AIRPORT RAMP PROGRAM

JM

HNTB ARCHITECTS ENGINEERS PLANNERS

5910 W. Plano Parkway
Suite 200
Plano, Texas
75093
(972) 661-5626
FAX (972) 661-5614
www.hntb.com

November 10, 2004

Mr. Steve Chutchian, P.E.
Assistant City Engineer
Town of Addison
16801 Westgrove Drive
Addison, Texas 75001-9010

Re: Richard Byrd Drive Repairs

Dear Mr. Chutchian:

At your request, we have investigated repair options for the Richard Byrd Drive pavement replacement project. Mr. Mike Ebeling, P.E. and Mr. Michael Hutchison, P.E. visited the site on November 9, 2004 to evaluate repair alternatives to the pavement. After assessing the condition of the area in question, we considered three options that would address the Town's concerns. The viable options are:

1) Removal and replacement of the entire three-inch asphalt surface course and restriping.
2) Milling one inch of the entire asphalt surface and applying a one inch overlay and restriping.
3) Milling ¼" of the entire asphalt surface, edge milling the entire length of the north edge of the asphalt surface (along the hangar) as well as strategic areas on the south edge (to accommodate drainage) and applying a one inch overlay and restriping.

After careful consideration of the above alternatives, we recommend option three as the most practical option for this situation. The ¼" milling over the entire surface is to remove the seal coat on the existing surface. The seal coat has the potential of reducing the bonding capability between asphalt layers. The contractor will need to comply with all federal, state, and local regulations in hauling off the milled material. We have included the attached cost estimate of option three for your use, and estimate the construction cost of this strategy to be approximately $52,000.

Thank you for the opportunity to assist in this matter. Please contact me with any questions you may have.

Very truly yours,

HNTB CORPORATION

Jerry D. Holder, P.E.

Enclosure

M:\JOBS\39131-RichardByrdApron\COMMMTGS\LETTERS\one inch overlay recommendation 111004.doc

TOWN OF ADDISON

RICHARD BYRD DRIVE PAVEMENT REPLACEMENT
ONE INCH OVERLAY AND RESTRIPING
Estimate of Construction Cost

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNITS	UNIT PRICE	COST
1	PAVEMENT WEDGE MILLING (6 ft.)	1,085	LF	$3.16	$3,431
2	PAVEMENT BUTT JOINT MILLING	628	SY	$5.75	$3,611
3	PAVEMENT MILLING (1/4" DEPTH)	5,889	SY	$1.95	$11,483
4	PRIME COAT	1,665	GAL	$2.13	$3,543
5	HOT MIX ASPHALT, TYPE D, 1"	400	TON	$57.50	$23,000
6	6" SOLID YELLOW TAXILANE CENTERLINE MARKING	1,900	LF	$3.45	$6,555
				SUBTOTAL	$51,623

TOTAL: $51,623

SAY: $52,000.00

Notes:
-Asphalt Quantity based upon 7240 square yards of pavement.
M:\JOBS\39131-RichardByrdApron\COSTACCT\[1 inch overlay estimate.xls]Sheet1

REBCON, INC.

April 30, 2004

Mr. Steve Chutchian
Town of Addison
P.O. Box 9010
Addison, TX 75001-9010

RE: Richard Byrd Drive Pavement Replacement
Addison Airport

Dear Mr. Chutchian:

In response to your correspondence dated April 28, 2004 regarding the referenced project, please find the following:

- As I stated in my letter to Mr. Jim Pierce, dated February 2, 2004, the pavement was accepted by the Town of Addison on December 19, 2003 upon which the maintenance period began.
- Rebcon was, and still is, more interested in providing a satisfactory solution to this problem than arguing if it is a materials and workmanship issue, so we agreed to correct the problem. The problem is cosmetic in nature, not structural, and the solution you agreed with on March 17, 2004 would have addressed this problem.
- The work has not been performed yet, so, of course, the problem still exists. In Rebcon's and Lewisville Paving's opinion, further deterioration has not occurred such that the heavy sand/seal coat would no longer be a viable solution. Rebcon should be able to determine what it thinks is the best available option which all parties would be pleased with. The Airport Staff is very concerned about aesthetics and durability, and we think this solution addresses both of those issues in a positive way. We would not intentionally recommend a solution that would cause both the Owner and Rebcon problems in the future.
- Upon your approval of our proposed solution, Rebcon entered into a Subcontract agreement with Lewisville Paving Co. The agreement was entered into in good faith knowing the work would be performed, and now you have suddenly cancelled work which Lewisville Paving was prepared to perform.
- Mr. Walter Holloway, President of Lewisville Paving, said the optimum time to perform the work was mid to late April, because of temperature, and you agreed to this time frame. Mr. Greg Krieg, of Rebcon, Inc., has been arranging an agreeable construction time with Mr. Luis Elguezabal, Assistant Director of Addison Airport, since late in the week of April 19. Mr. Elguezabel's schedule, air temperature, precipitation, and Lewisville Paving's schedule all have to be coordinated in order to perform the work. If you desire, please confirm this with Mr. Elguezabel.
- Rebcon has not failed to expedite the work in an expedient manner, and we were preparing to perform the work until you called Mr. Krieg to stop our efforts on Wednesday, April 28, 2004.. Mr. Krieg was waiting until the end of April, because he

was concerned about temperatures, and he wanted the optimum performance of the seal coat. We were under the impression the Town and the Airport wanted the best performance of the material rather than a specific date, until you called Mr. Krieg.

- Standard Section 1.42.1, Removal of Defective and Unauthorized work, is not applicable to this situation, because the work was inspected, tested, and accepted by the Town of Addison. Rebcon has agreed to correct the problem as a maintenance issue.
- Mr. Krieg met with you at the project site on Thursday morning, April 29, 2004, to discuss the issue. The Town and Airport suggested Microsurfacing as a possible solution to the problem, and requested Rebcon to pursue this option. Rather than pursue this idea, or any other solutions which may be accepted and rejected at a later date, Rebcon will hire a consulting engineer to properly study the problem and issue an opinion as to what the correct solution is according to industry standards. We will present this solution to your for your approval.
- Rebcon had a mutually agreed upon solution with the Town of Addison, which you recently rejected, so we have not caused the delay. We will not be subject to an arbitrary fourteen (14) calendar day correction period, but we will work in an expedient manner to find a mutually agreeable solution so the problem is corrected properly. Nor will we be subject to the deduction of monies due Rebcon. As stated earlier, this is a maintenance issue, so Rebcon has earned all monies due.
- Mr. Krieg told me, at the April 29 meeting you said to disregard the letter you were sending regarding this issue. We cannot disregard allegations which damage our credibility and have such serious implications. Unfortunately, this problem exists, and in the future we would be very pleased to have a meeting to discuss any problems or issues you have, rather than receive such a letter. We believe a meeting with all responsible parties would be more beneficial and solve the problem sooner.

Apparently I have offended you by requesting final payment for this project. My understanding was that Rebcon would not request final payment until a solution was found and agreed upon. We did this as a show of good faith, even though the project had been completed and accepted. Upon your acceptance of our solution to this problem, I then started pursuing final payment. One reason I have called the Airport twice for payment help is because of the confusing issue of funding for this project and who is responsible for payment. Our second application for payment took a very long time for processing, and I had to contact several people to find out when we would receive payment. I apologize if you had a different understanding, and we will continue to wait for full payment until this problem is corrected if that is your desire.

Sincerely,

REBCON, INC.

Robert C. Bibby

4-21-04

Lisa, Mark:

The attached letter dated 3/15/04 from Rebcon offered a proposed fix for the ravelling at seams on Richard Byrd Dr.

As per Steve's note, we gave them the go-ahead for this in mid to late April. However, we looked at the job today with Jerry Hoeber and Mike Ebeling of HNTB. Mike has a lot of construction experience.

We decided to send a letter to Rebcon saying that we have re-evaluated the situation and will require a more agressive "fix". HNTB will help with the preparation of the letter. Rebcon will not be happy but we have $27,000 of their retainage.

So we are now entering what may be a somewhat difficult period of negotiation with Rebcon.

However, however this turns out, there will be a period of time that Richard Byrd will need to be closed to make repairs.

We will keep you informed.

Jim Reiss

cc Steve, Luke

REBCON, INC.

3/17/04 Robert Bibby contacted on 3/17/04, & told to proceed w/ work in mid to late April, 2004. SM

March 15, 2004

Mr. Steve Chutchian
Town of Addison
P.O. Box 9010
Addison, TX 75001-9010

RE: Richard Byrd Drive Pavement Replacement
Addison Airport

Dear Mr. Chutchian:

Rebcon, Inc. consulted with Austin Bridge & Road regarding the pavement raveling on the referenced project, and they suggested we contact Lewisville Paving Co., Inc. for a solution to the problem. We met with Mr. Walter Holloway, President of Lewisville Paving Co., at the Airport on Thursday, March 11, 2004, so he could perform a visual inspection, and he offered the following:

- Treat the area with a heavy seal coat-sand coat.
- Use polytar heavy duty pavement sealer material as manufactured by Gem-Seal of Dallas.
- Scrub areas which are showing signs of raveling with a wire broom in order to remove any loose material. Pre-treat rough areas with a heavy seal coat containing 6 to 8 pounds of sand, applied by squeegee, to cover seams and rough areas.
- Clean the area with a high pressure blower to remove any debris.
- Apply a first coat of material containing 3 to 4 pounds of silica sand and approximately 7% of polymers by volume. The application shall be approximately 0.12 to 0.15 gallons per square yard applied by spray.
- Apply a second coat of material containing 2 to 3 pounds of silica sand and approximately 7% of polymers by volume. The application shall be approximately 0.09 to 0.12 gallons per square yard applied by spray.
- Depending on the weather, the second coat will be applied not later than the day following the first coat. The material will need 24 to 36 hours to properly cure after the second coat application. The re-striping can commence 24 hours after the second coat is applied. No rain can be predicted for 24 hours after the second application. Temperature wise, the best time for this procedure is mid to late April.

1868 W. NORTHWEST HWY. DALLAS, TEXAS 75220 972/444-8230

Please let me know if this solution meets your approval, and we will start coordinating with airport personnel for an April application time.

Sincerely,

REBCON, INC.

Robert C. Bibby

enclosure

gemseal...

POLYTAR™

HEAVY DUTY PAVEMENT SEALER
DETAILED APPLICATION SPECIFICATIONS

1. Scope:

This recommended practice covers the application of PolyTar™, a high performance, polymer modified, emulsified coal tar pavement sealer. This application serves as weather protection, beautification of surface, and aliphatic-solvent (petroleum distillates such as gas, oil and diesel) resistant seal for asphaltic concrete pavements of airport ramps and taxiways, parking lots, and driveways.

2. References:

2.1 ASTM Specification D-3320; Standard Specification for Emulsified Coal Tar Pitch (Mineral Colloid Type).
2.2 ASTM Specification D-490; Standard Specification for Road Tar.
2.3 ASTM Specification D-3423; Standard Practice for Application of Emulsified Coal Tar Pitch.
2.4 ASTM Specification D-2939; Standard Methods of Testing Emulsified Bitumens Used as Protective Coatings.
2.5 ASTM Specification D-4866; Performance Standard for Coal Tar Pitch Emulsion Pavement Sealer Foundations Containing Mineral Aggregates and Optional Polymeric Admixtures.
2.6 AASHTO Specification TP5-97; Provisional Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer.

3. Materials:

3.1. The contractor shall use PolyTar ™ polymer modified coal tar emulsion. No alternative will be accepted. PolyTar™ will conform to the following requirements;

3.1.1. ASTM Specification D-3320; **Non volatiles (solids) shall be 40% ±1%.**

3.1.2. The refined tar prior to polymer modification shall conform to ASTM D-490, grade RT-12. The refined tar shall be derived from high temperature coke oven tar. Oil and water gas tars shall not be used even though they might comply with ASTM D-490, grade RT-12.

3.1.3. Polymer to refined tar ratio shall be 7% by volume of refined tar (ASTM D-490, grade RT-12), and will conform to the following criteria:

Dynamic Shear Rheology, (DSR)	Test Result
Tan Delta (G''/G'), 60°C 10 radian/second, 10% strain, ratio AASHTO TP5-97	Less than 4.5

3.1.4. The emulsion shall be produced using a colloid mill to insure homogeneity and appropriate size of the particles in suspension.

3.1.5. The contractor and/or his supplier will provide a certification with each bulk emulsion delivery indicating compliance with the above requirements. Further, the certificate will indicate the non-volatiles (solids) content and ash content of that particular transport lot as determined by results of tests performed on material loaded. Such certifications shall be subject to verification by testing samples of the emulsion received for use on the project. Costs of verification testing will be borne by Project Administrator.

3.2 Dilution water shall be potable and free of excessive minerals and contaminants. Water will be provided by Project Administrator and available within a reasonable distance from the job site.

3.3. Sand will be washed and graded silica sand, or crushed, washed, and graded slag, free of all contaminants, and conforming to the following gradation:

Sieve Size	% Passing
#8	100
#16	95 – 100
#30	60 – 93
#50	10 – 40
#100	0 – 10
#200	0 – 2

Note: Gradations outside these ranges may be used provided past history shows evidence of a durable surface.

4. Equipment: All tools and equipment necessary to perform the contract in accordance with the specified terms and conditions, such as brushes, hand squeegees, pumps and hose equipment, storage tanks, mixing tanks, water distributors, power sweepers, blowers, barricades and applicator equipment shall be provided as required by the contractor. All methods employed in performing the work and all equipment necessary for executing any part of the work shall be subject to approval by Project Administrator before work is started, and when found unsatisfactory will be corrected. All equipment will be in good working condition.

4.1. Spray equipment used on the job shall have mechanical mixing devices incorporated in their construction to assure homogeneous mixing of the emulsion and required additives. The pumping system must be adequate to apply a uniform coating at the specified rates of application. Equipment requiring pressurization of the mixing tank for distribution will not be used.

4.2. Motorized squeegee application equipment used on the job will have two or more devices such as squeegees and/or drag broom assemblies to assure even distribution of the tar emulsion system. Mechanical mixing devices will be incorporated into the construction of the applicator to assure homogeneous mixing of the emulsion and required additives.

4.3. Mixing or agitating equipment may be either portable powered or a tank-type power mixer. In any case, mixers shall be of sufficient capacity to assure homogeneous mixing of the emulsion and required additives and to maintain complete suspension of mineral aggregate until the emulsion system is applied to the pavement. All storage tanks or drop tankers shall be equipped with mechanical agitators sufficient to keep the coal tar emulsion homogenous during storage.

5. Preparation of Surfaces:

5.1. Allow new asphalt to cure. Cure time varies with type of asphalt, aggregate, weather conditions, and construction procedures. Hot mix asphalt will usually cure in 30 - 90 days. Cold mix pavements should have at least 90 days to cure. Required cure time should be determined by Project Administrator, and a written order to proceed will be furnished to the contractor.

5.2. Wide cracks, extensive alligator cracking patterns, soft or sunken spots indicate that the pavement and/or base should be repaired or replaced. Extensive patching shall be allowed to cure prior to sealcoating in accordance with 5.1.

5.3. Thoroughly inspect the pavement for minor cracks and other imperfections. Ignore hairline cracks. Cracks of approximately 1/4 - 3/4 inch wide should be cleared of debris and filled with a Gem Seal approved crack sealant in accordance with manufacturer's specification. **(OPTIONAL)**

5.4. Remove oil and grease spots that have not permanently damaged or softened the pavement by scrubbing with a detergent and flushing with water until a water-break-free surface is obtained. Oil and grease spots with deeper penetration will be treated by burning with hand held propane torch, and then coating the spot with an approved oil spot primer such as Tar-Prime. If the oil spot is so severe as to cause permanent deterioration of the pavement, or if the pavement has failed due to other causes, the pavement shall be removed to the full depth of the damage and replaced with new asphalt pavement in accordance with paragraph 5.1.

5.5. Old traffic control lines may be blackened with black epoxy or black acrylic coatings. Excessive build up of lines should be abraded before any prime coats of asphalt or tar emulsion are applied. **(OPTIONAL)**

5.6 Highly oxidized or weathered asphalt surfaces shall be primed with a coat of PolyTar™ diluted 1 to 1 with water. The prime coat shall be allowed to dry thoroughly before proceeding with additional applications. Application rate shall be 0.09 - 0.10 gallon per square yard of diluted PolyTar™. **(OPTIONAL)**

5.7. Immediately before application of sealer, clean the surface of all loose dust, dirt, leaves, and any other foreign materials by sweeping, blowing, flushing with water, or any combination of the three.

6. Mix Design and Application Rates:

6.1.

Use	Coats	PolyTar™ Gallon	Water** Gallon	Sand*** (x100 lbs.)		Application Mix Gal/Sq. Yd
Low	1st	100	0-5	2-3		0.10 - 0.12
Traffic	2nd	100	0-5	0-3		0.08 - 0.12
Medium	1st	100	0-5	2-3		0.10 - 0.15
Traffic	2nd	100	0-5	0-3		0.10 - 0.12
High	1st*	100	0-5	2-3		0.10 - 0.15
Traffic	2nd	100	0-5	2-3		0.10 - 0.12
	3rd	100	0-5	0-3		0.08 - 0.12

*1st Coat is applied to entrances, exits, high traffic lanes and turning radii. **Additional water need only be added when using sand in the mix design. ***Sand should be added to the final coat when skid resistence is needed. **WARNING:** Addition of latex polymers or fast drying additives of any type to PolyTar™ is not necessary and will be harmful to the emulsion.

NOTE: 1. These water dilution ratios are volumetric and are based on receiving PolyTar™ with a solids content of 40 +/- 1 percent.
2. Approximately 20 pounds of sand displaces 1 gallon of liquid.

3. Project Administrator may require the contractor to submit one or more samples, at random, throughout the course of the job for mix design verification.

WARNING: Sealcoats, when improperly applied and/or under certain environmental conditions, may become slippery. As with any paint-like coating, repeated applications reduce texture. Skid resistance can be improved with additions of 3 to 4 pounds of sand per gallon. CAUTION MUST BE EXERCISED, particularly when skid resistance is a major safety factor.

6.2. Latex additives: PolyTar™ contains a high molecular weight polymer that is cross-linked with refined tar (RT-12). It is not intended to be used with any additives, latex or otherwise. **Any additive other than silica sand can be detrimental to the emulsion and is not recommended by Gem Seal Corporation.**

6.3. Sand will be slowly added into the PolyTar™ with the mixer engaged during the addition of the sand to assure uniform dispersion and to prevent overloading of the mixing device. Water may be added, if necessary, should the tar emulsion system become too thick to be uniformly applied. Additional water will be added only after approval by the Project Administrator, and additions will not exceed 5% by volume of undiluted PolyTar™ or those amounts expressly stipulated by the Project Administrator.

6.4. Slow mixing shall be continuous from the time all materials are placed into the mixer until the pavement sealer mix is applied by the application equipment. During the entire mixing process, no breaking, segregating, or hardening of the emulsion, and no balling or lumping of the aggregate shall be permitted.

6.5. The coating shall be applied uniformly over the entire pavement surface and free of voids and pinholes. When pavement temperatures are in excess of 120°F, fog spraying of pavement with clean water is recommended to achieve better bond and even spreading of material. Fog spray shall dampen pavement without leaving puddles. (OPTIONAL)

6.6. Subsequent coats will be applied only after the previous coat is dried, preferably 24 hours later, but no less than 4 hours under ideal conditions. Ideal conditions are temperatures in excess of 70°F, sunshine, and less than 60% relative humidity. Marginal conditions can require curing times greater than 24 hours. Subsequent coats should be applied at right angles to the previous coat, if possible.

6.7. Sealer will not be applied unless the temperature is a minimum 50°F and rising and pavement temperature is 60°F and rising. Work will be completed so that there is a minimum of two hours of sunlight remaining after completing the day's work. Sealer will not be applied under rainy or wet conditions such as an overcast sky with high humidity. UNDER NO CIRCUMSTANCES will work be performed under cold and/or wet conditions, nor will tar emulsion be used that has been subjected to freezing weather.

7. Incidentals:

7.1. The contractor and Project Administrator will coordinate their activities with each other to insure the availability of the work area so as not to delay the execution of the project, to maintain traffic flow, and to minimize activities that might be detrimental to the work in progress such as automatic sprinkler systems, other customer or construction traffic, etc.

7.2. The contractor will notify the Project Administrator of pavement areas that he feels have so deteriorated or have other outside factors such as poor drainage, improper construction, etc., that will render the application of a seal coat ineffective.

7.3. Striping will be done with a latex or acrylic paint approved by the manufacturer. No striping will commence until the seal coat to be striped has cured for at least 24 hours.

7.4. The contractor shall submit with his proposal at least three references of previously completed projects, proof of workers compensation and liability insurance coverage, and all local business licenses and permits as required by local authorities.

7.5 The contractor will provide a performance and payment bond to the Project Administrator – OR – waivers of lien from suppliers will be provided with each invoice of payment. (Optional).

8. Job Site Location and Scope of Project: See Exhibit "A." (To be drawn and attached by property owner, manager, or architect/engineer).

9. Basis of Payment: These prices shall be full compensation for furnishing materials, preparation, mixing, and applying materials in compliance with this specification, and for all the tools, equipment, labor, and incidentals necessary to complete this project.

The proposal shall indicate by line item:

1. The approximate square yards and cost of patching to be performed.
2. The approximate lineal feet and cost of crack sealing to be performed.
3. The approximate square yards and cost of the sealcoating to be performed.
4. The approximate lineal feet and cost of the traffic striping to be performed. -OR- A lump sum cost when performed in accordance with painting diagrams provided by the Project Administrator.

5. Total cost of project. (Applicable taxes, permitting fees and/or miscellaneous charges shall be identified by type and amount.)

10. WARNINGS and Miscellaneous Notes:

10.1. Skid Resistance: Sealcoats, when improperly applied and/or under certain environmental conditions, may become slippery. As with any paint-like coating, repeated applications reduce texture. Skid resistance can be improved with additions of 3 to 4 pounds of sand per gallon. CAUTION MUST BE EXERCISED, particularly when skid resistance is a major safety factor. Gem Seal Corporation does not recommend sealcoating asphalt pavements with the following characteristics; main thoroughfares, runways, steep inclines, poor drainage, and vehicles traveling at speeds in excess of 25 mph that are subject to rapid stops or hydroplaning. Gem Seal Corporation recommends applying coal tar emulsion to asphalt pavement surfaces only.

10.2. Container warning: Containers, regardless of being empty, half full, or full of product, may retain a residue of liquid and/or vapor and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner. Empty pails should have a hole punched in the pail bottom to prevent drowning of small children. All containers should be disposed in an environmentally safe manner and in accordance with governmental regulations. For work on tanks, refer to OSHA regulations, ANSI 49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

**Container refers to any vessel, can, drum, tanker, distributor tank, etc., that may be used for handling and/or storing any of the products covered by this guideline specification or any product of unknown origin.

10.3 Health and Environmental: PolyTar™ is not considered a hazardous waste and meets all current Federal requirements for industrial waste. **AS AN APPLICATOR** you should be familiar with all potential hazards prior to entering the workplace. Toxicity Characterization Leaching Procedure information and Material Safety Data Sheets will be provided upon request. In case of accidental spill, contain with absorbent material, allow to dry, and dispose of according to local, state and federal regulations. Precautions should be taken to prevent surface runoff and PolyTar™ from entering storm drainage system or ponds.

10.4. Maintenance of coating can prolong its life and attractive appearance. Sand, gravel and other debris should be removed as they accumulate. Oil drippings, antifreeze, etc. can be scrubbed with mild detergents and flushed with clean water.

10.5. Technical assistance available from Gem Seal Corporation upon request.

10.6. Do not allow to freeze.

LIMITED WARRANTY

PolyTar™ polymer modified coal tar emulsion is warranted to meet or exceed all requirements of ASTM D 3320 and conform to all material requirements in Section 3.1 of this specification. Gem Seal Corporation will provide detailed specifications and certifications upon request.

The manufacturer warrants these materials to be merchantable quality, when stored, used, and applied in accordance with these specifications. While the manufacturer recommends uses for these materials based on tests believed reliable, the manufacturer in no way guarantees particular methods of use, applications, or performance under certain conditions. The manufacturer does not warrant these products to be suitable for any use or method of application other than the general purpose and method of application as indicated in these specifications. Liability under this warranty is limited to the replacement of the product proven defective or to the purchase price, at the manufacturer's option, upon return of the unused portion. This warranty is made in lieu of all other expressed or implied warranties and excludes liability for consequential damages. In the event of a claim under this warranty, written notice of the complaint must be given to the manufacturer.

5201 Causeway Blvd.. TAMPA, FL 33619 (813) 623-3941

4765 Frederick Dr., S.W. ATLANTA, GA 30336 (404)696-7660

2290 Channel Ave. MEMPHIS, TN 38113 (901) 775-2685

3111 W. Saner Ave. DALLAS, TX 75233 (214) 333-4343

139 S. Walnut Circle GREENSBORO, NC 27409 (336) 854-8200

GEM SEAL™

HP LaserJet 3200se

HP LASERJET 3200

APR-28-2004 9:08AM

Fax Call Report

Job	Date	Time	Type	Identification	Duration	Pages	Result
493	4/28/2004	9:06:58AM	Send	99727889334	1:09	2	OK

to Lisa Pyles

Fax 972-788-9334

Addison 50!

50 YEARS OF FUN!

TOWN OF ADDISON PUBLIC WORKS DEPARTMENT

(972) 450-2871 FAX (972) 450-2837

April 28, 2004

REBCON, INC.
1868 WEST NORTHWEST HIGHWAY
DALLAS TEXAS 75220

Attention: Mr. Robert Bibby

Re: Town of Addison, Texas
Richard Byrd Drive Pavement Replacement
Final Acceptance of New Asphalt Pavement

Dear Mr. Bibby,

Please refer to Rebcon, Inc.'s correspondence of March 15, 2004 to Mr. Steve Chutchian, Town of Addison, in which a procedure is outlined for the repair of asphalt pavement in a taxiway area at the Addison Airport. The pavement had been previously rejected by the Town of Addison as defective and failing to conform to contract requirements. The correspondence outlined a method of repair which was subsequently verbally accepted by the Town of Addison on March 17, 2004 with a mutually agreed upon completion date of mid to late April, 2004.

The failure of Rebcon, Inc. to perform the agreed upon repair in an expedient manner has resulted in an increase in asphalt pavement deterioration such that the seal coat treatment is no longer an acceptable solution. The Town of Addison will require removal and replacement of the defective area in a manner acceptable to the Town. Rebcon, Inc. must submit a plan method of removal and replacement for approval by the Town prior to the work.

Please further consider this letter as formal notice of the intent of the Town of Addison to exercise their authority if necessary under **Standard Specification 1.42.1 Removal of Defective and Unauthorized Work.** Rebcon, Inc. will be allowed fourteen (14) calendar days from the receipt of this notice to submit a plan, obtain approval of the plan from the Town, and complete the removal and replacement of the asphalt pavement to the complete satisfaction of the Town. The Town will remedy the defective work and deduct the cost of such from the monies due Rebcon, Inc. should Rebcon, Inc. fail to replace the defective work within this allotted time.

to Lisa Pyles

Fax 972-788-9334

TOWN OF ADDISON®
PUBLIC WORKS DEPARTMENT
Post Office Box 9010 Addison, Texas 75001-9010

Addison 50!
50 YEARS OF FUN!

(972) 450-2871 FAX (972)450-2837
16801 Westgrove

April 28, 2004

REBCON, INC.
1868 WEST NORTHWEST HIGHWAY
DALLAS TEXAS 75220

Attention: Mr. Robert Bibby

Re: Town of Addison, Texas
Richard Byrd Drive Pavement Replacement
Final Acceptance of New Asphalt Pavement

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The failure of Rebcon, Inc. to perform the agreed upon repair in an expedient manner has resulted in an increase in asphalt pavement deterioration such that the seal coat treatment is no longer an acceptable solution. The Town of Addison will require removal and replacement of the defective area in a manner acceptable to the Town. Rebcon, Inc. must submit a plan method of removal and replacement for approval by the Town prior to the work.

Please further consider this letter as formal notice of the intent of the Town of Addison to exercise their authority if necessary under **Standard Specification 1.42.1 Removal of Defective and Unauthorized Work.** Rebcon, Inc. will be allowed fourteen (14) calendar days from the receipt of this notice to submit a plan, obtain approval of the plan from the Town, and complete the removal and replacement of the asphalt pavement to the complete satisfaction of the Town. The Town will remedy the defective work and deduct the cost of such from the monies due Rebcon, Inc. should Rebcon, Inc. fail to replace the defective work within this allotted time.

Do not hesitate to contact us if you have any questions.

Yours truly,

Town of Addison

Steven Z. Chutchian, P.E.
Assistant City Engineer

Via Certified U.S. Mail, Return Receipt Requested

Cc: Michael E. Murphy, P.E.
Jerry Holder, P.E.
Jim Pierce, P.E.

Lisa Pyles

ADDISON MUNICIPAL AIRPORT

Construction/Maintenance Standards and Specifications

May 30, 1991

I. OBJECTIVE:

Develop Addison Municipal Airport into a first class "general aviation" facility taking into consideration safety, serviceability, environmental impact and aesthetics. To achieve this objective, the Town and AATI require that the buildings, pavement, drainage facilities and grounds are maintained in a "general state of good repair and condition".

II. AIRPORT SPECIFICATIONS/STANDARDS

A. Buildings - Buildings shall be constructed and maintained in accordance with the building code adopted by the Town of Addison. Broken windows, peeling paint or other obvious defects shall be repaired as they occur. Buildings shall be inspected annually and the attached building inspection form (Attachment "A") shall be completed and submitted to the airport operator. Any noted defects shall be repaired within 30 days, weather permitting.

B. Maintenance of Existing Pavements - A "general state of good repair" for existing pavements shall be pavements with a "pavement condition index" (PCI) as follows:

1. Runway - Minimum PCI 55 Good
2. Main Taxiway "A", "A-1", and "A-2" - Minimum PCI 50 Fair/Good
3. Major Public Taxiways "E", "F", "M", and "N" - Minimum PCI 50 Fair/Good
4. Minor Public Taxiways "AA", "B", "BB", "C", "CC","G", "H", "J", "K" and "L" - Minimum PCI 40 Fair
5. Private Aprons and Ramps - Minimum PCI 40 Fair
6. Parking Areas - Minimum PCI 40 Fair

In addition, pavements shall not have any potholes, heavy rutting, grass growing in it or other failure detrimental to the operation of aircraft or motor vehicles. Existing pavements shall be inspected annually and the attached pavement inspection form (Attachment "B") shall be completed and submitted to the airport operator. Any noted defects shall be repaired within 30 days, weather permitting.

Repairs shall be in accordance with the Standards/Specifications and details outlined in "Attachment C".

C. **New Construction/Reconstruction of Airside Pavements** - All areas of new construction/reconstruction shall be designed and constructed in accordance with the following FAA advisory circulars using portland cement concrete pavement:

1. AC 150/5320-6C Airport Pavement Design and Evaluation.
2. AC 150/5370-10A Standards for specifying Construction of Airports.

Minimum design loadings shall be as follows:

1. Runway - 120,000 pounds dual
2. Main Taxiway - 100,000 pounds dual
3. Taxiways "A-1", "A-2", "B", "E", "F", "M", & "N" and associated ramps and aprons - 60,000 pounds dual
4. Taxiway "L" and associated ramps and aprons - 40,000 pounds dual
5. Taxiways "AA", "BB", "CC", "C", "G", "H", "J" and "K" and associated ramps and aprons - 12,500 pounds single

D. **New Construction/Reconstruction of Landside Pavements** - All landside facilities shall be constructed/reconstructed in accordance with the attached Standard (Attachment "D") as a minimum. Parking areas shall be a minimum of 5" reinforced portland cement concrete pavement with fire lanes, dumpster routes, and delivery areas a minimum of 6" reinforced portland cement concrete.

E. **Drainage Facilities** - Drainage facilities shall be maintained in a manner that does not create a hazard or nuisance. This requires regular mowing and removal of trash/debris. All new construction/reconstruction shall be in accordance with the Addison Drainage Criteria Manual and applicable sections of FAA Advisory circular AC 150/5320-5B. Drainage facilities shall be inspected annually and the attached drainage inspection form (Attachment "E") shall be completed and submitted to the airport operator. Any noted defects shall be repaired within 30 days, weather permitting.

F. **Grounds** - Grounds shall be kept free of all hazards and nuisances. This requires the regular mowing and removal of all trash, debris, and nuisance related materials.

ADDISON AIRPORT 2001 COMMITTEE REPORT
EXECUTIVE SUMMARY

August 25, 1998

Attached is a copy of the Addison Airport 2001 Committee's Report. The 2001 Report examines a variety of operational and management issues identified by the Committee as relevant to a complete investigation and development of a recommendation for future management of Addison Airport. The current long-term lease for management of the Airport expires on December 30, 2000. This community task force spent more than 18 months analyzing the Airport and developing this report document for the Addison City Council's consideration. The 2001 Committee conducted an inclusive and participatory investigation that involved public input into the development of the Committee's recommendation.

The 2001 Committee recommends that the City Council hire a professional service provider to administer a competitive bidding process leading to the selection of an operator of Addison Airport by September 1, 2000. The 2001 Committee recommends that the City Council consider the following policy development as vital to the successful completion of this management transition process and development of a new contract for services to manage Addison Airport. It is important to remember that the focus of this process is to identify policy issues for the City Council and bidding process consultant to consider. The 2001 Committee was not charged with developing a detailed management contract instrument.

The 2001 Committee's policy recommendations have been divided into three categories related to recommended elements of the future contract for services, recommended bidding criteria, and an environmental consideration. The policy recommendations have been prioritized for the City Council's consideration. The executive summary also identifies report chapters that provide a complete analysis of each of the recommended actions.

2001 Committee Policy Recommendations:

Elements of the Contract -

1. Continue privatization of the airport management function under a contract for services structure *(Chapter VIII)*
2. Contractually recognize that the real estate development responsibilities and the normal aviation operations responsibilities are two separate functions in the management of the Airport (Chapter VIII)
3. Create a new management structure based on a partnership of openness, trust, and periodic performance review *(Chapter VIII)*
4. Develop an operator compensation structure based on defined quantitative and qualitative performance standards which are prescribed in the new services contract with bonus incentives for exemplary job execution *(Chapter VIII)*
5. Ensure airport operations that offer aviation users and aviation industries a location that provides first class facilities from which to base operations and business *(Chapter VII)*
6. Ensure that the operator promotes development of the Airport in a balanced and synergistic approach in concert with all facets of the Addison Airport Master Plan and Town of Addison land use controls and goals as adopted by the City Council *(Chapter IV)*

7. Ensure that future management agreements include mechanisms for open reporting of financial information between the operator and the Town *(Chapter V)*

Bidding Criteria –

1. Hire a third-party professional service advisor to administer the request for qualifications and request for proposals process and to assist in the development of a new contract for services instrument *(Chapter IX)*
2. Ensure that the operator possesses a strong understanding of all relevant aviation regulatory codes and develops a strong working relationship with all relevant regulatory bodies *(Chapter III and Chapter VI)*

Environmental Consideration -

1. Recognize that there are environmental issues existing at the Airport and that the Town of Addison should work to ensure all environmental issues are investigated and resolved before the end of the current management agreement *(Chapter VI)*

Exhibit A

NOTICE OF INTENTION TO ISSUE TOWN OF ADDISON, TEXAS COMBINATION TAX AND REVENUE CERTIFICATES OF OBLIGATION, SERIES 2004

NOTICE IS HEREBY GIVEN that on November 23, 2004, the City Council of the Town of Addison, Texas, at 7:30 p.m. at a regular meeting of the City Council to be held at the Town Hall, 5300 Beltline, Addison, Texas, the regular meeting place of the City Council, intends to pass an ordinance authorizing the issuance of not to exceed $4,400,000 principal amount of Certificates of Obligation for the purpose of paying contractual obligations to be incurred for the purpose of constructing improvements to and expanding the Addison Airport, including, to wit: (i) constructing improvements to runways, taxiways, lighting, drainage systems and facilities; (ii) constructing, designing and engineering a fuel farm (collectively with (i), the "Project"), (iii) payment of professional services of attorneys, financial advisors and other professionals in connection with the Project and the issuance of the Certificates. The Certificates shall bear interest at a rate not to exceed fifteen percent (15%) per annum, and shall have a maximum maturity date of not later than twenty (20) years after their date. Said Certificates shall be payable from the levy of a direct and continuing ad valorem tax, levied within the limits prescribed by law, against all taxable property within the City sufficient to pay the interest on this series of Certificates as due and to provide for the payment of the principal thereof as the same matures, as authorized by Subchapter C, Chapter 271, Texas Local Government Code, as amended, and from all or a part of the surplus revenues of the Town's combined waterworks and sewer system, such pledge of surplus revenues being limited to $1,000.

THIS NOTICE is given in accordance with law and as directed by the City Council of the Town of Addison, Texas.

GIVEN THIS October 12, 2004.

/s/ Carmen Moran
City Secretary
Town of Addison, Texas

8-7-97

Infrastructure Management / Airport Consultant
Strategic Planning / Business Plan
Management / Financial Planning

Steven A. Steckler Pres
301-907-2900

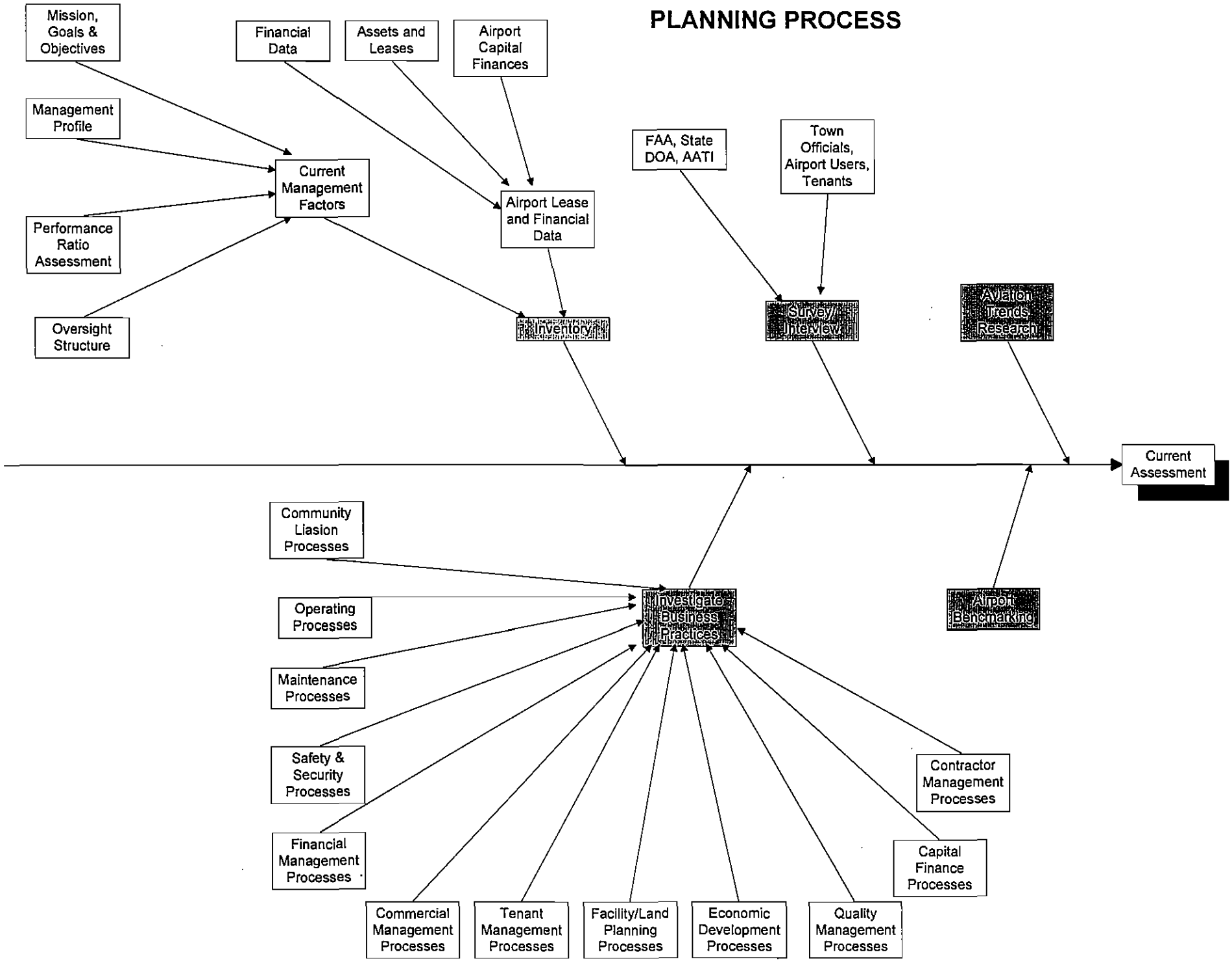
	Addison	Downton Kansas City	Dekalb Peachtree (Atlanta)	McKinney Municipal Airport
Number of Staff	9	20	24	25-30
Annual Budget				
Revenues ($000)	$656 (1995)	$1,700 (1996)	$2,000 (1996)	n.a.
Expenses ($000)	$732 (1995)	$1,700 (1996)	$2,000 (1996)	n.a.
Annual GA Operations				
Corporate Jet	15,700 (1997)	40,000	n.a.	< 3,750
Total	157,000 (1997)	142,000	213,000	125,000
Competing Airports	Love Field, Redbird Meachem	Johnson County Executive Johnson County Industrial	Fulton County, Cobb County, Gwrnett County	
Does the Airport Have a Tower?	Yes	Yes	Yes	Yes
Is it a Reliever Airport?	Yes (DAL)	Yes (MCI)	Yes (ATL)	
Is There an Industrial Park Present?	No	No	No	Yes
Flight School Related				
Present at Airport?	Yes, 11 schools	Yes, 4 schools	Yes, 6 schools	Yes, 1 school
Allows Touch & Go Activity?	No	Yes	Yes	Yes
%Ops related to Flight School	?	< 5% (or 7,100)	n.a.	n.a.

	Addison	Allegheny County	Fulton County (Atlanta)	Lancaster Municipal (Dallas)
Based Aircraft				
Number	685 (1997 est)	235	300	130
Type (Jet, Turbo, Other)	10% jet, 10% turbo	20% jet, 15% turbo	>75% (jet + turbo)	3% Jets, Rest Piston
Number of FBOs	4	2	3	1
Fuel Flowage Fees (cents/gallon)	?	8.0 cents	3.5 cents-5.0 cents	6.0 cents
Number of Hangars	70	85	30	120
Hangar Capacity (Avg. Sq. Footage)				
T-Hangars	n.a.	n.a.	n.a.	n.a.
Large Hangars	n.a.	n.a.	n.a.	n.a.
T-Hangars Related				
Does Airport Own Them?	Yes	No, individually-owned	Yes, 1 owned by FBO	Yes (75%), rest private
Who Administers (e.g.FBO, Airport)?	Operator	Self-admistered by owners	FBO	Airport (75%), FBO (25%)
Hours of Operations				
Airport	24 Hours, Daily	24 Hours, Daily	24 Hours, Daily	12 Hours, Daily
Tower	16 Hours, Daily	24 Hours, Daily	16 Hours, Daily	n.a.
Who provides fire & safety?	Town Fire Dept.	County Fire Dept.	Airport	City Fire Dept.

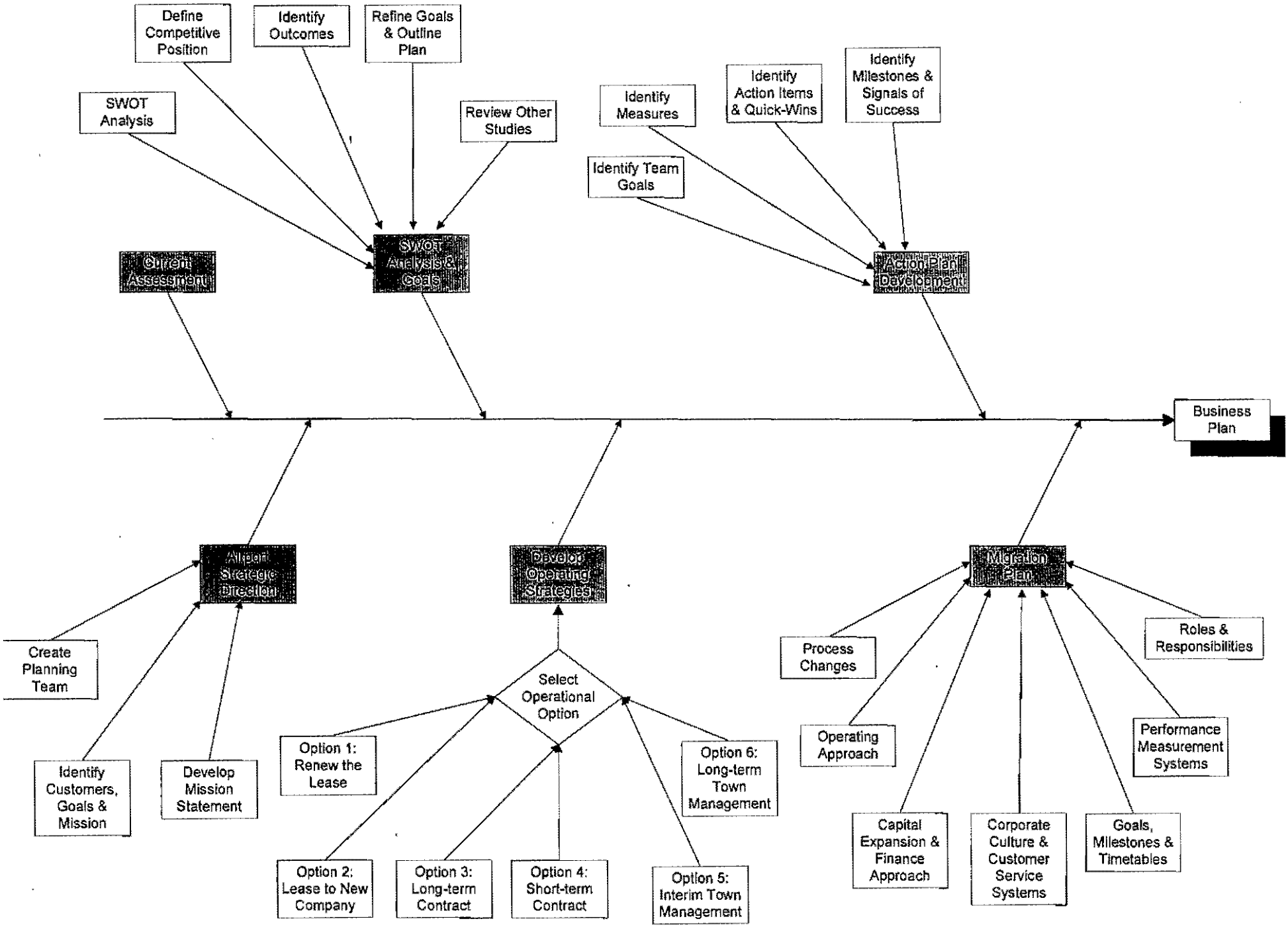
	Addison	Downton Kansas City	Dekalb Peachtree (Atlanta)	McKinney Municipal Airport
Based Aircraft				
Number	685 (1997 est)	295	600	145
Type (Jet, Turbo, Other)	10% jet, 10% turbo	11% jets, 7% turbo	n.a.	2% jets
Number of FBOs	4	4	5	1
Fuel Flowage Fees (cents per gallon)	?	7.3 cents	5.0 cents	7.0 cents
Number of Hangars	70	72	115	99
Hangar Capacity (Avg. Sq. Footage)				
T-Hangars	n.a.	n.a.	n.a.	n.a.
Large Hangars	n.a.	25,000-50,000 sq. ft.	n.a.	n.a.
T-Hangars Related				
Does Airport Own Them?	Yes	Yes	Yes (75%), rest private	No
Who Administers (e.g.FBO, Airport)?	Operator	FBO	Airport (75%), FBO (25%)	FBO
Hours of Operations				
Airport	24 Hours, Daily	24 Hours, Daily	24 Hours, Daily	16 Hours, Daily
Tower	16 Hours, Daily	24 Hours, Daily	17 Hours, Daily	14 Hours, Daily
Who provides fire & safety?	Town Fire Dept.	City Fire Dept.	County Fire Dept.	City

	Addison	Allegheny County	Fulton County (Atlanta)	Lancaster Municipal (Dallas)
Number of Staff	9	20	10	5
Annual Budget				
Revenues ($000)	$656 (1995)	$2,200 (1996)	$850 (1996)	$400 (1996)
Expenses ($000)	$732 (1995)	$2,200 (1996)	$450 (1996)	n.a.
Annual GA Operations				
Corporate Jet	15,700 (1997)	84,000	69,000	n.a.
Total	157,000 (1997)	140,000	98,000	n.a.
Competing Airports	Love Field, Redbird Meachem	West Moreland County, Roastaver, Washington County	Dekalb Peachtree, Cobb County, Gwrnett County	
Does the Airport Have a Tower?	Yes	Yes	Yes	No
Is it a Reliever Airport?	Yes (DAL)	Yes (PIT)	Yes (ATL)	Yes (DAL)
Is There an Industrial Park Present?	No	No, Possible In Future	Yes, Fulton Industrial Blvd.	No
Flight School Related				
Present at Airport?	Yes, 11 schools	Yes, 4 schools	Yes, 1 school	Yes, 1 school
Allows Touch & Go Activity?	No	Yes	Yes	Yes
%Ops related to Flight School	?	30% (or 42,000)	< 1% (or 980)	n.a.

PLANNING PROCESS



ADDISON AIRPORT BUSINESS PLANNING PROCESS (cont'd)



Addison!

JIM PIERCE, P.E.
Assistant City Engineer
(972) 450-2879
(972) 450-2834 FAX
jpierce@ci.addison.tx.us E-mail

Town of Addison 16801 Westgrove Dr. P.O. Box 9010, Addison, Texas 75001-9010

5-31-00

Sam: This came to us by way of a telephone "complaint" from Jeff Williams. Martinaire knows they are not supposed to wash aircraft, but their neighbor is doing it.

Can you handle this issue for us?

Jim

TOWN OF ADDISON

PUBLIC WORKS DEPARTMENT (972) 450-2871

Post Office Box 9010 Addison, Texas 75001-9010 16801 Westgrove

May 31, 2000

Mr. Jeff Williams
Martinaire
4550 Jimmy Doolittle, Hangar 6
Addison, TX 75001

Re: Aircraft Washing

Dear Mr. Williams:

In response to your recent telephone call to Mr. Pierce regarding Ameriflight, 4553 Jimmy Doolittle, washing aircraft on their ramp, this is to advise that this activity is permitted only if washwater drains to the sanitary sewer system. If the washwater drains to the storm sewer system, the activity is prohibited under the airport's Storm Water Pollution Control Plan.

This matter will be turned over to AATI, administrator of the Storm Water Pollution Control Plan, for appropriate action.

Thank you for bringing this matter to our attention. If you have any questions please do not hesitate to call me at 972-450-2878.

Very truly yours,

Michael E. Murphy, P.E.
Director of Public Works

Cc: Chris Terry, Assistant City Manager
Jim Pierce, P.E., Assistant City Engineer
Sam Stuart, President, AATI

5-18-00

Walter — Fuller air Sales

Jeff Williams
Martinaire
4550 Jimmy Doolittle
Hangar 6

letter for miles signature

Have been told they cannot wash aircraft on their ramp — they are not.

Stern air-

Amerifilte
Hangar just north —
is washing aircraft on their ramp

DAL-TECH
ENGINEERING, INC.
CONSULTING CIVIL ENGINEERS / SURVEYORS
CONSTRUCTION MANAGERS

March 26, 2001

Mr. Steve Z. Chutchian, P.E.
Assistant City Engineer
16801 Westgrove
Addison, Texas 75001-9010

RE: Surveying Services
Addison Airport Boundary Survey, Addison, Texas
DTE Job Number 0107

Dear Mr. Chutchian:

Dal-Tech Engineering, Inc. is very pleased to have been selected to provide surveying services for the Addison Airport Boundary Survey project.

Attached is the Level of Effort spreadsheet, prepared based upon the scope of work as discussed during our meeting of March 14, 2001. We have further met with Mr. David Pierce and Mr. Bob Katzen and received a great deal of information both from our discussion with them and from the airport site visit.

These attachments reflect our first draft of the Scope of Services based on our judgment as to the complexities and expertise that will be involved in delivering this assignment within the quality expectations of your staff. Please let me know if the cited tasks, manpower loading and proposed lump sum fee of **$198,428.00** are consistent with your expectations.

Further, you may note that in addition to the basic services, we have proposed several optional items. These items could be added or subtracted at your request.

17311 DALLAS PKWY / STE 200 / DALLAS, TX 75248 / 972-250-2727 / FAX 972-250-4774
222 W. EXCHANGE / FT. WORTH, TX 76101 / 817-626-8777 / FAX 817-626-5777
webmaster@dal-tech.com

We certainly do appreciate this opportunity to serve the Town and are looking forward to working with you. As you have a chance to review the attached preliminary scope of services and manpower projection for the proposed contract, if further information or clarification is needed, please let us know. Following your review, we will also prepare and submit the schedule of work with our final fee submittal. Thank you again for this opportunity to be of service to the Town.

Sincerely,

Sedi A. Toumani, P.E.
SAT/ats

Enc. Scope of Services
Manpower Projection

ADDISON AIRPORT BOUNDARY SURVEY
AND BASE MAPPING
SCOPE OF WORK

DAL-TECH Engineering, Inc. has been asked to prepare a scope of work and an estimate of probable cost for preparing a boundary survey and a base map of selected features of the Addison Airport property. Included in the boundary survey are locating the approximately 65 ground leases on the airport, the through-the-fence leases, joint use agreements, and easements affecting the property.

Optionally, DTE can also produce individual lease exhibits if desired.

The base map will show all buildings, taxiways, runways, fences, and streets within or immediately adjacent to the airport boundary. In addition, utilities such as water, wastewater, storm sewer, electric, gas, and telephone can be located at an optional level of quality as explained in more detail below.

The detailed scope of services to accomplish these goals is set out as follows:

1. Gather data and perform research:

A. At Town of Addison and at Addison Airport

DTE staff will coordinate with Town of Addison staff in both Public Works and at Addison Airport to gather existing documents, plans, maintenance records, electronic files, and any other information that will aid in the preparation of the boundary survey, leasehold establishment, and base mapping.

B. At TxDOT's Aviation Division in Austin

DTE staff will obtain any relevant information about Addison Airport from Charlotte Bergfeld or her designated representative in TxDOT's Aviation Division in Austin.

C. From County Courthouse Deed Records

We will use an outside professional abstracting service to gather the public records research for us. Although several of our DTE staff are very proficient in using the Dallas County Deed Records, abstracting professionals have access to easement databases that allow them to do thorough easement searches that we are unable to do. We plan to avail ourselves of this expertise.

Deliverables: DTE will prepare a document control system for the project and establish files containing relevant documents.

2. Establish Control

A. Perform GPS surveys and office processing to establish secondary control on permanent monuments.

There are several high-order monuments on the airfield established as part of the National Geodetic Survey's Primary Airport Control Station (PACS) and Secondary Airport Control Station (SACS) program. We will use these monuments as our primary control points for the project. We will establish six additional secondary control points, which will be constructed to a Town of Addison and DTE mutually approved design at mutually agreed upon locations.

Classical static GPS surveying techniques will be used to record satellite observation files at each of the primary and secondary control points and at selected vertical benchmarks on the airfield. Constraining the resultant network to the National Geodetic Survey monuments' data, we will perform office post-processing to determine the geodetic coordinates, the NAD 83 (1993) Texas North Central Zone (4202) State Plane Coordinates, and the PACS NAVD88 orthometric height for each of the stations in the network.

