

EXECUTIVE SUMMARY  
AIRPORT MASTER PLAN  
PHYSICAL/TECHNICAL REPORT  
COLORADO SPRINGS MUNICIPAL AIRPORT

Prepared For:

The City of Colorado Springs  
Department of Public Works  
Colorado Springs, Colorado

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## COLORADO SPRINGS MUNICIPAL AIRPORT

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## PREFACE

Leisure and business travelers throughout the nation are depending more and more upon air travel as a means of transportation. As a result, the need for efficient and safe airport facilities with greater capacities is also intensifying. The economic development of many communities has significantly been affected by the caliber of airport facilities because corporate executives, government leaders and private individuals typically use said facilities as a factor for judging an area's desirability.

The Colorado Springs Municipal Airport serves as a base of operation for both civilian and military aviation activity. The City of Colorado Springs owns and operates the airport, and Peterson Air Force Base facilities are located on airport property. Current aircraft and passenger activity levels are placing a strain on the existing airfield and passenger terminal complex, therefore, the time for major facility expansion has arrived.

Under the City's leadership, plans have been formulated to relocate the passenger terminal complex. Site preparation for a new runway has also been completed. Before proceeding with these and other improvements, a re-evaluation of all existing airport facilities and future requirements is, however, appropriate. The compatibility of recently completed facility expansion plans can then be determined, refinements can be made and a comprehensive airport plan can be developed.

The Federal Aviation Administration (FAA) assists with airport planning projects by authority of the Airport and Airways Improvement Act of 1982 and the current grant program, known as the Airport Improvement Program (AIP). This Colorado Springs Municipal Airport Master Plan study has been conducted in accordance with FAA guidelines contained in Advisory Circular 150/5070-6A. By definition, the plan is a concept of the airport's long-term development. In this report, the plan is graphically depicted and data and logic upon which the plan is based are reported.

The plan's goal is "to provide guidelines for future airport development which will satisfy aviation demand in a financially feasible manner, while at the same time resolving the aviation, environmental and socioeconomic issues existing in the community."

Greiner Engineering, Inc. of Colorado Springs, Colorado and Tampa, Florida has served as the overall project managers and performed all analyses pertaining to airport facilities, development staging, and cost estimates. Simat, Helliesen and Eichner of Waltham, Massachusetts identified the airport's service area, analyzed historical and future aviation activity levels, evaluated the plan's financial feasibility and identified the airport's economic impact on the community.

The desirability and economy of the entire Colorado Springs area will be enhanced by the implementation of this plan. Close coordination between the City of Colorado Springs and local, state and federal agencies was maintained throughout the study and will need to continue if successful implementation is to be achieved.

## 1.0 INTRODUCTION

### 1.1 BACKGROUND

\* The Colorado Springs Municipal Airport's current airfield is comprised of a primary north-south runway, two crosswind runways and a complimentary system of taxiways. Scheduled passenger and general aviation building facilities are located on the west side of the airfield; Peterson Air Force Base facilities are located at the north end of the airfield; and vacant, undeveloped land currently exists south and east of the airfield, with the exception of temporary military practice areas to the south. Exhibit 1.1 (Appendix) identifies these and other airport features.

\* In 1981, a "Land Use and Master Plan Study" was prepared. This study produced an airport master plan for facility development and a noise abatement plan. Improvements to the airport completed since then include rehabilitation of the existing north-south runway, site preparation for a new north-south runway/associated taxiways, and rehabilitation of the air carrier aircraft apron. The two major airport facility improvements called for in the 1981 Master Plan not yet accomplished are constructing the new north-south runway and constructing a new passenger terminal complex south of the airfield.

\* In March 1986, a "Conceptual Terminal Design Study" for a new passenger terminal was completed. Shortly thereafter, schematic design and construction document preparation for the terminal building, aircraft apron, entrance roadways, and parking facilities began. Phase I of this effort was completed in December 1986.

## 1.2 PROJECT SCOPE AND KEY ISSUES

\* Prior to initiating construction of the new passenger terminal complex, the second north-south runway and other airport facility improvements, the City of Colorado Springs retained Greiner Engineering, Inc. to re-evaluate the existing facility improvements program and noise abatement plan.

\* Tasks accomplished during this study are as follows:

- \* Facility and Aviation Activity Inventory
- \* Aviation Activity Forecasts
- \* Airfield and Building Facility Demand/Capacity Analysis
- \* Facility Requirements Program
- \* Facility Development Alternatives
- \* Environmental Overview
- \* Final Graphic Plan Depiction
- \* Facility Phasing
- \* Project Cost Estimates
- \* Financial Feasibility
- \* Economic Impact
- \* Community Involvement
- \* Administration
- \* Reports

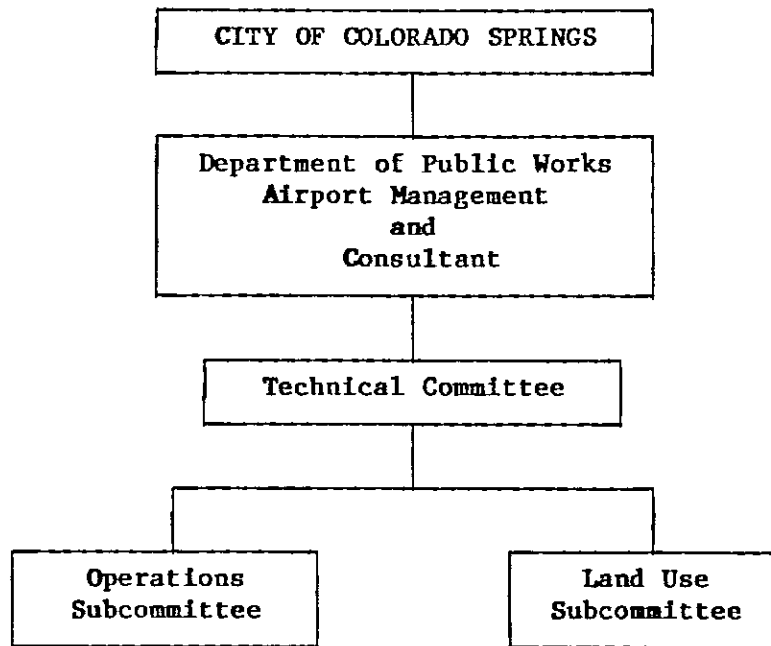
\* Key issues addressed in this study include:

- \* Future Aircraft and Passenger Activity
- \* Airfield Requirements
- \* Projected On-Airport Land Use
- \* Major Arterial Roadway Requirements in Close Proximity to the Airport
- \* Surface Water Runoff Management
- \* Major Utility Systems

## 1.3 ORGANIZATION AND SCHEDULE

\* A major objective of this plan is feasibility from the perspective of local, state and federal agencies. The plan also attempted to reflect the City's intended approach towards managing the airport. The basic approach to the study allows for the flow of information to and from all parties, as follows.





\* The Technical Committee was responsible for providing input pertaining to operational and land use alternatives.

\* The Operations Subcommittee was comprised of individuals and/or agencies involved in flying aircraft into and out of the airport.

\* The Land Use Subcommittee was comprised of land planners from the City of Colorado Springs, El Paso County and the Pikes Peak Area Council of Governments (PPACG).

\* Public involvement was encouraged so that all interested parties could present their views. Specifically, two advertised public information meetings were held in the City Council Chambers.

## 2.0 CONCLUSIONS AND RECOMMENDATIONS

### 2.1 SERVICE AREA AND AVIATION ACTIVITY FORECASTS

\* The Colorado Springs Municipal Airport is a small hub airport located 65 miles south of Denver's Stapleton International Airport and 40 miles north of Pueblo Memorial Airport. For planning purposes:

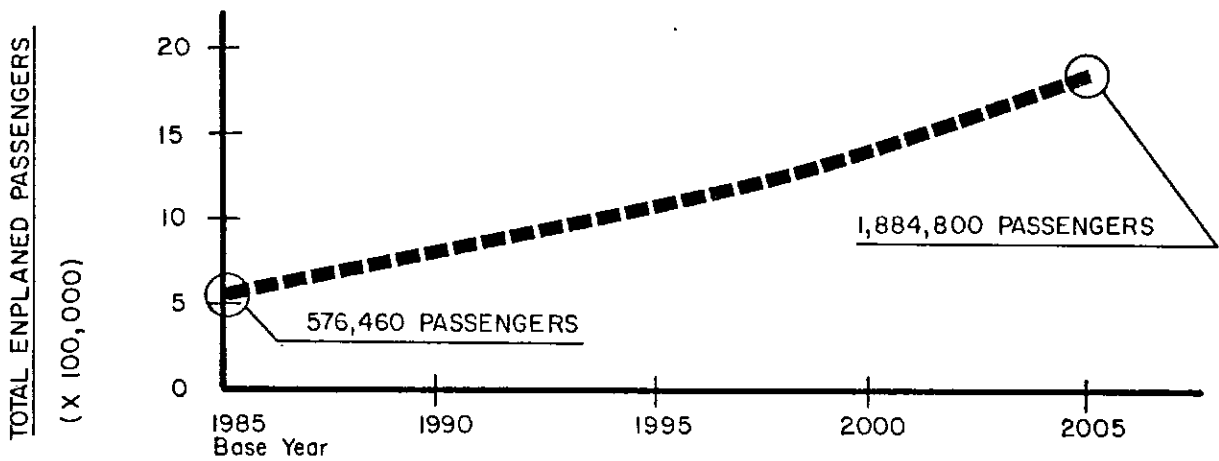
1. The primary service area for U.S. small hub airports is defined as that which is within a 40-minute driving time of the airport. This area, shown on Exhibit 2.1 (Appendix), encompasses most of El Paso and Teller Counties and represents the area which is most likely to be served by the Colorado Springs Municipal Airport.
2. The secondary service area extends to the area within a 60-minute drive of the airport. This defined service area includes the Pueblo area to the south and extends northward to the Castle Rock area.

