



U.S. Department  
of Transportation

*Executive Summary*

***ANALYSIS OF THE IMPACT OF CHANGES  
TO THE WRIGHT AMENDMENT***

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ON THE WRIGHT AMENDMENT**

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## **Executive Summary**

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### **Overview.**

Dallas-Fort Worth International Airport opened in 1974. To ensure its success and to provide assurance that the airport could meet its bond obligations, the cities of Dallas and Fort Worth agreed to move commercial passenger operations from Love Field in Dallas and Meacham Field in Fort Worth to Dallas-Fort Worth Airport. At that time, most of the major carriers serving the area signed an agreement to transfer their operations. Only Southwest Airlines--then a small, intra-state carrier--did not sign, and was subsequently found eligible by the courts to continue to provide intra-state service from Love Field. With airline deregulation in 1978, Southwest, with court approval, expanded its service to New Orleans from Love Field. Concern arose that other carriers might seek to provide expanded service from Love Field, a move that might dilute the service from and financial standing of Dallas-Fort Worth Airport. The legislative result of that concern was the Wright Amendment--a provision contained in the International Air Transportation Competition Act of 1979--that expressly prohibits non-stop air service (and through-ticketing and through-service) between Dallas Love Field and cities other than those in Texas, Arkansas, Louisiana, New Mexico, and Oklahoma.

Since enactment of the Wright Amendment, two views of its potential impacts have developed. On one hand, many believe that the Amendment's restrictions limit the benefits of Southwest's lower-fare structure as well as the potential economic contribution of Love Field. As a result, residents outside the five state area, as well as some residents of Dallas, have argued for changes to the Amendment in order to allow Southwest to expand its operations from Love Field and provide low-fare service to more cities. On the other hand, others feel that removing or changing the current restrictions would break the agreement between the cities of Dallas and Fort Worth that has served as the foundation for regional economic planning and development. They also contend that expanding service at Love Field would compromise the justification to expand Dallas-Fort Worth Airport, lessen rather than increase consumer choice and service, and reduce the margin of safety.

### **Results in Brief.**

A change to the Wright Amendment will result in more service, more competition, lower fares, and more traffic for the Dallas-Fort Worth Metroplex and the region. Travellers to or from the Metroplex region will save an estimated \$183 million per year in air fares. The amount of additional service that can be provided at Love Field beyond the 214,000 annual operations today will be limited by airspace interactions caused by Love Field's proximity to Dallas-Fort Worth Airport and the orientation of its runways in relation to those at Dallas-Fort Worth Airport. Safety will be maintained by FAA-imposed procedures, and noise impacts on the region will continue to decline as older "Stage 2" aircraft are phased out. Aircraft delays would become a significant problem only if operations reach the unlikely level of 360,000 operations annually. Under all possible scenarios, Dallas-Fort Worth Airport will continue to grow and remain the region's dominant airport.

## **Study Approach and Results.**

This study evaluates five questions surrounding change to the Wright Amendment:

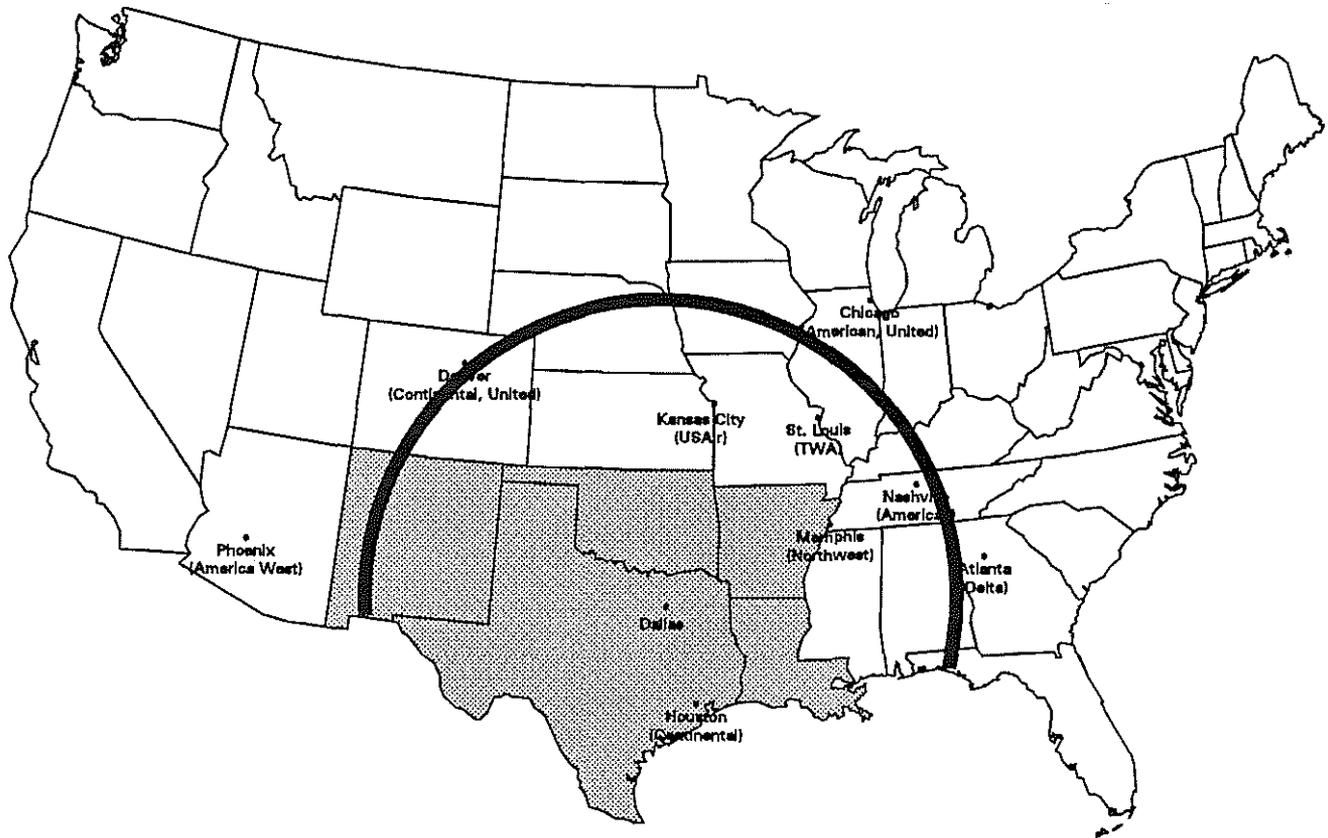
- What will be the impact on competition and fares?
- How much capacity can Love Field add?
- What will be the impact of opening Love Field on the continued growth of Dallas-Fort Worth Airport?
- Will travelers prefer Love Field over Dallas-Fort Worth Airport?
- What are the likely environmental consequences of more air traffic at Love Field?

