Airport to facilitate active users' interests.
- Offer a range of tiedown and hangar storage options for various levels of users (from "less expensive inactive exterior storage" to "deluxe enclosed storage").
- Do not unduly restrict use of T-hangars for non-aviation storage (i.e., RV storage), provided principal use is for aircraft storage and reasonable safety/fire standards are met.
- Permit multiple aircraft storage in single-unit T-hangar at reasonable cost.
- Encourage development of small commercial-use rental hangars for experimental/antique aircraft shops, private aircraft restoration or modification, specialty services, etc.
- UNICOM should be regularly monitored and utilized to provide useful airport information.
- Emphasize Compton Airport's less complex procedures and lower use costs as compared with nearby Long Beach, Torrance Municipal, and Hawthorne Municipal airports.
- Offer general aviation and enthusiast groups facilities to gather and meet. Encourage the groups' positive interaction with the public and the Airport. Among the groups to be considered are:
  - Aircraft Owners and Pilots Association
  - Experimental Aircraft Association
  - Antique Airplane Association
  - 99's
  - Air Explorers
  - Civil Air Patrol
  - Flying clubs
  - Local pilot organizations
- Permit individual based aircraft owners to perform preventative maintenance on their own aircraft consistent with the applicable Federal Aviation Regulations (FAR's 43 and 91).
- Provide an aircraft wash rack and maintenance shed for based aircraft owners' use.

- Encourage quality, stable, competitive FBO's with adequate services and facilities.
- Offer reasonably priced fuel with attentive line service. Emphasize quick, efficient service and increased hours of fueling availability. Fuel costs should reflect role of the Airport and the level of facilities/services.
- Offer 80 octane AVGAS or ASTM D439 auto fuel (i.e., "MOGAS"). This offering should prove especially attractive to the users of "enthusiast" type aircraft.
- Consider economic advantages and disadvantages of fixed (e.g., fuel island) versus mobile (e.g., refueler trucks) refueling systems.
- Consider user "self-service" fueling program to reduce costs and enhance hours of availability. Investigate possibility of implementing a 24-hour access, credit-card activated, self-service fueling system.
- Provide reasonable automobile access to aircraft parking/tiedown/hangar areas to facilitate authorized user access to aircraft.
- Provide reasonable levels of security without unduly restricting legitimate users and visual access for public.
- Market the Airport as a base of operations for helicopters – both based and transient.
- Provide a well-equipped state-of-the-art flight planning center (for based and transient users) with direct FSS line, weather computer, motels/restaurants listing, Weather Channel TV, etc.
- Approach compatible tenants at competitive airports and attract them to Compton Airport. Obtain names/addresses of competitive airports' based and transient users. Send direct marketing mailing to all such prospective tenants and users.
- Send marketing letters to "enthusiast" aircraft owner groups (use enthusiast magazine and club mailing lists).

### **Aviation Marketing Actions – Compton Airport Transient Aircraft Users**

The following actions should be considered in marketing Compton Airport to its transient aircraft users:

- Emphasize and promote desire to be "best general aviation airport in region" and "general aviation gateway to the central Los Angeles area".

Cater to personal, recreational, and business aircraft users. Promote advantages of using Compton Airport as a destination or fuel/rest stop.

- Approach compatible transient aircraft operators at nearby competitive airports (Long Beach, Torrance Municipal, and Hawthorne Municipal airports) and attract them to Compton Airport. Use direct mailing techniques to identify and attract compatible aircraft operators.
- Conduct a "fuel island survey" of transient aircraft users' service and facility requirements and desires. Determine what makes the airport attractive to transient aircraft users and promote that via advertisements, flyers, etc.
- Tailor line services to attract transient users. Provide low-cost fuel, both 80 and 100 octane; quick, efficient service; and adequate hours of availability. Offer a transient fuel discount coupon to attract new transient customers.
- Offer 24-hour airport access and aeronautical service (particularly aviation fuel service).
- Market the Airport to local service providers (rental car companies, motels, restaurants, resorts, recreational activities, etc.). Promote availability of such services to transient user group.
- Provide adequate on-airport signage (i.e., commercial tenants listing, transient parking, fueling, frequencies, vehicle loading areas, etc.) and lighting (i.e., transient parking area and public areas).
- Provide easily recognizable marked transient parking positions with quality tiedowns (preferably taxi-thru positions).
- Encourage development of public ground transportation options (light rail/limo/taxi/bus services) from the Airport throughout the community and into central Los Angeles. Promote availability of such services to transient user group.
- Encourage free courtesy van service to/from area hotels, motels, restaurants, attractions, etc.
- Ensure that all airport information guides accurately detail the Airport's facilities, services, and attractions.
- Provide pilots and airport users with printed airport data sheets suitable for insertion in Flight Guide, Pilots Guide to California Airports, Jeppesen Airway Manuals, etc.. These data sheets should identify the Airport's facilities, services, commercial tenants, and attractions.
- Emphasize newly developed airport terminal/snack bar/coffee shop to attract the flying public and local citizens to the Airport.

## Aviation Marketing Actions – Compton Airport Tenants and Concessionaires

The following actions should be considered in marketing Compton Airport to its based commercial tenants and concessionaires:

- Stimulate the economic health of on-airport FBO's and concessionaires. Encourage them to provide quality, reasonably priced services and facilities consistent with customer demand and airport role.
- Support airport tenants and concessionaires with adequate on-airport directional signing and commercial services listings.
- Participate in a joint marketing program with commercial tenants. Airport and tenants could share in the cost of advertising and promotion. Consider local and regional exposure.
- Be flexible and innovative in promoting and establishing new aviation activities and businesses. Consider the following activities:
  - Foreign air carrier or college-affiliated aviation training programs
  - FAA-approved airframe and powerplant technician training programs
  - Specialized aircraft repairs, modifications, interiors, etc.
  - Experimental aircraft supply, equipment, manufacturing, etc.
  - Aircraft rebuilding and refurbishment
  - Aircraft power plant maintenance, overhaul, and accessory repair
- Encourage the establishment of general aviation-related "incubator industries" and aviation specialty shops consistent with reasonable safety requirements and public policy considerations.
- Encourage active use of aircraft as opposed to inactive aircraft storage. Consider designating an inactive aircraft storage area on the Airport (lower cost, lower public visibility, unimproved area). Active aircraft are more likely to patronize on-airport commercial tenants and concessionaires.
- Establish rules/regulations, fees, insurance requirements, and operating procedures in a manner which reasonably encourages as well as controls on-airport aviation activity.
- Do not "over-design" or "over-build" airport facilities unnecessarily increasing costs that must be passed on to airport tenants and users.

## Aviation Marketing Actions – Compton Airport Area Community-at-Large

The following actions should be considered in marketing Compton Airport to its surrounding community:

- Encourage the general public and local community to get positively involved in "their" airport and in general aviation. Suggested approaches include:
  - Air shows/air fairs/community airport days/FBO open houses, etc.
  - "Learn to fly" promotions through FBO's.
  - Airport participation in General Aviation Market Expansion (GAME) Plan, as sponsored by The General Aviation Task Force.
  - Get local media interested in positive aspects of the Airport and aviation.
  - Establish regular "aviation column" in local media.
  - Issue regular media releases regarding airport/aviation development and activities.
  - Develop and distribute airport informational brochure that emphasizes airport services and capabilities and benefits to local community.
  - Have airport representatives (manager, FBO's, etc.) regularly speak to community service groups and civic organizations.
  - Encourage airport tours by school and civic groups.
  - Have the Airport participate/contribute to community's non-aviation events (i.e., July 4th parade, etc.).
- Provide adequate airport-related directional signing off-airport.
- Offer attractive public viewing and picnic areas overlooking airfield and airport activity areas.
- Establish connection with local colleges and vocational training schools to foster joint educational programs. Provide airport "internships" for selected students.
- Ensure that local community economic development groups (e.g., Chamber of Commerce, realtors, tourism agencies, etc.) know about the Airport and actively promote it in their marketing efforts.

- Offer an "open-door" airport management policy and effectively communicate with general public and local community regarding such issues as aircraft noise, safety, and airport development.
- Market Airport's capabilities and services to local businesses and corporations. Encourage local businesses to use airport tenant services such as air charter, aircraft rental and flight instruction, and aerial photography.

