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ABSTRACT

FREeway IMPACT
on Santa Maria, California
by
Marion Lyle Powell
Master of Arts in Geography
September, 1966

The economic impact of freeways on bypassed communities is a problem having both practical and theoretical value. In this study an attempt is made to determine freeway impact upon land use, retail sales, land values, and travel patterns, in Santa Maria, California.

A statistical analysis of land use and retail sales for fourteen business types produced uncertain results. Qualitative information from interviews unraveled some of the uncertainty by showing considerable impact on land use and retail sales for service stations and motels, and to a lesser extent on eating and drinking places. The remaining business types showed minor freeway impact. Locational advantages from the new freeway location are nonetheless realized by several of the less affected business types, and at least two companies are currently relocating near access ramps. Land values are quantitatively and qualita-
tively analyzed with results indicating modest impact on residential property adjacent to the freeway. Commercial land values are also affected, particularly on important streets with freeway proximity. In addition, changing traffic volume and modified travel patterns clearly indicate freeway induced changes in accessibility.

The essential difficulty presenting more precise freeway impact conclusions center around an inability to specifically isolate the simultaneous impact of Vandenberg Air Force Base. For that reason the research design is reviewed and methodological proposals outlined for future freeway impact studies.
CHAPTER I

INTRODUCTION

Since the conclusion of World War II the United States has been undergoing a dramatic revolution in transportation. This change is based primarily on increasing automobile per capita ownership and in the associated mobility demands of a motoring public. In part these demands have been met by highway improvement programs, programs accelerated by passage of the 1956 Interstate Highway Act. This legislation allocated federal expenditures for the construction of a 41,000 mile, freeway-type1 interstate highway system. This fundamental change from unlimited-access roadways to limited-access freeways has created a host of transportation problems which, in turn, raise questions related to social and community values, political considerations and resource allocations.

The economic effects of limited-access roadways are rooted in three essential benefits: (1) vehicular, (2) non-vehicular, and (3) reorganization. Vehicular benefits are those which reduce travel time and distance, and thereby reduce vehicular operation and maintenance costs for the motoring public. Non-vehicular benefits presumably

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1 Freeways, expressways, and parkways maintain full or partial control over access, while most other roadways, including streets, have unlimited access.
effect higher land values and increased business activity, both derived from greater accessibility. Changes in accessibility also bring about a more efficient reorganization of land uses and associated social and economic systems.²

It is with two of these economic effects that this study is concerned: non-vehicular and reorganization benefits. Studies concerned with these two benefits are known as economic impact studies. Research has been conducted in many parts of the United States in an effort to determine the relative and absolute effects of a freeway upon both urban and rural environments. Although most of the work has focused on single communities, a few studies have dealt either with impact upon the central business district of large cities or upon multiple urban and rural areas.³

In general the value of such studies has been two-fold: (1) a theoretical base for further work, and (2) practical answers to freeway-impact questions. Specifically, impact studies may furnish information for determining the allocation of public funds for highway improvement, and may


³Robert J. Huhtanen, Paul J. Mika, Richard E. Preston, Raymond E. Murphy, A Study of the Effects of Freeways on Central Business Districts.

A. J. Bone and Martin Wohl, Economic Impact Study of Massachusetts, Route 128.
supply data for selecting future route locations. In addition, such research may improve land use planning, provide concepts as to anticipated land values and business effects, and supply information that may help the general public in acceptance or non-acceptance of highway improvement.\(^4\)

The purpose of this study is to determine the economic impact of a new freeway on the city of Santa Maria, California. On October 29, 1962, after five years of litigation and two years of road construction, a limited-access freeway replaced the existing US 101 which passed through the city.\(^5\) Whereas the old highway passed through the heart of the central business district of Santa Maria and was lined by more than three miles of strip retail business, the new freeway sliced through farmland and residential property approximately one mile east of the business district (Figure 1). It would thus appear that, with through traffic diverted and local travel patterns modified, accessibility to various points within the Santa Maria area was altered by the freeway.

It was felt that freeway impact could best be evaluated by a multi-criteria approach. Therefore, the specific problems confronted in this study were: What has been the


\(^5\)Records of the California State Division of Highways, Division V, San Luis Obispo, California.
SANTA MARIA STUDY AREA

Figure 1

SANTA MARIA GENERAL LOCATION

ORCUTT AREA

LOS ANGELES
impact of the freeway on commercial land use, retail sales, and land values in the city of Santa Maria, California?

A freeway impact study in Santa Maria posed a special problem; that is, the concurrent impact of an adjacent military-civilian installation, Vandenberg Air Force Base. The air base interjects an important variable into this impact study because its development coincided in time with the development of the freeway in Santa Maria. As a national defense installation Vandenberg Air Force Base, to a degree, operates independently of the local economies, and any fluctuations in air base expenditures could, therefore, cause economic changes in Santa Maria unrelated to changes caused by the freeway.

Despite the problem imposed by Vandenberg Air Force Base upon this impact study it was believed that a reasonable separation could be achieved between the freeway effects and those of the air base. It was hoped that this effort might possibly aid in refining the conceptual methods of economic impact studies when more than one significant event causes change in a study area.

Like other research problems, economic impact studies demand a methodology, a methodology consistent with stated objectives. In this study two obvious questions arose: (1) what indicators determine economic impact? and (2) how were those indicators to be measured? Answers to those questions come in part from an evaluation of a number of
highway impact studies, and it is to an evaluation of such literature that the following chapter is devoted.
Soon after the construction of the first limited-access highways the need for economic impact studies was clearly recognized. It was reasoned that a change in accessibility might cause important economic changes in those communities affected by highway improvement, but the exact characteristics of those economic changes were unknown. Over the past twenty years, a wealth of specific information has been gathered and a methodology formulated. A review and evaluation of the methods employed in a selected group of highway impact studies is the purpose of this chapter.

Studies Surveyed:

Branham, May, and Michael (1953):

Kokomo and Lebanon, Indiana, two highway bypassed cities, were the subjects of an early economic impact survey. As a forerunner to more recent and sophisticated works, the Indiana survey is valuable in terms of basic methodology. Its purpose was to explain changes in traffic, land use, retail sales, and land value caused by highway

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impact. Since precise figures could not be derived from governmental agencies, most of the data were obtained by personal interview. The data were then subjected to a "before and after" technique. The before period immediately preceded highway completion while the after period followed the completion by six months.

Two essential weaknesses arose in the Indiana survey: (1) excessive reliance on interview data, and (2) the before and after time continuum. Since interviews call for memory and opinion the data are difficult to control and accurately quantify. The Indiana study also erroneously presupposed that within a six-month span the major force of economic impact would be sustained. A later work, based on an analysis of ten impact areas, indicated that impact usually begins before a highway is in service, surges to a peak shortly after its opening, falls to a lower level in a few years, and then either disappears altogether or remains as a permanent increment to growth.

California State Division of Highways (1951-1956-1962):
California has been a leader in promoting impact studies. A review of several California studies ought to,

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7This writer experienced difficulty when comparing statistical data with interview results in a proseminar paper, Beaumont, California, a Freeway Impact Study, submitted to the Department of Geography, San Fernando Valley State College, Spring 1964.

therefore, reveal not only techniques utilized but methodological improvements over time as well.

The study of Imperial, California employed a "before and after" method that spanned a two-year period. The technique was supplemented by a "control area" device which, in effect, allowed comparisons between the study area and an area presumably unaffected by highway improvement. Comparisons were made of changes in traffic volume, population changes, and business sales through government supplied quantified data. In particular, cafes, bars and service stations were singled out for special treatment.

The objectives of the Imperial study were never precisely spelled out, the application of techniques was not consistent, and the time interval of two years "before and after" seemed inadequate. However, the introduction of a control area device did permit more accurate comparisons than the Indiana study.

A bypass study of Tulare, California, also employed the "before and after" and "control area" methods. Eating and drinking places and service stations were again isolated and all other retail activity consolidated; the

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9 For a complete bibliography of California impact studies refer to California Land Economic Studies, Right-of-Way Research and Development, California State Division of Highways, Sacramento, California.

three categories were then areally delimited and spatially analyzed with respect to distance from the bypass. Changes in property values were attempted through actual sales but insufficient transactions prevented comparisons. Yet, the objective of the study was never stated nor were land use changes directly considered. The consolidation of all other retail activity into one category assumed a similar economic impact for each activity, an assumption with little basis on either empirical or theoretical grounds. A lengthening of the study period to four years, however, was meaningful.

The Petaluma, California study also utilized the "before and after" and "control area" methods. Business activity was outlined in detail with eleven categories statistically represented. Property sales were investigated but insufficient sales again precluded concrete statements. The essential aim of the study was not readily apparent nor was a "before and after" period of three years adequate. However, the presentation of interview information based on and supportive of quantitative data created a better understanding of freeway impact.

In summary, the central tendency of most California bypass studies has been a predilection for commercial

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activity. Spatial aspects of land use are rarely pursued. Population changes and traffic volume are only casually mentioned. Over time, though, the California studies do reflect a refinement of techniques and their introduction of the control area device has been instrumental in producing more precise statistical impact conclusions. 