\* Colorado Springs' strong socioeconomic base will be a major contributing factor in air travel growth in Colorado Springs during the next 20 years. Further, a travel agency survey indicates that with competitive service quality and facilities, the Colorado Springs airport has the capability of increasing its service area.

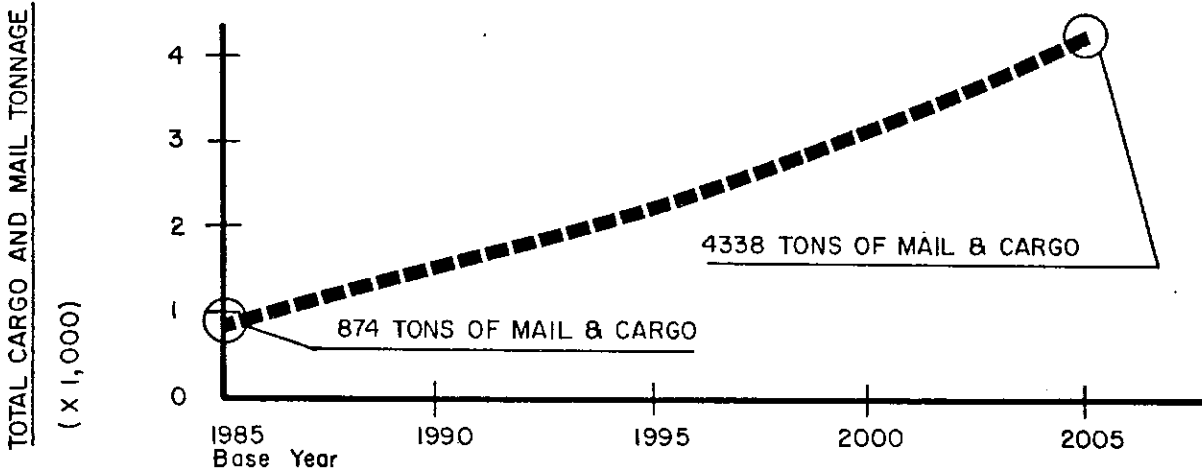
\* Following several years of instability due to the 1978 airline deregulation, the 1979 energy crisis and the 1981 PATCO strike, the Colorado

**AVIATION ACTIVITY FORECASTS \***  
 COLORADO SPRINGS MUNICIPAL AIRPORT

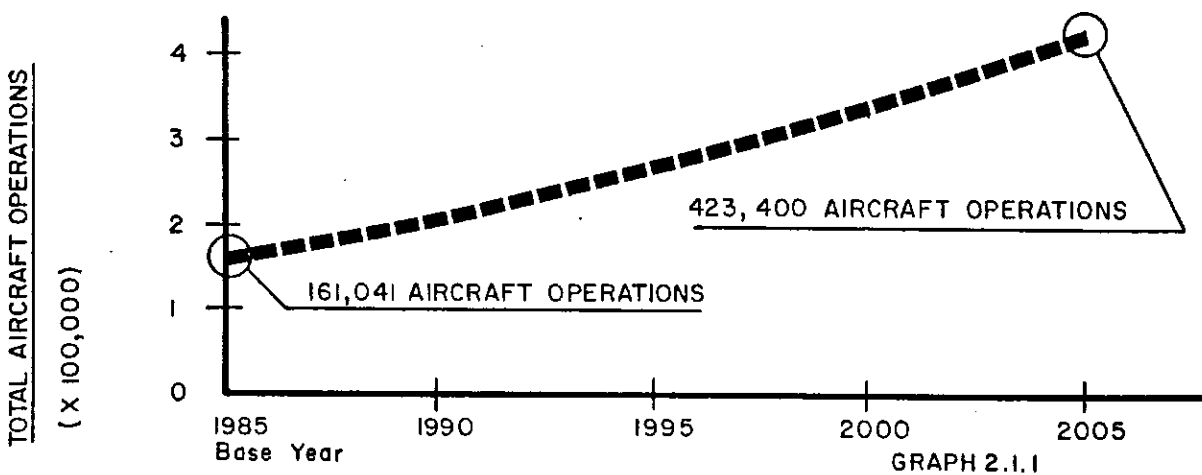
ANNUAL ENPLANED PASSENGERS



ANNUAL CARGO AND MAIL TONNAGE



ANNUAL AIRCRAFT OPERATIONS



\* SEE TABLE 2.1 IN APPENDIX FOR A CONSOLIDATED LIST OF FORECASTS

GRAPH 2.1.1

Spring Municipal Airport has recently been increasing in number of enplaned passengers and has, in fact, become a leader among airports of its size since 1983. For the period 1978 to 1985, Colorado Springs passenger traffic increased by 92 percent from 316,464 to 608,781 passengers. This reflects a marked increase in the number of carriers serving Colorado Springs as a separate market from Denver, rather than merely a spoke point. In 1985, the Colorado Springs airport provided non-stop service to five locations and one-stop service to fifteen locations, after reaching a low in 1982 of two non-stop markets.

\* Between 1978 and 1985, scheduled operations increased from 22,953 to 30,200 movements, general aviation operations decreased from 128,814 to 96,770 movements, and military activity increased slightly from 34,000 to 34,142 movements.

\* Forecasted activity for the year 2005 is 52,400 total scheduled airline operations, 315,400 general aviation operations, and 55,600 military operations. Thus, by the year 2005, the total number of annual operations are forecasted to reach 423,400, from 161,112 in 1985. A consolidated list of forecasts is provided in Table 2.1 (Appendix).

## **2.2 DEMAND CAPACITY ANALYSIS, FACILITY REQUIREMENTS AND ALTERNATIVES**

\* An airport's future requirements program is based on an analysis of existing airfield and building area facility capacities, locations, conditions, and forecasted demand levels. Airspace and air traffic control are also important airport "facilities" requiring careful consideration.

\* A comparison of forecasted aircraft activity versus airfield capacities suggests the existing airfield will provide sufficient annual capacity only until the early 1990's. With the long lead time required for design, funding and construction, it appears construction of the second parallel runway in the near future is appropriate.

\* The following findings of the Master Plan Study conducted concurrently with the FAR Part 150 Noise Study support the need for the new runway.

1. These two studies compared airport-related noise impacts on the community with one versus two north-south parallel runways. The studies conclusively determined the second north-south runway is required to assure future compatibility between the airport and the surrounding community.
2. The second runway would provide much needed general aviation capacity and improve Instrument Flight Rules (IFR) capacity from the south. It may also be beneficial to establish a general aviation reliever airport to accommodate a portion of the general aviation touch-and-go activity. This action is, however, considered to be secondary in importance to the noise mitigation. In addition, the second north-south runway would also protect the investment already made in existing facilities. If the second north-south runway is not constructed in the near future to establish compatibility between the airport and community, the airport could conceivably need to be relocated in future years.

\* A primary runway length of 13,500 feet is required for the forecasted future non-stop service destination points and the weight of aircraft expected to serve these locations. The existing primary runway of 11,121 feet can only be extended 1,000 additional feet without effecting future airfield improvements. Therefore, construction of the new parallel runway to the full 13,500 feet as planned is required.

\* Precision instrumentation is ultimately required at both ends of both north-south runways. Visual approaches to both ends of the crosswind runways are sufficient. Pavement edge lighting is required on all active runways and taxiways.

\* It is recommended that southwest-northeast Runway 3-21 be phased out. Only one crosswind runway (Runway 12-30) is required to provide sufficient airfield wind coverage and optimum airfield capacity. This will also minimize airfield maintenance costs. The proposed elimination of crossfield Runway 3-21 provides for optimum location of the new terminal.

\* A new passenger terminal complex in the airport's south quadrant is required to handle the forecasted enplanements. Substantial additional acreage, not available at the existing terminal site, is necessary for ultimate expansion and for optimizing scheduled aircraft taxiing distances using either of the north-south parallel runways. The new terminal location midfield in an undeveloped area provides ample acreage for future aviation and non-aviation support facilities required for a major terminal complex.