# Appendices

## Chronology of Airport Development

---

<u>Year</u>	<u>Event</u>
1924	<p>Colonel C.S. Smith first landed his aircraft on a large vacant field in Compton. Shortly thereafter, Col. Smith purchased the field from the local school district and established an airport on the site.</p> <p>Later that same year, the proprietorship of the Airport changed hands. Jimmy Angel, after whom Angel Falls in Brazil is named, took over from Col. Smith.</p> <p>Several different proprietors operated the Airport over the next decade.</p>
1936	<p>Earl Woodley took over the lease and between 1940-1945, he succeeded in purchasing all of the area included in the present facility.</p>
1941	<p>During the war years of 1941-1946, Compton Airport was used exclusively by the military as a truck storage depot. After the war-time hostilities ceased, private flying reemerged at Compton under the direction of Mr. Woodley. He hired flight instructors, bought airplanes, and operated a flying school at the Airport.</p>
1962	<p>In 1962, Mr. Woodley died. His widow desired to have the property remain as an airport. After much solicitation and support by pilot groups, local politicians, and the citizens of the Los Angeles area, the Board of Supervisors voted to acquire the facility as a regional airport.</p> <p>The County, upon the recommendation of the Los Angeles County Aviation Commission, proceeded to lease the Airport from an investment company, Valiant Investment. The County then served as the airport operator.</p>
1966	<p>In June of 1966, the County acquired the 77 acres of land that now comprise Compton Airport.</p>
1986	<p>The current Airport Layout Plan (ALP) was prepared by Los Angeles County.</p>
1990	<p>Airport Master Study was initiated by the County.</p>
1991	<p>The day-to-day management and operation of all five County airports, including Compton Airport, was transferred to a private company, COMARCO, under the terms of a 20-year operating agreement (commenced on April 1, 1991).</p>

Appendix B  
Existing Airport Facilities

<i>Item</i>	<i>Description</i>	<i>Condition / Comments</i>
-------------	--------------------	-----------------------------

### Runway/Taxiway System

#### Runway 7L-25R

Pavement	3,670' long; 60' wide Effective gradient: 0.4% Section (estimated): 2.0" Asphalt 6.0" Base Rock Strength: 12,500# (single-wheel)	Good — Surface and drainage system rejuvenated in 1990
Shoulders	Dirt/grass; surface graded and level	Adequate
Safety Areas	Length: 50' beyond Runway 7R departure end 70' beyond Runway 25L departure end Width: 120±'	Substandard size — Inadequate length
Markings	Basic Displaced threshold Runway 7R — 895' Displaced threshold Runway 25L — 860'	Good — Remarketed in 1990
Lighting	None	

#### Runway 7R-25L

Pavement	3,670' long; 60' wide Effective gradient: 0.4% Section (estimated); 2.0" Asphalt 6.0" Base Rock Strength: 12,500# (single-wheel)	Fair
----------	--	------

<i>Item</i>	<i>Description</i>	<i>Condition / Comments</i>
Shoulders	Dirt/grass; surface graded and level	Adequate
Safety Areas	Length: 50' beyond Runway 7R departure end 70' beyond Runway 25L departure end Width: 120±'	Substandard size — Inadequate length
Markings	Basic Displaced threshold Runway 7R — 895' Displaced threshold Runway 25L — 860'	Fair
Lighting	Medium-intensity edge lights	Fair
<b><u>Taxiways</u></b>		
North Parallel	20' wide; asphalt Full length of runway Runway-to-taxiway separation — 105' Contiguous to north parking apron Medium-intensity lighting along southern edge	Fair — Substandard separation
South Parallel	20' wide; asphalt Full length of runway Runway-to-taxiway separation — 105' Contiguous to south parking apron Medium-intensity lighting along northern edge	Fair — Substandard separation
Runway Entrances/Exits	Five locations on each runway: At approach end of Runways 7L&R — 30' wide 1,130' from approach end of Runways 7L&R — 30' wide; At mid-field — 50' wide 1,100' from approach end of Runways 25L&R — 30' wide; At approach end of Runways 25L&R — 30' wide;	Fair — Runway Hold Line not properly marked

<i>Item</i>	<i>Description</i>	<i>Condition / Comments</i>
Holding Pads	Generally on undefined apron areas adjacent to runway entrance taxiways	None formally designated
Marking	Standard centerline stripes Hold Lines not properly marked The words "Compton – El.97" are painted on the northern parallel taxiway and apron	Fair
Visual Approach Aids	Two-box VASI serving Runways 25L&R REIL serving Runway 25L	
<b><u>Other</u></b>		
Wind Indicators	Lighted wind cone in segmented circle located near mid-field on north side of Runway 7L-25R Traffic pattern indicators Wind tee located in segmented circle	Fair — Nonstandard traffic patterns for Runways 7L&7R
Radio Aids	VFR-only Nondirectional Radio Beacon — Antenna located on roof of T-hangar Buildings F & G	Fair
Rotating Beacon	Located on dedicated pole in Airport's southeast corner	Fair

Item	Description	Condition / Comments
<b>Building Area - Airport Property</b>		
<b><u>Aircraft Aprons</u></b>		
North Apron	10± acres; asphalt 100± tiedown positions 38± portable storage hangars Segmented circle and lighted wind cone Aircraft washing area Pilots lounge/rest rooms Compass Rose Marked taxilanes	Fair
Southwest Apron	13± acres; asphalt 126 fixed T-type storage hangars 25± tiedown positions One aircraft painting booth hangar	Fair
South Central Apron	3.5± acres; asphalt 3 – 8,000 s.f. FBO hangars/offices 25± aircraft parking positions; Auto parking lot	Fair
Southeast Apron	5± acres; asphalt 50 aircraft parking positions New terminal building Aircraft fueling facility Portable office trailer Auto parking lot	Fair/Good
<b><u>Buildings</u></b>		
Airport Terminal	To be located in southeast corner of Airport Approx. 3,000 s.f.; modular Includes airport offices; coffee shop; lounge; public rest rooms, and telephones	Under construction

<i>Item</i>	<i>Description</i>	<i>Condition / Comments</i>
FBO Hangar/Office Facilities	3-800 s.f. structures located immediately west of terminal area Tenants include: Pacific Aviation; Thompson Airmotive; and Commandair	Good
Helicopter Facilities	Located in south central portion of airfield Two T-hangars Principal tenant is City of Compton Police Air Support Unit	Good
<b><u>Other Facilities</u></b>		
Fuel Storage	2 underground steel tanks 15,000 gal. - 80 octane 15,000 gal. - 100LL octane	Fair – No known leakage, but replacement anticipated
Fuel Dispensing Area	Adjacent to Terminal Building Kiosk with suspended fueling hoses	Fuel (80 and 100LL) dispensed at the island and by 1,200 gal. refueler truck (100LL)
Perimeter Walls/Fencing	Various types completely encircle Airport Controlled access entrance gates off Central and Wilmington Avenues and Alondra Boulevard FBO and terminal area auto parking lots publicly accessible from streets	
<b><u>Roads and Parking</u></b>		
Main Public Access Points	Off Alondra Boulevard Serves Terminal Building and FBO areas	Good – Paved with asphalt
Controlled Access Points	Off Central and Wilmington Avenues Serves tiedown and hangar areas;	Good – Card-controlled vehicle gates
Public Auto Parking	Adjacent to airfield maintenance facility 35± spaces; paved Adjacent to FBO offices/hangars 60± spaces; paved	Good

<i>Item</i>	<i>Description</i>	<i>Condition / Comments</i>
<b><u>Utilities</u></b>		
Electricity	Supplier - City of Los Angeles, Department of Water and Power	
Telephone	Supplier - Pacific Bell Public phone located at Airport Terminal Building and FBO's	
Water	Supplier - City of Los Angeles, Department of Water and Power	
Sewer	City of Los Angeles sewer system	

## Summary of Airport User Survey Questionnaires

---

Early in the Master Plan study effort (September 1990), a survey questionnaire was distributed by mail to every aircraft owner based at Compton Airport and known to the airport management. More than 350 questionnaires were distributed and 75 responses were received. This response rate (21%) is considered to be good for this type of survey.

A summary of the questionnaire responses follows. Note that percentages in some cases do not total 100% due to multiple responses.

Summary

**Compton Airport Master Plan Study**

**AIRPORT USER SURVEY**

**September 1990**

1. What "year/make/model" of aircraft do you presently base at Compton Airport?

Various types of small single-engine and light twin-engine aviation aircraft were listed. An unusually high percentage of the listed aircraft were of the type typically operated for recreational or enthusiast purposes.

2. What is your ownership interest in this aircraft?

[92%] = I own it alone.  
[ 8%] = I own it jointly with others.  
[ 0%] = It is owned by my company/employer.  
[ 0%] = Other: \_\_\_\_\_

3. Approximately how many landings have you made at Compton Airport in the past twelve months?

[45%] = 0 - 50      [ 8%] = 151-350  
[44%] = 51-150     [ 3%] = over 350

4. How is your aircraft stored at Compton Airport?

[70%] = Hangar      [30%] = Tiedown

5. In what community do you usually begin/end your local ground trip to/from Compton Airport and how long does this trip take?

Numerous Los Angeles/Compton area communities were listed. The typical travel time was under 30 minutes.