This study evaluates these questions by considering two alternatives to the Amendment: modification, which would allow some new service, and repeal. Repeal was evaluated according to three different possible service levels at Love Field.

- Base Case. The Wright Amendment will be retained in its present form.
- Modified Wright. A change permitting non-stop flights of up to 650 miles and through-service and through-ticketing to any destination beyond.
- Repeal/Equal Access. Carriers serve Love Field by focusing on service to their major hubs and Southwest adds service to a limited number of cities beyond the 650 miles noted above.
- Repeal/Origin and Destination. Love Field becomes a major origin and destination base (70 flights a day) by a carrier other than Southwest.
- Repeal/Major Hub - An airline, other than Southwest, decides to establish Love Field as a hub (230 flights a day).

Figure ES.1. presents the existing Wright Amendment service restriction as well as the 650 mile limit of the Modified Wright scenario.

**Figure ES.1. Existing and Modified Wright Amendment Service Limits From Dallas Love Field**



KEY:		Wright Amendment Service Area
		Modified Wright Amendment (650 Statute-Mile) Service Area

What will be the impact on competition and fares? With a few exceptions, the Wright Amendment limits service from Love Field to that provided by Southwest Airlines. If the Wright Amendment were changed, competition and fares in the Metroplex would be affected in two ways.

*First*, new service by Southwest Airlines from Love Field would likely include a number of new cities (see Table ES.1). This would result in increased competition for service from Dallas-Fort Worth Airport and should result in net increases in service for the Metroplex. Other carriers are also likely to add non-stop service from Love Field to their hubs. Only if carriers choose to shift flights from Dallas-Fort Worth Airport to Love Field rather than to supplement existing service would the diversity of air service from Dallas-Fort Worth Airport be reduced.

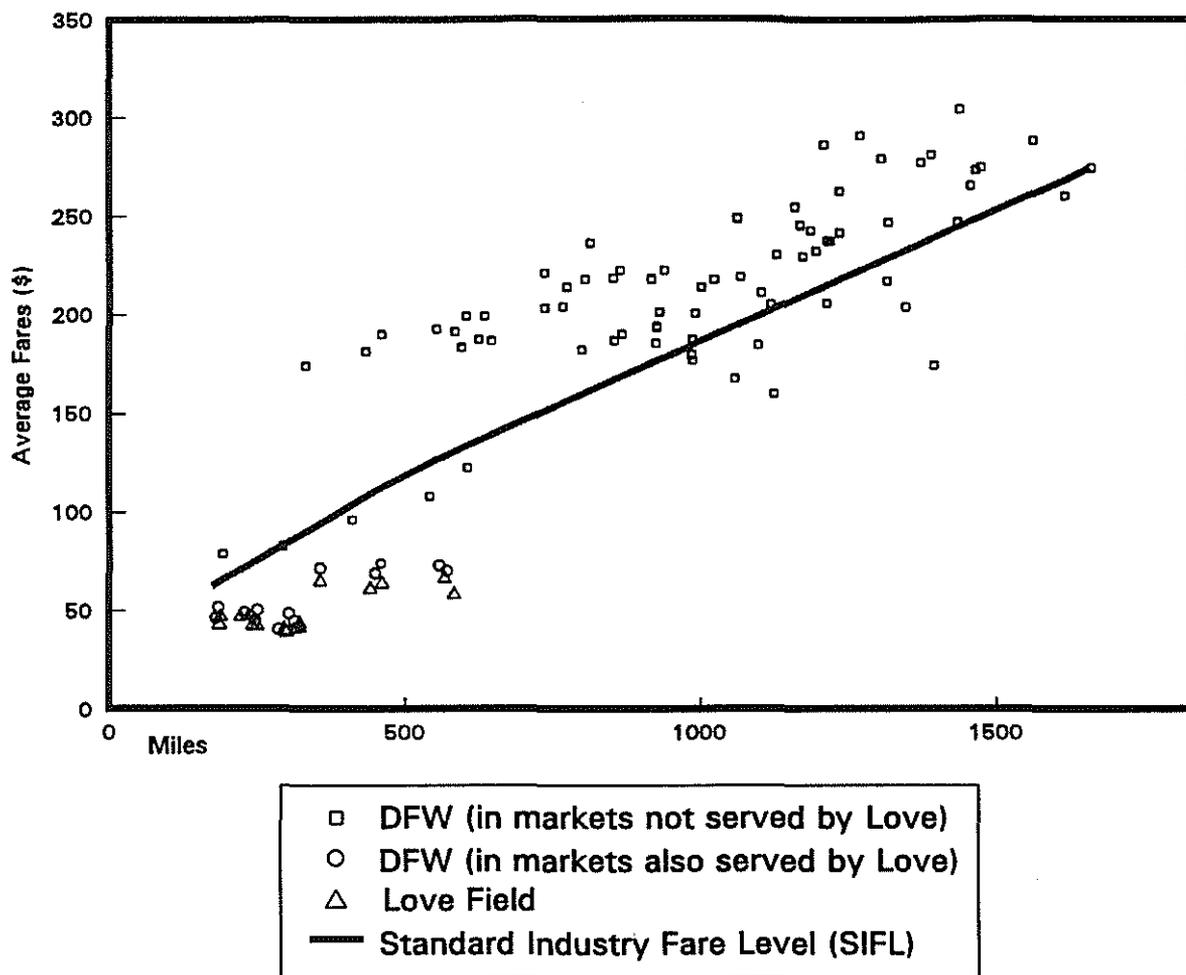
Table ES.1.  
Market Entry By Southwest Airlines to/from the  
Metroplex Following Change to  
the Wright Amendment

<b>Most Likely Non-Stop Markets</b>	<b>Most Likely Key One-Stop and Connecting Markets</b>
<p><b>South:</b></p> <p>Birmingham Memphis</p> <p><b>Midwest:</b></p> <p>Kansas City St. Louis</p> <p><b>West:</b></p> <p>Phoenix</p>	<p><b>South:</b></p> <p>Nashville</p> <p><b>Midwest:</b></p> <p>Chicago Detroit Indianapolis</p> <p><b>West:</b></p> <p>Burbank Las Vegas Oakland Ontario (CA) Reno San Diego San Francisco</p>

The non-stop cities listed above represent the most likely additional entry points from Love Field given Southwest Airlines' current operating pattern. Analysis suggests that Southwest may enter a limited number of additional cities (all smaller in population than those shown).