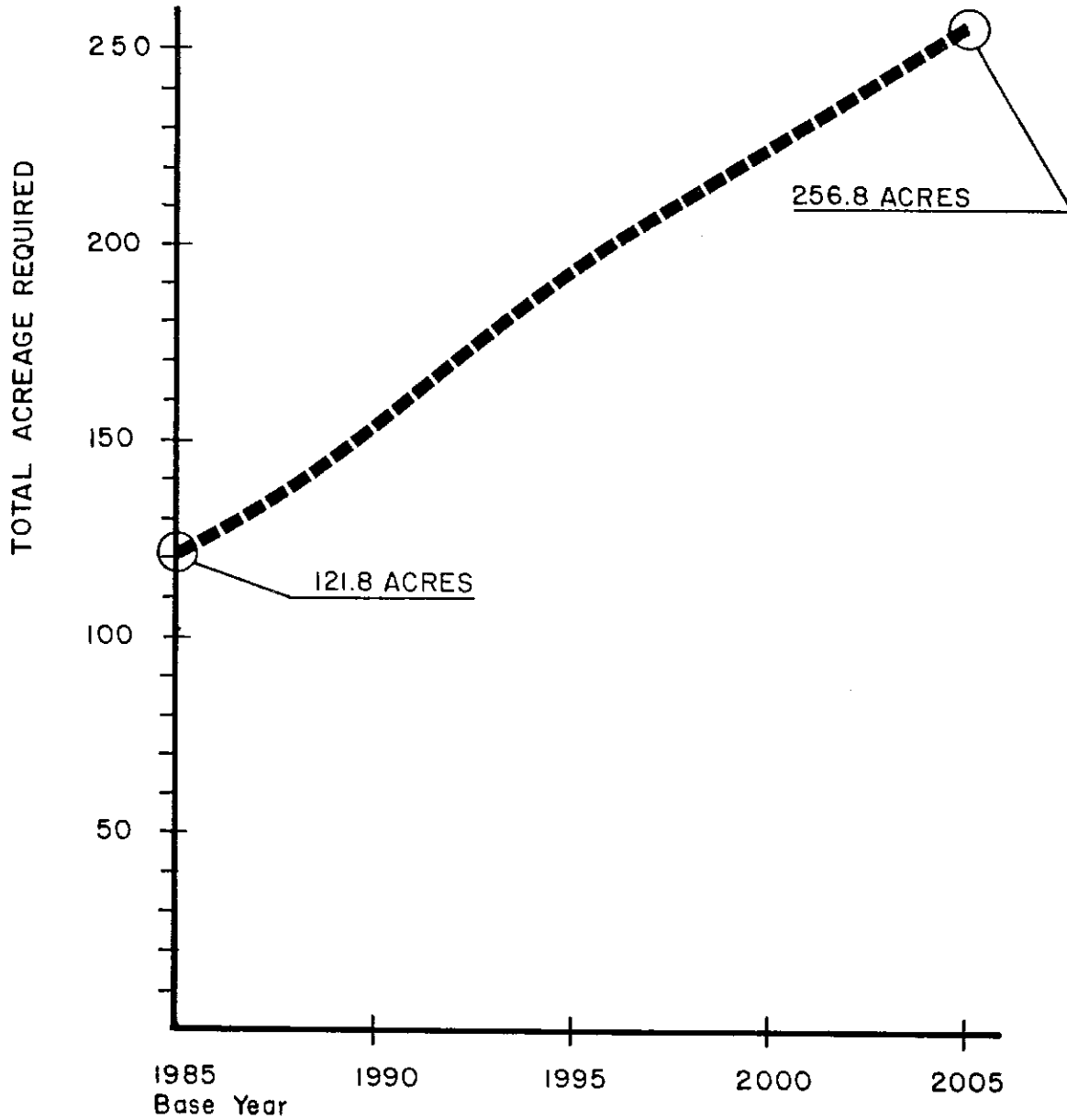
\* Facilities required for all cargo freight versus express package and airline cargo activities vary. Sufficient acreage for all possible cargo functions, including a possible air express hub operation, should be allocated. Colorado Springs high-tech companies, the foreign trade zone and other industries urgently need modern freight handling facilities airside and landside to handle their products.

\* Off-airport roadways, as well as new on-airport roadways and vehicle parking lots, will require ample room for future expansion. Vehicular movements related to the airport, such as scheduled airline passengers and employees, terminal support personnel, fuel suppliers, airport employees, general aviation pilots and passengers, and fixed based operators have been considered in the Master Plan and provisions for growth recommended.

\* The passenger terminal's relocation from the airport's west to south quadrant and anticipated aviation increases are the most influential events affecting the access requirements. Peak hour vehicular movement projections based on passenger enplanement forecasts suggest there will be sufficient demand by the end of the planning period to justify a four-lane terminal area entrance road from the west and a two-lane entrance road from the south. In addition, a one-way loop road to the terminal building is required to provide appropriate passenger enplaning and deplaning drop-off lanes, vehicle parking access and commercial vehicle exposure.

\* A traffic study performed by Greiner Engineering, Inc. indicates off-airport roadway improvements in the airport's vicinity area are required to

FACILITIES REQUIREMENTS \*  
COLORADO SPRINGS MUNICIPAL AIRPORT



\* SEE TABLE 2.2 IN APPENDIX FOR A CONSOLIDATED LIST OF FACILITIES REQUIREMENTS.

GRAPH 2.2.1



assure sufficient capacity for future vehicular traffic to the new terminal area. These proposed improvements are in order of priority as follows:

1. (a) Upgrade Powers Boulevard to four lanes and extend southward from Fountain Boulevard to existing Drennan Road; (b) extend Hancock Expressway from future Chelton Drive east to Powers Boulevard; and (c) obtain the required right-of-way for a grade separated intersection at Drennan Road and Powers Boulevard.
2. Upgrade Powers Boulevard between Platte Avenue and Fountain Boulevard to a four-lane roadway.
3. Upgrade Drennan Road between Academy and Powers Boulevard to a four-lane roadway.
4. Construct a grade separated intersection at Drennan Road and Powers Boulevard west of the airport.
5. Construct a grade separated intersection at Powers Boulevard and the south airport entrance road of the airport.

\* Various uses for the existing terminal, such as charter/tour organizations, museums, recreational facilities, office space, retail stores, assembly plants, etc., are discussed in the study. The existing terminal building roadway system and vehicle parking lots should be adjusted to conform with future tenant demand levels. No combination of future users are, however, likely to require greater roadway or parking capacity. Therefore, no adjustments to existing terminal-related landside facilities are required unless it becomes financially advantageous to a future tenant or to airport management to reconfigure the entire area.

\* A consolidated Facility Requirements Program in terms of acreages required is provided in Table 2.2 (Appendix).

\* One of five airfield expansion alternatives studied was selected and calls for two parallel crossfield taxiways and parallel taxiways to all runways.

\* One of five land use organization alternatives studied in the new terminal area was selected and calls for reserving all land between the runways for the ultimate passenger terminal expansion. Acreage west of and adjacent to the south end of the new north-south runway is reserved for cargo facilities. Other land south of the new support facilities is reserved for terminal and non-aviation commercial land uses.

### 2.3 ENVIRONMENTAL OVERVIEW

\* An essential phase of the airport planning process is to determine the environmental impact of proposed improvements. During the past 20 years, federal guidelines regarding procedures for determining the significance of project impacts has become increasingly structured.

\* The following two reports pertaining to the environmental impact of airport improvements have previously been filed with the FAA: "Environmental

Impact Assessment Report for the Proposed Master Plan Development at Colorado Springs Municipal Airport" dated October 1974, and "Land Use and Master Plan Study" dated March 1981.

\* According to existing federal regulations, improvements called for in this master plan which may require environmental assessments are as follows:

1. Construction of the new north-south Runway 17L-35R (as a result of the former environmental studies, this runway is in the process of phased construction with grading and drainage now complete);
2. Establishing instrument landing systems on new Runway 17L-35R (future environmental requirements to be determined by FAA); and
3. Construction of the new public entrance road into the airport's south quadrant (future environmental requirements to be determined by FAA).

\* The FAR Part 150 Noise Compatibility Study initiated in early 1986 addresses the noise/land use implications of the first two items above. The FAA will need to be consulted to determine whether the Environmental Impact Assessment Report submitted in 1974 in conjunction with the recent FAR Part 150 Noise Study sufficiently assesses the impact of the above-listed projects and facilities.

## 2.4 PHYSICAL PLAN

\* Major features of the airport master plan to be implemented during the next 20 years are listed below and shown on Exhibit 2.2 (Appendix).

- \* A passenger terminal complex including airside, terminal building, and landside facilities is to be constructed in the airport's south quadrant;
- \* A network of public and restricted use service roads to passenger terminal, terminal support and other facilities in the airport's south quadrant is to be constructed;
- \* Runway 17L-35R is to be completed east of and parallel to existing Runway 17R-35L;
- \* An expanded taxiway system, including parallel crossfield taxiways, parallel taxiways east of existing Runway 17R-35R, west of future Runway 17L-35R and southwest of existing Runway 12-30, is to be constructed;
- \* Existing Runway 3-21 and Taxiway C are to be abandoned;
- \* The existing electrical vault in the infield is to be relocated to east of proposed parallel Taxiway I east of existing Runway 17R-35R;

- \* A second airfield electrical vault is to be constructed in the airport's south quadrant to provide service to the new Runway 17L-35R and associated taxiways;
- \* Precision instrumentation, perhaps both instrument landing systems (ILS) and microwave landing systems (MLS), are to be installed at new runway Thresholds 17L and 35R;
- \* MLS are to be installed at existing Thresholds 17R and 35L;
- \* Visual approach aids, including Precision Approach Path Indicators (PAPI) and lighted windsocks are to be installed at new runway Thresholds 17L and 35R;
- \* The military's lease is to total 971± acres and is to include land in the north and east quadrants. Acreage in the south quadrant currently leased by the military will revert to civilian use;
- \* A site for a second Crash/Fire/Rescue facility is identified adjacent to new Runway 17L-35R in the south quadrant in the event it is required to provide sufficient response time to all airfield locations;
- \* Infrastructure, including electrical, gas, sewage, and potable/fire hydrant water service will be established in the south quadrant;

- \* A fuel farm to serve scheduled aircraft using the new terminal will be established in the south quadrant;
- \* The airport maintenance facility will be relocated from the center of the military's north quadrant leasehold to a site adjacent to Taxiway B and south of the air traffic control tower;
- \* General aviation facilities in the west quadrant are to be expanded;
- \* The existing passenger terminal building is to be converted as opportunities arise for other uses;
- \* Air cargo facilities are to be constructed west of Threshold 35L in the west quadrant and adjacent to Runway 17L-35R in the south quadrant;
- \* Existing Taxiway A is to be extended to Threshold 17R, and four associated connectors are to be constructed or reconfigured;
- \* Existing Runways 17R-35L and 12-30, as well as existing Taxiways A, B and D pavement strengths, will be reestablished.