6. What are your principal reasons for choosing Compton Airport as a base for your aircraft?

[41%] = Near home                      [20%] = Convenient  
[28%] = Reasonably priced hangars    [11%] = Friendly

7. What are the purposes of your flights into/out of Compton Airport?

Business	20%
Personal/Recreational	70%
Flight Training	10%
Total	100%

8. How important are the following airport characteristics with respect to your use of Compton Airport as a base for your aircraft?

	Not Important	1	2	3	4	Very Important	Average Response
Cost considerations	1	2	3	4	5	(4.4)	
Tiedown availability	1	2	3	4	5	(3.8)	
Hangar availability	1	2	3	4	5	(4.1)	
Instrument approach capability	1	2	3	4	5	(2.4)	
Full array of user services (FBO, fuel, etc.)	1	2	3	4	5	(3.7)	
Several competitive fixed base operators	1	2	3	4	5	(3.5)	
Availability of parallel runways	1	2	3	4	5	(3.6)	
Aircraft security	1	2	3	4	5	(4.6)	
Physical facilities (runways, taxiways, lighting, aprons, etc.)	1	2	3	4	5	(4.3)	
Airport location/access with respect to your home	1	2	3	4	5	(4.2)	
Airport location/access with respect to your office	1	2	3	4	5	(3.2)	
Friendly atmosphere	1	2	3	4	5	(4.4)	

**Summary of Airport User Survey Questionnaires / Appendix C**

---

9. In relationship to comparable airports, how do you rate Compton Airport with respect to the following factors?

	Compton is Worse/Inferior		Compton is Average		Compton is Better/Superior		Average Response
Overall cost of operating/renting an aircraft	1	2	3	4	5		(3.7)
Fuel prices	1	2	3	4	5		(2.3)
Aircraft storage costs	1	2	3	4	5		(3.3)
Fixed Base Operator services	1	2	3	4	5		(3.3)
Physical facilities	1	2	3	4	5		(2.9)
Overall airport maintenance	1	2	3	4	5		(3.4)
Security	1	2	3	4	5		(3.0)
Airspace and air traffic environment	1	2	3	4	5		(3.3)
Rules, regulations, standards, and procedures	1	2	3	4	5		(3.6)
General airport atmosphere (ease of operation, friendliness, etc.)	1	2	3	4	5		(4.3)
Other (specify) : _____	1	2	3	4	5		

10. What airfield facilities and services would encourage you to increase your use of Compton Airport?

[ 3%] = Longer runway

[ 8%] = Additional hangars

[22%] = Instrument approach capability

[ 4%] = Air traffic control tower

[49%] = Restaurant/coffee shop

[14%] = Additional facilities or services (specify): \_\_\_\_\_ (See following list)

- Electrical service to hangars
- Additional hangars at lower price (several)
- FBO maintenance capability (several)
- Avionic FBO repair shop (several)
- Provide UNICOM service
- Direct line to FSS from pilots' lounge areas
- Nice restaurant
- More restrooms
- Compressed air and electricity
- Airport maintenance area for planes
- Wider runways

11. In your opinion, what do you believe is the appropriate future role for Compton Airport? That is, should the Airport:

[42%] = Remain essentially as it is?

[54%] = Continue to serve the same type of aircraft as at present, but increase the levels of activity and services?

[ 4%] = Expand to attract greater use by corporate aircraft?

[ 0%] = Other: \_\_\_\_\_

12. What specific suggestions can you offer to improve or enhance the operation, procedures, facilities, and services at Compton Airport? (See following list)

- Leave Compton Airport "as is"
- Move the Aviation School to off-airport school district property
- Provide UNICOM service
- Have a secure storage area – suitable storage lockers
- Coffee shop (several)
- More reasonable fuel prices (several)
- Build block wall on south side of field for protection from street
- Lower hangar and tiedown cost (several)
- Better security
- Stress safety and training
- Repair fences
- Repaint peeling paint on hangars (several)
- Make grass green – cut down on dust and dirt (several)
- Cosmetic improvements/enhance Airport's appearance (several)
- More hangars
- Approach lights on runway
- Instrument approach capability (several)
- Offer avionics repair
- Electrical power outlets
- Promote Compton's benefits
- Restore water faucets between hangars
- Add air compressor
- Electricity to hangars on north side
- Add clearways at end of runway
- More air shows/community relations

## Acquisition of Additional Land Area

---

### Introduction

Over the years, it has been suggested that Los Angeles County or private interests acquire additional land area contiguous to Compton Airport to permit the expansion of the Airport's building area and aircraft storage capacity. The only area of land that would readily facilitate such expansion is the strip of residentially developed land located between the Airport's northern boundary and 156th Street.

The purpose of this discussion paper is to 1) review the advantages and disadvantages associated with the possible acquisition of all or a part of this land area; and 2) offer the Consultant's conclusions regarding any such acquisition.

### Description of Land Area and Improvements

The subject land area is a long rectangular strip of land (approximately 9.5 acres) that is fully developed and in high-density residential use (see Figure D-1). Seventy-three single-family houses are located on the 3,800' x 110' strip of land. The parcels front on 156th Street and are bordered in the back by the Airport's northern boundary wall. The houses are 30-40 years old.

The 3,800' strip of land is divided into three roughly equal-length segments. One 1,400' long segment extends from Central Avenue east to Tajauta Avenue, the second 1,200' long segment extends from Tajauta Avenue to Dwight Avenue, and the third 1,200' long segment extends from Dwight Avenue to Wilmington Avenue. In previous discussions, both the City and County have indicated that these individual segments are the smallest land area increments that should be considered for acquisition. In this way, no isolated parcels would remain, and the neighborhood's basic configuration would be retained.

At the time of this analysis, the asking prices for representative parcels (with fixed improvements) in this area were in the \$80,000-\$90,000 range.

### Discussion

The two basic questions related to this discussion are:

- Should all, a portion, or none of this land area be acquired to support Airport expansion and development?

- Can all, a portion, or none of this land area be acquired in a cost-effective and socially-acceptable manner?

The advantages and disadvantages associated with the potential acquisition of the subject land area are summarized in Table D-1.

As indicated in the Airport Activity Forecast section of the Compton Airport Master Plan Report, the number of aircraft based at the Airport is projected to total 500 by the year 2010. With appropriate modifications to the Airport's existing runway/taxiway system and building area, all of these aircraft can be accommodated within the Airport's existing boundaries. Therefore, on the basis of forecasted general aviation demand, there appears to be no requirement for acquisition of additional Airport property during the 20-year planning timeframe. However, beyond the 20-year planning timeframe, additional land area may be required to accommodate aeronautical demand.

In addition, it is estimated that acquisition of the subject properties and the preparation of the basic sites for hangar development would cost a minimum of \$100,000 per hangar unit. The computational basis for this estimate is presented in Table D-2.

## **Conclusions**

While it would be advantageous to the general public and aviation community to acquire additional land area for possible future expansion and development of Compton Airport, the various "costs" — both financially and socially — of doing so at this time are significant. In addition, on the basis of the 20-year Airport Activity Forecast, there is no immediate need for the acquisition. However, any future change in the Airport's operational role and/or demand characteristics could require an in-depth reevaluation of the acquisition's merit.

In light of the fully-developed residential nature of the subject land area, no future change in land use in this area is envisioned. Therefore, the option of acquiring the subject land area, should it prove advantageous at some point in the future, is not lost, but merely delayed. However, it can be anticipated that with the normal escalation in property values, future acquisition of the subject land area will be significantly more costly and, thus, more difficult to justify on a cost/benefit basis.

Accordingly, it is suggested that the subject land area not be acquired at this time. The option of acquiring the subject land area should, however, be preserved for future consideration. The development of the basic airfield and northside airport building area should be conducted in such a manner as to not preclude future access to and ultimate development of the subject land area for Airport-support purposes.

Table D-1

## Advantages and Disadvantages - Additional Property Acquisition

### Compton Airport

---

#### ADVANTAGES

- Provides approximately 7.8 acres of additional land area (1.7 acres allocated to linear park) for development of approximately 80 aircraft storage hangar units and associated access taxiways.
- Enhances safety and mitigates community noise impacts by removing residential uses closest to the Airport's aircraft operations area.
- Permits greater flexibility in layout and utilization of airfield and building areas.
- Preserves subject land area for long-term public aviation use.

#### DISADVANTAGES

- Very expensive to acquire – approximately \$100,000 per hangar unit basic site cost (see Table D-2 for computational basis).
- Based aircraft forecasts do not indicate a need for additional aircraft storage capacity during the 20-year planning timeframe.
- Acquisition process may be disruptive of neighborhood and affected families.
- Acquisition may be socially and politically difficult to achieve.