Second, Southwest Airlines' low-fare structure and frequent service would have an impact on demand for air travel in the southwestern region. For example, when Southwest has initiated service in a market in the past, fares for service in that market have fallen by an average of 22 percent and traffic has increased by 50 percent. Furthermore, fares for those markets with non-stop service from both Love Field (provided by Southwest) and Dallas-Fort Worth Airport (provided by various airlines) average 39 percent below the standard industry fare level--the Civil Aeronautics Board pre-deregulation fare formula adjusted for cost increases. Fares for markets for which service is only available from Dallas-Fort Worth Airport (with no service by Southwest), on the other hand, average 19 percent above the standard industry fare level (see Figure ES.2) .

**Figure ES.2. Average Fare and Standard Industry Fare Level for Non-Stop Jet Markets Served from Love Field and Dallas-Fort Worth (1990)**



If the Wright Amendment were repealed, travelers to or from the Metroplex could conservatively expect to realize an estimated annual fare savings of \$183 million (in 1991 dollars, see Table ES.2). This result would be slightly lower (approximately 5 to 10 percent) if the Wright Amendment were modified rather than repealed.

Table ES.2.  
Annual Fare Savings by Market Resulting From Wright Amendment Repeal

MARKET (From the Metroplex)	Forecast 1996 Passengers <sup>a</sup>	Additional 1996 Passengers <sup>b</sup>	Average Fare Savings (Millions of 1991 Dollars)
<b><i>Non-Stop Markets</i></b>			
Birmingham	60,000	23,000	\$ 3.1
Kansas City	209,000	128,000	18.1
Memphis	113,000	64,000	8.4
Phoenix	263,000	161,000	22.7
St. Louis	295,000	168,000	23.2
<b><i>One-Stop and Connecting Markets</i></b>			
Nashville	133,000	30,000	3.4
Burbank	64,000	15,000	2.2
Chicago	817,000	334,000	45.7
Detroit	292,000	53,000	5.4
Indianapolis	128,000	29,000	3.3
Las Vegas	216,000	49,000	4.6
Oakland	79,000	34,000	5.9
Ontario	122,000	28,000	3.8
Reno	53,000	12,000	1.4
San Diego	185,000	42,000	5.4
San Francisco	299,000	143,000	26.4
<b>TOTAL</b>	<b>3,328,000</b>	<b>1,313,000</b>	<b>\$183.0</b>

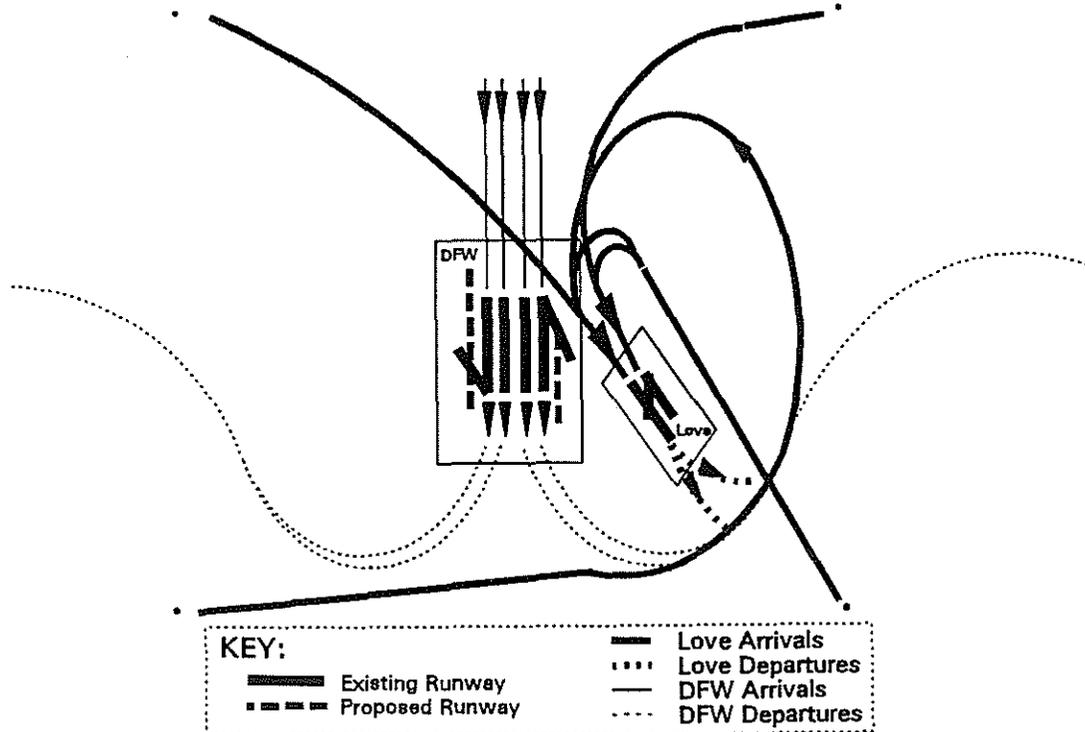
Notes:

- a) Market forecast based on 1990 U.S. Department of Transportation Survey of Origin and Destination Passengers for each city pair, forecast to grow at rate of the Terminal Area Forecasts provided by the Federal Aviation Administration.
- b) Demand would increase by less than the 50 percent non-stop average since many of the markets would only be affected by multiple stop (through-ticketing) service.

**How much capacity can Love Field add?** Dallas Love Field is located about 4 1/2 miles from the Dallas central business district and 12 miles east of Dallas-Fort Worth Airport. While Love Field is closer to downtown Dallas than is Dallas-Fort Worth Airport, access is limited to two signal-controlled roads expected to reach capacity within the next 5 to 10 years. The airfield is a fully developed 1,300-acre site with two parallel runways (each with Instrument Landing Systems) capable of handling most domestic aircraft operations and one shorter north-south runway used for light general aviation aircraft. Industrial and residential development adjacent to Love Field make it impractical to add new capacity through land acquisition. Thus, the potential for expanded air service at Love Field is a function of the airspace and terminal capacity.

