ARIZONA DEPARTMENT OF TRANSPORTATION

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SOCIOECONOMIC AND LAND VALUE IMPACT OF URBAN FREEWAYS IN ARIZONA

Executive Summary

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16. ABSTRACT

This study analyzes the impact of freeway construction on residential property values and the attitude of residents about the development of freeways in close proximity to their property.

Changes in land use along two corridors in the Phoenix Metropolitan area where freeways were developed are also analyzed. This was done using time series aerial photographs and county records of zoning changes.

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1.0 Report Purpose and Major Conclusions

Report Purpose. This report includes two lines of research on the impact of urban freeways.

- The first objective of this study is to identify patterns of socioeconomic change that might accompany the development of new urban freeways in Arizona.
- The second line of research is to evaluate the effect upon land prices of an announcement of freeway construction.

Major Conclusions. The strongest and most obvious conclusion about the historic socioeconomic impact of freeways in metro Phoenix is that **freeways are a necessary but not sufficient cause for development to occur.**

- **Other factors that are also important** include municipal planning and zoning, land availability, existing utilities and infrastructure, and other transportation modes--railroads and arterials in the case studies and, presumably, airports, and general development trends.
- **Freeways create a condition that improves the market opportunity for change.**
- More importantly, **development around freeways can be controlled by strong urban land use planning.**
- However, it is clear that **income-generating properties--non-residential uses and apartments--have strong locational preferences for freeway corridors.**
- **In the absence of strong planning, private development will guide the freeway corridor's development.**

A second conclusion is that **income-generating properties locate in freeway corridors, like classic land use theory predicts.**

- Moreover, freeway **intersections are most likely to be developed into non-residential activities.**
- **However, residential developments are the predominant corridor activity--** 60 percent of the Black Canyon's and 75 percent of the Superstition Corridor's inventory.

A third conclusion is that the intensity of freeway corridor development depends on a combination of macroeconomic demand conditions and the supply of developable land.

- The case of the Superstition Corridor and the urban form analysis demonstrates that one of the most important effects of freeways is the development of the urban fringe that is caused by freeway accessibility.
- Compared to that effect, there is a surprising amount of undeveloped land which exists in the corridors themselves, especially those on the fringes.
- The expansion of the urban freeway system from approximately 80 miles to over 200 miles will certainly accelerate accessibility to more remote fringes, while it will create an oversupply of corridor land.

Beyond these broad statements, the specific kinds of land uses and their locations are very much dependent on the peculiarities of place--existing land uses, existing zoning, etc.

The Black Canyon and Superstition Area socioeconomic case studies have demonstrated that the life of quality residential neighborhoods extends far beyond freeway completion. What seems to be necessary is that quality residential neighborhoods need to be supported by complementary land uses and strong freeway design features.

In the Superstition Study Area, where a good combination of design and land planning was implemented, the rate of appreciation for single family property values for houses closer than one-half mile to the freeway was actually greater than similar homes in a control area beyond one-half mile of the freeway.

Residential perceptions in the Superstition Area were generally neutral or favorable toward the freeway. Long-time residents (who had moved there before the freeway was constructed) and those living within 200 feet of the freeway had the most negative perceptions.

Regarding the land value/freeway announcement analysis, the major conclusion is that land values in proposed freeway corridors have increased due to freeway alignment announcements.

- In all freeway corridors, the rate of land appreciation was substantially higher after freeway announcement, compared to its rate prior to announcement.

- The average monthly rate of sales value appreciation before the freeway announcement was virtually identical for impact zones and control areas--1.99 percent and 1.92 percent, respectively.

- After the freeway announcement, the average monthly appreciation was 3.77 percent in control areas and 6.67 percent in impact zones.

- **Thus, within the freeway corridor, land prices trebled because of the freeway announcement.**

Beyond these conclusions are the findings which support them. These are summarized in the following eight sections.

2.0 Research Focus and Study Area Description

Research Focus. Previous research provides a strong theoretical foundation, supported by previous case studies, for the analysis of urban freeway impacts in Arizona. The literature strongly emphasizes that each metropolitan area is unique, and that freeways in and of themselves only create opportunity, but change depends on a larger number of factors.

Phoenix is unique in the combination of its very rapid rate of growth, its low-density development that contributes to a rapid physical expansion of the urban periphery, and its extremely limited freeway system. Maricopa County's planned freeway system introduces a significantly new factor into the urban area's future development. Its implementation will create freeway corridors in both urbanized areas and in the undeveloped periphery. Moreover, the addition of 231 miles of freeway system to the urban network (compared to only 80 miles that are currently in place within the urban area) will substantially alter the supply/demand balance for freeway corridor property.

There are a number of areas that are explored in this study.

- What is the demographic impact of freeways?

- What are the land use impacts of freeways?

- What are the impacts on residential development?

- What are the impacts on residential property values?
- How do people living closely to a freeway perceive it?
- What are impacts on business?
- How do freeways affect urban form?
- How do announced freeway alignments affect land prices?

Study Area Description. Portions of two freeways within metropolitan Phoenix were selected as case studies: the Superstition Freeway (Arizona 360) from its junction with Interstate 10 in the City of Tempe to Gilbert Road in the City of Mesa; and the Black Canyon Freeway from McDowell Road to Bell Road in the City of Phoenix.

Based on a review of the literature on freeway impacts, two types of Study Areas were defined for each of the freeway corridors:

1. A study area was defined to include a segment three miles long, extending 1-1/2 miles on either side of the freeway. A study area was divided into three smaller areas: a sample area, defined to be one-half mile on either side of the freeway, and two control areas that extended beyond the sample area for one mile.

2. The second type of area defined was a freeway study corridor which is defined to extend one-half mile on either side of the freeway and which runs from 10 to 12 miles along the freeway.

Thus, within metropolitan Phoenix, four distinct areas were identified (Figure 2-1).

3.0 Freeway Development and Municipal Planning

Freeways are a necessary, but not sufficient cause for high density land use change in either their freeway corridors or in larger influence areas. It is clear that good municipal planning--which anticipates and accommodates market results, combined with careful land planning and design requirements--will guide and control land use change around freeways, if the plan is acted upon.