Table D-2

## Computational Analysis - Additional Property Acquisition

### Compton Airport

---

#### COMPUTATIONAL ANALYSIS

- 73 individual parcels with improvements – all are in residential use.
- Estimated market value (property and fixed improvements) of each parcel is approximately \$85,000.00.
- Therefore, market value of total land area is approximately \$6.2 million.
- Plus, additional costs associated with relocation, demolition, basic site preparation, and linear park landscaping are estimated at \$1.8 million.
- Yields a total property acquisition cost of approximately \$8.0 million.
- Due to reduced parcel depth (110 feet minus 20-foot setback for linear park), approximately 80 aircraft hangar units and associated access taxiways could be developed in the subject area.
- Therefore, the site cost for each hangar unit would be approximately \$100,000.00.

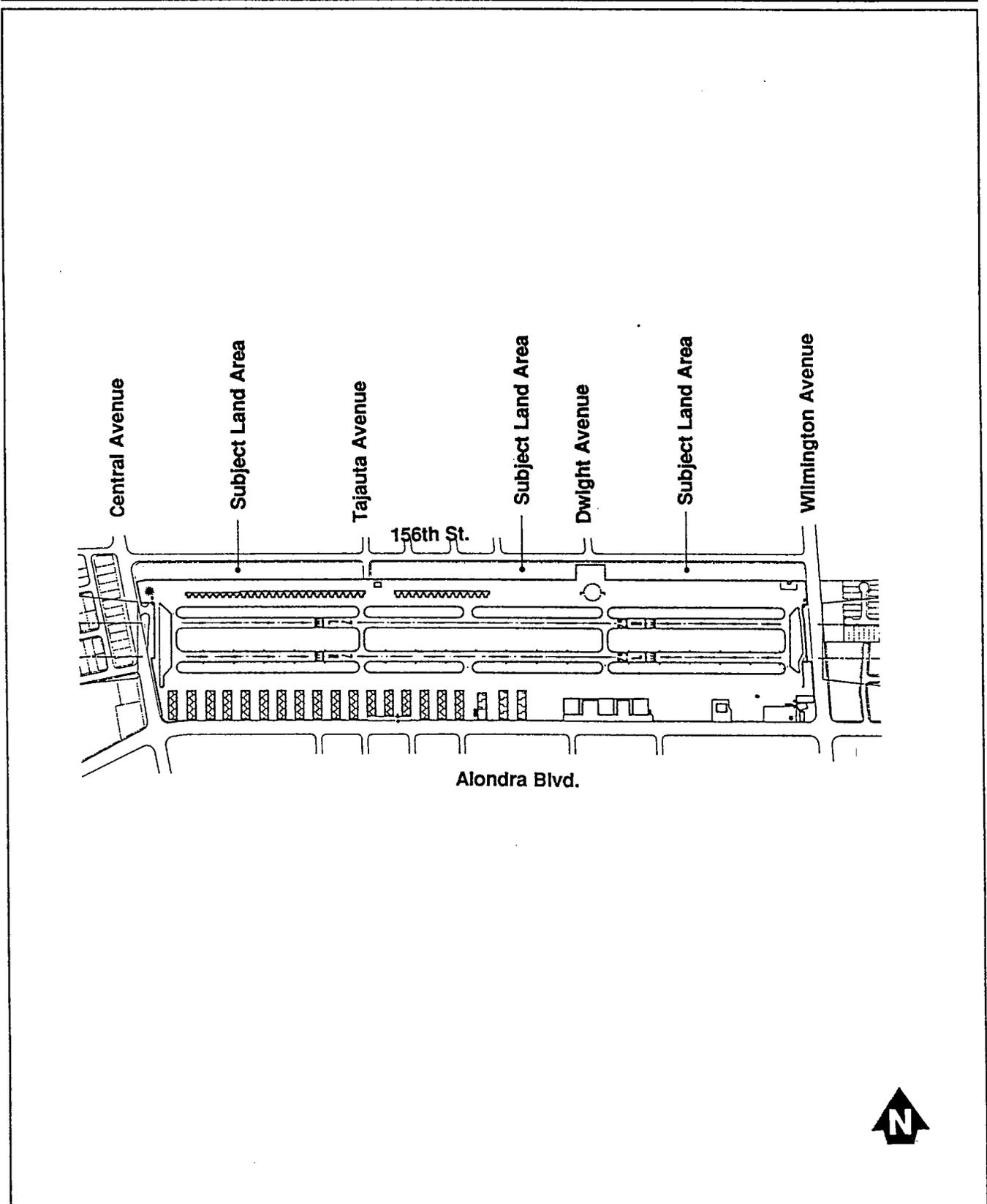


Figure D-1

**Subject Land Area - Additional Property Acquisition**  
Compton Airport

## Initial Study - Environmental Checklist Form

## I. BACKGROUND

1. Name of Proponent: **County of Los Angeles**
2. Address and Phone Number of Proponent:  
**Department of Public Works**  
**Aviation Division**  
**900 So. Fremont Avenue, 2nd Floor**  
**Alhambra, California 91803-1331**  
**818-458-7389**
3. Date of Checklist Submitted: **May 1, 1991**
4. Agency Requiring Checklist: **County of Los Angeles**
5. Name of Proposal, if applicable: **Compton Airport Master Plan**

## II. ENVIRONMENTAL IMPACTS

(Explanations of all "yes" and "maybe" answers are required on attached sheets.)

	YES	MAYBE	NO
1. <b>Earth.</b> Will the proposal result in:			
a. Unstable earth conditions or in changes in geologic sub structures?	—	—	<u>X</u>
b. Disruption, displacements, compaction or overcovering of the soil?	<u>X</u>	—	—
c. Change in topography or ground surface relief features?	—	—	<u>X</u>
d. The destruction, covering or modification of any unique geologic or physical feature?	—	—	<u>X</u>
e. Any increase in wind or water erosion of soils, either on or off the site?	—	<u>X</u>	—
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet, or lake?	—	—	<u>X</u>
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards?	—	—	<u>X</u>

	YES	MAYBE	NO
<b>2. Air.</b> Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	—	<u>X</u>	—
b. The creation of objectionable odors?	—	—	<u>X</u>
c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?	—	—	<u>X</u>
<b>3. Water.</b> Will the proposal result in:			
a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters?	—	—	<u>X</u>
b. Changes in absorption rates, drainage patterns or the rate and amount of surface water runoff?	<u>X</u>	—	—
c. Alterations to the course or flow of flood waters?	—	<u>X</u>	—
d. Change in the amount of surface water in any water body?	—	<u>X</u>	—
e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	—	<u>X</u>	—
f. Alteration of the direction or rate of flow of ground waters?	—	—	<u>X</u>
g. Change in the quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	—	—	<u>X</u>
h. Substantial reduction in the amount of water otherwise available for public water supplies?	—	—	<u>X</u>
i. Exposure of people or property to water-related hazards such as flooding or tidal waves?	—	—	<u>X</u>
<b>4. Plant Life.</b> Will the proposal result in:			
a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	—	—	<u>X</u>
b. Reduction of the numbers of any unique, rare or endangered species of plants?	—	—	<u>X</u>
c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species?	—	—	<u>X</u>

	YES	MAYBE	NO
d. Reduction in acreage of any agricultural crop?	—	—	<u>X</u>
<b>5. Animal Life.</b> Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	—	—	<u>X</u>
b. Reduction of the numbers of any unique, rare or endangered species of animals?	—	—	<u>X</u>
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	—	—	<u>X</u>
d. Deterioration to existing fish or wildlife habitat?	—	—	<u>X</u>
<b>6. Noise.</b> Will the proposal result in:			
a. Increases in existing noise levels?	<u>X</u>	—	—
b. Exposure of people to severe noise levels?	—	—	<u>X</u>
<b>7. Light and Glare.</b> Will the proposal produce new light or glare?	—	<u>X</u>	—
<b>8. Land Use.</b> Will the proposal result in a substantial alteration of the present or planned land use of an area?	—	<u>X</u>	—
<b>9. Natural Resources.</b> Will the proposal result in:			
a. Increase in the rate of use of any natural resources?	—	<u>X</u>	—
b. Substantial depletion of any nonrenewable natural resource?	—	—	<u>X</u>
<b>10. Risk of Upset.</b> Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including but not limited to oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	<u>X</u>	—	—
b. Possible interference with an emergency response plan or an emergency evacuation plan?	—	—	<u>X</u>
<b>11. Population.</b> Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	—	—	<u>X</u>
<b>12. Housing.</b> Will the proposal affect existing housing, or create a demand for additional housing?	—	—	<u>X</u>