B. Run level loops as necessary to incorporate existing vertical information.

The vertical datum for the PACS / SACS points is GPS-derived NAVD88 orthometric heights. These orthometric heights are published to centimeter precision (~0.03') and are considered to be that precise in relation to other PACS / SACS stations but not necessarily in relation to other NAVD88 known points in the area. Therefore, we need to incorporate some of the "local" benchmarks to ensure that our GPS vertical model works properly.

C. Prepare a report including "recovery drawings" showing each monument, its physical location, its data, and its metadata on an individual drawing for each monument.

After all of the above GPS work and leveling has been completed, DTE will compile a brief report documenting the GPS work and the associated statistics. The report will contain "recovery drawings" showing each monument, its physical location, its data, and its metadata on an individual drawing for each monument.

Deliverables: Meet with the Town Staff to deliver and discuss the GPS Report with a "recovery drawing" for each monument.

3. **Compile graphic documents of preliminary data.**

   A. **Plot deeds, leases, "through the fence" leases, easements, joint use agreements, TxDOT information, and plan data in a digital (AutoCad or Microstation) file.**

   Using the data gathered in Item 1, above, we will prepare a preliminary work map compiling the known facts concerning the location and extent of airport fee ownership, leases, utility easements, joint use agreements, aviation limitations and easements, engineering data, and other knowledge gained during the data gathering and research activities.

   B. **Analyze plot to identify any problem areas needing special attention and curative work.**

   Special attention will be paid to possible conflicts and problem areas. Those items that are not locatable due to poor or ambiguous description will be identified for special attention. These items will be added to the preliminary work map to the degree possible for the orderly and efficient prosecution of the fieldwork.

HARD COPIES → **Deliverables: the preliminary work map in CAD format.**

4. **Prepare a preliminary report and present it to the Town of Addison**

   Prepare a formal report describing our findings and identifying those items from the data collected that need further attention or definition. Attend a formal meeting with the Town of Addison staff to present the report and mutually to define "action items" for the Town of Addison and the DTE staff.

   Deliverables: meet with the Town Staff to present our Preliminary Report on research.

5. **Perform field surveys**

   A. **Establish three-dimensional tertiary control points for use in making boundary ties and mapping.**

   Working from the primary and secondary control points, DTE field crews will use GPS and conventional methods to establish tertiary control points for use in tying property corners and in mapping. Although these points will be of such permanence as to survive the project, they will not be published formally beyond the documentation in our project files.

B. Locate property corners and evidence of leaseholds using the preliminary work map as a guide.

Our crews will use the tertiary control points to locate and tie all evidence of fee simple boundaries and of leaseholds. Artificial monuments recited in deeds will be searched out. The evidence will be tied to the project coordinate system.

C. Locate in three dimensions all buildings, taxiways, runways, fences, streets, and utilities within or immediately adjacent to the airport boundary.

In addition to locating boundary corners, DTE personnel will locate buildings, taxiways, crossovers, runways, fences, streets, and utilities (water, wastewater, storm sewer, electric, gas, telephone). Our involvement with utility location can be very limited or very extensive as reflected in the four-tiered ***Subsurface Utility Engineering (SUE)*** options stated below:

Quality Level D –	*DTE personnel can conduct "records search" to obtain information on utilities solely from existing utility records.*
Quality Level C-	*DTE can perform a "surface visible feature survey" to locate visible aboveground utility facilities such as manholes, valve boxes, posts and to correlate this information with existing utility records.*
Quality Level B-	*DTE can utilize the application and interpretation of surface geophysical techniques which include electromagnetic, magnetic, and elastic wave methods to designate the presence and approximate horizontal location of underground utilities.*
Quality Level A-	*DTE can characterize a utility's spatial position, composition, condition, size, and other data that may be reasonably available about the utility and its surrounding environment through its exposure by non-destructive excavation techniques, such as air/vacuum extraction.*

Optionaly, DTE's level of involvement for Subsurface Utility Engineering (SUE) should be determined by the Town of Addison.

Deliverables: Meet with the Town Staff to deliver copies of work notes, sketches, ASCII files, etc.

6. **Perform office work to process and refine field data into graphic documents.**

   A. **Download data collectors, make calculations, and perform analysis and further research to establish property boundaries, encroachments, protrusions, leasehold limits, and easement locations.**

   After the field evidence is gathered, the data will be downloaded, processed against our control information, and imported to the project database for analysis.

   Inevitably, this analysis leads to a secondary level of courthouse research to clarify issues that have become apparent. DTE will provide the services to gain these materials.

   Once boundary lines have been established, an analysis of the spatial relationship between boundaries and improvements will be made to identify any encroachments or protrusions of improvements that may exist.

   Leases, joint use agreements, through-the-fence leases, and easements will then be harmonized to the boundaries and the improvements, and, finally, a fieldnote description of the Airport property will be prepared.

   B. **Perform CAD work necessary to prepare a boundary survey / base map presenting the results of the surveying.**

   The graphic documents presenting the results of the survey will be prepared in CAD format. The drawings will be "layered" to segregate thematically related data items on the same layer to facilitate the preparation of specialized exhibits in the future.

   All of the data gathered will reside in this graphic environment, and multiple drawings may be produced at the Town's request.

   Optionally, individual lease exhibits and descriptions can be prepared.

Deliverables: Meet with the Town Staff to provide hardcopies and digital versions of the graphic documents prepared.

7. Monument the boundaries of the airport and the leaseholds.

A. Perform office work to prepare stakeout files for the field crews.

Data collector files will be prepared for the crews to use to set out the corners.

B. Perform field work to set monuments (rebar with plastic caps) at all feasible boundary corners and at leasehold corners if requested by Addison Airport staff.

DTE field crews will set out 5/8" diameter 24" long rebar monuments with plastic caps at angle points in the fee simple boundary where no found monument exists.

Optionally, DTE crews can set out the same type of monument at lease corners if desired by the Town of Addison.

Deliverables: Monuments set in the field.

8. Prepare a final surveyor's report to present to the Town of Addison.

A. Prepare a final report having the following structure:

1. Executive Summary stating the project scope, objectives, and results.

2. A narrative describing the data gathering activities, preparation of the working sketch, and the conclusions drawn from the documents gathered.

3. Minutes of the formal meeting with the Town of Addison for the presentation of the preliminary report, the action items defined in that meeting, and the actions taken.

4. Formal surveyor's report addressing the research issues, the results of the field work, the interpretation of the evidence gathered, and the professional opinions drawn from that evidence.

5. The boundary survey / base map, signed and sealed, and, optionally, lease exhibits on individual leases.

6. Appendices

    a. A list of all documents gathered, their relevance, and their provenance.
    b. Copies of airport vesting deeds
    c. Copies of lease agreements

d. Monument location sketches, metadata, and horizontal / vertical data for all GPS secondary control monuments that were established.

B. Make a formal presentation to the Town Council of the results.

Deliverables: Electronic and Hard Copies of Final Report, Survey and Sorted Lease Documents

*OPTIONAL ITEMS

1. Subsurface Utility Engineering and Mapping
2. Individual Lease Exhibits and Descriptions
3. Setting Lease Corners Monument

ADDISON AIRPORT

	$135.00		$100.00		$6(
	PRINCIPAL		RPLS		SURVE
TASKS	Hours	Cost	Hours	Cost	Hours
III. OPTIONAL					
5C. Subsurface Utility Engineering					
A. Level D	4	$540	32	$3,200	40
B. Level C	4	$540	40	$4,000	80
C. Level B	4	$540	40	$4,000	80
80 → D. Level A	4	$540	40	$4,000	80
6B. Boundary Survey					
A. Individual Lease Area Drawing and Description	4	$540	95	$9,500	180
B. Joint Use Agreements Drawing and Description	4	$540	32	$3,200	60
C. Easements Drawing and Description	4	$540	16	$1,600	40
40 → 7B. Setting Lease Corners Monument	4	$540	16	$1,600	32
SUB-TOTAL	**28**	**$3,780**	**295**	**$29,500**	**560**

JM-
F.K.I.

June 6, 2001

Re: Addison Airport Survey
Progress Report #1

Dear Steve,

Please find attached a schedule of the Airport Survey project. The level looping and documentation tasks have been expanded to include the control reference points on existing Town benchmarks on the perimeter of the airport. Below is a discussion of progress on each task:

1. **Gather Data and Research**
   A. We have completed research of the airport properties,
   B. We have completed research of the adjoining tracts and rights-of-way, and although a bit challenging, to our surprise we have been successful in finding the needed records including deeds, abstract maps, and plats.
   C. This week we have started our search for easements, and expect to complete this task by the end of the week.
   D. Lease agreements have been located and although we have not yet reviewed each one, they appear to be in good order. A County record search is currently underway, with some of the instruments found in excess of two hundred pages each. The combination of Town and County records should provide the vast majority of the lease agreements. We expect to have them in hand and reviewed in the next two weeks, prior to our June 15, 2001 progress report.

2. **Controls**
   A. GPS-set secondary controls are completed.
   B. Level loops are in progress, and will include several Town benchmarks in the network.
   C. Documentation is in progress. Please find below a sample of the recovery/publication cover sheet for your review and comment. The OPUS data sheets, containing State Plane coordinates, will be attached to the final product. We expect that these will be complete and submitted with the June 15, 2001 progress report.

3. **Compile Graphic Documents of Preliminary Research Data**
   Overall airport boundary has been platted using the record deeds, with on-going verification/clarification with the adjoining tract record drawings. This master drawing will be adjusted with field data for completion.

4. **Preliminary Report**
   This progress report, updated and expanded bi-weekly, will serve as our preliminary report.

5. **Field Surveys**
   A. The federal survey monuments have been located and tied to secondary control monuments, and the tertiary control network is in progress, in conjunction with vertical control. This task will be complete this week.
   B. Some property corners have been field-located and marked to assist with office operations. The body of this task to be performed in sequence.
   C. Feature mapping to begin next week, one week ahead of schedule.

6. **Processing of Field Data**
   Processing of field data to proceed with field operations.

7. **Monument Boundaries**
   Will proceed on schedule, in sequence.

8. **Prepare Final Report**
   Will proceed on schedule, in sequence.

Static Control Point

Date: 5-17-01	**Observer: Scott Hardin**	
Rec. ht/ft: 6.56	**Rec ht/M: 2.000**	**Vertical Measure**
Session Start Time: 1:06 PM		**Session End Time: 3:24 PM**

Dal-Tech Engineering 972-250-2727
17311 Dallas Parkway, Dallas Tx. 75248

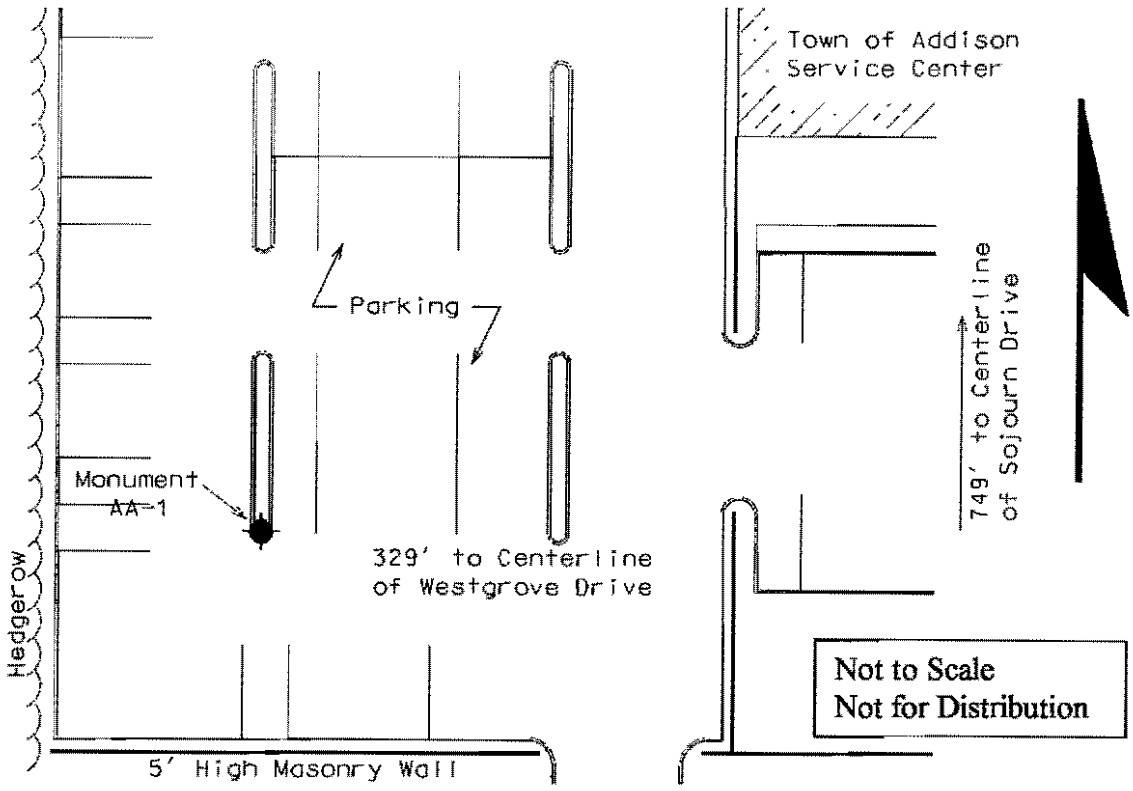
Point Name: AA-1

Description:

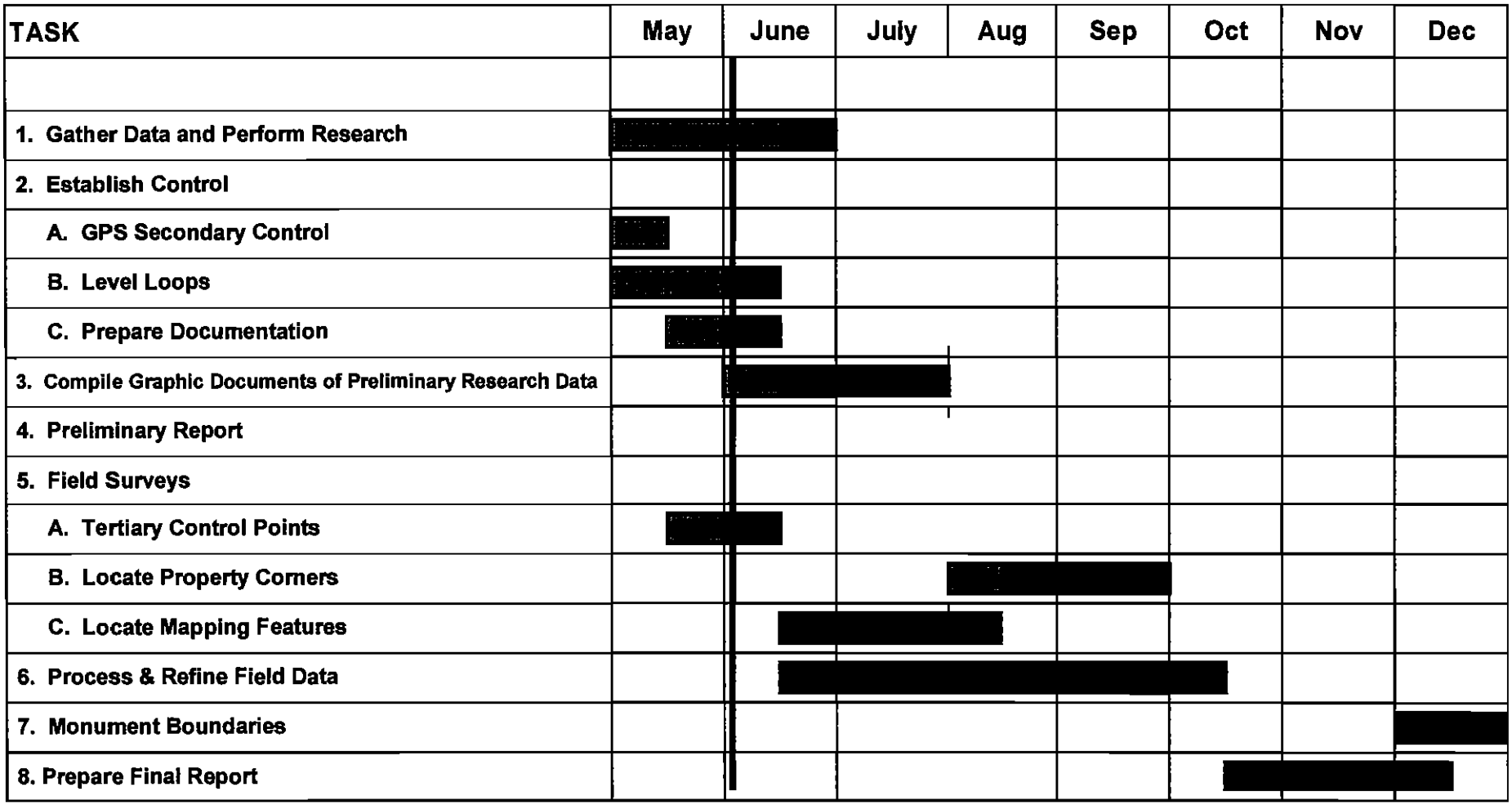
3" Aluminum Disk set in concrete, inscribed with "AA-1"

Location:

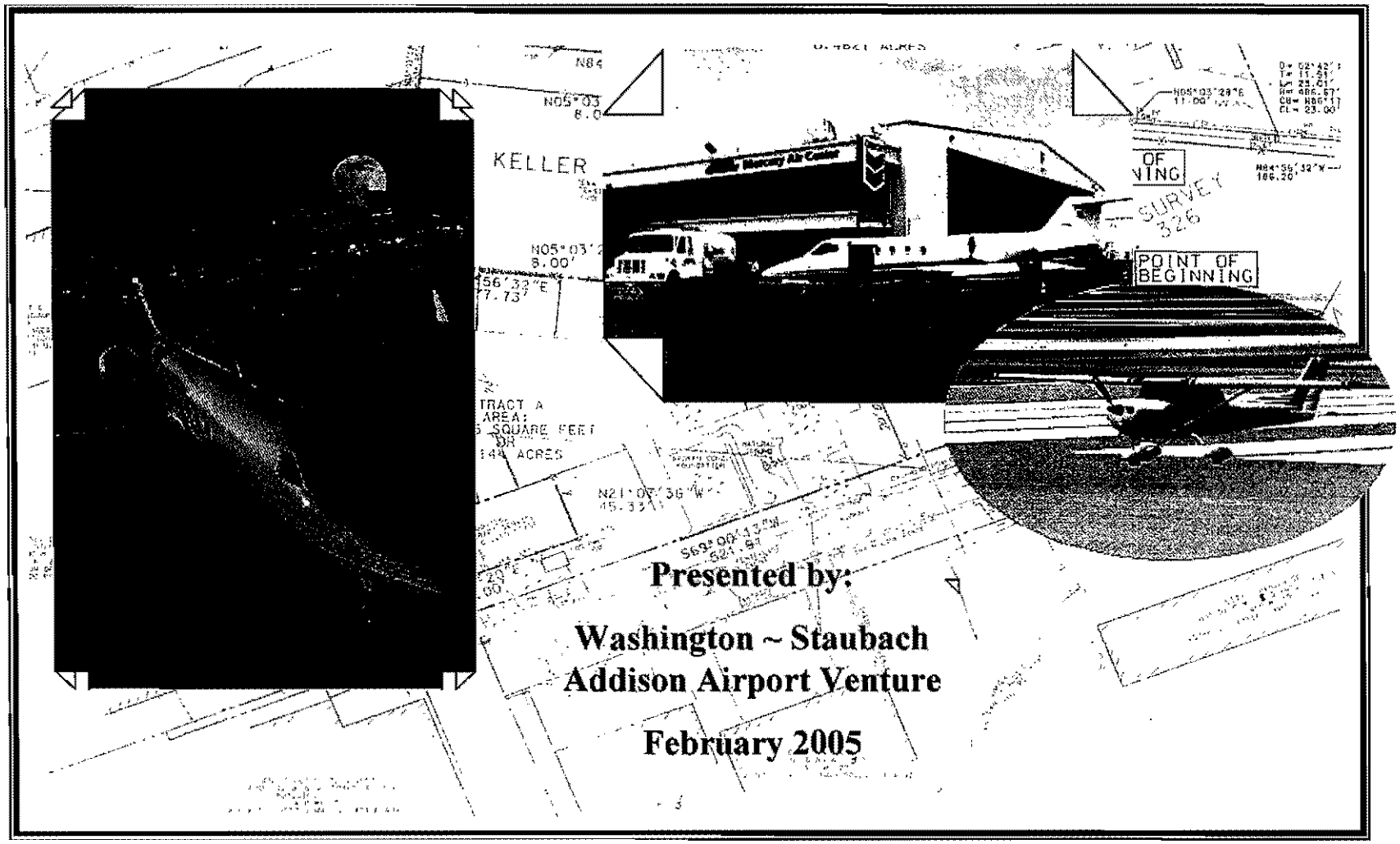
Located in the Town of Addison Service Center Compound, 729' South of the centerline of Sojourn Drive where it intersects the centerline of Westgrove Drive, 329' West of the centerline of Westgrove Drive, and 29' North of a 5' high masonry wall. Monument set at the south radius (1.5') point of a traffic island, 4" below top-of-curb.



ADDISON AIRPORT SURVEY

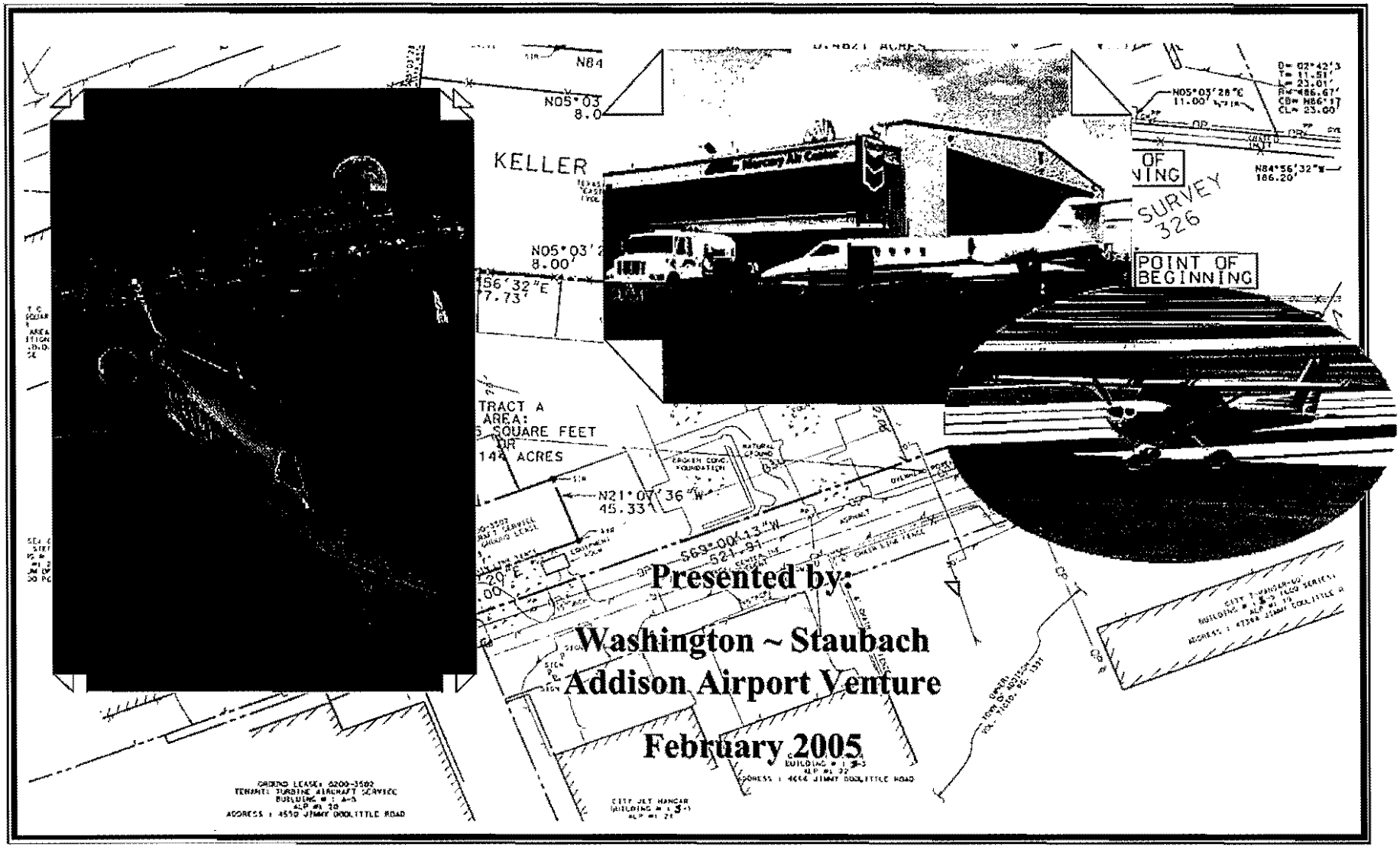


Strategic Plan for Real Estate Management and Landside Operations




Addison!®
Airport

Strategic Plan for Real Estate Management and Landside Operations

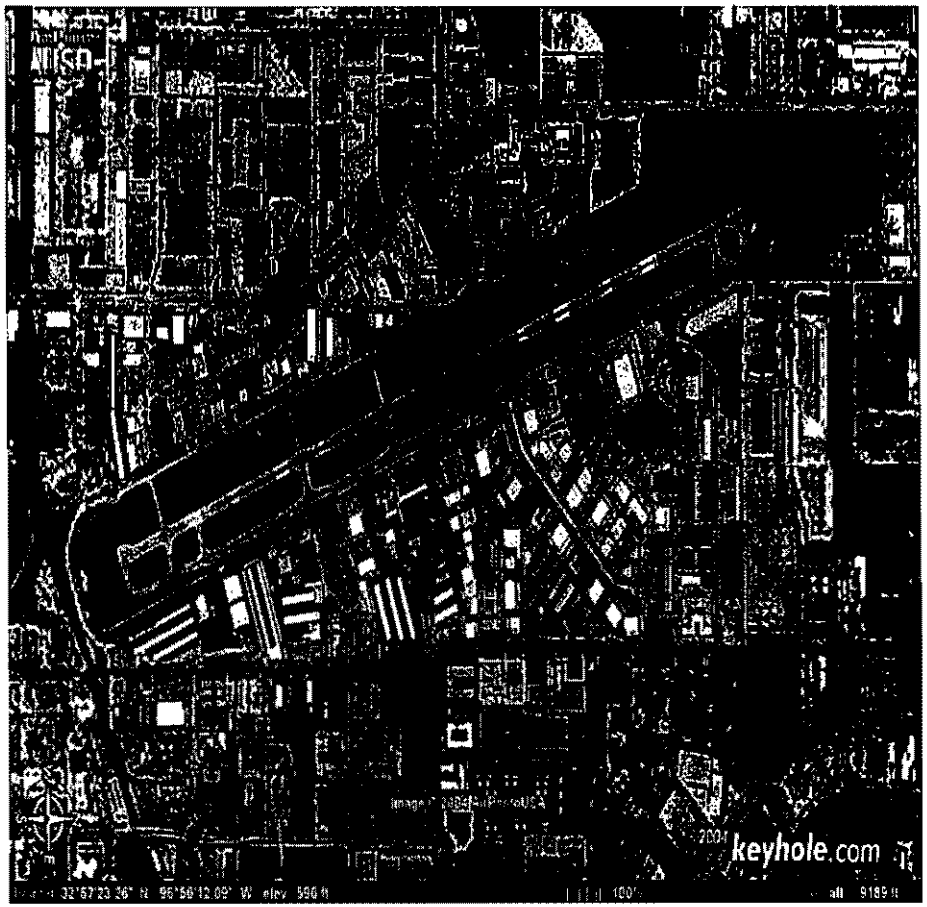


Introduction

Purpose of Strategic Plan

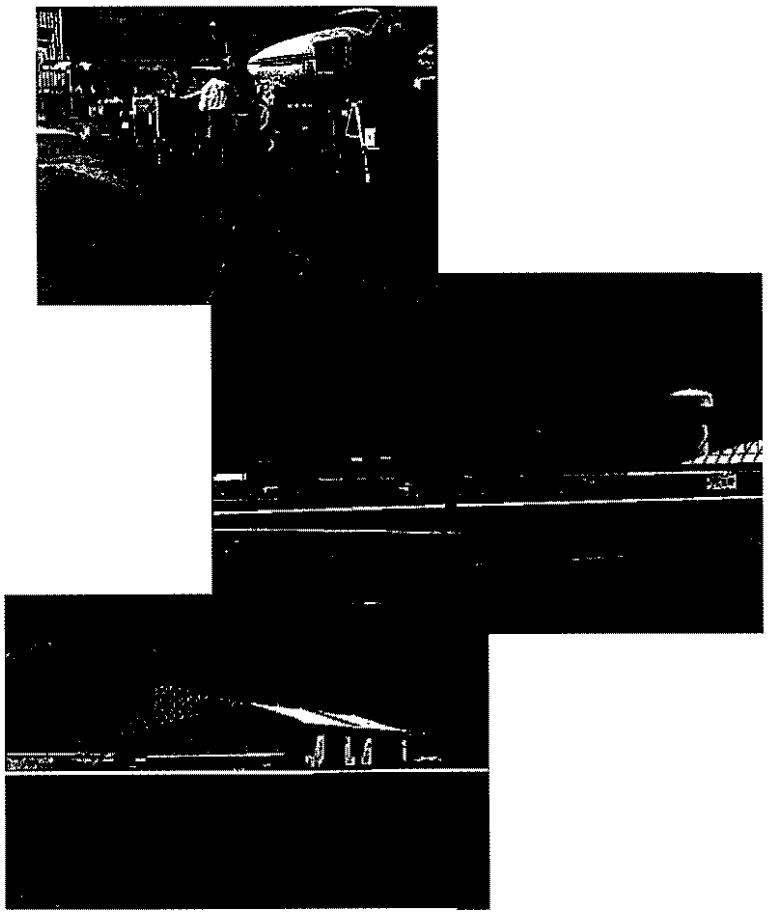
- Identify and set forth management objectives and strategies necessary to align the airport's real estate portfolio with the Town of Addison's long-term vision for Addison Airport.

Current Situation



- Fully developed
- Landlocked
- Incompatible adjacencies
- Inefficient land use
- Aging facilities
- Long-term leases

Strategic Planning Process



- Considered Master Plan
- Analyzed existing portfolio
- Defined short, intermediate and long-term objectives
- Established processes and procedures for real estate decisions
- Developed strategic land-use plan
- Established benchmark analyses to track progress

Strategic Plan Objectives

Addison Airport

Strategic Plan Objectives

- Address projected demands
- Identify growth opportunities
- Maximize revenue
- Improve overall value of the real estate portfolio
- Plan for orderly redevelopment
- Complement the Town's long-term vision

Strategic Plan Elements

- Proactively manage the real estate portfolio to meet long-term objectives
- Minimize incompatible land uses
- Target under-developed land and aging facilities
- Identify opportunities for acquisition and expansion
- Utilize through-the-fence agreements to leverage operational capacity and offerings
- Benchmark progress

Strategic Plan Implementation

Strategic Plan Implementation

- Proactively manage the real estate portfolio to meet long-term objectives

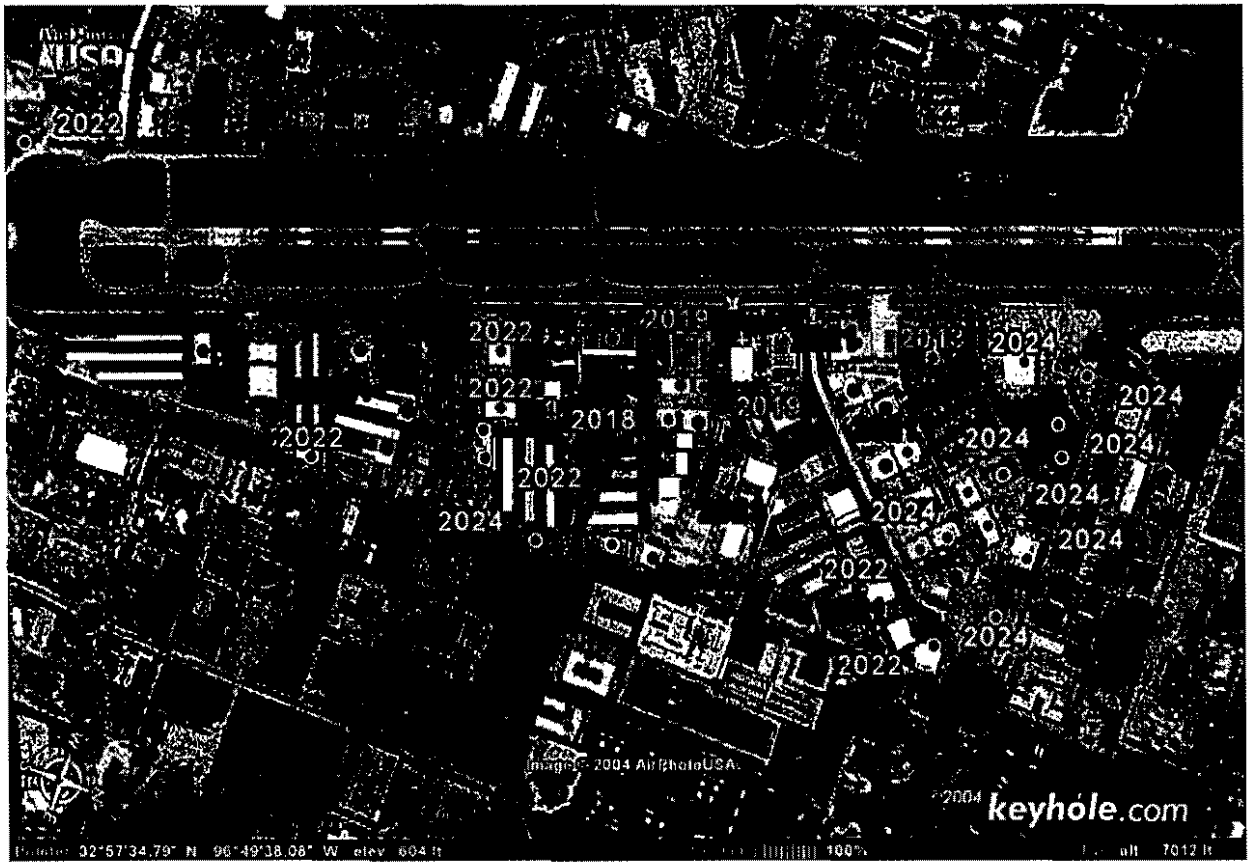
Proactive Portfolio Management

- Airport encompasses 373 acres
- 129 acres income producing
- 81 acres ground leased
- 47 acres town-owned (includes 11 vacant acres)

Proactive Portfolio Management

- 73% of revenue generated from real estate rental and fees
- 42% of all income tied to long-term agreements
- 25% of revenue from fuel sales

Ground Lease Expirations



- 56 active ground leases
- First ground lease due to expire 2013
- Two-thirds of the ground leases due to expire between 2020~2024 (36 properties)

Addison Airport

Strategic Real Estate Evaluations

- Prepared and reviewed Asset Management Plans for each ground-leased property
  - Income performance
  - Leasehold valuations
  - Type, condition and value of improvements
  - Land use to long-term objectives
  - Tenant needs
  - Environmental issues
  - Legal issues
  - Strategic considerations

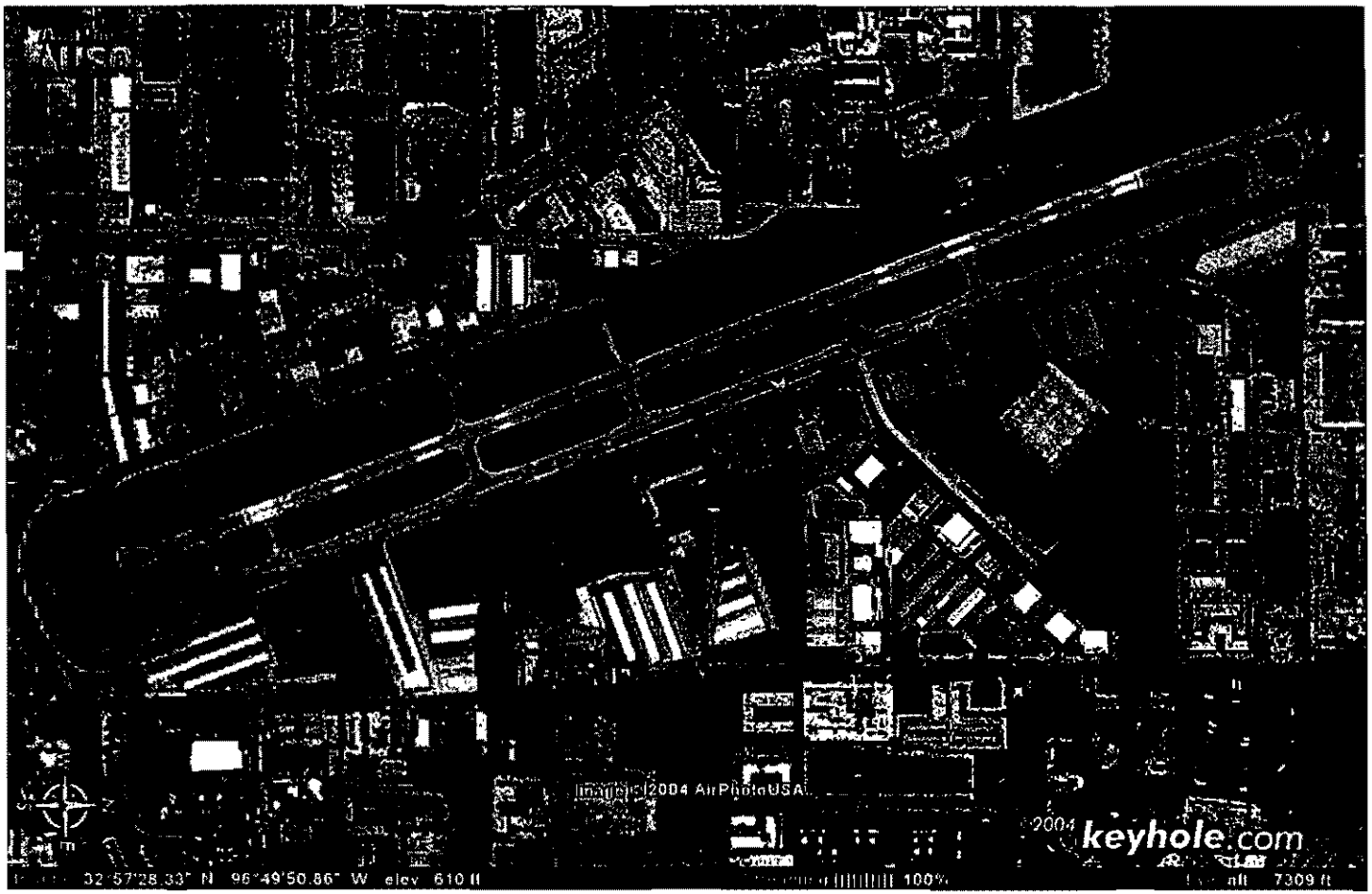
Addison! Airport

Strategic Plan Implementation

- Proactively manage the real estate portfolio to meet long-term objectives
- Minimize incompatible land uses

Current Land Use

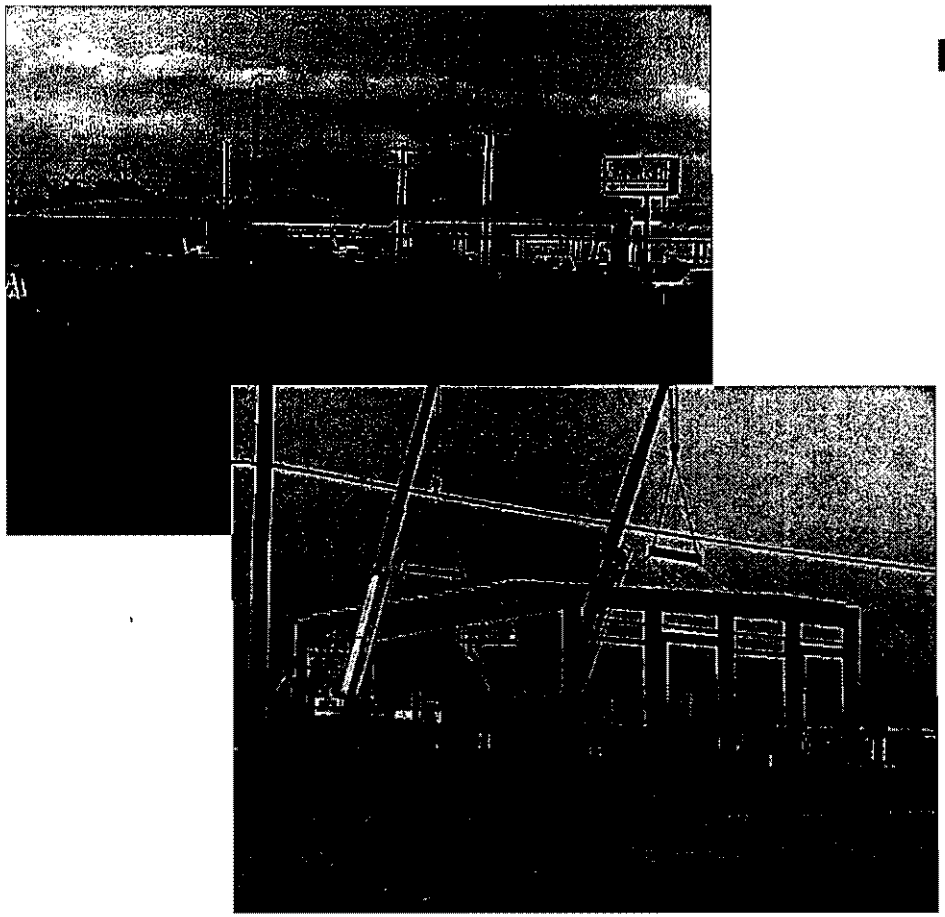
- Fixed Based Operators
- Commercial
- Corporate
- Executive/ Multi-Tenant
- T-Hangars/Tie Downs



Strategic Plan Implementation

- Proactively manage the real estate portfolio to meet long-term objectives
- Minimize incompatible land uses
- Target under-developed land and aging facilities

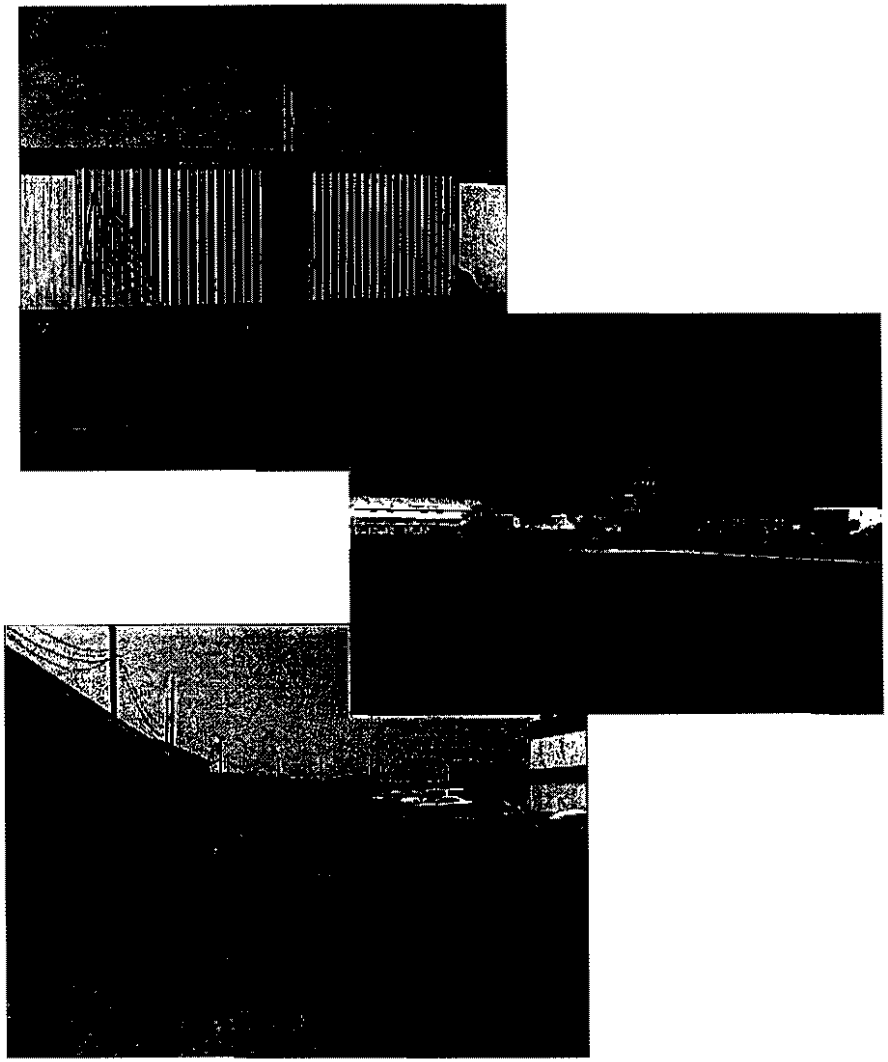
Re-develop Under-developed Land



- Reconfigured 6.5 acres of under-developed land into a 20,000 SF corporate hangar including office, dedicated ramp and aircraft/vehicle parking. Area now consists of 2.4 acres of fully developed land, leaving 2.2 acres for future development.

Addison Airport

Aging Facilities

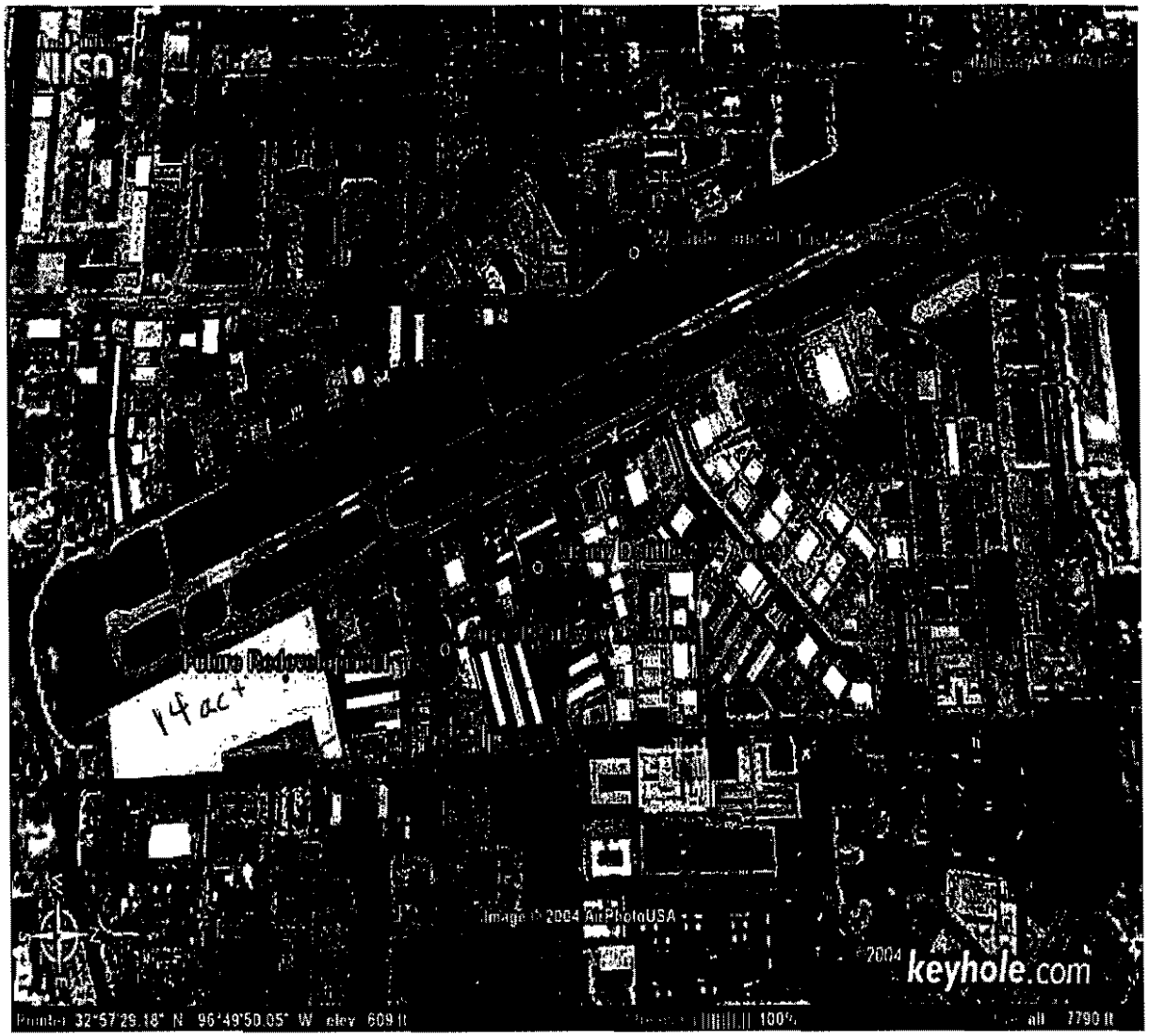


- Repair and/or replace aging hangars
- Improve public parking capacity and quality
- Enhance overall condition of existing facilities

Strategic Plan Implementation

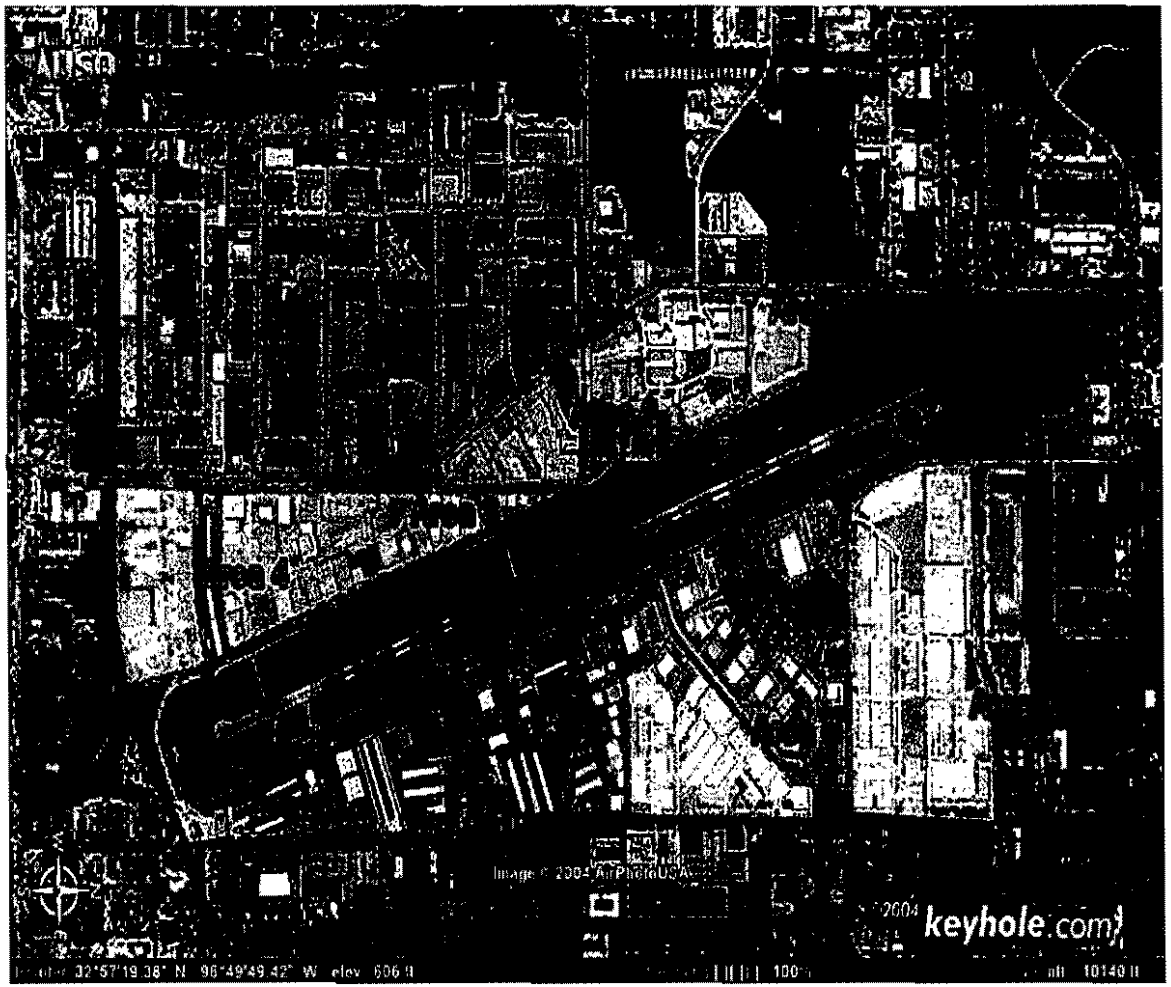
- Proactively manage the real estate portfolio to meet long-term objectives
- Minimize incompatible land uses
- Target under-developed land and aging facilities
- Identify opportunities for acquisition and expansion

Future Development of Owned Land



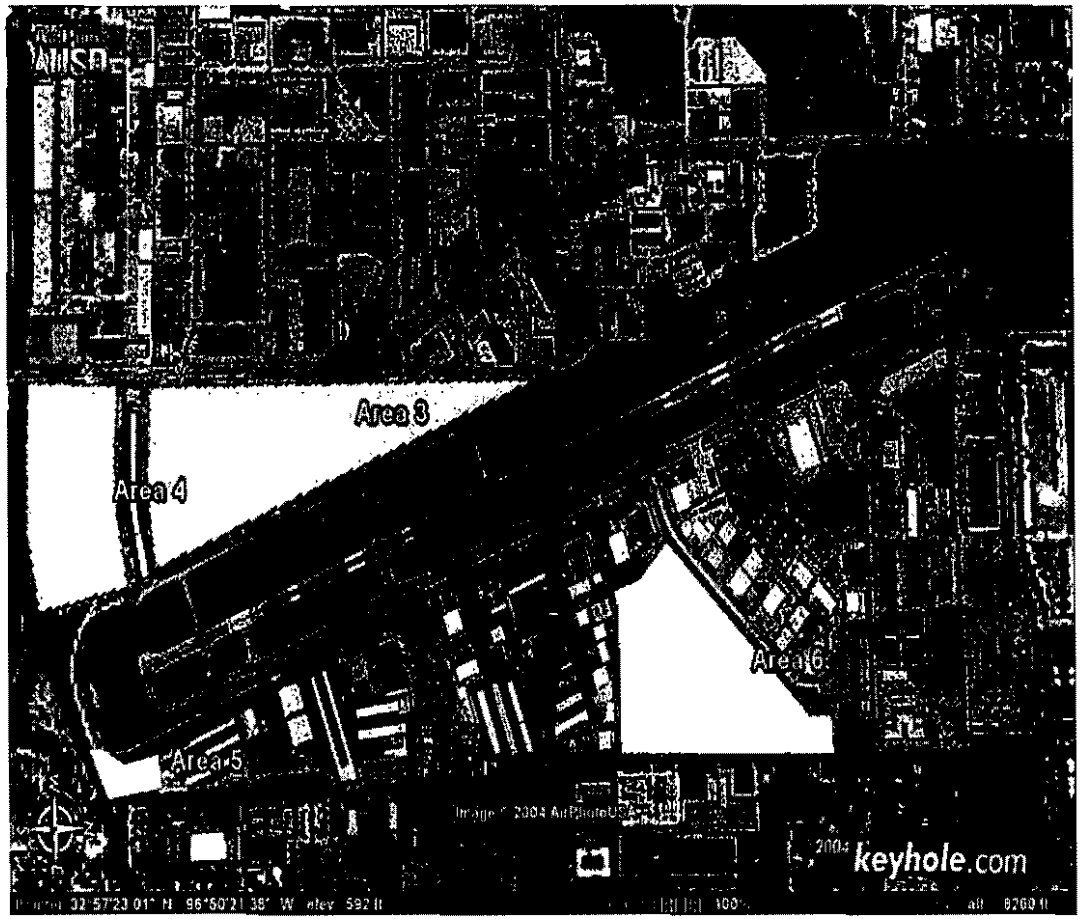
- Midway Triangle
  1.3 acres
- W. Side Tunnel Tract
  4.78 acres
- Jimmy Doolittle
  2.14 acres
- Airport Parkway
  2.2 acres
- Redevelop SE quadrant of airport

Potential Acquisitions



- Physical barriers limit expansion potential
- 7 areas (227 acres) were considered
- 4 areas (102 acres) most probable for expansion

Potential Acquisitions



Area 3 (44 acres) & Area 4 (25 acres)

- Light industrial office/showroom
- Retail along Midway Road
- Mostly non-aviation use
- Older, underutilized

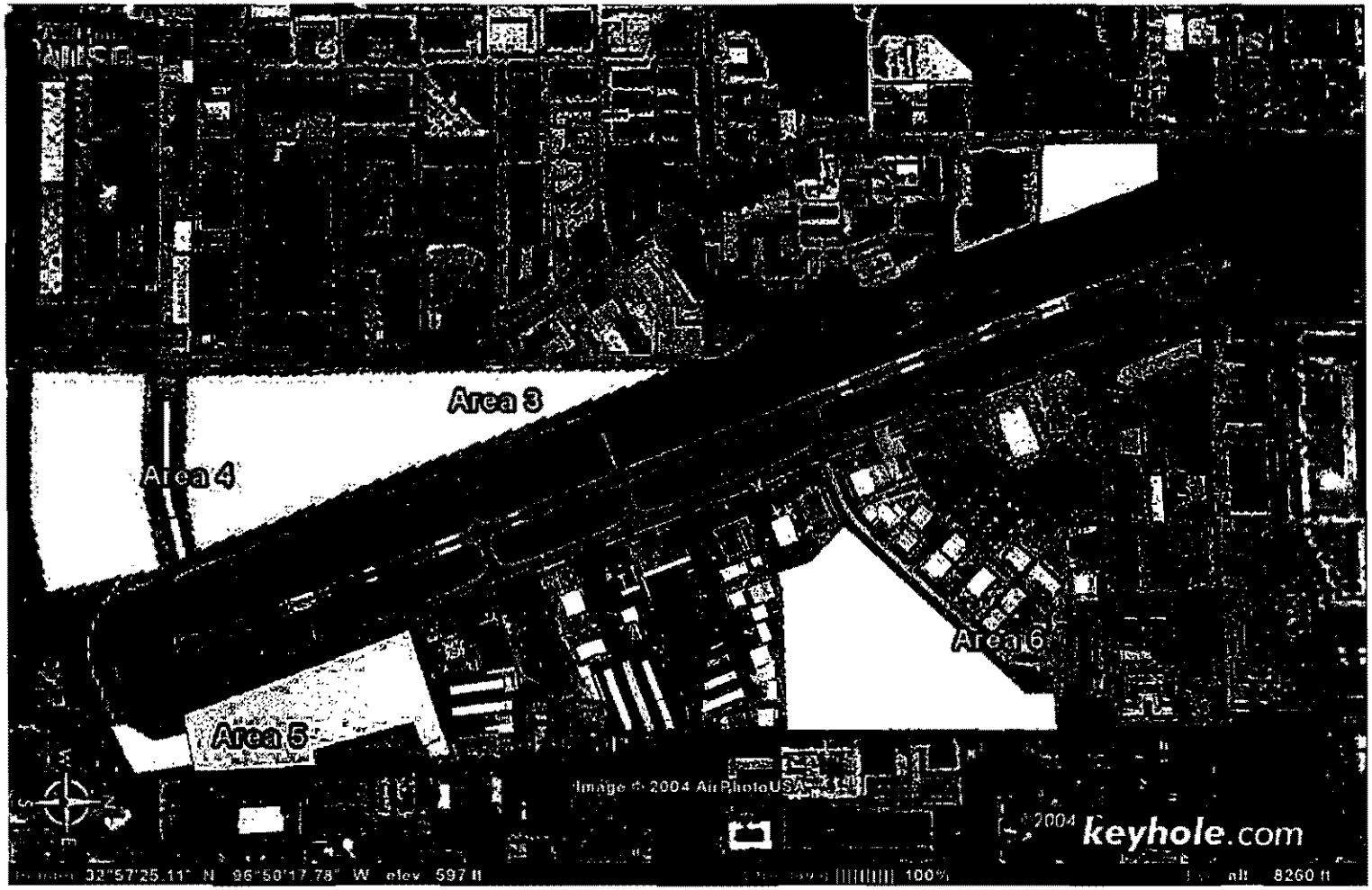
Area 5 (2 acres)

- 3 small out-parcels
- High visibility
- Height restrictions

Area 6 (31 acres)

- Two-thirds are "off-airport users"
- 7 large conventional & T-hangars
- Remainder small office/showroom

Overall Expansion Opportunities



Addison Airport

Strategic Plan Implementation

- Proactively manage the real estate portfolio to meet long-term objectives
- Minimize incompatible land uses
- Target under-developed land and aging facilities
- Identify opportunities for acquisition and expansion
- Utilize through-the-fence agreements to leverage operational capacity and offerings

Addison! Airport

Through-the-Fence Benefits

FAA Tolerance?