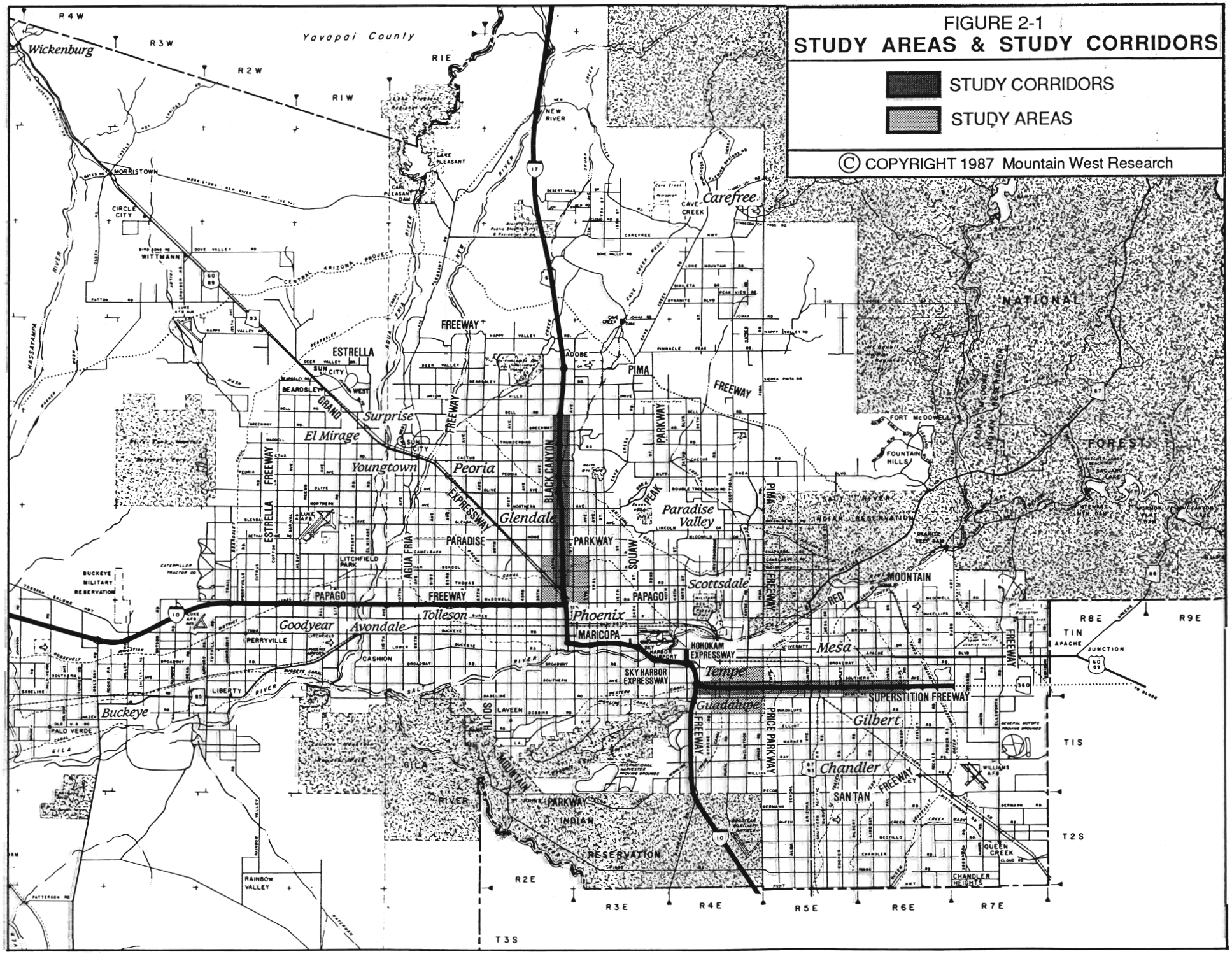


FIGURE 2-1
STUDY AREAS & STUDY CORRIDORS
STUDY CORRIDORS
STUDY AREAS
© COPYRIGHT 1987 Mountain West Research
Yavapai County
Wickenburg
Morristown
Circle City
Wittmann
Cave Creek
Carefree
Fountain Hills
Fort McDowell
Estrella
Sun City
Surprise
El Mirage
Youngtown
Peoria
Glendale
Paradise Valley
Scottsdale
Phoenix
Tolleson
Goodyear
Avondale
Buckeye
Perryville
Cashion
Liberty
Laveen
Maricopa
Tempe
Mesa
Gilbert
Chandler
San Tan
Queen Creek
Chandler Heights
Tin Apache Junction
Buckeye Military Reservation
Rainbow Valley
Indian Reservation
Sky Harbor Airport
Hohokam Expressway
Sky Harbor Expressway
Superstition Freeway
Price Parkway
Black Canyon Freeway
Squaw Peak Parkway
Agua Fria Freeway
Estrella Freeway
Grand Avenue
Red Mountain Freeway
South Mountain Freeway
Central Arizona Project
Gila River
Salt River
New River
Cave Creek
Lake Pleasant
Carl Pleasant Dam
Stewart Mtn. Dam
Roosevelt Dam
Bartlett Dam
Granite Reef Dam
Saguaro Lake
Canyon Lake
Apache Junction
Williams AFB
Luke AFB
General Motors Proving Grounds
Hassayampa River
Agua Fria River
Salt River
Gila River
R4W
R3W
R2W
R1W
R1E
R2E
R3E
R4E
R5E
R6E
R7E
R8E
R9E
T1S
T2S
T3S
Tolleson
Litchfield Park
Paradise
Papago
Pima
Guadalupe
Elliot
Warner
Ellsworth
Williams Field
Queen Creek
Cloud
Ocotillo
Chandler
Germann
Queen Creek
Pecos
Ray
Brown
Baseline
Southern
Broadway
Apache

Freeway Development. The Black Canyon and Superstition Freeways were built at two distinctly different periods in metro Phoenix's development.

- The Black Canyon Freeway was conceived, designed, and built as part of the Interstate Highway System, and was completely federally funded. In Arizona, five interstates were built, including Interstate 17 from Flagstaff to Phoenix Sky Harbor Airport. The southern portion of the freeway (below Northern) was built from 1958 to 1961, and its entire northern portion (from Northern Avenue to Bell Road) was built by 1965.