Garrison and Marts (1958):

An excellent example of the scholarly interest in impact research was the Marysville, Washington, study. Objectives were to make statements regarding impact on travel patterns, many categories of business activity, and land values. Essentially the same basic techniques were used; a "before and after" period of three years, and "control areas" comprising adjacent, presumably unaffected communities. Since it was believed that changing travel patterns were the chief mechanism causing changes, individuals were asked opinions on highway improvement and queried regarding personal trip patterns. Twenty-one business types were recognized, the smallest number for which data could be acquired and still avoid state income disclosure laws. By conversion to a percentage of their

13 Although only three California studies have been evaluated most of the remainder were personally reviewed. It should be noted that the California State Division of Highways has conducted other studies, some of which are specifically aimed at determining the effect of highway improvement on motels and industrial and residential land values.

14 Garrison and Marts, Op cit.
mean the business data permitted three comparisons; temporal and spatial, linear trends, and seasonal fluctuations. Property values were determined by sales but no differentiation was made between land and improvement values since, to the knowledge of the authors, no exacting method existed for that separation.

Travel patterns, business activity, and property values had changed. Yet, other than a few general statements, impressions, and inferences, the authors were unable, or at least unwilling, to draw definite impact conclusions. The study was seeking to provide many specific answers which, on the basis of available data, could not be supplied. The writers themselves point out a basic problem:

What is needed is a plausibility argument that is sufficiently general to explain how each and every kind of land use would react under each and every situation to highway improvement. Such a plausibility argument is lacking and depends on extension of work such as that exemplified in Chapter II (travel patterns and opinion surveys).15

Adkins (1959):

Impact on land values in Dallas, Houston, and San Antonio, Texas, was sought in a study by William G. Adkins.16 To each city was applied the "before and after" concept with

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15 Ibid., p. 98.
"control areas" designed to isolate net expressway effects. Two techniques were employed; (1) an unadjusted sales price that did not separate land value from improvements, and (2) an adjusted sales price which, subtracting from the sales price the appraisal tax value of improvements multiplied by a construction cost factor, should reflect more closely the price paid for land only. A three-banded areal application of properties adjacent and parallel to the expressway were compared to control areas one to two miles distant in Dallas and Houston, while only one band was constructed in San Antonio. Results clearly demonstrated a zonal impact. Both methods indicated an overwhelming land value increase in the freeway-adjacent band with, surprisingly, the least change occurring in the middle band.

In evaluating the two methods it would appear that the unadjusted sales, through the inclusion of improvements, cannot adequately determine the varying character of property from place to place. On the other hand adjusted sales, by shedding individual character and reducing property to a common land base, ought to more accurately measure impact. Adjusted sales are not without difficulty, however, for maintaining a consistent degree of uniformity requires careful statistical conversion and analysis.
Cribbins, Hill, and Seagraves (1965):

A North Carolina study investigated the general hypothesis that "land value decreases with increasing distance from the highway in the after period, whereas in the pre-freeway period land value follows no particular pattern with respect to the interstate route."¹⁷ Land sales were obtained, given the "before and after" treatment, and correlated with their shortest straight-line distance to the interstate access. This correlation indicated no disruptive effects on overall property values and that the average price of all land was significantly higher in the after period.

These conclusions thus react in direct conflict to the Adkins study. The North Carolina report, however, essentially concerned agricultural land whereas the Adkins work was dominated by commercial and residential properties. This is significant, not only in terms of accessibility theory, but in its applicability to the Santa Maria study as well because the Santa Maria bypass presently passes through all three general land use types.

Summary and Conclusions

The foregoing impact studies have demonstrated a variety of purposes and techniques. The answers sought

have ranged from the general to the specific, and the subject has encompassed entire communities or singular topics. Despite these variabilities, the fundamental approach and the impact indicators seem clearly identified.

At the methodological heart of economic impact research exists the "before and after" concept and the "control area" device. Both tools serve as the analytic framework within which the following primary indicators are measured: travel patterns, traffic volume, population change, land use change, retail sales, and land values. The framework itself is relatively inflexible for if a study presumes to make statements with minimal error, then both the "before and after" and "control area" techniques must be used. The actual selection and utilization of indicators, however, is dependent upon the specific purpose of a particular study. Whether that purpose is aimed toward land values, retail sales, community benefits, or to any combination of problems, the use of indicators must meet the test of relevance. That relevance, as we have seen, fluctuates from study to study and from purpose to purpose.

A greater difficulty lies in the application of the foregoing criteria. For instance, what continuum of time

\[13^{\text{It should be noted that in CBD studies the use of parking meter revenue is an important indicator of freeway impact. Moreover, the California studies have occasionally discussed building permits, but the applicability of those permits in measuring impact has not been adequately substantiated.}}\]
should represent the "before and after" technique, and how should a "control area" be defined?

**Before and After Approach:**

It would appear that any before and after interval less than three years is insufficient and, according to Stroup and Vargha, anything less than five years is purely short-run and does not adequately allow for a lag in internal adjustment. In addition, the before and after concept is applied to land values in a different temporal setting than to retail sales. Bardwell and Merry stated that the first public announcement date of a freeway location is important since it makes people "aware." This awareness can be immediately expressed in land speculation and, consequently, in land value. On the other hand, retail sales reflect contemporary demand rather than anticipatory value, and would hence exhibit impact immediately upon freeway completion. Therefore, the important date for land values is the date of public notification that a freeway will be constructed within a prescribed area. For retail sales that date occurs upon freeway opening.

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Control Area Device:

In defining a "control area" the essential objective, as indicated earlier, is to select an area which is unaffected by highway improvement. Land value changes directly related to impact are assumed to occur in the area immediately adjacent to relocated highways. Control areas should therefore be established at presumably unaffected locations within the same community or general area. In considering retail sales changes, however, "control areas" are normally larger and more encompassing because disclosure laws and a lack of sufficient zonal data usually forces individual business types into a community-wide classification. For this reason comparative control areas are selected from adjacent, unaffected communities, as in the Marysville study, or from the county of which the study area is a part. The reliability of the county as a control area might best be appreciated from the following excerpt:

It is anticipated that economic changes which take place at a community level are likely to be in general concert with similar changes at the county level. Moreover, this relationship is likely to persist over long periods of time, thus imbuing the relationship with a predictive quality which is valuable in assessing the nature and extent of dislocation when it occurs. 27

Individual Measures of Highway Impact:

Problems also arise in the use of impact indicators. For example, the importance of travel patterns cannot be

27 Ibid., p. 40.
overstated since it is through the quantification and interpretation of those patterns that a greatly improved understanding of changes in accessibility is gained. Yet, the difficulty in acquiring accurate data is so large that travel pattern analysis is beyond the resources of most impact studies. Conversely, traffic volume of affected and unaffected roadways is usually available, and gives a statistical preciseness that can be correlated with impact. The majority of studies err, however, when, in the absence of travel pattern data, traffic volume is insufficiently handled. It would also appear that, instead of a simple before and after numerical statement, traffic volume should be viewed at many locations within a given time interval. Trends can thus be observed and associated, or adjusted, to other indicator trends.

Population changes are not necessarily caused by highway relocation. However, an increase or decrease in population creates changing demands on land use, business activity, and land values. Economic changes more directly attributable to population change than to highway impact act as a variable and must, accordingly, be considered. For that reason population trends, rather than singular before and after totals, should be noted.

The importance of land use change, though not well-established in the aforementioned impact works, is nonetheless substantial. If a new highway creates locational advantage or disadvantage, eventual changes in land use
will ensue. These changes may occur, however, not only in the immediate vicinity of a relocated highway, but in other sectors of a community as well. Insofar as impact measurement is concerned it would, therefore, follow that specific use changes offers an observable criterion for associating land use with business activity and land value.

The principal difficulty encountered in evaluating retail sales is the frequent inability to isolate and compare individual business volumes. State tax agencies, by law, cannot disclose individual business incomes which thus precludes a fine breakdown of business data. Fortunately, some state agencies compile and issue taxable sales data by collective business types for communities and counties. In the absence of more specific business information and in view of the obvious statistical unreliability of income interviews, the collective sales data apparently provide the most acceptable resource for estimating highway impact on commercial activity.

Determining land values is complicated by multiple problems. The use of assessed valuation is generally poor because that valuation represents an appraisal subject to many non-market conditions. Actual land sales in an open market, of course, offers the best resolution to this problem. If an insufficient number of land sales has been recorded, however, the use of an appraisal scheme may be required. When sufficient sales are available an additional difficulty must be faced: how is land value
divorced from improvement value? The Adkins study produced a method for separating land from improvements, a method similar to that mentioned by Raup. Raup indicated that one procedure meeting with some success involves the calculation of the ratios of the assessed value of land to the assessed value of structures on the land for each property included in a market sale. With the use of this ratio, applied to sales price, it has been possible to estimate market land values. Since this technique still utilizes, in part, the appraisal scheme, it is not without error, and for that reason care must be exercised in evaluating results.

In light of the studies considered in this chapter two broad generalizations seem evident: (1) a definite methodology has been formulated, but (2) the lack of adequate data often prevents a precise measurement of impact.