	YES	MAYBE	NO
<b>13. Transportation/Circulation.</b> Will the proposal result in:			
a. Generation of substantial additional vehicular movement?	—	<u>X</u>	—
b. Effects on existing parking facilities, or demand for new parking?	<u>X</u>	—	—
c. Substantial impact upon existing transportation systems?	—	—	<u>X</u>
d. Alterations to present patterns of circulation or movement of people and/or goods?	—	—	<u>X</u>
e. Alterations to waterborne, rail or air traffic?	—	—	<u>X</u>
f. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?	—	—	<u>X</u>
<b>14. Public Services.</b> Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			
a. Fire protection?	—	—	<u>X</u>
b. Police protection?	—	—	<u>X</u>
c. Schools?	—	—	<u>X</u>
d. Parks or other recreational facilities?	—	—	<u>X</u>
e. Maintenance of public facilities, including roads?	<u>X</u>	—	—
f. Other governmental services?	—	—	<u>X</u>
<b>15. Energy.</b> Will the proposal result in:			
a. Use of substantial amounts of fuel or energy?	—	<u>X</u>	—
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	—	—	<u>X</u>
<b>16. Utilities.</b> Will the proposal result in a need for new systems, or substantial alterations to the following utilities?			
a. Power or natural gas?	—	—	<u>X</u>
b. Communications systems?	—	—	<u>X</u>
c. Water?	—	—	<u>X</u>

		YES	MAYBE	NO
d.	Sewer or septic tanks?	—	—	<u>X</u>
e.	Storm water drainage?	—	—	<u>X</u>
f.	Solid waste and disposal?	—	—	<u>X</u>
<b>17.</b>	<b>Human Health.</b> Will the proposal result in:			
a.	Creation of any health hazard or potential health hazard (excluding mental health)?	—	—	<u>X</u>
b.	Exposure of people to potential health hazards?	—	—	<u>X</u>
<b>18.</b>	<b>Aesthetics.</b> Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	—	<u>X</u>	—
<b>19.</b>	<b>Recreation.</b> Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	<u>X</u>	—	—
<b>20.</b>	<b>Cultural Resources.</b>			
a.	Will the proposal result in the alteration of or the destruction of a prehistoric or historic archeological site?	—	—	<u>X</u>
b.	Will the proposal result in adverse physical or aesthetic effects to a prehistoric or historic building, structure, or object?	—	—	<u>X</u>
c.	Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?	—	—	<u>X</u>
d.	Will the proposal restrict existing religious or sacred uses within the potential impact area?	—	—	<u>X</u>
<b>21.</b>	<b>Mandatory Findings of Significance.</b>			
a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	—	—	<u>X</u>

- |   | YES | MAYBE | NO       |
|---|-----|-------|----------|
| b. Does the project have the potential to achieve short-term, to the disadvantage of the long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)      | —   | —     | <u>X</u> |
| c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.) | —   | —     | <u>X</u> |
| d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?   | —   | —     | <u>X</u> |

### III. DISCUSSION OF ENVIRONMENTAL EVALUATION

**General Note:** The Compton Airport Master Plan is a comprehensive assessment of the facility and service enhancements required to see the Airport fulfill its public service role through the year 2010. This Master Plan builds upon the Airport Layout Plan approved by the County of Los Angeles in 1966.

The following key findings and recommendations are identified in the Master Plan:

- The operational/service role of the Airport is not expected to differ significantly from the role the Airport has served since its first use in 1924.
- Within the initial five-year period, the runways' pavement ends are programmed to be relocated inward approximately 230 feet to accommodate the FAA-standard Object Free Area. This relocation will result in a reduction in published runway length from the current 3,670 feet to an ultimate length of 3,190 feet.
- Due to anticipated future demand for additional aircraft basing capacity, it is anticipated that the current parallel runway system (Runways 7L-25R and 7R-25L) will be converted to a single runway configuration (Runway 7-25) within the five- to ten-year timeframe.

The sum of the airfield development proposed in the Master Plan represents a mitigatable impact on the environment. The appropriate mitigation actions are identified in the Master Plan.

The following is submitted in response to the preceding environmental impact checklist:

- 1 a The construction activities which would occur as a result of implementation of this Plan would consist principally of paving and erection of single-story structures. None of these activities are anticipated to create unstable earth conditions or have any effect upon the underlying geologic structures.
- 1 b The construction of additional taxiways and ramp areas will result in covering the existing unirrigated areas, which are sparsely covered with native plant species. None of the project site is in its native state. Most of the site has been previously altered during construction of the original airfield or development of adjacent uses.
- 1 c The area to be developed is essentially level. There will be no significant changes in topography because of construction activity.
- 1 d The airport site is a flat, undifferentiated plane. No unique geologic or physical features have been identified.
- 1 e,f New development will result in creation of additional impervious surfaces and, therefore, additional storm water run-off. The engineering design of the new facilities should include provisions for handling run-off to prevent an increase in erosion. Site watering and other techniques should be used during construction to minimize dust and wind erosion.
- 1 g There are no known faults on or near the project area.

- 2 a The forecasted increases in aircraft operations will increase the amount of emissions attributable to the Airport (both directly by aircraft and indirectly by automobiles associated with airport users). However, the total amount of emissions will not have a significant effect on regional air quality. The amount of emissions is negligible compared to the much larger effect attributable to the existing and planned urbanized development in the area.
- 2 b Aircraft engines, especially turbine engines, produce exhaust odors which many people find objectionable. However, the volume of use by turbine aircraft, which are typically the most objectionable, is forecast to be insignificant and no significant change will occur with the other engine types.
- 2 c Future development at the Airport is of such limited scale that it is not anticipated to cause any change in climate.
- 3 a Although the project will increase the amount of storm run-off, it will not change the course or direction of water movement.
- 3 b-d As described in 1e, the planned addition of pavement and structures will increase the amount of storm runoff. This will result in a minor increase in flows of water into the existing storm water drainage system.
- 3 e In a manner similar to roads, the run-off from airfield pavement can be expected to contain materials associated with the vehicles which use it (aircraft, automobiles, and trucks). The amount of these materials is small and no mitigation measure is proposed. Accidental spillage associated with aircraft fueling operations has a greater potential to affect surface water quality. Current state and federal hazardous materials regulations (which require increasingly stringent controls over the next decade) are adequate to protect the environment. There are no unusual conditions at Compton Airport which require special mitigation measures.
- 3 f-h It is anticipated that the Airport will continue to be served by the City's water distribution system.
- 3 i According to the relevant Flood Insurance Rate Maps, the Airport is outside of any designated flood zones.
- 4 a-c No rare, endangered, or threatened plant species are known to exist on or near the Airport. No development projects identified in the Plan are of sufficient scale to affect the diversity of species or the number of any one species.
- 4 d No agricultural uses currently exist on Airport property, nor are any proposed.
- 5 a-c No rare, endangered or threatened animal species are known to exist on or near the Airport. No development projects identified in the Plan are of sufficient scale to affect the diversity of species or the number of any one species. None of the proposed projects will result in the creation of barriers (i.e., pavement, fences, or ditches) to animal movement where they do not already exist.

- 5 d None of the Airport remains in its native state. The land was altered during the initial development of the airfield. With the exception of the land directly required for future aviation facilities, the land is expected to remain in its current state. To the limited extent that airport land currently serves as habitat for wildlife, it will continue to do so.
- 6 a Forecast increases in aircraft operations will increase the cumulative level of noise experienced off of airport property, but single-event noise levels are not anticipated to change. However, residential noise impacts could be reduced if the Runway Protection Zones are ever acquired by the Airport.
- 6 b The majority of the aircraft anticipated to use Compton Airport are incapable of producing "severe" noise levels. The noisiest aircraft anticipated to use the Airport are piston-powered twin-engine aircraft. Most of the operations by the noisiest of the twin-engine aircraft will occur during the daytime, which will have the least impact upon area residents and businesses.
- 7 The principal change in lighting identified in the Airport Master Plan will be the addition of Runway End Identifier Lights (REIL), which will be added to Runway 7L when Runway 7R is abandoned. A special study is suggested to determine an appropriate way of mitigating REIL flash annoyance that could potentially impact off-airport land uses.
- 8 No significant changes in either on-airport or off-airport land uses are proposed. If the Runway Protection Zones are ever acquired by the Airport, there would be a reduction in available residential units.
- 9 a,b The forecast increases in aircraft operations will increase the rate of use of petrochemicals associated with Compton Airport. However, the improvements proposed in the Airport Master Plan will not cause this increase in use. Rather, the Plan proposes improvements that will be needed to respond to the increase in demand for airport services caused by continued growth in Compton, Los Angeles County, and the surrounding region.
- 10 a Inherent in the operation of an airport is the potential for an explosion or release of hazardous materials in the event of an accident (i.e., fuel). There are, however, no existing or planned operations at Compton Airport that present an unusual level of risk.
- 10 b The Compton Airport is a major public air transportation resource for the Compton area in the event of a major emergency or disaster.
- 11 No change in location, distribution, or growth rate of human population is expected to be directly or indirectly affected by implementation of the Master Plan.
- 12 The area surrounding Compton Airport is already fully-developed, and no deletion of existing housing is proposed.