- In contrast to the Black Canyon Freeway, the Superstition Freeway was originally conceived as part of a larger intra-urban system, very similar to the one presently planned and being built. In 1960, Wilbur Smith and Associates completed a freeway system master plan for metro Phoenix. The Superstition was designed to be the southeast leg of a larger system, principally conceived to improve accessibility from Tempe and Mesa into the larger urban area. The Superstition Study Corridor was completed in several phases from 1972 to 1981.

3.2 Municipal Urban Planning

Phoenix, Tempe, and Mesa each reacted differently to freeway corridors, as their general plans show. The differences among the three cities' general plan responses to freeway systems is instructive, especially compared to actual land use development which has since occurred.

City of Phoenix. In 1969, Phoenix adopted its first General Plan in 46 years, made in the context of the 1960 Wilbur Smith Freeway Master Plan. Because the plan assumed the development of the Wilbur Smith freeway system, it anticipated that more new growth would take place in peripheral areas made accessible for development by new freeways, like the North Black Canyon. **Thus, north Black Canyon development was ruled by the 1969 General Plan, which also contained realistic objectives that fit market expectations.**

City of Tempe. The City of Tempe did not adopt a general plan until 1967, well after the 1960 Freeway Master Plan. Since, Tempe updated its general plan in 1972 and 1978, amended it in 1983, and is currently preparing another update. The frequency of these revisions has allowed Tempe to incrementally adjust to change, without dramatically changing its master plan. Each new general plan grows logically and sequentially from the previous. Moreover, Tempe's actual development has been faithful to the conceptual design, if not the detail, of the 1967 plan.

The Superstition Corridor and Study Area were both planned to be residential areas, with commercial uses at arterial nodes. The area is clearly planned to be a well-integrated residential area, with generous planning for schools, parks, and community centers along the freeway and in its corridor. Thus, **the guidance the 1967 to 1978 plans provided for Superstition Corridor development have been a resounding success.**

City of Mesa. The Superstition Freeway was built in Mesa between 1977 and 1981. Most of Mesa's existing urban area in 1971 was further than a mile from the proposed Superstition. Prior to 1971, the city did not have a general plan. Mesa's 1971 General Plan treated the freeway as a peripheral structure.

By the time Mesa's General Plan was updated in 1982, it was obvious that the 1971 plan had not controlled development along the Superstition. Instead, the market had controlled development. The Superstition provided access to East Valley agricultural land, which stimulated a land boom. **Mesa's 1971 General Plan, in treating the Superstition as an afterthought, failed to control market development driven by accessibility along the freeway.** Mesa's 1982 General Plan has been more successful in guiding freeway corridor growth than its 1971 plan.

Conclusions. Tempe's implementation of a plan which successfully developed the Superstition Corridor into proportionately more residential land uses than either market theory would predict or land planning principles would recommend, rather forcefully illustrates the very strong role that local governments can take in controlling freeway development.

- As a detailed analysis of the Phoenix area corridors' development between 1959 and 1987 shows, at a macroscopic scale classic locational requirements prevail rather strongly.
- What the case study of general plans demonstrates is that **a clear public vision of development that is contrary to market forces can also prevail.**

4.0 Land Use Impacts in the Study Areas

There are several major findings regarding land use impacts in the Study Areas.

- Both the Black Canyon and Superstition areas developed quickly after completion of the freeways.

- The influence of Encanto Park and Cielito Park in the Black Canyon area has influenced the stability of residential neighborhoods that surround it.

- The rapid industrial development of the western Black Canyon area is due more to the compilation of zoning, rail proximity, available land with utilities in place, and the Black Canyon Freeway than to the freeway alone.

- Over a long period, from 1959 to 1987, residential density has increased with the encroachment of multifamily, especially along freeway and arterial corridors.

- Tempe's will to implement the 1967 General Plan, combined with a beneficial freeway design, has resulted in stable residential development along the Superstition Corridor.

- The placement of land uses in the Superstition area supports residential development. Like the Black Canyon, single family residential areas are supported by parks and schools. Non-residential activities are mainly clustered at arterial intersections, and industrial development is separated from any residential area by an arterial.

- Over time, the Superstition area has evolved into higher density uses. In part, this is from later development of non-residential activities. However, in the Impact Area and the older North Control Area, multifamily development has occurred, even displacing some single family residential.

5.0 Impacts on Residential Neighborhoods in Study Areas

One of the most important findings of the land use analysis is that, in both Study Areas, **residential development, particularly single family development, has been well-maintained over reasonably lengthy periods in areas close to freeways.** In both the Black Canyon and Superstition Study Areas, **these residential uses benefited by strong spatial support from complementary land uses (e.g., parks), by buffering from freeways and arterials (e.g., multifamily buffering and beneficial freeway design), and by strong urban planning (e.g., the Tempe case).**

This section focuses on two issues. First, the property value impact of close freeway proximity is evaluated for the Superstition Study Area. Second, the perception of the freeway by homeowners in the Superstition Study Area is presented.

5.1 Impact on Property Values in the Superstition Study Area

The value of single family dwelling units from 1972 to 1987 was analyzed from sales transaction records of the Maricopa County Assessor's Office for the Superstition Study Area.

Rate of Appreciation. The rate of appreciation during the 1976 to 1979 period was faster for the Study Area than the metro Phoenix average (see Figure 5-1). It is possible that the more rapid Study Area increase was due to freeway accessibility. However, the rate of appreciation has been slower in the Study Area than in metro Phoenix since 1981. This is caused by the weight of newer, more expensive housing in the metro measure. To correct for this, the Study Area was measured against the rate of appreciation in resale housing. Figure 5-2 shows some significant results. North Tempe resale housing appreciated at about half the rate of the metro Phoenix average. The Study Area compares very favorably with North Tempe.

Conclusions on Property Values. There are no discernable negative property value impacts from the Superstition Freeway in the Study Area. To put these results in perspective, however, the Study Area is very well-integrated with the freeway. The freeway has a beneficial design, and the City of Tempe has consistently followed through with its General Plan guidelines to make the Study Area a single family residential neighborhood with strong residential attributes--schools, parks, and shopping facilities. Freeway accessibility, in this context, is a positive attribute.