- Fee-simple (not subject to economic limitations as airport ground leases)
- Properties remain on tax rolls
- Effectively leverages airport without expending considerable financial resources
- Attractive alternative of property ownership
- Excellent location with immediate airport access

Addison Airport

Strategic Plan Implementation

- Proactively manage the real estate portfolio to meet long-term objectives
- Minimize incompatible land uses
- Target under-developed land and aging facilities
- Identify opportunities for acquisition and expansion
- Benchmark Progress

Benchmark the Progress

- Average ground rent
- Airport/adjacent property land value
- Building area to land ratio
- Hangar to land area ratio
- Real estate revenue
- Revenue/building area
- Leasehold (tenant) value
- Leased fee (landlord) value
- Current property value

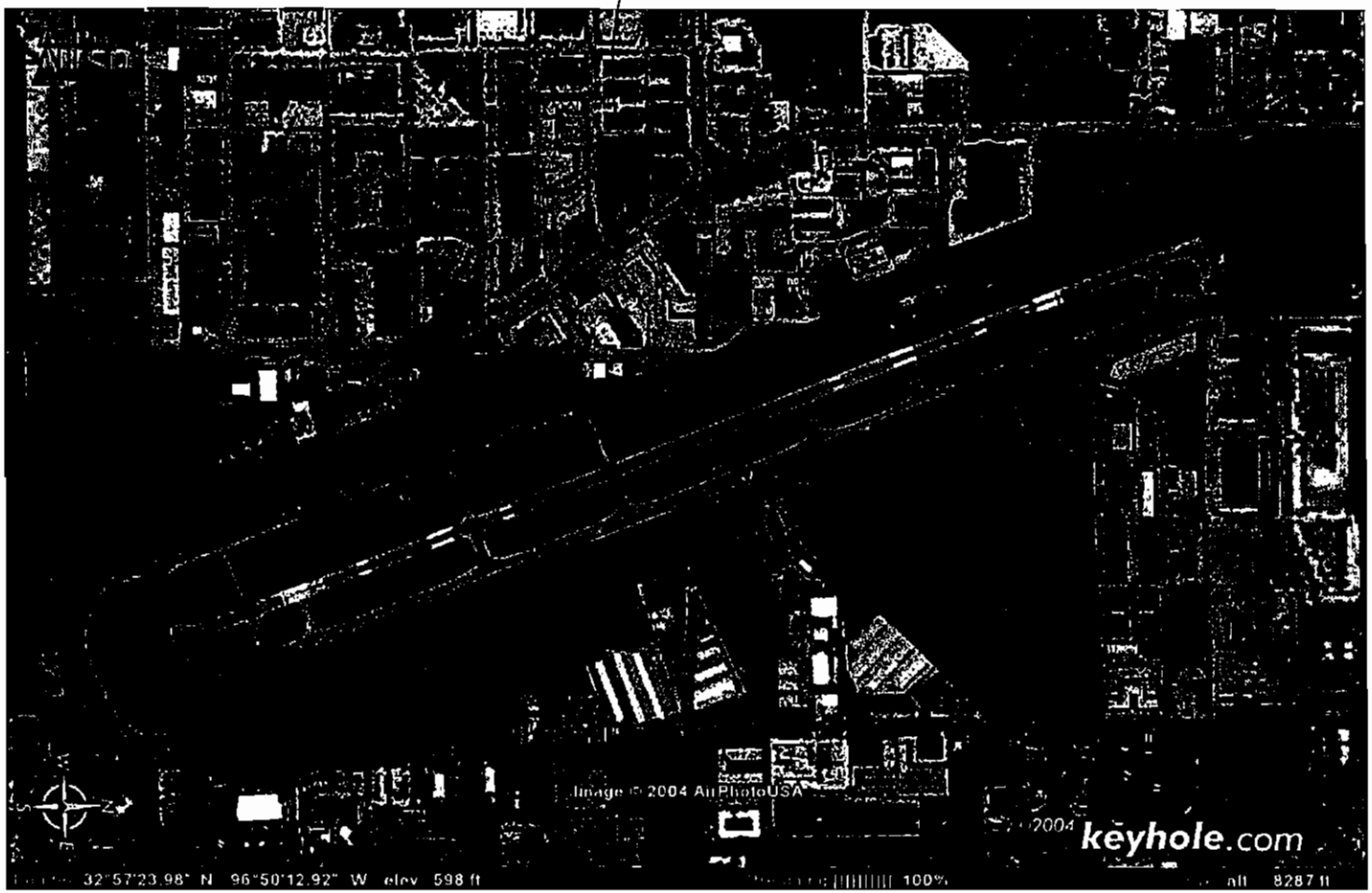
Summary

Addison Airport

The Future

West Side Fueler?

- Fixed-based Operators
- Commercial
- Corporate
- Executive/ Multi-Tenant
- Special Use
- T-Hangars/ Tie-downs



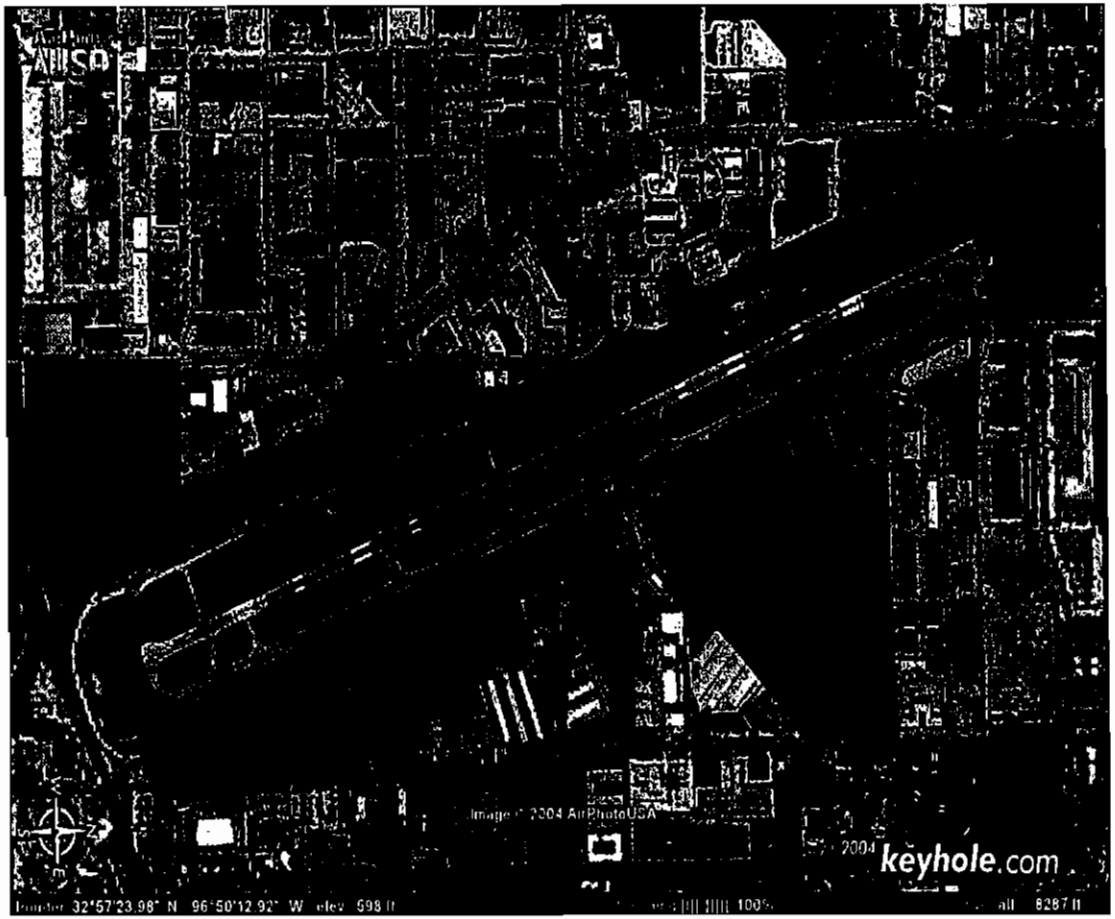
Addison Airport

Plan of Action

- Determine composition of special-use area
- Assess feasibility of proposed high-density hangar development
- Evaluate relocation of helicopter operations to the west side
- Explore economic development program for adjacent properties

Addison! Airport

The Future



- Addresses projected demands
- Identifies growth opportunities
- Maximizes revenue
- Improves overall value of the real estate portfolio
- Provides for orderly redevelopment
- Complements the Town's long-term vision


Addison!®
Airport

Whats next? Multilevel hangars, redo ground leases
Airport self sustaining? or infuse general funds
Take a close look @ Westside for development.
Economic incentives?
market – 4-6 passenger jets – Master plan the area.
Direct the development, don't respond. Cannot use
Airport funds for this area. (its off airport).
Future is Corporate/commercial use
Manage exist Real Estate Portfolio VERY CAREFULLY
Use through the fence as a POSITIVE strategy
How do we make that happen?
Focus on Air Taxi – what would we need to do to make this
a primary concept here? (Use Navatos)

WASHINGTON

ASCE'S State Affairs: On The Right Track

Two years ago, ASCE launched a state government relations program to assist its state councils, sections and branches in becoming more aware of and active in state and local legislative and regulatory activities.

Now that the dust is beginning to settle, it's time for a reality check. Have ASCE members responded to the Society's call for action? What have we accomplished over the past two years? What steps should be taken to improve the program? These are fair, valid questions that need to be addressed.

Let's begin by examining the big picture. Two years ago, 31 of the 78 U.S. sections of ASCE were engaged in some type of government relations activities. This took a dramatic swing upward once the state program was included in the 1997 ASCE Strategic Plan. By October 1998 the number of U.S. sections involved in state government relations had increased to 48, spanning 35 states.

This is great news, but we need to expand our universe. It is our goal to add programs in five states in 1999. Will your section accept this challenge?

Is our state and local advocacy program working? You bet it is. Here are some examples to illustrate this point.

The Arizona Society of Civil Engineers (AZSCE) jump-started its government relations program with two new initiatives in 1998. AZSCE established a state key contact program to provide its members with a "voice" in critical state legislative and regulatory matters. It also mailed an introductory kit to the members of the Arizona legislature. The kit contained an opening letter—which included background information on AZSCE and an official request to provide technical information to legislators and staff on issues impacting civil engineering—and a small gift (a stress ball) with AZSCE's name and telephone number.

The California State Council crafted a public relations strategy to oppose a state ballot initiative—Proposition 224—which would have severely altered the state's procurement procedures. The council placed ads in the state's major newspapers urging voters to vote against Proposition 224. California voters overwhelmingly defeated the initiative on June 2, 1998.

The Nebraska Section's decision to hire a retired civil engineer as a registered lobbyist paid huge dividends when the Nebraska legislature passed a law revising the state's Engineers and Architects Regulation Act in 1997.

The Utah Section has combined forces with the Consulting Engineers Council of Utah to educate city, county and state agencies on the concept of implementing a quality-based selection (QBS) process for contracted engineering services. The group has hired a professional facilitator to conduct presentations to many public organizations. Also, the team is active on the legislative front—keeping tabs on the Utah legislature and encouraging legislators to support QBS as a guiding principle in selection.

Where do we go from here? The main objective is to keep this initiative in the spotlight. That means ASCE national leaders must continue to promote this program to sections and branches. In turn, each section and branch must find that one champion to spearhead this initiative.

Sections should take advantage of the ASCE State Public Affairs Grants Program to establish or enhance their public policy advocacy initiatives. Grants are available now. Contact your section or branch for more details.

There are at least 7,424 reasons why ASCE believes it must have an effective state government relations program. That's the number of state legislators in this country, and only a handful of these individuals are engineers. In addition, there are tens of thousands of officeholders at the city, county and municipality levels throughout the country. That is a vast number of people who need to be aware of and educated on issues important to civil engineers. These lawmakers can determine the fate of your profession. It's time for civil engineers to demand a seat at the legislative and regulatory tables. Don't expect or assume that the other engineering societies will look out for your profession's best interests. That responsibility is ultimately yours.

Is our state and local advocacy program working? You bet it is.

For more information regarding ASCE's State Government Relations Program, contact the ASCE Washington office at 202/789-2200.

M. Jordan Connors
ASCE *State Government Relations Manager*
Washington, D.C.

NEWS

FUNDING

Innovative Financing Backs Highway Project

A $295 million highway project in northwest New Mexico will convert 120 mi of two-lane roadway to four lanes using bonds that will be repaid by federal funds. The project also comes with a 20-year performance-based warranty from the Performance Roads Division of Koch Materials Co., Wichita, Kan., the design and construction manager for the job.

For the first time ever, future federal funds will be the sole source of repaying a state bond issue with no state guarantee, said Pete Rahn, secretary of the New Mexico State Highway and Transportation Department, Santa Fe. "This project will forever change the way major infrastructure projects are funded," he said.

Although other states have pledged future federal funds to repay bonds, those states have guaranteed to repay them with state dollars if federal funding does not cover the debt, according to John Fenner, adjutant secretary for the State Highway and Transportation Department. New Mexico, on the other hand, is issuing bonds that will be insured by Ambac Assurance Corp., New York, leaving the state with little or no funding liability. "It's purely on the shoulders of the federal government to come through with the money," Fenner said.

The state will use about $28 million of the $222 million it receives each year in federal transportation funding to repay the debt on the 18-year bonds. The payments will begin in 2001 and last for 15 years. This way the state gets the money needed for the project up front rather than waiting for the money to trickle in over the years, Fenner said.

The state paid Koch Materials $62 million for the 20-year performance-based road warranty. Koch is betting that it will cost less than $62 million to keep the road at a certain level of performance over 20 years, Fenner said. The state claims that it will save nearly $90 million with the warranty, because it expected to pay about $150 million to maintain the road over the same period.

Although the state isn't telling Koch how to build the road, it expects the finished product to meet certain performance requirements. Current road-building methods are very prescriptive, said Bob Heitmann, vice president of Koch's Performance Roads Division. "Instead, New Mexico is saying it wants performance-based results."

The road must meet the equivalent of a pavement serviceability index rating of 3.0 or better throughout the 20-year warranty or Koch has to fix it. The warranty also covers bridges, drainage and erosion control features for 10 years.

Although Koch has some proprietary pavement construction techniques that it claims makes roads last longer, it will still have to send out bid requests for the construction work. The first contracts will be let by October and the project is scheduled to be completed no later than November 2001. ▼

MARTIN PEREA

State Route 44 in northwest New Mexico will become U.S. Highway 550 once 120 mi of two-lane road are converted to four lanes.

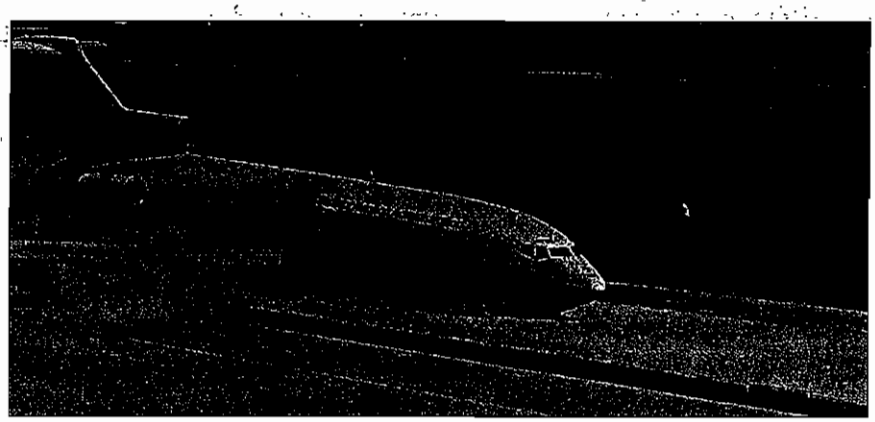
AIRPORTS

Cellular Concrete Stops Airplanes in Their Tracks

Instead of the fear of flying, the Port Authority of New York and New Jersey is trying to relieve the fear of landing. In a design similar to a runaway truck ramp, the Port Authority is installing aerated cellular concrete pads to stop an aircraft that overshoots a runway. The concrete blocks that make up the pad are one-tenth the density of normal concrete, so when an aircraft runs over them, the landing gear breaks through at a consistent pace and slows to a stop.

With the first system already installed on runway 4R at John F. Kennedy International Airport (JFK), the Port Authority has ordered two more systems for LaGuardia Airport at a cost of $9.8 million. The pad, called an engineered material arresting system (EMAS), was developed by the Port Authority; the Federal Aviation Administration (FAA); Engineered Systems Co., Lester, Pa.; and Edwards and Kelcey's Boston office.

The JFK project was in response to a 1984 incident involving a Scandinavian airliner that ended up in Thurston Basin after overshooting a 500 ft long safety area. In 1988, the FAA started requiring airports to provide 1,000 ft of safety area, but many



During a test, an engineered material arresting system stopped a 727 aircraft traveling at 63 mph in less than 600 ft.

runways just don't have that kind of room. For about 400 runways in the U.S., it's not feasible to acquire the extra real estate needed, according to Robert E. David, FAA's manager of airport safety operations.

After the incident at JFK, the Port Authority started looking for engineered solutions to stop an aircraft in trouble. The requirements for the arrester bed included a consistent and predictable crush strength under all temperature extremes, nonflammable characteristics and efficient energy absorption for maximum performance in a limited distance. The system also should not hinder the efforts of safety personnel.

"Our system by definition is passive, because you never know when an overrun will occur," said Jim White, an FAA safety engineer in Atlantic City, N.J., who helped design and test the system.

The $2.9 million EMAS at JFK contains about 2,000 4 by 8 ft precast blocks. The first row is 12 in. high, and subsequent rows increase in height in 1 in. increments up to 30 in. The entire pad is 500 ft long and 150 ft wide.

Because the aerated concrete blocks have to have a high level of predictability, there is tight control of the curing process, said Peter Mahal, EMAS director at Engineered Systems. The blocks are designed to have a lower strength at the fore portion and a higher strength at the aft.

The system can stop a fully loaded 747 aircraft going 70 mph in 450 ft without snapping off the nosewheel or inflicting a force of more than 1 *g* on passengers, said Pam Walden-Phillips, senior airport engineer with the Port Authority. According to FAA studies, most overruns have occurred with planes traveling between 45 and 70 mph.

Because LaGuardia Airport handles aircraft smaller than the 747, the pads there will be shorter than at JFK. "Every design is going to be unique because of the need to pick a design aircraft," Walden-Phillips said. Port Authority officials hope to have one overrun installed at LaGuardia by December and another by next spring. ▼

UNDERGROUND

New Method Opens Door to Easier Tunneling

Used as an alternative to disruptive open-trench methods, the doorframe slab method allows shallow tunnels to be built under city streets without extensive road closures.

The doorframe technique derives its name from the mining industry, where inclined timber sidewall posts support a horizontal timber beam in excavated tunnels. The configuration of steel I-beams or pipes driven into the ground supporting a concrete roof slab mimics that structure.

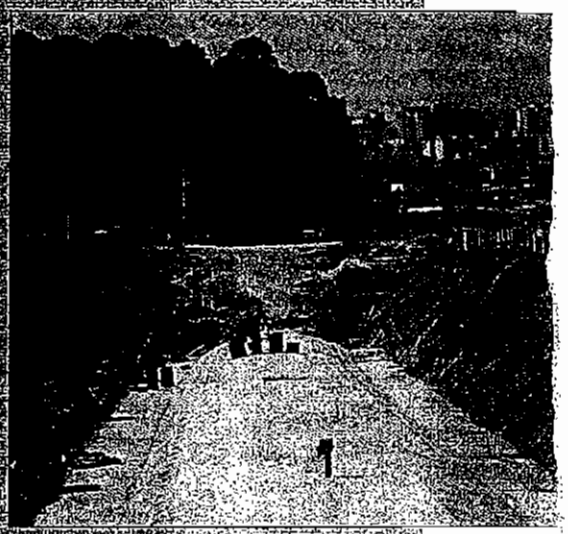
The main benefit of the method is that it reduces the time and extent of road closures; only 300-ft-long sections of road need be closed at any time.

The first stage of doorframe construction consists of an open cut to the tunnel's roof, usually ranging from 10 to 15 ft. Then a reinforced concrete slab, 2.5 to 3.5 ft thick, which will eventually serve as the tunnel's roof, is poured in sections. Along both longitudinal edges of the slab, 8-by-8-in. I-beams or 16-in. inclined, perforated steel pipes with 10- to 12-in. diameters are drilled into the ground and grouted every 5 ft. The slab is waterproofed using a sealing membrane, and then the trench is backfilled, allowing closed roads to be reopened faster than if the tunnel were built entirely using open-cut techniques.

During the next step, what is called the new Austrian tunneling method, or shotcrete supported tunneling, is used. First, crews excavate the tunnel using trenchless digging techniques. Then they erect temporary wall supports before pouring the tunnel's concrete foundation. Workers then install lateral drainage piping and a waterproof membrane before shotcreting lining walls and building the road surface and tunnel ventilation system.

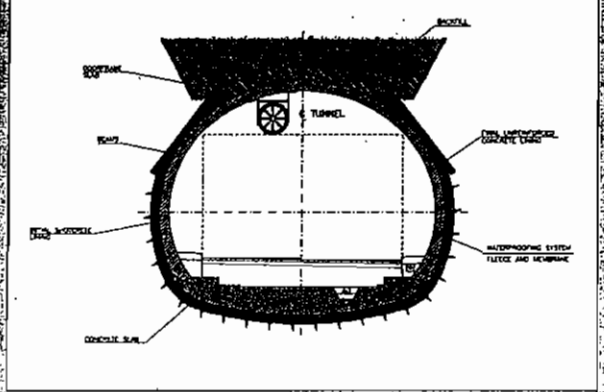
Dr. Sauer Corp., Herndon, Va., developed the tunneling method during construction of an underground rail system in Nickelsdorf, Austria. The system is also being used on the ongoing Brasilia Metro project for three sections with a total length of 3,950 ft. The sections link Taguatinga and Ceilandia.

"We've applied it in Germany, Boston and Texas, but the Brazil project is the biggest application of the technology to date," said Gerhard Sauer, president of Dr. Sauer Corp. ▼



After the concrete hardens on a roof slab for a tunnel project in Brasilia, Brazil, crews will backfill the 15 ft deep trench and begin tunneling below ground.

Doorframe Slab Method



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URS Greiner

August 19, 1998

Mr. James Pierce, P.E.
Assistant City Engineer
Town of Addison
PO Box 144
Addison, TX 75001

Re: West Taxiway and Connectors with Drainage Improvements
Addison Airport

Dear Mr. Pierce:

Enclosed for your review and information are several documents from Alliance Airport related to the airport operations which you may find useful. The documents include the following:

- Rules and Regulations for the Fort Worth Airports
- Alliance Airport Ground Vehicle Operating Regulations
- Fort Worth Alliance Airport Contractor Requirements
- Memo to Alliance Airport Users Re: Security and Safety
- A Guide to Ground Vehicle Operations on the Airport
- City of Fort Worth Minimum Standards for Fixed Base Operators and Other Airport Tenants

Sincerely,

URS GREINER, INC.

Leslie V. Sagar

Leslie Sagar, P.E.
Project Manager

cc to John Baumgartner
Kurt Horn

FORT WORTH AIRPORT RULES AND REGULATIONS

From Chapter 3
Of
The Code Of The City Of Fort Worth
Titled
"Airports And Aircraft"

City Of Fort Worth ◆ Aviation Department ◆ 4201 North Main Street ◆ Suite 228

Fort Worth, Texas 76106-2736 ◆ (817) 624-1127

FORT WORTH AIRPORT
RULES AND REGULATIONS
From
Chapter 3 Of The Code Of The City Of Fort Worth
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PENALTY FOR VIOLATIONS

(Sec. 3-2.)

Any person, firm or corporation who violates, disobeys, omits, neglects or refuses to comply with or who resists the enforcement or any of the provisions of this chapter affecting fire safety, zoning and public health and sanitation, including dumping of refuse, shall be fined not more than two thousand ($2,000.00) dollars for each offense, and shall be fined not more than five-hundred ($500.00) dollars for all other violations. Each day that a violation is permitted to exist shall constitute a separate offense.
(Ord. No. 10029, 5, 12-22-87)

ARTICLE I - IN GENERAL

Sec. 3-1. Definitions.

The following terms, when used in this chapter, shall have the meanings respectively ascribed to them by this section:

AIRCRAFT shall mean any weight-carrying structure for navigation in the air and which obtains support by the dynamic reaction of the air to any obstruction connected with the structure. Gliders and ultralights, either powered or unpowered, helicopters, hot air balloons, and airships will be considered aircraft.

AIRPORT CERTIFICATION MANUAL OR ACM shall mean the FAA approved manual containing the minimum operating standards of a specific airport, as prescribed in FAR Part 139, for certification of that airport.

AIRPORT CERTIFICATION SPECIFICATIONS OR ACS shall mean the FAA approved specifications containing the minimum operating standards of a specific airport, as prescribed in FAR Part 139, for certification of that airport.

AIRPORT, AIRPORTS, OR AIRFIELD shall mean all of the land, improvements, facilities and development of the Fort Worth Meacham, Alliance, and Spinks Airports, or any other city-owned or operated airport, except for the Dallas-Fort Worth International Airport.

AIRPORT ROADWAY shall mean those portions of the airports designated and made available temporarily or permanently by the Director for vehicular traffic and not located on ground leased by others.

AVIATION DEPARTMENT shall mean the Aviation Department of the City of Fort Worth, Texas, the department employing those city employees whose primary task is to administer, operate, and maintain all city-owned and operated airports.

AIR OPERATIONS AREA OR AOA shall mean any area of the airport, both public and leased, used or intended to be used for the landing, takeoff, taxiing, or parking of aircraft, or any other area designated so by the Director.

AIR TRAFFIC CONTROL OR ATC shall mean personnel, equipment, and air traffic control services provided by the Federal Aviation Administration, or other person, firm, or corporation contracted to do so by the City of Fort Worth.

AIRCRAFT EMERGENCY shall mean a problem or condition involving an aircraft either in flight or on the ground, which could endanger lives or property. An aircraft emergency can be declared by the pilot, ATC, or other personnel responsible for the safe operation of the aircraft or airport.

AIRPORT MANAGER shall mean the specific manager of any city-owned and operated airport, responsible for the efficient administration of a specific city-owned and operated airport. The Airport Manager acts in the absence of the Director, or upon specific instruction of the Director.

AIRPORT OFFICIAL shall mean the Director, Airport Manager, Airport Operations Superintendent, Airport Operations Supervisor, or any other Aviation Department employee designated by the Director to be responsible for the safe operation of the airports, and specifically designated with the authority to do so by the Director.

AIRPORT RESCUE AND FIREFIGHTING OR ARFF shall mean the primary airport firefighting personnel and equipment responding to emergencies on the airports.

DIRECTOR shall mean the Director of Airport Systems of the Aviation Department, the appointed head of the Aviation Department, being responsible for the administration, operations, and maintenance of all city-owned and operated airports.

EMERGENCY shall have the same meaning as Aircraft Emergency, supra.

FAR shall mean the Federal Aviation Regulations found in Title 14, Code of Federal Regulations.

FAA shall mean the Federal Aviation Administration.

GROUND TRANSPORTATION BUSINESS shall mean the pursuance of the occupation of transporting passengers, material, or baggage for hire, either within the airport or from or to the airport from or to the points outside the airport.

GROUND VEHICLE OPERATION HANDBOOK shall mean the handbook approved by the FAA governing operations of motor vehicles on an airport.

HELICOPTER shall mean any rotorcraft which depends principally for its support and motion in the air upon the lift generated by one or more power driven rotors, rotating on substantially vertical axis.

HELIPORT shall mean any area of land or water or a structural surface which is used or intended to be used for the landing and takeoff of helicopters and any appurtenant areas which are used or intended to be used for heliport buildings and other heliport facilities. The term shall also include helistop.

LANDING FIELD shall mean any place, on land or water, where aircraft may land, be repaired, take on fuel or take off, but shall not include facilities for the exclusive use of helicopters.

MOVEMENT AREA shall mean the runways, taxiways, and other landing areas of the airport which are utilized for taxiing, hover taxiing, air taxiing, and landings and takeoffs of aircraft, exclusive of ramp areas.

OPERATOR shall mean any person who pilots, controls, or maintains, either directly or indirectly, an aircraft, landing field, heliport, or vehicle.

PERSON shall mean any individual, firm, partnership, corporation, association, company (including any assignee, receiver, trustee, or similar representative thereof), or the United States of America or any foreign government, state, or political subdivision thereof.

RESTRICTED AREA shall mean any portion of the airport to which no ingress is permitted except upon specific authorization by the Director.

RAMP OR RAMP AREA shall mean those portions of the airport, both public and leased, designated for the parking and/or storage of aircraft.

RUN-UP shall mean any operation of a stationary aircraft engine above idle power except to overcome inertia for taxiing.

VEHICLE OR MOTOR VEHICLE shall mean any automobiles, golf carts, trucks, buses, motorcycles, horse-drawn vehicles, tugs, or any other device in or upon or by which any person or property is or may be transported, carried, or drawn upon land, excepting aircraft and railroad rolling equipment or other devices running only on stationary rails or tracks.

VEHICULAR PARKING AREA shall mean those portions of the airport designated and made available temporarily or permamently by the Director for the parking of vehicles but not including parking areas under lease to others.

ARTICLE V - REGULATIONS GOVERNING CITY-OWNED LANDING FIELDS

DIVISION I. GENERALLY

Sec. 3-81. Title.

The rules set out in this article are adopted for the regulation of any city-owned airport which is exclusively situated in the City (hereinafter called "Airport"). These rules may be cited as "Fort Worth Airport Rules and Regulations".

Sec. 3-82. Intent.

It is the intent of the rules and regulations in this article to establish and promulgate the standards deemed necessary to the maintenance and promotion of the peace, health, good government and welfare of city-owned airfields; to provide for the best performance of the functions thereof; to promote the security of persons using the airfields and their facilities; and by such rules and regulations, to provide suitable penalties for the violation thereof.
(Code 1964, 4-24; Ord. No. 8840, 1,6-7-83)

Sec. 3-83. Scope.

The rules and regulations in this article shall constitute a special enactment effective only within the boundaries of the airport and not otherwise.
(Code 1964, 4-27; Ord. No. 8840, 1, 6-7-83)

Sec. 3-84. Federal Aviation Administration Regulations and Procedures.

(a) All flight and ground aircraft operations and vehicle operations at an airport shall be conducted in accordance with FAA rules and regulations and FAA approved policies and procedures for aircraft and airports, and now in effect or hereafter promulgated, which rules, regulations, and procedures are incorporated into this Code by reference.

(b) Any ACM or ACS now in effect or hereafter adopted for an airport, upon adoption, is incorporated into this Code by reference.

Sec. 3-85-95. Reserved.

DIVISION 2. REGULATION OF VEHICLES

Sec. 3-96. Generally.

All of the provisons of article 6701d of the Revised Civil Statutes of Texas, entitled "Uniform Act Regulating Traffic on Highways", are hereby declared to be in effect on the airport roadways, as defined, except insofar as this article prescribes different provisions.
(Code 1964, 4-28; Ord. No. 8840, 1, 6-7-83)

Sec. 3-97. Traffic Control Devices.

(a) It shall be unlawful to disobey any traffic-control device, sign, signal, marking or insignia erected, installed or placed by authority of the director of transportation and public works of the city. This shall apply, when applicable, to both vehicular and pedestrian traffic. Insofar as possible, all such devices, signs, signals, markings or insignia shall conform to the manual and specifications adopted by the state highway commission, as set forth in sections 29 and 31 of article 6701d of the Revised Civil Statutes of Texas.

(b) Except for speed limit signs, all traffic-control devices, signs, signals, markings and insignia as presently located, erected, or installed on the premises of the airport are hereby adopted, affirmed and ratified. Hereafter, the director of transportation and public works or his designated representative shall conduct studies and investigations relating to all such traffic-control devices, signs, signals, markings and insignia, and in accordance with such studies and determinations shall make such changes as are deemed necessary in the interest of traffic safety. Records of such changes, when effected, shall be maintained in the director's office; provided, however, the delegation of authority granted in this section shall not extend to establishing or changing speed limits, whether maximum or minimum, but same shall be established by the city council according to the requirements of state law as delegated to cities by legislative enactment.

(c) The speed limits upon airport roadways are set, affirmed and ratified at twenty (20) miles per hour and such lower speeds as shown on the maps or plats attached hereto and as described therein. Vehicular speeds on public aircraft ramps and airports are set, affirmed and ratified at ten (10) miles per hour. In compliance with and in obedience to the above authority, the city council has determined upon the basis of an engineering and traffic investigation that the prima facie maximum speed limits set forth in this subsection are reasonable and safe under the conditions found to exist at all intersections and other places and upon any part of the airport roadway system, having taken into consideration the width and condition of the pavement and other circumstances on such portions of the airport roadway system as well as the usual traffic speed limits thereat and thereon, which limits, when appropriate signs giving notice thereof are erected, shall be effective at any such intersection or other place or part of

the airport roadway system at all times during hours of daylight or darkness, or at such other times as may be determined.
Code 1964, 4-29; Ord. No. 8840, 1, 6-7-83)

Sec. 3-98. Parking.

(a) It shall be unlawful to park a vehicle or to permit the same to remain standing within the boundaries of the airport except at such places and for such periods of time, and upon payment of such parking fees and charges, as may from time to time be prescribed by the City Council and so indicated by the posting of appropriate signs or installation of parking meters; provided, however, that an airport official, at such times as are necessary for the safety or security of the airport, may require that the owner or operator of a vehicle immediately move same to a location designated by the airport official.

(b) Any vehicle which is disabled or which is parked in violation of this section or which represents an operational hazard at the airport may be removed or towed and impounded, all at the operator's or owner's expense and without liability for any damage to the vehicle which may ensue from such removal or towing. Such expense shall be a lien against the vehicle and payment in full therefore shall be a prerequisite to the reclaiming of the vehicle by the operator or owner.

(c) The method of disposition of abandoned or junked motor vehicles or other vehicles shall be as set forth in article 4477-9a, Revised Civil Statutes of Texas (Texas Litter Abatement Act).

(d) Unless prior arrangements have been made with the airport manager, motor vehicles properly parked but which remain at the airports in excess of thirty (30) days may be removed and disposed of by the airport manager as provided in article 4477-9a, Revised Civil Statutes of Texas. There shall be installed at each entrance to public parking lots on the airports a suitable permanent and legible sign discernible from a distance of forty (40) feet, which shall read substantially as follows:

NOTICE: IF VEHICLE IS TO BE PARKED
IN EXCESS OF THIRTY (30) DAYS,
CALL 624-1127

(e) For vehicles rendered inoperable due to collision or other causes:

(1) The owner or person in charge thereof shall have an opportunity to contact a wrecker or tow service and have the vehicle removed from the airport.

(2) If a motor vehicle rendered inoperable is not removed by the owner or person in charge within forty-eight (48) hours, it shall be impounded and disposed of at the direction of the airport manager and in accordance with article 4477-9a, Revised Civil Statutes of Texas.

(3) Nothing in this section shall be construed to prevent the immediate removal of a damaged or inoperable motor vehicle from a traveled road or right-of-way onto a shoulder or other safe place in order to maintain traffic flow and safety.

(f) For motor vehicles without an operator due to arrest or detention of the owner or person in charge thereof:

(1) Where a motor vehicle is without an operator due to the arrest or detention of the owner or person in charge thereof, the vehicle shall be taken to a city vehicle impoundment area.

(2) If the arrested or detained person is confined but makes provision for another person to remove the vehicle within twenty-four (24) hours, no charges or fees shall accrue against the vehicle unless it has been towed to the pound, in which case it shall be subject to the prevailing customary charges for towing, impoundment and storage.

(3) The procedures relating to notification and auction set forth in article 4477-9a, Revised Civil Statutes of Texas, shall apply.

(4) Nothing in this section shall authorize the release of a motor vehicle which itself is to be used as evidence in a criminal proceeding or prosecution, which contains or contained any item of evidence to be introduced in a criminal proceeding or prosecution, or which is subject to forfeiture by federal, state or local law enforcement officials.

(Code 1964, 4-30; Ord. No. 8840, 1, 6-7-83)

Sec. 3-99. Loading Zones - Passengers.

The Director may establish zones for loading or unloading passengers from vehicles at the airport. Such zones shall be designated with appropriate control devices, signs, signals, markings or insignia, and no person shall park any vehicle in any such passenger loading zone nor shall any person stop or stand any vehicle in a passenger loading zone except to load or unload passengers, and then only for the established time limit posted in such zone.
(Code 1964, 4-31; Ord. No. 8840, 1, 6-7-83)

Sec. 3-100. Same - Materials.

The Director may establish loading zones for the loading and unloading of material at the airport. Such zones shall be designated with appropriate control devices, signs, signals, markings or insignia, and no person shall stop, stand or park any vehicle in a loading zone other than for the expeditious unloading and delivery, pickup and loading of material. In no case shall the stop for loading and unloading of materials exceed the established time limit posted in such loading zone.
(Code 1964, 4-32; Ord. No. 8840, 1, 6-7-83)

Sec. 3-101. Impeding Flow of Traffic.

No person shall park, stop or stand a vehicle in any airport roadway, driveway, ramp, taxiway, parking area, passenger loading zone, loading zone or in front or near any entrance or exit to any building at the airport so as to block, obstruct or impede the free passage of any vehicles, pedestrians or aircraft.
(Code 1964, 4-33; Ord. No. 8840, 1, 6-7-83)

Sec. 3-102. Right-of-Way for Taxiing Aircraft.

Taxiing aircraft shall have the right-of-way in preference over vehicles or pedestrians. No vehicle may drive on or across any portion of a runway or taxiway without being in radio contact with the control tower or having made prior arrangements with control tower to receive a light signal or similar permission.
(Code 1964, 4-34; Ord. No. 8840, 1, 6-7-83)

Sec. 3-103. Condition of Vehicles.

(a) It shall be unlawful for any person to operate a vehicle on the airport unless such vehicle is in compliance with all licensing and registration requirements of state and federal law applicable to the type of vehicle.

(b) It shall be unlawful for any person to operate on the airport any vehicle in which any of the following are not operable:

Headlights
Tail lights
Tires
Mirrors
Horn
Any other device which bears on safe operation of the vehicle.

(c) No vehicle maintenance shall be performed in any public area, either aeronautical or non-aeronautical use, without prior consent of the Director.

Sec. 3-104. Vehicle Communications.

(a) It shall be unlawful for any person to operate a vehicle on the movement area of the airport unless the vehicle is equipped with a two-way radio capable of communicating with the ATC tower.

(b) Unless prior written permission has been granted by the Director, no person shall operate a vehicle on the movement area of the airport unless the vehicle is in contact with the ATC tower, by way of two-way radio, or is under escort by a vehicle which is in such contact.

Sec. 3-105. Access to Airport Property.

Notwithstanding anything in this division, the Director or his designee may restrict the access of any vehicle or person to any part of the airport, both public and leased, to ensure the safety or security of the airport.

Sec. 3-106-115. Reserved.

DIVISION 3. REGULATION OF AIRCRAFT

Sec. 3-116. Parking; Fees.

(a) Parked aircraft. Aircraft shall be parked only in assigned, leased, or otherwise properly designated and authorized areas. Parked and unattended aircraft shall be chocked or tied down if remaining overnight. No aircraft shall be parked in restricted areas without the permission of an airport official.

(b) The Director shall establish and maintain a schedule of fees to be charged for the parking of aircraft on the public-use transient apron and on other designated public access parking areas. It shall be unlawful to park an aircraft on any such public parking area between the hours of 12:00 midnight and 6:00 a.m. unless the required overnight parking fees have been paid. Failure to pay the required parking fee may subject the owner or operator of the aircraft to criminal sanctions or may result in the impoundment of the aircraft as hereinafter provided. If any aircraft is found parked in violation of this section, and the identity of the operator cannot be determined, the owner, or person in whose name such aircraft is registered, shall be held prima facie responsible for such violation.

Sec. 3-117. Illegally Parked Aircraft; Remedies.

Aircraft which are parked, stored or abandoned contrary to the provisions of Section 3-116, may be impounded. Redemption of aircraft which have been impounded will necessitate the owner or operator paying all fees accrued against such aircraft to include towing and storage fees incident to impoundment. The city may remove such aircraft from an illegal parking place by engaging private towing services or a fixed base operator. Any charges resulting from such activities shall be charged against the registered owner of the aircraft.
(Code 1964, 4-36; Ord. No. 8840, 1, 6-7-83)

Sec. 3-118. Accidents; Damaged Property; Repairs to Aircraft.

(a) All accidents, incidents or damage of any nature involving aircraft or vehicles shall be reported to the Director as soon as possible after the occurrence of same.

(b) Any damage to airport installations, equipment or property as a direct or indirect consequence of flight operations shall be, prima facie, the responsibility of the owner of the aircraft casually related to such damage. Repair of such damage shall be ordered and accomplished by the airport manager by sending an invoice covering the cost thereof, payable upon receipt, to the responsible owner.

(c) The owner of a damaged or disabled aircraft shall promptly remove it from any portion of the Movement Area, unless otherwise directed by the FAA, NTSB or an airport official. Failure of the owner or operator to so remove an aircraft may result in removal by the Aviation Department, and all expenses of this removal will be the responsibility of the owner.

(d) Damaged or disabled aircraft parked or stored in an authorized, assigned, leased or otherwise properly designated area in excess of thirty (30) days without undertaking repair or restoration thereof to operable condition will, in the absence of special arrangements with and permission of the airport manager, be deemed abandoned aircraft and subject to impoundment as illegally parked aircraft under Section 3-117.

(e) Repairs to aircraft damaged while in motion or parked on the airport are the sole responsibility of the owner. The owner or operator accepts the premises as is and receives no assurances from the City, other than those required by the Federal Aviation Administration and leases that may be in effect on the Airport.

(f) No repairs to or maintenance of aircraft shall be performed on any public area of an airport, unless authorized by the Director.

Sec. 3-119. Lien on Impounded Aircraft.

The City shall have a lien on impounded aircraft for the storage and care thereof. Notification to the owner of impounded aircraft shall be conclusively presumed given if, after accrual of sixty (60) days of unpaid storage charges or fees, the registered owner of such aircraft is advised by registered or certified letter, return receipt requested, of the fact of impoundment, delinquency in payment of charges, the City's lien for the payment of same and contemplated public sale of such aircraft following the expiration of thirty (30) days from the mailing of such notice unless payment or suitable arrangements for payment have been made.
(Code 1964, 4-38; Ord. No. 8840, 1, 6-7-83)

Sec. 3-120. City Free from Liability.

No liability shall accrue to the city, its officers, agents or employees for the towing, removal, impoundment, storage or disposition of aircraft or their contents under the provisions of this article.
(Code 1964, 4-39; Ord. No. 8840, 1, 6-7-83)

Sec. 3-121. Aircraft Operations - Generally.

(a) All aircraft operations shall be conducted in accordance with current Federal Aviation Administration Rules and Regulations. All persons operating an aircraft shall have all licenses, registrations, certificates and other required documentation available on their person, or in the aircraft, in accordance with same.

(b) Traffic patterns. All aircraft shall follow the instructions of ATC concerning in-flight traffic patterns for any and all runways at the airport. During periods that ATC services are not provided, aircraft shall adhere to the traffic patterns established and designated by the indicators located at the segmented circle, or as specified in Federal Aviation Regulation PART 91.

(c) Authority to prohibit operations. Except for emergency landings, the Director may prohibit aircraft landings and takeoffs at any time and under any circumstances which he/she deems likely to endanger persons or property.

Sec. 3-122. Aircraft Movement.

(a) Takeoffs and landings. No aircraft shall land at or take off from the airport without permission from ATC, during hours that ATC services are provided. During hours that ATC services are not provided, landings and takeoffs will be at pilots' discretion and in accordance with all Federal Aviation Regulations fe operating aircraft on an uncontrolled airport.

(b) Taxiing. No person shall taxi an aircraft on any portion of the movement area without permission of ATC. during hours that ATC services are provided. During hours that ATC services are not provided, taxiing will be at pilots' discretion and in accordance with all Federal Aviaton Regulations for operating aircraft on an uncontrolled airport. No aircraft shall be taxied into or out of a hangar under its own power.

(c) Aircraft lights. All aircraft which are being taxied, towed or otherwise moved at the airport shall have running lights on during the hours of darkness and during periods of reduced visibility.

Sec. 3-123. Aircraft Noise.

(a) Noise abatement. All persons operating an aircraft will at all times adhere to any and all Noise Abatement Procedures in effect at the airports, except in the case of an emergency.

(b) Engine run-ups. No person shall run up any aircraft engine at the airports except in a place designated for such purposes by the Director. and no maintenance run-ups shall be conducted between the hours of 12:00 midnight and 6:00 a.m.

At no time shall any person run up any aircraft engine in such a position that hangars. shops. other buildings, parked vehicles or persons are in the path of propeller or jet blast. No aircraft engine may be run up within 100 feet of any building on the airport.

Sec. 3-124. Miscellaneous Operational Regulations.

(a) Radar. Surveillance radar equipment in aircraft shall not be operated within three-hundred (300) feet of any fuel servicing or other operation in which flammable liquids or vapors may be present or created.

(b) Passenger loading. All loading and unloading of passengers on air carrier or chartered air carrier aircraft operating under the rules of FAR PART 121 shall be performed at the designated public terminal building only, unless otherwise approved by the Director not less than twenty-four (24) hours in advance.

Sec. 3-125-135. Reserved.

DIVISION 4. PERSONAL CONDUCT

Sec. 3-136. Generally.

The provisions of this article shall not be construed as limitations upon the civil or criminal laws of this state which are in full force and effect within the airports.
(Code 1964, 4-41; Ord. No. 8840, 1, 6-7-83)

Sec. 3-137. Restricted Areas.

(a) The Director shall have authority to designate restricted areas at the airport.

(b) It shall be unlawful, without specific authorization from the Director, to enter or travel, in a vehicle or on foot, upon any area designated as a restricted area.

(c) It shall be unlawful for any person who is upon any restricted area of the airport to fail or refuse proper identification (driver's license, social security card or some similar authoritative indicia of identity) upon the request of an airport official or employee or of a peace officer of the city or the county or other state or federal law enforcement officer.
(Code 1964, 4-42; Ord. No. 8840, 1, 6-7-83)

Sec. 3-138. Animals.

It shall be unlawful to bring any animal on the airport or to permit or cause the same to be brought thereon without a specific permit. license or lease therefore from the city; provided, however, that this section shall not apply to a guide dog accompanying a blind person, to a hearing ear dog accompanying a deaf person. to animals properly restrained or confined for shipment, or to animals confined in private motor vehicles.
(Code 1964, 4-43; Ord. No. 8840, 1, 6-7-83)

Sec. 3-139. Soliciting.

(a) It shall be unlawful to solicit funds or anything of value for any purpose at the airport without a permit or other specific written authority from the city.

(b) It shall be unlawful to sell or offer for sale any article or merchandise on the airport without a permit or concession from the city. This is not intended to prohibit business enterprises leasing premises on the airports from inviting salesman, mobile lunch trucks and similar activities to their leased premises, for the convenience of customers and employees of such business enterprises only.

(c) It shall be unlawful to solicit any business or trade, including transportation of persons or baggage for hire, on the airports without a permit or concession from the City as provided in chapter 34 of this Code.
(Code 1964, 4-44; Ord. No. 8840, 1, 6-7-83)

Sec. 3-140. Advertisements.

It shall be unlawful to post, distribute or display signs, advertisements, handbills, circulars or printed or written matter of a commercial nature at the airports without specific authorization from the Director.
(Code 1964, 4-45; Ord. No. 8840, 1, 6-7-83)

Sec. 3-141. Throwing Objects.

Without having first obtained authorization from the Director, it shall be unlawful to throw any object from:

(1) Any terminal building, hangar, or from any other building or structure on the airport: or

(2) From any vehicle or aircraft on the airport.
(Code 1964, 4-47; Ord. No. 8840, 1, 6-7-83)

Sec. 3-142. Litter.

It shall be unlawful to place, discharge or deposit in any manner any litter, offal, garbage, trash, debris, junk or any refuse on the airport, except at such places and under such conditions as the Director may from time to time prescribe.
(Code 1964, 4-48; Ord. No. 8840, 1, 6-7-83)

Sec. 3-143. Noxious or Corrosive Substances.

(a) It shall be unlawful to bring any noxious or corrosive substance upon any area of the airport without the prior approval of the Director and the Federal Aviation Administration.

(b) It shall be a defense to a prosecution under this section that such activities were necessitated by a prevailing emergency.
(Code 1964, 4-50; Ord. No. 8840, 1, 6-7-83)

Sec. 3-144. Fire-Fighting Equipment.

It shall be unlawful to move any fire-fighting or extinguishing equipment on the airport except by authorized personnel, or where a true emergency exists.
(Code 1964, 4-51; Ord. No. 8840, 1, 6-7-83)

Sec. 3-145. Kites, etc.

It shall be unlawful to operate or release any kite, balloon, model aircraft, model rocket or parachute upon or above the airport without written permission from the Director.
(Code 1964, 4-52; Ord. No. 8840, 1, 6-7-83)

Sec. 3-146. Demonstrations.

(a) It shall be unlawful for organizations, groups or individuals or individuals to conduct or participate in parades, marches, patrols or demonstrations on the airport unless a permit has been granted by the city council in response to a written request to engage in such activity.

(b) It shall be unlawful, while engaging in any such activity otherwise permitted as described above, to prevent or interfere with access to or egress from any airport facility or premises or to hamper or curtail the conduct of business at the airport and no person while so engaged shall in any manner, by words or physical force, assail, coerce, threaten or intimidate any member of the public.
(Code 1964, 4-53; Ord. No. 8840, 1, 6-7-83)

Sec. 3-147. Camping, Games, Hunting, Picnicking.

It shall be unlawful to use airport premises for the purpose of camping, athletic games or contests hunting or picnicking unless a permit therefore is granted by the Director.
(Code 1964, 4-55; Ord. No. 8840, 1, 6-7-83)

Sec. 3-148. Photography; Movie Productions; Polls.

(a) It shall be unlawful to utilize photographic or moving picture equipment for the purpose of picture-taking or moving picture photography in or near any area designated as a restricted area within the airport unless such person has obtained a permit from the Director.

(b) It shall be unlawful to use the airport premises for the purpose of any commercial or private photographic, theatrical or moving picture production without a permit from the Director.

(c) It shall be unlawful to conduct polls, opinion surveys, name listings, or to solicit any other commercial data or information on airport premises without a permit from the Director.
(Code 1964, 4-56; Ord. No. 8840, 1, 6-7-83)

Sec. 3-149. Tampering with Private or Public Property.