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CHAPTER III

METHODOLOGY

Overall Research Design:

On the basis of previous research the methodological foundation for assessing economic impact seems clear. In this impact study of Santa Maria, California, both the before and after concept and the control area device serve as an analytic framework within which various impact indicators are measured. Indicators selected for interpretation and correlation included traffic volume, population changes, parking meter revenue, retail sales, land use, and land values. Travel pattern analysis was excluded, despite its intrinsic worth, because the acquisition and refinement of measurable data was beyond the time available. It was believed, however, that by devoting a greater than normal effort on traffic volume the lack of travel pattern data would not provoke major shortcomings. The inclusion of parking meter revenue was also of value in this report because it appears such revenue is an accurate indicator of central business activity since it reflects the number of cars parking downtown.29

Within this broad framework procedural adaptations were necessary in accordance to the availability of data

and in keeping with the particular economic and geographic character of Santa Maria. That modified procedure used herein is as follows:

The before and after concept encompassed a period of approximately five years during which each indicator except land use was examined either quarterly or annually. Land use was plotted only in the before period (1962) and in the after period (1966) since the difficulties in reconstructing land use for each successive year posed an almost insurmountable task.

The principal control area for retail sales was Santa Barbara County, of which Santa Maria is a part. A nearby community, Lompoc, served as a secondary control area because that city, unlike Santa Maria, has not undergone major highway improvement but, like Santa Maria, is economically affected by Vandenberg. By utilizing Lompoc as a secondary control area it might be possible, through comparisons, to isolate the impact of Vandenberg from the highway impact in Santa Maria.

Land value control areas were chosen in presumably unaffected areas within Santa Maria. These unaffected areas are situated approximately equidistant from the old highway as the assumed affected areas. The specific location of land value control areas was based on the recommendation of realty agents and on field observations.

Measures of Impact:

The use of individual indicators was guided by the
following considerations.

Traffic Volume: An analysis of traffic flow included not only the old highway and the freeway, but freeway ramp counts and major street counts as well. These flows, evaluated annually over a five-year span, should provide a more meaningful appreciation of traffic volume changes than before and after counts alone.

Population Changes: Commencing with the 1960 federal census, observations were made of official yearly population estimates up to and including 1966. On the basis of information furnished by city and county officials, population changes can be associated in both time and space. This latter association may be sketchy but time and space changes, even in a generalized fashion, can promote an increased understanding of traffic flows and consequent changes in land use, business activity, and land value.

Parking Meter Revenue: Monies obtained from this source have been supplied on a monthly basis for a period of five years, 1961-1965. The data offered, as a supplemental device, greater control in correlating traffic volume with business activity in the central business district. Fluctuations and trends in that trend were moreover related to changes in land use and city policy.

Retail Sales: Available data from the California State Board of Equalization permits the classification of retail sales into fourteen business types. The actual sales for each business type were adjusted, by quarter
1961-1965, to 1960 constant dollars in order to eliminate sales changes caused by cost-of-living increases. Those constant dollar values were then converted to a percentage of their mean so that both seasonal and annual trends could be observed. Based on those observations, interviews were arranged with individuals connected to each business type in order to obtain qualitative information to supplement the statistical data. Reliable data cannot, unfortunately, be acquired for specific locations within the community in order to note the shifting locus of each business type.

**Land Use:** This indicator was employed, essentially, for representing cartographically the fourteen business types during the before and after periods. A potential correlation was thus allowed between land use types and particular business activities with respect to locational changes.

**Land Values:** Land values adjacent to and situated on both sides of the freeway were compared to values in the selected control areas. The method suggested by Raup was adopted: Land sales were converted into a land-improvements ratio and, by subtracting the improvements, the approximate land value was derived. The resulting difference between the affected and unaffected areas should provide, then, a basis for inferred change.

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30 See footnote 28 and lines 3-10, page 22, of this paper.
Qualifying Guidelines

Above and beyond the methodological framework as set forth, this study presumes that statistical data and qualitative information are singularly inadequate for estimating economic impact. For example, a pure statistical change could suggest inevitable conclusions which, without qualitative knowledge, are invalid. That change might more readily be qualified by changes in community policy, business practice, or even individual caprice. Yet, qualitative information without statistical data is worse, and can only lead to overgeneralized statements of questionable value. For the above reasons this paper will emphasize a quantitative approach, but will be supplemented, wherever practical, with qualitative evidence.

Before evaluating the freeway impact of US 101 on Santa Maria it is necessary to review the regional orientation and general economic structure of that city in order that the reader will be better prepared to understand the general character of the community with respect to the specific aspects of freeway impact which follow.
CHAPTER IV

REGIONAL ORIENTATION AND ECONOMIC STRUCTURE

Regional Orientation of Santa Maria

Santa Maria lies in the northwestern portion of Santa Barbara County approximately 170 highway miles northwest of Los Angeles. The city is situated on basically flat terrain within the Santa Maria Valley thirteen miles from the Pacific Ocean. To some extent rough topography dominates the valley's inland borders and, in part, restricts the number of surface transportation links with outside areas. The mainline tracks of the north-south Southern Pacific coastal route are located nine miles to the west at Guadalupe. Santa Maria is connected to Guadalupe by a small branch line designed, essentially, to handle the valley's agricultural products. In addition, Guadalupe is tied to Santa Maria by State Highway 166, a narrow, two-lane road which twists its way eastward through the coast ranges to Cuyama Valley and points in Ventura and Kern Counties. To the west, between Santa Maria and the coast, winds the Cabrillo Highway (State Highway 1), a scenic but lightly traveled two-lane road. In addition, many county roads and major streets exist for localized purposes but, without doubt, the chief interregional artery passing through the Santa Maria Valley is US 101.

US 101 is the westernmost of all federal north-south
highways within the conterminous United States, and extends for over a thousand miles from the Mexican border to Port Angeles, Washington. The highway acts not only as the principal link between communities along its lengthy path, but as the coastal connector between the metropolitan centers of Los Angeles and the San Francisco Bay area. Because of increasing traffic the Division of Highways began improvements to bring US 101 up to limited-access standards in the early 1950's.

On March 24, 1955, the State Division of Highways resolved to upgrade and relocate US101 from unlimited-access within Santa Maria to a freeway bypass status on either the western or eastern city margins. Six months later, on September 26, 1955, the city of Santa Maria signed a freeway agreement with the Division of Highways to the effect that the designated bypass would be constructed on the city's eastern outskirts about one mile to the east of the then existing route. That date marks the first public announcement of the adopted freeway route, and the State thereupon commenced purchasing the required right-of-way property. By October 27, 1960, although financial settlements were not entirely satisfied, all contested right-of-way property had been acquired through condemnation proceedings. Construction began thereafter and the freeway was completed and opened to public use on October 25, 1962. Since that date US 101 traffic has been diverted from downtown Santa Maria to the bypass. Yet, that
diversion is not clearly understood because the freeway gives access to Santa Maria at six outlets within a six-mile span, outlets which undoubtedly modify both local and through traffic volumes. These modified traffic volumes, as indicators of economic change, will be considered in the following chapter.

**Economic Base:**

A general understanding of a bypassed community's economic structure is important to economic impact research. That point has been stressed by Womer\(^3^2\) who indicated that a town whose basic economy is industrial or agricultural will largely benefit from a bypass. The main streets are no longer clogged, local motorists find it easier to park, and increased shopping is, therefore, encouraged. Other communities, based on tourism, however, may have their incomes seriously reduced as a result of highway relocation. To these general conclusions may be added the comments of Kipp\(^3^3\) who stated that areas with specialized activities dependent on highway services are far more adversely affected than a diversified community which can develop or adjust from its internal resources.

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\(^3^1\) Dates and information as supplied by Mr. Robert Wright, Right-of-Way agent, from records of California State Division of Highways, Headquarters, District V, San Luis Obispo, California

Santa Maria developed from the late 1800's as the principal market town for Santa Maria Valley. The town's growth was largely predicated upon an increasing agricultural expansion of the valley's rich alluvial soils. In the early 1900's an oil company began petroleum production in the south and southeastern sections of the valley and its bordering sand hills. These two basic sources of income, agriculture and petroleum, dominated the local economy for over fifty years. As recently as 1950, for example, of a total $23,541,000 net basic income, thirty-eight percent was derived from agriculture and ten percent from petroleum. Tourism accounted for six percent and property and pensions, manufacturing and state and federal spending two percent each.

In 1956, however, this resource base was drastically altered by income resulting from federal expenditures for the development and maintenance of Vandenberg Air Force Base. By 1960 Vandenberg's yearly contributions to local


34 Monies earned from outside sources, after production and export costs have been deducted, is defined as net basic income.

35 The preceding and subsequent net basic income dollar figures are drawn from Simon Eisner and Associates, General Plan Report, Santa Barbara County Planning Department, p. 27. Percentages were computed from this source for purposes of comparing relative importance.
economies totaled $60,000,000 of which $30,000,000 went to the Lompoc area, $24,600,000 to the Santa Maria Valley, and the remainder to several San Luis Obispo County communities and the Santa Ynez Valley. The portion accruing to the Santa Maria Valley, combined with other 1960 income of $28,224,000, raised the area's net basic income to $52,884,000. Vandenberg spending thus displaced agricultural income as the leading contributor to economic growth in the Santa Maria Valley, comprising 46 percent and 37 percent respectively. Mining and tourism each provided five percent, with lesser amounts attributed to manufacturing, property and pensions, and federal and state funds.

Subsequent to 1960 total Vandenberg expenditures have fluctuated considerably. In 1961 average monthly spending reached $7,600,000, but declined to $6,335,000 for 1962. During 1963 monthly spending by Vandenberg rose to $7,430,000, but again dropped in 1964 to $6,600,000. Those monthly and yearly fluctuations, by their very volume, have

36 Vandenberg AFB was constructed on a site approximately 20 miles southwest of Santa Maria and 10 miles north of Lompoc. The rapid influx of workers and their personal needs were greater than any single community could absorb. As a result many individuals associated with the Vandenberg development were forced to acquire housing and necessities in areas up to 50 miles distant.