Airspace capacity is clearly an important constraint to expanding service at Love Field. Love Field's two main runways are at an angle to Dallas-Fort Worth Airport's main north-south runways, resulting in airspace limitations between traffic approaching or departing Dallas-Fort Worth Airport and Love Field in the north. This orientation, coupled with the proximity of the two airports and the high-activity levels in the area creates airspace limitations on Love Field operations (see Figure ES.3). Further, any change in airspace rules to increase the capacity at Love Field would result in a decrease in capacity for Dallas-Fort Worth Airport. Thus, the most effective airspace configuration for the region remains that of the Federal Aviation Administration's recently completed *Metroplex Plan*, now being implemented.

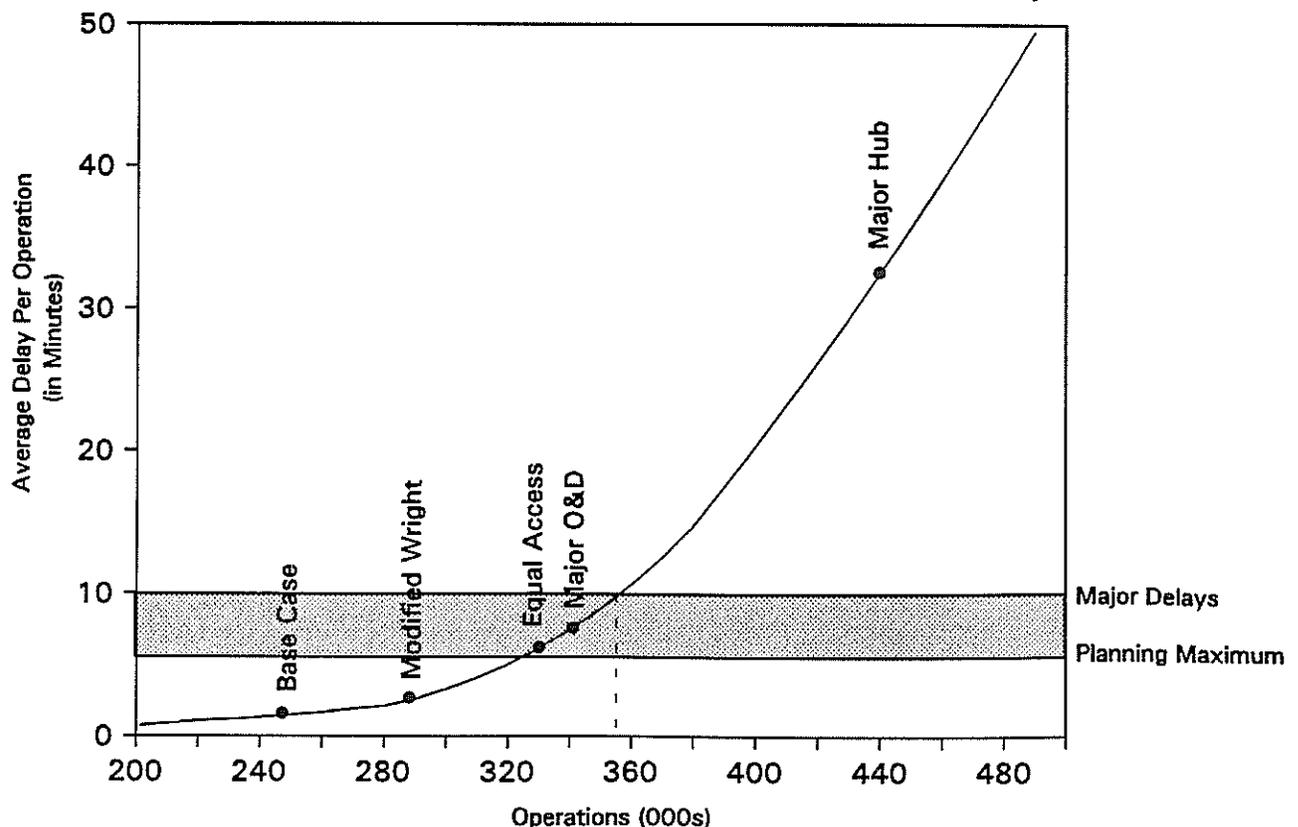
**Figure ES.3. Dallas-Fort Worth Airport and Love Field Federal Aviation Administration Arrival and Departure Paths**



Notes: Schematic not to scale.  
Boxes around airports are for identification and do not show boundaries.

Changing the Wright Amendment to establish a 650-mile perimeter with through-service and through-ticketing would not result in unmanageable capacity or delay problems. This is largely true under repeal also, provided that carriers do not elect to establish hub operations at Love Field (see Figure ES.4). If Love Field were to become a major hub, capacity and delays would become much more serious concerns. Under repeal, two conditions unique to the Metroplex airspace would become increasingly important as activity at Love Field increased. First, south-flow arrivals (which occur 70 percent of the time) are limited to a single stream at Love Field due to competing airspace with Dallas-Fort Worth Airport. Second, all departures from the Dallas-Fort Worth area use common airspace for each aircraft type. Thus, for example, if two planes of the same type, one at Love Field and one at Dallas-Fort Worth Airport, are set to depart for the same destination, one might have to wait. These conditions are not expected to engender significant delays under repeal, as long as carriers limit their Love Field operations to servicing existing hubs, as illustrated by the Equal Access scenario. But any operations beyond that level, such as operating Love Field as a major hub, could result in serious delay problems.

