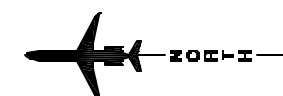


LEGEND

- Airport Property
- Municipal Boundaries
- Extra-territorial Jurisdiction
- +++++ Railroad Tracks
- ||||| Study Area
- Airport Environs Noise District
- 2002 60 DNL Noise Contour
- 2002 65 DNL Noise Contour
- 2002 70 DNL Noise Contour
- 2002 75 DNL Noise Contour

Source: Base Information and Map:
City of Lincoln Geographic
Information System, May 2002.
Coffman Associates Analysis.



0 6000
SCALE IN FEET

Lincoln Airport

Exhibit 5E
POTENTIAL REVISIONS TO AIRPORT
ENVIRONS NOISE DISTRICT

The subdivision review process is an ideal time to secure easements and require the recording of covenants. In this way, subdivision regulations could be used in support of airport compatibility overlay zoning.

- EVALUATION

The City of Lincoln has adopted subdivision regulations which contain provisions relating to the requirements of the Airport Environs Noise District. Prior to plat approval, all requirements contained within the Airport Environs Noise District must be met. As discussed in previous sections, current land use planning, in addition to potential revisions to conventional land use regulations, can adequately meet the need for compatible development in the airport area. Therefore, changes to the subdivision regulations are not necessary.

- CONCLUSION

Due to the comprehensive nature of the existing regulations, this option need not be considered further.

Building Codes

Building codes regulate the construction of buildings, setting standards for materials and construction techniques to protect the health, welfare, and safety of residents. Codes address structural concerns, ventilation, and

insulation, each of which influences the noise attenuation capabilities of a building. Building codes commonly apply to both new construction and major alterations.

Building codes can require sound insulation in the construction of noise-sensitive uses in areas subject to high aircraft noise levels. Requirements for sound insulation customarily are applied within the 65 DNL contour with increasingly stringent standards in the 70 and 75 DNL contours. Most sound insulation code standards describe in detail the required improvements needed to achieve a given level of noise reduction.

- EVALUATION

Building codes have been adopted by both the City of Lincoln and Lancaster County. Regulations contained within the Airport Environs Noise District must be met prior to building permit issuance. As discussed in previous sections, current land use planning, in addition to potential revisions to conventional land use regulations, can adequately meet the need for compatible development in the airport area. Therefore, changes to the building codes are not necessary.

- CONCLUSION

Due to the comprehensive nature of the existing regulations, this option need not be considered further.

Transfer of Development Rights

Land ownership actually includes a bundle of rights to the use of that land. These include rights of access, mineral rights, limited rights to the airspace above the land, and rights to develop the land. Transfer of development rights (TDR) is based on the idea that each right has a market value which can be separated and sold without selling the entire property.

TDR was developed as a way to preserve environmentally important areas without having to buy them with public funds. The technique begins by dividing the municipality into sending and receiving zones. The sending zones are areas where environmental preservation and minimal development are desired, and the receiving zones are areas where additional development is preferred. Development rights, measured in terms of development density, are assigned through the zoning ordinance. If developers in the receiving areas can get additional development rights, they are allowed to build to higher densities than normally allowed by the zoning ordinance. They would buy these rights from landowners in the sending zones. In this way, the public can benefit from preserving environmentally valuable land, the owner of that land can be paid for preserving it, and developers can reap higher profits.

Based on experience with these programs around the country, several conditions for the successful use of TDR have been identified. The receiving districts must be capable of immediate

development; the regulatory process must have integrity and be trusted by developers; the regulatory agency must be able to inform and help property owners and developers; and programs must be as simple as possible and facilitate the self-interest of all involved parties. (See "Making TDR Work," by Peter J. Pizor, in the *Journal of the American Planning Association*, Vol. 52, No. 2, Spring 1986.)

A variation of TDR is density transfer zoning. This allows developers of several large tracts of land to move their allotted densities among tracts to reduce densities in areas worthy of preservation. This differs from TDR because only one owner is involved in the transfer, and a system for sale and purchase of development rights is not required. Density transfer zoning often can be achieved through creative use of the planned unit development process.

In rapidly growing areas with large amounts of vacant land, TDR can be an effective tool for airport land use compatibility planning. At no cost to the taxpayers, it can neatly deal with the problem of what to do with land in high noise zones when there are no practical alternatives to residential development.