It shall be unlawful to tamper with or obstruct the operation of private or public property at an airport in any manner which may result in damage to persons or property.

Sec. 3-150. Smoking Prohibited.

It shall be unlawful for any person to possess a burning tobacco product within the AOA.

Sec. 3-151-154. Reserved.

DIVISION 5. AIRCRAFT FUELING AND FIRE SAFETY

Sec. 3-155. Uniform Fire Code Adopted.

The provisions of Article 24 of the Uniform Fire Code of 1982, "Airports/Heliports and Helistops", and Uniform Fire Code Standard No. 24-1, "Aircraft Fueling", are hereby adopted as a part of this Code, by reference. The Uniform Fire Code and Uniform Fire Code Standards are on file in the office of the City Secretary.

Sec. 3-156. Fueling Servicing Operations; Location.

All fuel servicing operations shall be performed outdoors at locations designated by the Director.

Sec. 3-157. Same - Aircraft Engines.

The engine of an aircraft may not be operated while the aircraft is being fueled, except as authorized by officials of the Fort Worth Fire Department.

Sec. 3-158. Same - Bonding and Grounding.

During fuel servicing, all aircraft and fuel servicing vehicles, hydrants, pits, cabinets and nozzles shall be electrically bonded to each other and grounded before fuel flow starts.

Sec. 3-159. Same - Fire Hazards.

(a) Open flames. No open flames or lighted open flame devices shall be permitted within fifty (50) feet of any fuel servicing operation or fueling equipment.

(b) Lightning precautions. All fuel servicing operations shall be suspended when lightning discharges occur in the immediate vicinity of the airport.

(c) Fuel spills. Spills or leaks of fuel which flow over an area in excess of ten (10) feet in any dimension shall be reported immediately to the airport ARFF station.

(d) Electrical switches. No electrical switches of any type shall be operated within fifty (50) feet of any fuel servicing operation or fuel servicing vehicle.

Sec. 3-160. Same - Air Carriers.

During fuel servicing operations of any air carrier or chartered air carrier aircraft, operating under FAR PART 121, a qualified flight attendant must be present in the cabin if passengers are present in the cabin.

Sec. 3-161. Fuel Servicing Vehicles; Storage and Parking.

(a) No fuel servicing vehicle shall be parked or stored inside of any building unless approved by the Fort Worth Fire Department.

(b) No fuel servicing vehicle shall be parked within ten (10) feet of another vehicle, and shall be parked in a manner which will allow for rapid dispersal of vehicles in the event of any emergency.

(c) No fuel servicing vehicle shall be parked within five-hundred (500) feet of any hotel/motel complex nor within fifty (50) feet of any other building or structure on any airport.

Sec. 3-162. Same - Smoking.

(a) It shall be unlawful to possess a burning tobacco product within a fuel servicing vehicle.

(b) The cab of each fuel servicing vehicle shall be equipped with a sign bearing the words "NO SMOKING".

(c) Owners of fuel servicing vehicles which contain smoking equipment, such as ash trays and lighters, shall have such equipment removed or rendered inoperable.

Sec. 3-163. Same - Fire Extinguishers.

Each fuel servicing vehicle shall have two listed extinguishers, each having a rating of 20B, mounted one on each side of the vehicle.

Sec. 3-164-167. Reserved.

Sec. 3-168. Intent.

This division is designed to establish and define enforcement authority necessa to the maintenance and promotion of the peace, good government and welfare of the city's airfields; for the performance of the functions thereof; for the order and security of its inhabitants, users and visitors; and to protect the peace, lives, health and property of such inhabitants, users and vistors.

(Code 1964, 5-57; Ord. No. 8840, 1, 6-7-83)

Sec. 3-169. Airport Security.

(a) General. The primary responsibility for the design, establishment, promulgation and coordination of any special police, fire and health instructions and procedures effective at and upon city airfields shall rest with the Director, advised and assisted by the aviation advisory board, the chief of police, the fire marshal, the director of the department of transportation and public works and such other departments and agencies of the city as special problems circumstances may from time to time require.

(b) Power of the Director and assistants to require identification. The Director and other regularly appointed employees of the aviation department specifically designated by the Director shall have the right and power to request and require any person to give his true name and residence address to such director or capacity in matters connected with the aviation department, including the enforcement of this article (Fort Worth Airport Rules and Regulations). It shall be unlawful for any person to intentionally refuse to report or give a false report of his name or residence address to the director or designated employee who has requested the information when acting in an official capacity in a matter connected with aviati department including the enforcement of this article.
(Code 1964, 4-58; Ord. No. 8840, 1, 6-7-83)

Sec. 3-170. Enforcement Authority; Penalties.

Any peace officer of the city, the Director and other regularly appointed employees of the aviation department specifically designated by the Director shall have the right and power to enforce any and all regulations contained in this chapter. Such persons shall have the power to issue citations for any violation of this chapter.
(Ord. No. 10029, 2, 12-22-87)

Sec. 3-170-175. Reserved.

ALLIANCE AIRPORT

GROUND VEHICLE OPERATING REGULATIONS

The regulations that follows are based on the City of Fort Worth's Aviation Ordinance and special Alliance Airport requirements. Adherence to these regulations will result in a safe environment for anyone operating an aircraft or vehicle on the airport.

Application - These regulations apply to anyone operating a motor vehicle within the perimeter fence of the airport and includes all roads, ramps, taxiways and runways.

Speed Limit - The speed limit on the airport's public ramp is 10 mph. The speed limit on the perimeter road is 20 mph.

Public Ramp - Unless servicing an aircraft or responding to an emergency, all vehicles should stay on the ramp road. This road is identified by the red stripe located on the north, south and east side of the public ramp. All vehicles should remain between this line and the edge of the ramp.

Perimeter Road - The only vehicles authorized to routinely use the perimeter road are emergency (fire and police), FAA-AFS (technicians) and airport management. Excepting ARFF, these vehicles should have markings indicating their organization and a yellow beacon light affixed to the roof or dash board. Approval by the airport manager is required for use of the road by any organization not identified above.

Any vehicles using the perimeter road must stop at the DEA taxiway and Taxiway Hotel and give way to aircraft.

Movement Area - This area, defined as any taxiway or runway and controlled by the Tower, is restricted to emergency, airport management and FAA-AFS vehicles. Prior to entering these areas, these vehicle operators must obtain approval from the Tower controllers via ground or tower frequency.

ILS Critical Area - When the airport's beacon light is operating during inclement weather, it's an indication of the airport operating under instrument conditions. No vehicle shall pass through the ILS critical area (see attached airport layout) during these conditions without gaining approval from the tower via radio. This is especially important at the south end of the airport on the perimeter road which passes directly through the ILS critical area for R/W 16.

F.O.D. - Foreign Object Damage can cause severe damage to aircraft and even serious injury to pilots and passengers. Debris such as rocks, mud, bolts, screws, cans, paper or any object that can be ingested into engines or cause tire damage should be picked up and appropriately discarded.

Airport Visitors - Any person not an airport employee at Alliance who is visiting a tenant is the responsibility of that tenant. Once that visitor is allowed access through the gate, it is the responsibility of that tenant to ensure the visitor reaches the appropriate parking area for that tenant.

Smoking - Smoking is not allowed anywhere on the airport public ramp.

FORT WORTH

ALLIANCE AIRPORT

CONTRACTOR REQUIREMENTS

I. AIRPORT ACCESS

All vehicular construction traffic should access Airport property at the north gate located adjacent to the east side of the Airport apron and just north of The Perot Group administrative offices. All employees needing routine access should secure security identification top caps from Airport Operations as stated in the attached procedures.

II. VEHICULAR OPERATING PROCEDURES

The attached procedures shall be adhered to by contractor and sub-contractor employees at all times. Any violations of these procedures could result in the removal of said employee from Airport property.

III. CONTRACTOR PARKING

Designated parking at the apron north of the Airport entrance will be made available for all employee vehicles, construction inspectors, and equipment not essential to the project.

IV. AIRCRAFT MOVEMENT AREAS

Forty-eight (48) hours notice is mandatory for the closure of any portion of the Airport movement areas. The movement area is defined as any runway and taxiway primary or safety area on the Airport. Contact Airport Operations personnel at 491-4202 for coordination of this activity.

V. UTILITY INTERRUPTION

Any interruption of water or electrical service to existing facilities should be coordinated through Airport Operations personnel. Forty-eight (48) hours notification is required for any planned interruption of utilities.

VI. SAFETY

Due to the location of the proposed construction, it is essential that the area be physically separated from the aircraft apron. Lighted barricades shall

be utilized as barriers and markers to completely separate the construction area from any potential aircraft traffic. It is the responsibility of the contractor to check and maintain the lighting on a daily basis.

VII. FOREIGN OBJECT DAMAGE

Foreign Object Damage caused by debris from construction activities at airports has the potential of causing sever damage to aircraft tires and engines. As a precaution, the contractor is required to clean and maintain the entire construction area on a routine basis. This shall include sweeping any portion of the Airport paved surfaces containing any spoils from construction.

VIII. EMPLOYEE FACILITIES

Restrooms and break area for employees shall be provided for by the contractor. Portable restrooms shall be located at the direction of the Airport Manager or Operations staff.

IX. NOTICE OF PROPOSED CONSTRUCTION

The FAA form concerning the notice of proposed construction on airports shall be completed and submitted to the Southwest Regional Office prior to start of construction.

X. EXCEPTIONS

Exceptions to the policies and procedures here-in may be approved only by the Alliance Airport Manager or Operations staff on duty.

VEHICULAR OPERATING PROCEDURES

FORT WORTH ALLIANCE AIRPORT

MAY 1, 1990

- The Fort Worth Alliance Airport is open 24 hours daily. However, the FAA Control Tower's operating hours are from 0700 - 2200 local time. No vehicles are authorized on any taxiway or runway outside of these hours unless prior approval has been obtained by either the City of Fort Worth's Aviation Department or Pinnacle Air Services.

- Moving aircraft always have the right-of-way. Give way to aircraft while on aprons or taxiways. It is much easier for a vehicle to maneuver to avoid an aircraft than for an aircraft to maneuver to avoid a vehicle, please keep this in mind when using any portion of the airfield that may have aircraft operating in it.

- The speed limits on the airport runway, taxiway system and aprons shall not exceed 10 m.p.h. Speed limits on airport roadways shall not exceed 20 m.p.h. Please adhere to these speed limits at all times. (Code 1964, 4-29; Ord. No. 8840 1, 6-7-83).

- Only vehicles displaying an airport vehicle top cap will be authorized on any portion of the airport secured areas. All other vehicles desiring access must be escorted by airport operations personnel. (Code 1964, 4-57; Ord. No. 8840, 6-7-83).

- The security guard and/or airport operations personnel employed by the City of Fort Worth, will check all persons desiring access to the aircraft parking apron. You will be asked to provide your name, address, company and/or organization, and the purpose of your visit. Escort and/or directions will be provided as necessary to prevent incursions onto the aircraft movement areas. (Code 1964, 4-58; Ord. No. 8840, 6-7-83).

- To gain access onto any portion of the aircraft movement areas, you must first contact either airport operations personnel or Pinnacle Air Services to be trained in the operating procedures for operations on the Fort Worth Alliance Airport. For repetitive operations onto the aircraft movement areas, a vehicle top cap must be issued, appropriate training received and advance notification given to airport operations personnel. Proper radio communication with the FAA tower is

mandatory for all vehicles operating in the movement area.

- While operating on taxiways and runways, exercise extreme caution to avoid edge lights and/or signage. In the event damage to the lighting or signage system results, immediately notify operations personnel at the City of Fort Worth's Administrative Building adjacent to the apron.

- Do not park or stop your vehicle on any airport roadway, apron, taxiway, parking area, passenger loading zone, loading zone or in front or near any entrance or exit to any building so as to block, obstruct or impede the free passage of any vehicles, pedestrian or aircraft. (Code 1964, 4-33; Ord. No. 8840, 1, 6-7-83).

- Due to the lack of an airport perimeter road, operating a vehicle on the taxiway system is approved for authorized vehicles as shown on the attached layout. Vehicle operations on the apron north of taxiway "A" to taxiway "H" crossing over to taxiway "B" and the use of taxiway "B" south to the end of "B" at the hold line next to runway 34 is authorized. This procedure will be revised in the near future when the remainder of runway 16/34 is open and the perimeter road is completed.

- Any vehicle that enters the airfield should remain on a paved surface at all times unless it is required to move off the paved surface for inspection reasons. It is important not to track mud, gravel or debris back onto the paved surfaces that may cause foreign object damage (FOD) to aircraft engines.

- If you make a mistake and end up in an area where radio communication is necessary, move to one side of the paved surface (avoiding aircraft), position your vehicle facing the control tower and blink your headlights. Operation personnel will be notified by the tower and will be dispatched to escort you off of the movement area.

- Any unauthorized vehicle operating onto the aircraft movement areas, or a violation of other procedures as set forth herein, will be issued a citation and escorted off of the airport by security/operations personnel. (Ord. No. 10029, 2, 12-22-87).

TDW3:"OP

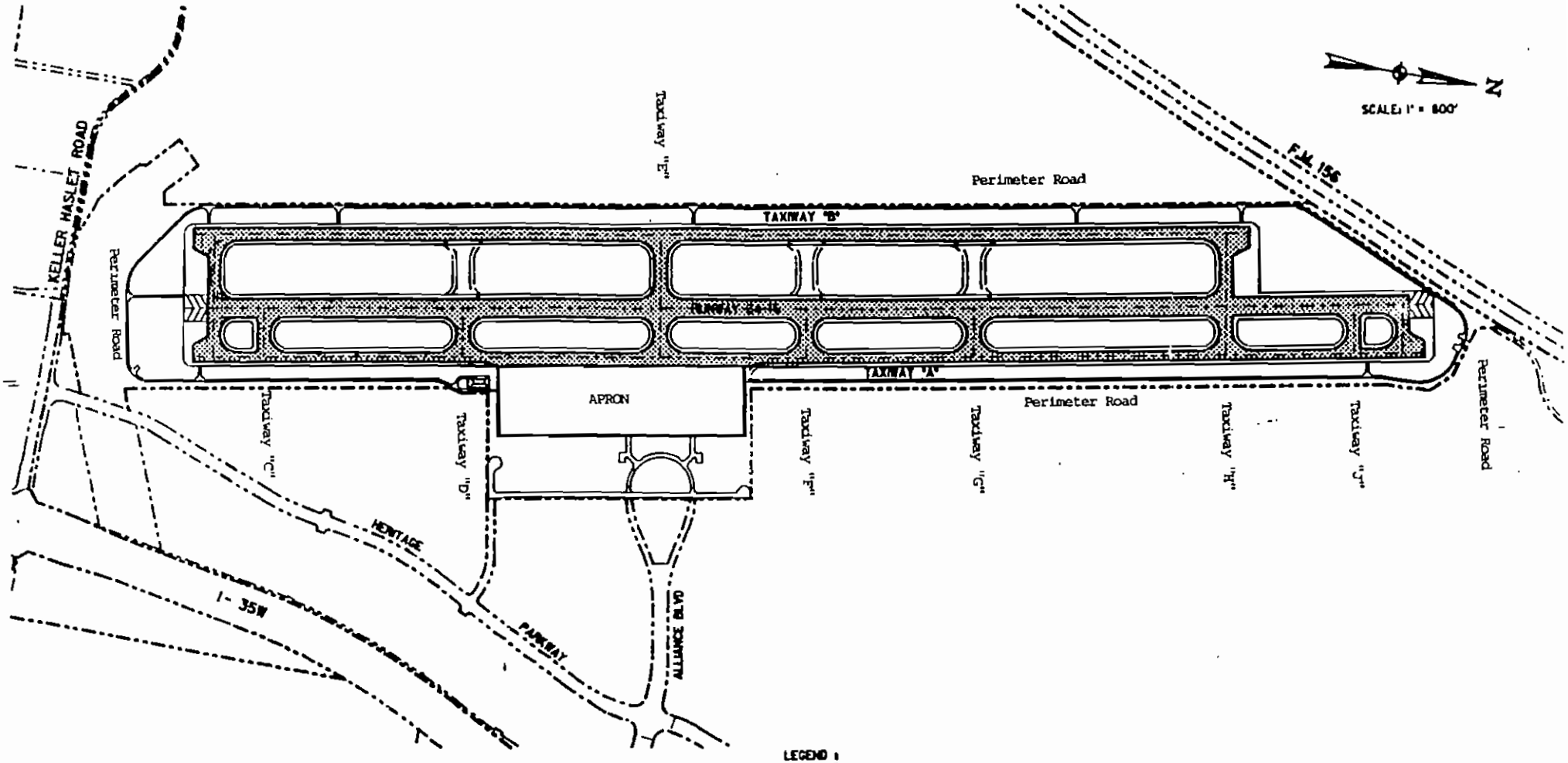

EXHIBIT 3-1

AIR CARRIER AIRCRAFT OPERATIONS MOVEMENT AREA

MEMORANDUM

TO: All Alliance Airport Users

FROM: Thomas J. Harris
Alliance Airport Director of Operations

DATE: May 8, 1990

RE: Security & Safety

Effective immediately 24-hour security will be provided at the entrance of Alliance Airport by an outside security firm. They will be stopping each vehicle entering the airport secured area and requesting information such as name, organization, destination and purpose of visit. This requirement has been necessitated by a number of safety violations that have taken place over the preceding months and should eliminate any further airfield incursions from taking place.

In order to better accommodate users in the future from being stopped each time they enter the airport, an airport permit process will be established in the coming weeks. The focus of this process will be to issue security identification top caps for each vehicle belonging to those individuals who need access to any part of the airfield or secured area. The secured area is defined as any paved surfaces falling within the boundaries of the airport perimeter fence which includes all of the apron area, taxiway, runway and perimeter road.

In order to obtain a security top cap, it will be necessary for each individual requiring access to the airport to participate in a short training session to be conducted by City of Fort Worth Operations Personnel. This session will cover all of the rules and regulations that are in place and that are attached to this document for Alliance Airport. After attending this class, permits will be issued along with a top cap that will enable you to access any of the secured area which includes any apron or perimeter road surface.

Once you gain access to any portion of the secured area inside the perimeter fence, your identification security top cap must be displayed on the top of your vehicle. Any vehicle found in the secured area without a top cap or qualified escort will be challenged by Operations Personnel and escorted off the field.

In order to enter any of the movement areas which is defined as the taxiway or runway surface, you must have radio contact with the FAA Tower, and be briefed by Operations Personnel regarding the proper procedures for radio communication.

Our intention is to have these new procedures in place by June 1, 1990. In order to receive necessary training for obtaining permits and top caps, please contact the City of Fort Worth Administrative Office at Alliance Airport at 491-4202 to schedule an appointment. Although all of the airport users have been conditioned to operate in a certain manner over the timeframe in which the airport has been opened, it is absolutely necessary to institute formalized procedures to safeguard both personnel and equipment at this airport as soon as possible. Although there may be some changes to these procedures in the future, these will enhance our operation to the degree necessary ensuring safety and security for all.

Thank you for your assistance. I look forward to working closely with all of you and making Alliance Airport a great success.

TJH/jkb
TDW3:MEMO58

VEHICULAR OPERATING PROCEDURES

FORT WORTH ALLIANCE AIRPORT

MAY 1, 1990

- The Fort Worth Alliance Airport is open 24 hours daily. However, the FAA Control Tower's operating hours are from 0700 - 2200 local time. No vehicles are authorized on any taxiway or runway outside of these hours unless prior approval has been obtained by either the City of Fort Worth's Aviation Department or Pinnacle Air Services.

- Moving aircraft always have the right-of-way. Give way to aircraft while on aprons or taxiways. It is much easier for a vehicle to maneuver to avoid an aircraft than for an aircraft to maneuver to avoid a vehicle, please keep this in mind when using any portion of the airfield that may have aircraft operating in it.

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- Only vehicles displaying an airport vehicle top cap will be authorized on any portion of the airport secured areas. All other vehicles desiring access must be escorted by airport operations personnel. (Code 1964, 4-57; Ord. No. 8840, 6-7-83).

- The security guard and/or airport operations personnel employed by the City of Fort Worth, will check all persons desiring access to the aircraft parking apron. You will be asked to provide your name, address, company and/or organization, and the purpose of your visit. Escort and/or directions will be provided as necessary to prevent incursions onto the aircraft movement areas. (Code 1964, 4-58; Ord. No. 8840, 6-7-83).

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mandatory for all vehicles operating in the movement area.

- While operating on taxiways and runways, exercise extreme caution to avoid edge lights and/or signage. In the event damage to the lighting or signage system results, immediately notify operations personnel at the City of Fort Worth's Administrative Building adjacent to the apron.

- Do not park or stop your vehicle on any airport roadway, apron, taxiway, parking area, passenger loading zone, loading zone or in front or near any entrance or exit to any building so as to block, obstruct or impede the free passage of any vehicles, pedestrian or aircraft. (Code 1964, 4-33; Ord. No. 8840, 1, 6-7-83).

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- Any unauthorized vehicle operating onto the aircraft movement areas, or a violation of other procedures as set forth herein, will be issued a citation and escorted off of the airport by security/operations personnel. (Ord. No. 10029, 2, 12-22-87).

TDW3:VOP

VEHICLE PERMIT APPLICATION
REPETITIVE ACCESS TO AIRPORT SECURED AREAS
FORT WORTH ALLIANCE AIRPORT

DATE:_____

NAME:_____

ADDRESS:_____

_____

TELEPHONE:_____

INSURANCE COMPANY:_____ POLICY #_____

_____

_____

VEHICLE(S):

Make:_____
Model:_____
Year:_____

Top Cap No(s).____

Authorized Operator(s):

Name:_____

_____

_____

Make:_____
Model:_____
Year:_____

Deposit:_____

Date of Issuance:_____

Training Verification
Operations Personnel
City of Fort Worth

_____
(Print)

_____
(Signature)

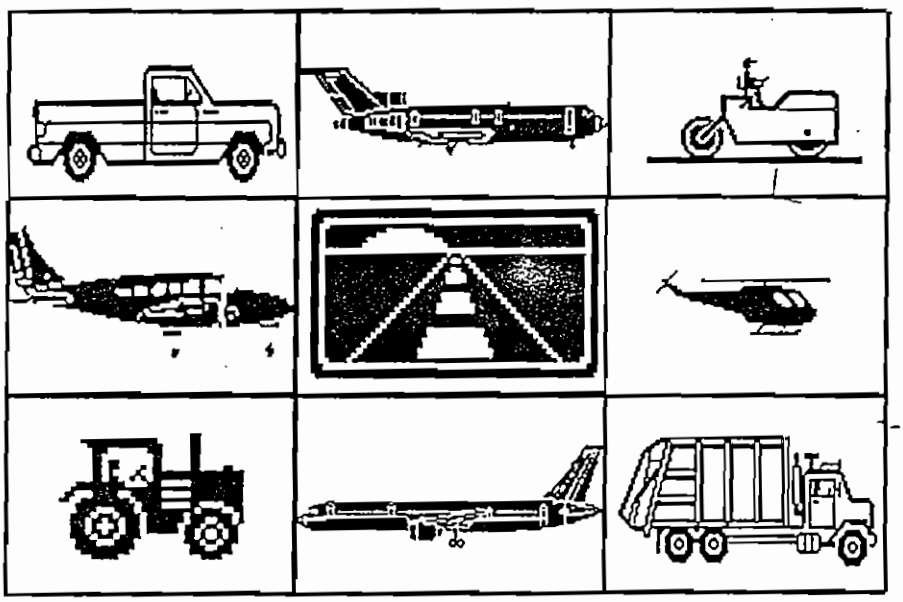
(a) Authorized vehicle operator(s) must receive annual training by airport operations personnel. Only those operators completing training are authorized to operate the vehicle(s) inside the airport secured area.
(b) All vehicles must have two (2) way radio(s) capable of communicating with the FAA Control Tower. Radio(s) must be operable at all times when operating on the aircraft movement areas.
(c) Top caps must be displayed while vehicle is operating inside secured area.
(d) Permit is valid for a period of one (1) year.
(e) Proof of insurance must be provided prior to issuance of the permit and top cap. $_____ is the minimum required coverage.
(f) A $5.00 deposit will be required for the issuance of each top cap.

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

OFFICE OF AIRPORT SAFETY AND STANDARDS
AIRPORT SAFETY & OPERATIONS DIVISION
WASHINGTON, DC 20591

DOT/FAA/AS-90-3
August, 1990

A GUIDE TO GROUND VEHICLE OPERATIONS ON THE AIRPORT



FOREWORD

Every year there are many accidents and incidents involving aircraft and vehicles on airports that result in property damage, personal injury, and sometimes, death. Most of these accidents and incidents could have easily been prevented.

Some airport operators, airlines, and fixed base operators have extensive formal training programs for employees whose duties involve operating a ground vehicle on the air operations area. However, many rely solely on informal on-the-job training.

In an effort to improve the safety of ground vehicle operations on airports, the FAA developed this guide to ground vehicle operations. The guide provides airport orientation and operational information and would be used as a resource document by the airport operators and other members of the aviation community responsible for training ground vehicle operators. In addition to orientation and operational information, the guide touches on some other areas that a ground vehicle operator may encounter such as Foreign Object Damage, security, and reporting emergencies.

By its very nature, it was necessary for the guide to be generic. If the guide will be used as a training document at a specific airport, there is a need to supplement the guide with information pertinent to the particular airport. Several references are made to this fact throughout the text. There also may be information in the guide not applicable to a particular airport that should be deleted. Some of the necessary supplemental information, along with possible deletions, clarifications, and additions are listed below:

a. Supplemental Information.

(1) Copy of airport's rules and regulations concerning ground vehicle operations.

(2) Airport diagram showing runways, taxiways, aprons, movement areas, vehicle roadways, location of the airport fire station, critical areas for electronic navigational aids, and areas where vehicles are permitted to operate.

(3) Copy of airport traffic patterns.

(4) Airport security procedures that the employee should be aware of and employee's responsibility in this area.

(5) Procedures, person to contact, and telephone number for reporting:
(a) emergencies.
(b) ground vehicle accidents.

b. Deletions, clarifications, and additions. There may be some things covered in the guide that are not applicable to a particular airport, e.g., control towers, ILS's, airport rescue and fire fighting equipment, etc. To avoid confusion, it may be advisable to delete this material. There may also be some material in the guide, or perhaps areas not addressed, that merit explanation or clarification for a particular airport. The guide is not copyrighted, so changes can be made that will enhance its usability at a particular airport.

Any comments or suggestions on improving the driver's guide should be sent to:

Federal Aviation Administration
Office of Airport Safety and Standards
Safety and Compliance Division, AAS-300
800 Independence Avenue, SW
Washington, D.C. 20591

ACKNOWLEDGMENT

The guide to ground vehicle operations on an airport was written by Betty Stansbury, AAE of BMS Enterprises, under a contract with the FAA. The guide produced under that contract was modified by the FAA to accommodate comments received during coordination with the aviation community. Throughout this effort, the Office of Airport Safety and Standards received support and assistance from the FAA's Office of Safety Oversight.

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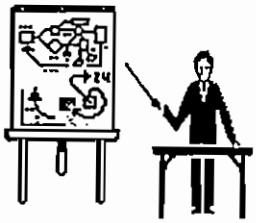
A MESSAGE TO VEHICLE OPERATORS

This guide was prepared to teach you about the unique problems and safety requirements of working and driving a vehicle on an airport. If you have never worked on an airport before, it can be a confusing experience for the first few weeks. This guide explains some of the things you will see, how things work, and some of the rules you will have to follow when working on an airport. If you already work on an airport, this guide may teach you some things you didn't know, or remind you of some things you may have forgotten.

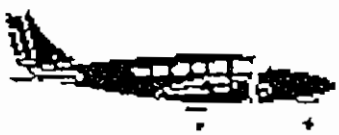


SAFETY IS THE FIRST PRIORITY!

Airports are different than any other place you have ever worked. The potential for injury, not only to yourself, but to pilots and their passengers, is great. Each of us must make safety our first priority. One careless mistake could result in the death or injury of yourself or others. It's up to each one of us to make sure we do everything we can to make the airport as safe as possible.

One way to do that is to know how the airport operates, what the signs and markings mean, the types of problems and safety hazards that may occur, and any special rules that your airport may have. This guide talks about those things and your responsibilities as a vehicle or equipment operator.

We left some blank pages at the back of this guide for your airport manager to add an airport map and a copy of your airport's rules and regulations. If these pages are blank ask your employer to get a copy of them for you. The rules are for your safety as well as the safety of the pilots and their passengers. After you finish reading this guide, ask your employer to show you on the map where you will be working, and which areas you are not allowed to go into.

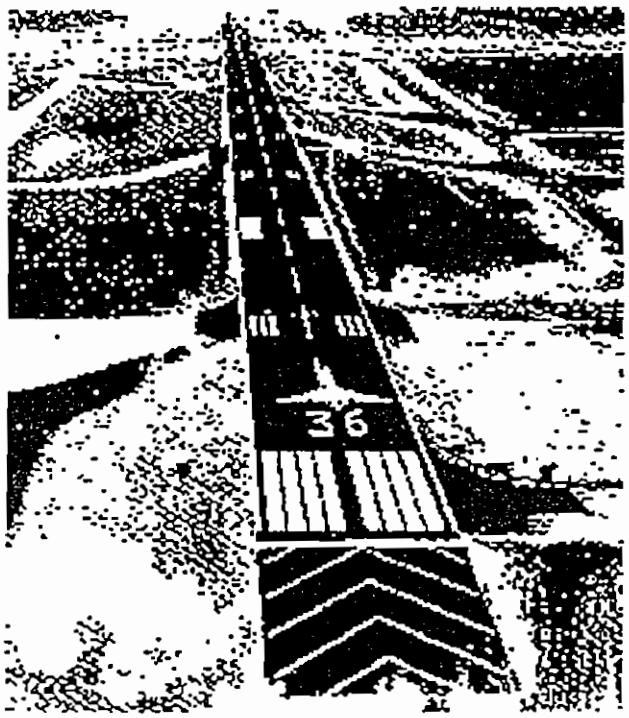


THE BASIC PARTS OF AN AIRPORT

If you've never worked on an airport before, the names and functions of everything your employer wants you to remember can be confusing. In addition to learning your new job, you need to know some important things about the airport itself.

RUNWAYS

A runway is the area where an aircraft lands or takes off. It can be grass, or packed dirt, or a hard surface such as asphalt or concrete. Runways have special markings on them to help a pilot in the air to tell that it is a runway (and not a road) and to help them when they are landing or taking off. Runway markings are white.



Most runways have numbers on the end. The number is the runway's compass direction. (For example, a runway numbered 36 would be pointing north or 360 degrees.) Some airports have more than one runway going in the same direction, so they add letters to the end of the number - R for right, C for center, and L for left. The other end of the runway is pointing in the opposite direction, so it gets a different number. The runway called 36 would be called 18 (for 180 degrees) if you were looking at it from the other end.

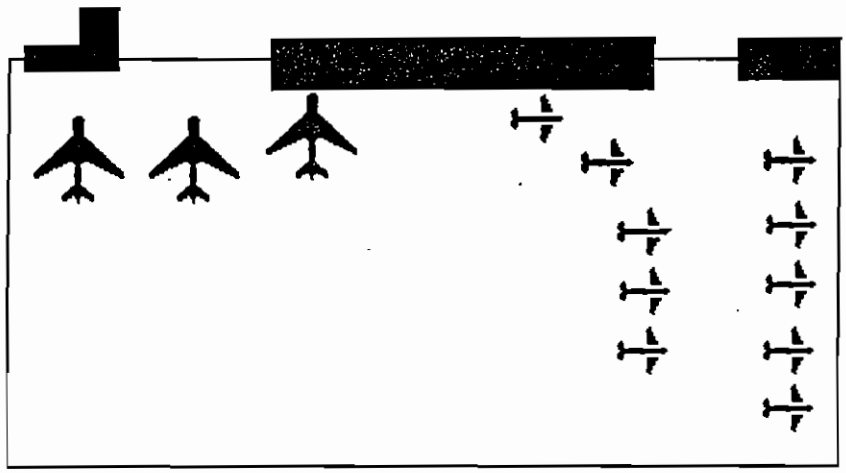
Runways may have other markings besides the end number on them. They may have white stripes down the middle of them, and solid white lines on the edges. Some runways have markings like those shown in the picture above. The most important thing for you to remember about a runway is that it is meant for aircraft use, so you should never drive your vehicle on it, unless you are authorized to do so.

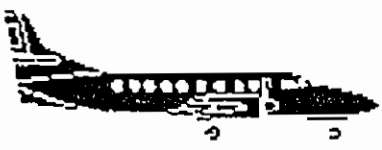
TAXIWAYS

Taxiways are areas used by the aircraft to get to and from their parking place and the runway. Taxiways look a lot like runways, but they usually aren't as wide as the runway, and they don't have the same kind of markings. Taxiway markings are yellow. Instead of numbers taxiways use letters (like A, B, or C) for names. Like runways, taxiways are meant for aircraft use. Never drive your vehicle on a taxiway unless you are authorized to do so.

APRONS

Aircraft aprons are the areas where the aircraft park. Aprons are also sometimes called ramps. They vary in size, from areas that may hold five or ten small planes, to the very large areas that the major airports have. Unlike the runways or taxiways, aprons can be used by vehicles. Your work may require you to drive on an apron. If so, be very careful in these areas. Watch out for aircraft that are moving and yield the right of way to them. Don't assume the pilot will see you and stop - he or she may be busy with other things like radio communications or checking the aircraft instruments. Every year there are many accidents involving vehicles and aircraft, that result in property damage, personal injury, and, in some cases, death. Don't let this happen to you! Your airport manager has established rules for driving a vehicle on the airport - get a copy and read and obey them. The rules are there for your safety as well as the safety of the aircraft pilot and passengers.





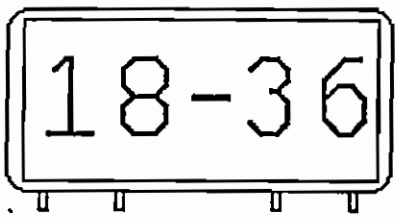
In addition to watching out for moving aircraft, be careful not to get to close to a parked one. Aside from nicks and dents which are expensive to repair, you could be hurt if an aircraft suddenly started its engine and you were too close. You should also be aware of the problem of jet blast or prop wash. This occurs when an aircraft engine is running. If you are near the aircraft, especially if you are behind it, you can be hit by a strong wind that can knock you onto the ground, and in some cases can even burn you. There have been several cases where vehicles have been overturned by jet blast. One way to tell if an aircraft is about to start its engine or if the engine is already running is to look for a flashing light on top of the fuselage (body) of the aircraft.

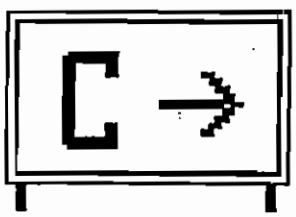
... AND ALL THE EXTRA LITTLE THINGS

Let's look at the signs, markings, lights, and navigational aids that are on airports. Depending on how busy your airport is, and whether the airlines use it or not, your airport may or may not have some of these things.

SIGNS

The signs near the runways and taxiways come in different sizes and colors. If the sign has white numbers on a red background, it is called a runway holding position sign. The name isn't all that important to remember - but what you should remember is that a sign like this (red background, white numbers) means that you are on the edge of the protected area around a runway and you should not be there without special permission (which we'll talk about later in a section called "What if I have to go on the runway ?").

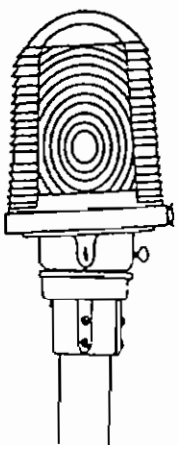




If you see a yellow sign with black letters on it (or at some airports a black sign with yellow letters), that is called a guidance sign. The taxiways at your airport may have these signs next to them. The signs are to help guide the pilot in getting from one place to another while the plane is on the ground (kind of like street signs). Some signs say things like CARGO or TERM (for 'terminal') to identify what the parking area ahead is used for, or the direction to go to find that area.

There are many other kinds of signs. 'Distance remaining' signs are sometimes put by the runway to tell the pilot how much runway length is left. 'ILS Holding position' signs tell pilots and vehicle operators where to stop to avoid interrupting a type of navigation signal used by landing aircraft. The airport manager may put up signs to remind pilots of noise reduction procedures or warning signs to tell you, the vehicle operator, not to drive beyond a certain point.

LIGHTS

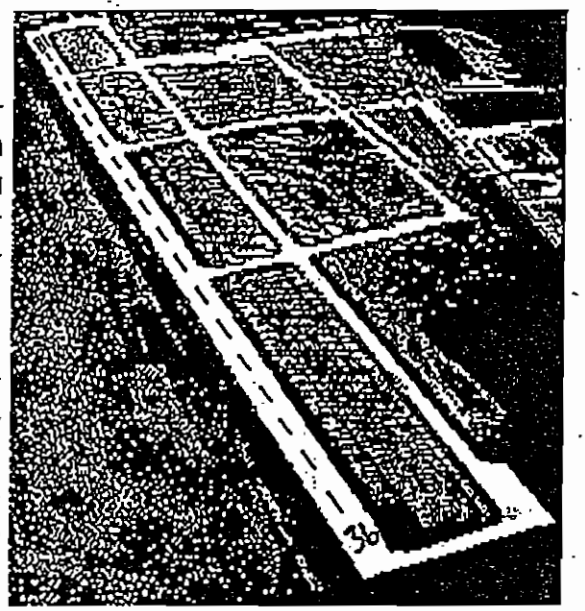


The runways and taxiways at your airport may have lights on their edges. If the runway has lights, the color of the lights along the sides of the runway is white. Near the ends of instrument runways, the lights may have two colors - white on one side and amber on the other. You may see some lights across the end of the runway as well. These are called runway threshold lights and are green on one side and red on the other. Taxiway lights are blue.

In addition to the lights on the ground, your airport may have a flashing light that is on top of a pole or building or tower. This light flashes a green and white light and is called a rotating beacon. This light helps the pilot in the air locate the airport at night.

One other light that you may see is on buildings or poles and is called an obstruction light. It is a bright red light and warns pilots that there is an object or structure underneath it.

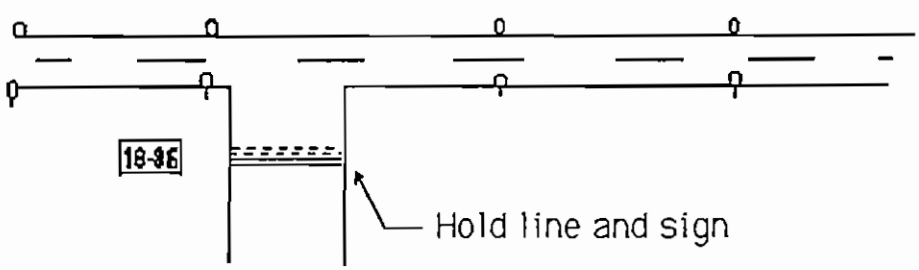
MARKINGS



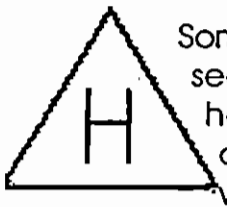
Runway markings are always white. Most runways have numbers on each end and a broken stripe down the middle. They may also have a solid white line along the edge. (If the runway at your airport is grass or packed dirt, it may not have these markings.)

Some runways have extra markings besides centerline and side stripes. These are called touchdown markings, fixed distance markings and threshold markings. They tell the pilot where to touch down when landing, and how much runway is left in front of them.

Taxiways have yellow markings. The center of the taxiway has a solid yellow stripe. The sides may have one or two solid yellow stripes along the the edge. Again, not all airports have these markings, especially if the taxiway is grass or dirt. As the taxiway comes up to the edge of the runway, you may see what pilots call a 'hold' line that looks like this. It is two solid yellow stripes followed by two broken yellow stripes. This is the pilot's version of a STOP sign. It means you are about to go onto a runway. Along the side of the taxiway next to the hold line should be a runway holding position sign (the red and white sign we talked about earlier). Remember, you should never go onto a runway, except in special circumstances. So if you see a hold line, stop and don't go any closer to the runway.



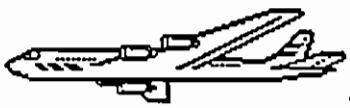
Aprons have markings as well. Aircraft parking spaces, called tiedowns, may be marked on the apron. Vehicle roadways may also be marked on the apron. If the aprons on your airport have roadway markings, you should drive your vehicle within those marked areas. Taxiways may also be included on the apron. They will usually be on the outer edge of the apron or provide access to the aircraft gates and parking areas.



Some airports have special landing areas for helicopters. If you see a H in a triangle on the apron or on the ground, that means it is a helicopter pad. Helicopters can takeoff and land right on that small area. Be especially careful when you drive in this area, and look up as well as all around to make sure no one is about to takeoff or land on the pad. Another thing about helicopters - they can blow a lot of dust and gravel around when they are close to the ground, so watch out. And remember, a helicopter is like other aircraft - you must yield right of way.

NAVIGATIONAL AIDS

Depending on how busy your airport is, and whether or not the airlines use it, your airport may have an instrument landing system. If you ever hear someone talking about an ILS, that is what they are referring to. An ILS is a piece of equipment that sends out an electronic signal to help guide a pilot in the air to the end of the runway. It is actually made of several pieces of equipment that are placed along the side and near the end of the runway. Some airports now have something called an MLS, which is a lot like an ILS. If you see an orange and white checkered building near a runway with an antenna next to it, or some bright red bars on poles near the end of the runway, that's the ILS.



The ILS (and the MLS) is one kind of electronic aid to help pilots. There are a lot of other aids as well. Your airport may have a VOR, or an NDB. The runway may have VASI's or PAPI's. The runway ends may have some flashing lights called approach lights. All these names can become confusing, but don't worry, you don't have to remember them. What you should remember is that when driving near these pieces of equipment, especially the electronic signal equipment, you must stay out of the protected areas around them to avoid interfering with their signals. If a road or taxiway is close enough to an ILS to affect it, there should be an ILS holding position sign like we talked about earlier to show you where to stop. If there isn't an airport map at the back of this guide, or if it doesn't show the restricted areas (called "critical areas"), ask your airport manager to show you on the map where they are located.

WHAT KIND OF AIRPORT DO YOU WORK AT?

There are three different types of airports. Airports that are used by the military (which we won't be talking about in this guide), airports that are used only by general aviation (privately owned airplanes) and airports that are used by both general aviation and the airlines. There is another type of airport, called a heliport, that is used only by helicopters, but we'll consider that a general aviation airport.

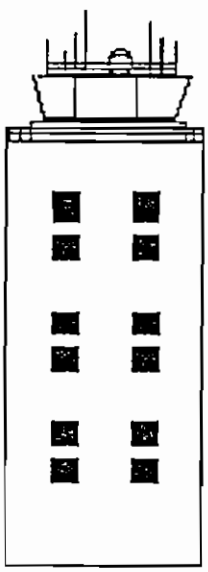
GENERAL AVIATION

Most airports in this country are general aviation airports. General Aviation is defined as everything but the military and the commercial airline aircraft. GA aircraft range in size from the small propeller driven planes up to the larger jets similar to those used by the airlines.

AIR CARRIER

Air carrier airports are the ones that the airlines use. An air carrier airport may have just one small commuter airline that comes in a few times a day, or it may have hundreds of airline flights a day.

DOES YOUR AIRPORT HAVE AN AIR TRAFFIC CONTROL TOWER?



Some airports have an Air Traffic Control Tower on the airport which directs the airplanes in the air and on the ground. Controllers in the tower use radar and other equipment to guide aircraft and provide safe separation between them. If you aren't sure if your airport has a control tower, ask your employer.

If your airport has a tower, it is called a 'controlled' airport whenever the tower is open. That means that anyone wanting to fly into or out of the airport must first get permission from the controller. An aircraft on the ground must also get permission from the controller to be on the runway or taxiways.(Controllers call these areas 'movement areas'.) As an operator of a vehicle or piece of equipment, if you ever have to go onto a runway or taxiway, their associated safety areas or any other part of the movement area, you must get the controller's permission first. The airport map that your manager provided with this guide should identify the movement areas for your airport.

When the tower is closed or if there is no control tower, the airport is called uncontrolled. Procedures to follow for going onto the runway at a controlled and uncontrolled airport are discussed in the next section.

WHAT IF I HAVE TO GO ON A RUNWAY OR TAXIWAY?

There may be times when your work requires you to go onto a runway or taxiway. It may be for maintenance work such as sweeping, snow removal or mowing along the edge of a runway, or to tow a disabled aircraft. If you have to go onto a runway or taxiway, or onto the safety areas along the sides of them, you must do certain things.

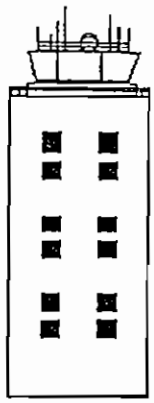
AT AN UNCONTROLLED AIRPORT

An airport is called "uncontrolled" when it does not have an air traffic control tower or the tower is closed. At an uncontrolled airport you don't have to get a controller's permission before going onto a runway or taxiway, but it's a good idea to get the airport manager's permission first. If possible, carry an air-to-ground radio tuned into the airport's common traffic advisory frequency (usually called the UNICOM), and using proper radio procedures, which we'll go into later, say where you are and what you will be doing, especially when you are about to cross a runway. If you can't carry an air-to-ground radio, let someone in authority (the airport manager) know where you will be, and for how long. When you get near the runway-taxiway system, SLOW DOWN. Look both ways, and then look UP for aircraft that are taxiing, landing or taking off. Always yield the right of way to any aircraft, and give them plenty of room to pass by you. If the aircraft is on the same taxiway as you are and is headed in your direction, back up and move out of their way. If you are about to cross or go onto a runway, look both ways and then look again. If an aircraft that is about to land is close enough that you can see it, stop and wait for it to land and go past you before going onto the runway. If you can't see both ends of the runway from where you are, go to a place where you can before crossing. Whenever possible, cross at the end of a runway. If your vehicle has a rotating beacon, use it whenever you are on a taxiway or runway. If you are going to be on the runway for a long time (for example - snow removal), ask the airport manager to consider closing the runway. (Only someone with the proper authority, like the airport manager, can close a runway, so don't try to do this yourself.)

AT A CONTROLLED AIRPORT

If you work at an airport with a control tower you must get the controllers permission before going onto the movement area which includes the runway or taxiway, or onto the protected areas next to them. Again, whenever possible, try to cross a runway at its end. Turn on your vehicle's rotating beacon if it has one.

RADIO COMMUNICATIONS



HOW TO TALK TO THE TOWER

At a controlled airport, you must get permission from the air traffic controller to go onto a runway or taxiway. To get permission, you must use the same procedures and terminology that pilots use. These are the steps you should follow;

1 use an air-to-ground radio with the airport's ground control frequency on it. Ask your employer what the ground control frequency is, and make sure your radio is tuned to that frequency. Each vehicle should have a call sign identifying the vehicle (like 'Companyname one"). This call sign may be displayed on the dash board of the vehicle. You should know what the call sign for your vehicle is.

2 know the proper phrases that controllers and pilots use. (Note: Controllers do not use the 'ten' codes such as ten-four.)

3 know what you are going to say before you call the controller. If you are uncomfortable talking on the radio, practice a few times by yourself before calling the controller.

4 use the proper sequence in calling the cantroller. Before you start talking on the radio, make sure that no one else is already talking on that frequency. Then, if the radio is clear, you should:

a) say who you are calling, then who you are. " **(Name of Airport) Ground, this is (Your vehicle call sign).**"

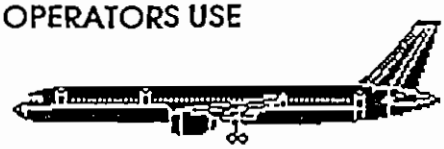
b) wait for the controller to respond. It may take the controller a little while to call you back if they are very busy. When the controller calls back "**(Your vehicle call sign), this is (Name of Airport) Ground.**", tell the controller who you are again, where you are, and what you want to do. "**(Your vehicle call sign) is on the west apron by XYZ Aviation and would like to proceed down taxiway Alpha and cross runway 12-30 to the east side.**" Then wait for the controller to answer you.

c) the controller will either approve or deny your request, or issue special instructions. "**(Your vehicle call sign), proceed down taxiway Alpha and cross runway 12-30**". Or "**(Your vehicle call sign), proceed down taxiway Alpha and hold short of runway 12-30.**" Acknowledge that you have heard the controllers instructions. "**Roger, (Your vehicle call sign).**" If the controller gives you special instructions (such as hold short), repeat the in structions briefly to the controller to show that you have heard and understand the order. " **(Your vehicle call sign), Roger, Hold short of runway 12-30.** " Page 10 goes over the phrases that controllers use. You should know these phrases *and what they mean* before going onto any runway or taxiway.

d) once you have acknowledged the controller, follow the instructions he/she just gave you.

That's all there is to it. It's not so hard once you get use to it. (We've also included a short instruction sheet on page 20 for you to cut out and place in your vehicle to help you remember what to do.) Also, if you're ever unsure what the controller said, or if you don't understand an instruction, ASK THE CONTROLLER TO REPEAT IT. "**(Your vehicle call sign), Say again.**" The controller would much rather repeat something to you than to have you go some place you shouldn't and cause an accident.

PHRASES PILOTS, CONTROLLERS, AND GROUND VEHICLE OPERATORS USE



WHAT IS SAID	WHAT IT MEANS
Acknowledge	Let me know you have received and understand this message.
Advise intentions	Tell me what you plan to do.
Affirmative	Yes
Confirm	My version is ... is that correct?
Correction	I made a mistake. This is what I should have said.
Go ahead	Continue speaking your message.
Hold	Stay where you are.
Hold short	Stop at the hold line at the intersection of the taxiway and the runway. Do not proceed onto the runway.
How do you hear me?	How well is this radio working?
Immediately	RIGHT NOW.
Negative	No, or permission not granted, or that is not correct.
Out	The radio conversation is ended and no response is expected.
Over	My radio transmission is ended and I expect a response.
Proceed	You are authorized to begin or continue moving.
Read Back	Repeat my message to me.
Roger	I have received all of your last transmission.
Say again	Repeat what you just said.
Speak slower	Speak slower.
Stand by	Wait a moment, I will call you back.
That is correct	The understanding you have is correct.
Unable	I can't do it.
Verify	Request confirmation of information. Also, check and transmit correct information.
Wilco	I have received your message, understand it, and will comply.

LIGHT SIGNALS

Air traffic controllers have a backup system for communicating with pilots if the aircraft's radios stop working. The controller has a light gun in the tower that sends out different colored lights to tell the pilot what to do. If you are ever working on a runway or taxiway and your radio quits working, you should turn your vehicle toward the tower, start flashing your headlights and the controller will signal you with the light gun. The signals, and what they mean, are listed below. These signals are also described on page 20 so they can be cut out and posted in your vehicle.

IF THE LIGHT IS	IT MEANS
Steady green	ok to cross runway or taxiway
steady red	stop
flashing red	move off the runway or taxiway
flashing white	go back to where you started
alternating red and green	use extreme caution

THE AVIATION ALPHABET

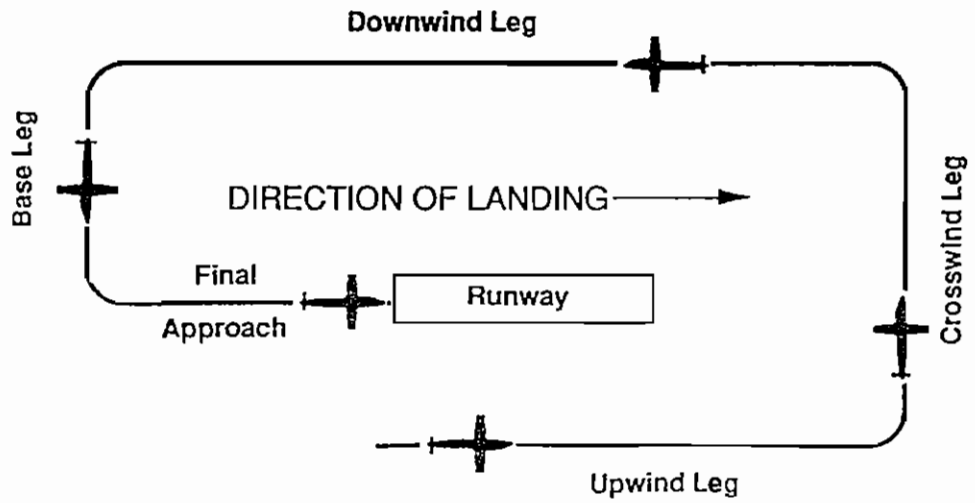
Because some letters have similar sounds, like B and P, the aviation industry uses the following words to reduce confusion. For example, Taxiway B would be referred to as Taxiway Bravo on the radio.

Instead of saying	say	instead of saying	say
A	Alpha	N	November
B	Bravo	O	Oscar
C	Charlie	P	Papa
D	Delta	Q	Quebec
E	Echo	R	Romeo
F	Foxtrot	S	Sierra
G	Golf	T	Tango
H	Hotel	U	Uniform
I	India	V	Victor
J	Juliet	W	Whiskey
K	Kilo	X	Xray
L	Lima	Y	Yankee
M	Mike	Z	Zulu

ABCDEFGHIJKLMNOPQRSTUVWXYZABCDEFGHIJKLMNOPQRSTUVWXYZ

TRAFFIC PATTERNS

Aircraft approaching a runway for landing follow a pattern. In most cases, the pattern is a rectangular box with the pilot making all turns to the left.(Check with your airport manager to find out what traffic patterns are used at your airport.) Each side of the pattern has a name, as shown in the diagram. Pilots use these names to report their position on the radio when they are in the traffic pattern. Familiarity with these names will help you locate an aircraft when the pilot reports his/her position on the radio.



OTHER IMPORTANT THINGS

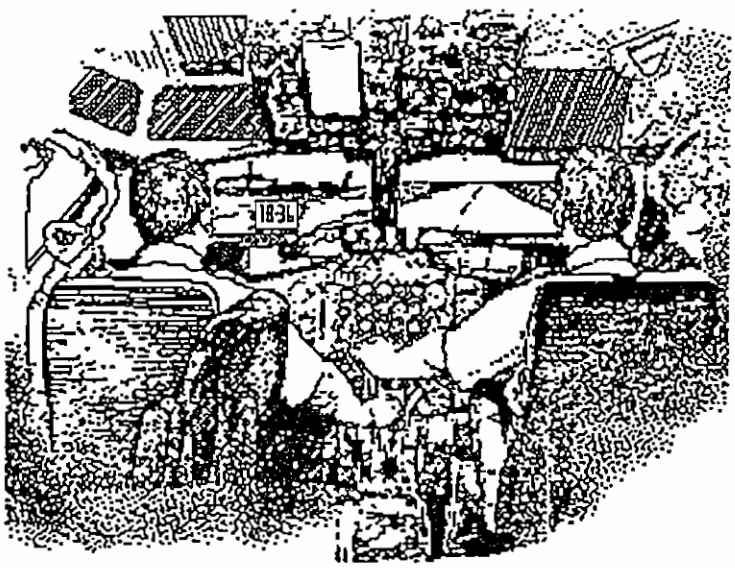
TRASH AND ROCKS CAN BE A REAL PROBLEM!

Trash can be sucked into a jet engine and cause it to quit, which could be deadly if the aircraft is just starting to takeoff. Trash can puncture tires, and dent or puncture wings and other parts of an aircraft, making the aircraft unsafe.

Rocks can be just as serious. A rock sucked into a jet engine can shred parts of the engine in seconds. A rock caught by a propeller can damage the propeller, as well as become a deadly projectile that can hurt anyone standing nearby. In aviation language, the damage caused by rocks and other debris is called 'FOD' - foreign object damage.

You can help make your airport a safer place by following these basic rules; Put all your trash in a covered container that won't be blown over. Get in the habit of picking up any trash and rocks lying around on the ground. Keep an eye out for nails, bolts and other small metal pieces that can puncture tires easily. Also pick up plastic bags instead of letting them blow across the field. Always try to avoid tracking mud and rocks on to the pavement surfaces.