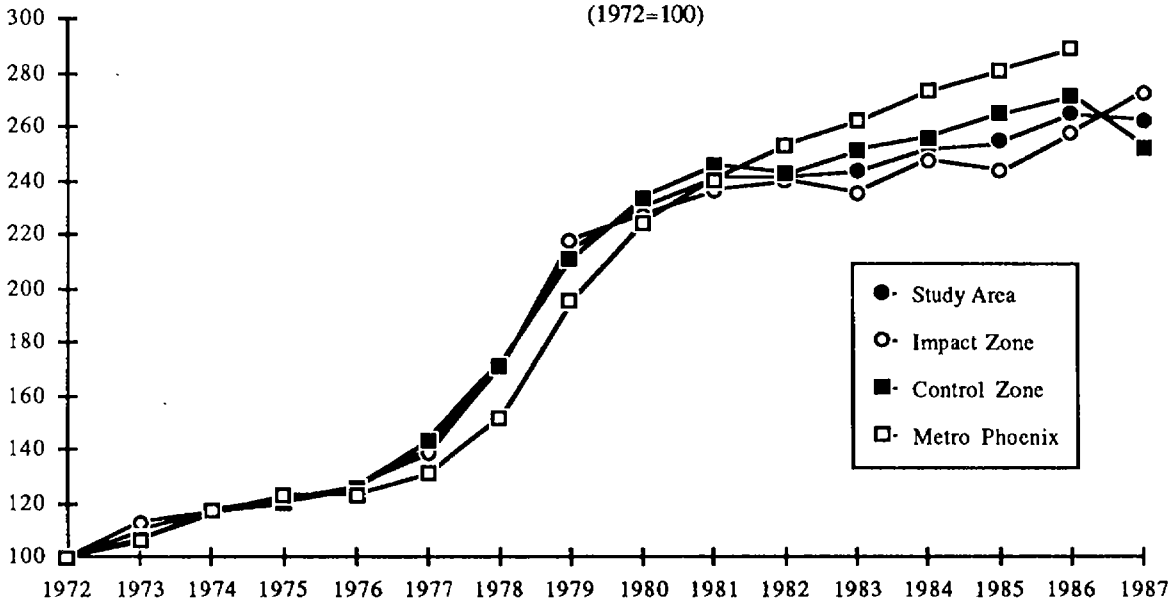
5.2 Homeowners' Attitudes in the Superstition Study Area

Subjectively, a freeway can be interpreted as a physical entity and/or a transportation facility. The pertinent question becomes one focused on trade-off. Does close proximity to an urban freeway create a negative perception that outweighs the positive perception of increased accessibility?

The perception, opinion, and attitudes of Superstition area residents were examined through primary survey research using a structured questionnaire. Telephone interviews with 109 homeowners were conducted in the late afternoon and early evening from June 30 through July 10, 1987.

FIGURE 5-1

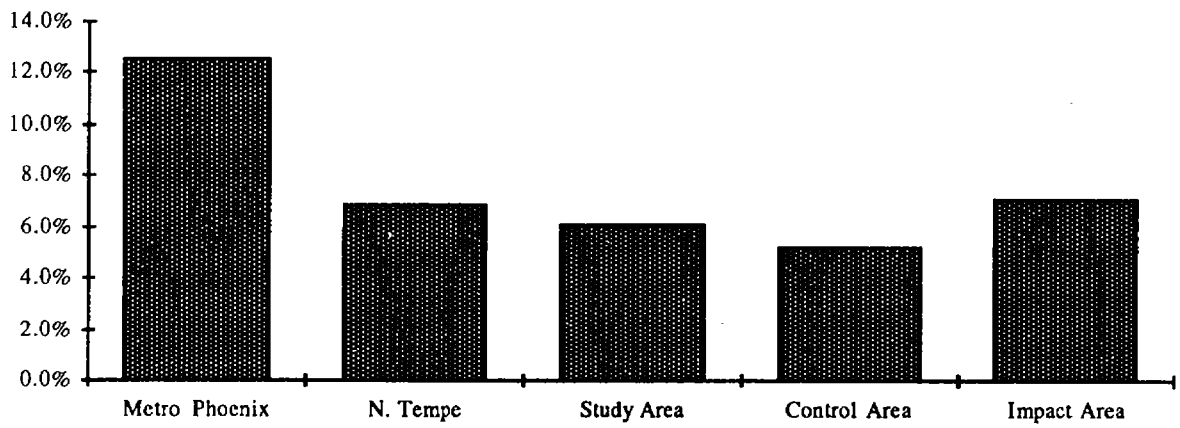
APPRECIATION INDEX
STUDY AREA AND METRO PHOENIX
1972-1986
(1972=100)



Source: Economic Research Division, Mountain West Research, July 1987.

FIGURE 5-2

APPRECIATION OF RESALE HOUSING
1982-1984 AVERAGE COMPARED TO 1985-1987 AVERAGE
STUDY AREA BY DISTRICT, NORTH TEMPE AND METRO PHOENIX



Source: Economic Research Division, Mountain West Research, July 1987.

The important findings about residents' attitudes toward the freeway are on balance, ambiguous.

- Homeowners who moved to the Study Area before the Superstition was built did so because of the house and the neighborhood. Homeowners who moved after the freeway was built did so because of the neighborhood, because of freeway accessibility, and because of price.

- Accessibility is perceived to be the most positive freeway impact.

- Overall, 76 percent of homeowners considered the overall impact of the freeway on their lives as very good.

- Ninety percent of homeowners who moved to the area after the freeway was built thought its impact was positive.

- Noise was ranked to be the most noticeable negative effect from the freeway, especially by those living closer than 400 feet.

- The majority of homeowners who lived more than 200 feet from the freeway would again buy a home as close to a freeway. Only 21 percent who lived within 200 feet would do so.

- People who live within 600 feet of the freeway are most uncertain about its property value effect. The further away people live, the more they believe the freeway has no effect.

- Moreover, people who live close to the freeway are preoccupied with its effect in their property's value. After 600 feet, homeowners are more realistic about other factors that affect property value.