TDR is a very complicated technique that is difficult to justify solely for the purposes of airport land use compatibility. If a local jurisdiction is already using or considering TDR, airport compatibility criteria could be included with other environmental criteria in the design of the program.

- EVALUATION

TDR is not currently being used in the City of Lincoln or Lancaster County. As discussed in previous sections, current land use planning, in addition to potential revisions to conventional land use regulations, can adequately meet the need for compatible development in the airport area. This is not a viable alternative.

- CONCLUSION

This option need not be considered further.

Environmental Zoning

Special zoning regulations to preserve environmentally-sensitive areas or protect development from environmental hazards can also promote land use compatibility near airports. Floodplain overlay zoning, which restricts or prohibits development in all or part of the floodplain, is the most common form of environmental zoning. Other environmental zoning regulations may include steep slope zoning requiring low development densities and special construction standards, wetland preservation zoning limiting densities and the design of drainage facilities, and groundwater recharge zones limiting building density and lot coverage. All can be used to restrict the development of noise-sensitive uses in environmentally-sensitive areas that are also impacted by aircraft noise.

- EVALUATION

The City of Lincoln is currently evaluating the implementation of environmental zoning as it relates to development within floodplains. Consideration could be given to not allowing residential development within established floodplains in the Airport Environs Noise District. This would allow for the protection of not only the western boundary of airport property, but also flight tracks which utilize floodplains to the north and southwest of the airport as depicted on **Exhibit 5F**.

- CONCLUSION

Consideration could be given to regulating residential development within established floodplains in the Airport Environs Noise District. This could allow for the protection of current flight track corridors as well as the property bordering the airport to the west.

Fair Disclosure Regulations

Fair disclosure regulations are not actually land use regulations. They are intended to ensure that prospective buyers of property are informed that the property is or will be exposed to potentially disruptive aircraft noise. It is not uncommon around even major airports for newcomers to report having bought property without having been informed about airport noise levels.

At the most formal level, fair disclosure can be implemented through regulations requiring the seller or his agent to provide a notice of aircraft noise exposure on the real estate listing sheet and at the time that a sales contract is executed. In addition, any easements should be revealed at the time of closing. Although these measures are intended to protect buyers of property from being unaware of aircraft noise, a potential problem is that they can be difficult to enforce.

Fair disclosure regulations can place a serious responsibility on real estate agents and lenders. If the regulations are properly drafted, however, the responsibilities of real estate agents and sellers are 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.

Another approach to fair disclosure is to require the recording of a fair disclosure agreement and covenant at the time of rezoning or subdivision plat approval. The agreement would require the property owner to disclose the airport noise situation to prospective buyers. As a covenant running with the land, this requirement would bind all future property owners.

