



Chapter 7 – Implementation

7.0 INTRODUCTION

In previous chapters, the air traffic demand forecast is presented and then constrained by the airfield demand/delay analysis results, the desirable number of gates is established and environmental impacts are analyzed to arrive at a final gate plan. This chapter presents:

- The Facilities Development Plan;
- Development Cost Estimates;
- Management Plan, including recommendations on funding the Capital Improvement Plan (CIP), allocating resources, planning and programming for annual CIP execution, near term actions and issues and, supplementing management organization.

7.1 FACILITIES DEVELOPMENT PLAN

The future development program for Love Field includes terminal, taxiway, on-airport roads, and other miscellaneous support facility improvements. The development plan is provided in the following sections and is presented by facility category.

7.1.1 Landside

- **Terminal Development - Phase 1**

The Phase 1 terminal development would open the three existing gates on the East Concourse, the remainder of the East Concourse would be demolished to allow for relocation of the existing cargo building. The existing cargo building and the existing vacant ticket wing would then be demolished and development of a Commercial Vehicle Lot could then take place initiating the curb frontage and roadway improvements. This would facilitate the flow of passengers to and from the commercial vehicle lot. Phase 1 would provide Love Field with 25 active gates, it facilitates roadway construction and restores available curb front capacity. In summary the Phase 1 Terminal Development includes the following projects:

1. Open three East Concourse gates
2. Demolish remainder of East Concourse
3. Construct new cargo building
4. Demolish existing cargo building
5. Develop Commercial Vehicle Lot
6. Begin curb frontage and terminal roadway improvements

- **Terminal Development - Phase 2**

Phase 2 of the terminal development program at Love Field would relocate/replace the Southwest Airlines “University for People” training facilities in order to redevelop the North Concourse to accommodate seven additional gates on a demand driven basis. Phase 2 ultimately provides Love Field with the maximum 32 gates including those located on the Lemmon Avenue side of the airport.

The commercial vehicle courtyard would be replaced by a new ticketing and baggage claim wing with access to the East Concourse. The terminal access roadway improvements would continue and a pedestrian walkway would be provided from the parking garage to the new ticketing bag claim area. In addition, a small ground level parking area is proposed to the east of the new ticketing and bag claim area



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and just south of the East Concourse. During the Phase 2 terminal development program, it is expected that planned improvements to the Cedar Springs and Mockingbird intersection would be on-going. The Phase 2 Terminal Development projects are summarized below:

1. Relocate/replace Southwest Airlines Training Facility
2. Redevelop North Concourse
3. Demolish existing vacant ticket wing
4. Construct new ticketing and bag claim wing on Commercial Vehicle Courtyard
5. Continue with terminal roadway improvements
6. Construct new pedestrian walkway from parking garage to new ticketing/bag claim
7. Begin improvements to Cedar Springs/Mockingbird intersection

7.1.2 Airside

Airside improvements at Love Field pertain primarily to the taxiways system. The taxiway improvements identified will enhance the movement of aircraft on the ground, reducing taxiing times, departure delays and air pollutant emissions.

1. Dual taxiway entrances to Runways 13R, 31L, 13L and 31R. Dual taxiway independent access to the runway ends will provide air traffic controllers with the flexibility to selectively sequence departures prior to takeoff clearance in order to minimize aircraft delays caused by airspace conflicts with DFW.
 2. Extend Taxiway “L” to meet “D1”, to provide for dual taxiway capabilities from Runway 13R to the West Concourse, facilitating aircraft movements.
 3. Expansion of the Runway 31L holding apron to accommodate two B737-700s in a dual taxiway configuration.
 4. Extension of Taxiway “K” to meet extended Taxiway “B5” and construction of Taxiway “M” between “B1” to “B3”. To provide for a dual taxiway system around the terminal area. Once the dual system is in place, depending on direction of traffic, one of the taxiways could be operated in a clockwise direction and the other in a counter clockwise direction to avoid aircraft taxiing conflicts around the terminal.
 5. Construction of Taxiway “M” between “B5” and Runway 18-36, to provide for additional aircraft movement flexibility.
 6. Expand the intersection fillet between Runway 31L and Runway 18-36, to facilitate the movement of aircraft exiting Runway 31L. Frequently, aircraft arriving on Runway 31L miss exit “D” and have to proceed to “C4”, an additional 2,800 feet of taxi distance to the terminal.
 7. Provide a designated road for aircraft service vehicles. To enhance the safety of the airport, a designated road should be provided for airside vehicles.
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8. Provide a Remote Apron and Deicing Area located west of Taxiway “K” and north of Taxiway “C”. This airfield improvement would provide a central area for the deicing of aircraft during winter storm events. The area could be used as a remote aircraft parking apron at other times.