## 2.5 STAGING AND COST ESTIMATES

\* Improvements to airport facilities are to be made according to aircraft operation and passenger levels. The useful life and condition of existing facilities also influence when improvements should be made. Therefore, initial priorities assigned to master plan projects are based on forecasted levels of demand and on information regarding the airport's development. Time frames associated with the projects are of secondary importance because they will periodically shift as actual activity levels are realized and as forecasts are updated.

\* A major objective of the planning process is for all improvements to become a part of and/or compatible with the long range plan. In addition, the useful life of facilities should be appropriate for the expenditure. Whenever the priority listing is reviewed and revised, this principle should be remembered recognizing that some limited life improvements may be necessary.

### Short Range Capital Improvement Program

\* Projects to be accomplished by the time activity levels reach approximately 212,000 total annual operations, 30,200 air carrier operations, and 880,000 passenger enplanements are listed in Table 2.3 (Appendix). The letters and numbers associated with each project on the exhibit indicate which of the following major improvement categories the project is associated with:

1. Existing Pavement and Lighting Systems - \$429,000 (Project Cost)
2. Existing Taxiway System Improvements - \$1,978,000 (Project Cost)
3. Airfield Pavement Expansion (New Runway, Etc.) - \$48,445,000  
(Project Cost)
4. Airfield Equipment - \$1,089,000 (Construction Cost)
5. Building Related Facilities (New Terminal, Etc.) - \$65,231,000  
(Project Cost)
6. Roadways - \$4,494,000 (Project Cost)
7. Utilities - \$5,061,000 (Project Cost)
8. Other (Drainage Facilities, Etc.) - \$5,707,000 (Project Cost)

#### Short Range Cost Estimates

\* To accomplish the short-range improvement program, the estimated total project cost is \$132,434,000 in 1986 dollars. Of this, \$65,432,500 is eligible for FAA funding under the current Airport Improvements Program, however, FAA's actual funding level will depend on the priority ranking of each project and on the FAA's total budget for any given year. An additional \$822,000 of improvements is eligible for federal funding under the Facilities and Equipment funding program. Program costs not eligible for any type of FAA funding total \$66,179,500.

#### Intermediate-Range Capital Improvement Program

\* Airport improvement projects associated with the intermediate-range program are required when airport activity levels reach approximately 269,900



total annual operations, 41,100 scheduled annual operations, and 1,190,700 annual enplaned passengers. While most projects included in the program are expansions to existing facilities or new facilities altogether, the program also includes replacing existing facilities likely to reach their useful life by the time projected activity levels are reached. Current estimates suggest that the activity levels associated with the intermediate-range program will occur by the year 1995.

\* An improvements program for this time frame must be recognized as a more generalized estimate when compared with the short-range improvements program. Project definitions and costs will presumably change by the time they are actually required, however, general definitions and estimated costs at this time are still helpful for planning purposes. Each intermediate-range improvements project is listed in Table 2.4 (Appendix) along with estimated costs for each.

#### Intermediate-Range Cost Estimates

\* The total estimated cost for accomplishing these intermediate-range program improvements is \$12,478,000 in 1986 dollars. FAA eligible project costs under the Airports Improvement Program total \$10,637,000. An additional \$569,000 of improvements is eligible for federal funding under the Facilities and Equipment funding program. Non-eligible project costs therefore total \$1,272,000.

### Long-Range Capital Improvements Program

\* When activity levels reach approximately 423,400 total annual operations, 52,400 scheduled operations, and 1,884,800 annual enplaned passengers, improvements included in the long-range program will be required. Current estimates suggest this activity level will be reached by the year 2005.

\* Generally, at this point in the airport's development, increasing emphasis will need to be placed on replacing existing facilities that have reached their useful life. It will also, however, be desirable to expand the airfield, install additional navigational aids, and expand passenger terminal complex facilities and access roadways according to the project list set forth in Table 2.5 (Appendix).

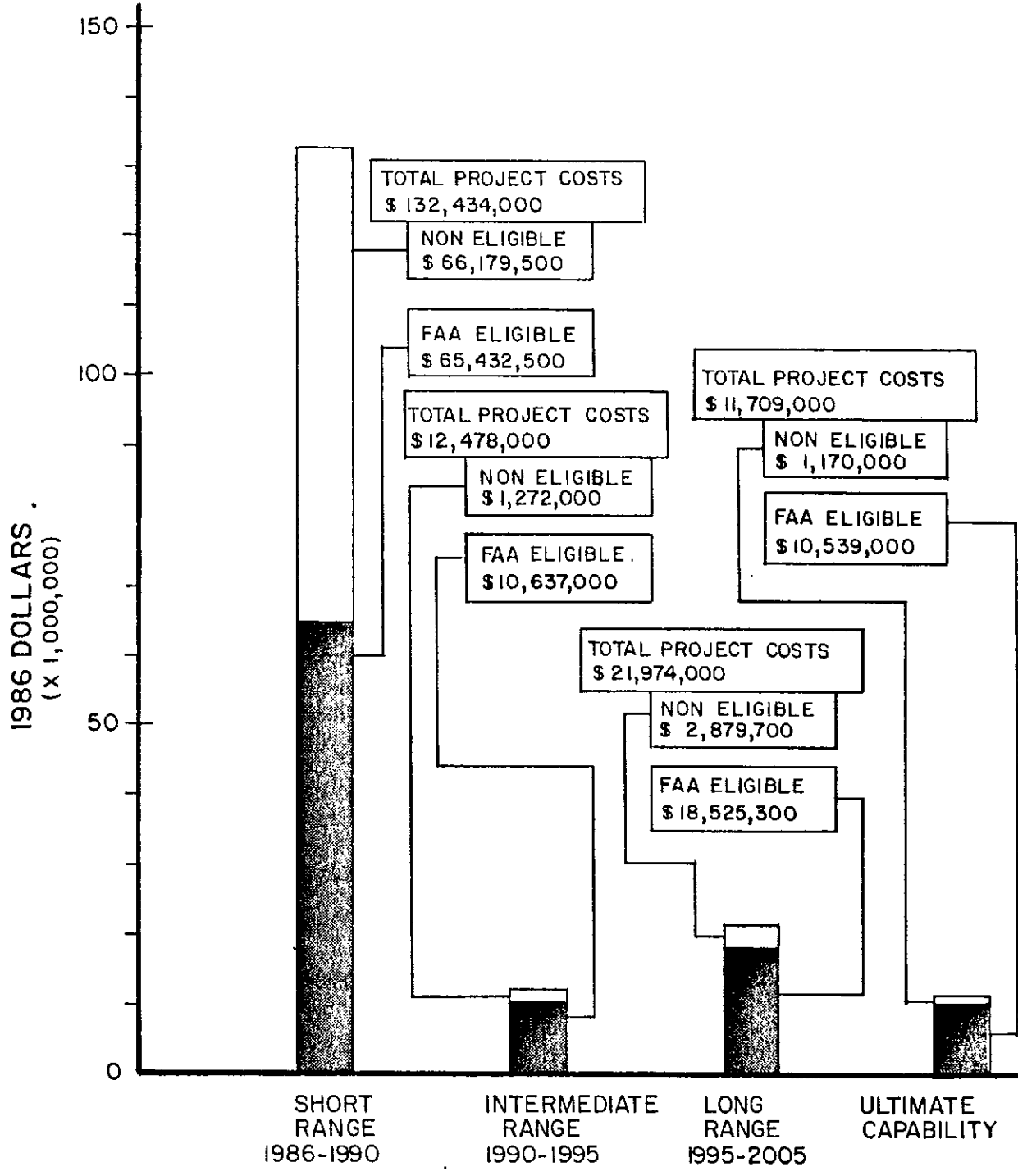
### Long-Range Cost Estimates

\* The total estimated cost for the long-range improvement program is \$21,974,000 in 1986 dollars. FAA eligible project costs under the Airport Improvement Program total \$18,525,300. An additional \$569,000 of improvements is eligible for federal funding under the Facilities and Equipment funding program. Non-eligible project costs total \$2,879,700.

### Ultimate Capability Improvement Program

\* Five airfield pavement expansion projects identified in this Master Plan as ultimate capability improvements are listed in Table 2.6 (Appendix).

**CAPITAL IMPROVEMENTS PROGRAM \***  
**COLORADO SPRINGS MUNICIPAL AIRPORT**



\* SEE TABLES 2.3, 2.4, 2.5 AND 2.6 IN APPENDIX FOR PROJECT DESCRIPTIONS AND COSTS.

GRAPH 2.5.1

These projects are either considered to be alternative improvements to be accomplished if short, intermediate or long range improvements are not made or to be airfield improvements that are desirable, but not essential.

\* First, existing north-south Runway 17R-35L could be extended to the south by 1,000 feet to increase an aircraft's load and/or length of haul if the new north-south runway is not initially constructed at its full 13,500 foot length. This project is relatively costly because of the terrain beyond existing Threshold 35L and the subsequent large volume of earthwork that would be necessary. The other four ultimate capability airfield projects are to improve the taxiway system. These projects are listed in Table 2.6 (Appendix) along with estimated costs.

#### Cost Estimates

\* Ultimate capability program project costs total \$11,709,000. Project costs eligible for FAA funding total \$10,539,000. The remaining \$1,170,000 program cost is not FAA eligible.

## **2.6 FINANCIAL FEASIBILITY**

\* Based on the assumptions used and the analysis of available data, the Colorado Springs Phase I Capital Improvement Program appears feasible over the 30-year planning period. Revenues available for debt service exceed the debt service requirement by 187 percent. This more than surpasses the debt service coverage ratio of 1.25 usually required by revenue bonds.