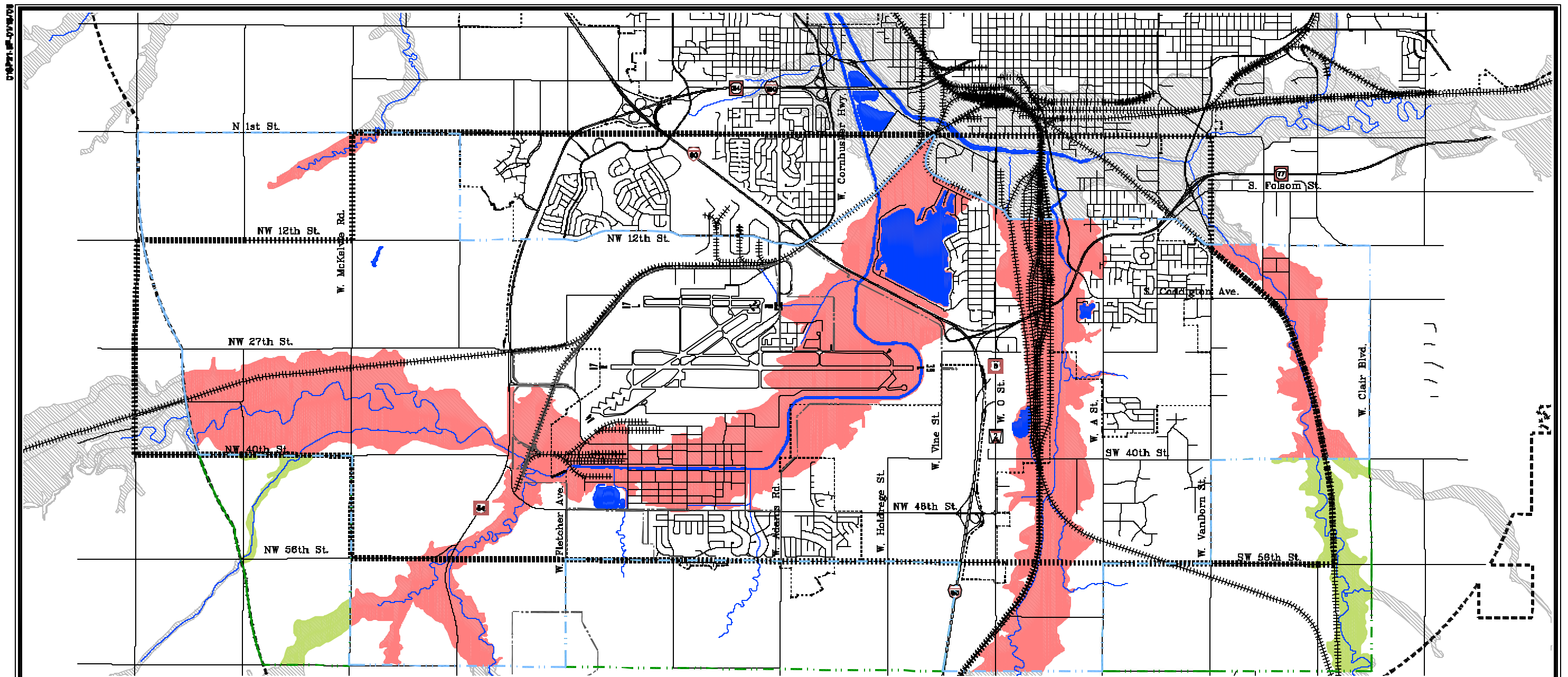
- EVALUATION AND
CONCLUSION

City and county governments do not have the ability to regulate the sale of real estate or realtors. However, consideration could be given to

requiring new developers within the Airport Environs Noise District to post the noise contours within the sales office of the development as well as signs located throughout the area being developed. This would help ensure that future property owners are aware of the noise produced by the airport prior to purchasing property in the area. Additionally, a fair disclosure covenant could be required prior to the approval of the subdivision plat. Since large portions of undeveloped land are contained within the various noise contours, establishment of fair disclosure policies would have an affect on a large number of potential property owners.

Consideration could be given to including a statement indicating that the property is contained within the Airport Environs Noise District on the development plat approval issued by the City. A copy of the noise contours could also be attached to the approval. This information would be passed on to the purchaser of the property by the realtor who is bound by ethics to disclose any available information regarding the property.

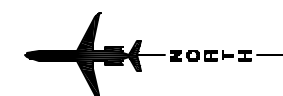
Efforts can also be made by lobbying state legislature to clarify or revise the *Nebraska Real Estate Commission Seller Property Condition Disclosure Statement* to enhance fair disclosure of aircraft noise impacts. Portions of Section C, Title Conditions, on the current statement could be modified to notify buyers of the existence of aviation easements. Realtors would need to be educated on the existence and potential effects of transportation



LEGEND

- Airport Property
- Municipal Boundaries
- Extra-territorial Jurisdiction
- +++++ Railroad Tracks
- ||||| Study Area
- Airport Environs Noise District
- Alternative Airport Environs Noise District Expansion
- ▨ Floodplains Outside the Airport Environs
- Floodplains within the Airport Environs
- Floodplains within the Expanded Airport Environs

Source: Base Information and Map:
City of Lincoln Geographic
Information System, May 2002.
Goffman Associates Analysis.



Lincoln Airport

Exhibit 5F
ALTERNATIVE ENVIRONMENTAL ZONING

noise as well as the intent of aviation easements. A sample memo sent to realtors providing educational information on disclosure is provided in **Appendix D**.

The *Property Condition Disclosure Statement* could also be changed to include a special category for disclosing transportation noise and aviation easements. A sample disclosure statement has been provided in **Appendix D**. In the sample, impacts associated with transportation and airports is found under Environmental Information.