6.0 Impact on Businesses

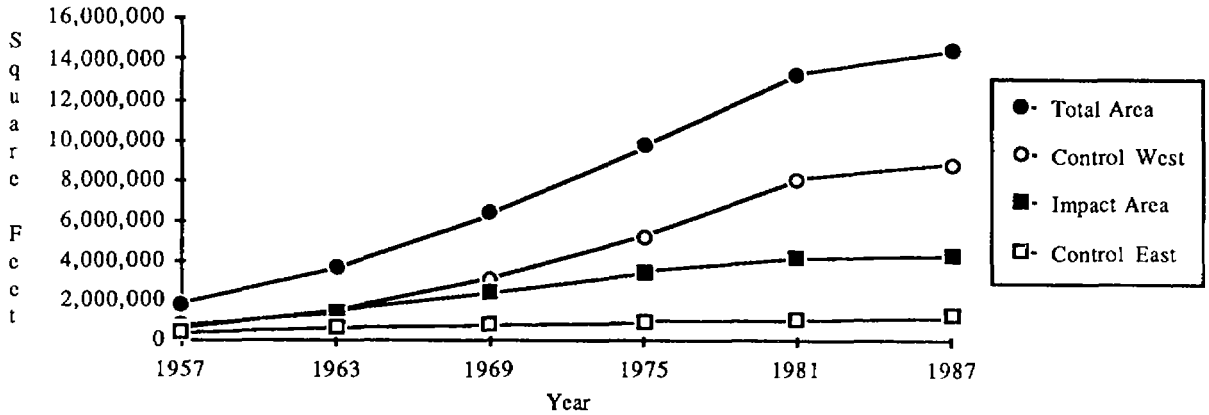
The timing and intensity of non-residential development in each of the Study Areas from 1957 to 1987 was studied, using the Maricopa County Assessor's Office property valuation records.

Black Canyon Study Area. Over a 24-year period, from 1957 to 1981, total non-residential intensity in the Black Canyon Study Area increased at a sustained rate, as Figure 6-1 shows. Overall, the Study Area is dominated by industrial uses.

- Non-residential development has mainly taken place in the West Control Area, where three major transportation nodes--the Southern Pacific rail line, the Grand Avenue arterial, and the freeway--along with industrial zoning and available vacant land that contained utility infrastructure have all combined to stimulate industrial development.

FIGURE 6-1

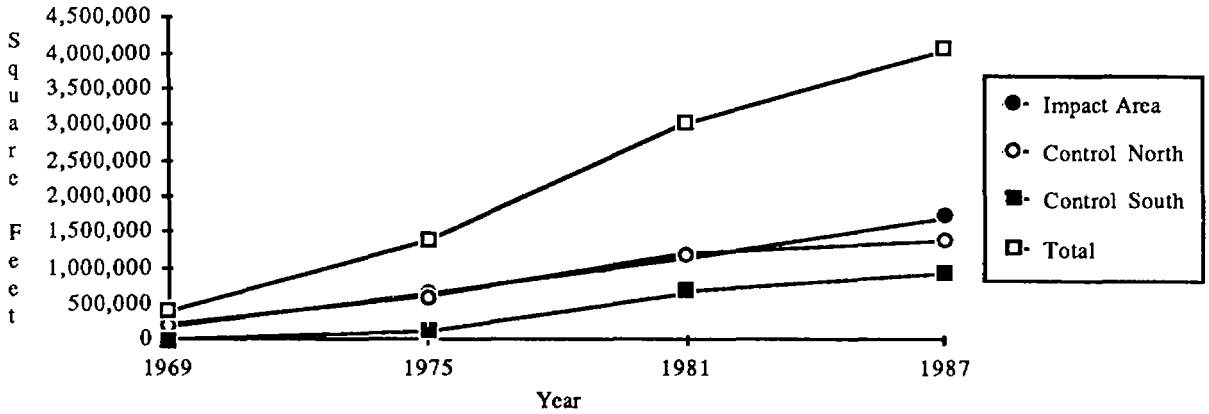
NONRESIDENTIAL DEVELOPMENT
BLACK CANYON STUDY AREA
1957-1987



Source: Economic Research Division, Mountain West Research, July 1987.

FIGURE 6-2

NONRESIDENTIAL DEVELOPMENT
SUPERSTITION STUDY AREA
1969-1987



Source: Economic Research Division, Mountain West Research, July 1987.

- The Impact Area, which contains large areas of industrial development (also at the intersection of the freeway, the Grand Avenue arterial, and the railroad), also grew substantially.

- The East Central Area has successfully maintained its original residential character due to the influence of Encanto Park and the original higher quality of its single family development.

Superstition Study Area. The development of non-residential income-generating property in the Superstition area increased most substantially after the completion of the freeway in 1975, as Figure 6-2 shows. Due to the strong residential character of the Superstition Study Area, most of its non-residential development was in retail uses. More office development, however, has developed within the freeway corridor, and this has taken place later than retail uses. The Impact Area also contains most non-residential uses in the Study Area.

Major Findings Regarding Non-Residential Impacts. There are two general findings regarding the non-residential impact of freeways.

- Combining the two Study Areas, it is clear that freeways have stimulated non-residential growth in both cases.

- However, the freeway's presence is only a contributing factor to the precise location of non-residential development. Equally important are municipal planning and zoning, available land, utilities, and infrastructure, and other transportation nodes.