Deicing Pad

Storm water runoff from Love Field discharges to Bachman Lake at the northwest and Knights Branch at the southeast of the airport surface area. In the terminal area, a trench drain system transports apron pavement runoff to Knights Branch. This system does not provide the ability to divert and capture glycol contaminated runoff during winter storm deicing events.

As a result, compliance with current EPA water quality regulations is achieved through the exercise of Best Management Practices (BMP) by airport users and tenants. For example, to avoid excessive gate occupancy times during a deicing event, Southwest Airlines uses a portion of the terminal apron adjacent to the North Concourse support facilities as the designated deicing pad for its departing aircraft. Continental and American however, deice in the immediate vicinity of their gates on the East Concourse. At both locations, the possibility of glycol contaminated runoff entering the trench drain and discharging into Knights Branch is always imminent and is prevented only through vigilant BMP application.

In the future, as traffic increases and more gates are placed into use, current airline practices may no longer be feasible. The purpose of the remote Deicing Pad is to provide a central area between the gates and the most frequently used runway, R13R-31L, for all airline aircraft to enter and be deiced. The advantages of a centralized location for deicing are:

1. The City can more effectively comply with EPA regulations at a controlled location, designated to capture and collect glycol and glycol contaminated runoff for disposal or treatment;
2. One, or possibly two deicing pads may be more economical to construct and provide with glycol diversion and capture devices, than would reconstruction of the existing trench drain system to meet glycol contaminated storm water requirements; and
3. Central deicing pad(s) would reduce gate occupancy times during deicing events.

Whether at a central location or at the gates, the deicing fluid capture must be disposed of or treated. A detailed and accurate study of winter storm precipitation and dispensed deicing fluid volumes should be undertaken to determine which of the deicing locations and disposal methods are most operationally and economically feasible at Love Field. The study should investigate the application of new environmental technologies such as the use of anaerobic treatment facilities on an airport.



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7.1.3 Access Roads - Terminal Loop Road

The terminal curbside roadway is envisioned to consist of two laterally separated roadways. The roadway adjacent to the terminal building (hereinafter referred to as the Private Vehicle Roadway) would be used by arriving and departing passengers in private vehicles. The roadway adjacent to the parking garage (hereinafter referred to as the Commercial Vehicle Roadway) would be dedicated for commercial vehicle use.

The Commercial Vehicle Roadway would consist of a 20-foot curb lane and two 12-foot through lanes. A 30-foot median island would separate the Private Car Roadway and the Commercial Vehicle Roadway. The median island would serve as a passenger loading and unloading area for commercial vehicles, providing approximately 1,450 feet of curb frontage. This curb frontage would accommodate the projected requirement for commercial vehicles.

Due to the physical constraints imposed by the existing and proposed parking structures, the proposed terminal roadway configuration would involve widening on the north side of the existing roadway. Thus, the proposed Private Vehicle Roadway curb would encroach into the existing vacant terminal building by approximately 60 feet.

The proposed roadway configuration features a flyover to accommodate vehicles recirculating to the Private Car Roadway. A second at-grade recirculation road will be provided to allow vehicles recirculating from the curb to the parking garage, as well as for commercial vehicle recirculation. To provide sufficient weaving distances and satisfy minimum curve radii, both recirculation roadways would be aligned south of the Spirit of Flight Monument. The proposed configuration would eliminate the existing recirculation road and the exit road from Aviation Place. It would also eliminate the existing roadways on Howard Megredy Circle.

The section of Cedar Springs Road north of Tom Branniff Lane will be widened to four lanes in each direction. The terminal approach roadway would split at approximately the existing intersection with Aviation Place, with the right lanes signed for Arrivals and Departures, and the left lanes signed for Parking Garage and Commercial Vehicles.

Approximately 500 feet beyond the existing recirculation road, the Parking Garage access roadway will diverge to the left from the Commercial Vehicle Roadway. This roadway would provide separate access for the existing garage and the proposed parking structure.

The Private Vehicle Roadway and Commercial Vehicle Roadway would merge into a three-lane roadway beyond the existing terminal building. The reconfigured Parking Exit Plaza will provide two lanes for vehicles exiting the parking garage. Thus, the terminal exit roadway will consist of five lanes from the Parking Exit Plaza to the recirculation roadways.



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7.1.4 Support Facilities

Airport Operations - Expand the 5th floor of the Main Terminal Building and build the roof at level 6. The new facilities would house a new Public Safety Office that includes personnel from the Police Department, Fire Department and Airport Operations. Included in the program is a centralized crisis management center. The proposed expansion is about 14,130 square feet.