37 The absolute expenditure and employment figures which follow were obtained from Economic Impact on Local Economy, pamphlets 1960 through 1965, issued by Director of Comptroller, Vandenberg AFB. Percentages were again computed to emphasize the changing relative impact.
important economic ramifications in nearby communities. Yet, still another economic factor exists, a factor of shifting relative importance. In 1961, for instance, Santa Maria's share of Vandenberg expenditures was 45 percent. For each succeeding year, however, Santa Maria has been receiving a decreasing percentage of total Vandenberg spending: 44 percent (1962), 41 percent (1963), and 37 percent (1964). 1961 was also the year during which the highest absolute number of Vandenberg workers resided in the Santa Maria Valley. That total, 7,065, represented 51 percent of the total Vandenberg work force living off-base. Similar to trends indicated for expenditures, the work force has fluctuated and relatively declined. For example, in 1962 the average number of off-base Vandenberg workers maintaining Santa Maria residence was 6,505 (49 percent); for 1963 those figures were 6,951 (41 percent), and during 1964 totalled 5,600 (36 percent).38

**Conclusions:**

In terms of economic impact the foregoing background presents several significant implications. First, if the findings of Womer and Kipp have national applicability, then the lack of a substantial tourism resource in Santa Maria would preclude a detrimental freeway impact in a

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38 The relative decline of Vandenberg workers residing in Santa Maria is apparently related to housing changes, and this factor will be enumerated upon under considerations of population changes.
general sense. At the specific level of community service, however, that statement cannot be assumed. For that reason, comments on general and specific aspects of economic impact must await further analysis. Second, the fluctuations connected to Vandenberg expenditures and workers residing off-base should be reflected in local economic fluctuations independent of freeway impact. Third, a declining relative importance of Vandenberg expenditures and workers in Santa Maria may point toward population change and a consequent shift in the center of economic activity unrelated to highway improvement.
CHAPTER V

CHANGES IN POPULATION AND TRAFFIC VOLUME

Population Changes

Population Changes in Santa Maria:

In 1950 the city of Santa Maria reported in an official population of 10,440 inhabiting a ground space of precisely four square miles. By April 1, 1956, the year that Vandenberg commenced operations, city population had risen 30 percent to an estimated 13,477. After that date the impact of Vandenberg, plus annexations of property by the city, swelled the population to an official 1960 total of 20,027 contained within an approximate area of five and one-half square miles. The population had nearly doubled in the decade 1950-1960 with 70 percent of that growth occurring in the four-year span 1956-1960.

From 1960 to 1964 the population continued to increase rapidly; thereafter population totals have remained relatively constant. The largest increase took place between 1961 and 1962 when the population leaped from 21,625 to

39 The population figures of 1950 and 1960 for Santa Maria, Santa Barbara County, and Lompoc are based on the official decennial counts of those years issued by the Bureau of Census, Census of the United States. Changes in areal limits for Santa Maria, as derived through annexations, were obtained from records of the Santa Maria City Clerk.

40 Estimate of California State Department of Finances.
26,000. By 1963 the population total had reached 28,625 and was followed in 1964 and 1965 with respective estimates of 30,125 and 30,625. Population in the five-year period, 1960-1965, had, therefore, increased 10,598 or approximately 50 percent. Annexations during this period were substantial, and the city's area more than doubled to about 14 square miles. It should be noted, however, that at least half of the annexed area is practically uninhabited. This is particularly true in the north and northeast sectors, and of a large, four-square-mile area surrounding the Santa Maria Public Airport to the southwest. In addition, as a result of the annexations, the freeway presently passes through the eastern and northeastern portions of the city.

The land acquired by Santa Maria prior to 1960 did not include many homes or people. Population growth for the pre-1960 period was thus sustained primarily by internal development, especially near the northwestern, western, and eastern limits. Since 1960, however, the greatest population increases have occurred in annexed territory to the south, toward the north and northwest, and in several tracts to the northeast of the freeway. Of the 10,598 city population growth between 1960 and 1965, it was reported

41 All population estimates for the period 1960-1965 were supplied by the Santa Barbara County Planning Department. Several sources for population estimates are available, but those compiled by Santa Barbara County were utilized since they are based on local economic knowledge and revised annually.
that approximately 3,500 located to the south, 3,000 in the north and northwest, and 2,000 within those tracts to the northeast of the freeway.  

On the basis of the foregoing data it would appear that Santa Maria has grown peripherally in each direction except westward. If that statement were perfectly true, an economic dislocation would not normally be expected; businesses would retain a central location with outward expansion generally in tune with population growth. However, a substantial and relatively compact population cluster has developed in the immediate vicinity of Santa Maria on unincorporated land in the Orcutt area several miles to the south. This population, not counted in the Santa Maria figures, amounted to but a few thousand in 1956, but by 1960 the area held 11,539 individuals. And, on April 1, 1965, it was estimated that this population had risen to 17,000. That 17,000, when compared to Santa Maria city population, is impressive, over 50 percent. Equally significant is the continuing lack of much commercial activity in the Orcutt area. This lack was expressed in a 1960 socio-economic survey which indicated that about 80 percent of the Orcutt area population conducted their

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42 Approximate population figures were interpreted from field studies conducted by Hahn and Wise, planning consultants, San Carlos, California, in their work preparing the General Plan, Santa Maria.

43 Estimate by Santa Barbara County Planning Department.
daily shopping in the city of Santa Maria while 93 percent maintained bank accounts in the city.\textsuperscript{44} The possibility that this population may, therefore, exert spatial re-arranging forces upon Santa Maria economic activity unrelated to freeway impact is a factor that cannot be ignored. That factor will be more appropriately explored, however, when analyzing land use changes and retail sales.

**Population Changes in the Control Areas:**

Santa Barbara County has gained substantial population since 1950 but not so markedly as Santa Maria. The county's jump from 98,220 in 1950 to 168,962 in 1960 is a 72 percent increase compared to nearly 100 percent for Santa Maria. In 1960 the county population estimate of 237,050 indicated a 40 percent growth while Santa Maria increased 50 percent. Those ratios are not unexpected since Vandenberg has produced the county's greatest economic impetus to growth and that impetus has been most intently focused in the north-western portion of the county.

The city of Lompoc, ten miles south of Vandenberg, has experienced a growth rate essentially similar to Santa Maria. Lompoc's 1960 population of 14,415 more than doubled its 1950 total, and that city has likewise seen the growth of adjacent unincorporated urban environments comprising a 1965 population of 16,000, and with little commercial

\textsuperscript{44}Hahn and Wise, planning consultants, San Carlos, California, in *Results of a Socio-Economic Survey Made August 26th through September 1, 1960*, pp. 102.
development. Unlike Santa Maria, however, Lompoc does not appear to be leveling off in population growth.

**Housing Factors Affecting Population Changes:**

The dissimilarity in recent population trends between Santa Maria and Lompoc appears to be in general related to a gradual residence shifting of Vandenberg workers. This shift was permitted by changes in available housing and requires explanation. 45

Prior to 1956 sufficient housing existed in both Santa Maria and Lompoc to adequately meet their normal growth. Following that date, of course, the rapid influx of several thousand workers and their families produced a demand for housing that could not be immediately supplied. Motels, trailer courts, apartments, and virtually all single dwellings within the Santa Maria and Lompoc areas were filled to capacity, and housing demands spilled into surrounding regions. In response to this shortage, contractors and their workers poured into Santa Maria and Lompoc, and in turn contributed to the local economies through the purchase of building materials and personal necessities. Housing development proceeded as follows in Santa Maria and Lompoc:

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45 The following information was furnished by several realty officials, secretary of the retail merchants' association, and the city clerk.
The sudden deceleration in Santa Maria housing development which resulted in the extremely low construction figures for 1964 and 1965 was evidently caused by overbuilding; many houses were never sold and more than one developer went through bankruptcy; vacancies still exist although a slow "filling in" is taking place. Lompoc followed a fairly similar building pattern, but was not as extensively over-constructed. In any event, as housing became more plentiful near Vandenberg, the Vandenberg workers residing in more distant locations began to resettle in the Lompoc area. This fact helps to explain why the number of Vandenberg workers and their expenditures has decreased in Santa Maria while, at the same time, total Vandenberg workers and spending have not generally declined. Yet, it was shown that the Santa Maria population has not decreased. It would, therefore, appear that the slow departure and resettlement of Vandenberg workers is more than offset by the arrival of other non-Vandenberg

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With respect to economic impact of the Santa Maria freeway, the shift of Vandenberg workers and more plentiful housing is significant. The assumption prevails that with population now increasing slowly and with a substantial home vacancy rate, the freeway cannot at this time exert a locational affect on new residences. It is believed that only when housing vacancies are greatly reduced and if a new housing demand arises can the freeway exercise a potential locational advantage. The above statements do not refer to retail activity, for Santa Maria was not commercially overbuilt. Other factors affecting commercial activity exist, however, and shall be discussed under land use changes and retail sales.