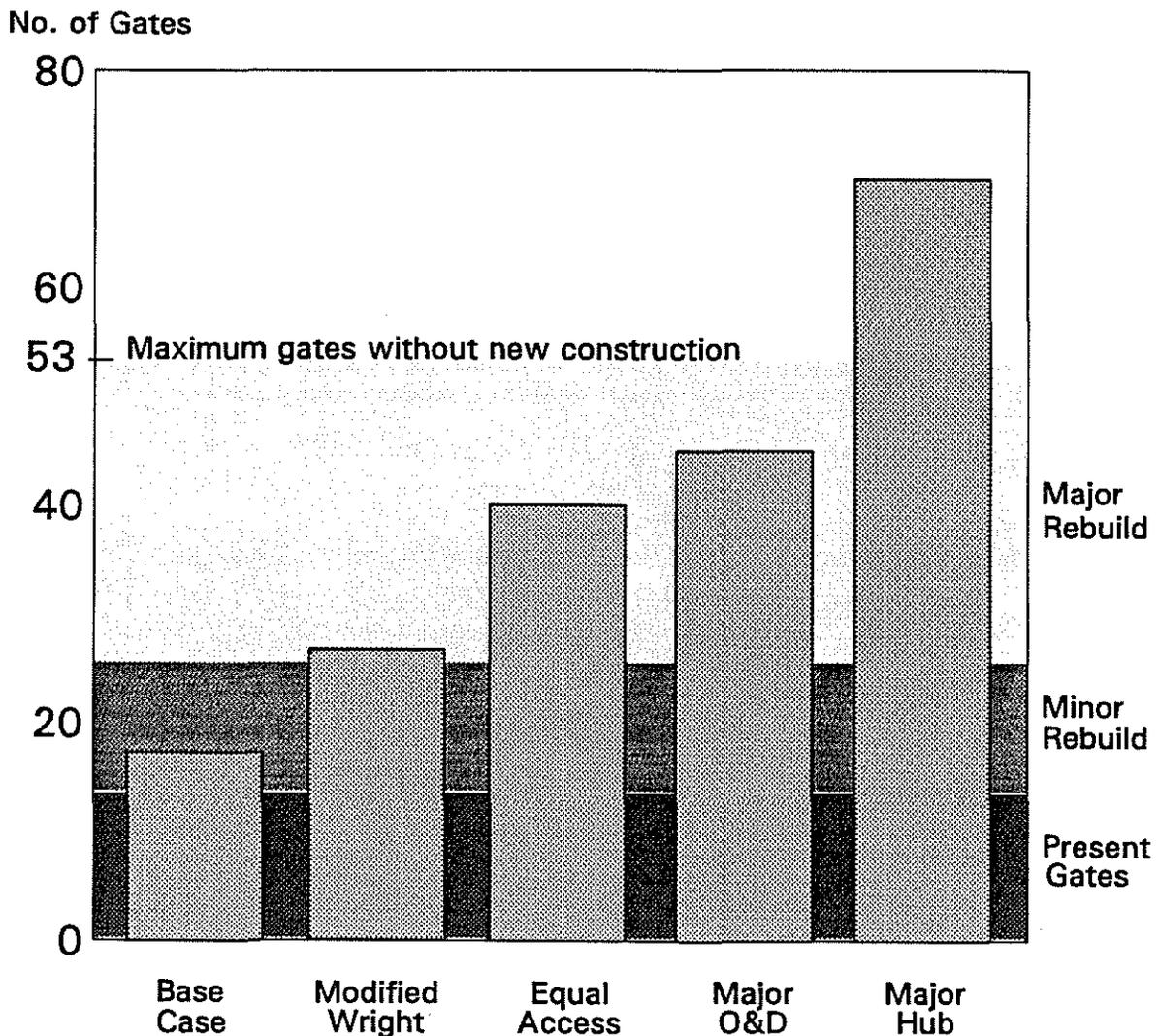
**Figure ES.4. Relationship Between Operations and Delay at Love Field (with 1996 Scenario Forecasts)**



Source: Howard Needles Tammen Bergendorf based on forecasts prepared by Apogee Research and FAA Airport Capacity and Delay Model.

The terminal at Love Field will support an increase in airline passenger operations, but will not support a hub operation at Love Field without the construction of new terminal facilities. The terminal, located between the parallel runways, has three concourses. The west concourse is used by Southwest Airlines. The north and east concourses have not been used for scheduled commercial passenger service for a number of years and most space has been leased out for commercial enterprises. At present, 13 active passenger loading gates are in use by Southwest. An additional 15 gates could be opened with little or no reconstruction. Major reconstruction would yield 25 more gates, bringing the total to 53 gates (see Figure ES.5).

**Figure ES.5. Gates Required by Scenario at Love Field (1996)**



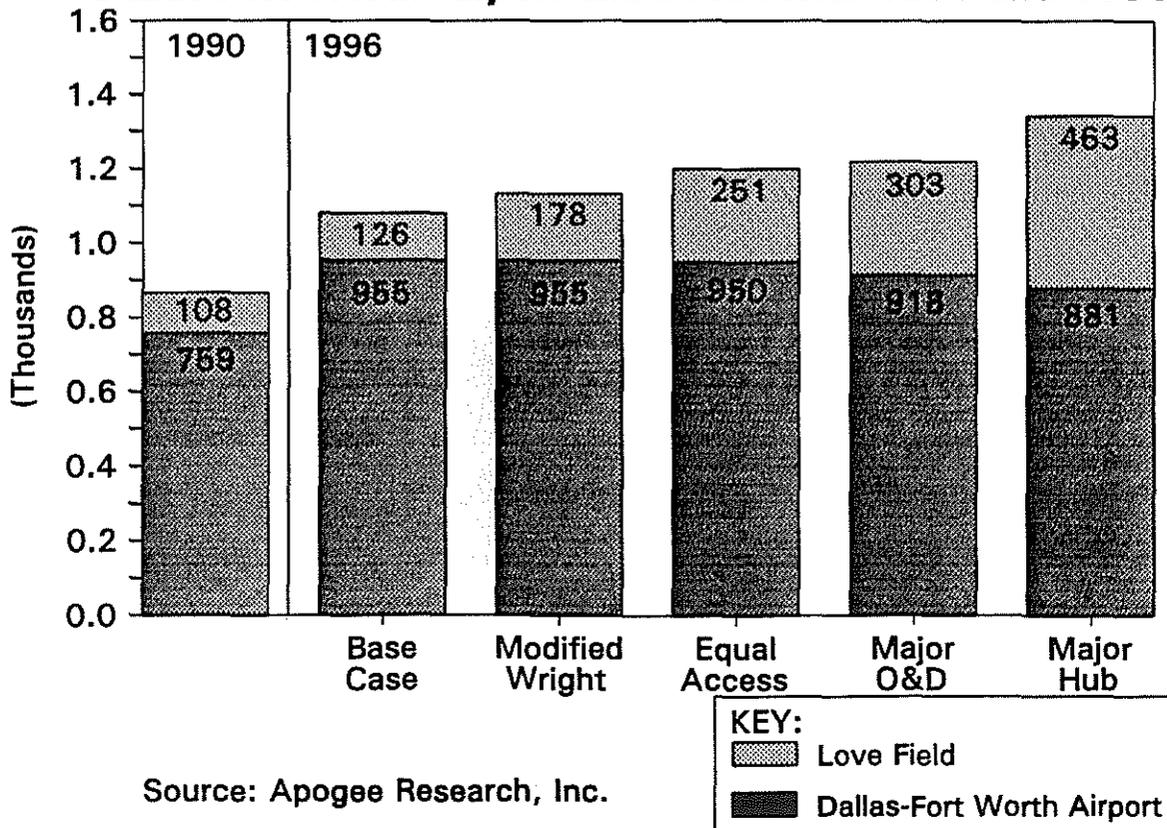
Source: Howard Needles Tammen Bergendorf

**What will be the impact of opening Love Field on the continued growth of Dallas-Fort Worth Airport?** It has been suggested that growth at Dallas-Fort Worth Airport could be affected by (1) a shift in operations to Love Field, and (2) operational delays and delays in constructing planned new runways.