\* Debt service exceeds the airport's annual revenues for the period 1989 through 1996. There are, however, adequate funds available from the retained earnings generated within the project period. In fact, these revenues never fall below a balance of \$6,800,000. As well, there is also the Bond Contingency Fund of \$5,500,000 to provide a further cushion should it be needed.

\* At this point, the implications of this analysis are unclear and, thus, suggest a twofold approach. First, the City should pursue the path of revenue bond financing. Toward that end, the City should undertake a rates and charges analysis at the airport and begin negotiations with the airlines. It is entirely possible that the assumptions used in this analysis understate the level to which the airlines will participate, thus enhancing the potential for revenue bonds.

\* Because of the inherent uncertainty at this stage of the analysis (prior to commitments from the airlines and the FAA) and the ballot requirements facing the City, it is also recommended that the City prepare for funds to be raised or pledged from some other source available to the City, such as general obligation bonds. Due to the operating shortfall in the early years of the project, it is clearly not possible at this time to suggest with a high degree of certainty that the project can be fully financed through revenue bonds. In addition, further uncertainty is introduced due to the assumption that the FAA will fund all eligible projects to the full extent of the eligibility.

A P P E N D I X

### ACKNOWLEDGEMENTS

Time and effort contributed by the following individuals during the Airport Master Plan Study is acknowledged and greatly appreciated:

- Mr. Robert M. Isaac, Mayor of Colorado Springs
- Mr. DeWitt Miller, Director of Public Works
- Mr. Edward L. Stricker, Director of Aviation
- Mr. Robert Allison, Assistant Director of Aviation
- Mr. Gary Haynes, City Engineer
- Mr. William M. McCall, Senior Civil Engineer, City Engineering Division
- Mr. Hugh King, City Public Works Department
- Operation Subcommittee Members:
  - Mr. Pete Melia - Federal Aviation Administration Airport's District Office, Denver
  - Mr. Dennis Mewshaw, Mr. Bill Chevront - Colorado State Aviation Planning
  - Mr. Robert Earl, Mr. Joe Hoff, Mr. Bill Burësh - Federal Aviation Administration, Air Traffic Control Tower
  - Mr. John E. McNamara - Air Transport Association
  - Mr. Gary Maher - Peterson Air Force Base
  - Mr. Bill Chandler - Meadowlake Airport
  - Mr. W.R. Menzel - Colorado Jet Center
- Land Use Subcommittee Members:
  - Mr. David Salamon - Pikes Peak Area Council of Governments
  - Mr. Tom Burdett, Mr. Craig Blewitt - Colorado Springs Planning Department
  - Mr. John Fisher - El Paso County Land Use Department
- The Van Sant Group

**TABLES**



Table 2.1

## CONSOLIDATED AVIATION ACTIVITY FORECASTS

## Colorado Springs Municipal Airport

Annual Activity by Category (1)	Base Yr FY 1985 (2)	Forecast			
		1990 (3)	1995 (4)	2000 (5)	2005 (6)
<b>ENPLANED PASSENGERS</b>					
Annual:					
Jet	496,151	792,700	1,071,600	1,348,200	1,696,300
Regional	<u>80,309</u>	<u>88,100</u>	<u>119,100</u>	<u>149,800</u>	<u>188,500</u>
Total	576,460	880,800	1,190,700	1,498,000	1,884,800
<u>Average Day/Peak Month</u>					
Jet	1,810	2,886	3,902	4,963	6,193
Regional	<u>291</u>	<u>334</u>	<u>440</u>	<u>535</u>	<u>682</u>
Total*	2,098	3,207	4,336	5,498	6,875
<u>Peak-Hour</u>					
Jet	406	623	825	1,020	1,180
Regional	<u>66</u>	<u>68</u>	<u>70</u>	<u>72</u>	<u>108</u>
Total*	472	690	889	1,064	1,270
<u>Total Passengers</u>					
Peak Hour:					
Jet	515	756	1,024	1,235	1,438
Regional	<u>84</u>	<u>88</u>	<u>113</u>	<u>115</u>	<u>174</u>
Total*	599	876	1,128	1,350	1,612
<b>CARGO AND MAIL TONNAGE</b>					
Enplaned	265	498	752	1,075	1,567
Deplaned	<u>609</u>	<u>1,096</u>	<u>1,504</u>	<u>2,042</u>	<u>2,821</u>
Total	874	1,594	2,256	3,117	4,388
<b>AIRCRAFT OPERATIONS</b>					
Annual					
Scheduled Service					
Jet	15,860	23,300	27,600	31,000	35,300
Regional	14,340	11,900	13,500	14,600	17,100
Military					
Local	18,778	20,900	24,300	27,300	30,600
Itinerant	15,364	17,100	19,900	22,300	25,000
General Aviation					
Local	54,575	77,600	104,300	137,500	181,400
Itinerant	<u>42,124</u>	<u>61,000</u>	<u>80,300</u>	<u>103,800</u>	<u>134,000</u>
Total	161,041	211,800	269,900	336,500	423,400

\* Non-additive

Table 2.1 (Cont'd)

## CONSOLIDATED AVIATION ACTIVITY FORECASTS

## Colorado Springs Municipal Airport

Annual Activity by Category (1)	Base Yr FY 1985 (2)	Forecast			
		1990 (3)	1995 (4)	2000 (5)	2005 (6)
<u>Average Day Peak Month</u>					
Jet	58	86	102	112	134
Regional	<u>50</u>	<u>44</u>	<u>50</u>	<u>52</u>	<u>62</u>
Total	108	130	152	164	196
<u>Peak-Hour</u>					
Jet	6	9	11	12	13
Regional	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>4</u>
Total	9	12	14	15	17
<u>Total Design Hour Operations</u>					
Jet	6	9	11	12	13
Regional	3	3	3	3	4
General Aviation/ Air Taxi	18	23	30	38	51
Military	<u>9</u>	<u>10</u>	<u>12</u>	<u>14</u>	<u>15</u>
Total Itinerant/ IFR*	29	38	46	56	68
Total Local/VFR*	40	53	70	90	117
Total All*	61	80	102	128	162
<u>Aircraft Departures</u>					
<u>Average Day/Peak Month</u>					
Jet	29	43	51	56	67
Regional	<u>25</u>	<u>22</u>	<u>25</u>	<u>26</u>	<u>31</u>
Total	54	65	76	82	98
<u>Peak-Hour</u>					
Jet	5	7	9	10	11
Regional	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>3</u>
Total	7	9	11	12	14

\* Non-additive

Source: SH&amp;E Team and Greiner Engineering, Inc.

TABLE 2.2

CONSOLIDATED FACILITIES REQUIREMENTS PROGRAM  
(in acres)

## Colorado Springs Municipal Airport

<u>Unit</u>	<u>Requirements</u>				
	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
<u>Passenger Terminal</u>					
Aprons	10.8	13.2	16.3	17.5	19.2
Terminal Building	4.5	6.4	6.8	7.9	9.1
Parking:					
Public	11.2	16.7	20.8	25.0	29.2
Employee	1.3	1.4	1.7	2.0	2.4
RAC	1.3	2.0	2.3	2.8	3.3
Roads	<u>3.7</u>	<u>5.3</u>	<u>6.3</u>	<u>7.5</u>	<u>8.8</u>
Sub-Total	32.8	45.0	54.2	62.7	72.0
<u>Cargo Terminals</u>					
Aprons	0.5	1.7	2.0	4.8	6.0
Buildings	1.0	1.3	1.8	2.1	2.5
Truck Court	0.5	0.8	1.0	1.4	1.7
Parking	<u>0.1</u>	<u>0.2</u>	<u>0.3</u>	<u>0.5</u>	<u>0.7</u>
Sub-Total	2.1	4.0	5.1	8.8	10.9
<u>Terminal Support</u>					
Catering	4.0	8.0	12.0	12.0	12.0
Rental Car Maintenance	10.0	12.5	15.0	17.5	20.0
Ground Service Equipment	2.0	2.0	2.5	3.0	4.0
Fuel Farm	1.0	2.0	2.7	3.2	4.0
Overflow Parking	<u>4.0</u>	<u>6.0</u>	<u>8.3</u>	<u>10.0</u>	<u>10.0</u>
Sub-Total	31.0	30.5	40.5	45.7	50.0
<u>General Aviation</u>					
FBO Plots	15.0	15.0	15.0	15.0	15.0
Based A/C Tiedowns	12.4	13.0	14.0	15.6	17.2
Transient A/C Tiedowns	3.2	5.0	5.4	9.0	14.1
Corp. Hangar Plots	9.6	14.6	17.3	20.4	23.6
T-Hangars	5.7	6.0	6.6	7.2	8.0
Multi-Plane Hangars	—	<u>1.0</u>	<u>2.5</u>	<u>4.0</u>	<u>6.0</u>
Sub-Total	45.9	54.6	60.8	71.2	83.9

TABLE 2.2 (Cont'd)

CONSOLIDATED FACILITIES REQUIREMENTS PROGRAM  
(in acres)

Colorado Springs Municipal Airport

<u>Unit</u>	<u>Requirements</u>				
	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>2005</u>
<u>Airline Maintenance</u>	-	2.5	15.0	17.5	20.0
<u>Airport Maintenance</u>	2.0	3.0	4.0	4.0	4.0
<u>Commercial</u>					
Hotel	7.0	7.0	7.0	7.0	7.0
Bank	1.0	1.0	1.0	1.0	1.0
AMF	-	4.0	4.5	5.0	6.0
Office Complex	-	2.0	2.0	2.0	2.0
Industry	—	—	—	—	—
Sub-Total	8.0	14.0	14.5	15.0	16.0
Total	111.8	153.6	194.1	224.9	256.8

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Source: Greiner Engineering, Inc.