Fuel Farm – Fuel storage and system improvements relating to modernization of the fuel management system are included in the Facilities Development Plan.

7.2 DEVELOPMENT COST ESTIMATES

Order of magnitude cost estimates were prepared for the improvement projects proposed for Dallas Love Field. The estimates were prepared from conceptual development drawings only. Therefore, the level of detail and accuracy in the estimate is preliminary and subject to change once the actual project goes to the design phase. The following assumptions were used in preparing the cost estimates:

- The method of project procurement would be competitive bids.
- Unit costs were obtained using a national industry of average prices.
- All general conditions, bonds, overhead and profit are summarized and included with each estimate.
- A contingency of 35% has been included in the estimates to account for construction uncertainties at the master planning stage of development.

The development costs are provided in Section 7.3 and following items pertain should also be noted.

Items included in the estimates are:	Items not included in the estimates are:
<ul style="list-style-type: none"> - Demolition, clearing and grubbing, - Site work, - Utilities, - flexible pavement, - rigid pavement, - Concrete/brick paver medians, - Sod & seeding/curbside amenities, - Irrigation, - Drill shafts, - Structural concrete, - Reinforced concrete elevated roadway, - Concrete bridge railing, - Cast in place retaining wall and - Indirect cost and mark ups. 	<ul style="list-style-type: none"> - Design and consulting fees - Program management, - Construction management, - Field inspection, - Permits, - Testing, - Owner furnished items, - Taxes, - Operations/maintenance and property acq.

Source: KJM & Associates



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7.3 CAPITAL IMPROVEMENT PLAN

The development projects proposed as a result of this Master Plan are summarized below.

<u>Phase 1</u>	<u>Construction Cost</u>
Terminal Development	\$ 15,709,000
Roadway / Landside Development	3,392,000
Airside Development	<u>3,194,000</u>
	\$ 22,295,000
 <u>Phase 2</u>	
Terminal Development	\$ 102,053,000
Roadway / Landside Development	15,420,000
Airside Development	<u>7,500,000</u>
	\$ 124,973,000
Total	\$ 147,268,000

Table 7-1 presents the existing planned CIP projects that the City of Dallas currently has on file. Table 7-2 provides the Master List of all future development projects in addition to those previously identified in Table 7-1. Table 7-2 is broken into four sections: Planned Improvements, Phase One Improvements, Phase Two Improvements, and “Other”.

Planned improvements are those which were previously identified by the city and are currently identified in Love Field’s existing CIP. Phase One Improvements are those improvements that can start right away. Phase Two Improvements are improvements that either have started in Phase One or need the construction of a Phase One project to be implemented. “Other” projects are environmental programs that have been recommended by the MPAC to be carried out by the Department of Aviation on a regular basis.

Figure 7-1 provides the probable timing of the Master Plan projects if the city elects to undertake the improvements in the near term. The duration of each project includes design, bidding, permitting, and construction.

Table 7-1
DALLAS LOVE FIELD
AIRPORT IMPACT ANALYSIS/MASTER PLAN
Existing Aviation Facilities Improvements