The principal points gained from an evaluation of population changes with respect to economic impact are as follows:

1. During the period 1960-1965, immediately prior to and after the freeway completion, Santa Maria population increased about 50 percent. That increase should be reflected in retail sales growth and must, therefore, be considered as an increment above and beyond freeway impact.

2. The location and amount of population growth within Santa Maria during the post-1960 period may effect commercial land use changes not directly associated with freeway development.

3. The growth of an adjacent and relatively large unincorporated residential population with little commercial activity may also produce a significant locational shift in business establishments that cannot be directly related to freeway impact.
Excessive housing construction in Santa Maria produced high vacancy rates which, combined with a present low population growth rate, tends to negate either locational advantage or disadvantage of the freeway. This factor may, in turn, influence land values.

**Traffic Volume:**

**Highway Orientation:**

The Santa Maria Freeway is basically oriented in a north-south direction parallel to and approximately one mile east of old US 101. Both north and south of the city, separated by nearly six miles, the freeway gives access to the old highway and Santa Maria via on and off ramps (Figure 2). From its southern union with the freeway, the old highway veers northwestward to its connection with Orcutt Way. At this junction, locally known as the Orcutt Y, the highway curves into a true north-south orientation and penetrates the southern Santa Maria city limits. During the next four miles old US 101 (called Broadway within Santa Maria) passes through an almost continuously built-up commercial frontage before turning northeastward to join the freeway at its northern access. About midway along that four-mile strip is located the heart of the central business district, at Broadway and Main Street. Along this strip traffic signals operate to facilitate traffic flow and reduce speed, particularly in the downtown area.

Access to and from Santa Maria and the freeway is additionally provided at four principal street locations.
TRAFFIC VOLUME

Figure 2

AVERAGE DAILY TRAFFIC


0 5,000 10,000 15,000 20,000 25,000

Vehicles
Those street locations, each with an east-west alignment, are Donovan Road, Main Street, Stowell Road, and Betteravia Road. Donovan Road is the freeway's inlet and outlet for the northern sectors of Santa Maria; Main Street gives access to central Santa Maria; Stowell Road serves south-central Santa Maria; and Betteravia Road acts as a connector to the southern portions of the city. Access to and from the large, unincorporated Orcutt area is provided by any of the aforementioned routes and Orcutt Way, or via Clark Avenue and Orcutt Way.

Old Highway Traffic Analysis:

Traffic figures for 1961 and 1962 at the south Santa Maria access are not available. However, a comparison of that access with Clark Avenue indicates a similarity for the years 1963-1965. That similarity, transferred to 1961 and 1962, suggests, despite a suspicious 1962 figure, a 1961 vehicular movement at the south Santa Maria access of 6,100 average daily traffic (ADT). Acceptance of this figure, plus the suspect 1962 count of 12,100, when compared to the 1963-1965 traffic, would indicate that

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47 Traffic count figures included in the following descriptive-analytic treatment of traffic volume were primarily secured from the California State Division of Highways, Annual Traffic Census, successive publications, 1961 through 1965. Ramp counts were obtained through courtesy extended by the State Division of Highways, Traffic Section, Headquarters District V, San Luis Obispo, California. Traffic counts were secondarily acquired for non-state roads and streets from the Santa Barbara County Road Department and the Santa Maria City Street Department.
previous to the freeway an average of about 9,000 vehicles passed the south Santa Maria access point. Subsequent to the freeway that point sustained an ADT between 9,000 and 12,000. The foregoing 1961 and 1962 interpretive figures can be confirmed by counts of the old highway immediately south of its junction with Orcutt Way. The importance of Orcutt Way is clearly demonstrated when, in the years 1961-1962, its average daily traffic (11,000 plus) exceeded the traffic volume on the then existing US 101 south of the Orcutt Y. North of that junction, during 1961 and 1962, the united traffic swelled to 22,700 and 27,700 ADT respectively, but those totals for 1963, 1964, and 1965 (post-freeway period) dropped abruptly to 17,100, 16,600, and 18,300. Since the Orcutt Way figures have remained relatively stable during the past five years, the stated losses must have been caused by a reduction of traffic on the old highway between the south Santa Maria access and

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48 Average daily traffic (ADT) at control stations is totalled by weeklong hourly counts each month of the year. All other traffic count locations are counted for 24 hours once each year and then compared and adjusted with representative control stations. Control stations applicable to this traffic volume study are located at the intersection of Main Street and Broadway in Santa Maria, and at the freeway's connection with State 166 three miles north of the city.

49 Figures for the years 1961-1965 were not always available at each location but, on the basis of sufficient count data for nearby locations, some invaluable interpretive adjustments can be made. In addition, it should be noted that a few counts appear excessively high thereby indicating a need for reservation. Since the data are obviously imprecise in character, interpretive statements must, of necessity reflect generality.
the Orcutt Y. On the basis of the above traffic counts it, therefore, seems reasonable to assume that traffic on the old highway between the south Santa Maria access and the Orcutt Y has decreased about two-thirds to approximately 3,000-4,000.

From Betteravia Road to Stowell Road, on Broadway, traffic volume increases. At Stowell Road, during 1961 and 1962, US 101 sustained an ADT of 23,900 and 25,200. Yet, in the after-freeway period traffic counts had dropped to 19,400, 21,200, and 18,300 respectively, an average decrease of 20 percent. In the central business district ADT was determined at two locations, both on Broadway, immediately north and south of Main Street. CBD traffic counts are, in general, slightly less than at Stowell Road and Broadway, but follow a similar pattern. Counts in the two-year pre-freeway period ranged from 22,700 to 26,500. After the freeway completion and a diversion of traffic, however, an approximate 20-25 percent drop in traffic to a range of 18,700-20,000 occurred.

One mile farther north, at Donovan Road and Broadway, ADT falls sharply. Although 1961 and 1962 counts were not taken for that location those figures can be derived from traffic counts for the junction of US 101 and State 166 (Cuyama Highway). For the past five years the counts at

50 That ADT is verified by a 1965 traffic count of 3,618 taken by the Santa Barbara County Road Department.
that junction have been relatively constant, between 14,300 and 16,000, with the 1961 and 1962 ADT 14,300 and 14,800 respectively. Since the traffic on State 166 itself is less than 1,000, and because there was no intervening road between Donovan and State 166 in 1961 and 1962 to siphon traffic, there must have been a minimum of 14,000 ADT at Donovan Road and Broadway during the years immediately preceding the freeway. The 1963 to 1965 ADT, however, report 9,800, 9,300, and 10,100 respectively, an approximate drop of 30 percent subsequent to completion of the Santa Maria Freeway.

Freeway Traffic Analysis:

Traffic on the freeway has shown an average daily vehicular count in excess of 10,000 for each year since its opening. In general, traffic volume reaches a peak at the Main Street Overpass with a three-year average of 12,100. Both north and south of Main Street the freeway traffic dips slightly to average counts of 11,700 at Donovan Road and 11,200 at Stowell Road. In the absence of travel pattern data any attempt to isolate through traffic from locally-generated traffic can only be general at best. However, in that connection, all traffic counts between Los Angeles and San Francisco on US 101 were reviewed. This review revealed no ADT less than 6,400, with the majority considerably higher and, within 30 miles of Santa Maria in either direction, the minimum ADT's were 7,800 to the south and 12,600 in the north. Had the freeway not
been completed in late 1962, the 1963 ADT within Santa Maria, based on a rising trend related to population growth, would have been in the neighborhood of 2,000 ADT greater than 1962. Therefore, the actual 1963 Broadway totals, deducted from the presumed 1963 figures, would result in what is believed to be a conservatively valid estimate of 6,000-8,000 through-traffic.

Freeway Ramp Counts:

Ramp counts furnished by the California State Division of Highways for 1963 through 1965 are valuable for relating freeway influence to travel patterns (Table 1). At the south Santa Maria access point ramp counts are conspicuously higher for northbound off and southbound on, as expected, then northbound on and southbound off. Counts at the former ramps range from 795 to 1,430 ADT, but both 1965 figures have declined from 1964. The latter ramps average from 190 to 360 vehicles daily.

The Betteravia Road ramp counts are characterized by relatively high southbound off and northbound on which climb from their respective lows of 730 and 1,130 in 1963 to 2,140 and 2,220 in 1965. Conversely, counts for northbound off and southbound on are low, ranging from 260 to 550 from 1963 to 1965.

Stowell Road ramp counts are somewhat identical to Betteravia Road though differing in total quantity and proportion. The northbound on and southbound off remain the ramps with highest counts although the southbound off
<table>
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<tr>
<td><strong>South Santa Maria Access:</strong></td>
<td></td>
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<tr>
<td>Northbound Off</td>
<td>1070</td>
<td>1430</td>
<td>890</td>
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<tr>
<td>Southbound On</td>
<td>795</td>
<td>1100</td>
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<td>Southbound Off</td>
<td>260</td>
<td>360</td>
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</tr>
<tr>
<td>Northbound On</td>
<td>190</td>
<td>260</td>
<td>200</td>
</tr>
<tr>
<td><strong>Betteravia Road:</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Northbound Off</td>
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reached a peak of only 920 ADT compared to the former’s 2,030. Northbound off and southbound on are substantially less.

Counts at Main Street possess a marked similarity on all four ramps. The counts range from a low of 1,370 ADT to a high of over 1,800 over a three-year span. In 1965, for example, the ADT for each ramp was as follows:
Northbound off 1,330; southbound off 1,570; northbound on 1,570; and southbound on 1,780.