**TABLE 2.3**  
**SHORT RANGE**  
**CAPITAL IMPROVEMENTS PROGRAM**  
**(1986 - 1990)**

Colorado Springs Municipal Airport

	1986 Dollars		
	Project Costs	FAA <sup>a</sup> Eligible Costs	Non-Eligible Costs
<b>1. EXISTING PAVEMENT &amp; LIGHTING SYSTEMS</b>			
*Raise R/W 17R-35L Edge Lights (1-A)	22,000	19,800	2,200
*Replace Porous Friction Course on Northern 1,500' of Runway 17R-35L (1-B)	359,000	323,100	35,900
*Reestablish R/W 12-30 Pavement Strenght (1-C)	1,026,000	923,000	103,000
*Replace R/W 12-30 Pavement Edge Lighting (1-D)	90,000	81,000	9,000
*Reestablish T/W B and Connector T/Ws B1, B3 Pavement Strengths (1-E)	639,000	575,000	64,000
*Seal Coat Terminal Apron (1-F)	<u>48,000</u>	<u>43,200</u>	<u>4,800</u>
<b>SUBTOTAL</b>	<b>2,184,000</b>	<b>1,965,100</b>	<b>218,900</b>
<b>2. EXISTING TAXIWAY SYSTEM IMPROVEMENTS:</b>			
*Extend & Light T/W A to the North (2-A)	753,000	677,700	75,300
*Construct & Light H.S. Connector 3,000' from Threshold 17R (2-B)	362,000	325,800	36,200
*Widen T/W Fillet West of T/W C (2-C)	<u>156,000</u>	<u>140,400</u>	<u>15,600</u>
<b>SUBTOTAL</b>	<b>1,271,000</b>	<b>1,143,900</b>	<b>127,100</b>
<b>3. AIRFIELD PAVEMENT EXPANSION:</b>			
*Construct & Light Crossfield T/W G Northwest of Terminal & High Speed T/W G Connector at R/W 17R-35L (3-A)	3,798,000	3,418,000	380,000
*Relocate & Expand Existing Electrical Vault in Infield (3-B)	253,000	227,700	25,300
*Construct & Light Parallel T/W I (3-C)	6,897,000	6,207,000	690,000
*Construct & Light H.S. Connector 8,000± from Threshold 35L (3-D)	531,000	477,900	53,100
*Construct & Light R/W 17L-35R System incl. Blast Pads, T/W E, 2 H.S. Connectors 3,000' from Thresholds 17L & 35R, and 2 H.S. Connectors 8,000' from Thresholds 17L & 35R (3-E)	30,664,000	27,597,600	3,066,400
*Construct & Light Extension T/W B (3-F)	2,207,000	1,986,300	220,700
*Construct & Light T/W F (3-G)	1,669,000	1,502,100	166,900
*Construct & Light Crossfield T/W G Northeast of Terminal (3-H)	1,660,000	1,494,000	166,000
*Install Airfield Electrical Vault (3-I)	<u>316,000</u>	<u>284,400</u>	<u>31,600</u>
<b>SUBTOTAL</b>	<b>47,995,000</b>	<b>43,195,000</b>	<b>4,800,000</b>
<b>4. AIRFIELD EQUIPMENT:</b>			
*Replace or Relocate ASR-6 (4-A)	253,000	F&E	0
*Prepare Site for MLS on Threshold 35R (4-B)	127,000	114,300	12,700
*Install MLS on Threshold 35R (4-C)	316,000	F&E	0
*Install MALSR on 35R (4-E)	253,000	F&E	0
*Install PAPIs at Thresholds 17L & 35R (4-F)	127,000	114,300	12,700
*Install Lighted Wind Socks at Thresholds 17L & 35R (4-G)	13,000	11,700	1,300
*Install Compass Rose (4-H)	---	0	Military
*Install Low Level Wind Sheer Eq. at Threshold 35R, and Relocate Existing LLWSAS at Threshold 17L (4-I)	---	F&E	0
<b>SUBTOTAL</b>	<b>1,089,000</b>	<b>240,300</b>	<b>26,700</b>

**TABLE 2.3 - Continued**  
**SHORT RANGE**  
**CAPITAL IMPROVEMENTS PROGRAM**  
**(1986 - 1990)**

Colorado Springs Municipal Airport

	<u>1986 Dollars</u>		
	<u>Project</u> <u>Costs</u>	<u>FAA<sup>a</sup></u> <u>Eligible</u> <u>Costs</u>	<u>Non-Eligible</u> <u>Costs</u>
<b>5. BUILDING RELATED FACILITIES:</b>			
*Construct Passenger Terminal Building (5-A)	40,480,000	0	40,480,000
*Purchase & Install Airside Passenger Terminal Equipment & Relocate Airside Equipment from West Quadrant (5-B)	2,960,000	0	2,960,000
*Construct & Light Aircraft Apron & Related Taxiway Connectors (5-C)	15,180,000	13,662,000	1,518,000
*Construct & Light Public Parking (5-D) <sup>b</sup>	5,693,000	0	5,693,000
*Construct & Light Employee Parking (5-E)	633,000	0	633,000
*Terminal Landscaping & Irrigation System (5-F)	<u>285,000</u>	<u>0</u>	<u>285,000</u>
<b>SUBTOTAL</b>	<b>65,231,000</b>	<b>13,662,000</b>	<b>51,569,000</b>
<b>6. ROADWAYS:</b>			
*Construct & Light Public Entrance Road from the West (6-A)	3,163,000	2,846,700	316,300
*Construct Public Service Road to Terminal Bldg. & S. Quad. Terminal Support Facilities (6-B)	519,000	0	519,000
*Construct Public Service Road to W. Quad. Cargo Facilities (6-BB)	327,000	0	327,000
*Construct Restricted Use Perimeter Road (6-C)	105,000	0	105,000
*Entrance Road Landscaping & Irrigation (6-D)	<u>380,000</u>	<u>0</u>	<u>380,000</u>
<b>SUBTOTAL</b>	<b>4,494,000</b>	<b>2,846,700</b>	<b>1,647,300</b>
<b>7. UTILITIES:</b>			
*Install Utility Main Systems (7-A)			
- Electrical	0	0	0
- Gas	633,000	0	633,000
- Sewage	1,265,000	0	1,265,000
- Potable Water/Fire Hydrant	<u>3,163,000</u>	<u>316,300</u>	<u>2,846,700</u>
<b>SUBTOTAL</b>	<b>5,061,000</b>	<b>316,300</b>	<b>4,744,700</b>
<b>8. OTHER:</b>			
*Complete Water Management Plan (8-B)	2,783,000	1,391,500	1,391,500
*Install Security Fencing (8-C)	490,000	441,000	49,000
*Construct C/F/R Vehicle Ready Pad (8-D)	76,000	68,400	7,600
*Construct Airport Maintenance Facilities (8-E)	949,000	0	949,000
*Noise Mitigation (8-F)	<u>840,000</u>	<u>700,000</u>	<u>140,000</u>
<b>SUBTOTAL</b>	<b>5,138,000</b>	<b>2,600,900</b>	<b>2,537,100</b>
<b>GRAND TOTAL</b>	<b><u>\$132,463,000</u></b>	<b><u>65,970,200</u></b>	<b><u>65,670,800</u></b>

<sup>a</sup> Project costs eligible for FAA Enplanement and Discretionary funding are listed in this column. Project costs eligible for F&E (Facilities & Equipment) funding appear in the "Project Costs" column and total \$822,000.

<sup>b</sup> Costs associated with the former military landfill site are not included because the site's composition is unknown.

Source: Greiner Engineering, Inc., Van Sant Group and Isbill & Associates

Compiled by Greiner Engineering, Inc.

TABLE 2.4  
INTERMEDIATE RANGE  
CAPITAL IMPROVEMENTS PROGRAM  
(1990 - 1995)

Colorado Springs Municipal Airport

	1986 Dollars		
	Project Costs	FAA <sup>a</sup> Eligible Costs	Non-Eligible Costs
<b>1. EXISTING PAVEMENT &amp; LIGHTING SYSTEMS:</b>			
*Reestablish T/W A & Connector T/W Pavement Strengths (1-A)	\$1,231,000	1,108,000	123,000
SUBTOTAL	\$1,231,000	1,108,000	123,000
<b>2. EXISTING TAXIWAY SYSTEM IMPROVEMENTS:</b>			
*Construct Bypass T/W Connector at Threshold 35L (2-B)	428,000	385,000	43,000
*Construct Bypass T/W Connectors at Thresholds 17L & 36R (2-C)	723,000	651,000	72,000
SUBTOTAL	1,151,000	1,036,000	115,000
<b>3. AIRFIELD PAVEMENT EXPANSION:</b>			
*Construct Crossfield T/W H (3-A)	5,001,000	4,501,000	500,000
*Construct & Light T/W to Expanded General Aviation Facilities (3-B)	1,412,000	1,271,000	141,000
*Construct & Light T/W J to Airline Maintenance Facilities from T/W I (3-C)	737,000	663,000	74,000
SUBTOTAL	7,150,000	6,435,000	715,000
<b>4. AIRFIELD EQUIPMENT:</b>			
*Install MLS on R/W 35L (4-A)	316,000	F&E	0
*Install MALSR on R/W 35L (4-B)	253,000	F&E	0
SUBTOTAL	569,000	0	0
<b>5. BUILDING RELATED FACILITIES:</b>	---	---	---
<b>6. ROADWAYS</b>			
*Extend Public Service Road (6-A)	90,000	0	90,000
SUBTOTAL	90,000	0	90,000
<b>7. UTILITIES</b>	---	---	
<b>8. OTHER:</b>			
*Construct C/F/R Building Adjacent to R/W 17L-35R (8-A)	316,000	284,000	32,000
SUBTOTAL	316,000	284,000	32,000
<b>GRAND TOTAL</b>	<u>10,507,000</u>	<u>8,863,000</u>	<u>1,075,000</u>

<sup>a</sup> Project costs eligible for FAA Enplanement and Discretionary funding are listed in this column. Project costs eligible for F&E (Facilities & Equipment) funding appear in the "Project Costs" column and total \$569,000.