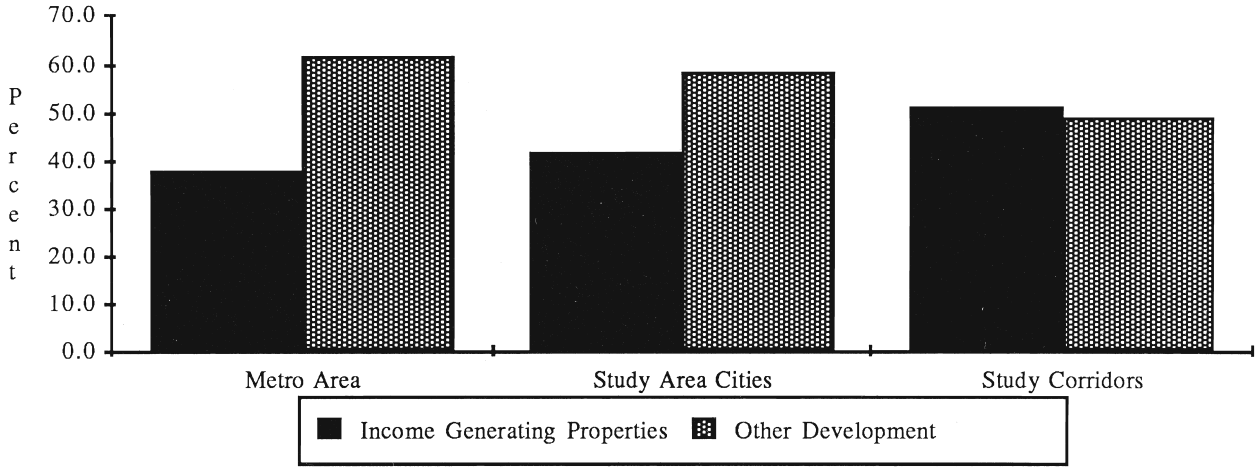
7.0 Freeway Corridor Development in Metro Phoenix

The corridor analysis has produced some important findings, which follow according to the major questions that it was designed to answer.

1. **To what extent has actual corridor development followed market-based land use theory?**

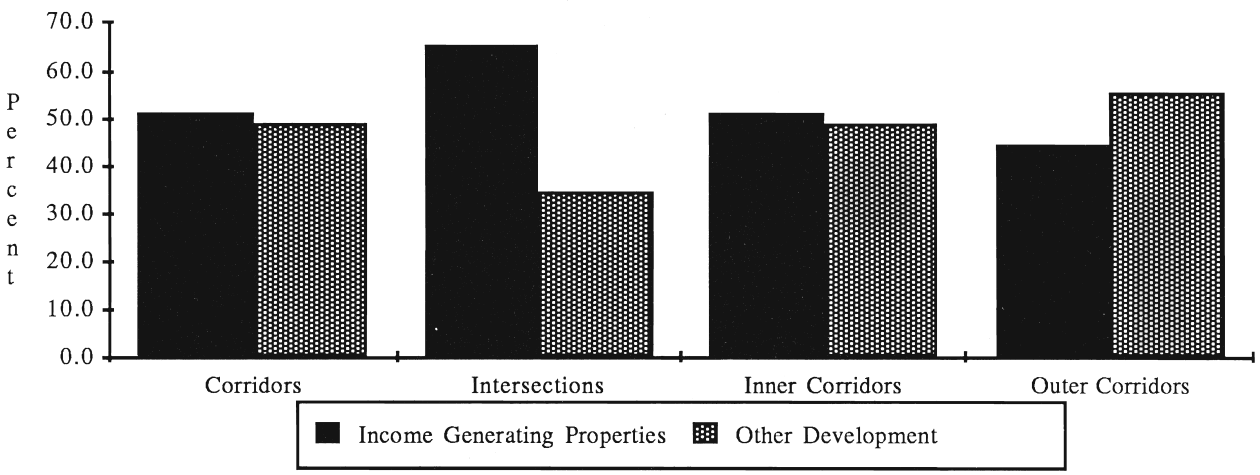
   - Freeway study corridors contain a larger share of income-generating properties. Two corridors that were underdeveloped when the freeway was built (and thus where the market was freer to develop) contain an even larger share (see Figure 7-1).

FIGURE 7 - 1
INCOME-GENERATING AND OTHER DEVELOPMENT
METRO AREA, STUDY AREA CITIES, AND STUDY CORRIDORS
1987



Source: Economic Research Division, Mountain West Research, July 1987.

FIGURE 7 - 2
INCOME-GENERATING AND OTHER DEVELOPMENT
STUDY CORRIDORS BY AREA
1987



Source: Economic Research Division, Mountain West Research, July 1987.

- Two corridors were already urbanized before freeway development, and both contain more extreme land use distributions, but for different reasons. Tempe's is due to municipal planning and the South Black Canyon's to previously existing locational attributes and site characteristics.

- The two "undeveloped corridors" are the most similar pair among study corridors, including their share of income-generating uses.

- Non-residential development within freeway corridors grew much faster than other kinds of development, and grew faster than metrowide non-residential development.

- Inside freeway corridors, the growth rate for property that does not generate income was half the rate of other land uses.

2. **How strongly does municipal planning affect corridor development?**

- Only 29 percent of corridor uses in the Tempe Superstition Corridor, which Tempe planned for residential, are income-generating properties.

- Although each of the corridors are dissimilar in land use details, the Tempe corridor stands out in uniqueness in all areas--along its length, at intersections, within inner corridors, and within outer corridors. This is because the City's General Plan primarily called for residential development in the corridor, and because the General Plan was followed upon.

3. **Do subareas of the corridor develop differently?**

- Income-generating properties are 66 percent of all uses at intersections, 51 percent of all uses at inner corridors, and only 45 percent of all uses in outer corridors (see Figure 7-2).

- Within study corridors, outer corridors developed more quickly at first, followed by inner corridors and then intersections. This is especially true of residential development.

- Non-residential inventory develops earliest at intersections, then inner corridors and then outer corridors.

4. **In previously undeveloped areas, have freeway corridors developed at different rates, magnitudes, and uses?**

- Comparatively, the two previously undeveloped corridors--the North Black Canyon and the Mesa Superstition--look more alike than any other pair of study corridors.

- The large amount of undeveloped land within corridors is surprising, given the short supply of freeway corridor land in metro Phoenix.

  -- In 1975, twelve years after freeway completion, about 30 percent of the South Black Canyon Corridor north of Bethany Home Road was undeveloped.

  -- In 1987, 22 years after freeway completion, 25 percent of the North Black Canyon's land area is still undeveloped.

-- Six years after freeway completion, 30 percent of the Mesa Superstition Corridor is undeveloped.

-- The Tempe Superstition is an exception. In 1975, when the freeway was completed, about 40 percent of the corridor was undeveloped. In 1987, only small infill pockets and industrial land were vacant.