At Donovan Road the reverse of Betteravia and Stowell Roads is revealed. The Donovan ramps are noted for considerably higher counts for northbound off and southbound on than their opposing ramps. Northbound off maintains an ADT approximating 1,050 while southbound on indicates 1,030. Counts for southbound off and northbound on vary from 440 to 530.

Very pronounced ramp count dissimilarities are observed for the north Santa Maria access. Southbound off and northbound on share the highest existing ADT counts of 2,750 and 2,820. Their counterparts, the northbound off and southbound on, are least important of all ramps tied to the Santa Maria Freeway with ADT counts of 190 and 180.

Ramp Counts Related to Travel Patterns:

In terms of travel patterns the foregoing ramp counts give a statistical basis for meaningful generalizations.

Conversations with the Santa Barbara County Traffic
Engineer,\textsuperscript{51} founded on a knowledge of county traffic and population location, suggested the following: At the south Santa Maria access the northbound off and southbound on are used primarily by those individuals residing or conducting business in the general area between the Orcutt Y and Stowell Road. To most of the 17,000 population living south of the Orcutt Y, the south Santa Maria access is poorly located. For that reason, when traveling southbound, their primary route is Clark Avenue to the freeway; when northbound they use Orcutt Way and either Betteravia Road or Stowell Road for access to the freeway; and for destinations within Santa Maria movement is via Orcutt Way and Broadway.

The Stowell Road ramp counts reflect a desire of south central Santa Maria traffic, when northbound, to avoid the two-mile congestion of Broadway. If southbound, however, traffic generating in this area apparently does not use Stowell Road but, more frequently, moves south on Broadway and, depending on destination, follows Betteravia Road, Orcutt Way, or the south Santa Maria access.

At Main Street the consistent and fairly high counts for all four ramps have their basis in at least two factors. When traveling north or south on the freeway the quickest route to the central business district is via the Main

\textsuperscript{51}Mr. Keith Franklin, Traffic Engineer, Santa Barbara County Road Department, Courthouse Building, Santa Barbara, California.
street exit reaches the heart of downtown within one mile and thus avoids all of the Broadway congestion that would be encountered if a freeway departure is made at any other access. The Main Street on ramp counts reflect the relatively dense population of central Santa Maria east of Broadway which evidently finds the freeway to be the shortest, most rapid, and least congested route for both northern and southern destinations. The increasing importance of Main Street itself is clearly indicated from state traffic counts. Those counts show that within two years after the freeway completion, traffic volume at Main Street and the freeway had risen over 50 percent, from 4,900 ADT in 1963 to 7,500 in 1965. Within two blocks of Broadway on East Main Street, traffic volume increased from 8,500 ADT to 11,400 (34 percent) during that same two-year period. Unfortunately, traffic count figures previous to the freeway for East Main Street are not available. But in light of the elicited ramp and street data, traffic on East Main Street in the earlier period was undoubtedly somewhat less.

Traffic volume associated with the Donovan ramps, dominated by northbound off and southbound on, is again related to convenience of access. Travel generated from the north and northwestern portions of the city, destined for southern areas beyond Santa Maria, utilize the Donovan southbound on ramp. This procedure is followed in order to avoid heavy traffic and reduced speed along Broadway. In the opposite situation the apparent exit is northbound
off. To some extent the population located in the housing tracts northeast of the freeway affect the Donovan ramp count totals. Their geographical position in such, however, that portions of the area are additionally influenced by the Main Street access.

Travel patterns concerning the north Santa Maria access are related to its location which provides the first freeway departure with a northern approach to Santa Maria. Since traffic on US 101 north of Santa Maria is appreciably heavier than traffic to the south (US 101 junction with State 166, 14,700 - versus - US 101 junctions with Clark Avenue, 9,100), it is reasoned that southbound off and southbound on would be somewhat higher. The opposing ramp directions, northbound off and southbound on, are least desirable since there is no commercial or residential activity in the immediate vicinity. Moreover, the latter ramps offer a circuitous route regardless of destination, and that circuity is clearly recognized by extremely low traffic volume (190 and 180 ADT).

In the foregoing analysis of traffic volume a copious quantity of statistical and qualitative data has been formulated. Despite that quantity, travel patterns are still but vaguely understood. Yet, there is no doubt that the freeway has altered travel patterns and traffic volume. Those changes, as a basis for potential land use, retail sales, and land value changes, are summarized, in general, as follows:
(1) Traffic volume on old US 101 decreased approximately 20 percent in south Santa Maria, 20-25 percent in central Santa Maria, and 30 percent in north Santa Maria.

(2) Although not explicitly outlined, a 4,000 city population increase since the freeway opening in late 1962 prevented a further decline in traffic volume of 10-20 percent.

(3) Use of the Santa Maria Freeway by local individuals for both local and non-local purposes is partly responsible for a decline in old US 101 traffic. That use has produced travel changes which increased the traffic volume on east-west streets having freeway access, particularly East Main Street.

(4) Through-traffic diverted from old US 101 is estimated at between 6,000-8,000, but the number which make stops in Santa Maria was not determined.
CHAPTER VI

CHANGES IN LAND USE, RETAIL SALES, AND PARKING METER REVENUE

It is clear that the Santa Maria Freeway has altered accessibility and, as outlined in the previous chapter, the changes in accessibility were reflected in changed traffic volume and travel patterns for both local and non-local traffic. In keeping with accessibility theory, then, traffic volume and travel pattern changes should effect changes in commercial land use and in the volume of retail sales. The degree to which land uses and retail sales have been affected by the freeway is the subject of this chapter.

Retail sales data were available for fourteen business types - apparel stores, general merchandise stores, food stores, packaged liquor stores, eating and drinking places, drug stores, home furnishings and appliance dealers, building material and farm implement stores, motor vehicle dealers, automotive supply stores, service stations, business and personal services, manufacturing, wholesaling, and miscellaneous, and other retail stores. The data

52 Data were supplied by the California State Board of Equalization, Research and Statistics Unit, Sacramento, California, and represent gross taxable retail sales. Although a fine breakdown of businesses into many different types was desired, adequate sales data could not be obtained for a number of reasons; violation of business disclosure laws, California state methods of compiling and
for each type of business were adjusted to constant dollars and converted to a percentage of their mean for each quarter, 1961 through 1965.

Commercial land use was classified into the aforementioned fourteen business types in order to lend an interpretative relationship with retail sales. Each business type was cartographically expressed in pre-freeway (1962) and post-freeway (1966) land use maps. In the ensuing discussion both land use and retail sales will be considered alternately with each business type.

Subsequent to the statistical presentation of land use and retail sales, the revenue derived from parking meters, 1961 through 1965, will be examined. Changes in such revenue provide a quantitative basis for association with general economic trends in the central business district. The data must be qualified, however, because parking meter revenue has also been affected by land use change and city policy.

To avoid erroneous conclusions based on a purely filing data, closed accounts destroyed when no tax delinquency exists, and destruction of all records after a lapse of three years. The data were thus necessarily united into fourteen business types, a union which might, in terms of determining freeway impact, be incompatible. An intra-city, zonal differentiation of data was also requested in order to more accurately measure spatial characteristics, but the data could only be secured for cities and counties in their entirety.

Land use information for 1966 was collected by a field survey, and the land use existing for 1962 was reconstructed from three sources: (1) City Directory, (2) city business licenses, and (3) a 1962 telephone directory.
numerical analysis the author solicited local merchants for qualitative explanations of change. Their ideas are summarized following the statistical considerations of retail sales, land use, and parking meter revenue.

Changes in Retail Sales and Land Use by "Business Type"

Apparel Stores:
Apparel stores include all businesses which exclusively merchandise women's wear, men's wear, footwear, or any combination thereof.

Land Use (Figure 3): In the period immediately preceding the freeway, apparel stores were predominately located in the central business district (CBD) and in particular along Broadway. Only four stores existed elsewhere, one on North Broadway, one on South Broadway, and two neighboring stores on East Main Street. Four years later, as of April 1966, the following changes were noted: within the CBD there was no numerical decline of apparel stores. A shifting of location, however, has occurred, mainly from outer CBD sites to a Broadway frontage. Outside the CBD a significant development has taken place whereby an agglomeration of apparel stores has arisen on South Broadway near Stowell Road. Farther south, close to Betteravia Road and South Broadway, a large chain shoe store was constructed. In other sectors of the city virtually no changes took place.
APPAREL STORES
LAND USE CHANGES 1962-1966

Figure 3
Retail Sales (Figure 4): Quarter by quarter retail sales in apparel stores rose until the third quarter of 1963, some nine months following freeway completion. Thereafter a gradual but continuing decline set in, a decline which in 1965 averaged 10 to 15 percent below its 1963 high. Santa Barbara County, however, indicated a general upward trend for the five-year period, 1961-1965. At the time of the freeway opening Santa Barbara County averaged about 10 percent below the city of Santa Maria, but three years later, during 1965, the county averaged ten percent above Santa Maria. The city of Lompoc rose sharply from 1961 to 1962 and thereafter sustained an upward trend similar to Santa Barbara County. Immediately prior to the freeway Lompoc remained a few percent below Santa Maria and immediately after a few percent above. The present gap, related to the Lompoc rise and Santa Maria decline, is approximately twenty percent.