- 13 a A minor addition to the amount of surface traffic is anticipated, to be associated with the increase in aircraft operations. The amount of traffic is minor compared to the larger volume attributable to the existing business and residential development in the Airport environs.
- 13 b The additional parking required to serve the projected increase in vehicular traffic will be accommodated by on-airport parking areas designated in the Airport Master Plan.
- 13 c Minor growth in aviation uses is not anticipated to have a significant effect on the surface transportation system.
- 13 d The closure of Runway 7R–25L will have the effect of shifting a portion of arriving and departing traffic approximately 200 feet to the north of the current location.
- 13 e Air traffic is forecast to increase from its current estimated level of 90,000 annual operations to 156,000 annual operations. The Plan is designed to accommodate projected demand for aviation services at the Compton Airport.
- 13 f No changes in surface streets are proposed.
- 14 a-d The increase in aviation use is anticipated to be of such limited extent that no increase in the level of police, fire protection, school or recreation facilities will be required.
- 14 e The increased use of the Compton Airport will marginally increase the maintenance of public facilities (i.e. roads, water, sewer, and electricity). However, the effect will be minor. Revenues generated by increased airport usage are expected to (at least partially) offset the added costs.
- 14 f Management of airport development activities, as well as increased usage, will place additional demands on County staff time. The additional demand will, however, be minor.
- 15 a,b The forecast increases in aircraft operations will increase the rate of use of aircraft and automobile fuels, gas, and electricity associated with Compton Airport. However, the proposed improvements will not cause this increase in use. Rather, it reflects improvements that will be needed to respond to the increase in demand for airport services caused by continued growth in the City of Compton, Los Angeles County, and the surrounding region. In any event, the amounts are not considered to be "substantial".
- 16 a-f No significant change in utility systems will be required to service the new facilities identified in the Plan.
- 17 a,b No uses are proposed which would introduce a health hazard.
- 18 The Master Plan proposes extending the Airport perimeter wall along Alondra Boulevard to enhance airport security and safety. The wall offers the additional advantage of ameliorating aircraft noise impacts on adjacent off-airport land uses. The wall presents the potential to be an eye-sore, due to graffiti on the outer wall surface. In addition, citizens may perceive the perimeter wall as further isolating the Airport from the local community.

- 19 To many of the based aircraft owners, flying is principally a recreational activity. The projects identified in the Master Plan will support this recreational activity. No other effects on recreation on- or off-airport are anticipated.
- 20 a-d There are no known archeological, historic, or sacred sites on the Airport.
- 21 a The proposed changes to the airfield and anticipated growth in operations are limited and are not anticipated to result in degradation of the environment, diminution of any plant or animal, or have any effect upon archeological or historical sites.
- 21 b The character of the Plan is one of small incremental changes over a long period of time.
- 21 c The impacts associated with operation of the Compton Airport are not forecast to change substantially. Those impacts that have been identified would be mitigated through implementation of the Plan.
- 21 d The proposed changes to the airfield and anticipated growth in operations are limited. They are not anticipated to have any significant environmental effect on human beings.

On the basis of this initial evaluation:

- I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED.
- I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Date \_\_\_\_\_

\_\_\_\_\_  
(Name)

For County of Los Angeles

---

**Appendix F**

**Hangar Financing Options**

---

Hangars are unusual among airport facilities in terms of the ways in which they can be financed. Not all of the typical airport funding sources can be used for hangar development – hangars are not eligible, for example, to receive federal AIP grants. Portions of the hangars' access taxiways, however, are eligible for AIP grants. Considering the high priority assigned to construction of additional hangars at Compton Airport, it is appropriate to take a closer look at hangar financing options.

Table F-1 compares the advantages of five different public and private hangar financing options. While intended primarily for financing the development of permanent T-hangars, the five financing options can also be applied to the development of portable hangars and corporate or executive style hangars.

At Compton Airport, virtually all of the small aircraft storage hangars have been built and financed by the county. The large conventional hangars and the FBO facilities were developed by the private sector.

For the near term, it is anticipated that future hangar construction (fixed or portable types "T" or "box" types) will continue to be financed and owned by the County. This financing approach is consistent with past County practice and permits the County to allocate its financial resources as appropriate to revenue-producing airport improvements.

At Compton Airport, the Airport-owned/Airport-financed and Airport-owned/State Loan Program-financed approaches to financing hangar development appear to offer the greatest likelihood of success. It is anticipated that, at least for the near term, any new hangars constructed at the Airport will be airport-owned/Airport-financed or Airport-owned/State Loan Program-financed.

Table F-1

## Hangar Financing Options

### Compton Airport

#### Privately Owned/Privately Financed

This approach is most often pursued at publicly owned airports that are unable to afford the initial development cost of hangar construction or prefer to use their limited financial resources for other higher priority projects. The hangars are designed, financed, and owned by private sector interests. Title to improvements may or may not revert to the airport upon expiration of the lease term.

##### *Advantages*

- No public financing or capital required.
- Private development can generally be accomplished at lower cost and in less time than public development.
- Pride of private ownership and ownership equity interest may encourage above-average structural maintenance and facility utilization.
- Airport gains immediate revenue from land area rental/use fees.

##### *Disadvantages*

- Airport either gains no equity interest in improvements or gains no equity interest until term expiration.
- Revenue accruing to airport is modest (i.e., generally land rent only).
- Potential for private default and resultant turmoil.
- Airport sacrifices a measure of control to private interests.
- Potential for low quality or inconsistent design unless airport owner sets precise design and construction standards.

#### Airport Owned/Privately Financed

With this approach, the airport owner obtains private sector financing to construct the hangars and subsequently owns and operates them.

##### *Advantages*

- No public financing or capital required.
- Airport "owns" improvements thus facilitating control. (Note that private financier may retain some element of control over the facility and its use).

##### *Disadvantages*

- Private financing costs may be high.
- Loan assurances may encumber or constrain airport.
- Private financial interests (banks, savings and loans institutions, developers, etc.) are generally not familiar with hangar development projects.

#### Airport Owned/Airport Financed

This approach assumes that the airport has sufficient surplus income and/or retained earnings to self-finance hangar construction.

##### *Advantages*

- Generally results in the lowest "financing" costs.
- Airport owns improvements thus facilitating control.
- Use of airport funds does not impact community's general funds or bonding capability.
- Over the long term, airport realizes a significant measure of revenue.

##### *Disadvantages*

- Only larger airports with adequate financial resources are capable of pursuing this approach.
- Utilizes frequently scarce airport capital resources that might better be applied toward other airport improvement projects for which alternative funding sources are not available.
- Positive cash flow frequently not realized by airport for several years.

**Table F-1 continued**  
**Hangar Financing Options**  
**Compton Airport**

---

**Airport Owned/State Loan Program Financed**

This method of hangar financing has been successfully utilized by numerous airport owners in the state of California. The public airport owner borrows the funds necessary for hangar development from the California State Airport Loan Program. The loan is then retired from hangar rental revenues over a period of up to 15 years.

*Advantages*

- Airport owns improvements thus facilitating control.
- Scarce airport and community funds are not required.
- Interest rate charged (currently 7.5% per annum) is attractively below the rates available from private financing sources.
- Loan can be retroactively applied to eligible projects.
- Over the long term, airport realizes a significant measure of revenue.

*Disadvantages*

- The State Loan Program usually has backlog of loan requests – sometimes as long as a year.
- Repayment schedule has constant principal payments thus expenses usually exceed revenues in initial years.

**Airport Owned/Publicly Financed**

Using this arrangement, the airport utilizes funds or financial resources (general fund, general obligation bonds, revenue bonds, etc.) to construct hangars.

*Advantages*

- Airport owns improvements thus facilitating control.
- Scarce airport funds are not required.

*Disadvantages*

- Public resources may be unavailable or required for higher priority community projects.
- Bonding process may require security pledge and/or vote of citizenry.

Source: Hodges & Shutt

---

**Appendix G**  
**References**

---

California, State of. Department of Transportation. Division of Aeronautics. 1989. *Public Use Airport Inventory Data – Compton Airport*.

\_\_\_\_\_. Department of Transportation. Division of Aeronautics. 1989. *The California Aviation System Plan*.

Los Angeles, County of. Aviation Division. 1963. *Compton Airport Site Study*.

Northrup Corporation. 1972. *Los Angeles County Airports Noise Study*.

Southern California Association of Governments. 1987. *General Aviation System Study Phase II*.

United States, Department of Transportation, Federal Aviation Administration. 1989. *FAA Statistical Handbook of Aviation*.

\_\_\_\_\_. 1989. *General Aviation Activity and Avionics Survey*.

\_\_\_\_\_. 1989. *Airport Design – Advisory Circular 150/5300-13*.

\_\_\_\_\_. 1987. *National Plan of Integrated Airport Systems*.

\_\_\_\_\_. 1990. *FAA Aviation Forecasts*.

\_\_\_\_\_. 1987. *FAA Terminal Area Forecasts*.

Wilsey, Ham & Blair. 1963. *Compton General Plan – Preliminary Report*.