Project Name	Category	Total Cost	Fiscal Year		Future	Total
			2000-01	20001-02		
Airfield Rescue and Fire Fighting	Safety	\$ 1,660,000				\$ -
Asbestos Abatement	Environmental	\$ 4,656,409				\$ -
Aviation Commercial Development	Land Acquisition	\$ 18,911,922				\$ -
Bachman Lake Dredging	Environmental	\$ 275,000	\$ 275,000			\$ 275,000
Baggage Claim Renovations	Terminal	\$ 8,600,000		\$ 5,100,000		\$ 5,100,000
Blast Fence Reconstruction	Environmental	\$ 2,705,000		\$ 500,000	\$ 1,000,000	\$ 2,500,000
Ceiling Replacement	Terminal	\$ 296,000				\$ -
Computerized Parking and Taxi System	Parking	\$ 2,720,605				\$ -
Data Management System	General	\$ 125,000	\$ 125,000			\$ 125,000
Drainage Improvements	Environmental	\$ 1,000,000	\$ 1,000,000			\$ 1,000,000
Electrical Upgrade	Airfield	\$ 5,991,100				\$ -
Equipment Maintenance Facility	Terminal	\$ 689,144				\$ -
Escalator Replacement	Terminal	\$ 400,000				\$ -
Flooring Improvements	Terminal	\$ 56,000				\$ -
Heliport Security Improvements	Safety	\$ 30,000				\$ -
Landscaping	Landscaping	\$ 3,534,185	\$ 1,500,000			\$ 1,500,000
Long Range Study	Environmental	\$ 500,000				\$ -
Noise Monitoring System	Airfield	\$ 1,424,468				\$ -
Parking Expansion	Parking	\$ 5,662,412				\$ -
Parking Structure	Parking	\$ 58,160,000	\$ 58,160,000			\$ 58,160,000
Pavement Condition Analysis Equipment	Safety	\$ 350,000				\$ -
Perimeter Fence	Safety	\$ 1,174,675				\$ -
Public Safety Offices	Terminal	\$ 4,000,000	\$ 1,000,000		\$ 3,000,000	\$ 4,000,000
Reconstruct Airfield Pavement	Pavement	\$ 7,013,177	\$ 1,900,000			\$ 1,900,000
Renovate Public Restrooms	Terminal	\$ 2,008,838				\$ -
Replace West Concourse Apron	Pavement	\$ 3,300,000	\$ 3,000,000			\$ 3,000,000
Resurface Runway 18-36	Pavement	\$ 297,868				\$ -
Roadway Improvements	Pavement	\$ 7,340,698				\$ -
Roadway Renovations	Pavement	\$ 416,092				\$ -
Roof Renovations	Terminal	\$ 3,714,408				\$ -
Sanitary Sewage Disposal Unit	Environmental	\$ 400,000	\$ 210,000			\$ 210,000
School Soundproofing	Environmental	\$ 2,726,944				\$ -
Signage Improvements	Safety	\$ 300,000				\$ -
Steam Turbine Chiller	Terminal	\$ 15,314,065				\$ -
Storeroom Renovations	Terminal	\$ 73,777				\$ -
Terminal Improvement	Terminal	\$ 14,441,306				\$ -
Upgrade Terminal HVAC	Terminal	\$ 17,200,000	\$ 9,325,000	\$ 5,000,000	\$ 2,875,000	\$ 17,200,000
TOTAL		\$ 197,469,093	\$ 76,495,000	\$ 10,600,000	\$ 6,875,000	\$ 94,970,000

Table 7-2
DALLAS LOVE FIELD
AIRPORT IMPACT ANALYSIS/MASTER PLAN
Master Project List