General Merchandise Stores:

General merchandise stores include the basic department store type plus the specialty stores group, such as sporting goods, florists, and jewelry stores.

Land Use (Figure 5): In 1962 the bulk of general merchandise stores were located in the CBD. A scattering were found on West Main and East Main, but more were situated along South Broadway. By 1966 fewer stores operated in the CBD, but those which remained, unlike apparel stores, did little shifting. However, of the four 1962 CBD
APPAREL STORES
RETAIL SALES CHANGES

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Figure 4
GENERAL MERCHANDISE STORES
LAND USE CHANGES 1962-1966

Figure 5
department stores only two remained in 1966, one moving to a location outside the CBD and the other ceasing activity altogether. The greatest buildup of general merchandise stores occurred to the east and south of the CBD. On East Main Street a series of specialty shops opened within three blocks of the freeway, and on South Broadway the vacating downtown department store was relocated near Stowell Road. Other specialty shops located nearby while farther south along South Broadway a decline in general merchandise stores was observed.

**Retail Sales (Figure 6):** Gross taxable sales for Santa Maria general merchandise stores climbed sharply from 1961 to 1962, tapered off during the first three quarters of 1963, and then declined in the fourth quarter of 1963 and the first and second quarters of 1964. Sales thereafter rose rather abruptly, particularly in the fourth quarter of 1965. Santa Barbara County, however, has shown a steady rise during both the before and after freeway periods. In those quarters that Santa Maria declined Santa Barbara County surged ahead, notably in the first quarter of 1964. The Santa Maria decline, with relation to Santa Barbara County, however, amounted to but a few percent. When compared to Lompoc the same pattern emerges except that during the three quarters that Santa Maria decreased Lompoc averaged 15 percent higher. Subsequent to the second quarter of 1964 Santa Maria has closed the gap with Lompoc, and in the fourth quarter of
1965 Santa Maria averaged 20 percent above Lompoc.

Food Stores:

Food stores include all businesses which primarily retail groceries or specialty foods regardless of other non-food items stocked.

Land Use (Figure 7): During the past four years there has been relatively little change in land use associated with food stores. Most stores are located on the peripheral borders of the CBD and along East and West Main Street and North and South Broadway. Since the freeway opening a local chain store was constructed on East Donovan Road within three blocks of the freeway. Slated for imminent construction is a very large chain grocery on South Broadway property near Stowell Road, an immediate area which presently sustains one chain food store.

Retail Sales (Figure 8): From 1961 through the fourth quarter of 1962 retail sales for Santa Maria food stores increased rapidly. During 1963 and 1964 taxable sales rose slowly only to dip slightly in 1965. Quarterly levels from year to year did not decrease except for the noted 1965 decline, but quarterly fluctuations in Lompoc and Santa Barbara County were sharp. The latter two, in particular Lompoc, sustained noticeable drops in the third quarters of 1963 and 1964. Fluctuations aside, however, the general trend for Santa Maria, Santa Barbara County, and Lompoc appeared as large increases from 1961 to 1962, small increases during 1963 and 1964, with slight decreases
for 1965. In the two years previous to freeway completion Santa Maria averaged approximately ten percent below the trend lines of Lompoc and Santa Barbara County, but in the two years subsequent to freeway opening (1963-1964) Santa Maria trends were ten percent higher than both the latter. In 1965 the trends of all three locations were at basically the same level above their means.

**Packaged Liquor Stores:**

Packaged liquor stores include all stores chiefly concerned with the sale of off-premise liquor. Excluded are those establishments which sell off-premise liquor but cater mainly to on-premise consumption.

**Land Use (Figure 9):** From 1962 to 1966 the number of liquor stores was reduced from 15 to 14. The location of liquor stores during this time interval remained virtually unchanged. In 1962 two stores existed in the CBD but by 1966 only one continued in business. All other liquor stores occupied radial locations from the CBD on Main Street and Broadway. The single other locational change occurred on East Main Street when a small liquor store acquired new and much larger quarters across the street from its original site.

**Retail Sales (Figure 10):** Similar to other business type trends, the retail sales of packaged liquor in Santa Maria increased markedly from 1961 to 1962. Since the second quarter of 1963, some six months following freeway completion, a steady decline set in, a decline that in 1965
PACKAGED LIQUOR STORES
LAND USE CHANGES 1962-1966

Figure 9
PACKAGED LIQUOR STORES
RETAIL SALES CHANGES

- SANTA MARIA
- SANTA BARBARA COUNTY
- LOMPOC

Figure 10
averaged 15 to 20 percent below the 1962 peak. Santa Barbara County sales, on the other hand, maintained a predictable seasonal pattern and consistent upward trend for the entire five-year period. During 1962 Santa Barbara County was 15 percent below the Santa Maria trend line. In the fourth quarter of 1963 the county passed Santa Maria, a passing that widened to an average of 12 percent for 1965. Lompoc sales produced an irregular pattern but fundamentally reached a peak in 1961 when its trend line averaged over 20 percent higher than Santa Maria. Thereafter, Lompoc sales decreased steadily until the third quarter of 1964 when a rising trend began. The 1962 Santa Maria peak was 10 percent higher than Lompoc, but the sustained reversal of Santa Maria thereafter, coupled with the late 1964 rise of Lompoc, resulted in 1965 Santa Maria trend lines averaging 10 percent below Lompoc.

Eating and Drinking Places:

Eating and drinking places include all establishments principally oriented to the service of prepared food, drink, or both.

Land Use (Figure 11): In 1962 eating and drinking places were chiefly situated on North Broadway and in the CBD. A scattering of businesses also existed on South Broadway, West Main Street, and Blosser Road, but no taverns or restaurants had developed on East Main. By April 1966, three and one-half years following freeway completion, locational change was evident. Within the CBD several small
EATING and DRINKING PLACES
LAND USE CHANGES 1962-1966

Figure 11
cafes closed business and on North Broadway a large, well-known restaurant suffered bankruptcy. While West Main endured no decline of eating and drinking establishments, Blosser Road decreased from six to three. On Broadway south of Stowell Road, however, the number of cafes and bars more than doubled, from six to thirteen. A new cafe was also constructed adjacent to a truck stop in an uninhabited area in the northeast quadrant of Betteravia Road and the freeway. In addition, development has now taken place on East Main Street with the construction of three modern restaurants.

Retail Sales (Figure 12): From 1961 to 1962 Santa Maria sales leaped an average of 30 percent. During the second quarter of 1963, however, a decline began which lasted until the third quarter of 1964. Thereafter, sales rose and for the year 1965 averaged approximately five percent above the 1962 peak. Santa Barbara County indicated a general upward trend in all quarters. The county thus dropped below Santa Maria by ten percent in 1962 but rose five percent above during the latter’s decline. By 1965, however, the trends and levels of both were substantially equal. Lompoc sales exhibited no decline during the study period with the greatest increases occurring from 1961 to 1962 and slower increases thereafter. In 1962 Lompoc averaged 12 percent below Santa Maria, but rose five to ten percent above during Santa Maria’s decline. Throughout 1965 Lompoc sales showed basically similar trends and
EATING and DRINKING PLACES
RETAIL SALES CHANGES

Figure 12

SANTA MARIA
SANTA BARBARA COUNTY
LOMPOC
levels as Santa Maria and the county. Yet, Lompoc demonstrated a fundamental difference. Whereas Santa Maria and Santa Barbara County sustained marked seasonal fluctuation, that fluctuation was not nearly as pronounced in Lompoc. Additionally, both Santa Maria and the county displayed seasonal highs during third quarters while Lompoc more frequently (three years out of five) indicated fourth quarter highs.

Drug Stores:

Drug stores include just those businesses which are noted as pharmacies or drugs dealing in prescriptions although most stores of this business type commonly handle a variety of other merchandise.

Land Use (Figure 13): In 1962 nine stores were classified as drug establishments in Santa Maria. Six were located within the CBD, one on North Broadway, one on West Main, and the largest store situated on South Broadway near Stowell Road. Four years later the number of drug stores had dropped to seven. Of the six downtown stores only three remained, the vacated premises being currently occupied by other business types. The stores on North Broadway, West Main, and South Broadway continued to operate without interruption. The single addition was the opening of the second largest drug store in Santa Maria on East Main Street within a few blocks of the freeway.

Retail Sales (Figure 14): From the third quarter of 1962 through the second quarter of 1963 drug stores in
Figure 14

DRUG STORES
RETAIL SALES CHANGES

Mean 100

Santa Maria indicated an increase of 30 percent over preceding quarters. The decline that subsequently followed continued to the present time although a general leveling occurred within the past year. Santa Barbara County also reached a peak in late 1962 and early 1963, but neither the peak nor the drop were substantial. In that period county levels were 15 percent below Santa Maria, but by 1964 the county's rise, combined with Santa Maria's decline, resulted in county levels ten percent above Santa Maria. Lompoc sales demonstrated trends more closely aligned with Santa Barbara County than Santa Maria. Late 1962 and early 1963 were also peak periods for Lompoc, but an earlier rise and subsequent decline were not particularly large. For that reason Lompoc averaged about ten percent below Santa Maria during their respective peak periods, but maintained levels ten percent above for late 1963 and 1964.

**Home Furnishings and Appliance Dealers:**

This business type includes all stores primarily retailing furniture and appliance goods although service may also be authorized.