**ABOVE GROUND LEVEL (AGL):** An elevation datum given in feet above ground level.

**AIRPORT TRAFFIC CONTROL TOWER (ATCT):** A terminal facility that uses air/ground communications, visual signaling, and other devices to provide ATC services to aircraft operating in the vicinity of an airport or on the movement area. (AIM)

**AIRCRAFT ACCIDENT:** An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, and in which any person suffers death or serious injury as a result of being in or upon the aircraft or by direct contact with the aircraft or anything attached thereto, or in which the aircraft receives substantial damage. (NTSB)

**AIRCRAFT OPERATION:** The airborne movement of aircraft in controlled or noncontrolled airport terminal areas and about given en route fixes or at other points where counts can be made. There are two types of operations – local and itinerant. An operation is counted for each landing and each departure, such that a touch-and-go flight is counted as two operations. (FAA Stats)

**AIRCRAFT PARKING LINE LIMIT (APL):** A line established by the airport authorities beyond which no part of a parked aircraft should protrude. (Airport Design AC)

**AIRPORT:** An area of land or water that is used or intended to be used for the landing and taking off of aircraft, and includes its buildings and facilities, if any. (FAR 1)

**AIRPORT ELEVATION:** The highest point of an airport's usable runways, measured in feet above mean sea level. (AIM)

**AIRPORT LAYOUT PLAN (ALP):** A scale drawing of existing and proposed airport facilities, their location on the airport, and the pertinent clearance and dimensional information required to demonstrate conformance with applicable standards.

**AIRPORT REFERENCE CODE (ARC):** A coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. (Airport Design AC)

**AIRPORT LAND USE COMMISSION (ALUC):** A commission established under provisions of California Public Utilities Code, Sections 12670 et seq., in each county within which a public-use airport is located for the purpose of ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive airport noise and safety hazards. (Chapter 4, Article 3.5 of State Aeronautics Act)

**AMBIENT NOISE LEVEL:** Background noise level, the normal or existing level of environmental noise at a given location.

**APPROACH LIGHT SYSTEM (ALS):** An airport lighting system which provides visual guidance enabling a pilot to align the aircraft with the extended runway centerline during a final approach to landing. Among the specific types of systems are:

- LDIN – Sequenced Flashing Lead-in Lights.
- ODALS – Omnidirectional Approach Light System, a combination of LDIN and REILS.
- SSALR – Simplified Short Approach Light System with Sequenced Flashing Lights. (AIM)

**APPROACH SPEED:** The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration. (AIM)

**AVIGATION EASEMENT:** A type of easement that includes the following rights or restrictions: (1) the right of overflight above the property at any altitude above a surface specified in the easement. (2) A right to subject the property to noise, vibrations, fumes, dust, emissions associated with airport activities. (3) Prohibits the erection or growth of any object, tree or structure that would penetrate the defined airspace. (4) A right of entry to the property, with proper notice to the owner for the purpose of removing, marking, or lighting any structure or other object that may constitute a hazard or obstruction. (5) Prohibits certain land use characteristics that may create flight hazards, including electrical interference, glare, misleading light sources, smoke, steam, dust or other visual impairments and uses which may attract large flocks of birds.

**BASED AIRCRAFT:** Aircraft stationed at an airport on a long-term basis.

**CEILING:** Height above the earth's surface to the lowest layer of clouds or obscuring phenomena. (AIM)

**CIRCLING APPROACH/CIRCLE-TO-LAND MANEUVER:** A maneuver initiated by the pilot to align the aircraft with a runway for landing when a straight-in landing from an instrument approach is not possible or not desirable. (AIM)

**COMMERCIAL OPERATOR:** A person who, for compensation or hire, engages in the carriage by aircraft in air commerce of persons or property, other than as an air carrier. (FAR 1)

**COMMUNITY NOISE EQUIVALENT LEVEL (CNEL):** The noise measure adopted by the State of California for evaluating airport noise. It represents the composite noise levels of aircraft operations during an average annual 24-hour day. CNEL is measured in A-weighted decibels (dBA) and evening and nighttime operations are weighted to reflect a community's greater sensitivity to noise during these hours and to account for quieter ambient levels.

**COMMUTER AIR CARRIER:** An air taxi operator which performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week and places between which such flights are performed. (FAA Census)

**CONTROL ZONE:** Controlled airspace surrounding one or more airports, normally a circular area. Having a radius of five statute miles plus extensions to include instrument arrival and departure

paths. Most control zones surround airports with air traffic control towers and are in effect only for the hours the tower is operational.

**CONTROLLED AIRSPACE:** Any of several types of airspace within which some or all aircraft may be subject to air traffic control. (FAR 1)

**DAY-NIGHT AVERAGE SOUND LEVEL (Ldn):** The noise descriptor adopted by the U.S. Environmental Protection Agency for measurement of environmental noise. It represents the average daytime noise level during a 24-hour day, measured in decibels and adjusted to account for the lower tolerance of people to noise during nighttime periods.

**DECIBELS, A-WEIGHTED (dBA):** A measure of sound level, adjusted to account for the perception range of the human ear.

**DEED NOTICE:** A deed notice is a formal statement which is added to the legal description of the deed for a property and on any subdivision map which states that the property is subject to aircraft overflights. Deed notices are used as a form of buyer notification as a means of ensuring that those who are particularly sensitive to aircraft overflights can avoid moving to the affected areas. (Refer to overflight easement.)

**DISPLACED THRESHOLD:** A landing threshold that is located at a point on the runway other than the designated beginning of the runway. (See Threshold) (AIM)

**FEDERAL AVIATION REGULATIONS (FAR):** Regulations issued by the FAA to regulate air commerce; issued as separate "Parts", e.g., Part 77.

**FAR PART 77:** The part of the Federal Aviation Regulations which deals with objects affecting navigable airspace.

**FAR PART 77 SURFACES:** Imaginary surfaces established with relation to each runway of an airport. There are five types of surfaces: (1) primary; (2) approach; (3) transitional; (4) horizontal; and (5) conical.

**FEDERAL AVIATION ADMINISTRATION (FAA):** The United States government agency which is responsible for insuring the safe and efficient use of the nation's airspace.

**FIXED BASE OPERATOR (FBO):** A business operating at an airport that provides aircraft services to the general public, including but not limited to sale of fuel and oil; aircraft sales, rental, maintenance, and repair; parking and tiedown or storage of aircraft; flight training; air taxi/charter operations; and specialty services, such as instrument and avionics maintenance, painting, overhaul, aerial application, aerial photography, aerial hoists, or pipeline patrol.

**GENERAL AVIATION:** That portion of civil aviation which encompasses all facets of aviation except air carriers. (FAA Stats)

**GLIDE SLOPE:** An electronic signal radiated by a component of an ILS to provide descent path guidance to approaching aircraft.

**HELIPAD:** A small, designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters. (AIM)

**INSTRUMENT APPROACH PROCEDURE:** A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority. Refer to nonprecision and precision approach procedures. (AIM)

**INSTRUMENT FLIGHT RULES (IFR):** Rules governing the procedures for conducting instrument flight. Generally, IFR applies when meteorological conditions with a ceiling below 1,000 feet and visibility less than 3 miles prevail. (AIM)

**INSTRUMENT LANDING SYSTEM (ILS):** A precision instrument approach system which normally consists of the following electronic components and visual aids: (1) Localizer; (2) Glide Slope; (3) Outer Marker; (4) Middle Marker; (5) Approach Lights. (AIM)

**INSTRUMENT OPERATION:** An aircraft operation in accordance with an IFR flight plan or an operation where IFR separation between aircraft is provided by a terminal control facility. (FAA ATA)

**INSTRUMENT RUNWAY:** A runway equipped with electronic and visual navigation aids for which a precision or nonprecision approach procedure having straight-in landing minimums has been approved. (AIM)

**ITINERANT OPERATION:** An arrival or departure performed by an aircraft from or to a point beyond the local airport area.

**LARGE AIRCRAFT:** An aircraft of more than 12,500 pounds maximum certificated takeoff weight. (FAR 1)

**LOCALIZER (LOC):** The component of an ILS which provides course guidance to the runway. (AIM)

**LOCALIZER TYPE DIRECTIONAL AID (LDA):** A NAVAID used for nonprecision instrument approaches with utility and accuracy comparable to a localizer but which is no a part of a complete ILS and is not aligned with the runway. (AIM)

**LOCAL OPERATION:** An arrival or departure performed by an aircraft: (1) operating in the traffic pattern, (2) known to be departing or arriving from flight in local practice areas, or (3) executing practice instrument approaches at the airport. (FAA ATA)

**MEAN SEA LEVEL (MSL):** An elevation datum given in feet above mean sea level.

**MICROWAVE LANDING SYSTEM (MLS):** A precision instrument approach system providing a function similar to an ILS, but operating in the microwave spectrum. It normally consists of three components: azimuth station, elevation station, and precision distance measuring equipment.