Changing the Wright Amendment to allow a 650 mile limit and through-service and through-ticketing or repealing the Wright Amendment with other carriers serving their hubs from Love Field will have little if any impact on Dallas-Fort Worth Airport's growth. Only if the Amendment is repealed and a carrier establishes a major origin and destination base or a major hub at Love Field would Dallas-Fort Worth Airport face a shift in operations, the possibility of additional delays, or delays to expansion plans. To achieve either scenario (major origin and destination or major hub), however, an air carrier must be willing to accept additional delays at Love Field and, as a consequence, sacrifice service.

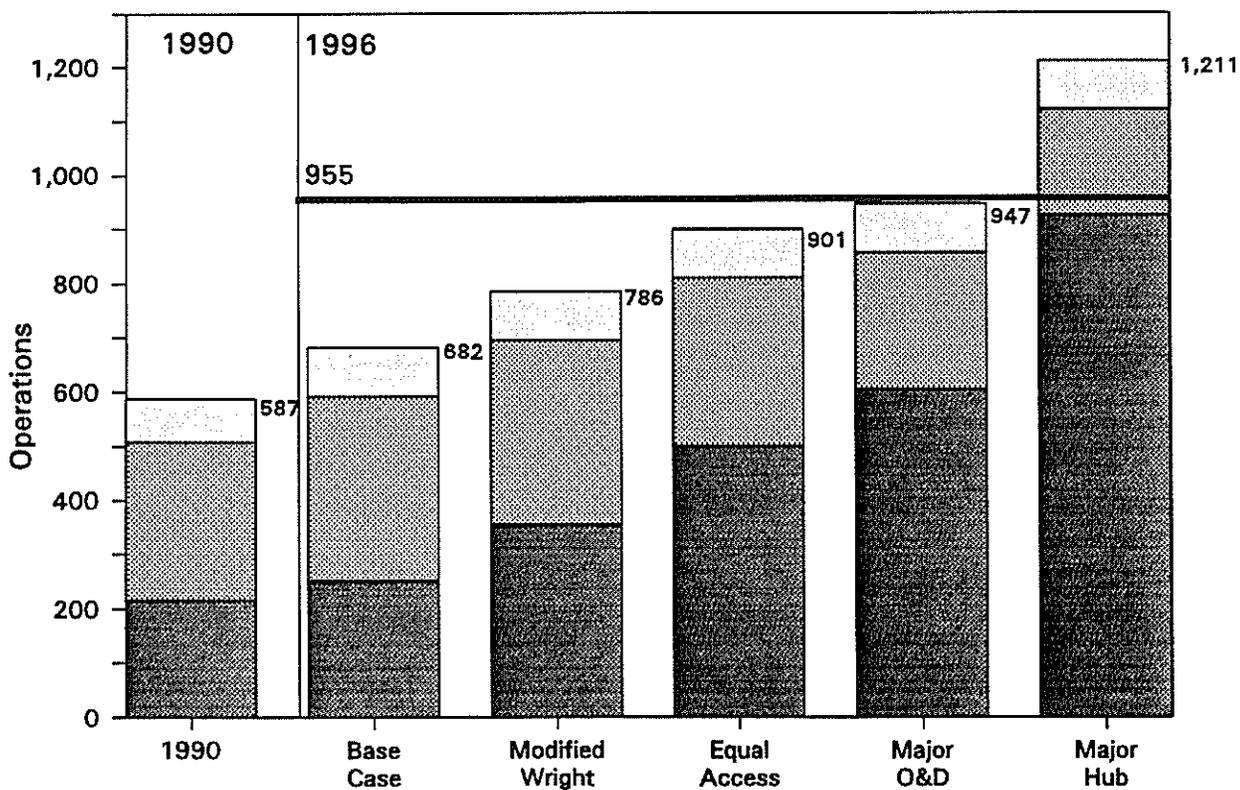
For example, using estimated forecast average daily domestic jet departures from Love Field and Dallas-Fort Worth Airport as one measure, Dallas-Fort Worth Airport operations drop from 950 under the Equal Access scenario to 881 under the Major Hub, with a corresponding shift upward--from 251 to 463 daily jet departures--at Love Field (see Figure ES.6).

**Figure ES.6. Estimated Daily Jet Departures from Dallas-Fort Worth Airport and Love Field: 1990 and 1996**

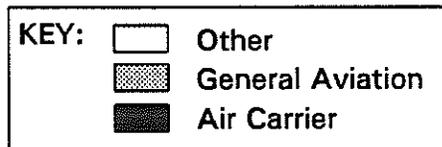


Furthermore, because Dallas-Fort Worth Airport will remain the region's primary airport under any scenario (both in terms of operations and for airspace planning purposes), traffic to Love Field will not have any detrimental impact on Dallas-Fort Worth Airport's capacity--except under the extreme scenario of the Major Hub at Love Field. For example, using SIMMOD, a Federal Aviation Administration computer airspace and airport simulation model, ATAC Corporation concluded (in March 1990) that an increase to 955 daily operations at Love Field--an increase of more than 50 percent over 1990 operations and one within the forecast levels for both the Modified Wright and Equal Access scenarios--would not result in additional delays at Dallas-Fort Worth Airport (see Figure ES.7). This will remain the case even though the development schedule for Dallas-Fort Worth Airport calls for two new runways to be completed, one in 1994 and the second in 1997. Existing air traffic procedures at Love Field will have to be modified slightly to accommodate the proposed new runways, but these modifications will not change arrival and departure capacity levels forecast for Love Field.