EXPENDITURE TECHNIQUES

Land use management techniques involving direct expenditures include the following:

- Property Acquisition
- Sound Insulation
- Noise and Aviation Easement Purchase
- Purchase Assurance
- Sales Assurance
- Development Rights Acquisition

These measures are usually considered as a last resort because they are expensive, often disruptive, and sometimes controversial. They are most often justified when noise impacts are severe and cannot be mitigated through aircraft noise abatement alone. These measures are potentially eligible for FAA funding assistance through the noise set-aside of the Federal Airport Improvement Program (AIP) if they are part of an FAA-approved Part 150 Noise

Compatibility Program. In general, to be eligible for FAA approval, these programs can apply only to areas within the 65 DNL contour based on existing conditions or the five-year forecast conditions, whichever is greater. Historically, properties within noise contours exceeding 65 DNL have received much higher priority for mitigation funding than properties located within lesser contours (i.e. 55 and 60 DNL noise contours); therefore, the evaluation of properties contained only within the 65 DNL noise contour will be evaluated within the following expenditure techniques.

Property Acquisition

Acquisition and clearance of noise-sensitive land uses impacted by high noise levels is one method of ensuring noise compatibility around an airport. The intent of acquisition is to remove residents from severely noise-impacted areas and to prevent incompatible uses from being developed near the airport. This can be an effective way to ensure complete noise compatibility around an airport, although it can be very expensive.

Under federal regulations, land may be acquired for noise mitigation, with funding through the noise set-aside of the AIP, if it is within the locally deemed contour of significance and has been developed for noise-sensitive land uses. As previously mentioned, properties within noise contours exceeding 65 DNL have received much higher priority for mitigation funding than properties located within lesser

contours (i.e. 55 and 60 DNL noise contours).

Acquisition of undeveloped land may also be eligible if compatible use zoning and subsequent compatible development are not considered practical. The FAA actively supports airport ownership of land impacted by noise above 70 DNL. While acquisition of areas impacted by noise down to 65 DNL is eligible for federal funding assistance, it can be difficult to establish a high priority with the FAA for funding the acquisition of property outside the 70-75 DNL contour. Eligible sponsors for grant funding of a land acquisition program include airport proprietors, other public agencies, and quasi-public agencies such as industrial development corporations.

Typically, property acquisition for noise mitigation is accomplished through voluntary programs. The purchasing agency notifies property owners in a given area when it is ready to negotiate the purchase of their land and homes. Property owners are assured that the airport will buy their land, assuming a fair price can be negotiated. Under a purely voluntary program, property owners are under no obligation to participate and may decide to remain in their homes. If the acquisition is part of a comprehensive redevelopment project, it may be necessary for the purchasing agency to reserve the right to use its eminent domain authority.

If federal funds are used for property acquisition, the airport must comply with

the Federal Uniform Relocation Assistance and Real Property Acquisition Act (See 49 CFR, Part 24). Under these regulations, the fair market value of the home is established through two professional appraisals. The homeowner is also entitled to reimbursement of moving expenses and compensation for other relocation expenses (such as closing costs and incidental expenses for a new home, and compensation for a higher interest rate on the new mortgage) up to a maximum of \$22,500. If the maximum relocation benefit, in addition to the sale price of the home, is not enough to assure the displaced person of acquiring comparable housing or, in any case, decent, safe, and sanitary housing, additional relocation payments may be available, subject to a case-by-case review.

In addition to clearing noise-sensitive land uses, property acquisition can also be used to promote the development of compatible uses. Land parcels can be bought, consolidated, re-zoned, and sold or leased for redevelopment of compatible industrial, commercial, and recreational uses. Redevelopment of noise-impacted property can ensure land use compatibility near the airport while promoting economic development. This can involve a full urban renewal or community redevelopment program or the simple sale of land for private development. A large-scale redevelopment program is potentially very complicated and would be successful only if a variety of local conditions are favorable.

- **EVALUATION AND CONCLUSION**

As depicted on **Exhibit 5G**, 11 dwelling units are located within the 2002 65 DNL noise contour. One dwelling is located north of the airport and is a rental property primarily associated with farming operations. Therefore, the acquisition of this dwelling and associated property would not be appropriate.