**MINIMUM DESCENT ALTITUDE (MDA):** The lowest altitude, expressed in feet above mean sea level, to which descent is authorized on final approach or during circle-to-land maneuvering in execution of a standard instrument approach procedure where no electronic glide slope is provided. (FAR 1)

**MISSED APPROACH:** A maneuver conducted by a pilot when an instrument approach cannot be completed to a landing. (AIM)

**NAVIGATIONAL AID/NAVAID:** Any visual or electronic device airborne or on the surface which provides point-to-point guidance information or position data to aircraft in flight. (AIM)

**NOISE CONTOURS:** Lines drawn about a noise source indicating constant energy levels of noise exposure. CNEL and Ldn are the measures used to describe community exposure to noise.

**NONPRECISION APPROACH PROCEDURE:** A standard instrument approach procedure in which no electronic glide slope is provided. (FAR 1)

**NONPRECISION INSTRUMENT RUNWAY:** A runway with an instrument approach procedure utilizing air navigation facilities, with only horizontal guidance, or area-type navigation equipment for which a straight-in nonprecision instrument approach procedure has been approved or planned, and no precision approach facility or procedure is planned. (Airport Design AC)

**OBJECT FREE AREA (OFA):** A two-dimensional ground area surrounding runways, taxiways, and taxilanes which is clear of objects except for objects whose location is fixed by function. (Airport Design AC)

**OBSTRUCTION:** Any object of natural growth, terrain, or permanent or temporary construction or alteration, including equipment or materials used therein the height of which exceeds the obstruction standards of subpart C of FAR Part 77 "Objects Affecting Navigable Airspace".

**OBSTACLE FREE ZONE (OFZ):** The airspace defined by the runway OFZ and, as appropriate, the inner-approach OFZ and the inner-transitional OFZ, which is clear of object penetrations other than frangible NAVAIDs.

**OBSTRUCTION:** An object, including a mobile object, which penetrates an imaginary surface described in FAR Part 77.

**OUTER MARKER:** A marker beacon at or near the glide slope intercept position of an ILS approach. (AIM)

**OVERFLIGHT EASEMENT:** An easement which describes the right to overfly the property above a specified surface and includes the right to subject the property to noise, vibrations, fumes and emissions. An overflight easement is used primarily as a form of buyer notification.

**OVERFLIGHT ZONE:** The area(s) where aircraft are maneuvering to enter or leave the traffic pattern, typically defined by the FAR Part 77 horizontal surface.

**OVERLAY ZONING:** Establishes development standards in areas of special concern over an above the standards applicable to basic underlying zoning districts.

**PLANNING BOUNDARY:** The area designated by the ALUC surrounding each airport pursuant to Section 21675 (c) of the Public Utilities Code in which the ALUC plan applies.

**PRECISION APPROACH PATH INDICATOR (PAPI):** An airport landing aid similar to a VASI, but which has light units installed in a single row rather than two rows.

**PRECISION APPROACH PROCEDURE:** A standard instrument approach procedure in which an electronic glide slope is provided. (FAR 1)

**PRECISION INSTRUMENT RUNWAY:** A runway with an instrument approach procedure utilizing an instrument landing system (ILS), microwave landing system (MLS), or precision approach radar (PAR). (Airport Design AC)

**PUBLIC USE AIRPORT:** Publicly or privately owned airport that offers the use of its facilities to the public without prior notice or special invitation or clearance, and that has been issued a California Airport Permit by the Division of Aeronautics of the California Department of Transportation. For purposes of the ALUC plan, the State Division of Aeronautics has interpreted "public use" to include special-use airports in which commercial operators offer service to the public.

**REFERRAL AREA:** The area around an airport defined by the planning boundary adopted by the ALUC within which certain land use proposals are to be referred to the ALUC for review.

**RUNWAY EDGE LIGHTS:** Lights used to define the lateral limits of a runway. Specific types include:

- HIRL – High-Intensity Runway Lights.
- MIRL – Medium-Intensity Runway Lights.

**RUNWAY END IDENTIFIER LIGHTS (REIL):** Two synchronized flashing lights, one on each side of the runway threshold, which provide a pilot with a rapid and positive visual identification of the approach end of a particular runway. (AIM)

**RUNWAY PROTECTION ZONE (RPZ):** An area (formerly the clear zone) used to enhance the safety of aircraft operations. It is at ground level beyond the runway end. (Airport Design AC)

**RUNWAY SAFETY AREA (RSA):** A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway. (Airport Design AC)

**SAFETY ZONE(S):** For the purposes of this Plan, a safety zone is an area near an airport in which land use restrictions are established to protect the safety of the public from potential aircraft accidents.

**SINGLE-EVENT NOISE:** As used in this report, it refers to the noise from an individual aircraft operation or overflight.

**SINGLE EVENT NOISE EXPOSURE LEVEL (SENEL) OR (SEL):** The A-weighted sound level of a single noise event, such as an aircraft overflight, measured over the time interval for which the sound exceeds a threshold level and normalized to a reference duration of one second. SENEL and SEL values are identical: SENEL is used in California, SEL is adopted by the EPA and FAA.

The SENEL or SEL expresses the level of a continuous one-second signal that contains the same amount of energy as the entire noise event. This value is not equal to the maximum A-level occurring during the noise event. Aircraft noise events last more than one second. SENEL/SEL values will be higher than the maximum A-level for the same events.

**SMALL AIRCRAFT:** An aircraft of 12,500 pounds or less maximum certificated takeoff weight. (FAR 1)

**STANDARD INSTRUMENT DEPARTURE (SID):** A preplanned instrument flight rules (IFR) air traffic control departure procedure printed for pilot use in graphic and/or textual form. SID's provide transition from the terminal to the appropriate en route structure. (AIM)

**STANDARD TERMINAL ARRIVAL ROUTE (STAR):** A preplanned instrument flight rule (IFR) air traffic control arrival route published for pilot use in graphic and/or textual form. STARs provide transition from the en route structure to an outer fix or an instrument approach fix/arrival waypoint in the terminal area. (AIM)

**STOPWAY:** An area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted takeoff, without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted takeoff. (FAR 1)

**STRAIGHT-IN INSTRUMENT APPROACH:** An instrument approach wherein final approach is begun without first having executed a procedure turn; it is not necessarily completed with a straight-in landing or made to straight-in landing weather minimums. (AIM)

**TAXILANE:** The portion of the aircraft parking area used for access between taxiways, aircraft parking positions, hangars, storage facilities, etc. (Airport Design AC)

**TAXIWAY:** A defined path, from one part of an airport to another, selected or prepared for the taxiing of aircraft. (Airport Design AC)

**TERMINAL INSTRUMENT PROCEDURES (TERPS):** Procedures for instrument approach and departure of aircraft to and from civil and military airports. There are four types of terminal instrument procedures: precision approach, nonprecision approach, circling, and departure.

**TERMINAL RADAR SERVICE AREA (TRSA):** Airspace surrounding designated airports wherein ATC provides radar vectoring, sequencing, and separation on a full-time basis for all IFR and participating VFR aircraft. (AIM)

**THRESHOLD:** The beginning of that portion of the runway usable for landing. (AIM) (Also see Displaced Threshold)

**TOUCH-AND-GO:** A practice maneuver consisting of a landing and a takeoff performed in one continuous movement. A touch-and-go is defined as two operations.

**TRAFFIC PATTERN:** The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach. (AIM)

**TRANSIENT AIRCRAFT:** Aircraft not based at the airport.

**UNICOM (Aeronautical Advisory Station):** A nongovernment air/ground radio communication facility which may provide airport information at certain airports. (AIM)

**UTILITY AIRPORT:** An airport designed, constructed, and maintained to serve airplanes having approach speeds less than 121 knots. (Airport Design AC)

**VISUAL APPROACH:** An approach where the pilot must use visual reference to the runway for landing under VFR conditions.

**VISUAL APPROACH SLOPE INDICATOR (VASI):** An airport landing aid which provides a pilot with visual descent (approach slope) guidance while on approach to landing. Also see PAPI.

**VISUAL FLIGHT RULES (VFR):** Rules that govern the procedures for conducting flight under visual conditions. VFR applies when meteorological conditions are equal to or greater than the specified minimum — generally, a 1,000-foot ceiling and 3-mile visibility.

**VISUAL GLIDE SLOPE INDICATOR (VGS):** A generic term for the group of airport visual landing aids which includes Visual Approach Slope Indicators (VASI), Precision Approach Path Indicators (PAPI), and Pulsed Light Approach Slope Indicators (PLASI). When FAA funding pays for this equipment, whichever type received the lowest bid price will be installed unless the airport owner wishes to pay the difference for a more expensive unit.

**VISUAL RUNWAY:** A runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an FAA-approved airport layout plan. (Airport Design AC)

**WIND SHEER:** A condition typified by rapid changes in wind velocity and duration with altitude.