**Figure ES.7. Average Daily Activity at Love Field  
1990 and 1996**



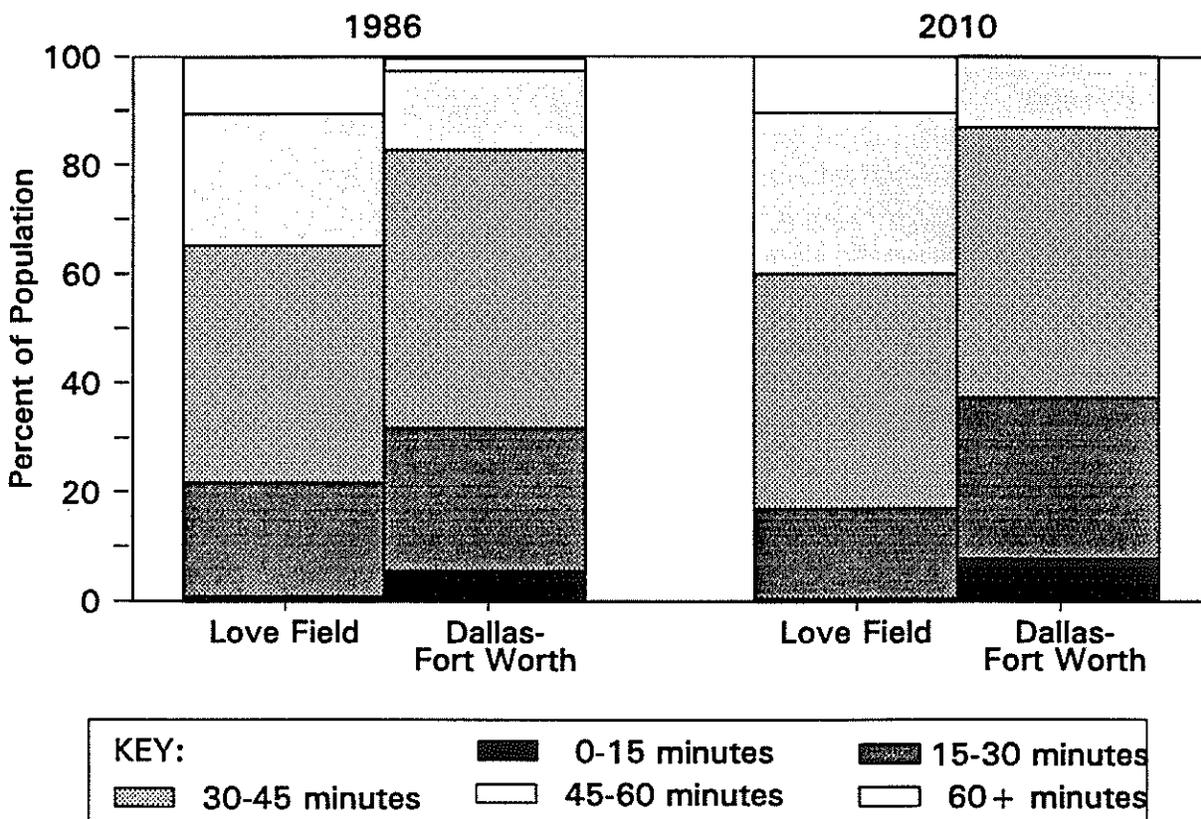
Source: Apogee Research, Inc.



**Will travelers prefer Love Field over Dallas-Fort Worth Airport?** Some carriers serving Dallas-Fort Worth Airport have expressed concern that Love Field, because of its geographic proximity to the City of Dallas, would be the "preferred" airport.

Data provided by the North Central Texas Council of Governments show, however, that the time to drive to Dallas-Fort Worth Airport is actually shorter than to Love Field for the majority of the Metroplex population and workforce. Furthermore, access to Dallas-Fort Worth Airport will improve through 2010, while access to Love Field will deteriorate. For example, the percentage of Metroplex households within 45 minutes' drive of Love Field is expected to fall from the 1986 level of 67 percent to 62 percent by 2010. Conversely, the percent within 45 minutes of Dallas-Fort Worth Airport is expected to grow from 86 percent in 1986 to 88 percent in 2010 (see Figure ES.8).

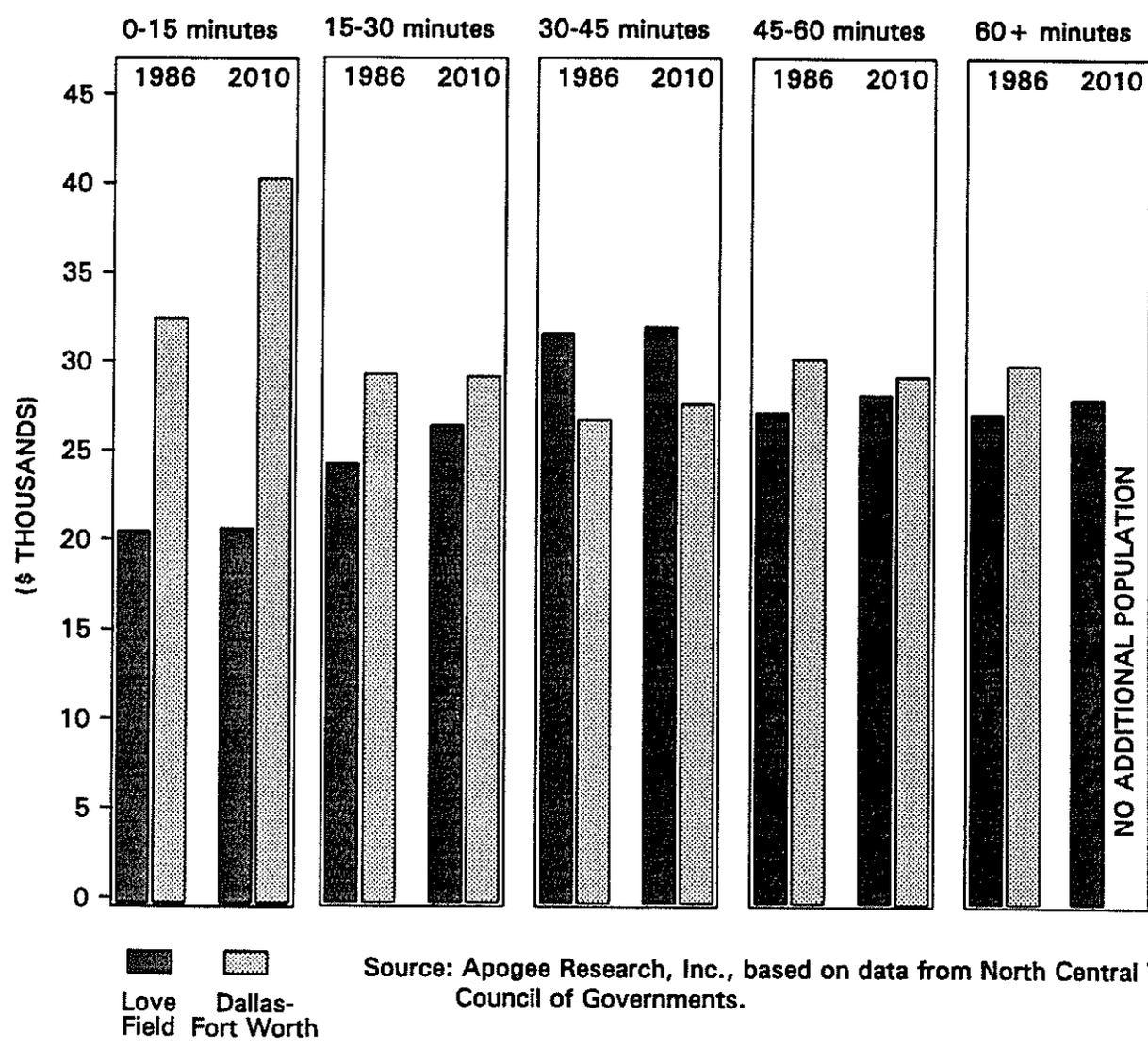
**Figure ES.8. Percentage of Metroplex Population Served By Travel Time Contour Interval**