	Project Description	Subtotal Construction	Contingency and Escalation	Adjusted Construction	General Conditions	Total Construction	OH/P/Profit	Total Project Cost	
R O A D	Terminal Roadway System	\$ 3,699,236	\$ 1,294,733	\$ 4,993,969	\$ 749,095	\$ 5,743,064	\$ 976,321	\$ 6,719,385	
	Automobile Parking Structure	\$ 32,018,938	\$ 11,206,628	\$ 43,225,567	\$ 6,483,835	\$ 49,709,402	\$ 8,450,598	\$ 58,160,000	
	Improvements to Cedar Springs	\$ 366,912	\$ 128,419	\$ 495,331	\$ 74,300	\$ 569,631	\$ 96,837	\$ 666,468	
	Cedar Springs and Mockingbird Intersection	\$ 5,891,661	\$ 2,062,081	\$ 7,953,742	\$ 1,193,061	\$ 9,146,804	\$ 1,554,957	\$ 10,701,760	
D	New Commercial Vehicle Holding Lot	\$ 400,000	\$ 140,000	\$ 540,000	\$ 81,000	\$ 621,000	\$ 105,570	\$ 726,570	
		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
T E R M I N A L	North Concourse Skybridge Connector	\$ 1,530,176	\$ 535,562	\$ 2,065,738	\$ 309,861	\$ 2,375,598	\$ 403,852	\$ 2,779,450	
	East Concourse Skybridge Connector	\$ 1,229,063	\$ 430,172	\$ 1,659,234	\$ 248,885	\$ 1,908,120	\$ 324,380	\$ 2,232,500	
	North Concourse Renovations	\$ 4,443,326	\$ 1,555,164	\$ 5,998,490	\$ 899,774	\$ 6,898,264	\$ 1,172,705	\$ 8,070,968	
	Central Lobby Renovations	\$ 6,282,218	\$ 2,198,776	\$ 8,480,994	\$ 1,272,149	\$ 9,753,143	\$ 1,658,034	\$ 11,411,178	
	Baggage Claim Expansion (40' Expansion & Renovations)	\$ 4,128,990	\$ 1,445,146	\$ 5,574,136	\$ 836,120	\$ 6,410,256	\$ 1,089,744	\$ 7,500,000	
	Baggage Claim Expansion (87' Expansion & Renovations)	\$ 4,679,522	\$ 1,637,833	\$ 6,317,354	\$ 947,603	\$ 7,264,957	\$ 1,235,043	\$ 8,500,000	
	Relocate Cargo Building	\$ 4,298,360	\$ 1,504,426	\$ 5,802,786	\$ 870,418	\$ 6,673,204	\$ 1,134,445	\$ 7,807,649	
	New Ticket Wing and Skybridge to East Conc.	\$ 18,664,398	\$ 6,532,539	\$ 25,196,937	\$ 3,779,541	\$ 28,976,478	\$ 4,926,001	\$ 33,902,479	
	New East Concourse	\$ 24,287,321	\$ 8,500,562	\$ 32,787,883	\$ 4,918,183	\$ 37,706,066	\$ 6,410,031	\$ 44,116,097	
	New North Concourse	\$ 20,310,369	\$ 7,108,629	\$ 27,418,998	\$ 4,112,850	\$ 31,531,848	\$ 5,360,414	\$ 36,892,262	
	Extend New East Concourse	\$ 3,300,769	\$ 1,155,269	\$ 4,456,039	\$ 668,406	\$ 5,124,444	\$ 871,156	\$ 5,995,600	
	Office/Provisions Bldg. North Conc.	\$ 2,058,158	\$ 720,355	\$ 2,778,513	\$ 416,777	\$ 3,195,290	\$ 543,199	\$ 3,738,490	
	Office Bldg. @ North Concourse	\$ 2,189,025	\$ 766,159	\$ 2,955,184	\$ 443,278	\$ 3,398,462	\$ 577,738	\$ 3,976,200	
	Replace SWA Training Facility	\$ 8,808,550	\$ 3,082,993	\$ 11,891,543	\$ 1,783,731	\$ 13,675,274	\$ 2,324,797	\$ 16,000,070	
	New West Concourse	\$ 30,619,869	\$ 10,716,954	\$ 41,336,823	\$ 6,200,523	\$ 47,537,347	\$ 8,081,349	\$ 55,618,696	
	Baggage Claim Renovations								
	Public Safety Offices								
	Upgrade Terminal HVAC								
	S I T E	North Concourse Apron	\$ 124,620	\$ 43,617	\$ 168,237	\$ 25,236	\$ 193,473	\$ 32,890	\$ 226,363
		AOA Fenceline	\$ 18,000	\$ 6,300	\$ 24,300	\$ 3,645	\$ 27,945	\$ 4,751	\$ 32,696
		Demo. East Concourse (NW Portion)	\$ 303,486	\$ 106,220	\$ 409,706	\$ 61,456	\$ 471,162	\$ 80,098	\$ 551,260
		Demo. East Concourse (East Portion)	\$ 675,090	\$ 236,261	\$ 911,291	\$ 136,694	\$ 1,047,984	\$ 178,157	\$ 1,226,141
		Demo. Cargo Building	\$ 602,422	\$ 210,848	\$ 813,270	\$ 121,990	\$ 935,260	\$ 158,994	\$ 1,094,254
Demo. East Ticket Wing		\$ 1,067,680	\$ 373,688	\$ 1,441,368	\$ 216,205	\$ 1,657,573	\$ 281,787	\$ 1,939,361	
Demo Main Terminal to East Concourse		\$ 1,422,370	\$ 497,830	\$ 1,920,200	\$ 288,030	\$ 2,208,229	\$ 375,399	\$ 2,583,628	
Demo. North Concourse		\$ 2,052,875	\$ 718,506	\$ 2,771,381	\$ 415,707	\$ 3,187,088	\$ 541,805	\$ 3,728,893	
North Concourse Apron		\$ 129,000	\$ 45,150	\$ 174,150	\$ 26,123	\$ 200,273	\$ 34,046	\$ 234,319	
Demo. West Concourse (NW Portion)		\$ 805,450	\$ 281,908	\$ 1,087,358	\$ 163,104	\$ 1,250,461	\$ 212,578	\$ 1,463,040	
Demo. West Concourse		\$ 1,589,680	\$ 556,388	\$ 2,146,068	\$ 321,910	\$ 2,467,978	\$ 419,556	\$ 2,887,534	
West Concourse Apron Work		\$ 2,207,309	\$ 772,558	\$ 2,979,868	\$ 446,980	\$ 3,426,848	\$ 582,564	\$ 4,009,412	
New North Concourse Apron		\$ 4,009,412	\$ 1,403,294	\$ 5,412,706	\$ 811,906	\$ 6,224,612	\$ 1,058,184	\$ 7,282,796	
Demo East Conc. Skybridge		\$ 109,790	\$ 38,427	\$ 148,217	\$ 22,232	\$ 170,449	\$ 28,976	\$ 199,425	