Source: Greiner Engineering, Inc.

TABLE 2.5  
LONG RANGE  
CAPITAL IMPROVEMENTS PROGRAM  
(1995 - 2005)

Colorado Springs Municipal Airport

	1986 Dollars		
	Project Costs	FAA <sup>a</sup>	Non-Eligible Costs
Eligible Costs			
<b>1. EXISTING PAVEMENT &amp; LIGHTING SYSTEMS</b>			
*Reestablish R/W 17R-35L Pavement Strength including Blast Pads (does not include extended Military Stopways) (1-A)	1,529,000	1,376,000	153,000
*Replace R/W 17R-35L Pavement Edge Lighting (1-B)	113,000	102,000	11,000
*Reestablish T/W D Pavement Strength (1-E)	410,000	369,000	41,000
*Replace T/W A & Associated T/W Connector Pavement Edge Lighting (1-F)	214,000	193,000	21,000
*Reestablish W. Quadrant General Aviation Apron Pavement Strength (1-H)	<u>424,000</u>	<u>382,000</u>	<u>42,000</u>
<b>SUBTOTAL</b>	<b>2,690,000</b>	<b>2,422,000</b>	<b>268,000</b>
<b>2. EXISTING TAXIWAY SYSTEM IMPROVEMENTS:</b> -----			
<b>3. AIRFIELD PAVEMENT EXPANSION:</b>			
*Construct T/W J South of T/W H to Existing Threshold 35L (3-A)	2,015,000	1,814,000	201,000
*Construct T/W K South of T/W H 4,100±' (3-B)	<u>2,824,000</u>	<u>2,542,000</u>	<u>282,000</u>
<b>SUBTOTAL</b>	<b>4,839,000</b>	<b>4,356,000</b>	<b>483,000</b>
<b>4. AIRFIELD EQUIPMENT:</b>			
*Prepare Site for MLS on Threshold 17L (4-A)	127,000	114,300	12,700
*Install MLS on 17L (4-B)	316,000	F&E	0
*Install MALSR on 17L (4-C)	<u>253,000</u>	<u>F&amp;E</u>	<u>0</u>
<b>SUBTOTAL</b>	<b>696,000</b>	<b>114,300</b>	<b>12,700</b>
<b>5. BUILDING RELATED FACILITIES:</b>			
*Expand Passenger Terminal Building (5-A)	8,080,000	7,272,000	808,000
*Purchase & Install Airside Passenger Terminal Equip. (5-B)	570,000	512,000	58,000
*Expand Aircraft Apron And Construct Eastern Taxiway Connector (5-C)	<u>2,079,000</u>	<u>1,871,000</u>	<u>208,000</u>
<b>SUBTOTAL</b>	<b>10,729,000</b>	<b>9,655,000</b>	<b>1,074,000</b>
<b>6. ROADWAYS:</b>			
*Extend Public Service Roads (6-A)	316,000	0	316,000
*Construct & Light Commercial Frontage Road (6-B)	190,000	0	190,000
*Construct & Light Public Entrance Road from the South (6-C)	<u>443,000</u>	<u>399,000</u>	<u>44,000</u>
<b>SUBTOTAL</b>	<b>949,000</b>	<b>399,000</b>	<b>550,000</b>
<b>7. UTILITIES:</b> -----			
<b>8. OTHER:</b>			
*Construct Fuel Farm (8-A)	<u>316,000</u>	0	<u>316,000</u>
<b>SUBTOTAL</b>	<b>316,000</b>	<b>0</b>	<b>316,000</b>
<b>GRAND TOTAL</b>	<b><u>20,219,000</u></b>	<b><u>9,162,300</u></b>	<b><u>10,487,700</u></b>

<sup>a</sup> Project costs eligible for FAA Enplanement and Discretionary funding are listed in this column. Project costs eligible for F&E (Facilities & Equipment) funding appear in the "Project Costs" column and total \$569,000.

Source: Greiner Engineering, Inc.



TABLE 2.6.  
ULTIMATE CAPABILITY  
AIRFIELD IMPROVEMENTS

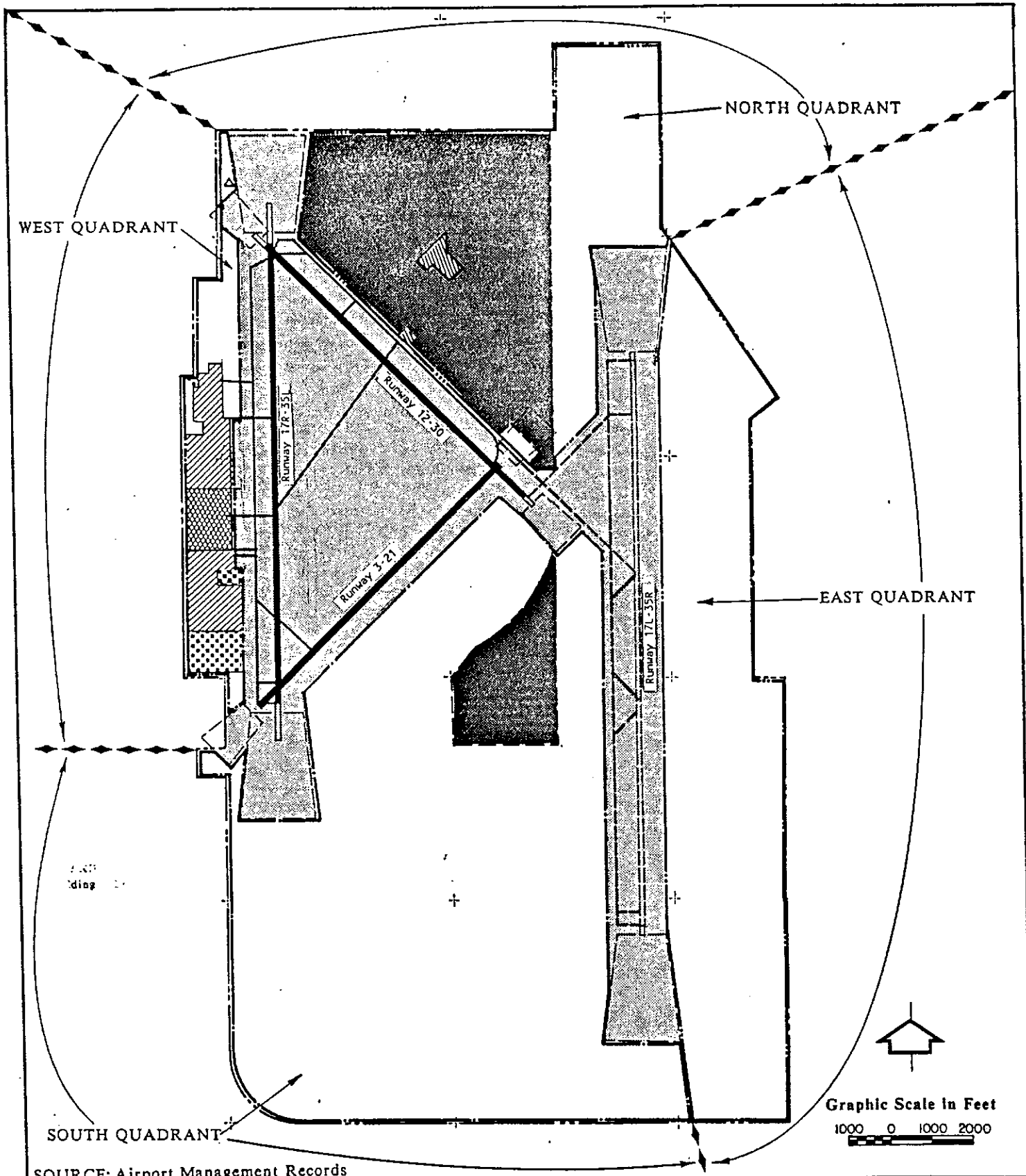
Colorado Springs Municipal Airport

	1986 Dollars		
	Project Costs	FAA Eligible Costs	Non-Eligible Costs
<u>AIRFIELD PAVEMENT EXPANSION:</u>			
*Construct H.S. Connector 5,300' from Threshold 17R (U-2-A)	745,000	671,000	74,000
*Construct H.S. Connectors 5,700' from Threshold 17L and 5,300' from Threshold 35R (U-2-B)	1,226,000	1,103,000	123,000
*Widen and Light H.S. Connector at T/W A-1 (U-2-C)	498,000	448,200	49,800
*Widen and Light H.S. Connector at T/W A-3 (U-2-D)	209,000	188,100	20,900
*Extend Existing R/W 17L-35R, T/Ws A, I & J 1,000' to the South (U-3-A)	3,674,000	3,307,000	367,000
*Construct Parallel T/W N Southwest of R/W 12-30 (U-3-B)	3,744,000	3,370,000	374,000
*Extend T/W K South to Threshold 35R (U-3-C)	2,705,000	2,435,000	270,000
*Construct Connector Between T/Ws I & B (U-3-D)	729,000	656,000	73,000
*Extend & Light Taxiway to the North and South to Expanded General Aviation Facilities (U-3-E)	857,000	771,000	86,000
*Construct and Light T/W to Airline Cargo Facility (U-3-J)	450,000	405,000	45,000
*Expand and Light Public Parking (U-5-D)	G	---	---
<b>GRAND TOTAL</b>	<u>14,837,000</u>	<u>13,354,300</u>	<u>1,482,700</u>

Source: Greiner Engineering, Inc.