Source: Apogee Research from North Central Texas Council of Governments data.

Further, Dallas-Fort Worth Airport is closer to the higher-income areas--the areas whose residents have a higher propensity to fly--than is Love Field, an advantage that will also grow over time (see Figure ES.9).

**Figure ES.9. Median Income by Travel Time Contour Interval 1986 and 2010**

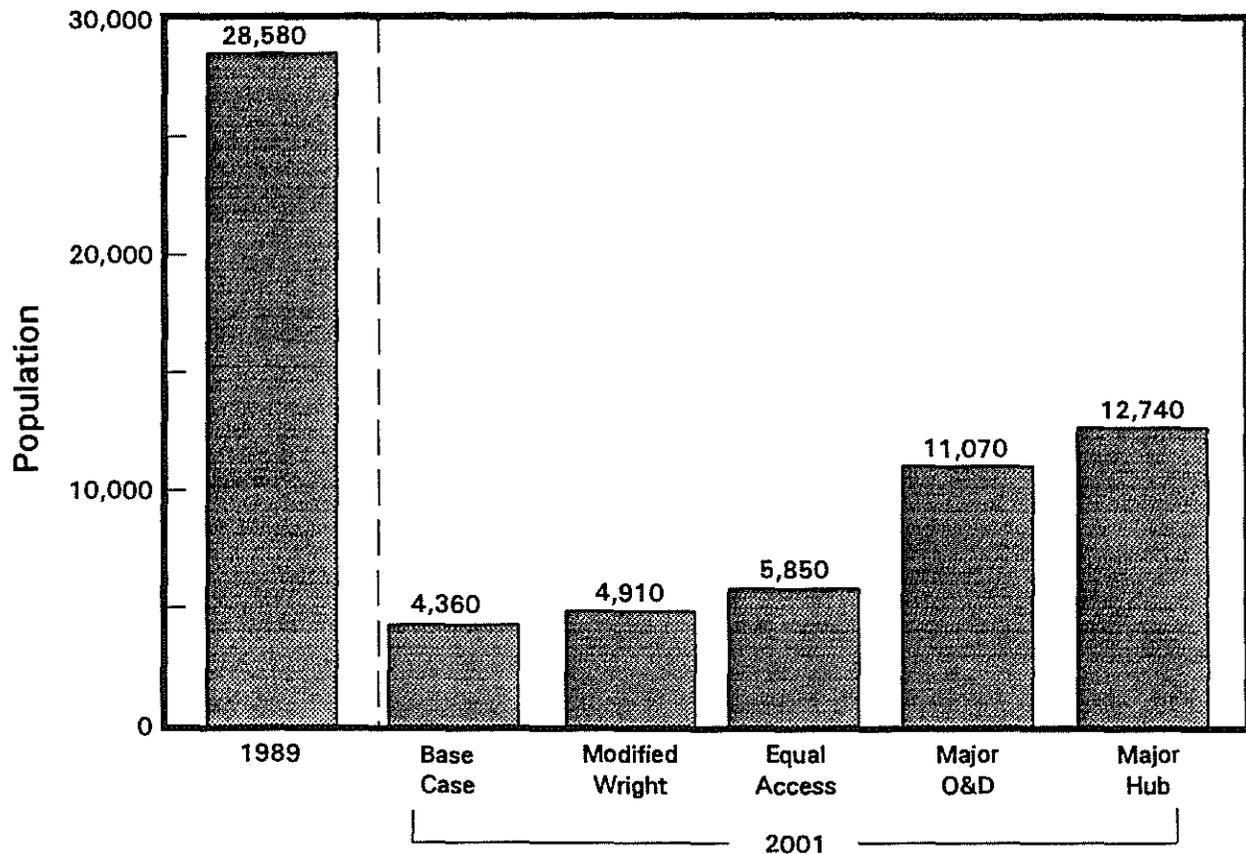


**What are the likely environmental consequences of more air traffic at Love Field?**

The primary environmental consequence of any change to the Wright Amendment is noise.

Aircraft noise will be reduced from current levels under any of the scenarios examined primarily due to the change to a quieter "Stage 3" airline fleet and the phase-out of some older, noisier general aviation aircraft. In 1989, for example, 29,000 people lived within an area equal to or in excess of noise levels deemed compatible with residential development by the Federal Aviation Administration (technically termed the "65 Ldn" line) (see Figure ES.10). Even with an increase in operations, that number is expected to decline dramatically over the next 10 years.

**Figure ES.10. Population Within 65 Ldn at Love Field**



Source: Howard Needles Tammen Bergendorf

The complete report is available from:

Office of Policy and Plans  
Federal Aviation Administration  
800 Independence Avenue, S.W.  
Washington, D.C. 20591