VEHICLE/AIRCRAFT ACCIDENTS



Several collisions between vehicles and aircraft happen each year, and each of them could have been avoided by using some common sense precautions. Aircraft have the right of way, so it is up to you to stay out of their way. Give the aircraft plenty of room to pass by you. The pilot has a limited view from the cockpit.(In a large airplane, a pilot's view of ground areas immediately in front and adjacent to the sides of the aircraft is limited and to any areas behind the wings is nonexistent.) Never assume that the pilot sees you and will wait to let you go first. If you must work near or next to a parked aircraft, approach the aircraft slowly and remain far enough away from it that you do not block its path or the path of other vehicles, especially fueling trucks. Look UP also, so that you don't hit any over-hanging wingtips. If you do accidentally hit an aircraft, or another vehicle or other property, stop immediately and report it in accordance with your airport's rules and regulations.

HOW TO REPORT AN EMERGENCY

Each airport has its own rules and regulations about how to report an emergency. Ask your employer for the procedures to follow to report an emergency at your airport. The most important thing to remember is to TELL SOMEONE (preferably the airport manager or someone in charge), whether you see an emergency happen or you are involved in one, so that the proper emergency personnel can be called for help.

AIRCRAFT RESCUE AND FIREFIGHTING (ARFF)

Some airports have specially trained firefighters at the airport for aircraft rescue and firefighting. It is important for you to know where the fire station is (if your airport has one). If you see a fire truck driving with its flashing lights on, pull over to where you will be out of the truck's way and do not proceed until it is well clear of you. Ask your employer if your airport has ARFF and if it does, where the station is located.

SECURITY

When most of us think about security and airports, we think about hijackers and terrorists. But airport security involves much more than protecting against these hostile acts. We must protect the airport against the everyday small problems, too. Aircraft are much more likely to be stolen or vandalized than they are to be hijacked. The person who gets lost and drives on the wrong place is just as big a threat to the safety of the airport as the terrorist.

Depending on the type and size of the airport you work on, your airport's security system may be as simple as a fence or it may include items as complicated as computer controlled automatic gates with television screen monitors. At large air carrier airports, security may

be provided by the airport's police department or a contractor hired just for that purpose. At smaller airports, the airport manager or the FBO manager may be responsible for security. But regardless of who is responsible for providing the overall security for the airport, each person who works on the airport is responsible for making the security plan work. If you see a gate left open and unattended - close it, and then report it to the airport manager or airport security. If you see a strange vehicle on the apron that doesn't look like it belongs there, or appears lost, stop it and offer assistance or directions. Or, if your airport has a security department, contact them for help. If you work at an air carrier airport the airport manager has a complete security plan for the airport. Be sure you know what your responsibilities are. If you are uncertain, ask your employer for a copy of the sections that apply to you and your work area.

NIGHTTIME DRIVING -IT LOOKS SO DIFFERENT!

If you haven't seen your airport at night yet, the first time may be surprising. If your airport's runways and taxiways aren't lighted, the airport may look like a big black emptiness. If the runways and taxiways are lighted, the airport may look like a confusing array of blue, white, red and green lights.

It's much easier to get lost or confused when driving on the airport at night. Your vision changes at night so that the lights may seem to blur together. If you have to drive at night, it's a good idea to take someone who is familiar with how the airport looks at night with you the first couple of times. If that's not possible, allow yourself a little extra time to get to wherever you are going, and drive slower than you normally would. Watch for signs and markings like those we talked about earlier. And if you're not absolutely sure, ASK someone.

BAD WEATHER DRIVING - WHEN IT'S SNOWING, RAINING, OR JUST PLAIN LOUSY OUTSIDE

Have you ever been in a 'whiteout' - when the wind is blowing the snow so badly that you can't see ten feet in front of you? If you have, then you know bad weather can be a real hazard to try to drive in. Snow, rain, freezing rain, and even fog can affect the operation of the airport as well as affecting your work. Here are a few precautions to remember when driving in bad weather:

- *Give yourself plenty of time to get wherever you are going.*
- *Drive slower than you normally would.*
- *If your vehicle has a rotating beacon, use it - it helps others see you.*
- *If possible, plan your route to avoid steep or slippery areas.*
- *Tell someone which route you are going, and when you'll be back.*
- *Test the brakes, headlights and windshield wipers on the vehicle before you leave.*

SPECIALIZED EQUIPMENT

SNOW REMOVAL EQUIPMENT

The airport manager is responsible for the overall operation of the airport, which includes maintaining the runways in a safe condition. Snow removal may be a part of that job. If you are one of the people who are responsible for clearing the runways, there are a few things you should remember.

Keep alert. Just because you have permission to be on the runway to remove snow doesn't mean someone else might not make a mistake, either another vehicle or an aircraft. If your airport has a control tower, let the controller know where you are every five minutes or so. (They might not be able to see you if the weather is bad.) If your airport doesn't have a tower, or the tower is closed, but you have an air-to-ground radio in your vehicle, turn to the common traffic advisory frequency (usually called UNICOM), and announce where you are and what you are doing every few minutes or so. Let someone in authority know where you are and when you will be back. And make sure your vehicle is in good operating condition before you go out onto the runway.

MOWERS AND OTHER MAINTENANCE EQUIPMENT

Snow removal isn't the only job the airport manager has to take care of. Grass has to be cut, the pavement occasionally needs to be swept and lights and other equipment need repairing. If you are the person who has to do these things, then you will be working on or next to the taxiways and runways, and you need to be extra careful. When working in these areas, follow the information given in the previous section "What if I have to go on a runway or taxiway?"

FUEL TRUCKS AND SERVICE VEHICLES

Your job may require you to fuel or service aircraft. If so, you probably will never need to go onto a runway or taxiway. However, some accidents have occurred because the driver (who normally only drove on the apron and roadways) became confused or wasn't paying attention and accidentally drove onto the runway or taxiway? Other accidents have occurred on the ramp areas where the driver was authorized to drive, either because the pilot and/or driver failed to see each other and didn't stop in time, or because a moving object (either a plane or a vehicle) ran into a parked one. So follow the rules we talked about earlier,as well as your own airport's rules and regulations.

WHAT IF I MAKE A MISTAKE?

As hard as we try not to, all of us make mistakes once in a while. What will happen to you if you make a mistake while operating a piece of equipment or a vehicle on the airport? That depends on the type of mistake you make, whether any one is hurt or property damaged, and the airport's policy.

The owner of the airport, whether it is a city, state, airport authority, or private owner has certain rules anyone who is on the airport must follow. Ask your employer for a copy of these rules, and then read and obey them. The rules can cover a wide range of subjects, depending on the size and complexity of the airport. Breaking any of the rules may be punishable by a fine or other penalty.

It is up to the representative of the owner of the airport (usually the airport manager) to determine what rules have been broken and what the punishment will be. Most airports look at each mistake on a case by case basis. At a minimum, you and your company would be responsible for any injury or property damage.

If you operate a vehicle or piece of equipment on the airport, it is your duty to report ANY accident, even minor dents or scratches, to your employer, and in accordance with your airport's rules and regulations. Even a small dent in the wrong place on an aircraft can make that aircraft unsafe to fly. Please, do your part to help make the airport a safe place.

HOW MUCH DO YOU REMEMBER? ? ? ? ?

1) The red and white sign next to the runway is called a runway hold position sign. If I am next to this sign, it means
   a. that I am about to go onto the protected area next to the runway.
   b. that I should follow the sign to get to the parking apron.
   c. nothing to me, it's only there for the pilot's use, not mine.

2) Two solid yellow stripes followed by two broken yellow stripes is the marking for a runway hold line. A hold line means:
   a. all aircraft must stop and be cleared before going onto the runway.
   b. everyone, including vehicles, must stop unless authorized to proceed onto the runway.
   c. that I am about to go next to some electronic signal equipment.

3) Runway markings are
   a. white.
   b. yellow
   c. red

4) Taxiway markings are
   a. white
   b. yellow
   c. red

5) A 'controlled' airport is one that has an Air Traffic Control Tower.
   a. true
   b. false

6) FOD is caused by
   a. bad weather conditions
   b. the airport manager
   c. trash and debris

7) If I have to cross a runway, I should try to do so
   a. at the end
   b. in the middle
   c. wherever I want

8) If the air traffic controller signals me with a flashing red light, I should
   a. stop
   b. move off the runway or taxiway
   c. ignore the signal as it is for aircraft only

ANSWERS:
1. a 2. b 3. a 4. b 5. a 6. c 7. a 8. b

YOUR AIRPORT LOOKS LIKE THIS:

(If this page is blank, ask your employer for a copy of your airport's map.)

YOUR AIRPORT'S RULES AND REGULATIONS ARE:

(If this page is blank, ask your employer for a copy of your airport's rules and regulations.)

OTHER INFORMATION YOU SHOULD KNOW:

OTHER INFORMATION YOU SHOULD KNOW:

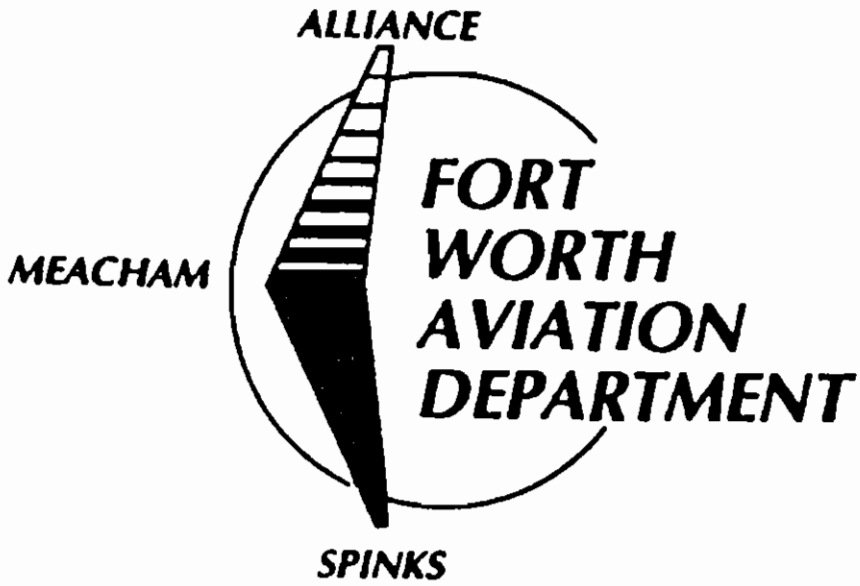
CITY OF FORT WORTH

DEPARTMENT OF AVIATION

MINIMUM STANDARDS FOR FIXED BASE OPERATORS

AND

OTHER AIRPORT TENANTS



ADOPTED BY THE FORT WORTH CITY COUNCIL

JUNE 16, 1992

REVISED 3/15, 1993

CITY OF FORT WORTH * DEPARTMENT OF AVIATION
MEACHAM AIRPORT TERMINAL * SUITE 228 * FORT WORTH, TEXAS 76106-2736
(817) 871-5400

INTER-OFFICE CORRESPONDENCE

TO: Those Listed Below March 15, 1993

FROM: Mike Reisman

SUBJECT: Revised Minimum Standards

Attached find a revised copy of the Minimum Standards. This revised copy updates the Rates and Charges, the formal title of the department which has changed, and re-organizes some of the pages and various articles.

The changes represent approvals for change from the City Council, as well as routine maintenance of the document. Please discard any previous copies of the Minimum Standards you are using as they are now obsolete.

cc: A.M. Rivera
Gary Curtis
Carl Nelson
Michael Brannan
Ike Thompson
Tom Harris
Cynthia Meza

GENERAL

Articles I through XX of the City of Fort Worth Minimum Standards for Fixed Base Operators and Other Airport Tenants are relevant to activities that take place at any airport owned and operated by the City of Fort Worth, Texas.

Additional Appendices contain information specific to only that airport identified in the individual Appendix.

CITY OF FORT WORTH
DEPARTMENT OF AVIATION
MINIMUM STANDARDS FOR FIXED BASE OPERATORS AND OTHER AIRPORT TENANTS

Article I	Definitions
Article II	Fixed Base Operator Permits
Article III	Flight Training
Article IV	Air Taxi Service
Article V	Specialized Commercial Flight Services
Article VI	Aerial Applications
Article VII	Aircraft Sales
Article VIII	Aircraft Rental
Article IX	Airframe and/or PowerPlant Repair
Article X	Radio, Instrument, or Propeller Repair
Article XI	Multiple Services
Article XII	Flying Clubs
Article XIII	Airport Tenant
Article XIV	Standard Lease Provisions/Minimum Requirements
Article XV	**** RESERVED ****
Article XVI	Schedule of Rates and Charges
Article XVII	Airport Development Procedures
Article XVIII	Nonpublic Aircraft Fuels Dispensing Agreement
Article XIX	**** RESERVED ****
Article XX	**** RESERVED ****

Appendix A Fort Worth Meacham Airport

Appendix B Fort Worth Spinks Airport

Appendix C Fort Worth Alliance Airport

ARTICLE I - DEFINITIONS

A. **DEFINITIONS.** As used herein, the following terms shall be defined as follows:

1) **Aeronautical Activity.** Any activity which involves, makes possible, or is required for the operation of aircraft, or which contributes to or is required for the safety of such operations. The following activities, commonly conducted on airports, are aeronautical within this definition: **pilot training, aircraft rental; FAR Part 135 and 121 charter operations, sightseeing; aerial photography, crop dusting, aerial advertising or surveying; scheduled and non-scheduled Part 121 operations; aircraft sales; sales of aviation petroleum products (whether or not conducted in conjunction with other included activities); service, repair and maintenance of aircraft; sale of aircraft parts and accessories; radio and instrument sales, repair and maintenance; and any other activity which because of its direct relationship to the operation of aircraft, can be regarded as an aeronautical activity.**

2) **Airport.** City of Fort Worth Meacham, Spinks, or Alliance Airports, Fort Worth, Texas, or any other airport owned and operated by the City of Fort Worth, except for the Dallas-Fort Worth International Airport.

3) **Airport Tenant.** Defined as any person, firm, or corporation leasing property from the City of Fort Worth on any city owned and operated airport for aeronautical purposes who is not a Fixed Based Operator. An Airport Tenant may hangar his aircraft on his leased property subject to the provisions contained in **Article XIII** herein set forth.

4) **Airport Tenant Sublessee.** Any person, firm or corporation leasing property on the airports from any Airport Tenant (described above) for aeronautical purposes who is not an FBO.

5) **Fixed Base Operator or FBO.** A **Fixed Base Operator** is defined as any person, firm, or corporation performing any of the functions or furnishing any of the services as hereafter set out for fixed based operators at the Fort Worth Meacham, Spinks or Alliance Airports, or any other airport owned and operated by the City of Fort Worth, except for the Dallas-Fort Worth International Airport.

No person, firm, or corporation shall engage in any commercial activity as a Fixed Base Operator as herein defined unless the same is done in full compliance with the standards, rules and regulations herein set forth. A person shall qualify as a Fixed Based Operator only upon providing the minimum services as described in **ARTICLE II.**

6) **Person(s)**. Any individual, firm, partnership, corporation, association, or company (including any assignee, receiver, trustee, or similar representative thereof) or the United States of America or any foreign government, or any state or political subdivision thereof.

7) **Through the Fence**. Operations that are conducted off the actual airport or city property that have aeronautical access to any portion of the Movement Area or Air Operations Area of the airports.

8) **CSL**. Combined Single Limit

9) **Commercial Tenant**. Any person performing any of the services as herein described and set forth, who is not categorized as an FBO or Airport Tenant.

10) **Commercial Tenant Sublessee**. Any person performing any of the services as herein described and set forth, who is not categorized as an FBO or Airport Tenant, and is leasing property from a Commercial Tenant on the airport.

ARTICLE II - FIXED BASE OPERATOR PERMIT

A. **Qualifications**. A person shall qualify as an **FBO** upon proof that said person is a **financially stable** and **responsible** business enterprise, proof that capital is available to perform the activities contemplated, and a **pro-forma** of the activities contemplated. In addition, said Airport tenant shall demonstrate and provide proof, that the premises from which it intends to operate on the Airport(s) and the personnel employed by it comply with the following **minimum** requirements:

1) A minimum of two (2) acres of land for the conduct of activities contemplated;

2) General aviation service facilities containing a minimum of **20,000 square feet.** If no facilities exists, tenant must agree to construct suitable buildings within 12 months to fulfill the requirements defined herein;

3) A staffed office facility;

4) A heated and air-conditioned waiting room for passengers and flight planning facilities for crews of itinerant aircraft;

5) Sanitary restroom facilities;

6) Public telephones;

7) Parking sufficient to accommodate employees and customers;

8) Personnel on duty seven (7) days a week during normal working hours and additional employees available on call during non-business hours. Personnel shall be neatly uniformed.

9) Availability of fuel for the public, and properly trained personnel and equipment adequate to perform fueling services, as outlined in Paragraph D below.

10) Provide the following additional services:

A. aircraft maintenance available to the general public as outlined in Article IX herein;
B. client/passenger services to include flight planning and weather briefing;
C. appropriate grades of aircraft lubricants;
D. oxygen;
E. aircraft storage and tiedown for permanent and transient aircraft;

F. equipment necessary to remove disabled aircraft up to 12,500 lbs. from the airfield;
G. APU/GPU starting service;
H. tug and aircraft towing service;
I. UNICOM service.

11) Provide for the following services as a minimum:

A. auto rental service;
B. air taxi service;
C. aircraft catering service; and
D. aircraft rental.

B. **Certification**. Prior to the commencement of FBO activities, said Airport tenant shall submit to the City of Fort Worth, a properly executed **Statement of Compliance** with the minimum qualifications set forth in **Article II paragraph A** of this document and with the applicable requirements specified in **Article IX, or other specific** requirements as may be prescribed. The City of Fort Worth shall have the right at any reasonable time to inspect the premises to assure compliance.

C. **Authorized Activities**. FBO shall have the right to engage in other aeronautical activities as set forth in **Articles III, IV, V, VI, VII, VIII, or X**, by complying with the minimum standards of the activities desired to be performed.

FBO shall provide written notification to the City of Fort Worth of it's intent to engage in those activities described in **Articles II through X**, and shall provide a **Statement of Compliance.**

If the FBO wishes to engage in any aeronautical activity not set forth in **Articles III through VIII, or X**, it shall provide the City of Fort Worth with written notification of said intent and shall comply with specific minimum standards as determined by the City of Fort Worth.

Permission to engage in the activities described herein shall not be granted until compliance with this Article, and all Federal, State and local laws, including Certificates of Occupancy, Building Permits, Codes, etc., have been met for all associated facilities (i.e. hangars, offices, etc.). In the event that said facilities fall below, or no longer meet compliance standards of Federal, State or local laws, the City has the right to suspend or revoke, temporarily or permanently, the right to engage in the FBO activities described herein.

The FBO shall display in a public area and in public view within the FBO facility, the Fixed Base Operator Permit issued by the City, indicating the FBO's compliance with the provisions of this Article.

D. **Public Aircraft Fuels Dispensing.**

1. FUEL

A. Prior to the presentation of a request for an FBO Permit, the prospective FBO shall furnish a letter of product commitment from an oil company acceptable to the City of Fort Worth.

B. The FBO shall provide at least two grades of aircraft fuel, including 100 Octane and Jet A. Said fuel shall be that of a nationally recognized company acceptable to the City of Fort Worth. Fuel prices shall be posted in public view either on fuel trucks and/or Fixed Base Operator Line Building.

2. FUELING FACILITIES

A. Trucks

The FBO shall furnish mobile dispensing trucks, at least one for each type of fuel, having a minimum capacity of 750 gallons of 100 Octane and 2,200 gallons of Jet A. Separate filter-equipped, dispensing pumps and meters for each type of fuel shall be required. Trucks shall be properly maintained, operated, and equipped in accordance with applicable Federal Aviation Administration recommendations, regulations, and requirements. Each truck will be equipped with a ground controlled radio capable of communicating with the Control Tower.

B. Tank Farm

1. The FBO shall furnish a minimum of two aircraft fuel storage tanks with a capacity of 10,000 gallons each. Unless FBO's fuel trucks are licensed for public road operation, FBO shall also provide a minimum 450 gallon automotive fuel storage tank.

2. Fuel storage tanks shall be above ground or under ground and such installations shall be in a location approved by the City of Fort Worth in the Fuel Farm (as designated in the Airport Master Plan Study, if applicable), and shall comply with applicable, uniform Building Code Standards, fire codes and ordinances of the City of Fort Worth, Federal and State regulations, and recommendations of the National Fire Protection Association. Aviation fuel tanks shall have walk in capabilities for cleaning and maintenance.

3. Fuel storage tanks shall comply with requirements set out by Environmental Protection Agency, the Federal Aviation Administration, Texas Water Commission, and local fire codes.

4. All plans and specifications for improvements on Tank Farm (including landscaping) shall be prepared and presented to City of Fort Worth and shall require the written approval of the Director of Airport Systems before any construction or installation may be undertaken.

5. The FBO shall store, handle and dispose of any hazardous waste or contaminated fuel in accordance with all Federal, State, and local laws, regulations and ordinances now or hereafter enacted. FBO shall bear all costs for cleanup of hazardous waste.

The FBO shall make available at the request of the Director of Airport Systems or his designated representative, copies of all manifested waste and certification of approved disposal site.

All hazardous waste shall be disposed of off the airport property.

E. INSURANCE AND INDEMNIFICATION

1. Fire Insurance

During the full term of the FBO Permit, the FBO shall, at its sole cost and expense, cause all improvements constructed or installed on FBO's leased premises to be kept insured to the full insurable value thereof against the perils of fire, extended coverage, vandalism, explosion and like perils. Said insurance shall be procured from a company authorized to do business in the State of Texas, and FBO shall provide City with evidence satisfactory to City that such coverage has been procured and is being maintained.

The proceeds of any such insurance, paid on account of any of the perils aforesaid, shall be used to defray the cost of repairing, restoring or reconstructing said improvements, as necessary; provided, however, that if the permit is canceled, such proceeds shall be paid to the City for it's exclusive use and benefit.

Property insurance policies required by this paragraph shall contain waiver of subrogation endorsements and shall contain a provision that City shall be notified by

the insurance company of any renewals, changes or cancellations of such insurance coverage by at least thirty (30) days written notice to City, and shall name the City as an additional insured.

2. Indemnification

City shall stand indemnified by FBO as herein provided. FBO is and shall be deemed to be an independent contractor and operator responsible to all parties for its respective acts or omissions, and City shall in no way be responsible therefor. FBO covenants and agrees to indemnify, hold harmless and defend City, its officers, agents, servants and employees from and against any and all claims for damages or injury to persons or property arising out of or incident to the leasing of or the use and occupancy of the premises by FBO, its employees, patrons, contractors or subcontractors, and FBO does hereby assume all liability and responsibility for injuries, claims or suits for damages to persons or property of whatsoever kind or character whether real or asserted, occurring during the term of this permit in connection with the use or occupancy of the premises by FBO, its employees, patrons, contractors, or subcontractors. FBO shall pay promptly when due all bills or charges for construction or maintenance as well as any other amounts due for material or services furnished in connection therewith, and FBO shall indemnify City against any and all mechanics and materialmen's liens or any other types of liens imposed upon the premises demised hereunder arising as a result of FBO's conduct or inactivity.

FBO shall promptly, after the execution of its FBO Permit, provide public liability insurance for personal injuries, including death, growing out of any one accident or other cause in a minimum sum of **Three Million and No/100 dollars ($3,000,000.00)** for one person and **Three Million and No/100 dollars ($3,000,000.00)** for two or more persons, shall provided property damage liability insurance in a minimum sum of Three Million and No/100 Dollars ($3,000,000.00) for property damage growing out of any one accident or other cause; shall provide products liability insurance in a minimum sum of **Three Million and No/100 dollars ($3,000,000.00)**, and shall provide hangar keeper's liability insurance in a minimum of Three Million and No/100 Dollars ($3,000,000.00).

FBO shall maintain said insurance with insurance underwriters authorized to do business in the State of Texas satisfactory to City. FBO shall furnish City with a certificate from the insurance carrier showing such

insurance to be in full force and effect during the entire term of this permit, or shall deposit with City copies of said policies. Said policies or certificates shall contain a provision that written notice of cancellation or of any material change in said policy to the insurer shall be delivered to City thirty days in advance of the effective date thereof, and said policy shall name the City as an additional insured.

F. FEES

1. Registration

The FBO shall be responsible for registering all above and below ground fuel storage tanks with the Texas Water Commission, City of Fort Worth, and any other agency now or hereafter requiring so, and be solely responsible for payment of all registration fees and other associated costs.

2. Fuel Flowage Fee

For the privilege of securing the right to dispense aircraft fuels, FBO shall pay to City a fuel flowage fee on the rate scale established by the City Council of the City of Fort Worth. Such fuel flowage fee rate scale may be adjusted by City at any time during the term of the agreement but in no case shall the rate be greater than that paid by any other FBO on the Airport.

3. Parking Fees

Any and all aircraft parking fees as established by the City and collected by FBO for parking on the public use transient apron or on any other property of City, not leased out on an exclusive basis, shall be paid to the City subject to the terms of any agreements for the collection of those fees.

4. Time of Payment

Fuel flowage fees and the payments on aircraft parking fees shall be due on the tenth day of the month succeeding that in which the aircraft fuels were supplied to FBO and/or parking fees collected, and shall be delinquent if unpaid before the fifteenth day of each month.

G. RECORDS OF FBO

The FBO shall keep true and accurate records and books which shall show all fuel deliveries made to FBO at said Airport and all parking fees collected. FBO's fuel supplier shall furnish monthly delivery reports to the Director of Airport Systems upon request.

With the payment of the fuel flowage fees and the aircraft parking fees as set forth in Paragraph F.2 and F.3 above, FBO shall submit to City detailed statements of such parking fees collected and of all fuel sales for the preceding calendar month. These statements shall be in a form and show such reasonable detail and breakdown as may be required by City.

H. AUDIT

Within thirty days after the end of each of City's fiscal years, FBO shall submit to City detailed statement of total gallons of fuel delivered into the Tank Farm and total parking fees collected. Such statement shall be prepared by independent Certified Public Accountant and any adjustment due on payments made during the previous year shall be accomplished at that time.

In addition, City shall have the right at any time during the term of its agreement with FBO to authorize an audit of FBO's records pertaining to its FBO operation on the Airport. Such audits shall be undertaken by an independent Certified Public Accountants, satisfactory to City. The cost of such audit shall be borne by City.

I. CANCELLATION

1. Cancellation by FBO

FBO Permits shall be subject to cancellation by FBO after the happening of one or more of the following events:

a. The permanent abandonment of the Airport.

b. The lawful assumption by the United States Government, or any uthorized agency thereof, of the operation, control or use of the Airport, or any substantial part or parts thereof, in such amanner as substantially to restrict FBO for a period of at least ninety days from operating thereon.

c. Issuance by any court of competent jurisdiction of any injunction in any way

preventing or restraining the use of the Airport, and the remaining in force of such injunction for a period of at least ninety days.

d. The default by City in the performance of any covenants or agreement required to be performed by City and the failure of City to remedy such default for a period of sixty days after receipt from FBO of written notice to remedy the same.

FBO may exercise such right of termination by written notice to City at any time after the elapse of the applicable periods of time and the permit shall terminate as of that date. Rentals due shall be payable only to the date of said termination.

Upon cancellation, FBO must submit an independent, certified engineering report indicating all facilities are in compliance with all Federal, State and local regulations.

2. Cancellation by City

FBO Permits shall be subject to cancellation by City in the event of any of the following acts or omissions by FBO:

a. Be in arrears in payment of the whole or any part of the amounts agreed upon for a period of ten days after the time such payments become due,

b. Make a general assignment for the benefit of creditors;

c. File a voluntary petition of bankruptcy;

d. Abandon the demised premises;

e. Discontinue required service to the public;

f. Fail to replace any improvements which have been destroyed by fire, explosion, etc. within six months from the date of such destruction;

g. Default in the performance of any of the covenants and conditions required herein (except rental payments) to be kept and performed by FBO, and such default continues for a period of thirty days after receipt of a written notice from City of said default; or

h. Fall below or be in non-compliance with any Federal, State or local laws governing the occupancy of associated facilities such as hangars, offices, etc.

In any of the aforesaid events, City may take immediate possession of the demised premises and remove FBO's effects, forcibly, if necessary, without being deemed guilty of trespassing. Upon said entry, the permit shall terminate.

Any fees due shall be payable to said date of termination.

Failure of City to declare the permit terminated upon the default of FBO for any of the reasons set forth herein, shall not operate to bar or destroy the right of City to cancel the permit by reason of any subsequent violation of the terms hereof.

J. ASSIGNMENT, TRANSFER OR SUBLETTING

The FBO shall not assign, sublet or transfer its FBO Permit or any privileges herein contained without prior written consent of City.

It is specifically stipulated and agreed that FBO will not enter into any tie-in agreements with other operators or sublet any of the rights herein whereby other operators share in the privileges or the services stipulated in this permit.

K. SUSPENSION OF PERMIT

During the time of war or national emergency, City shall have the right to lease the landing area or any part thereof to the United States Government for military use. If any such lease is executed, any provisions of FBO's permit which are inconsistent with the provisions of the lease to the Government will be suspended.

L. ATTORNEY'S FEES

In any action brought by City for the enforcement of the obligations of FBO, City shall be entitled to recover interest and reasonable attorney's fees.

M. TAXES

The FBO agrees to pay any taxes or assessments which may be lawfully levied against FBO's occupancy or use of the demised premises or any improvements placed thereon as a result of FBO's occupancy.

N. RELOCATION OF IMPROVEMENTS

In the event City requires any of the Tank Farm premises for expansion or development of the Airport, City reserves the right, on six months notice, to relocate or replace the improvements made by those FBO's whose fuel tanks are located within the City's designated fuel farm area in substantially similar form at another generally comparable location on said Airport.

The City shall have the right to one (1) year to complete the relocation construction from the time FBO is notified.

O. SUBORDINATION OF AGREEMENT

The FBO permit shall be subordinate to the provisions of any existing or future agreement between City and the United States relative to the operation or maintenance of the Airport, the execution of which has or may be required as a condition precedent to the expenditure of Federal funds for the development of the Airport.

ARTICLE III - FLIGHT TRAINING

Any person, Airport Tenant, Airport Tenant Sublessee, Commercial Tenant, or Commercial Tenant Sublessee desiring to engage in flight training shall provide as a minimum the following:

A. **Land**. Sufficient area for the proposed operations including automobile parking, training, aircraft tiedowns and/or hangar space to accommodate leased or owned aircraft.

B. **Buildings.** Lease or construct, within 12 months, adequate, and properly air-conditioned, lighted and heated floor space to provide classroom, briefing room, pilot lounge, rest rooms, office space and public use telephone. The above mentioned floor space shall be sufficient to accommodate the requirements of its program.

C. **Personnel**. At least one (1) properly FAA certificated flight/ground instructor to cover the type training offered.

D. **Aircraft**. At least one (1) owned/leased properly certificated aircraft equipped for the type flight instruction to be offered. If leased, documentation authorizing the operator to utilize said aircraft for flight instruction must be provided.

E. **Hours of Operation**. The hours of operation shall be a minimum of eight (8) hours daily, a minimum of five (5) days a week.

F. **Insurance Coverage for Owned/Leased Aircraft**.

Aircraft Liability

Bodily Injury & Property Damage	600,000 CSL
Passenger Liability	100,000 each person 300,000 each occurrence

Student/Renter Pilot Coverage
Comprehensive Public Liability/Property Damage

Bodily Injury & Property Damage	600,000 CSL

ARTICLE IV - AIR TAXI SERVICE

Any persons, Airport Tenants, Airport Tenant Sublessees, Commercial Tenants, Commercial Tenant Sublessees and FBOs desiring to engage in air taxi service must hold an **FAA Air Taxi-Commercial Operator Certificate** with ratings appropriate to the functions to be accomplished, and provide as a minimum the following:

A. **Land**. Sufficient area for the proposed operations including automobile parking, aircraft tiedown and or hangar space to accommodate leased or owned aircraft.

B. **Buildings**. Lease or construct, within 12 months, adequate, and properly air- conditioned and lighted floor space for office, public lounge, rest rooms and public use telephone. Building should also accommodate satisfactory arrangements for the checking in of passengers, handling of luggage, ticketing, ground transportation, and other related activities.

C. **Personnel**. Properly FAA certificated pilot(s) rated to conduct the air taxi services offered.

D. **Aircraft**. A minimum of one (1) four place aircraft meeting all the requirements of the **Air Taxi/Commercial Operator Certificate** held. Aircraft shall be owned or leased by agreement in writing and meet all the relevant requirements of **Part 135 of the FAA Regulations.**

E. **Hours of Operation**. The hours of operation shall be a minimum of 8 hours daily, a minimum of 6 days a week. On call service during non-operating hours shall be provided.

F. **Insurance**.

Aircraft Liability	
Bodily Injury & Property Damage	600,000 CSL
Passenger Liability	600,000 each passenger
GENERAL LIABILITY	
Bodily Injury & Property Damage	600,000 CSL

ARTICLE V - SPECIALIZED COMMERCIAL FLIGHT SERVICES

Persons, Airport Tenants, Airport Tenant Lessees, Commercial Tenants, Commercial Tenant Sublessee, and FBO's desiring to engage in specialized commercial air activities, including but not limited to, those listed below shall comply with the minimum standards specified herein:

Banner towing and aerial advertising
Aerial photography or survey
Fire fighting/fire patrol
Powerline/pipeline patrol
Any other operation specifically excluded from Part 135 of the Federal Aviation Regulations.

A. Land. Sufficient aircraft ramp and/or hangar space to accommodate leased/owned aircraft. Land area should be capable of providing facilities for auto parking, paved hangar apron and other area as needed to perform the operations contemplated.

B. Buildings. Lease or construct, within 12 months, adequate, and properly heated, air-conditioned, and lighted floor space for office and rest rooms. If aircraft maintenance is to be performed on site, a building space is required for shop and storage space.

C. Personnel. A minimum of **one (1) properly certificated Commercial Pilot** with appropriate ratings for the aircraft to be flown and operations to be conducted.

D. Aircraft. A minimum of **one (1) properly certificated aircraft (single/multi-engine)** meeting the requirements for the operations to be conducted. Aircraft owned or leased must meet all airworthy requirements of the FARs.

E. Hours of Operations. The normal hours of operation shall be at the operators discretion, but services should be reasonably available to the public.

F. Insurance.

Aircraft Liability

Bodily Injury & Property Damage	600,000 CSL

GENERAL LIABILITY

Bodily Injury & Property Damage	600,000 CSL

ARTICLE VI - AERIAL APPLICATIONS

Persons, Airport Tenants, Airport Tenant Lessees, Commercial Tenants, Commercial Tenant Sublessees, and FBO's desiring to engage in aerial application operations must hold an **Agricultural Aircraft Operator Certificate** issued by the FAA; comply with the requirements of all Federal, State of Texas, and any local laws and/or regulations applicable to aerial application operations.

A. Land. Sufficient paved aircraft parking apron and space for the loading and unloading of vehicles and equipment. An area **must be** set aside specifically for the cleaning and servicing of aircraft.

B. Facilities. A segregated chemical storage area protected from public access. Wash down of agricultural spraying aircraft and flushing of agricultural aircraft spray tanks will be accomplished only in areas so designated and in accordance with applicable **EPA, State Water Commission, State Department of Agriculture, State Department of Health and other Federal, State, and local rules and regulations.**

Empty chemical containers will be disposed of off the airport in accordance with applicable Federal and State laws. **A centrally drained, paved area for aircraft loading/unloading, servicing and dumping, tank truck handling and for the mixing of compounds** shall contain an adequate area and meet **all government requirements.**

Adequate ground equipment for the handling and loading of dusting materials shall be provided.

C. Personnel. A **minimum** of **one (1) properly FAA certificated commercial pilot,** properly rated for the aircraft to be used and meeting the requirements of all appropriate FAA Regulations and applicable State and local regulations.

D. Aircraft. A **minimum** of **one (1) airworthy aircraft** meeting all the requirements of the appropriate FAA Regulations and applicable State and local regulations. Leased aircraft shall be by written agreement and based on the Lessee's premises.

E. Hours of Operation. Available or on call 24 hours during normal aerial application season.

F. Insurance.

Aircraft Liability	
Bodily Injury & Property Damage	600,000 CSL
General Liability	
Bodily Injury & Property Damage	600,000 CSL
Environmental Impairment Liability (EIL)	1,000,000 each occurrence

Agricultural spraying operations will be conducted in accordance with procedures approved by the City of Fort Worth and only from the areas designated on the Airport(s). Careless handling of chemicals will result in appropriate legal action.

ARTICLE VII - AIRCRAFT SALES

Persons, Airport Tenants, Airport Tenant Lessees, Commercial Tenants, Commercial Tenant Sublessees, and FBO's desiring to engage in the business of the sale of new or used aircraft must lease and/or provide as a minimum the following:

A. Land. Sufficient land area to adequately store, display and service aircraft.

B. Buildings. Lease or construct, within 12 months, a minimum of **2,000 square feet** of properly lighted, air-conditioned and heated space for office, public lounge, rest rooms and public use telephones.

C. Personnel. A minimum of **One (1) current properly certificated FAA Commercial Pilot with rating appropriate for the types of aircraft to be demonstrated** and to conduct the operations contemplated.

D. Dealerships. New aircraft dealers shall hold an authorized factory or subdealership. All aircraft dealers shall hold a dealership license or permit, if required by state or local regulations.

E. Used Aircraft. A Lessee engaged in the sale of used aircraft must conform to the provisions of **FAR Part 47, Subpart C,** and must possess a valid **"Dealers Aircraft Registration Certificate", FAA Form 8050.**

F. Aircraft. A dealer of new aircraft shall have available or on call **one (1) current model demonstrator.**

G. Services. Provide for adequate parts and servicing of aircraft and accessories during warranty periods for new aircraft.

H. Hours of Operation. The normal operating hours shall be at the operators discretion, but should services should be reasonably available to the public.

I. Insurance.

Aircraft Liability

Bodily Injury & Property Damage	600,000 CSL
Passenger Liability	600,000 each passenger

General Liability

Bodily Injury & Property Damage	600,000 CSL

The above coverage shall include aircraft held for sale and demonstration by the Lessee but owned by others.

Products & Completed Operations Liability	3,000,000 each occurrence
Hangar Keepers Liability	500,000 each aircraft 1,000,000 each occurrence

J. Sales Tax Permit. Each lessee shall hold and conspicuously display a current Sales Tax Permit issued by the State of Texas.

ARTICLE VIII - AIRCRAFT RENTAL

Any person, Airport Tenant, Airport Tenant Lessee, Commercial Airport Tenant, Commercial Tenant Sub-Lessee, or FBO desiring to engage in the rental of aircraft to the public must provide as a minimum the following:

A. LAND. Sufficient land for the parking and storage of as many aircraft as are available for rent.

B. BUILDINGS. Lease or construct, within 12 months, a building which will provide adequate and properly air-conditioned, heated and lighted space for office, public lounge, rest rooms and public use telephones. If aircraft maintenance is to be performed on site, additional adequate area will be required for shop and storage space.

C. PERSONNEL. One person having a current commercial pilot certificate with appropriate ratings for the type of aircraft and training to be offered. If aircraft maintenance is to be performed on site, proper certification is required for shops and personnel.

D. AIRCRAFT. At least one airworthy aircraft owned or leased in writing to the lessee, which shall be certified for flight under instrument conditions.

E. HOURS OF OPERATION. Hours of operation will be a minimum of **6 days per week, 8 hours per day.**

F. INSURANCE COVERAGE FOR OWNED OR LEASED AIRCRAFT

Aircraft Liability

Bodily Injury & Property Damage	600,000 CSL

Student and Renter Pilot Coverage
General Liability

Bodily Injury & Property Damage	600,000 CSL

ARTICLE IX - AIRFRAME AND/OR POWER PLANT REPAIR

Any person, Airport Tenant, Airport Tenant Lessee, Commercial Tenant, Commercial Tenant Sublessee, or FBO desiring to engage in airframe and/or power plant repair service must provide as a minimum the following:

A. Land. Sufficient land for the parking and storage of type aircraft awaiting repair or pickup.

B. Buildings. Lease or construct, within 12 months, a building sufficient to provide adequate shop and storage space meeting local and state code requirements, plus adequate office space, public restrooms, public waiting areas and telephones, as required for **FAA Repair Shop Certification.**

Provide for both **major and minor** airframe and power plant repair and demonstrate the ability to suppress noise, dust, fumes, dirt, odors, smoke, and other similar nuisances, including but not limited to, soundproofing and air-conditioned enclosures for the performance of aircraft and engine repair.

C. Personnel. A minimum of **One (1) properly FAA certificated Airframe & Power Plant Mechanic** possessing the appropriate ratings for the work to be performed.

D. Hours of Operation. Hours of operation will be specified and on call services shall be available during non-operating hours. Updated phone numbers must be provided to Fort Worth Aviation Department staff.

E. Equipment. Sufficient equipment, tools, supplies and availability of parts to perform maintenance in accordance with manufacturers' recommendations or equivalent.

Demonstrated ability to and assume responsibility for promptly removing from the public landing area any disabled aircraft as soon as permitted by cognizant Federal and/or local authorities.

F. Insurance.

General Liability

Bodily Injury & Property Damage	600,000 CSL	each occurrence
Hangar Keepers Liability	1,000,000	each occurrence
Products & Completed Operations Liability	3,000,000	each occurrence

ARTICLE X - RADIO, INSTRUMENT, OR PROPELLER REPAIR SERVICES

Persons, Airport Tenants, Airport Tenant Lessees, Commercial Tenants, Commercial Tenant Sublessees, or FBO's desiring to provide radio, instrument or propeller repair services must hold an **FAA Repair Station Certificate** and **ratings** for the same and provide as a minimum the following:

A. Facility. Construct or lease, within 12 months, land area and buildings that will provide adequate and properly lighted, air-conditioned and heated space to house office, storage space, and minimum shop and hangar space as required for **FAA Repair Shop Certification.**

B. Personnel. A minimum of **One (1) certificated technician qualified** in accordance with the terms of the **FAA Repair Station Certificate.**

C. Hours of Operation. The hours of operation shall be a minimum of **8 hours a day, 5 days a week. On call services shall be available during non-operating hours.**

D. Insurance.

General Liability

Bodily Injury & Property Damage	600,000 CSL each occurrence
Hangar Keepers Liability	1,000,000 each occurrence
Products Liability	3,000,000 each occurrence

ARTICLE XI - MULTIPLE SERVICES

Persons who are not FBO's, desiring to engage in two or more commercial aeronautical activities, must provide as a minimum the following:

A. Land. The leasehold for multiple activities must comply with the space requirements contained in the **ARTICLE** applying to the activity that requires the largest amount of space.

B. Buildings. Lease or construct a building that complies with the space requirements contained in the **ARTICLE** applying to the activity that requires the largest amount of space.

C. Personnel. Minimum personnel appropriately rated to perform the specific functions for the services to be offered. Multiple responsibilities may be assigned to personnel to meet personnel requirements for all activities.

D. Aircraft. All requirements for aircraft for the specific activities to be engaged in must be provided; however, multiple uses can be made of all aircraft, except aerial applicator aircraft, to meet these requirements. In order to meet these requirements, however, a minimum of two aircraft must be owned or under the direct control of the Lessee and based on the Lessee's leasehold.

E. Hours of Operations. The Lessee will adhere to the operating schedule as required for each activity.

F. Services. All services specifically required for each activity must be provided during the hours of operations.

G. Equipment. All equipment, specifically required for each activity, must be provided.

H. Insurance Coverage. The Lessee will obtain the highest single coverage in the amounts established for each type of insurance required for the specific activity.

I. Facility Compliance. All facilities must be in compliance with all Federal, State and local laws concerning Certificates of Occupancy, Building Permits, and Codes, prior to being granted permission to engage in any activity described in Article XVIII. In the event that any facility falls below these standards, the City has the right to suspend or revoke, temporarily or permanently, all rights to engage in activities described in Article XVIII.

ARTICLE XII - FLYING CLUBS

In an effort to foster and promote flying for pleasure, develop skills in aeronautics, including pilotage, navigation, and an awareness and appreciation of aviation requirements and techniques, the category of **Flying Clubs** is added to the Minimum Standards of the Fort Worth Airport System.

All flying clubs desiring to base their aircraft and operate on any City of Fort Worth airport must comply with these Minimum Standards and requirements. However, they shall be exempt from regular Fixed Based Operator requirements upon satisfactory fulfillment of the conditions contained herein.

A. The club shall be a nonprofit corporation, association or partnership organized for the express purpose of providing its members with aircraft for their personal use and enjoyment **only.** The property rights of the members of the club shall be equal and no part of the net earnings of the club will inure to the benefit of any member in any form (salaries, bonuses, etc.). The club may not derive greater revenue from the use of its aircraft than the amount necessary for the operations, maintenance and replacement of its aircraft.

B. Flying clubs may not offer or conduct charter, air taxi, or rentals of aircraft operations. They may not conduct aircraft flight instruction except for regular members, and only members of the flying club may act as **pilot-in-command** of the aircraft except when receiving dual instruction. No flying club shall permit its aircraft to be utilized for the giving of flight instruction to any person, including members of the club owning the aircraft, when such person pays or becomes obligated to pay for such instruction, except when instruction is given by a Lessee based on the airport who provides flight training. Any qualified mechanic and/or flight instructor who is a registered member and part owner of the aircraft owned and operated by the flying club shall not be restricted from doing maintenance work and/or giving instruction in aircraft owned by the club, so long as the club does not become obligated to pay for such maintenance work or instruction, except that such mechanics and instructors may be compensated by credit against payment for dues or flight time.

C. All flying clubs and their members are prohibited from leasing or selling any goods or services whatsoever to any person or firm other than a member of such club at the airport(s) except that said flying club may sell or exchange its capital equipment.

D. A flying club shall abide by and comply with all Federal, State and local laws, ordinances, regulations and the Rules and Regulations of Airport Management.

E. The flying club, with its permit request, shall furnish the Department of Aviation a copy of its charter and by-laws, articles of incorporation/association, partnership agreement or other documentation supporting its existence; a roster, or list of members, including names of officers and directors, and investment share held by each member to be revised on a semi-annual basis; evidence of insurance in the form of a **Certificate of Insurance** with the City of Fort Worth, et al, named as an additional insured (10 days prior notice of cancellation shall be filed with the Department of Aviation); number and type of aircraft; evidence that aircraft are properly certificated; evidence that ownership is vested in the club; and operating rules of the club. In addition, the club shall maintain a set of books showing all club income and expenses. Said books shall be available for inspection by the Department of Aviation to determine compliance with this provision,

F. Insurance Coverage.

General Liability	
Bodily Injury & Property Damage	600,000 CSL

G. A flying club which violates any of the foregoing, or permits one or more members to do so, will be notified in writing of the violation and given **10 days** in which to correct said violation. Should such violation not be corrected within **10 days**, the City of Fort Worth shall have the right to terminate the tenancy.

ARTICLE XIII - AIRPORT TENANT

A person having the use designation of **"Airport Tenant"** shall be limited to the following and only the following uses:

Storage of wholly owned or leased aircraft and service and maintenance on wholly owned or wholly leased aircraft.

Such person may provide fuel for owned/leased aircraft, but only after meeting the requirements of the City of Fort Worth's **Non-Public Fuel Dispensing** policy. Such person shall not hangar aircraft owned by others, nor offer, nor provide, for financial gain, any services whatsoever to others, except, however, other's aircraft may be temporarily hangared without **compensation. "Temporarily"** means less than **60 days** in any one calendar year.

A. Insurance.

General Liability

Bodily Injury & Property Damage	600,000 CSL

B. The standard lease provisions (a) and (c) of **Article XIV,** paragraph 2 shall not be applicable.

C. Due to the vast variety of single and multi-occupancy hangars, a single, minimum standard for building and acreage is not established. Therefore, each application under this standard will be considered on its own merits.

ARTICLE XIV

STANDARD LEASE PROVISIONS/MINIMUM REQUIREMENTS FOR FIXED BASED OPERATORS AND OTHER TENANTS ON THE FORT WORTH MEACHAM, SPINKS AND ALLIANCE AIRPORTS

CITY OF FORT WORTH, TEXAS

The owner of the Fort Worth Meacham, Spinks, and Alliance Airports shall hereinafter be referred to as the **City of Fort Worth, City, or Lessor.**

The following **Standard Lease Provisions and Minimum Requirements** for commercial aeronautical activities have been established in the public interest for the safe and efficient operation of the **Fort Worth Airport System; to** enhance its orderly growth; to preclude the granting of an exclusive right to conduct aeronautical activity in violation of **Section 308(a) of the Federal Aviation Act of 1958;** to conform to **Title VI of the Civil Rights Act of 1964** and **Part 21 of the Department of Transportation Regulations;** and to assure to all lessees the availability of airport property on fair and reasonable terms and without unjust discrimination.

1. All Fixed Base Operators and airport tenants shall protect the public generally, the customers or clients of such Fixed Base Operators, and the **City of Fort Worth** from any and all lawful damages, claims, or liability and shall carry comprehensive general liability insurance with a company authorized to do business in the **State of Texas** with limits prescribed in the respective Articles contained herein, with the **City of Fort Worth** named as a additional insured, which policies must be approved by the Lessor. It is further understood that as circumstances in the future dictate, the Lessor may require an increase in bodily injury and property damage insurance.

2. A Fixed Base Operator shall satisfy Lessor that it is technically and financially able to perform the services of a Fixed Based Operator. In addition Fixed Based Operators must demonstrate a continued ability to conduct business and remain financially solvent by submitting an annual balance sheet, credit references and any other proof that Lessor may require from time to time. In cases of doubt by the Lessor, Lessor may conduct an audit to determine appropriate action. In each instance, the Lessor shall be the final judge as to the qualifications and financial ability of the Lessee. Lessor will not accept an original request to lease land area unless the proposed Lessee puts forth in writing a proposal which sets forth the scope of operation proposed, including the following:

a. Services to be provided;

b. Amount of land required;

c. Building space he or she will construct or lease;

d. Number of aircraft on the premises;

e. Number of persons to be employed;

f. Hours of operation;

g. Compliance with the applicable **Articles** contained herein; and

h. Evidence of his financial capability to perform and provide the services and facilities contemplated.

3. Any person, firm or corporation providing the minimum requirements set forth herein for Fixed Base Operator services is eligible to become a Fixed Base Operator at the airport(s), subject to the execution of an FBO Permit of not less than **five (5) years** containing such terms and conditions as may be determined by the City of Fort Worth. A Fixed Base Operator tenant shall not engage in any business or activity on the airport other than that authorized under his lease agreement. Any Fixed Base Operator desiring to extend his operation into more than one category or to discontinue operations in a category, shall first apply in writing to the **Director, Airport Systems**, for permission to do so, setting forth in detail the reasons and conditions for the request. The **Director, Airport Systems**, shall then grant or deny the request on such terms and conditions as the City of Fort Worth deems to be prudent and proper under the circumstances. Each Fixed Base Operator shall provide its own buildings, personnel and equipment, and other requirements as herein stated upon land leased from the City of Fort Worth, or subleased from other tenants.

4. All Fixed Base Operators at said airport(s) shall provide ample lounges and restrooms for their customers and shall make telephone service conveniently and readily available for public use.

5. All construction required of such operators shall be in accordance with design and construction standards required or established by the City of Fort Worth for the facility or activity involved. Title to any and all buildings and appurtenances, which may be built on Airport property, shall **vest** to the City of Fort Worth upon termination of lease, subject to continuing leasehold rights of lessee. All operators shall be required to furnish the City payment and performance bonds, or an acceptable substitute, commensurate with any contract or lease by and between such operator and the City.

6. The rates and charges for any and all activities and services of such operations shall be determined by the operators, and all such rates or charges shall be reasonable and be equally and fairly applied to all users of the services.

7. All operators at the airport(s) shall be full-time, financially sound business enterprises, with adequately manned and equipped facilities, including ample office facilities, and who observe normal or specifically required business hours.

8. All Fixed Base Operators shall, at their own expense, pay all taxes and assessments against any buildings or other structures placed on the premises by them, as well as all taxes and assessments against the personal property used by them in their operations.

9. All operators shall abide by and comply with all State, County and City laws and ordinances, the Rules and Regulations of the Aviation Department, and the Rules and Regulations of the Federal Aviation Administration (FAA).

10. In the event the City constructs the physical plant facilities (hangars, and the like, etc.) for use by any operator under the provisions of any lease or other contract, such lease or contract with such operators shall be on such terms and conditions as to guarantee a full return of the investment within **15 years**, plus interest and reasonable rental for use during such period.

11. All operators shall provide and pay all gas, electrical current, water and sewer charges and garbage collection charges used or incurred anywhere in or about the leased premises, and shall pay the charges made therefore by the suppliers. All payments shall be paid promptly as due.

12. All contracts and leases between such operators and the City shall be subordinate to the provisions of any existing or future agreement(s) between the **City of Fort Worth** and the **United States**, relative to the operation or maintenance of the Airport(s).

13. No Fixed Base Operators shall sublease or sublet any premises leased by such operator from the City, or assign any such lease, without the prior written approval of the City. Any such subletting or assignment shall be subject to all of the minimum standards herein set forth.

14. In the event the Lessee sublets or assigns any portion of his lease, the sublessees or assignees must agree to assume the full obligations of the lease as set forth herein and must agree to fully cooperate with the City in assuring compliance with these standards.

The sublessees or assignees shall immediately comply with any reasonable request or direction of the City as it relates to the enforcement of these standards.

15. In the event the Lessee or sublessee fails to comply fully with these standards or fails to comply with the reasonable request or direction of the City as it relates to these standards, said Lessee or Sublessee shall be in default. If said default continues for more than **30 days** after notice of said default, the City may terminate the lease. Said Lessee is responsible for the performance of the Sublessee.

16. Fixed Base Operators shall have the right to use common areas and facilities of the Airport(s), including runways, taxiways, aprons, roadways, floodlights, landing lights, signals and other conveniences for the takeoff, flying and landing of aircraft of Lessee.

17. Beginning with the effective date of adoption of these minimum standards, length of leases to Fixed Base Operators and Airport Tenants shall be determined on a case-by-case basis, but limited to a maximum of **thirty (30) years, plus up to (10) years** in options. In addition, rental rates shall be subject to review and reevaluation at the end of each **one (1) year period thereof**, in relation to changes in the **Consumer Price Index (CPI) for the Dallas-Fort Worth Metropolitan Area.** If at the end of the previous one (1) year period the CPI has increased, the rental terms shall be increased to such percentage of increase if there has been a decrease in the CPI during the previous one (1) year period, the City shall take no action to review or reevaluate the lease.

18. Lessees will, at all times during the continuance of the term of the lease and any renewal or extension thereof, conduct, operate and maintain for the benefit of the flying public, the Fixed Base Operation provided for and described therein, and provide all parts and services as defined and set forth, and will make all such services available to the public and that it will devote its best efforts for the accomplishment of such purposes and that it will at all times charge fair, reasonable and not unjustly discriminatory prices to patrons and customers for all merchandise or materials and services furnished or rendered. Notwithstanding anything contained in a lease that may be or appear to the contrary, it is expressly understood and agreed that the rights granted thereunder are nonexclusive and the Lessor reserves the right to grant similar privileges to another operator or operators upon formal application by that operator, and upon demonstration of compliance with the applicable standards.

19. All contracts and leases between such operators and the City shall be subordinate to the right of the City during time of war or national emergency to lease the landing area or any part thereof to the United States Government for military or naval use,

and if any such lease is executed, the provisions of any contracts or leases between such operators and the City, insofar as they are inconsistent with the provisions of the lease to the Government, shall be suspended.

20. Upon adoption of these standards, all leases entered into and any amendments to existing leases shall be in accordance with these standards. This paragraph shall include any lease renewals without options.