G - To reflect the intended construction schedule, Project U-5-D's cost is included in Short Range Project 5-D.

**EXHIBITS**



SOURCE: Airport Management Records

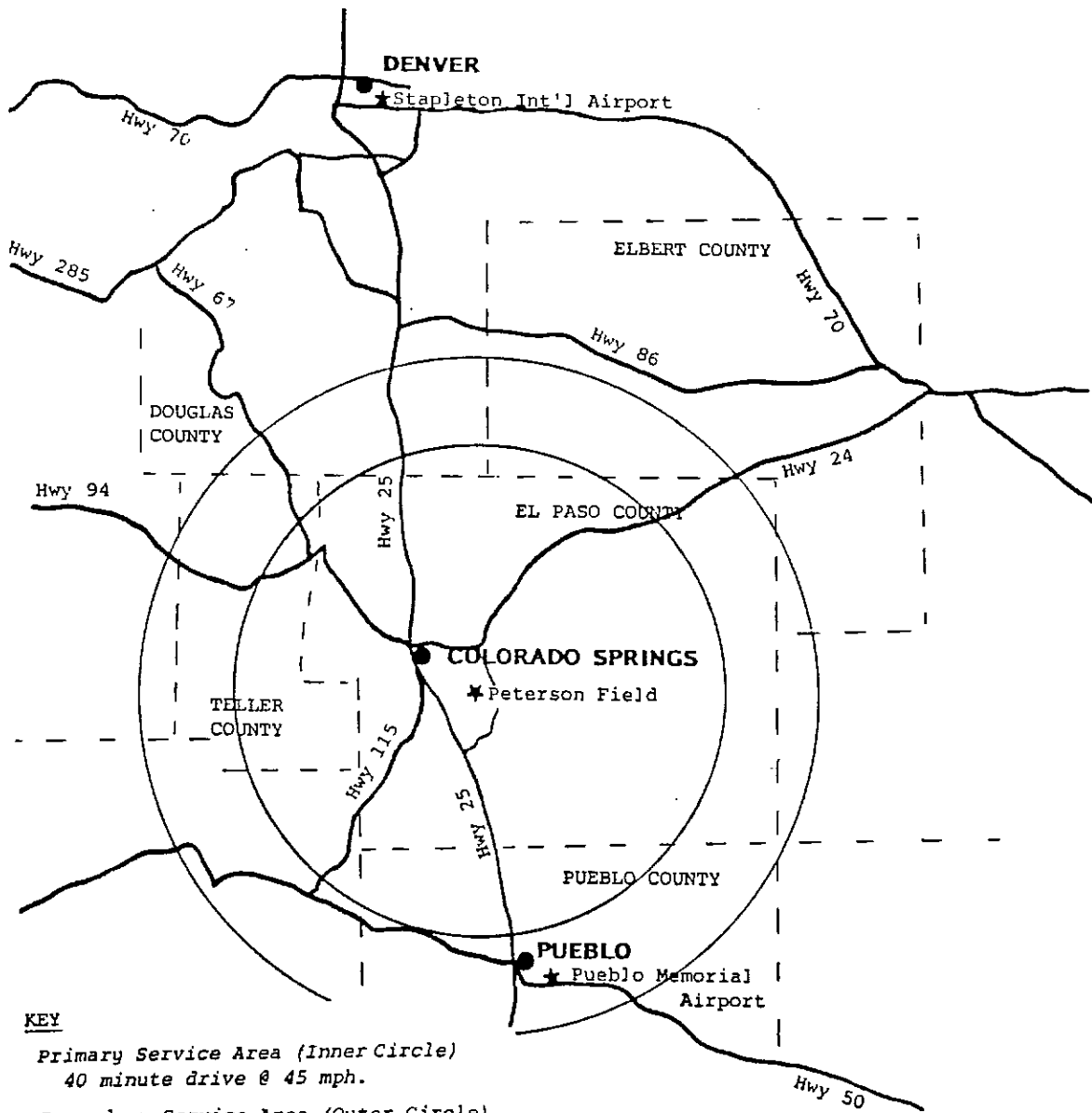
**Legend**

- |  |                                |  |                                       |
|--|--------------------------------|--|---------------------------------------|
|  | Airfield/Clear Zones           |  | Operations & Safety                   |
|  | Scheduled PAX Terminal Complex |  | Military                              |
|  | Terminal Support               |  | Fuel Farm                             |
|  | General Aviation               |  | Vacant/Ulimate Airport Expansion Area |

Greiner Engineering Inc.

EXHIBIT 1.1

**EXISTING AIRPORT LAND USES**  
**COLORADO SPRINGS MUNICIPAL AIRPORT**



**KEY**

- Primary Service Area (Inner Circle)  
40 minute drive @ 45 mph.
- Secondary Service Area (Outer Circle)  
60 minute drive @ 45 mph.
- Lines Indicate Major Highways
- Dotted Lines Indicate County Borders

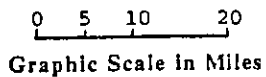
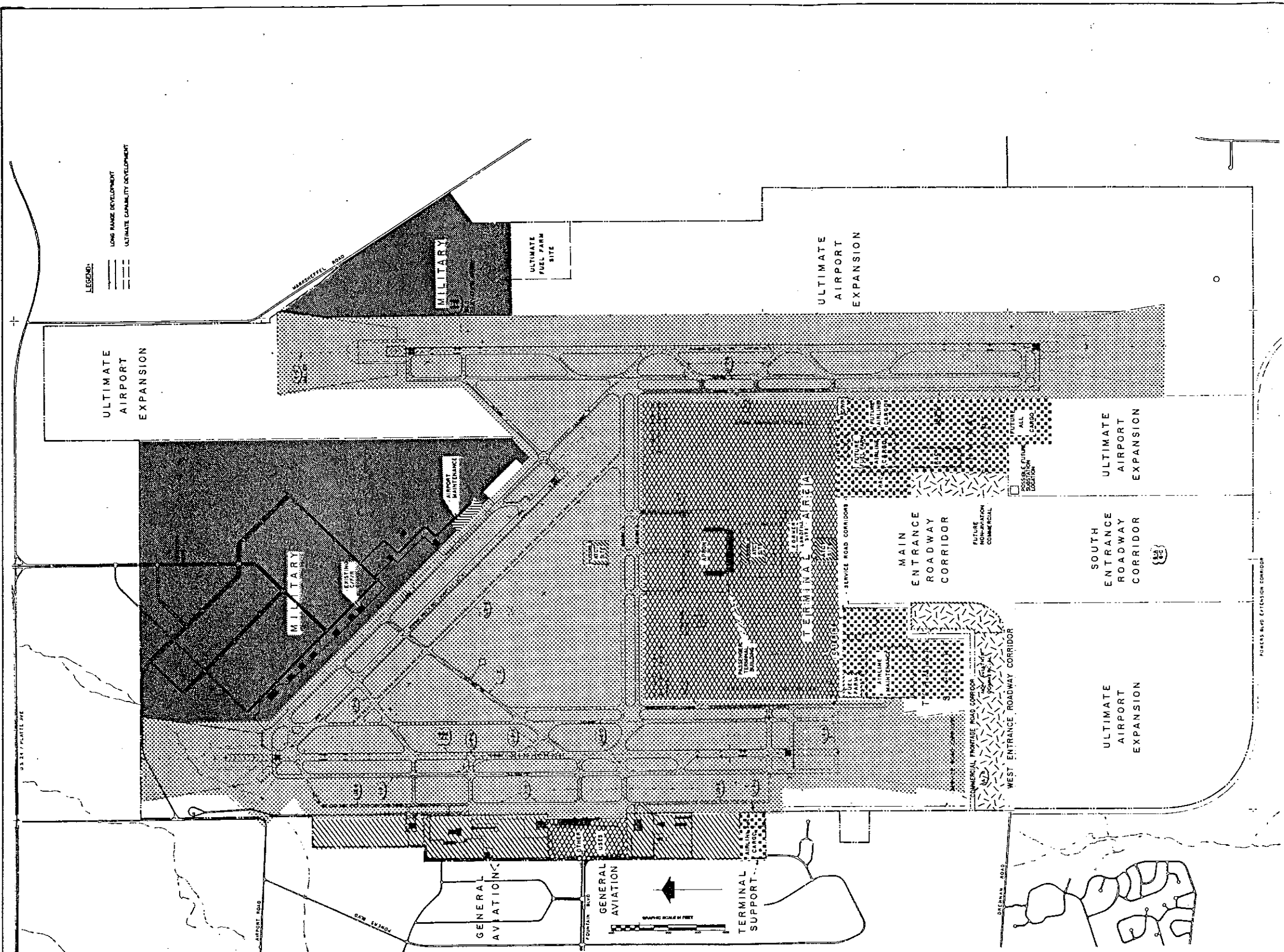


EXHIBIT 2.1

**AIRPORT SERVICE AREA**

**COLORADO SPRINGS MUNICIPAL AIRPORT**

Compiled by S, H & E Team/Greiner Engineering, Inc.



- LEGEND**
- Airfield/Clear Zones
  - Scheduled PAX Terminal Complex
  - Terminal Support
  - General Aviation
  - Non-Aviation Commercial Operations & Safety
  - Military
  - Fuel Farm
  - Public Access/Utility/Drainage
  - Vacant