Approximately ten dwellings are located within the 65 DNL noise contour south of the airport. Six of these dwellings are mobile homes associated with a larger mobile home park. The remaining four dwellings appear to be associated with light industrial operations. The future plan for this area is to continue to transition to noise compatible uses such as commercial/industrial. Therefore, property acquisition does not appear to be a viable option for mitigation of these dwellings given that the area is slated to transition to compatible commercial/industrial uses.

Additionally, property contained within the 70 DNL noise contour is planned for noise compatible land uses; therefore, the purchase of vacant property within this contour is not a viable option.

Acoustical Treatment

Dwellings and other noise-sensitive buildings can be acoustically-treated, or sound-insulated, to reduce interior noise levels. Sound insulation typically can improve the outdoor-to-indoor noise

level reduction of a structure by five to ten decibels. Sound insulation may involve thermal insulation and weatherproofing, the baffling of vents and mail slots, the installation of solid-core wood doors or foam-core steel doors, the installation of acoustical windows with special noise attenuation characteristics, the installation of new interior walls along existing walls, and the installation and use of year-round air conditioning and ventilation systems.

Fresh air circulation systems or air conditioning systems are necessary if the full benefits of sound insulation are to be realized. This enables windows and doors to be closed throughout the year. If air conditioning is to be fully effective for sound insulation, the residents must accept the costs and inconvenience of operating the system until the heating season begins. As an alternative, a forced fresh air circulation system, capable of a complete change of air twice every hour and a 20 percent change of new fresh air every hour, equipped with acoustical baffling or other treatment of the air inlets, would permit closed doors and windows when neither air conditioning nor heating are required. Most forced air heating systems can be adapted to this purpose. The FAA requires that property owners and residents be notified of the utility and maintenance costs associated with any heating or air conditioning systems installed as part of a sound insulation program.

The FAA will assist in funding sound insulation of noise-sensitive buildings within the 65 DNL contour if the

buildings cannot achieve an outdoor-to-indoor noise level reduction of 20 decibels or more. (Within the 70 DNL contour, the noise level reduction threshold increases to 25 decibels, and within the 75 DNL contour, to 30 decibels.) Sound insulation projects must be designed to achieve at least a five decibel improvement in noise level reduction. The target is to reduce interior noise levels to 45 DNL or less. Sometimes, a supplementary criterion is used in actual project design to ensure that interior noise levels from individual overflights do not exceed a Sound Exposure Level (SEL) of 65 dB. (This is an estimate of the average speech interference level.)

- **EVALUATION**

Typical acoustical treatment measures include the installation of acoustical doors and windows, insulation, and forced air heating and air conditioning systems. The estimated average cost of treating homes is approximately \$20,000 each and the average cost of treating apartment dwellings is \$5,000 each. This covers the costs of acoustical treatment, engineering, and administrative expenses. Acoustical treatment costs are eligible for 90 percent state and federal funding. The remaining 10 percent is covered through the airport operating budget. Mobile homes are not capable of being sound-insulated.

As a condition of participation in the acoustical treatment program, the airport could require homeowners to grant an aviation easement. This is a

very common feature of sound insulation programs around the country. In exchange for home improvements, the property owner conveys an easement granting the airport the right to operate aircraft in the area, with all attendant effects of aircraft operations, without being sued by the grantor. Since the easement runs with the land, it also helps to serve as a fair disclosure notice to future buyers of the home.

As depicted on **Exhibit 5G**, within the study area 11 dwelling units are contained within the 2002 65 DNL noise contour. Of these dwelling units, six are mobile homes which cannot be sound-insulated. Of the remaining five dwelling units, four are located in areas with high ambient noise levels either from traffic on Interstate 80, railroad tracks, or surrounding industrial land uses. In addition, the future plan for this is to transition to commercial/industrial uses. The remaining dwelling unit to the north is a rental property associated with a farm operation. Therefore, sound-insulating these five dwellings does not appear to be practicable.

- **CONCLUSION**

Considering that future plans show the area to the south transitioning to commercial/industrial, the dwelling to the north is a rental property, and the fact that noise complaints at the airport are not received within the 65 DNL, it is not feasible to pursue the formulation of a sound insulation program.