21. The Lessee shall remove from the airport(s) or otherwise dispose of in a manner approved by the City, all garbage, debris, and other waste material (whether solid or liquid) arising out of its occupancy of the premises or out of its operations. Said Lessee shall keep and maintain its leased premises in a neat and orderly manner; Lessee shall keep the grass cut and the building painted. Any garbage, debris, or waste which may be temporarily stored in the open shall be kept in suitable garbage or waste receptacles, the same to be made of metal and equipped with tight fitting covers and to be of a design to safely and properly contain whatever may be placed therein. The Lessee shall use extreme care when effecting removal of all such waste.

22. The City reserves the right to enter upon any premises leased to Fixed Base Operators at reasonable times for the purpose of making such inspections as it may deem expedient to the proper enforcement of these minimum standards and for the proper enforcement of any covenant or condition of any Fixed Base Operator's contract or lease agreement.

23. The City recognizes the rights of any person, firm or corporation operating aircraft on the airport(s) to perform services on its own aircraft with its own regular employees (including, but not limited to maintenance, repair and fueling) that it may choose to perform. Aircraft fueling accomplished under this provisions shall be in strict accordance with existing public and nonpublic fueling standards currently in force or hereinafter promulgated.

24. All operations conducted at the airport(s) will be conducted in the safest manner possible and for the maximum benefit of the flying public.

25. Where these standards call for a minimum square footage of space, and the applicant is permitted to conduct more than one activity, then such applicant shall have the minimum square footage for that activity which requires the **greatest minimum square footage.**

26. Standard Lease Provisions. All leases, subleases, or contracts for airport property, or for airport operations or use, shall contain the following standard provisions:

a. The right to conduct aeronautical activities for furnishing services to the public is granted the Lessee subject to Lessee agreeing:

(1) To furnish said services on a fair, equal and not unjustly discriminatory basis to all users thereof, and;

(2) To charge fair, reasonable and not unjustly discriminatory prices for each unit or service; provided that the Lessee may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.

b. The Lessee and their personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree as a covenant running with the land that: (1) no person on the grounds of race, color, national origin, sex or handicap, shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities; (2) that in the construction of any improvements on, over, or under such and the furnishing of services thereon, no person on the grounds of race, color, national origin, sex or handicap, shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination; and (3) that the Lessee shall use the premises in compliance with all other requirements imposed by or pursuant to **49 CFR Part 21, Nondiscrimination in Federally Assisted Programs of the Department of Transportation**, and as said Regulations may be amended.

c. The Lessee agrees to undertake an affirmative action program as required by **14 CFR Part 152, Subpart E,** to ensure that no person shall be excluded from participating in any employment activities covered in **14 CFR Part 152, Subpart E.** The Lessee agrees that no person shall be excluded on these grounds from participating in or receiving the services or benefits of any program or activity covered by this subpart. The Lessee agrees that it will require that its covered suborganizations will undertake affirmative action programs and that they will require compliance from their suborganizations, as required by **14 CFR Part 152, Subpart E,** to the same effect.

d. That in the event of breach of any of the preceding, nondiscrimination covenants, Lessor shall have the right to terminate the license, lease, permit, etc., and to reenter and repossess said premises and the facilities thereon, and hold the same as if said lease had never been made or issued.

e. During the time of war or national emergency, Lessor shall have the right to lease the landing area or any part thereof to the United States Government for military or naval use, and, if such lease is executed, the provisions of this instrument, insofar as the provisions are inconsistent with the provisions of the lease to the Government, shall be suspended.

f. No right or privilege has been granted which would operate to prevent any person, firm or corporation operating aircraft on the airport(s) from performing any services on its own aircraft with its own regular employees (including but not limited to maintenance, repair, and fueling) that it may choose to perform.

g. It is understood and agreed that nothing herein contained shall be construed to grant or authorize the granting of an exclusive right forbidden by **Section 308(c) of the Federal Aviation Act of 1958** or any aeronautical activities such as but not limited to:

(1) Charter operations;
(2) Pilot training;
(3) Aircraft rental;
(4) Aerial photography;
(5) Crop dusting;
(6) Sale of aviation petroleum products;
(7) Air carrier operations;
(8) Aircraft sales, and service incidental thereto, and
(9) Any other activity, because of its direct relationship to the operation of aircraft, thay may be regarded as an aeronautical activity.

h. Lessor reserves the right, in a reasonable and nondiscriminatory manner, to further develop or improve the landing area of the airport as it sees fit, regardless of the desires or views of Lessee and without interference or hinderance. However, Lessor shall notify Lessee in writing, 60 days prior to planned development.

i. Lessor shall have the right, but not the obligation to maintain and keep in repair the landing area of the airport and all publically-owned facilities of the airport(s), together with the right to direct and control all activities of Lessee in this regard.

j. All hangars, buildings, properties or land on the airport(s), shall be maintained in a clean, attractive, weed- free, well-painted, junk-free condition.

k. Lessor reserves the right to take any action it considers necessary to protect the aerial approaches of the airport(s) against obstructions together with the right to prevent the erection of any building or other structure on or adjacent to the

airport(s) which would limit the usefulness of the airport(s) or constitute a hazard to aircraft.

l. This agreement shall be subordinate to the provisions of any existing or future agreement between Lessor and the United States, relative to the operation or maintenance of the airport(s).

m. Incorporated into this agreement, by reference and as though set forth herein verbatim, are the minimum standards for **Fixed Base Operators** and **Airport Tenants** adopted by the Lessor. Such minimum standards shall be lawful, reasonable and nondiscriminatory. Further, all parties hereto agree to comply with any and all laws and regulations, including those of the FAA, and will not permit the premises covered by this agreement to be used for any unlawful or improper purpose.

n. Each Lessee shall at a minimum, maintain effective **Liability Insurance** for all of Lessee's operations in the amounts set out in this Standard for the particular activity in question and referenced in the minimum standards. Such insurance policies shall further name the Lessor as an additional insured. Certificates of such insurance shall be furnished by Lessee to the Lessor, and a Certificate presently then in effect shall be on administrative lease files at all times.

o. The standards and regulations enacted by the governmental agency responsible for the operation of the airport(s), now or in the future, may provide for use charges to be paid by those using, occupying, or conducting operations at the airport(s). Such charges may be based upon square footage, receipts or other reasonable basis, to be established by such standards and regulations. Lessee agrees to pay such charges as same are due and owing under any such standards or regulations now or hereafter in effect. Any such use charges shall be lawful, reasonable and nondiscriminatory.

p. Lessor may, on account of the breach of any provisions hereof, including the standards and regulations incorporated herein by reference, terminate this agreement and eject the party in violation in accordance with the provisions of the lease.

q. Lessee agrees to save and hold harmless the Lessor and its agents, servants, and employees of, from any and all liabilities. expenses, causes of action, damages and attorney's fees resulting from any of Lessee's businesses, operations, occupancy, or use of the airfield or leased premises, or resulting from any act or omission of Lessee's agents, servants or employees. This indemnity agreement shall apply and protect such Lessor and its agents, servants, and employees, even though it be contended, or even established, that said Lessor or its agents, servants, or employees were negligent, or that their conduct or omission in any way caused or contributed to any such liability, expense, damage, cause of action, or attorney's fees.

r. The purpose of the lease and the operations to be conducted by Lessee or Sublessee, and the identity of the premises to be occupied by Lessee, are set forth in this lease. No other operations, business, or occupancy may be conducted without the additional, written consent of the Lessor.

s. This agreement may not be assigned, in whole or in part, nor may the premises described herein be subleased, in whole or in part, without the **prior written** consent of the Lessor. Such consent shall not be unreasonably withheld.

t. In the event Lessee becomes insolvent, or the subject of any kind or chapter of bankruptcy proceeding, or if a receiver, assignee, or other liquidating officer is appointed for the business of Lessee, then Lessor may cancel this lease at Lessor's option upon giving written notice to Lessee.

Call HNTB & Look @ access Rd

Memorandum

To: Lisa Pyles

From: Dave Foster

Date: 1/6/2004

Re: RAMP Projects

Items considered for RAMP projects for FY04:

Gutters for the west side T-Hangars: South sides only $11,470.00 X

Both sides together $21,950.00 X

(2) Repairs for roofs $ 9,000.00 ✓

#1 High → **Concrete repair on the Vehicle Access Road:** 1,500 sq. ft. - $ 7,500.00 ✓

(2) **Hangar roof repairs on S3 (All-American Hangar):** $ 5,500.00 ✓

(2) **Hangar roof repairs on A1 and A1a (Skytech and Millenium):** $ 8,000.00 ✓ Ridge Cap

(3) **Fencing on the south end of airport (Lindbergh):** 1400 l.ft. $14,000.00 ✓

with mow strip?

~~36,000~~

$44,000

36,000
21,000
57,000

3000 gal Fuel Truck

Talk to Robin re Airport Fence mow strip to get rid of grass

plus mow
on access rd -
Roof Repairs = $22,500

Jim Pierce

From: Jim Pierce
Sent: Tuesday, February 18, 2003 4:55 PM
To: Lisa Pyles (E-mail)
Cc: Mark Acevedo
Subject: RAMP Projects

Lisa: The "fix" for the grass area/mowing problem will cost about $75,000 plus about $7,500 for engineering. This is based on Robin's and my opinion after looking at the site and puts it out of the RAMP range unless you want to add some money to it. The Westside T hanger area we feel is an overlay project with spot repairs, but it is way above the RAMP money range.

Perhaps the guard rail on Lindbergh, or striping will be better for RAMP.

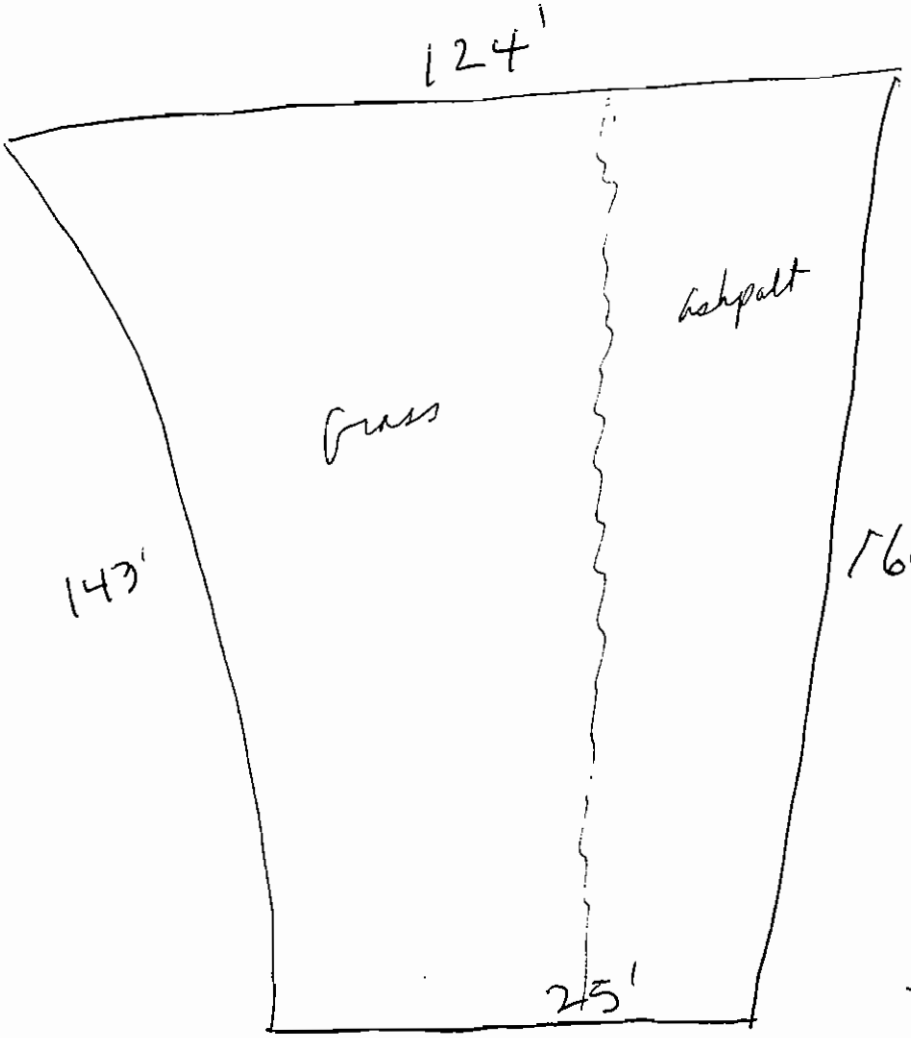
For a point of information, due to the dollar amount ($60,000), whatever project you choose will have to go thru the bidding process.

Please let me know what you decide.

Jim Pierce, P.E.
Assistant Public Works Director
P.O. Box 9010
Addison, TX 75001-9010
972-450-2879

2/03

Airport - Grassy Area - Mow Problem
cost est to pave



160
+143
303 ÷ 2 =

151.5' avg width

25
+ 124'
149 ÷ 2 = 74.5' avg width

Area = 74.5' x 151.5' = 11,287 ft² - or 1,254 yd²

731 yd³ excavation

1254 yd² x $ 50.00 62,700

731 yd³ excavation x 10 = 7310

$ 70,010

plus Engineering

#3 Robin

RAMP

Capital Improvement Projects	**Expected Costs**
Drainage Ditch (North end and Million Air) awaiting Master Plan	
West Side Overlay or Reconstruction	~~$88,000~~
Generator and Pilot Control Lighting	$45,000
Drainage Ditch- South End	
Runway Overlay	$2,500,000
Txwy Tango/Sierra Reconstruction	$417,000
Drainage Ditches along Txwy Uniform and Victor	
Txwy Alpha Reconstruction-Overlay/ Service Road Overlay	$1,820,000
Txwy Romeo Reconstruction-Overlay	$127,000
Overlay North Tie Downs	$55,000
Txwy Bravo Concrete Rehab/ Concrete Txwy Echo	$165,000
Airport Roads- Overlay / Reconstruction	$154,000
Vehicle Access Road Reconstruction/Repairs	$30,000
	$5,401,000

RAMP Projects

(2) West

Skytech Ramp Overlay
Grass Island on Txwy Uniform
Taxiway Striping
Non-Movement Area Boundary (1)
Signage Improvements (new signs for Txwy Romeo, Quebec, and Poppa and Replacement of Faded Sign Panels)

Call Engrs for Best Response

Items Needing Discussion

Txwy Romeo T-Hangars and Pavement
Txwy Poppa T-Hangars and Pavement
Noise Barrier for Run-up Areas
Lease Line Striping
Jet Hangar Repairs
Maintenance Shop and Equipment Storage
Skytech and Millennium Hangar Repairs
Seal Coat Patio Hangars during Construction
Apron Repairs

4/16/03 DRAFT

TABLE 7D
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
NOISE ABATEMENT ELEMENT					
1. Continue Pilot Education Program.	Administrative	None	Ongoing	Town of Addison	Operating budgets
2. Continue to Encourage use of NBAA Noise Abatement Procedures.	Administrative	None	Ongoing	Town of Addison	Operating budgets
3. Continue to Promote use of AOPA Noise Awareness Steps by light single and twin-engine aircraft.	Administrative	None	Ongoing	Town of Addison	Operating budgets
4. Create a Departure Procedure for Runway 15 that Incorporates Maintaining Runway Heading for 1.5 DME prior to Turning on Course for Business Jets and Turboprop Aircraft.	Administrative	Negligible	2004 / 2005	Town of Addison & FAA Flight Standards Division	Operating budgets
5. Construct a Run-up Enclosure.	$2,400,000	None	2004 / 2005	Town of Addison	FAA (90%) Airport Capital Budget (10%)
LAND USE MANAGEMENT ELEMENT					
1. Establish an Airport Influence Area (AIA) for the purposes of land use regulation.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
2. Update the General Plans for the Town of Addison and the cities of Carrollton and Farmers Branch to incorporate the 2007 65 DNL noise contour.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, and Carrollton	Operating budgets

3. Establish project review guidelines for the review of development projects within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
4. Maintain compatible zoning designations within the AIA.	Administrative	None	Ongoing	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
5. Enact overlay zoning to provide noise compatibility use standards within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
6. Amend subdivision regulations to require the granting of an avigation easement prior to development within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
7. Amend building codes in each jurisdiction to incorporate prescriptive noise standards.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
8. Adopt fair disclosure ordinances to ensure that future property owners are aware of the nosie produced by the airport prior to purchasing property within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
9. Acquire an ~~18~~-acre section of land which borders airport property to the northwest.	$3,000,000	None	2004	Addison Airport	FAA (90%) Airport Capital Budget (10%)

DRAFT

10. Acoustically treat 15 single family homes and 568 apartment units within the squared-off 2007 65 DNL noise contour.	$3,140,000	None	~~2004~~ Subject to avail funds	Addison Airport	FAA (90%) Airport Capital Budget (10%)
PROGRAM MANAGEMENT ELEMENT					
1. Maintain and update the system for receiving, analyzing, responding to noise complaints, and community outreach.	Administrative	None	Ongoing	Addison Airport	Airport Operating Budget
2. Publish a pilot's guide.[1]	$2,500 every three years	None	2004 and ongoing	Addison Airport	Airport Operating Budget
3. Review Noise Compatibility Program implementation.	$20,000 every three years	None	Ongoing	Addison Airport	Airport operating budget
4. Update Noise Exposure Maps and Noise Compatibility Program.	$300,000	None	~~Ongoing~~ 5-7 years	Addison Airport	FAA (90%) Airport Capital Budget (10%)

	Funding Source	**Amount**	**Percent**
Total Costs and Funding	FAA	$7,956,000	89.3%
	Airport Operating Budget	$67,500	0.8%
	Airport Capital Budget	$884,000	9.9%
	Total	$8,907,500	

[1] Initial cost of the pilot guide is covered under the cost of this Part 150 Study Update

DRAFT

8/24/04

Addison! Airport

GROUND VEHICLE TRAINING COURSE

Luis Elguezabal ~ 972-392-4850

OBJECTIVES

Familiarization of vehicle operators with:

- The airport driving rules and regulations, and penalties for violations
- Airside driving requirements
- Vehicle requirements
- Movement area and Non-Movement area driving requirements
- Airport familiarization
- Taxiway area recognition
- Runway area recognition
- Communications
- Light gun signals

Driving Rules and Regulations

Operator Requirements:

- Satisfactorily complete this class
- Aircraft have the right of way
- 15 MPH on roadways
- Perimeter gates closes behind vehicle
- Clearance from ATCT before entering the Movement area
- License holder is responsible for the currency of the airport's drivers license

Driving Rules and Regulations

- **Vehicle Requirements:**
  - Liability Insurance
  - Sound mechanical condition
  - Movement area – rotating yellow beacon visible from the air
- **Violation of Rules:**
  - Penalties for failure to comply with the Ground Vehicle Regulations shall consist of written warnings, suspension of airside driving privileges, and/or revocation of airside driving privileges. Receipt of 3 written warnings by an operator of a vehicle in any 12-month period will automatically result in suspension of airside driving privileges. Receipt of 5 written warnings in any 12-month period will automatically result in revocation of airside driving privileges.
  - Based on an evaluation of the circumstances or the severity of a particular incident or incidents, the Airport Director, or his/her designee, reserves the exclusive right to assess any penalty it deems appropriate at any time to any individual authorized to operate a vehicle on the airside without regard to prior operating history.
  - Suspension of airside driving privileges shall be no less that 3 calendar days and no greater that 30 calendar days.
  - The Airport Director will provide a copy of all written warnings issued to an operator to the local manager of the company owning or in possession and control of the vehicle or vehicles involved in the violation(s).

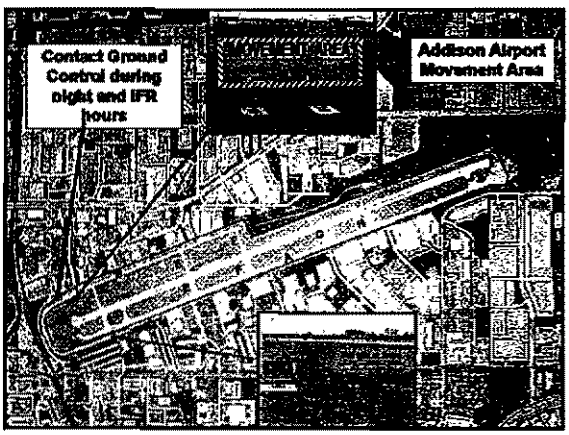
NON-MOVEMENT AREA

- Use extreme caution
- Aircraft have right of way
- Watch for blind spots around aircrafts or buildings
- Use perimeter road only

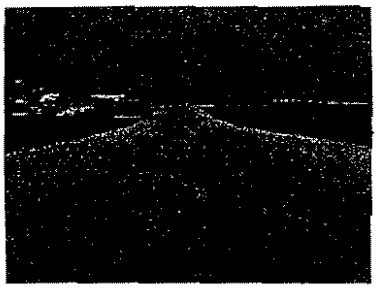
NON MOVEMENT AREAS

MOVEMENT AREA

- Under ATCT control
- Vehicles necessary for airport operations
- Rotating yellow beacon

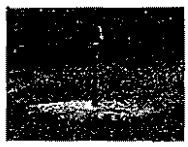


MOVEMENT AREAS



TAXIWAYS

- Lights – Blue



TAXIWAYS

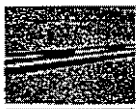
- Signs:
  - Designation and Direction

  - Location

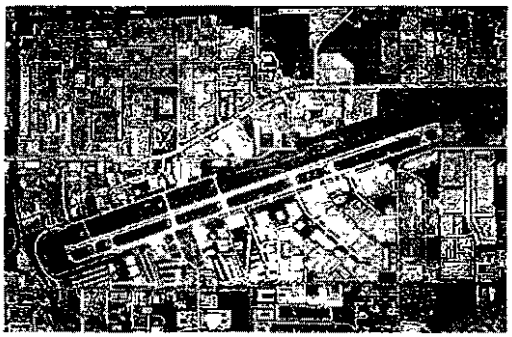
  - Safety Area Boundary

TAXIWAYS

- Markings:
  - Runway Hold Position and Centerline
  - Non-Movement Area
  - ILS Critical Area

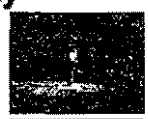


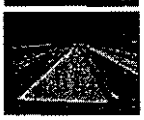
RUNWAY 15-33



Runway

- Lights:
  - Runway Edge
  - Threshold
- Markings



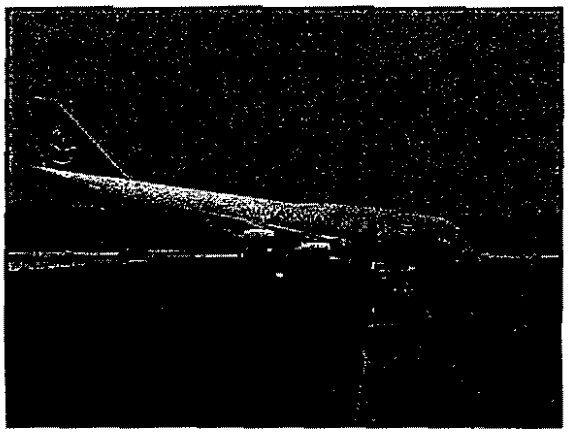


Runway

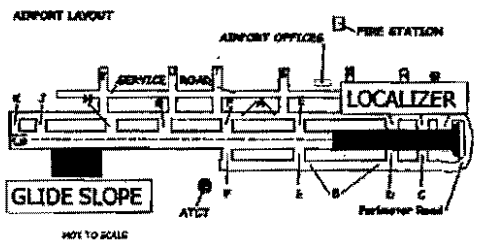
- Signs:
  - Mandatory Hold Position

  - ILS Hold Position

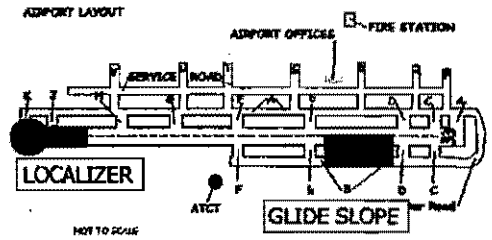
  - Runway Distance Remaining



RUNWAY 15 CRITICAL AREAS



RUNWAY 33 CRITICAL AREAS



Left n Right

Height

ILS ANTENNAS

- Localizer
- Glideslope

COMMUNICATIONS

- MONITOR THE FREQUENCY
- ALLOW AIRCRAFT TO USE THE FREQUENCY FIRST
  - Wait your turn, aircraft have priority
  - Who you are, Where you are, What is your intention
  - Listen for your call sign
- READBACK ALL HOLD SHORT INSTRUCTIONS
  - EXAMPLE: "Airport 3 will hold short of runway 15"
- ACKNOWLEDGE ALL TOWER INSTRUCTIONS
- YEILD TO ALL AIRCRAFT AND EMERGENCY VEHICLES

RADIO FREQUENCIES

- TOWER - 126.0 MHz
- GROUND CONTROL - 121.6 MHz
- CLEARENCE DELIVERY - 119.55 MHz
  - BACK-UP FOR GROUND CONTROL

COMMUNICATIONS

STAND BY — with your transmission

GO AHEAD

ROGER — I understand

WILCO — will comply

NO RADIO PROCEDURES

WHAT TO DO IF YOUR RADIO FAILS.....

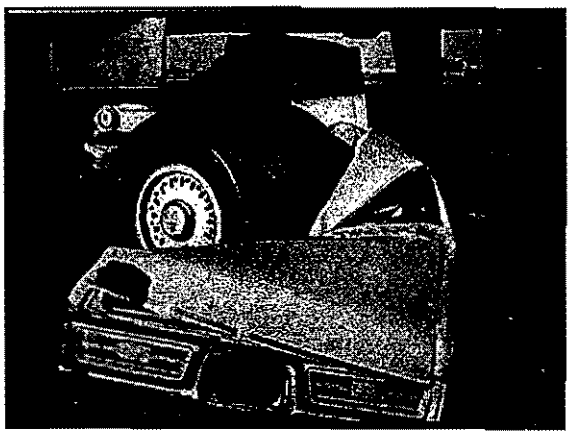
- WHILE AT HOME BASE
  - Stay there and get new radio
- WHILE ON RAMP/NON-MOVEMENT AREA
  - Remain clear of movement area
  - Seek assistance

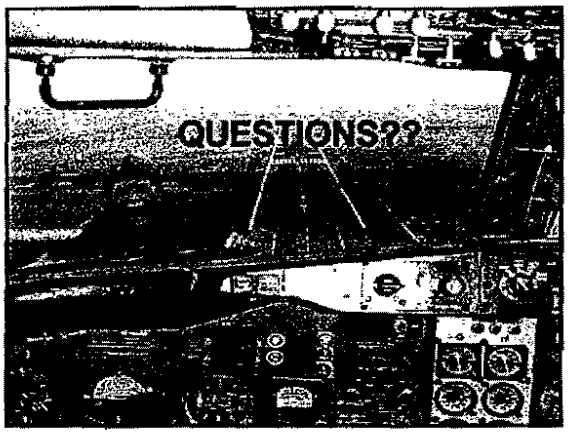
NO RADIO PROCEDURES

- WHILE ON MOVEMENT AREA, INCLUDING WEST SIDE OF AIRPORT
  - Exit movement area to safe location
  - Remain clear of runway at all times
  - Look for Light Gun signals

LIGHT GUN SIGNALS

- Steady Green – OK to cross Runway or Taxiway
- Steady Red – Stop
- Flashing Red – Move off the Runway or Taxiway
- Flashing White – Go back to where you started
- Alternating Red and Green – Use extreme caution




QUESTIONS??

7-27-00

ADDISON AIRPORT
NOISE ABATEMENT/ACTIONS/ PROGRAMS INITIATIVES

Noise issues are a continuing concern to any city where an airport is located. Over the years, the Town of Addison has worked with the operator to address the concerns of residents and will continue to do so under the new operating agreement with Raytheon/Staubach. To date, the following actions have been taken:

1. A takeoff procedure has been drafted that will minimize over-flight of noise sensitive neighborhoods
2. Notification materials have been printed and distributed to aircraft owners, Airport tenants and pilots by the current operator and by Fixed Base Operators to remind pilots of these noise sensitive areas and the suggested takeoff procedure to use to avoid these areas.
3. A notification sign has been installed at the end of the taxiway as a reminder to pilots (before takeoff) to follow the suggested takeoff procedure to reduce noise over residential areas

Both the Town staff and the staff of Addison's FAA Tower have observed that, when the above procedures are followed, noise complaints are virtually non-existent and complaints occur only when these procedures are not followed. The Town has encouraged Airport tenants to follow these voluntary guidelines.

NEW OPERATING AGREEMENT STANDARDS

Under the proposed new operating agreement, additional efforts to control noise will be implemented. The new operator will:

1. Expand on existing education and notification efforts. These could include efforts each quarter to keep noise abatement concerns and procedures in front of tenants and pilots.
2. Provide Town staff with a monthly report listing the number of noise complaints, the action taken to respond to the complaint and the offending aircraft/user, if known. This reporting/tracking mechanism will help pinpoint repeat offenders so appropriate action can be taken.
3. Meet with aircraft users/operators to discuss noise abatement programs and to secure higher levels of cooperation from tenants and pilots.

The new operator has agreed to implement these three steps. The new contract will include financial incentives to the Operator for positively impacting better implementation of noise abatement program and for pro-active pursuit of compliance.

STEPS FOR THE FUTURE

While working through the public process of planning an orderly transition to a new operator, the Town has continued efforts to address noise control issues.

The Town has submitted a request to the FAA for a Part 150 Noise Study, which will address all noise issues and potential solutions. When funded by the FAA, this is an extremely comprehensive study and may take as much as two years to complete after funding has been approved.

In addition, a request has been submitted to the FAA to seek the development and implementation of a Random Area Navigation (RNAV) departure procedure. While the FAA has, tentatively, confirmed that an RNAV departure procedure to reduce noise is feasible, it takes 6 to 9 months for formal action by the FAA. Since this process will provide an official FAA departure route, it can be expected to have a positive impact on reducing noise as well as mitigating possible environmental concerns.

The Town and the Operator will pursue obtaining both a Remote Transmitter-Receiver and an ASOS (Automatic Surface Observation System, weather reporting). While not direct solutions, these two items will have an indirect but positive impact on the noise abatement program when the Addison Control Tower is not in operation. These requests and a follow-up pursuit are being made to the FAA.

The possibility of additional operating hours of the Addison Control Tower is also being considered. The City and new operator have met with the Tower Chief and will be officially requesting FAA consideration of additional operating hours with the goal of establishing a 24-hour tower operation in the future. While the FAA has guidelines and operating traffic standards that must be met in order to add operating hours, the Town is considering paying for these additional hours from the Airport budget. Additional hours of tower operations will provide better service to airport users and better enforcement of noise control procedures.

If you have specific questions concerning any Airport matters, contact the Town of Addison, at 972-450-7000.

NOISE COMPATIBILITY PROGRAM

The Noise Compatibility Program (NCP) for Addison Airport includes measures to abate aircraft noise, guide land development, and implement and update the program. F.A.R. Part 150 requires that the plan apply to a period of no less than five years into the future, although it may apply to a longer period if the sponsor so desires. This NCP has been developed based on a ten-year planning period.

The objective of the noise compatibility planning process has been to improve the compatibility between aircraft operations and noise-sensitive land uses in the area, while allowing the airport to continue to serve its role in the community, state, and nation. The NCP includes three elements that are aimed at satisfying this objective.

- The **Noise Abatement Element** includes noise abatement measures selected from the alternatives evaluated in Chapter Five, Noise Abatement Alternatives.

- The **Land Use Management Element** includes measures to mitigate or prevent noise impact on existing noise-impacted land uses and future land use development in the airport environs. Potential land use management techniques were evaluated in Chapter Six, Land Use Alternatives.

- The **Program Management Element** includes procedures and documents for implementing the recommended noise abatement and land use measures, monitoring the progress of the program, and updating the Noise Compatibility Program.

Each measure of the NCP is summarized in **Table 7F** at the end of this chapter. Included in the table is a brief description of each recommended measure, the entity responsible for implementing each measure, cost of each measure, proposed timing of measure implementation, and potential sources of funding.

This chapter begins with a discussion of the recommended airfield improvements recommended in the concurrent Master Plan and associated effects on the aircraft noise exposure contours followed by a review of the alternatives eliminated from further consideration and a discussion of those alternatives considered to be viable. Finally, the program management element will be outlined and summary of all recommended measures and costs will be provided.

RECOMMENDED MASTER PLAN AIRFIELD IMPROVEMENTS

The concurrent Master Plan has recommended several airfield improvements. Among the improvements are a northern 408-foot extension of Runway 15-33, construction of a west side parallel taxiway that will temporarily be used for a runway while Runway 15-33 is being reconstructed, new fuel storage facilities, and new hangar facilities. Of the recommended improvements, only the runway extension will affect the noise exposure contours.

The extension of Runway 15-33 is anticipated to occur in the next five years. Therefore, this runway extension must be reflected on the five-year noise exposure map (NEM). Because the westside parallel taxiway will only be used as a runway temporarily, noise analysis of this airfield configuration is not required under federal guidelines.

2007 NOISE EXPOSURE CONTOURS WITH THE 408-FOOT EXTENSION TO RUNWAY 15-33

Contour Descriptions

The 2007 noise exposure contours which take into account the runway extension are depicted on **Exhibit 7A.** These contours replace the contours contained within the Noise Exposure Map document as the official noise contours.

The contours are similar in shape and size to the 2007 noise contours presented within the Noise Exposure Map document with the exception of the areas north of the airport. In this area, the 65 DNL contour extends approximately 300 feet further north than the previous contours. The 70 and 75 DNL contours also extend to the north by 200 and 400 feet, respectively.

Land Use Impacts

As contained within **Table 7A**, Three hundred and sixty-six (366) dwelling units are contained within the adjusted 2007 65 DNL noise contours. Of these

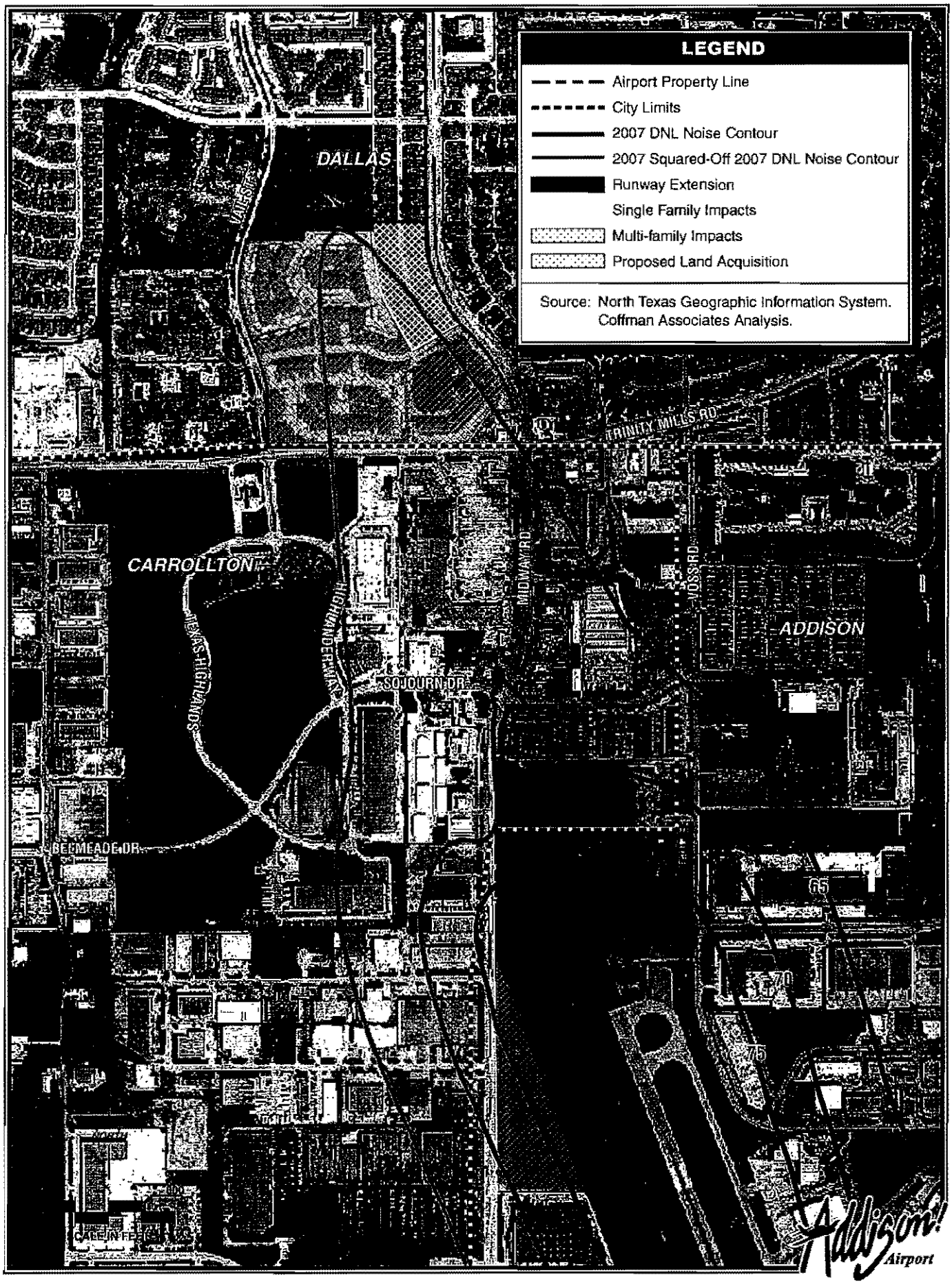


Exhibit 7D
RECOMMENDED MITIGATION AREAS
WITHIN THE 2007 NOISE CONTOURS

without an on-site inspection by a qualified specialist. For planning purposes only, the costs of treating homes is estimated to be $20,000 each and the cost of treating apartments is estimated to be $5,000 each, including contingencies. This is roughly based on the cost of acoustically treating homes near other airports.

This project would be eligible for FAA funding through the noise set-aside of the AIP. The acoustical treatment costs are eligible for up to 90 percent funding through the AIP. The local match will be provided through the Airport's capital budget.

Timing. These homes will be eligible for treatment after approval of the updated NCP by the FAA, expected in 2004. The overall pace of the program will depend on the completion of a feasibility study and the amount of funding available.

PROGRAM MANAGEMENT ELEMENT

The success of the Noise Compatibility Program requires a continuing effort to monitor compliance and identify new or unanticipated problems and changing conditions. Five program management measures are recommended at Addison Airport. The Airport Authority, as airport operator, is responsible for implementing these measures. They are discussed below and summarized in **Table 7F**.

1. Maintain and update the system for receiving, analyzing, responding to noise complaints, and community outreach.

Description. The airport currently has a system of recording, responding to noise complaints, as well as pro-active community outreach efforts. In addition to recording and filing complaints, it is important for the airport management to continue to respond to complaints, even if it is not possible to take remedial action. As part of this effort, it is recommended that the Airport continue to utilize their web site to keep the public informed of noise-related activities at the airport. Additionally, the Airport should continue to host meetings between airport users, airport tenants, and private citizens. These meetings are beneficial as they allow Airport staff to gain an understanding of future potential issues and the success of the current noise abatement policies and procedures.

Relationship to 1991 NCP. This is a continuation of the Noise Abatement Measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. The administrative actions discussed above in the "Description" will be necessary.

Cost and Funding. This will involve administrative costs.

Timing. This is an ongoing measure that is expected to continue in the future.

2. Publish a pilot guide.

Description. A pilot guide describing airport noise abatement information should be prepared for wide distribution to pilots using Addison Airport. The guide should include an aerial photo showing the airport and the surrounding area, pointing out noise-sensitive land uses and preferred noise abatement procedures. It could also include other information about the airport that pilots would find useful. The guide should be suitable for insertion into a Jeppesen manual so that pilots will be able to conveniently use it.

Airport management should distribute copies to all owners of aircraft based at the airport and to the fixed base operators so they can offer them to transient pilots.

Relationship to 1991 NCP. This a continuation of the noise abatement measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation. The Town of Addison is responsible for arranging for publication of a pilot guide.

Cost and Funding. The cost of a pilot guide is estimated at $5,000. It is currently budgeted as part of this F.A.R. Part 150 Study. The pilot guide should be revised and reissued as needed. For planning purposes, it is estimated that it will need to be republished every three years at a total cost of approximately $7,500.

Timing. Publication of a pilot guide is planned for 2003.

3. Review Noise Compatibility Program Implementation.

Description. The airport management must monitor compliance with the Noise Abatement Element. This will involve checking periodically with airport users and the local Tower Manager regarding compliance with the procedures.

It may be necessary from time to time to arrange for noise monitoring, noise modeling, or flight track analysis to study issues that may arise in the future.

The Town of Addison should also maintain communications with local planning officials and planning officials from the cities of Farmers Branch, Carrollton, and Dallas, to follow their progress in implementing the requested measures of the Land Use Management Element.

Relationship to 1991 NCP. This is a continuation of the noise abatement measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. The administrative actions discussed above in the "Description" will be necessary.

Cost and Funding. This measure will require administrative time and staff support. Expenditures for special noise

monitoring or modeling studies could be necessary from time to time. For budgeting purposes, this cost is estimated at $20,000 every three years. This will be covered through the airport's operating budget.

Timing. This is an ongoing activity that should begin as soon as the Noise Compatibility Program is approved.

4. Update Noise Exposure Maps and Noise Compatibility Program.

Description. The Town of Addison should review the Noise Compatibility Program (NCP) and consider revisions and refinements as necessary. A complete plan update will be needed periodically to respond to changing conditions in the local area and in the aviation industry. This can be anticipated every five to ten years. An update may be needed sooner, however, if major changes occur. An update may not be needed until later if conditions at the airport and in the surrounding area remain stable or do not change as anticipated in the Plan.

Proposed changes to the NCP should be reviewed by the FAA and all affected aircraft operators and local agencies. Proposed changes should be submitted to the FAA for approval after local consultation and a public hearing to comply with F.A.R. Part 150.

Even if the NCP does not need to be updated, it may become necessary to update the Noise Exposure Maps (NEMs). F.A.R. Part 150 requires the NEMs to be updated if any change in the operation of the airport would create a substantial, new non-compatible use. The FAA interprets this to mean an increase in noise levels of 1.5 DNL or more, above 65 DNL, over non-compatible areas that had formerly been compatible.

As a rule of thumb, the trigger for determining the need for contour updating is a 17 percent change in equivalent operations by the loudest aircraft regularly using the airport. To calculate "equivalent operations," any nighttime operations (between 10:00 p.m. and 7:00 a.m.) must be multiplied by ten and added to daytime operations.

Relationship to 1991 NCP. This a continuation of the noise abatement measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. No specific implementation actions, other than those discussed above, are required.

Cost and Funding. Costs of a complete update of the Noise Compatibility Program are estimated at $300,000. This would be eligible for up to 90 percent funding from the FAA. The Airport's share would come from the airport's operating budget.

Timing. This should be done as necessary. Updates are typically needed every five to ten years, depending on how much change occurs at the airport and in the local area. For planning purposes, two updates can be expected over the next 20 years.

RESIDUAL NOISE IMPACTS

Noise contours for the current conditions are shown in **Exhibit 7E**. These can be compared with the projected noise contours for 2007 and 2022 in **Exhibits 7F** and **7G**. Contours within each of the exhibits include north only the planned runway extension for Runway 15-33, but also the implementation of Noise Abatement Element Measure Four. This measure applies to business jets and turboprop aircraft and calls for the creation of a departure procedure for Runway 15 that incorporates maintaining runway heading for 1.5 DME prior to turning on course.

Implementation of this measure results in a slight extension of the 65 DNL noise contour to the south, over compatible land uses. The 70 DNL contour actually gets smaller in size to the south, and the 75 DNL contour does not change.

Table 7D shows the number of dwelling units exposed to noise for baseline conditions and after implementation of the Noise Compatibility Program. With the implementation of the program, no existing dwellings are added to the 65 DNL contour. Without proper land use planning, an additional nine dwelling units could be built within the primary noise abatement corridor to the south. Implementation of the recommendations within the Land Use Management Element would prevent these additional nine units, as well as the other 371 potential units.

Table 7E contains the population exposed to noise with implementation of the Noise Compatibility Program in comparison with baseline conditions. With the implementation of the program, no additional residents would be included within the 65 DNL noise contour. As discussed above, without proper land use planning, an additional 21 residents could reside within the 65 DNL noise contour.

impacts, none are contained within the 70 DNL noise contour. One noise-sensitive institution is contained within the 65 DNL noise contour.

Future noise impacts were calculated based on the growth risk analysis contained within Chapter Four of the Noise Exposure Map document. Based on this analysis, approximately 451 total future dwelling units could potentially be contained within the 65 DNL noise contour, including 59 within the 70 to 75 DNL contour and 21 within the 75 DNL contour.

TABLE 7A
Noise-Sensitive Land Uses Exposed to 2007 Aircraft Noise
With Implementation of the Preferred Airport Master Plan Alternative
Addison Airport

	Noise Contour (DNL)			
LAND USE	**65-70**	**70-75**	**75+**	**Total**
DWELLING UNITS				
Existing Dwelling Units	366	0	0	366
Future Potential Dwelling Units	371	59	21	451
Total Dwelling Units	737	59	21	817
NOISE-SENSITIVE INSTITUTIONS				
Places of Worship	0	0	0	0
Schools	0	0	0	0
Other (Library, Museum, Etc.)	1	0	0	1
Total Noise-Sensitive Institutions	1	0	0	1
HISTORIC RESOURCES				
Total Historic Resources	0	0	0	0

Population Impacts

As contained within **Table 4B**, Approximately 919 individuals are contained within the adjusted 2007 noise contour. This estimate is based on the persons per dwelling factor contained within the 2000 census report for the Addison area. A factor of 2.51 persons per dwelling was used in the calculation.

Future population impacts were calculated in the same manner described within Chapter Four of the Noise Exposure Map document. According to this analysis, approximately 1,132 potential future residents could be located within the 65 DNL contour, including 148 within the 70 to 75 DNL contour and 52 within the 75 DNL contour.

TABLE 7B
Population Exposed to 2007 Aircraft Noise
With Implementation of the Preferred Airport Master Plan Alternative
Addison Airport

	Noise Contour (DNL)			Total Above 65 DNL	
	65-70	70-75	75+	Residents	LWP
Existing Population	919	0	0	919	346
Potential Population	932	148	52	1,132	497
Total Population	**1,851**	**148**	**52**	**2,051**	**843**

Notes: LWP = Level-weighted population; an estimate of the number of people actually annoyed by aircraft noise. It is derived by multiplying the population in each DNL contour range by the appropriate LWP response factor. The factors used are as follows: 0.376 for 65-70 DNL, 0.644 for 70-75 DNL, and 1.000 for 75+ DNL.
Source: Coffman Associates analysis.

NOISE ABATEMENT AND LAND USE MEASURES ELIMINATED FROM CONSIDERATION

Several noise abatement and land use alternatives were evaluated in this study. These were discussed with the Planning Advisory Committee (PAC), local citizens, and government officials. The following paragraphs summarize those alternatives, presented for further discussion within Chapters Five and Six, which were eliminated from further consideration after additional study.

Three noise abatement alternatives were considered within Chapter Five. Further evaluation of these alternatives resulted in the elimination of two of these alternatives. Alternative Two, moving the run-up location and adjusting the aircraft orientation during run-ups, was eliminated as it shifted run-up noise from one group of businesses to another.

Alternative Three, construction of a run-up enclosure, was also eliminated as FAA does not provide funding assistance for mitigation measures that mitigate the noise impacts on office, commercial, or industrial land uses.

Chapter Six considered the establishment of a Joint Airport Zoning Board to draft, adopt, and oversee an Airport Zoning Ordinance. After further discussions with affected jurisdictions, it was determined that, due to the number of jurisdictions involved, it would not be feasible to regulate land use with such a board. The current informal coordination process has been effective in reviewing projects and maintaining compatibility in the vicinity of the airport.

NOISE ABATEMENT ELEMENT

The recommended noise abatement measures are described in this section. They include existing measures to be retained and new measures. Recommended noise abatement measures are described within this section and summarized in **Table 7F** at the end of this chapter.

EXISTING MEASURES TO BE RETAINED

1. Continue Pilot Education Program.

Description. The purpose of the pilot education program and noise abatement brochure distribution program is to educate all pilots based at Addison Airport as well as transient pilots. The goal of these programs is to inform pilots of the noise-sensitive land uses within the airport environs and to encourage avoidance of these areas whenever possible.

The Town of Addison has implemented a voluntary noise abatement program as a means to reduce the number of noise complaints. As part of this program, lighted signage has been installed at each end of the airport's runways reminding pilots to use proper noise abatement departure procedures. In addition, monthly noise abatement meetings are held by the airport management to discuss ways to educate pilots about voluntary compliance with the noise abatement program. These meetings are attended by pilots, flight department directors, and other airport users. A hand-out has also been produced detailing noise abatement procedures and has been placed in FBOs to reach transient pilots and tenants.

Relationship to 1991 NCP. This is a continuation of the Noise Abatement Measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. As an existing noise abatement policy, no additional implementation actions are necessary. The Town of Addison should continue to hold monthly meetings with airport users to ensure operators are aware of the noise abatement program.

Cost and Funding. As an existing policy, no additional costs will be borne by the airport users. The Town will incur normal administrative costs for informational efforts and sign maintenance.

Timing. This is an existing policy which is recommended to continue.

2. Continue to Encourage use of NBAA Noise Abatement Procedures.

Description. The Town should actively encourage business jet operators to use the National Business Aviation Association's (NBAA) Approach and Landing Procedure and Standard Noise Abatement Departure Procedures, or equivalent quiet-flying procedures developed by aircraft manufacturers.

The NBAA standard procedure involves the management of thrust, flap settings, speed, and climb rate to reduce noise quickly after takeoff. (A complete description of the procedure is in **Appendix F**.)

The NBAA has also published noise abatement approach procedures for jet aircraft. These include using minimum approach flap settings, maintaining minimum speed, and minimizing the use of reverse thrust after landing, consistent with safety. These procedures are also included in **Appendix F**.

Relationship to 1991 NCP. This is a continuation of the pilot education program the Town of Addison initiated after the 1991 NCP was approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. Since this is an existing policy, no specific implementation actions are necessary. The Town should reflect this policy in future published pilots guides, signs, pilot mailings, and on the Addison Airport Internet Web Site.

Cost and Funding. As an existing policy, no additional costs will be borne by the airport users. The Town will incur normal administrative costs for informational efforts.

Timing. This is an existing policy which is recommended to continue.

3. Continue to Promote use of AOPA Noise Awareness Steps by light single and twin-engine aircraft.

Description. The Aircraft Owners and Pilots Association (AOPA) encourages quiet and neighborly flying by distributing generalized noise abatement procedures for use by propeller aircraft. These "Noise Awareness Steps" have recommendations on how to fly the aircraft, as well as where to fly. Most of the steps provide guidance on pilot technique when maneuvering near noise-sensitive areas. The steps also encourage cooperation with the airport staff on noise abatement issues. These procedures are listed in **Appendix F** of this document.

It is not possible to predict how often these procedures would be used, so it is not possible to quantify their effects on noise. Nevertheless, any use of these procedures will help the overall noise conditions around the airport. Consequently, the airport staff should continue to encourage their use.

Relationship to 1991 NCP. This is a continuation of pilot education program the Town of Addison initiated after the 1991 NCP was approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. Since this is an existing policy, no specific implementation actions are necessary.

The Town should reflect these noise awareness steps in future published pilot guides, signs, pilot mailings, and on the Addison Airport Internet Web Site.

Cost and Funding. As an existing policy, no additional costs will be borne by the airport users. The Town will incur normal administrative costs for informational efforts.

Timing. This is an existing policy which is recommended to continue.

NEW MEASURES

Two noise abatement measures currently not implemented are recommended for implementation as listed below.

4. Create a Departure Procedure for Runway 15 that Incorporates Maintaining Runway Heading for 1.5 DME prior to Turning on Course for Business Jets and Turboprop Aircraft.

Description. A new departure procedure (DP) for business jets and turboprop aircraft should be developed that incorporates maintaining runway heading for 1.5 DME prior to turning to the 100-degree heading or a heading designated by departure control. Maintaining runway heading to the south for 1.5 DME prior to turning would keep aircraft over compatible development and avoid noise-sensitive areas to the southeast and southwest of the airport. This procedure could also be overlaid in the future with a series of waypoints to define an area navigation (RNAV) departure procedure.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. This is proposed as a departure procedure. The FAA Flight Standards Division would be charged with the establishment of 1.5 DME departure procedure from Runway 15.

It does not appear that this procedure would require an environmental assessment as the procedure would not direct aircraft over existing noise-sensitive areas at altitudes below 3,000 feet AGL. Neither does the procedure cause increased noise within the 65 DNL contour in existing residential areas. Decisions about the need for an environmental assessment, however, must be made by FAA.

Cost and Funding. Administrative costs will be borne by the FAA Flight Standards Division in establishing this procedure. The FAA may incur additional administrative costs in undertaking any potential environmental review needed.

Airport users may incur increased operational costs due to a slightly increased flight time and delays during peak periods in a southern flow when this procedure is in effect.

Timing. This is recommended for implementation after FAA review and

approval of the NCP and following any necessary environmental analysis/ approvals. This is anticipated in 2004/2005.

LAND USE MANAGEMENT ELEMENT

The recommended land use mitigation measures for the vicinity of Addison Airport are presented on the following pages and summarized within **Table 7F**. Many of the measures affect not only the Town of Addison, but also the cities of Carrollton, Farmers Branch, and Dallas. The Town of Addison is *requesting* that these cities implement the following measures. Implementation of the measures will help to ensure compatible development in the surrounding areas to minimize the noise impacts and continue to provide a viable airport that area businesses can depend on.

1. Establish an Airport Influence Area (AIA) for the purposes of land use regulation.

Description. The Town of Addison should adopt an AIA for land use planning purposes. It is requested that the cities of Farmers Branch, Carrollton, and Dallas also consider the adoption of such a boundary.

The suggested AIA is based upon the Airport's F.A.R. Part 77 horizontal surface as depicted on **Exhibit 7B**. The creation of an AIA would define the area within which the airport now exerts, and in the future may exert, a significant influence on local residents and potentially noise-sensitive land uses. The AIA would be appropriately contained within the various jurisdictions' general plan or, in the case of Dallas, the zoning ordinance.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. The adoption of an AIA can be established by the various jurisdictions by amending their respective general plans or zoning ordinance.

Cost and Funding. Adoption of this measure will involve administrative expenses for the various jurisdictions. These expenses would have to be paid from the respective operating budgets.

Timing. Amendments to general plans and zoning ordinances take time to prepare and process. The required amendments for this measure are projected for 2004.

2. Update the General Plans for the Town of Addison and the cities of Carrolton and Farmers Branch.

Description. The Town of Addison should adopt the 2007 65 DNL noise contour in place of the previously prepared noise contours which are part of the existing general plan. It is requested that the cities of Farmers Branch and Carrollton also consider the adoption of the contours. In addition, the Town of Addison should discourage

all noise-sensitive development within the 65 DNL noise contour. It is requested that the City of Carrollton also consider discouraging all noise sensitive development within the 65 DNL noise contour. Currently, those jurisdictions discourage only residential development.

Relationship to 1991 NCP. This is a partial continuation of a measure which was included in the 1991 NCP. The 1991 NCP recommended that the City of Dallas and the Town of Addison incorporate the noise contours into their respective comprehensive and area plans. The 1991 plan recommended prohibiting residential development within the 65 DNL contour and requiring sound attenuation for all other development within this contour. The Town of Addison and City of Carrolton currently prohibit residential development within the 65 DNL contour.

Implementation Actions. These policies can be established by the various jurisdictions by amending their respective general plans.

Cost and Funding. Adoption of this measure will involve administrative expenses for the various jurisdictions. These expenses would have to be paid from the respective operating budgets.

Timing. Amendments to general plans take time to prepare and process. The required amendments for this measure are projected for 2004.