- Regional malls have been early activities which led development in the North Black Canyon and Mesa Superstition Corridors.

- A large amount of residential development has also been an early activity in the two "undeveloped" corridors.

- "Undeveloped" corridors have grown more rapidly than "developed" corridors, but no more rapidly than the entire metro area since 1975.

- Non-residential development in "undeveloped" corridors is much more rapid than in any other area.

5. **How strongly do freeway corridors attract the several kinds of land uses?**

- The rate of development for office, hotel, and apartment uses is much faster within corridors than in other areas.

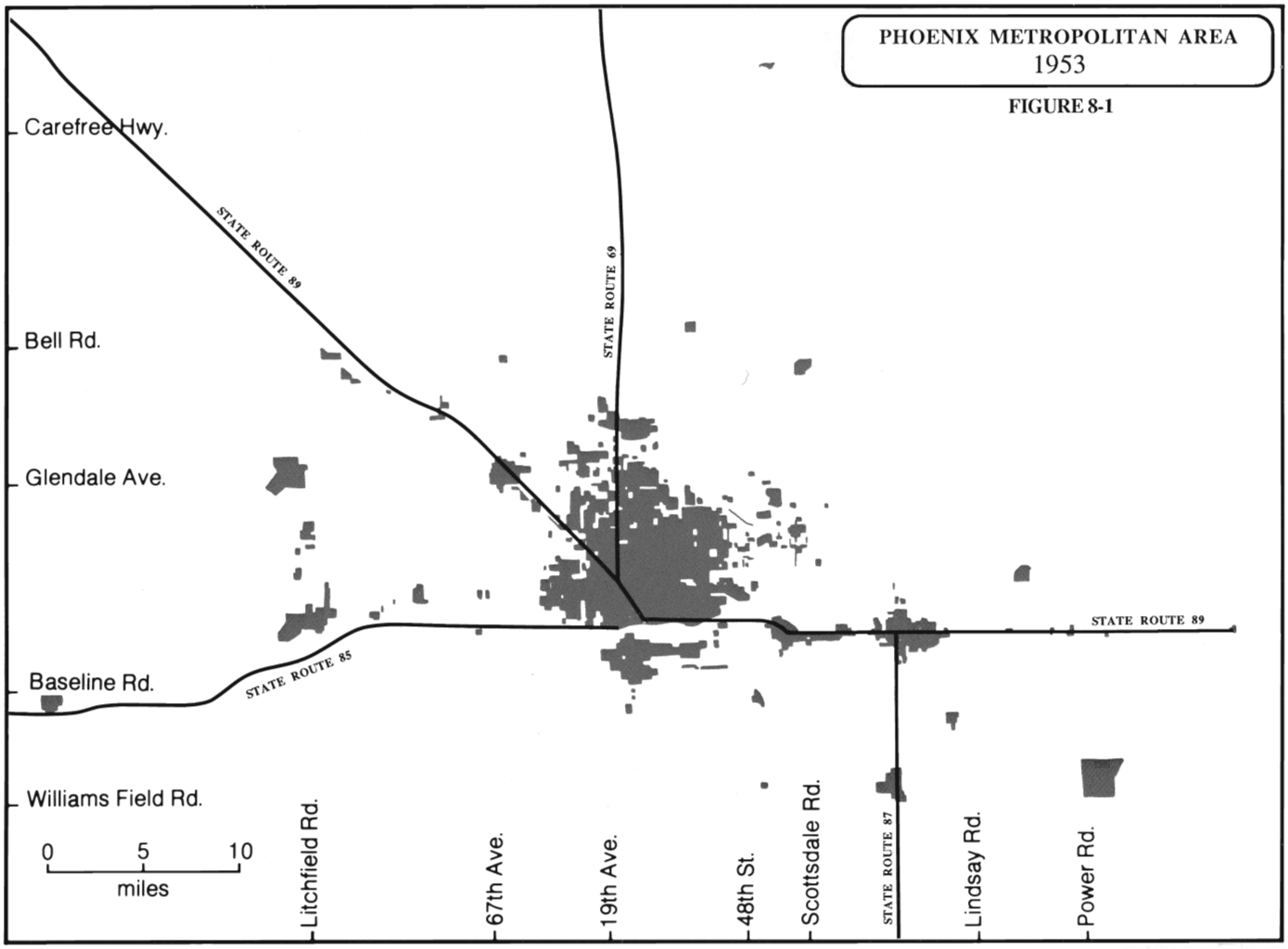
- Freeway attraction for industrial development is not as clear. Its rate is slower than other areas for "developed" corridors but faster than for "undeveloped" corridors. Its growth rate was not as fast in corridors than in other non-residential uses.

- The growth rate for retail and single family/townhouse inventory inside corridors was half the rate of other land uses.

- Single family development is a large part of freeway corridor development. Almost 70 percent of the inventory in the study corridor is single family development. Even discounting the Tempe Superstition area, single family inventory is still almost 50 percent of the inventory in each of the remaining three corridors.

8.0 Urban Form Impacts

Figure 8-1 shows the shape of the metro area urban form in 1953 before any urban freeways had been built. There is some correspondence between the major highway system and development patterns. Growth in the Tempe and Mesa areas in the eastern portion follow US 60 and 89. Development is also following this highway on the west side along the Grand Avenue Corridor. This is the highway connecting Phoenix to Los Angeles. Finally, there is some development along US 80 (now AZ 85) in the southwest section. This highway connected Phoenix to San Diego.


PHOENIX METROPOLITAN AREA
1953
FIGURE 8-1
Carefree Hwy.
Bell Rd.
Glendale Ave.
Baseline Rd.
Williams Field Rd.
STATE ROUTE 89
STATE ROUTE 69
STATE ROUTE 85
STATE ROUTE 89
0 5 10
miles
Litchfield Rd.
67th Ave.
19th Ave.
48th St.
Scottsdale Rd.
STATE ROUTE 87
Lindsay Rd.
Power Rd.