3. Establish project review guidelines for the review of development projects within the AIA.

Description. This policy is proposed to apply through the AIA. The adoption of special project review criteria, specifically addressing airport land use compatibility needs, would provide guidance to land use decision-makers as they review project proposals.

The following project review criteria should be included in the local general plans or as checklists for consideration by local planners, planning commissions, and governing bodies. These criteria are specifically suggested for use in reviewing planned development, rezoning, special use, conditional use, and variance applications within the AIA. The following criteria are suggested:

A. Determine the sensitivity of the subject land use to aircraft noise levels based on the requirements contained within **Table 7C**.

B. Advise the airport management of development proposals involving noise-sensitive land uses within the 2007 65 DNL noise contour.

C. Locate noise-sensitive public facilities outside the 2007 65 DNL contour and away from the primary aircraft traffic pattern, if possible. Also, require the dedication of noise and avigation easements to

the Town of Addison as airport proprietor.

D. Discourage the approval of rezonings, exceptions, variances, and conditional uses which introduce noise-sensitive development into areas exposed to noise exceeding 65 DNL.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. The Town of Addison should adopt these project review criteria either through a general plan amendment or as administrative guidelines. It is requested that the cities of Dallas, Carrollton, and Farmers Branch also consider implementing this tool.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

4. Maintain compatible zoning designations within the AIA.

Description. Areas within the 2007 65 DNL noise contour that are zoned for compatible land uses should be maintained.

Relationship to 1991 NCP. This is a continuation of a measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. This measure would be implemented by the Town of Addison. It is requested that the cities of Carrollton, Dallas, and Farmers Branch also consider implementing this measure.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. This is an on-going measure with no implementation time frame.

5. Enact overlay zoning to provide noise compatibility use standards within the AIA.

Description. To regulate land uses within the AIA, three districts of airport compatibility overlay zoning should be developed, with varying levels of protection based on the district designation. **Exhibit 7C** depicts the recommended noise overlay zones.

Airport Overlay Zone One (AO-1) would contain the areas within the 65 DNL contour. Future development within this overlay zone would be limited to non-noise-sensitive development such as open space, commercial, or industrial uses.

Airport Overlay Zone Two (AO-2) would encompass the areas within the approach and departure paths. Noise-sensitive development in these zones

would be allowed, but noise attenuation standards would be required.

Airport Overlay Zone Three (AO-3) would then encompass the remaining AIA. The purpose of this zone would be primarily for public disclosure of potential aircraft noise and overflight impacts. Avigation easements would be required for all new noise-sensitive development within the AIA.

Table 7C outlines a potential noise compatibility overlay matrix which would be included within the overlay zone description of the zoning ordinance for each jurisdiction.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. The Town of Addison should incorporate the various overlay zones into their respective zoning ordinances. It is requested that the cities of Carrollton, Farmers Branch, and Dallas also consider implementation of this measure.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

6. Amend subdivision regulations to require the granting of an avigation easement prior to development within the AIA.

Description. The Town of Addison should amend its subdivision regulations to support the relevant requirements of the Airport Overlay Zoning amendments. It is requested that the cities of Farmers Branch, Carrollton, and Dallas also consider similar amendments.

Specifically, the regulations should be amended to require the dedication of avigation easements for development within the AIA.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP. The 1991 NCP recommended acquiring avigation easements for all development within the 65 DNL noise contour.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction amending its subdivision regulations.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

TABLE 7C
Noise Compatibility Overlay Zoning Matrix
Addison Airport

	Uses allowed within each zone		
	AO-1 (65 DNL contour and greater)	**AO-2 (approach zones)**	**AO-3 (airport influence area boundary)**
RESIDENTIAL			
Single family, duplex, multi-family, manufactured housing	No	Yes [4, 5]	Yes [5]
Recreational vehicle parks	No	Yes [4, 5]	Yes [5]
Other residential	No	Yes [4, 5]	Yes [5]
PUBLIC FACILITIES			
Educational facilities	No	Yes [4, 5]	Yes [5]
Religious facilities, libraries, museums, galleries, clubs and lodges	No	Yes [6, 5]	Yes [5]
Outdoor sport events, entertainment and public assembly (except amphitheaters)	Yes [2, 5]	Yes	Yes
Indoor recreation, amusement parks, athletic clubs, gyms, spectator sports	Yes [5]	Yes	Yes
Neighborhood, community, and regional parks	Yes	Yes	Yes
Outdoor recreation (i.e. tennis, golf courses, riding trails, etc.)	Yes	Yes	Yes
Cemeteries	Yes [1]	Yes	Yes
INDUSTRIAL			
Any type of industrial facility such as the processing of food, wood, and paper products; printing and publishing; warehouses, wholesale, and storage activities; refining, manufacturing and storage of chemicals, petroleum and related products; manufacturing of stone, clay, glass, leather, gravel and metal products; construction and salvage yards; natural resource extraction and processing; etc.	Yes [5, 7]	Yes [7]	Yes

TABLE 7C (Continued)
Noise Compatibility Overlay Zoning Matrix
Addison Airport

	Uses allowed within each zone		
	AO-1 (65 DNL contour and greater)	**AO-2 (approach zones)**	**AO-3 (airport influence area boundary)**
COMMERCIAL			
Hotels/motels	Yes [1, 5]	Yes	Yes
Hospitals and other health care services	No	Yes [3]	Yes
Services: financial, real estate, insurance, professional, and government offices	Yes [5]	Yes	Yes
Retail sales: building materials, farm equipment, automotive, marine, mobile homes, recreational vehicles, and accessories	Yes [5]	Yes	Yes
Restaurants, eating and drinking establishments	Yes [5]	Yes	Yes
Retail sales: general merchandise, food, drugs, apparel, etc.	Yes [5]	Yes	Yes
Personal services: barber and beauty shops, laundry and dry cleaning, etc.	Yes [5]	Yes	Yes
Automobile service stations	Yes [5]	Yes	Yes
Repair services	Yes [5]	Yes	Yes
AGRICULTURE			
Animal husbandry; livestock farming, breeding and feeding; plant nurseries (excluding retail sales)	Yes [1, 5]	Yes	Yes
Farming (except livestock)	Yes [1, 5]	Yes	Yes
MISCELLANEOUS			
Transportation terminals, utility and communication facilities	Yes [5]	Yes	Yes
Vehicle parking	Yes	Yes	Yes

TABLE 7C (Continued)
Noise Compatibility Overlay Zoning Matrix
Addison Airport

NOTES:

1 The land use or activity is permitted; however, an outdoor-to-indoor noise level reduction of 45 decibels must be incorporated into the design and construction of those buildings where people work, live, or are otherwise received.

2 Land use is compatible provided special sound reinforcement systems are installed.

3 The land use or activity is permitted; however, an outdoor-to-indoor noise level reduction of 25 decibels must be incorporated into the design and construction of buildings and structures.

4 Residential/educational buildings require a noise level reduction of 25 decibels.

5 Avigation easement required for new development.

6 It is suggested that residential development incorporate noise attenuation standards into building and/or landscape design.

7. Uses that produce air pollutants that may obscure vision in any way, or which involve raw materials, products or by-products, which pose a potential explosive hazard, are not permitted.

7. Amend building codes in each jurisdiction to incorporate prescriptive noise standards and require an avigation easement as a condition of development, extensive remodeling or reconstruction, as these types of construction typically require a building permit and inspections.

Description. For those areas contained within the 65 DNL noise contour, the Town of Addison should amend its building codes to incorporate prescriptive noise standards. It is requested that the cities of Farmers Branch, Carrollton, and Dallas also consider such an amendment.

Prescriptive noise standards are perhaps the most commonly used approach to sound insulation standards. The existing building code would be amended to set forth specific construction standards intended to achieve a given level of noise reduction. It would be the duty of the local building inspectors to ensure that the correct materials are used and construction is done properly. After installation and a successful inspection, the building is presumed to be able to achieve the targeted level of noise reduction.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction amending its building codes.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

8. Adopting fair disclosure ordinances to ensure that future property owners are aware of the noise produced by the airport prior to purchasing property within the AIA.

Description. The Town of Addison should adopt fair disclosure ordinances in order to educate future residents of the potential impact of airport operations. It is requested that the cities of Farmers Branch, Carrollton, and Dallas also consider the adoption of such ordinances.

Within the ordinances, the responsibilities of real estate agents and sellers should be clearly defined and should be limited simply to disclosing the airport noise levels or overlay districts affecting the property and directing buyers to airport officials for more information.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

9. Acquisition of an 8.61-acre section of land which borders airport property to the northwest and is contained within the 2007 70 and 75 DNL noise contours.

Description. As depicted on **Exhibit 7D**, a triangular-shaped area of undeveloped land is located within the 2007 70 and 75 DNL noise contour. This 8.61-acre section is located adjacent to the northwest boundary of airport property and consists of four parcels.

The property is zoned for compatible industrial and transportation land uses and would most likely be developed as light industrial or office space due to its proximity to the central business district of Addison. This potential development is concerning as the property is located in close proximity to the site where aircraft maintenance run-ups are performed. Many of the current noise complaints received by the Airport are due to the impact of run-up activity on office spaces located near the airport. This site would be closer in

proximity to airport activity than any of the offices which currently lodge noise complaints.

The FAA typically actively supports airport ownership of land impacted by noise above 70 DNL. This parcel of land falls almost entirely within the 70 and 75 DNL noise contours; thereby, severely limiting the type of development that could successfully operate in such a location.

It is recommended that the parcel be purchased for future aviation uses. Purchasing this parcel would prevent potential incompatible land uses, allowed as conditional uses under the current zoning, from being immediately adjacent to the Airport.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. Following FAA approval of the NCP, the Town of Addison will need to appraise the parcels to be acquired.

Cost and Funding. It is anticipated that the parcels would cost approximately six million dollars to acquire. This project would be eligible for FAA funding through the noise set-aside of the AIP. The property acquisition costs are eligible for up to 90 percent funding through the AIP. The local match will be provided through the Airport's capital budget.

Timing. The property will be eligible for purchase after approval of the updated NCP by the FAA, expected in 2004.

10. Acoustically treat 15 single family homes and 568 apartment units within the squared-off 2007 65 DNL noise contour.

Description. Within the City of Dallas, 15 single family homes and 34 apartment buildings, containing 568 units, are contained within the squared-off 2007 65 DNL noise contour. It is recommended that these dwellings, depicted on **Exhibit 7D,** be considered for sound insulation.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. Following FAA approval of the NCP, the Town of Addison will need to secure funding for a feasibility study and the acoustical treatment of the eligible dwellings. The Town will then need to retain the services of acoustical engineers with expertise in sound insulation of existing structures. The engineers will need to coordinate with homeowners in undertaking inspections of the homes in order to develop a work scope and detailed specifications for the treatment program. The Town, in association with property owners, can then request bids from qualified contractors.

Cost and Funding. It is not possible to reasonably estimate the cost of acoustically treating the apartments

TABLE 7D
Noise-Sensitive Land Uses Exposed to Noise
With Noise Compatibility Program Versus Baseline Conditions

	Baseline Noise (Without Program)		With Noise Compatibility Program	
	2002	**2007[1]**	**2007**	**2022**
Existing Noise-Sensitive Institutions				
65+ DNL	1	1	1	1
Potential Future Noise-Sensitive Institutions				
65+ DNL	NA	0	0	0
Existing Dwellings				
65+ DNL	283	366	366	40
Additional Potential Dwellings[2]				
65-70 DNL	NA	371	380	205
70-75 DNL	NA	59	59	38
75+ DNL	NA	21	21	11
Total Future Dwellings				
Total above 65 DNL	NA	451	460	254

Source: Coffman Associates Analysis
[1] Represents 2007 Noise Exposure Map impacts with Master Plan preferred alternative.
[2] Implementation of the Land Use Management measures would reduce or eliminate potential dwelling units within the future noise exposure contours.

TABLE 7E
Population Exposed to Noise
With Noise Compatibility Program Versus Baseline Condition

	Baseline Noise (Without Program)		With Noise Compatibility Program	
	2002	2007[1]	2007[1,2,4]	2022[1,4]
65-70 DNL	741	932	953	515
70-75 DNL	0	148	148	94
75+DNL	0	52	52	27
Total above 65 DNL	741	1,132	1,153	636
LWP[3] above 65 DNL	279	498	506	281

1 Includes potential future residents of additional housing that may be developed inside noise contours.
2 Represents 2007 Noise Exposure Map impacts with Master Plan preferred alternative.
3 LWP - level-weighted population is an estimation of the number of people actually annoyed by noise. The actual population within each 5 DNL range is multiplied by the appropriate response factor to compute LWP. The factors are: 65-70 DNL - .376; 70 to 75 DNL - .644; 75+ DNL - 1.00. See the *Technical Information Paper*, "Measuring the Impact of Noise on People."
4 Implementation of the Land Use Management measures would reduce or eliminate potential dwelling units within the future noise exposure contours.

Source: Coffman Associates Analysis

SUMMARY

The Noise Compatibility Program for Addison Airport is summarized in **Table 7F** on the next page. The total cost of the program is estimated at **$9,507,500**. Most of the costs are related to the purchase of the undeveloped property within the 70 to 75 DNL noise contour ($6,000,000). Other significant costs include the costs of acoustically treating dwellings within the squared-off 65 DNL noise contour ($3,140,000).

Approximately 89 percent of the cost ($8,496,000) would be eligible for FAA funding through the noise set-asides of the Federal Airport Improvement Program. Approximately one and three-quarter percent of the cost ($67,500) would be paid through the Airport's operating budget. Approximately ten percent ($944,000) would be covered through the Airport's capital budget.

The recommended noise abatement measures can reduce disturbing aircraft noise in the area. The land use planning measures can also help to limit the potential for future noise-sensitive development in the airport area. Continuing program management will provide for a timely response to conditions that may change over time and require a re-evaluation of future noise conditions. While the Town of Addison must provide leadership and coordination of the entire program, success hinges on the cooperation of all involved parties.

TABLE 7F
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
NOISE ABATEMENT ELEMENT					
1. Continue Pilot Education Program.	Administrative	None	Ongoing	Town of Addison	Operating budgets
2. Continue to encourage use of NBAA noise abatement procedures.	Administrative	None	Ongoing	Town of Addison	Operating budgets
3. Continue to promote use of AOPA noise awareness steps by light single and twin-engine aircraft.	Administrative	None	Ongoing	Town of Addison	Operating budgets
4. Create a departure procedure for Runway 15 that incorporates maintaining runway heading for 1.5 DME prior to turning on course for business jets and turboprop aircraft.	Administrative	Negligible	2004 / 2005	Town of Addison & FAA Flight Standards Division	Operating budgets
LAND USE MANAGEMENT ELEMENT					
1. Establish an Airport Influence Area (AIA) for the purposes of land use regulation.	Administrative	None	2004	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets

TABLE 7F (Continued)
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
LAND USE MANAGEMENT ELEMENT (Continued)					
2. Update the General Plans for the Town of Addison and the cities of Carrollton and Farmers Branch to incorporate the 2007 65 DNL noise contour.	Administrative	None	2004	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets
3. Establish project review guidelines for the review of development projects within the AIA.	Administrative	None	2004	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets
4. Maintain compatible zoning designations within the AIA.	Administrative	None	Ongoing	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets
5. Enact overlay zoning to provide noise compatibility use standards within the AIA.	Administrative	None	2004	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets
6. Amend subdivision regulations to require the granting of an avigation easement prior to development within the AIA.	Administrative	None	2004	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets

TABLE 7F (Continued)
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
LAND USE MANAGEMENT ELEMENT (Continued)					
7. Amend building codes in each jurisdiction to incorporate prescriptive noise standards.	Administrative	None	2004	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets
8. Adopt fair disclosure ordinances to ensure that future property owners are aware of the noise produced by the airport prior to purchasing property within the AIA.	Administrative	None	2004	Town of Addison (Cities of Farmers Branch, Carrollton, and Dallas are requested to implement this measure.)	Operating budgets
9. Acquire an 8.61-acre section of land which borders airport property to the northwest.	$6,000,000	None	2004	Addison Airport	FAA (90%) Airport Capital Budget (10%)
10. Acoustically treat 15 single family homes and 568 apartment units within the squared-off 2007 65 DNL noise contour.	$3,140,000	None	2004	Addison Airport	FAA (90%) Airport Capital Budget (10%)
PROGRAM MANAGEMENT ELEMENT					
1. Maintain and update the system for receiving, analyzing, responding to noise complaints, and community outreach.	Administrative	None	Ongoing	Addison Airport	Airport Operating Budget

TABLE 7F (Continued)
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
PROGRAM MANAGEMENT ELEMENT (Continued)					
2. Publish a pilot guide.[1]	$2,500 every three years	None	2004 and ongoing	Addison Airport	Airport Operating Budget
3. Review Noise Compatibility Program Implementation.	$20,000 every three years	None	Ongoing	Addison Airport	Airport operating budget
4. Update Noise Exposure Maps and Noise Compatibility Program.	$300,000	None	Ongoing	Addison Airport	FAA (90%) Airport Capital Budget (10%)
		Funding Source		**Amount**	**Percent**
Total Costs and Funding		FAA		$8,496,000	89.4%
		Airport Operating Budget		$67,500	0.7%
		Airport Capital Budget		$944,000	9.9%
		Total		$9,507,500	

[1] Initial cost of the pilot guide is covered under the cost of this Part 150 Study Update.

NOISE COMPATIBILITY PROGRAM

The Noise Compatibility Program (NCP) for Addison Airport includes measures to abate aircraft noise, guide land development, and implement and update the program. F.A.R. Part 150 requires that the plan apply to a period of no less than five years into the future, although it may apply to a longer period if the sponsor so desires. This NCP has been developed based on a ten-year planning period.

The objective of the noise compatibility planning process has been to improve the compatibility between aircraft operations and noise-sensitive land uses in the area, while allowing the airport to continue to serve its role in the community, state, and nation. The NCP includes three elements that are aimed at satisfying this objective.

- The **Noise Abatement Element** includes noise abatement measures selected from the alternatives evaluated in Chapter Five, Noise Abatement Alternatives.

- The **Land Use Management Element** includes measures to mitigate or prevent noise impact on existing noise-impacted land uses and future land use development in the airport environs. Potential land use management techniques were evaluated in Chapter Six, Land Use Alternatives.

- The **Program Management Element** includes procedures and documents for implementing the recommended noise abatement and land use measures, monitoring the progress of the program, and updating the Noise Compatibility Program.

Each measure of the NCP is summarized in **Table 7F** at the end of this chapter. Included in the table is a brief description of each recommended measure, the entity responsible for implementing each measure, cost of each measure, proposed timing of measure implementation, and potential sources of funding.

This chapter begins with a discussion of the recommended airfield improvements recommended in the concurrent Master Plan and associated effects on the aircraft noise exposure contours followed by a review of the alternatives eliminated from further consideration and a discussion of those alternatives considered to be viable. Finally, the program management element will be outlined and summary of all recommended measures and costs will be provided.

RECOMMENDED MASTER PLAN AIRFIELD IMPROVEMENTS

The concurrent Master Plan has recommended several airfield improvements. Among the improvements are a northern 408-foot extension of Runway 15-33, construction of a west side parallel taxiway that will temporarily be used for a runway while Runway 15-33 is being reconstructed, new fuel storage facilities, and new hangar facilities. Of the recommended improvements, only the runway extension will affect the noise exposure contours.

The extension of Runway 15-33 is anticipated to occur in the next five years. Therefore, this runway extension must be reflected on the five-year noise exposure map (NEM). Because the westside parallel taxiway will only be used as a runway temporarily, noise analysis of this airfield configuration is not required under federal guidelines.

2007 NOISE EXPOSURE CONTOURS WITH THE 408-FOOT EXTENSION TO RUNWAY 15-33

Contour Descriptions

The 2007 noise exposure contours which take into account the runway extension are depicted on **Exhibit 7A.** These contours replace the contours contained within the Noise Exposure Map document as the official noise contours.

The contours are similar in shape and size to the 2007 noise contours presented within the Noise Exposure Map document with the exception of the areas north of the airport. In this area, the 65 DNL contour extends approximately 300 feet further north than the previous contours. The 70 and 75 DNL contours also extend to the north by 200 and 400 feet, respectively.

Land Use Impacts

As contained within **Table 7A**, Three hundred and sixty-six (366) dwelling units are contained within the adjusted 2007 65 DNL noise contours. Of these

01SP07-7D-5/22/03

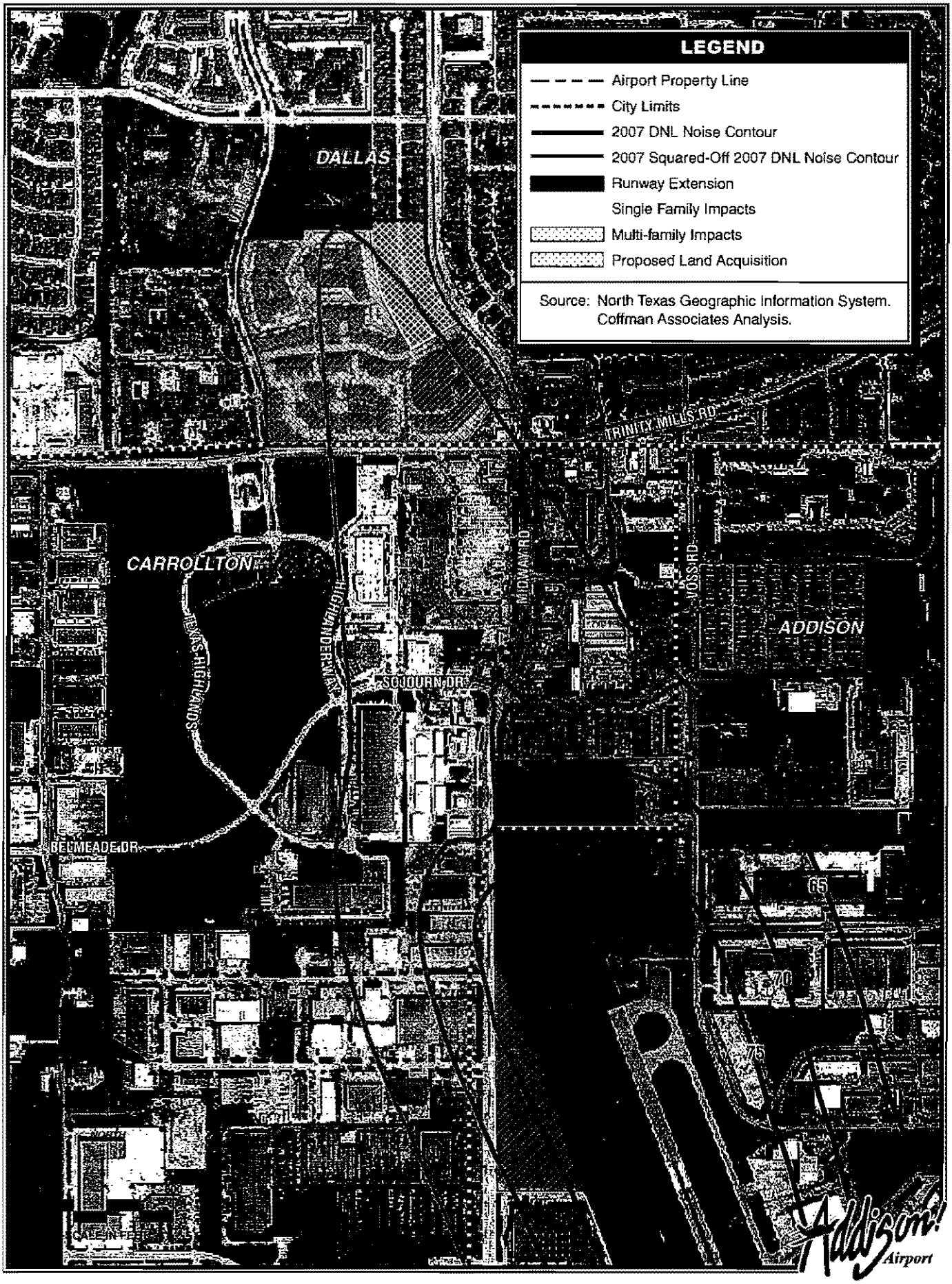


Exhibit 7D
RECOMMENDED MITIGATION AREAS
WITHIN THE 2007 NOISE CONTOURS

without an on-site inspection by a qualified specialist. For planning purposes only, the costs of treating homes is estimated to be $20,000 each and the cost of treating apartments is estimated to be $5,000 each, including contingencies. This is roughly based on the cost of acoustically treating homes near other airports.

This project would be eligible for FAA funding through the noise set-aside of the AIP. The acoustical treatment costs are eligible for up to 90 percent funding through the AIP. The local match will be provided through the Airport's capital budget.

Timing. These homes will be eligible for treatment after approval of the updated NCP by the FAA, expected in 2004. The overall pace of the program will depend on the completion of a feasibility study and the amount of funding available.

PROGRAM MANAGEMENT ELEMENT

The success of the Noise Compatibility Program requires a continuing effort to monitor compliance and identify new or unanticipated problems and changing conditions. Five program management measures are recommended at Addison Airport. The Airport Authority, as airport operator, is responsible for implementing these measures. They are discussed below and summarized in **Table 7F**.

1. Maintain and update the system for receiving, analyzing, responding to noise complaints, and community outreach.

Description. The airport currently has a system of recording, responding to noise complaints, as well as pro-active community outreach efforts. In addition to recording and filing complaints, it is important for the airport management to continue to respond to complaints, even if it is not possible to take remedial action. As part of this effort, it is recommended that the Airport continue to utilize their web site to keep the public informed of noise-related activities at the airport. Additionally, the Airport should continue to host meetings between airport users, airport tenants, and private citizens. These meetings are beneficial as they allow Airport staff to gain an understanding of future potential issues and the success of the current noise abatement policies and procedures.

Relationship to 1991 NCP. This is a continuation of the Noise Abatement Measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. The administrative actions discussed above in the "Description" will be necessary.

Cost and Funding. This will involve administrative costs.

Timing. This is an ongoing measure that is expected to continue in the future.

2. Publish a pilot guide.

Description. A pilot guide describing airport noise abatement information should be prepared for wide distribution to pilots using Addison Airport. The guide should include an aerial photo showing the airport and the surrounding area, pointing out noise-sensitive land uses and preferred noise abatement procedures. It could also include other information about the airport that pilots would find useful. The guide should be suitable for insertion into a Jeppesen manual so that pilots will be able to conveniently use it.

Airport management should distribute copies to all owners of aircraft based at the airport and to the fixed base operators so they can offer them to transient pilots.

Relationship to 1991 NCP. This a continuation of the noise abatement measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation. The Town of Addison is responsible for arranging for publication of a pilot guide.

Cost and Funding. The cost of a pilot guide is estimated at $5,000. It is currently budgeted as part of this F.A.R. Part 150 Study. The pilot guide should be revised and reissued as needed. For planning purposes, it is estimated that it will need to be republished every three years at a total cost of approximately $7,500.

Timing. Publication of a pilot guide is planned for 2003.

3. Review Noise Compatibility Program Implementation.

Description. The airport management must monitor compliance with the Noise Abatement Element. This will involve checking periodically with airport users and the local Tower Manager regarding compliance with the procedures.

It may be necessary from time to time to arrange for noise monitoring, noise modeling, or flight track analysis to study issues that may arise in the future.

The Town of Addison should also maintain communications with local planning officials and planning officials from the cities of Farmers Branch, Carrollton, and Dallas, to follow their progress in implementing the requested measures of the Land Use Management Element.

Relationship to 1991 NCP. This is a continuation of the noise abatement measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. The administrative actions discussed above in the "Description" will be necessary.

Cost and Funding. This measure will require administrative time and staff support. Expenditures for special noise

monitoring or modeling studies could be necessary from time to time. For budgeting purposes, this cost is estimated at $20,000 every three years. This will be covered through the airport's operating budget.

Timing. This is an ongoing activity that should begin as soon as the Noise Compatibility Program is approved.

4. Update Noise Exposure Maps and Noise Compatibility Program.

Description. The Town of Addison should review the Noise Compatibility Program (NCP) and consider revisions and refinements as necessary. A complete plan update will be needed periodically to respond to changing conditions in the local area and in the aviation industry. This can be anticipated every five to ten years. An update may be needed sooner, however, if major changes occur. An update may not be needed until later if conditions at the airport and in the surrounding area remain stable or do not change as anticipated in the Plan.

Proposed changes to the NCP should be reviewed by the FAA and all affected aircraft operators and local agencies. Proposed changes should be submitted to the FAA for approval after local consultation and a public hearing to comply with F.A.R. Part 150.

Even if the NCP does not need to be updated, it may become necessary to update the Noise Exposure Maps (NEMs). F.A.R. Part 150 requires the NEMs to be updated if any change in the operation of the airport would create a substantial, new non-compatible use. The FAA interprets this to mean an increase in noise levels of 1.5 DNL or more, above 65 DNL, over non-compatible areas that had formerly been compatible.

As a rule of thumb, the trigger for determining the need for contour updating is a 17 percent change in equivalent operations by the loudest aircraft regularly using the airport. To calculate "equivalent operations," any nighttime operations (between 10:00 p.m. and 7:00 a.m.) must be multiplied by ten and added to daytime operations.

Relationship to 1991 NCP. This a continuation of the noise abatement measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. No specific implementation actions, other than those discussed above, are required.

Cost and Funding. Costs of a complete update of the Noise Compatibility Program are estimated at $300,000. This would be eligible for up to 90 percent funding from the FAA. The Airport's share would come from the airport's operating budget.

Timing. This should be done as necessary. Updates are typically needed every five to ten years, depending on how much change occurs at the airport and in the local area. For planning purposes, two updates can be expected over the next 20 years.

RESIDUAL NOISE IMPACTS

Noise contours for the current conditions are shown in **Exhibit 7E**. These can be compared with the projected noise contours for 2007 and 2022 in **Exhibits 7F** and **7G**. Contours within each of the exhibits include north only the planned runway extension for Runway 15-33, but also the implementation of Noise Abatement Element Measure Four. This measure applies to business jets and turboprop aircraft and calls for the creation of a departure procedure for Runway 15 that incorporates maintaining runway heading for 1.5 DME prior to turning on course.

Implementation of this measure results in a slight extension of the 65 DNL noise contour to the south, over compatible land uses. The 70 DNL contour actually gets smaller in size to the south, and the 75 DNL contour does not change.

Table 7D shows the number of dwelling units exposed to noise for baseline conditions and after implementation of the Noise Compatibility Program. With the implementation of the program, no existing dwellings are added to the 65 DNL contour. Without proper land use planning, an additional nine dwelling units could be built within the primary noise abatement corridor to the south. Implementation of the recommendations within the Land Use Management Element would prevent these additional nine units, as well as the other 371 potential units.

Table 7E contains the population exposed to noise with implementation of the Noise Compatibility Program in comparison with baseline conditions. With the implementation of the program, no additional residents would be included within the 65 DNL noise contour. As discussed above, without proper land use planning, an additional 21 residents could reside within the 65 DNL noise contour.

OK as noted Notified Dave Fitz by phone 6-20-03

June 24, 2003

Name
Title
Address 1
Address 2

Dear :

The fourth Planning Advisory Committee (~~PAC~~) meeting for the Master Plan and F.A.R. Part 150 Noise Compatibility Study for Addison Airport has been scheduled for July 17, 2003, at the Addison Airport Terminal Building, 4651 Airport Parkway. Since our last meeting, our efforts have been focused on developing recommendations based upon comments received on the previously completed alternatives evaluation. The material to be discussed will be in the form of two draft working papers for the Master Plan and one draft working paper for the Part 150 Study as follows:

Master Plan

- Chapter Five – Airport and Financial Plans
- Appendix A- Environmental Evaluation
- Appendix B- Economic Benefit Analysis

Part 150

- Chapter Seven - Noise Compatibility Plan
- Appendix F- Implementation Materials

Chapter Seven and Appendix F for the Part 150 have been enclosed for your review. The Master Plan Chapter Five and Appendices will be sent to you prior to the committee meeting for your review. Due to the amount of material that will be covered at the meeting, we will be discussing the Master Plan from 9:00 a.m. to 12:00 p.m. We will reconvene from 1:30 p.m. to 4:00 p.m. to discuss the Part 150 recommendations. A public workshop has also been scheduled for later that evening, from 5:30 p.m. to 7:00 p.m. at the Addison Airport Terminal.

We look forward to meeting with you on July 17, 2003. In the meantime, if you have any questions regarding the study or if you should need additional information, please feel free to call me (602-993-6999) or David Fitz (~~816-524-3500~~ 860 #) at any time.

Sincerely,

James M. Harris, P.E.
Principal

c. Jim Pierce, Town of Addison
David Fitz, Coffman Associates

Coffman Associates
Airport Consultants

June 13, 2003

James C. Pierce, JR., P.E.
Assistant Public Works Director
Town of Addison
16801 Westgrove Drive
Addison, TX 75001-9010

Dear Mr. Pierce:

Please find enclosed with this letter four (4) copies of Chapter Seven, Noise Compatibility Plan, for your review. We are hoping to send this working paper to the Advisory Committee the week of June 23, 2003. For us to make this deadline we will need your comments by June 20, 2003. This will give the Advisory Committee plenty of time to review the materials and bring comments to the meeting on July 17, 2003.

Thank you for your attention to this matter. Please do not hesitate to call me at 800-892-7772 if you have any questions.

Sincerely,

David Fitz, AICP
Associate

Enclosures: as stated

cc: Jim Harris, Coffman Associates, Phoenix

CC to Chris Terry
Mark Acevedo
Lesia Pyles
Please send your comments directly to Dave Fitz. Thanks, Jim Pierce

HP LaserJet 3200se

HP LASERJET 3200

JUN-19-2003 2:53PM

Fax Call Report

Job	Date	Time	Type	Identification	Duration	Pages	Result
982	6/19/2003	2:46:32PM	Send	918165242575	6:33	11	OK

TOWN OF
ADDISON **PUBLIC WORKS**

To: Dave Fitz

Company: Coffman Assoc

FAX #: 1-816-524-1575

Date: 6-19-03

# of pages (including cover): 11

Re: Chapter 7 - Noise Compatibility Program

From: Jim Pierce, P.E.
Asst. Public Wks. Dir.
Phone: 972/450-2879
FAX: 972/450-2837
jpierce@ci.addison.tx.us

16801 Westgrove
P.O.Box 9010
Addison, TX 75001-9010

☐ Original in mail ☐ Per your request ☐ FYI ☐ Call me

Comments: Comments attached

Jim

Each measure of the NCP is summarized in **Table 7F** at the end of this chapter. Included in the table is a brief description of each recommended measure, the entity responsible for implementing each measure, cost of each measure, proposed timing of measure implementation, and potential sources of funding.

This chapter begins with a discussion of the ~~recommended~~ airfield improvements recommended in the concurrent Master Plan and associated effects on the aircraft noise exposure contours, followed by a review of the alternatives eliminated from further consideration and a discussion of those alternatives considered to be viable. Finally, the program management element will be outlined and a summary of all recommended measures and costs will be provided.

RECOMMENDED MASTER PLAN AIRFIELD IMPROVEMENTS

The concurrent Master Plan has recommended several airfield improvements. Among the improvements are a northern 408-foot extension of Runway 15-33, construction of a west side parallel taxiway that ~~will~~ could ~~temporarily~~ be used for a runway while Runway 15-33 is being reconstructed, new fuel storage facilities, and new hangar facilities. Of the recommended improvements, only the runway extension will affect the noise exposure contours.

The extension of Runway 15-33 is anticipated to occur in the next five years. Therefore, this runway extension must be reflected on the five-year noise exposure map (NEM). Because the westside parallel taxiway will only be used as a runway temporarily, noise analysis of this airfield configuration is not required under federal guidelines.

2007 NOISE EXPOSURE CONTOURS WITH THE 408-FOOT EXTENSION TO RUNWAY 15-33

Contour Descriptions

The 2007 noise exposure contours which take into account the runway extension are ~~depicted~~ Shown on **Exhibit 7A.** These contours replace the contours contained within the Noise Exposure Map document as the official noise contours.

The contours are similar in shape and size to the 2007 noise contours presented within the Noise Exposure Map document with the exception of the areas north of the airport. In this area, the 65 DNL contour extends approximately 300 feet further north than the previous contours. The 70 and 75 DNL contours also extend to the north by 200 and 400 feet, respectively.

Land Use Impacts

As ~~contained within~~ Shown in **Table 7A**, Three hundred and sixty-six (366) dwelling units are contained within the adjusted 2007 65 DNL noise contours. Of these

impacts, none are contained within the 70 DNL noise contour. One noise-sensitive institution is contained within the 65 DNL noise contour.

Future noise impacts were calculated based on the growth risk analysis contained within Chapter Four of the Noise Exposure Map document. Based on this analysis, approximately 451 total future dwelling units could potentially be contained within the 65 DNL noise contour, including 59 within the 70 to 75 DNL contour and 21 within the 75 DNL contour.

TABLE 7A
Noise-Sensitive Land Uses Exposed to 2007 Aircraft Noise
With Implementation of the Preferred Airport Master Plan Alternative
Addison Airport

	Noise Contour (DNL)			
LAND USE	65-70	70-75	75+	Total
DWELLING UNITS				
Existing Dwelling Units	366	0	0	366
Future Potential Dwelling Units	371	59	21	451
Total Dwelling Units	737	59	21	817
NOISE-SENSITIVE INSTITUTIONS				
Places of Worship	0	0	0	0
Schools	0	0	0	0
Other (Library, Museum, Etc.)	1	0	0	1
Total Noise-Sensitive Institutions	1	0	0	1
HISTORIC RESOURCES				
Total Historic Resources	0	0	0	0

Population Impacts

As contained within **Table 4B**, Approximately 919 individuals are contained within the adjusted 2007 noise contour. This estimate is based on the persons per dwelling factor contained within the 2000 census report for the Addison area. A factor of 2.51 persons per dwelling was used in the calculation.

Future population impacts were calculated in the same manner described within Chapter Four of the Noise Exposure Map document. According to this analysis, approximately 1,132 potential future residents could be located within the 65 DNL contour, including 148 within the 70 to 75 DNL contour and 52 within the 75 DNL contour.

NOISE ABATEMENT ELEMENT

The recommended noise abatement measures are described in this section. They include existing measures to be retained and new measures. Recommended noise abatement measures are described within this section and summarized in **Table 7F** at the end of this chapter.

EXISTING MEASURES TO BE RETAINED

1. Continue Pilot Education Program.

Description. The purpose of the pilot education program and noise abatement brochure distribution program is to educate all pilots based at Addison Airport as well as transient pilots. The goal of these programs is to inform pilots of the noise-sensitive land uses within the airport environs and to encourage avoidance of these areas whenever possible.

The Town of Addison has implemented a voluntary noise abatement program as a means to reduce the number of noise complaints. As part of this program, lighted signage has been installed at each end of the airport's runways reminding pilots to use proper noise abatement departure procedures. In addition, monthly noise abatement meetings are held by the airport management to discuss ways to educate pilots about voluntary compliance with the noise abatement program. These meetings are attended by pilots, flight department directors, and other airport users. A hand-out has also been produced detailing noise abatement procedures and has been placed in FBOs to reach transient pilots and tenants.

Relationship to 1991 NCP. This is a continuation of the Noise Abatement Measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. As an existing noise abatement policy, no additional implementation actions are necessary. The Town of Addison should continue to hold monthly meetings with airport users to ensure operators are aware of the noise abatement program.

Cost and Funding. As an existing policy, no additional costs will be borne by the airport users. The Town will incur normal administrative costs for informational efforts and sign maintenance.

Timing. This is an existing policy which is recommended to continue.

2. Continue to Encourage use of NBAA Noise Abatement Procedures.

Description. The Town should actively encourage business jet operators to use the National Business Aviation Association's (NBAA) Approach and Landing Procedure and Standard Noise Abatement Departure Procedures, or equivalent quiet-flying procedures developed by aircraft manufacturers.

The Town should reflect these noise awareness steps in future published pilot guides, signs, pilot mailings, and on the Addison Airport Internet Web Site.

Cost and Funding. As an existing policy, no additional costs will be borne by the airport users. The Town will incur normal administrative costs for informational efforts.

Timing. This is an existing policy which is recommended to continue.

NEW MEASURES

Two noise abatement measures currently not implemented are recommended for implementation as listed below.

4. **Create a Departure Procedure for Runway 15 that Incorporates Maintaining Runway Heading for 1.5 DME prior to Turning on Course for Business Jets and Turboprop Aircraft.**

Description. A new departure procedure (DP) for business jets and turboprop aircraft should be developed that incorporates maintaining runway heading for 1.5 DME prior to turning to the 100-degree heading or a heading designated by departure control. Maintaining runway heading to the south for 1.5 DME prior to turning would keep aircraft over compatible development and avoid noise-sensitive areas to the southeast and southwest of the airport. This procedure could also be overlaid in the future with a series of waypoints to define an area navigation (RNAV) departure procedure.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. This is proposed as a departure procedure. The FAA Flight Standards Division would be charged with the establishment of 1.5 DME departure procedure from Runway 15.

It does not appear that this procedure would require an environmental assessment as the procedure would not direct aircraft over existing noise-sensitive areas at altitudes below 3,000 feet AGL. Neither does the procedure cause increased noise within the 65 DNL contour in existing residential areas. Decisions about the need for an environmental assessment, however, must be made by FAA.

Cost and Funding. Administrative costs will be borne by the FAA Flight Standards Division in establishing this procedure. The FAA may incur additional administrative costs in undertaking any potential environmental review needed.

Airport users may incur increased operational costs due to a slightly increased flight time and delays during peak periods in a southern flow when this procedure is in effect.

Timing. This is recommended for implementation after FAA review and

approval of the NCP and following any necessary environmental analysis/ approvals. This is anticipated in 2004/2005.

LAND USE MANAGEMENT ELEMENT

The recommended land use mitigation measures for the vicinity of Addison Airport are presented on the following pages and summarized within **Table 7F**. Many of the measures affect not only the Town of Addison, but also the cities of Carrollton, Farmers Branch, and Dallas. The Town of Addison is *requesting* that these cities implement the following measures. Implementation of the measures will help to ensure compatible development in the surrounding areas to minimize the noise impacts and continue to provide a viable airport that area businesses can depend on.

1. Establish an Airport Influence Area (AIA) for the purposes of land use regulation.

Description. The Town of Addison should adopt an AIA for land use planning purposes. It is requested that the cities of Farmers Branch, Carrollton, and Dallas also consider the adoption of such a boundary.

The suggested AIA is based upon the Airport's F.A.R. Part 77 horizontal surface as depicted on **Exhibit 7B**. The creation of an AIA would define the area within which ~~the airport now exerts and in the future may exert, a~~ significant influence on local residents and potentially noise-sensitive land uses. The AIA would be appropriately contained within the various jurisdictions' general plan or, in the case of Dallas, the zoning ordinance.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. The adoption of an AIA can be established by the various jurisdictions by amending their respective general plans or zoning ordinance.

Cost and Funding. Adoption of this measure will involve administrative expenses for the various jurisdictions. These expenses would have to be paid from the respective operating budgets.

Timing. Amendments to general plans and zoning ordinances take time to prepare and process. The required amendments for this measure are projected for 2004.

2. Update the General Plans for the Town of Addison and the cities of Carrolton and Farmers Branch.

Description. The Town of Addison should adopt the 2007 65 DNL noise contour in place of the previously prepared noise contours which are part of the existing general plan. It is requested that the cities of Farmers Branch and Carrollton also consider the adoption of the contours. In addition, the Town of Addison should discourage

airport noise now and in the future may have a

(Can I send a model Avigation Easement?) Appendix Item?

would be allowed, but noise attenuation standards would be required.

Airport Overlay Zone Three (AO-3) would then encompass the remaining AIA. The purpose of this zone would be primarily for public disclosure of potential aircraft noise and overflight impacts. Avigation easements would be required for all new noise-sensitive development within the AIA.

Table 7C outlines a potential noise compatibility overlay matrix which would be included within the overlay zone description of the zoning ordinance for each jurisdiction.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. The Town of Addison should incorporate the various overlay zones into their respective zoning ordinances. It is requested that the cities of Carrollton, Farmers Branch, and Dallas also consider implementation of this measure.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

6. Amend subdivision regulations to require the granting of an avigation easement prior to development within the AIA.

Description. The Town of Addison should amend its subdivision regulations to support the relevant requirements of the Airport Overlay Zoning amendments. It is requested that the cities of Farmers Branch, Carrollton, and Dallas also consider similar amendments.

Specifically, the regulations should be amended to require the dedication of avigation easements for development within the AIA.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP. The 1991 NCP recommended acquiring avigation easements for all development within the 65 DNL noise contour.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction amending its subdivision regulations.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction amending its building codes.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

8. Adopting fair disclosure ordinances to ensure that future property owners are aware of the noise produced by the airport prior to purchasing property within the AIA.

Description. The Town of Addison should adopt fair disclosure ordinances in order to educate future residents of the potential impact of airport operations. It is requested that the cities of Farmers Branch, Carrollton, and Dallas also consider the adoption of such ordinances.

Within the ordinances, the responsibilities of real estate agents and sellers should be clearly defined and should be limited simply to disclosing the airport noise levels or overlay districts affecting the property and directing buyers to airport officials for more information.

Relationship to 1991 NCP. This is a new measure that was not included in the 1991 NCP.

Implementation Actions. This requires adoption of an ordinance by each jurisdiction.

Cost and Funding. This measure will involve administrative expenses. Funding would come from the operating budgets of each jurisdiction.

Timing. For planning purposes, this is projected for 2004.

9. Acquisition of an 8.61-acre section of land which borders airport property to the northwest and is contained within the 2007 70 and 75 DNL noise contours.

Description. As depicted on **Exhibit 7D**, a triangular-shaped area of undeveloped land is located within the 2007 70 and 75 DNL noise contour. This 8.61-acre section is located adjacent to the northwest boundary of airport property and consists of four parcels.

The property is zoned for compatible industrial and transportation land uses and would most likely be developed as light industrial or office space due to its proximity to ~~the central business district of Addison~~ Midway Road. This potential development is a concern as the property is located in close proximity to the site where aircraft maintenance run-ups are performed. Many of the current noise complaints received by the Airport are due to the impact of run-up activity on office spaces located near the airport. This site would be closer in

without an on-site inspection by a qualified specialist. For planning purposes only, the costs of treating homes is estimated to be $20,000 each and the cost of treating apartments is estimated to be $5,000 each, including contingencies. This is roughly based on the cost of acoustically treating homes near other airports.

This project would be eligible for FAA funding through the noise set-aside of the AIP. The acoustical treatment costs are eligible for up to 90 percent funding through the AIP. The local match ~~will~~ would be provided through the Airport's capital budget.

Timing. These homes will be eligible for treatment after approval of the updated NCP by the FAA, expected in 2004. The overall pace of the program will depend on the completion of a feasibility study and the amount of funding available.

PROGRAM MANAGEMENT ELEMENT

The success of the Noise Compatibility Program requires a continuing effort to monitor compliance and identify new or unanticipated problems and changing conditions. Five program management measures are recommended at Addison Airport. The Airport Authority, as airport operator, is responsible for implementing these measures. They are discussed below and summarized in **Table 7F**.

1. Maintain and update the system for receiving, analyzing, responding to noise complaints, and community outreach.

Description. The airport currently has a system of recording and responding to noise complaints, as well as pro-active community outreach efforts. In addition to recording and filing complaints, it is important for the airport management to continue to respond to complaints, even if it is not possible to take remedial action. As part of this effort, it is recommended that the Airport continue to utilize their web site to keep the public informed of noise-related activities at the airport. Additionally, the Airport should continue to host meetings between airport users, airport tenants, and private citizens. These meetings are beneficial as they allow Airport staff to gain an understanding of future potential issues and the success of the current noise abatement policies and procedures.

Relationship to 1991 NCP. This is a continuation of the Noise Abatement Measure which was included in the 1991 NCP and approved by the FAA for purposes of F.A.R. Part 150.

Implementation Actions. The administrative actions discussed above in the "Description" will be necessary.

Cost and Funding. This will involve administrative costs.

Timing. This is an ongoing measure that is expected to continue in the future.

RESIDUAL NOISE IMPACTS

Noise contours for the current conditions are shown in **Exhibit 7E.** These can be compared with the projected noise contours for 2007 and 2022 in **Exhibits 7F** and **7G**. Contours within each of the exhibits include north only the planned runway extension for Runway 15-33, but also the implementation of Noise Abatement Element Measure Four. This measure applies to business jets and turboprop aircraft and calls for the creation of a departure procedure for Runway 15 that incorporates maintaining runway heading for 1.5 DME prior to turning on course.

Implementation of this measure results in a slight extension of the 65 DNL noise contour to the south, over compatible land uses. The 70 DNL contour actually gets smaller in size to the south, and the 75 DNL contour does not change.

Table 7D shows the number of dwelling units exposed to noise for baseline conditions and after implementation of the Noise Compatibility Program. With the implementation of the program, no existing dwellings are added to the 65 DNL contour. Without proper land use planning, an additional nine dwelling units could be built within the primary noise abatement corridor to the south. Implementation of the recommendations within the Land Use Management Element would prevent these additional nine units, as well as the other 371 potential units.

Table 7E contains the population exposed to noise with implementation of the Noise Compatibility Program in comparison with baseline conditions. With the implementation of the program, no additional residents would be included within the 65 DNL noise contour. As discussed above, without proper land use planning, an additional 21 residents could reside within the 65 DNL noise contour.

Label Contours Ditto 76

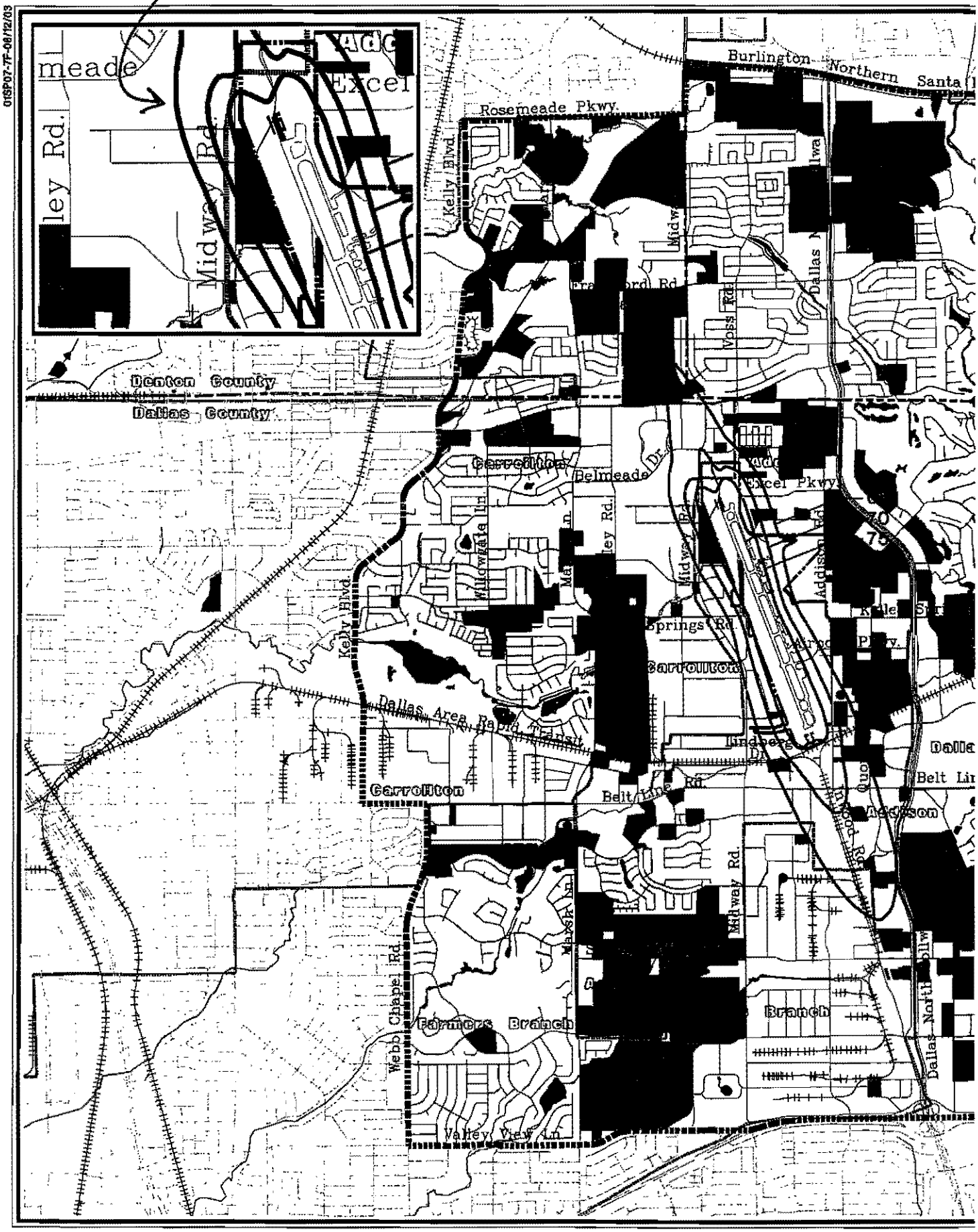


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TABLE 7D
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
NOISE ABATEMENT ELEMENT					
1. Continue Pilot Education Program.	Administrative	None	Ongoing	Town of Addison	Operating budgets
2. Continue to Encourage use of NBAA Noise Abatement Procedures.	Administrative	None	Ongoing	Town of Addison	Operating budgets
3. Continue to Promote use of AOPA Noise Awareness Steps by light single and twin-engine aircraft.	Administrative	None	Ongoing	Town of Addison	Operating budgets
4. Create a Departure Procedure for Runway 15 that Incorporates Maintaining Runway Heading for 1.5 DME prior to Turning on Course for Business Jets and Turboprop Aircraft.	Administrative	Negli-gible	2004/ 2005	Town of Addison & FAA Flight Standards Division	Operating budgets
5. Construct a Run-up Enclosure.	$2,400,000	None	2004 / 2005	Town of Addison	Airport Capital Budget
LAND USE MANAGEMENT ELEMENT					
1. Establish an Airport Influence Area (AIA) for the purposes of land use regulation.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets

TABLE 7D (Continued)
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
LAND USE MANAGEMENT ELEMENT (Continued)					
2. Update the General Plans for the Town of Addison and the cities of Carrollton and Farmers Branch to incorporate the 2007 65 DNL noise contour.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, and Carrollton	Operating budgets
3. Establish project review guidelines for the review of development projects within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
4. Maintain compatible zoning designations within the AIA.	Administrative	None	Ongoing	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
5. Enact overlay zoning to provide noise compatibility use standards within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
6. Amend subdivision regulations to require the granting of an avigation easement prior to development within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
7. Amend building codes in each jurisdiction to incorporate prescriptive noise standards.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets

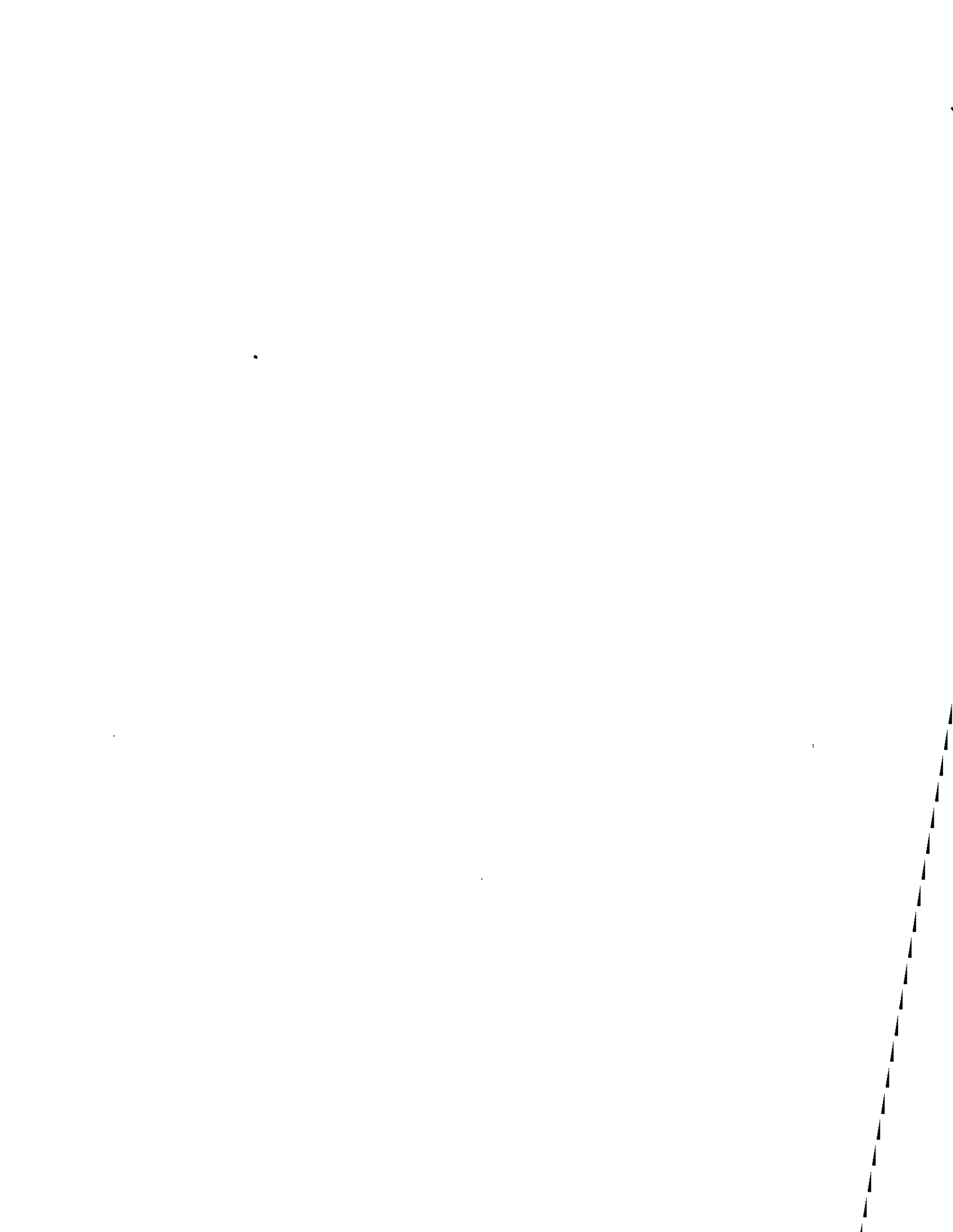
TABLE 7D (Continued)
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

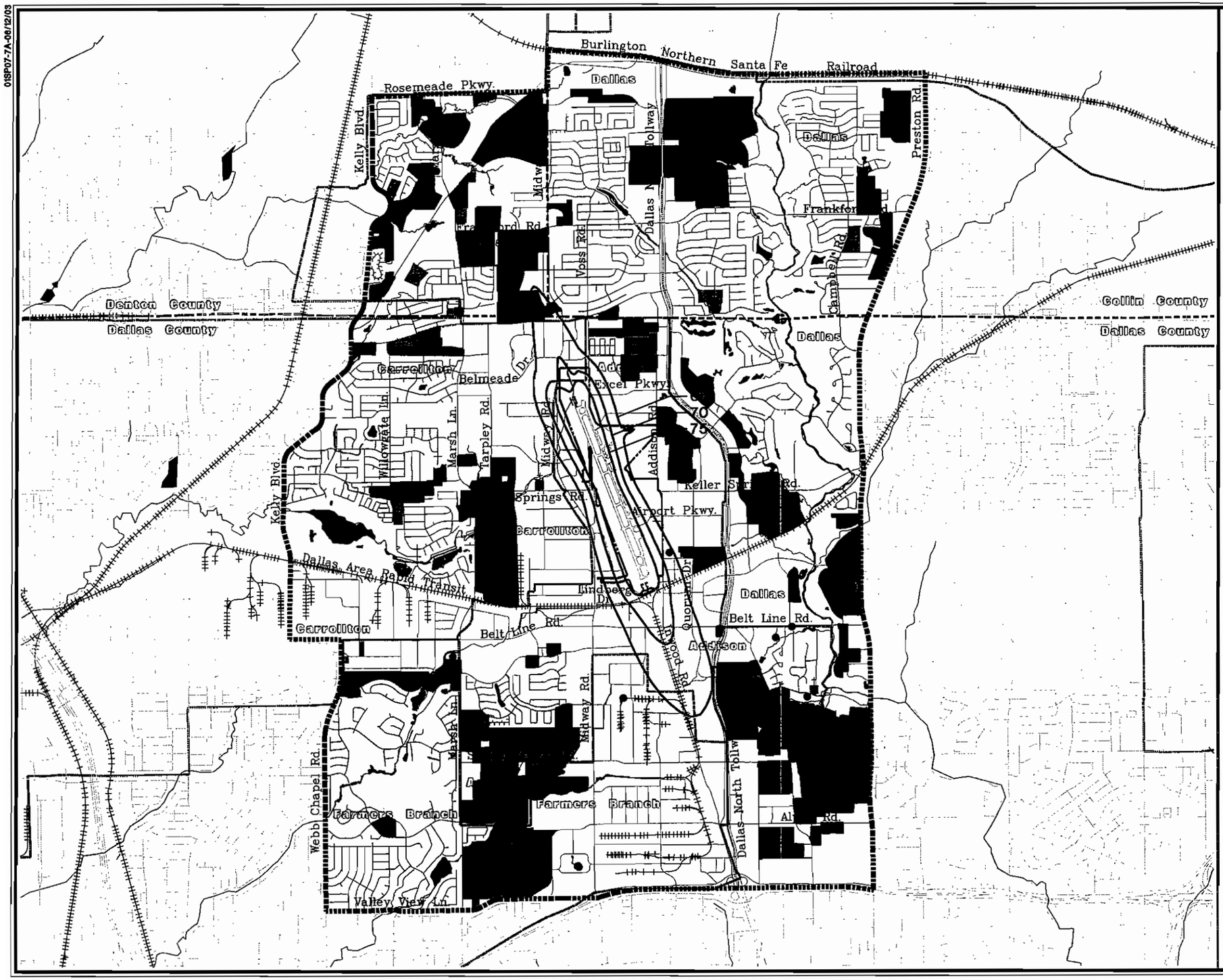
Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
LAND USE MANAGEMENT ELEMENT (Continued)					
8. Adopt fair disclosure ordinances to ensure that future property owners are aware of the noise produced by the airport prior to purchasing property within the AIA.	Administrative	None	2004	Town of Addison, Cities of Farmers Branch, Carrollton, and Dallas	Operating budgets
9. Acquire an 16.61-acre section of land which borders airport property to the northwest.	$6,000,000	None	2004	Addison Airport	FAA (90%) Airport Capital Budget (10%)
10. Acoustically treat 15 single family homes and 568 apartment units within the squared-off 2007 65 DNL noise contour.	$3,140,000	None	2004	Addison Airport	FAA (90%) Airport Capital Budget (10%)
PROGRAM MANAGEMENT ELEMENT					
1. Maintain and update the system for receiving, analyzing, responding to noise complaints, and community outreach.	Administrative	None	Ongoing	Addison Airport	Airport Operating Budget
2. Publish a pilot guide.[1]	$2,500 every three years	None	2004 and ongoing	Addison Airport	Airport Operating Budget
3. Review Noise Compatibility Program Implementation.	$20,000 every three years	None	Ongoing	Addison Airport	Airport operating budget

TABLE 7D (Continued)
Summary of Noise Compatibility Program, 2002-2012
Addison Airport

Measure	Cost to Airport or Government	Direct Cost to Users	Timing	Lead Responsibility	Potential Funding Sources
PROGRAM MANAGEMENT ELEMENT (Continued)					
4. Update Noise Exposure Maps and Noise Compatibility Program.	$300,000	None	Ongoing	Addison Airport	FAA (90%) Airport Capital Budget (10%)
		Funding Source		**Amount**	**Percent**
Total Costs and Funding		FAA		$8,496,000	71.3%
		Airport Operating Budget		$67,500	0.6%
		Airport Capital Budget		$3,344,000	28.1%
		Total		$11,907,500	

[1] Initial cost of the pilot guide is covered under the cost of this Part 150 Study Update





LEGEND

- Detailed Land Use Study Area
- County Boundary
- Municipal Boundary
- Airport Property
- Railroad Tracks
- 2007 NEM Contours (Per Recommended Airport Master Plan)
- Single Family Residential
- Multi-Family Residential
- Mixed Use
- Noise Sensitive Institutions
- School
- Day Care Facility
- Community Center/Lodges
- Medical Facilities
- Residential Care Facility
- Municipal Buildings
- Place of Worship
- Cemetery

Source: North Texas Geographic Information System.
Coffman Associates Analysis.

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Addison Airport

Exhibit 7A
2007 NOISE EXPOSURE CONTOUR WITH 408' EXTENSION TO RUNWAY 15-33

01SP07-7C-08/12/08

Burlington Northern Santa Fe Railroad
Rosemeade Pkwy.
Kelly Blvd.
Marsh Ln.
Dallas North Tollway
Voss Rd.
Preston Rd.
Frankford Rd.
Campbell Rd.
Denton County
Dallas County
Collin County
Dallas
Addison
Carrollton
Belmeade Dr.
Belt Line Rd.
Keller Springs Rd.
Airport Pkwy.
Tarpley Rd.
Midway Rd.
Addison Rd.
Willowgate Ln.
Dallas Area Rapid Transit
Spring Valley Rd.
Webb Chapel Rd.
Farmers Branch
Alpha Rd.
Valley View Ln.
65
70
75

LEGEND

- Detailed Land Use Study Area
- County Boundary
- Municipal Boundary
- Airport Property
- Railroad Tracks
- 2007 NEM Contours (Per Recommended Airport Master Plan)
- Zone 1 (65 DNL Contour)
- Zone 2 (Approach and Departure Paths)
- Zone 3 (Part 77, Horizontal Surface)

Source: North Texas Geographic Information System.
Coffman Associates Anelysis.

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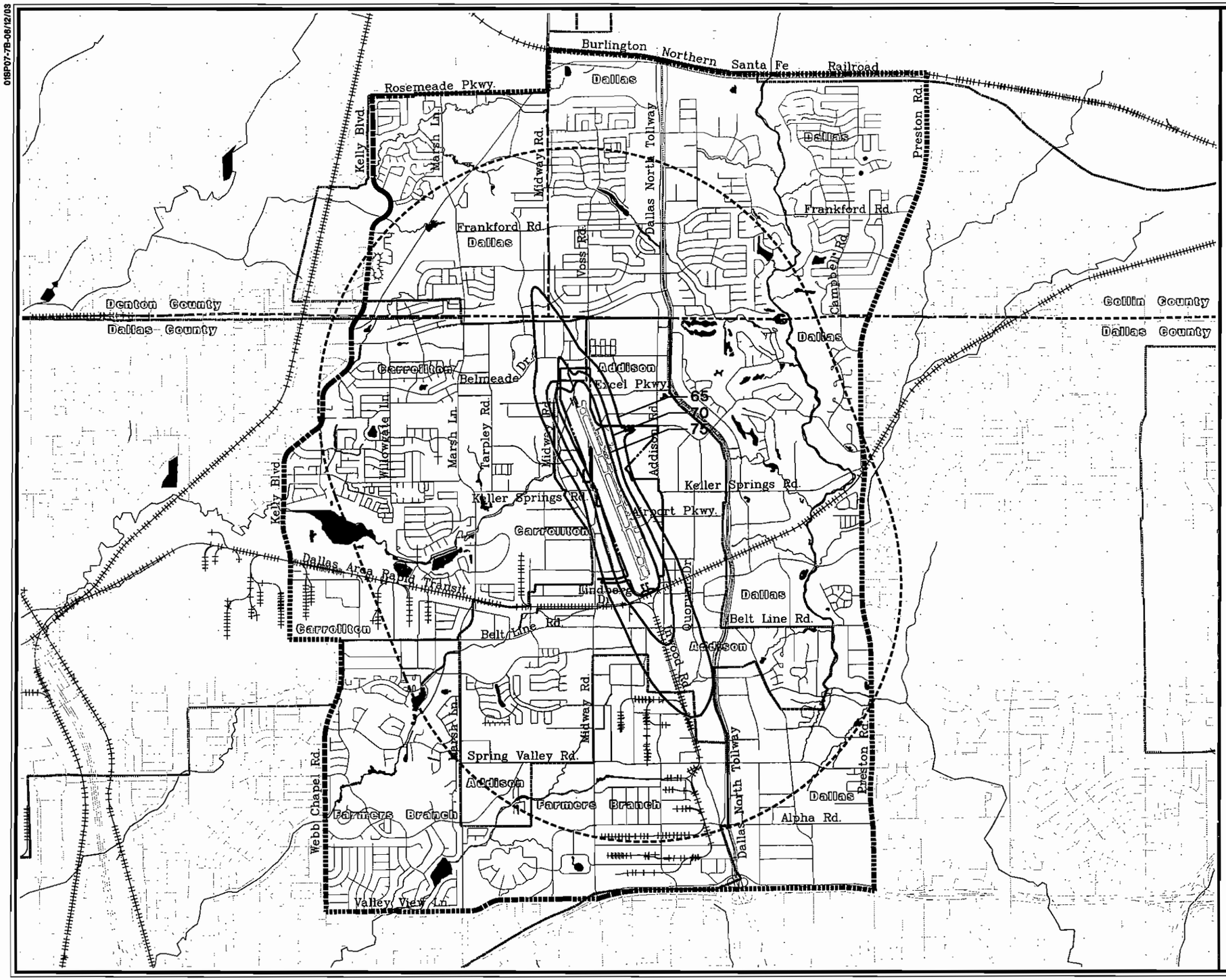
Addison Airport

Exhibit 7C
RECOMMENDED AIRPORT OVERLAY ZONE BOUNDARIES

016P07-7B-08/12/03



LEGEND

- Detailed Land Use Study Area
- County Boundary
- Municipal Boundary
- Airport Property
- Railroad Tracks
- 2007 NEM Contours (Per Recommended Airport Master Plan)
- Airport Influence Area
- Part 77, Horizontal Surface

Source: North Texas Geographic Information System.
Coffman Associates Analysis.

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Addison Airport

Exhibit 7B
RECOMMENDED AIRPORT INFLUENCE AREA

0ISP07-7E-08/12/03

Burlington Northern Santa Fe Railroad
Rosemeade Pkwy.
Kelly Blvd.
Dallas
Tollway
Dallas North
Midway Rd.
Voss Rd.
Preston Rd.
Frankford Rd.
Campbell Rd.
Denton County
Dallas County
Collin County
Dallas County
Dallas
Carrollton
Belmeade Dr.
Excel Pkwy.
Addison Rd.
Willowgate Ln.
Marsh Ln.
Tarpley Rd.
Midway Rd.
Kelly Blvd.
Keller Springs Rd.
Airport Pkwy.
Carrollton
Dallas Area Rapid Transit
Lindbergh Dr.
Quorum Dr.
Dallas
Belt Line Rd.
Carrollton
Addison
Midway Rd.
Marsh Ln.
Inwood Rd.
Dallas North Tollway
Webb Chapel Rd.
Farmers Branch
Farmers Branch
Valley View Ln.

LEGEND

- Detailed Land Use Study Area
- County Boundary
- Municipal Boundary
- Airport Property
- Railroad Tracks
- 2002 DNL Noise Exposure Contours
- Single Family Residential
- Multi-Family Residential
- Mixed Use
- Noise Sensitive Institutions
- School
- Day Care Facility
- Community Center/Lodges
- Medical Facilities
- Residential Care Facility
- Municipal Buildings
- Place of Worship
- Cemetery

Source: North Texas Geographic Information System.
Coffman Associates Analysis.

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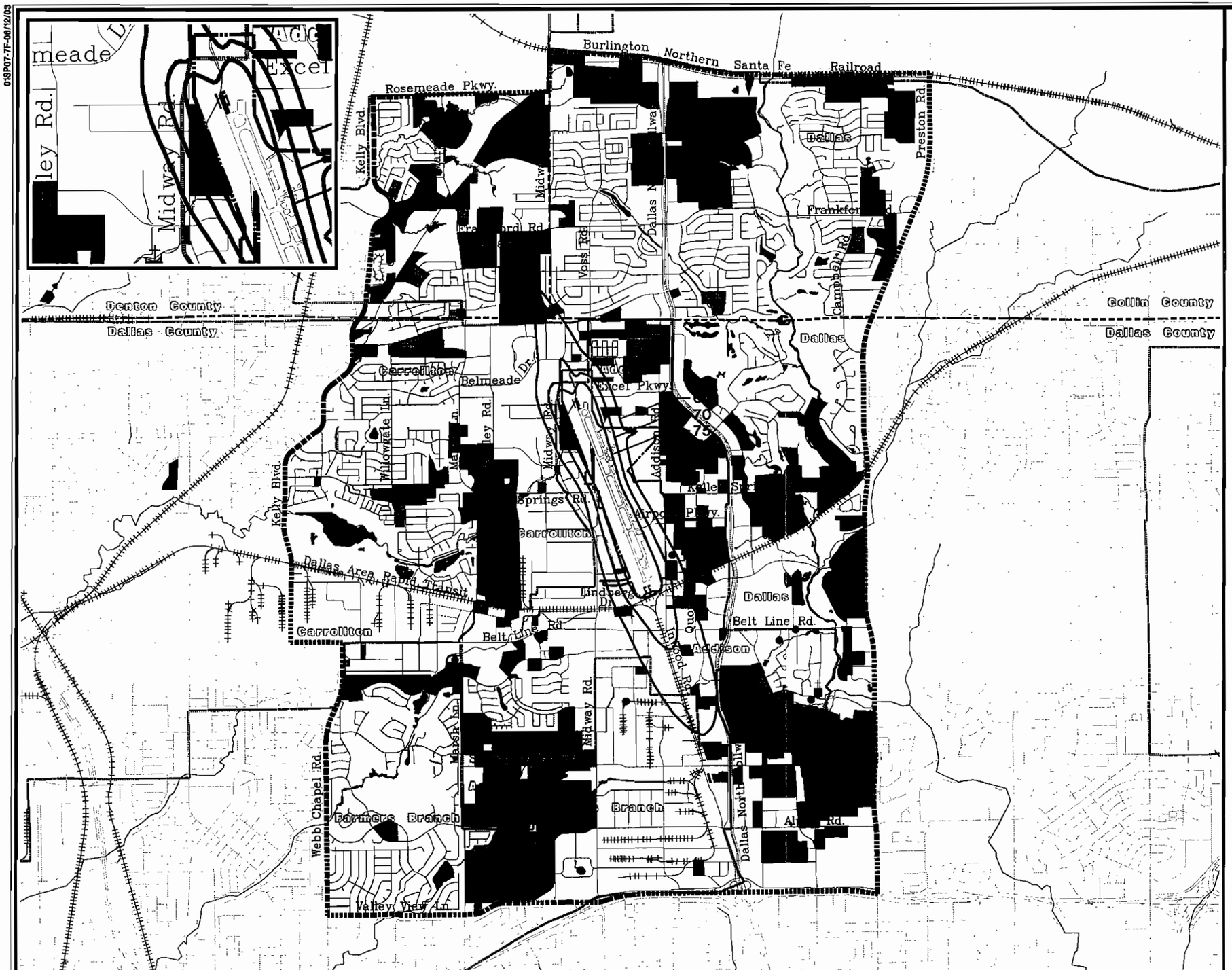
Addison Airport

Exhibit 7E
2002 AIRCRAFT NOISE EXPOSURE AND LAND USE

0\SP07-7F-08/12/03



LEGEND

- Detailed Land Use Study Area
- County Boundary
- Municipal Boundary
- Airport Property
- Railroad Tracks
- 2007 DNL Noise Exposure Contours
- Single Family Residential
- Multi-Family Residential
- Mixed Use
- Noise Sensitive Institutions
- School
- Day Care Facility
- Community Centsr/Lodges
- Medical Facilities
- Residential Care Facility
- Municipal Buildings
- Place of Worship
- Cemetery
- Potential Noise-Sensitive Growth Risk Areas
- Runway Extension Per 2003 Airport Master Plan Update

Source: North Texas Geographic Information System.
Coffman Associates Analysis.

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SCALE IN FEET

Addison! Airport

Exhibit 7F
2007 AIRCRAFT NOISE EXPOSURE AND LAND USE
WITH THE NOISE COMPATIBILITY PLAN

016P07-7G-06/12/03

Burlington Northern Santa Fe Railroad
Rosemeade Pkwy.
Kelly Blvd.
Midway Rd.
Dallas
Preston Rd.
Frankford Rd.
Voss Rd.
Dallas N
Campbell Rd.
Denton County
Dallas County
Collin County
Dallas County
Carrollton
Belmeade Dr.
Addison
Excel Pkwy.
Willowgate Ln.
Marsh Ln.
Midway Rd.
Addison Rd.
70
75
Kelly Blvd.
Springs Rd.
Keller Springs Rd.
Airport Pkwy.
Carrollton
Dallas Area Rapid Transit
Lindbergh Dr.
Dallas
Belt Line Rd.
Addison
Inwood Rd.
Midway Rd.
Dallas North Tollway
Webb Chapel Rd.
Marsh Ln.
Farmers Branch
Farmers Branch
Alpha Rd.
Valley View Ln.

LEGEND

- Detailed Land Use Study Area
- County Boundary
- Municipal Boundary
- Airport Property
- Railroad Tracks
- 2022 DNL Noise Exposure Contours
- Single Family Residential
- Multi-Family Residential
- Mixed Use
- Noise Sensitive Institutions
- School
- Day Care Facility
- Community Center/Lodges
- Medical Facilities
- Residential Care Facility
- Municipal Buildings
- Place of Worship
- Cemetery
- Potential Noise-Sensitive Growth Risk Areas
- Runway Extension Per 2003 Airport Master Plan Update

Source: North Texas Geographic Information System.
Coffman Associates Analysis.

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Addison! Airport

Exhibit 7G
2022 AIRCRAFT NOISE EXPOSURE AND LAND USE
WITH THE NOISE COMPATIBILITY PLAN

U.S. Department of Transportation
Federal Aviation Administration

ASY-300 98/001

Airport Ground Vehicle Operations

An **FAA** Guide

- This guide is intended for employees who drive vehicles or motorized equipment on airports.
- **Note to Drivers:** Please keep this guide and use it for reference and as a refresher.

This guide provides a general overview of safe procedures for driving on an airport. It is not intended to cover specific conditions at all airports. Some local procedures are unique. If there are questions about differences between this guide and local procedures, they can be resolved by your supervisor or airport manager.

Foreward

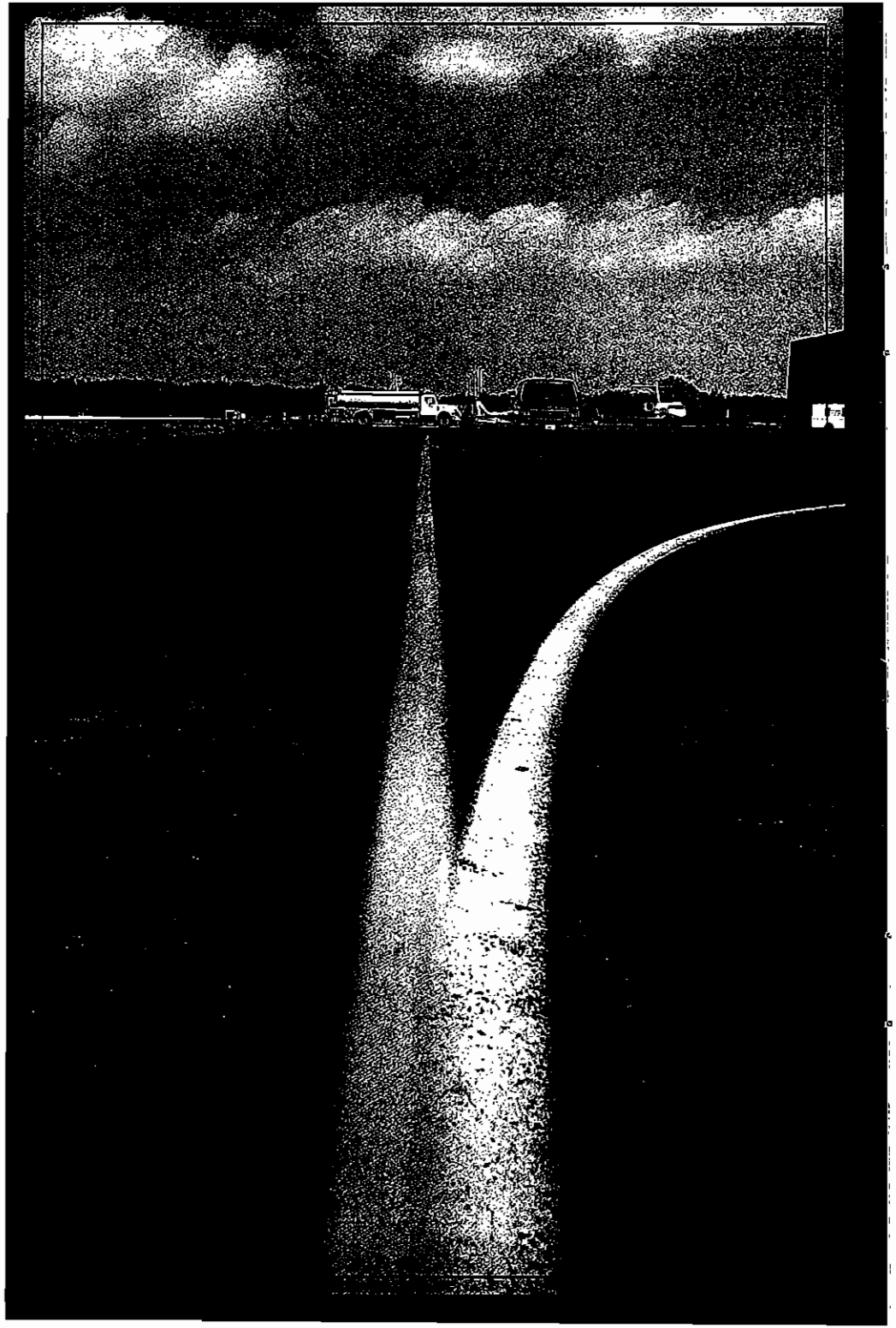
Everyone's cooperation is necessary to prevent potentially serious accidents on airports. The FAA has an ongoing program aimed at pilots to help reduce runway incursions, pilot/controller miscommunications and airport surface mishaps. Employees who operate vehicles or equipment on airports also have key responsibilities in these efforts.

By its nature, it is necessary for this guide to be generic. In addition to orientation and operational information, the guide touches on some other areas that a ground vehicle operator may encounter, such as foreign object damage (FOD), security, and reporting emergencies. If this guide is used as a training document at a specific airport, be sure to include that airport diagram along with this guide. Some of the necessary supplemental information is listed below:

- Airport rules and regulations concerning ground vehicle operations.
- Airport diagram showing runways, taxiways, aprons, movement areas, vehicle roadways, location of the airport fire station, critical areas for electronic navigational aids, and areas where vehicles are permitted to operate.
- Airport security procedures that the employee should be aware of and the employees responsibility in this area.
- Procedures, person to contact, and telephone number for reporting emergencies and ground vehicle accidents.

Any comments or suggestions on improving this guide are welcome and should be sent to the following address:

Federal Aviation Administration
Office of System Safety, ASY-300
800 Independence Avenue, SW
Washington, DC 20591



Section One

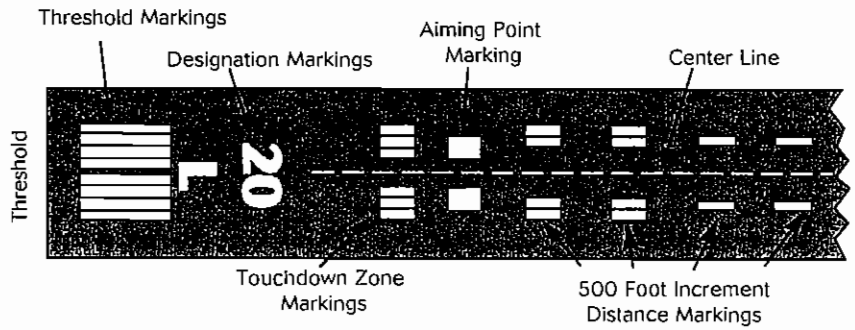
Airport Basics

The following information explains the basic features of any airport. There may be important unique aspects to the airports on which you drive, such as dedicated vehicle lanes, areas not visible to controllers, or nonstandard traffic patterns. Be aware and know the rules of your airport.

Runways

Runways have specific markings on them that are white. They will have numbers on each end and stripes down the middle with white lines on the edges. Runways that are served by an instrument approach will have more elaborate markings such as those shown in the figure. The most important thing to remember about a runway is that it is meant for aircraft use, so never drive your vehicle on it unless you are authorized to do so.

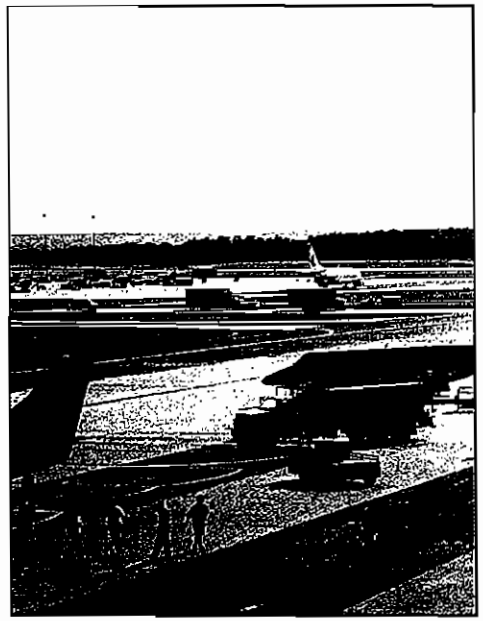
Runway Markings (Not to scale)



Taxiways

Taxiways are areas used by the aircraft to get to and from the ramp and the runway. Taxiways look similar to runways, but are usually not as wide and they don't have the same kind of markings. Taxiway markings are yellow. Instead of numbers, taxiways use letters or letter/number combinations for designators. Like runways, taxiways are meant for aircraft use. Authorization is normally required before you operate a vehicle on runways or taxiways. Aircraft cockpit windows are designed for pilots to see other aircraft. It can be difficult or impossible for the flight crew of large aircraft to see vehicles, particularly behind the wings or under the nose of the aircraft.

Aprons or Ramps



Aprons or ramps are the areas where aircraft park, load, and unload. Your work may require you to drive on an apron. If so, be very careful. Watch out for aircraft that are moving and always yield the right-of-way to them. Don't assume the pilot will see you and stop. He or she may be busy with other things like radio communications or checklist items.

In addition to watching for moving aircraft, be careful not to get too close to a parked aircraft. Aside from nicks and dents that are expensive to repair, you could be hurt if an aircraft suddenly started its engine and you were too close. You should also be aware of the problem of jet blast or prop wash. There have been several cases where vehicles have been overturned by jet blast. One way to tell if an aircraft is about to start its engine(s) or if the engine(s) is running is that the aircraft's flashing beacons will be on.

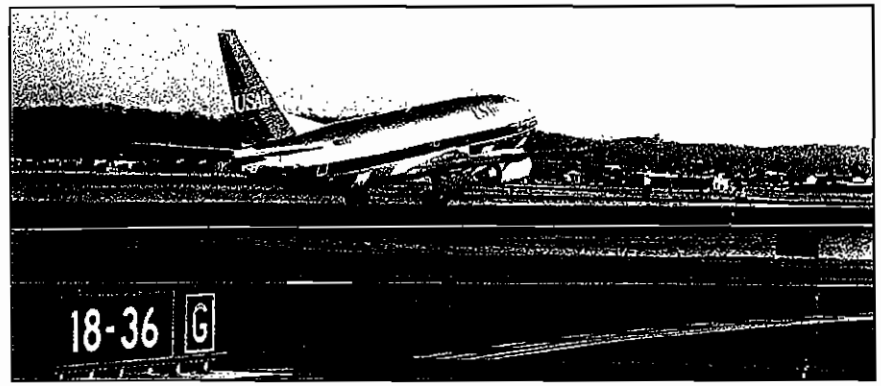
Signs

The colors and sizes of signs are important. If the sign has white numbers on a red background, it is a runway holding position sign. These signs are important because they mean you are on the edge of the protected area around a runway and must have permission to proceed.

A yellow sign with black letters is a guidance sign. A black sign with yellow letters is a location sign. The taxiways at your airport may have these signs next to them. Examples are CARGO or TERM to identify what the parking area ahead is used for, or the direction to go to find that area.

Guidance Sign

Location Sign



A driver would see these signs and markings when holding short of runway 18-36 at taxiway "G".

A taxiway sign with yellow letters and a black background will tell you which taxiway you are on and helps you determine your location. Some airports have these signs painted on the taxiways (see Figure 1 and 1a). Other airports have geographic position markings to use in determining a point on a taxiway (see Figure 2). Not all airports have implemented location signs and geographic position markings.

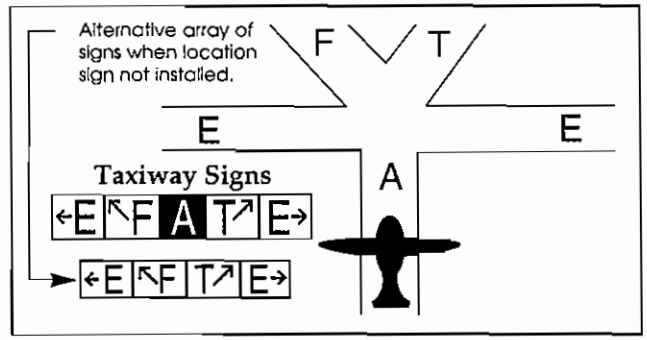


Figure 1

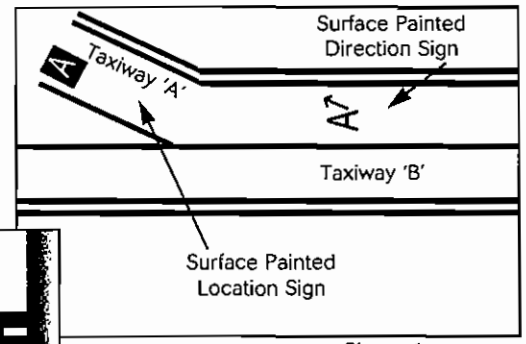


Figure 1a

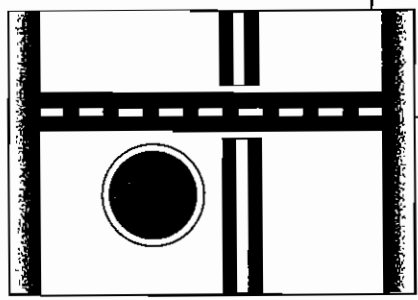


Figure 2

Lights

Runways are edged with white lights and taxiways have blue lights. Near the ends of runways, the lights may be two-sided. Amber on one side, white on the other. At the end of the runway you may also see runway threshold lights. These are red on one side, green on the other. If the amber or red lights are visible you may be approaching the end of the runway. Remember, runway edge lights are white and taxiway edge lights are blue.

Markings

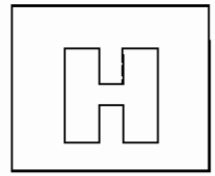
Runway markings are painted white. Taxiways have yellow markings. The center of the taxiway has a solid yellow stripe. The sides may have one or two solid yellow stripes along the edge. Again, not all airports have these markings. As the taxiway comes up to the edge of the runway, you may see what pilots call a "hold" line that looks like this. It is two solid yellow stripes followed by two broken yellow stripes. This is the airport version of a stop sign. Along the side of the taxiway next to the holdline, there may be a runway holding position sign (red and white) with the runway number. ILS hold markings advise pilots and vehicle operators where to stop to avoid interfering with aircraft navigational signals. At tower controlled airports, a clearance is required to pass either of these markers and enter the runway. When exiting the runway you may see hold signs with the same marks that appear on the taxiways. Be certain to go beyond these hold marking and signs.

Signage when on taxiway A holding short of runway 16R.

Hold Line Marking

ILS Holding Mark

Ramps have markings, as well, for aircraft parking and tie downs. Some airport ramps have special markings for vehicle operations. If there are vehicle or roadway markings, you should always drive your vehicle within those marked areas. Taxiways may also be marked on the apron to show aircraft routes to gates and parking areas.



Helicopter Landing Area Marking

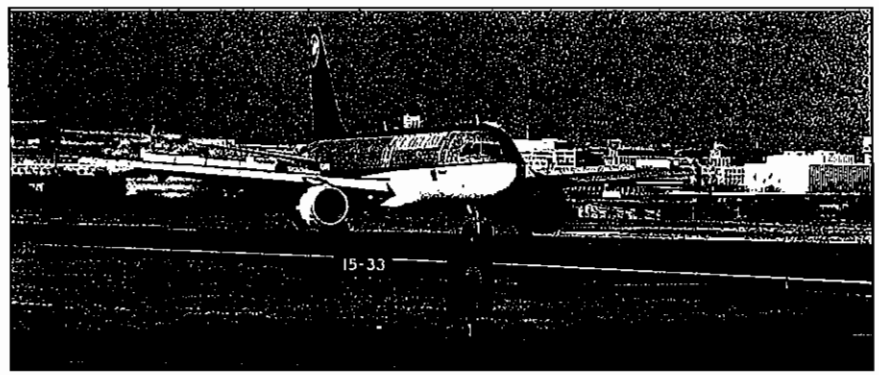
Some airports have designated helicopter landing pads. This is depicted with an H inside of a square. Be especially careful when you drive near helipads and look up for landing helicopters. Like all aircraft, you must yield the right-of-way to a helicopter.

Navigational Aids

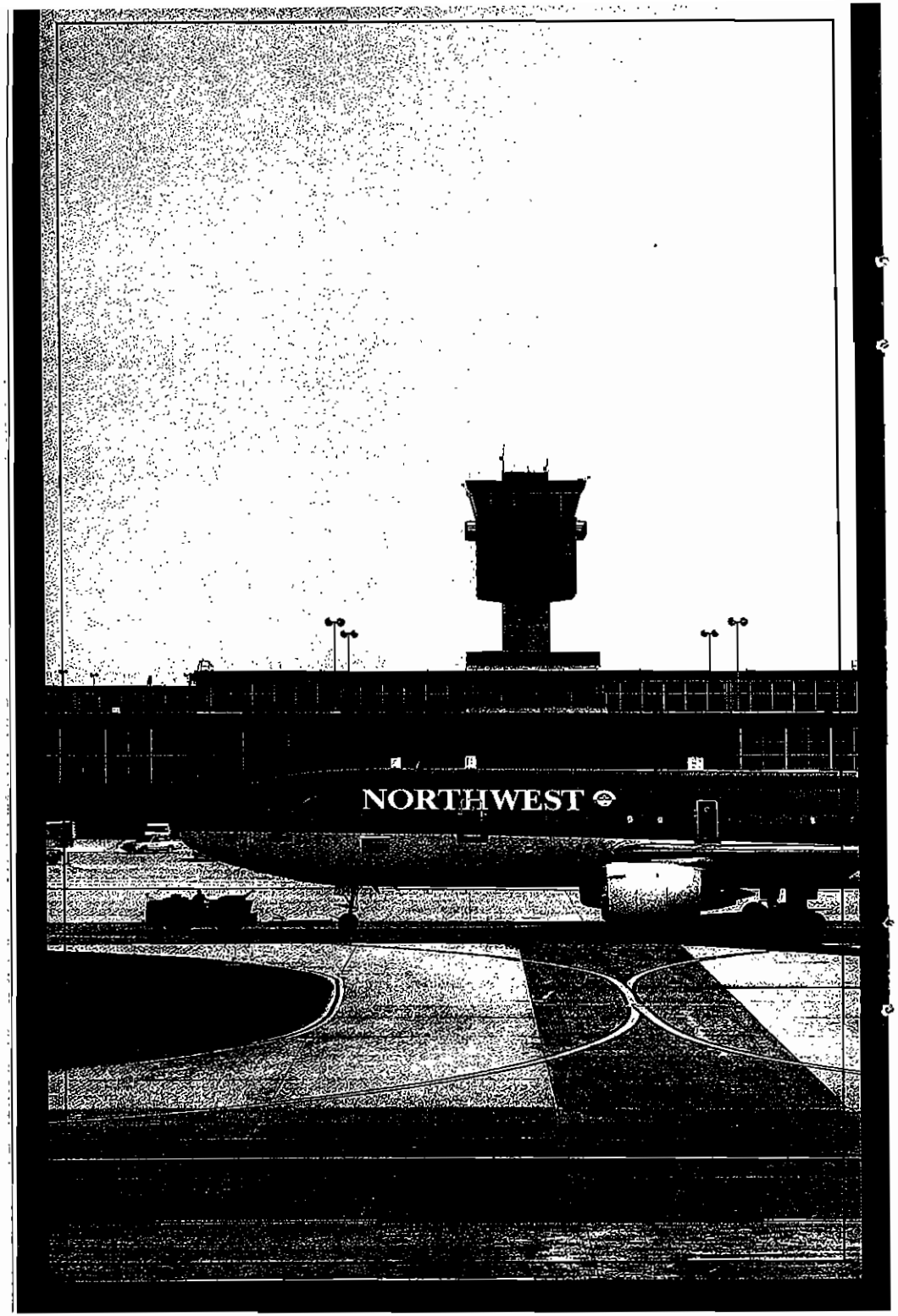
When driving near navigational aids, stay out of the protected areas around them to avoid interfering with their signals. If a road or taxiway is close enough to an ILS to affect it, there should be an ILS holding position sign like the one mentioned earlier.

More Signs

There may be signs to remind pilots of noise abatement procedures or warning signs that tell vehicle operators not to proceed beyond a certain point. You may see markings that identify the area of the airport under air traffic control. These markings are yellow and consist of two yellow lines, one solid one dashed. The dashed line faces the area controlled by ATC. Other signs include "distance remaining" signs on the runway to tell the pilot how much runway length is left.



3,000 feet remaining on runway.



Section Two

Controlled Airports

If your airport has an air traffic control tower, it is called a "controlled" airport whenever the tower is operating. That means anyone wanting to fly into or out of the airport must first get permission from the controller. Aircraft on the ground and vehicles must also get permission from the controller to be on the runway or taxiways. (Controllers call these areas "movement areas.") As an operator of a vehicle, you must get the controller's permission before you go onto a runway or taxiway, their associated safety areas, or any other part of the movement area. There are at least two ways to get permission, by radio or advanced coordination with ATC. Check the airport diagram and be sure of the location of the movement areas.

Radio Communications Procedures

1. Use an air-to-ground radio with the airport's ground control frequency on it. Each vehicle should have a call sign identifying the vehicle.
2. Know the proper phraseology and never use Citizen's Band (CB) lingo or law enforcement "ten" codes.
3. Think about what you are going to say before calling the controller.
4. Use the proper sequence in calling the controller. Before you start talking, make sure that no one else is already talking. Then you should:
   a) say who you are calling and who you are (e.g., "Cincinnati ground, Vehicle One.")
   b) wait for the controller to respond. Sometimes it takes a while if they are busy. When the controller responds, state where you are and where you want to go. For example, "Vehicle One is on the terminal ramp and would like to cross 18 Right at taxiway Alpha and proceed to the VOR." Wait for the controller's response.
   c) the controller will either approve or deny your request, or issue special instructions. An example of the instructions would be "Vehicle One, proceed to, hold short of runway 18 Right." Acknowledge that you have heard the controller's instructions. For example "Vehicle One, cleared to VOR, Vehicle One will hold short of 18 Right." Always repeat a "hold short" clearance. The section titled "Aviation Phraseology" lists air traffic control phrases with definitions. You should know what they mean before going onto any runway or taxiway. Note: Use extreme caution when you hear the phrase "go ahead." Controllers use this to mean "state your request." It never means "proceed!"

Communications are not difficult with a little practice. If you are ever unsure what the controller said, or if you don't understand an instruction, ASK THE CONTROLLER TO REPEAT IT WITH "SAY AGAIN." A controller, even one who is extremely busy, would rather repeat and explain something than to have a misunderstanding lead to an accident or runway incursion. Don't proceed thinking that the instructions will become clear once you go a little further.

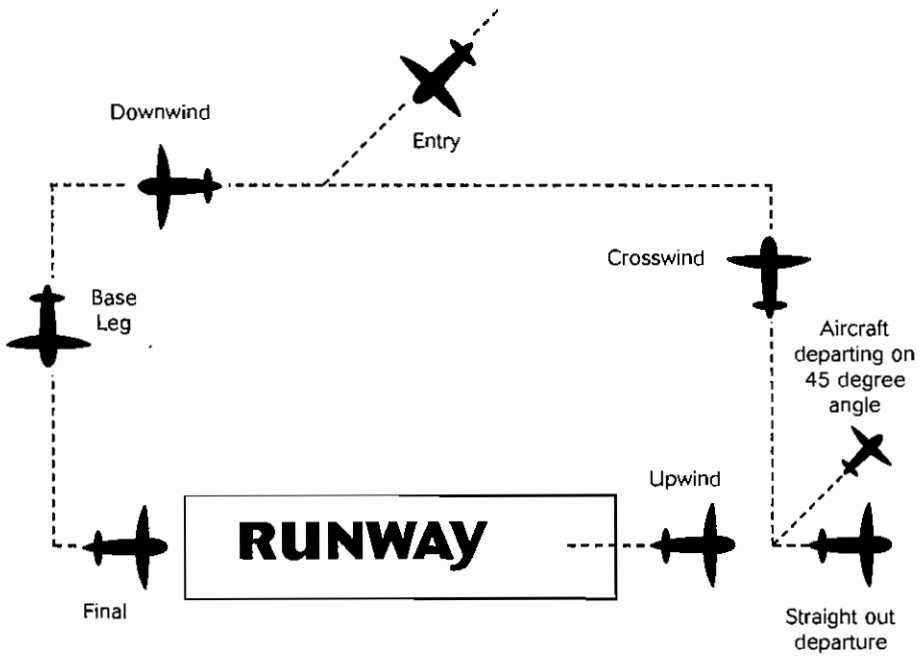
Advanced Coordination

When you contact the tower, you will receive instructions on how to proceed and what signals to expect.

Traffic Patterns

Aircraft approaching a runway for landing follow a pattern. In most cases, the pattern is a rectangular box with the pilot making all turns to the left. In a few cases, airports will use right traffic patterns. Pilots announce their position using the names for segments of the traffic pattern (e.g., Woodbridge traffic, Cessna 83 Bravo downwind, approaching base runway 19, Woodbridge).

Airport Traffic Pattern Operations



Section Three

Nontowered Airports

When the control tower is closed or if there is no tower, the airport is called nontowered. At a nontowered airport you don't have to get a controller's permission before going onto a runway or taxiway. You should, however, always carry a radio tuned to the airport's common traffic advisory frequency (CTAF) usually called UNICOM. When you get near the runways and taxiways, SLOW DOWN! Look both ways, and then look UP for aircraft that are landing or taking off. Always yield the right-of-way to taxiing aircraft and give them plenty of room. If an aircraft is on the same taxiway as you and headed in the opposite direction, move out of the aircraft's way. Be careful not to hit taxiway edge lights. If an aircraft is about to land on a runway that you need to cross, stop and yield to the aircraft until it has landed and taxied clear of the runway. Then proceed.

Aircraft at nontowered airports frequently make "touch and go" landings where immediately after landing, full power is applied and the aircraft takes off again. Before you cross a runway, make sure the aircraft has exited the runway or has gone past you.

Extra vigilance is key at nontowered airports. Aircraft do not have to communicate or announce their position in the pattern or on the surface. Some aircraft don't have radios. You can be lulled into complacency at nontowered airports because they usually aren't very busy, hence they don't justify a control tower. If you are used to not seeing any other traffic, don't expect this to always be the case. If your vehicle has a rotating beacon, be sure to turn it on anytime you are on the airport surface.

Sometimes the runway gradient makes it impossible to see the entire length of the runway and an aircraft can suddenly appear when you are crossing. It's best to cross runways at the end.

Section Four

Aviation Phraseology

Acknowledge - Let me know you have received and understand this message.
Advise intentions - Tell me what you plan to do.
Affirmative - Yes.
Confirm - My version is...is that correct?
Correction - An error has been made in the transmission and the correct version follows.
Go ahead - State your request (never means "proceed").
Hold - Stop where you are.
Hold short of ... - Proceed to, but hold short of a specific point.
Negative - No, or permission not granted, or that is not correct.
Proceed - You are authorized to begin or continue moving.
Read back - Repeat my message back to me.
Roger - I have received all of your last transmission. (It should not be used to answer a yes or no question.)
Say again - Repeat what you just said.
Standby - Wait...I will get back to you. (Standby is not an approval or a denial. The caller should reestablish contact if the delay is lengthy.)
Unable - I can't do it.
Verify - Request confirmation of information.
Wilco - I have received your message, understand it, and will comply.

The Aviation Alphabet

Because some letters sound similar, the following words are used to reduce confusion. For example, taxiway B would be referred to as taxiway Bravo.

A Alpha	**N** November
B Bravo	**O** Oscar
C Charlie	**P** Papa
D Delta	**Q** Quebec
E Echo	**R** Romeo
F Foxtrot	**S** Sierra
G Golf	**T** Tango
H Hotel	**U** Uniform
I India	**V** Victor
J Juliet	**W** Whiskey
K Kilo	**X** X-ray
L Lima	**Y** Yankee
M Mike	**Z** Zulu

Light Signals

Air traffic controllers have a backup system for communicating with pilots if the aircraft's or controller's radios fail. Controllers use a light gun with different colors to tell pilots or vehicle drivers what to do. If you are ever working on a runway or taxiway and your radio quits, you should turn your vehicle toward the tower, start flashing your headlights and the controller will signal you with the light gun.

This may take some time if the controller's attention is directed toward another part of the airport. Alternatively, try another frequency (the tower or "local control" frequency) or telephone the tower if you have access to a phone. BE PATIENT! Even a failed radio is not an excuse for proceeding without a proper clearance.

Light signals and their meanings:

Steady green - Okay to cross runway or taxiway; proceed; go.

Steady red - Stop.

Flashing red - Clear the runway or taxiway.

Flashing white - Return to starting point on airport.

Alternating red and green - General warning signal. Use extreme caution. *Note:* The warning signal is not a prohibitive signal and can be followed by any other light signal as circumstances permit.

Section Five

Other Important Information

Foreign Object Damage (FOD)

Trash or rocks sucked into a jet engine can shred parts of the engine in seconds. A rock caught by a propeller can damage the propeller, as well as become a deadly projectile. Make your airport a safer place by putting all trash in a covered container that won't be blown over. Get in the habit of picking up any trash and rocks near aircraft movement areas. Also pick up nails, bolts, or pieces of metal that could cause FOD or puncture tires. Avoid tracking mud and rocks onto the pavement surfaces.

Reporting Accidents

If you are involved in an accident, report it immediately to your supervisor. If a collision occurred between you and an aircraft, it's critical that the aircraft not be flown until the damage can be inspected and repaired.

Aircraft Rescue And Fire Fighting (ARFF)

Just as when you are in highway traffic, if you see an airport emergency vehicle with its lights on, pull out of its way and do not proceed until it is well clear of you.

Security

Depending on the type of airport you work on, the security system may be as simple as a fence or it may include items as complicated as computer controlled automatic gates with television screen monitors. At large air carrier airports, security may be provided by the airport's police department or a contractor. At smaller airports, the airport manager or the fixed base operator may be responsible for security.

If you see a gate left open, close it, and then report it to the airport security office. If you see a strange vehicle on the apron or a vehicle that appears lost, stop it and offer assistance. Or, if your airport has a security department, contact them for help. If you work at an air carrier airport, the airport manager has a complete security plan for the airport. Be sure you know what your responsibilities are and ask your supervisor if there is anything you are unsure about.

Nighttime Or Bad Weather Driving

If you have to drive at night, it's a good idea to take someone with you the first couple of times who is familiar with how the airport looks at night. It will look very different. The same applies if you are driving in bad weather. In both cases, allow yourself a little extra travel time and drive slower than you normally would.

Under winter conditions, signs and markings may be obscured by snow. Snow equipment may be operating in low visibility conditions and may not see your vehicle. Use caution, remember there are extra risks present.

Section Six

Quiz

This quiz tests your knowledge of rules, signs, and aviation phraseology. This quiz is not difficult but if you read this guide you should get most of the answers correct. If you don't understand, ask your supervisor for an explanation.

1) A controller who says "go ahead" means
   a. proceed as requested.
   b. continue straight ahead.
   c. state your message.

2) The red and white sign next to the taxiway is called a runway hold position sign. If you are next to this sign, it means
   a. that you are about to go onto the protected area next to the runway.
   b. that you should follow the sign to get to the parking apron.
   c. nothing to me, it's only there for the pilot's use.

3) Two solid yellow stripes followed by two broken yellow stripes is the marking for a runway hold line. A hold line means
   a. all aircraft must stop and be cleared before going onto the runway.
   b. everyone, including vehicles, must stop unless authorized to proceed onto the runway.
   c. that you are about to go next to some electronic signal equipment.

4) Runway markings are
   a. white.
   b. yellow.
   c. red.

5) Taxiway marking are
   a. white.
   b. yellow.
   c. red.

6) A "controlled" airport is one that has an operating airport traffic control tower.
   a. True
   b. False

7) FOD is caused by
   a. bad weather conditions.
   b. the airport manager.
   c. trash and debris.

8) If I have to cross a runway, I should try to do so
   a. at the end.
   b. in the middle.
   c. wherever I want.

9) If the air traffic controller signals me with a flashing red light, I should
   a. stop.
   b. clear the runway or taxiway.
   c. ignore the signal as it is for aircraft only.

10) If the air traffic controller signals me with a steady red light, I should
   a. stop.
   b. clear the runway or taxiway.
   c. ignore the signal as it is for aircraft only.

11) Traffic patterns are used at controlled airports (those with towers) only.
   a. True
   b. False

12) When driving in the area immediately behind a large jet aircraft with its engines running, a driver should
   a. not be concerned about danger from the jet blast because a typical car/van is too heavy to be affected.
   b. stop or stay well back and not proceed behind the aircraft until air traffic control has confirmed the aircraft is at idle power.
   c. cross the area of jet blast at a perpendicular angle to minimize the hazard.

13) Unless contrary instructions have been received from air traffic control, a vehicle should always yield to an aircraft.
   a. True
   b. False

14) If, at a nontowered airport, you see an aircraft approaching the runway to land when you are waiting to cross the same runway, you should
   a. hold short of the runway until the aircraft is past the point at which you will cross the runway then proceed when it is safe.
   b. proceed across if the aircraft has not announced its position on the UNICOM frequency.
   c. contact the pilot by radio and see if he or she intends to make a touch and go landing.
   d. flash your headlights at the aircraft.

15) An aircraft that has announced its position on the UNICOM frequency as "downwind" at the nontowered airport on which you are driving, is flying
   a. perpendicular to the runway after initial climb and turn.
   b. parallel to the runway in the direction opposite laoding.
   c. an approach to land with the wind instead of into the wind.
   d. too fast to spot until the aircraft slows down to land.

16) If a controller gives you permission to do something which appears unsafe
   a. you must comply or face disciplinary action.
   b. you should comply and then call your supervisor as soon as practicable.
   c. you should tell the controller your concerns and get clarification before proceeding.
   d. flash your headlights and proceed.

17) Aircraft usually land and takeoff
   a. into the wind.
   b. with the wind at their back.

18) An aircraft that has announced its position as "short final" is
   a. nearing the runway threshold for landing.
   b. about to make the last landing for the day.
   c. well outside of the airport traffic pattern.