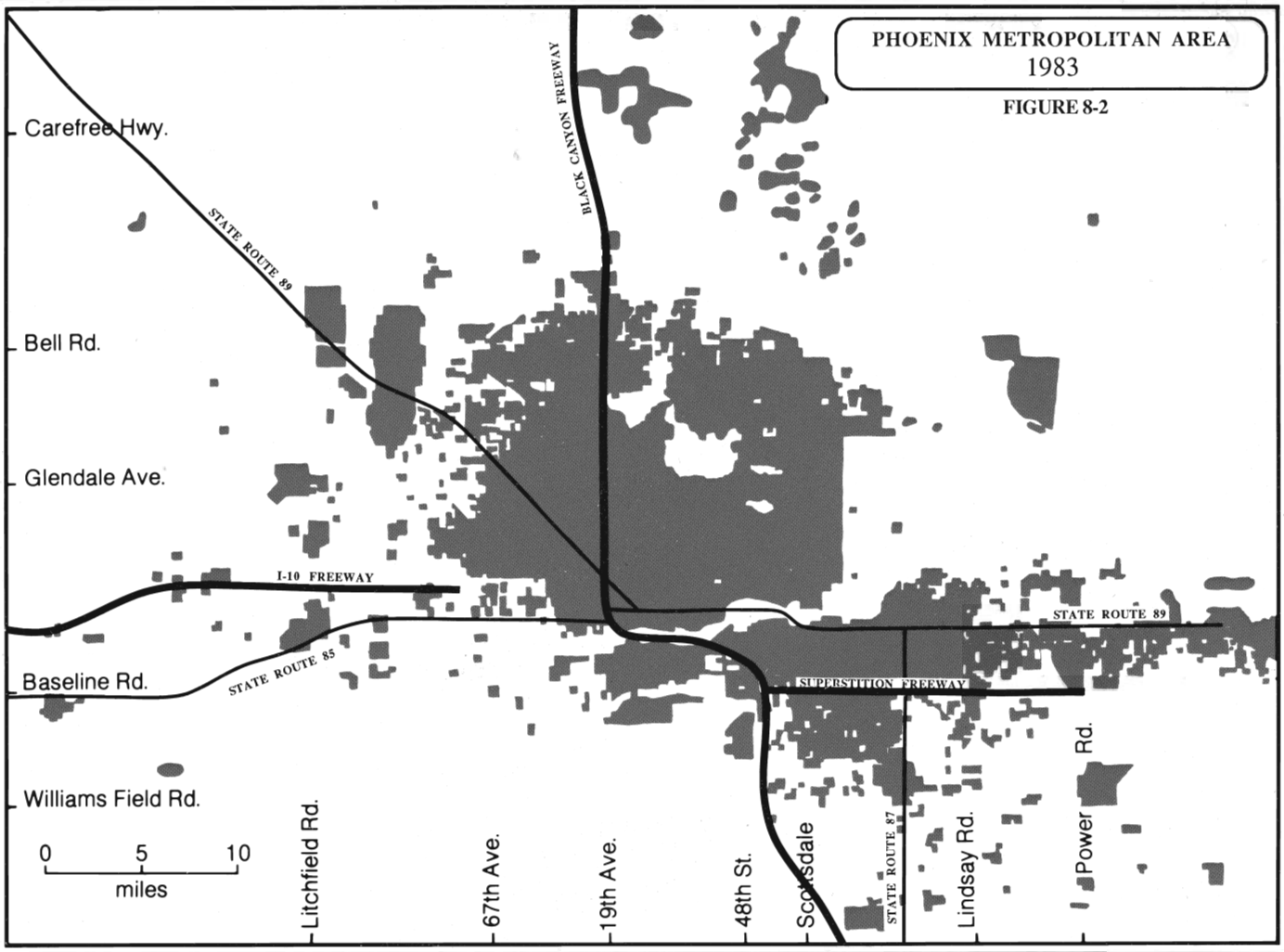

PHOENIX METROPOLITAN AREA
1983
FIGURE 8-2
Carefree Hwy.
Bell Rd.
Glendale Ave.
Baseline Rd.
Williams Field Rd.
STATE ROUTE 89
BLACK CANYON FREEWAY
I-10 FREEWAY
STATE ROUTE 85
STATE ROUTE 89
SUPERSTITION FREEWAY
0 5 10
miles
Litchfield Rd.
67th Ave.
19th Ave.
48th St.
Scottsdale
STATE ROUTE 87
Lindsay Rd.
Power Rd.

Figure 8-2 shows the development pattern in 1983. By this time, the developed area is many times larger than it was in 1953. Although some of the patterns of development are somewhat difficult to discern in some places, there still appears to be a strong correlation to the major transportation routes within the metro area. In particular, substantial development has occurred along the North Black Canyon and along the Superstition Corridor, which provided transportation accessibility from the urban core to undeveloped peripheral areas. Little change is evident along the Papago Corridor, which did not link the urban core to peripheral areas.

9.0 The Effect of Freeway Announcements on Land Prices

The purpose of this analysis is to determine whether the announcement of the freeway R.O.W. alignment alone causes land values in the corridor to increase. The study areas included the Estrella Freeway, Sun Valley Expressway, Agua Fria Freeway, and San Tan Freeway. Sales transactions were tracked for these freeways during two periods--prior to freeway announcement and after freeway announcement.

Conclusions. The announcement of freeway construction causes an increase in the appreciation rate of land sale values. The rate is greater for freeway corridor property than for control area property.

- Prior to the freeway announcement, the average appreciation rate was almost identical for the corridor and control areas. Across all freeways studied, the former averaged 1.99 percent per month, while the latter averaged 1.92 percent per month.
- After the freeway announcement, the average monthly rate of appreciation was 6.67 percent for corridors and 3.77 percent for control areas.
- Table 9-1 shows the monthly sale value appreciation rate for each corridor and for the average.

TABLE 9-1

MONTHLY APPRECIATION IN LAND SALES VALUE

	Before Announcement		After Announcement	
	Control	Impact	Control	Impact
Estrella	3.33%	3.07%	2.60%	4.65%
Sun Valley	1.44%	1.88%	6.85%	6.57%
Agua Fria	0.60%	0.10%	1.24%	1.52%
San Tan	2.30%	2.91%	4.37%	13.92%
AVERAGE	1.92%	1.99%	3.77%	6.67%

Source: Mountain West Research, October 1987.