**Land Use (Figure 15):** Prior to freeway completion the majority of home furnishings and appliance businesses operated within the CBD and on North Broadway. A few were located on West Main Street, two on South Broadway, and one on East Main Street. In April 1966 the CBD continued to maintain the greatest number of dealers with some locational shifting to different downtown sites. North Broadway
HOME FURNISHINGS and APPLIANCE DEALERS

LAND USE CHANGES 1962-1966

Figure 15
dropped from seven to four stores while Blosser Road gained two. West Main exhibited no change while one store opened on East Main. South Broadway lost one dealer but gained two new businesses. One of those two was the largest furniture store in Santa Maria which relocated from its original downtown position.

**Retail Sales (Figure 16):** Home furnishings and appliance sales rose abruptly from the beginning of 1961 through the third quarter of 1963. Thereafter, until the fourth quarter of 1964, taxable sales declined an average of nine percent. During 1965 business activity again rose, passing the 1961-1963 levels by five percent, but the rate of growth for 1964 and 1965 was slower than the 1961-1963 period. Santa Barbara County indicated a stable rise 1961 through 1965. For that reason Santa Maria's peak period averaged 10-15 percent above the county's mean, and in 1964 dropped five percent below county trends. Lompoc's taxable sales continued to rise until the second quarter of 1964 before the onset of a decline which has endured to the present time. The Lompoc levels were thus approximately five percent below Santa Maria's late 1962 and 1963 periods. Lompoc's late 1963 and early 1964 peak rates, however, were ten percent higher than Santa Maria. In 1965 Santa Maria's recovery and Lompoc's continued decline again reversed the trends.

**Building Material and Farm Implement Stores:**

Included within this business type are stores chiefly
HOME FURNISHINGS and APPLIANCE DEALERS
RETAIL SALES CHANGES

- SANTA MARIA
- SANTA BARBARA COUNTY
- LOMPOC
retailing construction materials and agricultural machinery and equipment.

**Land Use (Figure 17):** During the period immediately preceding the freeway, 13 of the 23 Santa Maria building material and farm implement stores were located along West Main Street and South Broadway. The remainder were mainly found on North Broadway and Blosser Road. As of 1966 the total stores remained at 23, but locational shift has occurred. West Main Street continued to sustain seven stores but South Broadway lost three of its six pre-freeway businesses. The North Broadway area also lost one store, but the loss of that store, plus the removal of three on South Broadway, was offset by the development of four building material and farm implement outlets to the west on Blosser Road.

**Retail Sales (Figure 18):** Taxable sales for Santa Maria reached a first peak in 1961 and declined in early 1962. From the fourth quarter of 1962 through the second quarter of 1963 business levels attained the second and highest peak. Thereafter, building material and farm implement sales have maintained a continuous decline, particularly during the first quarter of 1964. Santa Barbara County trends were generally upward from 1961 through 1963, dipped moderately in 1964, and began rising in 1965. A comparison with Santa Maria thus indicated that the latter's two peak periods were at levels averaging 15 percent above the county. During Santa Maria's subsequent decline,
BUILDING MATERIAL and FARM IMPLEMENT STORES
LAND USE CHANGES 1962-1966

Figure 17
BUILDING MATERIAL and FARM IMPLEMENT STORES

RETAIL SALES CHANGES

- SANTA MARIA
- SANTA BARBARA COUNTY
- LOMPOC

Figure 18
beginning in the third quarter of 1963, a reversal of positions occurred with county trends about 15 percent over Santa Maria. Lompoc sustained peaks in 1961 and 1962, dropped substantially in 1963, and rose suddenly for 1964 and 1965. Those levels and trends, contrasted to Santa Maria, were over 20 percent below Santa Maria during the latter's peak activity. Lompoc's 1964 and 1965 rise, related to Santa Maria's decline, demonstrated levels more than 25 percent above Santa Maria.

**Motor Vehicle Dealers:**

Motor vehicle dealers include all businesses primarily engaged in the sale of new and used vehicles although many dealers additionally provide maintenance and supplies.

**Land Use (Figure 19):** In 1962 a large majority of motor vehicle dealers were located in the northern portion of the CBD along North Broadway. Three dealers were situated on West Main, one on South Broadway, and none on East Main. Four years later the following land use pattern existed: the bulk of dealers retained their CBD and North Broadway locations, and within the CBD one operator enlarged his operations and another opened a sports car lot. West Main reflected no change, South Broadway gained two, and the establishment of a single dealer on East Main was observed. Moreover, it is significant to note that the largest downtown automobile dealer recently obtained a zoning variance from the city council, over the protests of city planners, in order to relocate his facilities one
MOTOR VEHICLE DEALERS
LAND USE CHANGES 1962-1966

Figure 19
block east of the freeway on East Main Street. Those facilities are currently under construction.

Retail Sales (Figure 20): From 1961 through the second quarter of 1963 absolute automobile sales in Santa Maria rose almost continually. Since then sales have indicated a slow but consistent yearly decline which in 1965 averaged six percent below the 1963 peak. Santa Barbara County, on the other hand, maintained a general upward trend for the entire five-year period, but that trend began to level after 1963. Sales patterns thus indicated that Santa Barbara County was seven percent below Santa Maria's level during the latter's 1963 peak, but the county maintained a ten percent advantage in 1963. Lompoc rose at essentially the same rate as Santa Maria from 1961 through the second quarter of 1963 with an average level it percent below Santa Maria. Lompoc thereafter continued to climb at its earlier rate while Santa Maria declined. For that reason Lompoc reached the Santa Maria levels in 1964 and throughout 1965 experienced an average auto sales 40 percent higher than the Santa Maria mean.

Automotive Supply Stores:

Automotive supply stores are those establishments which mainly retail automobile parts although secondary,

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54 As recorded in the city council minutes of November 15, 1965, Mr. Hal McBride stated his business had lost an average of $50,000-$60,000 in service activity since the opening of the freeway.
MOTOR VEHICLE DEALERS
RETAIL SALES CHANGES

- SANTA MARIA
- SANTA BARBARA COUNTY
- LOMPOC

Mean 100

%
non-automotive, sales may also be included.

**Land Use (Figure 21):** Prior to the freeway automotive supply stores were located on peripheral CBD sites and along North Broadway, both locations in general proximity to motor vehicle dealers. In addition, twelve stores operated on West Main and five on South Broadway. In 1966 the CBD and Broadway locations remained basically intact, but West Main Street lost four. East Main Street continued without an automotive supply store, but South Broadway gained three, including a large outlet near Stowell Road, while two other businesses opened on nearby Betteravia Road.

**Retail Sales (Figure 22):** Between 1961 and 1962 Santa Maria automotive supply sales leaped sharply. Total sales for 1963 and 1964 approximated 1962, but 1965 indicated a six percent drop. Trends for Santa Barbara County were strongly upward, 1961-1964, with a rising but more moderate rate for 1965. Sales patterns for the county thus averaged 25-30 percent above Santa Maria during 1961. By mid-1962, and continuing into 1964, Santa Maria's abrupt rise overtook and sustained sales levels nearly 15 percent above the county. In 1965, however, the county's rise and Santa Maria's decline resulted in the county averaging five percent over Santa Maria's mean. Thereafter, Lompoc growth indicated a current level 40 percent higher than Santa Maria.

**Service Stations:**

Service stations include all businesses whose
AUTOMOTIVE SUPPLY STORES
LAND USE CHANGES 1962-1966

Figure 21
activities are principally connected with dispensing gasoline.

**Land Use (Figure 23):** In 1962 service stations of Santa Maria were overwhelmingly situated on corner locations along old US 101 (Broadway). They were found in a North Broadway group, a group just north of the CBD, a group just south of the CBD, and a scattering on South Broadway. Additionally, five stations fronted on West Main and four on East Main. As of April 1966 locational changes were readily apparent. The North Broadway group retained its ten stations but two older stations closed and two new stations were constructed closer to the North Santa Maria access. Each of the groups to the north and south of the CBD lost two businesses, and West Main suffered the loss of one. Almost offsetting those losses were three new stations on South Broadway, two on Blosser Road, and one on East Main. Undoubtedly more significant was the development of six modern service stations adjacent to the freeway; one on Betteravia Road, one on Stowell Road, and four stations occupying locations fronting each of the on and off ramps at the East Main Street access. Moreover, in late June 1966, construction began on a new station with frontage on Donovan Road and the freeway.

**Retail Sales (Figure 24):** Similar to most business types in Santa Maria, service stations indicated a sharp rise in sales volume from 1961 through 1962. In the third quarter of 1963 business volume began to slump, a slump
SERVICE STATIONS
LAND USE CHANGES 1962-1966

Figure 23
SERVICE STATIONS
RETAIL SALES CHANGES

- SANTA MARIA
- SANTA BARBARA COUNTY
- LOMPOC

Figure 24
which at the end of 1965 had nearly dropped to 1961 levels. Santa Barbara County, with a higher 1961 base, also rose in 1962 and declined in the third quarter of 1963. However, by the first quarter of 1964 county sales stabilized and through 1965 those general trends have levelled. Therefore, Santa Maria's 1962 and early 1963 period averaged 12 percent above the county mean. Beginning in the first quarter of 1964, Santa Maria's decline and the county's stabilization resulted in approximately equal levels until late 1965 when Santa Maria dropped five to ten percent lower. Lompoc also climbed from 1961 through 1962, dipped in 1963, rose lightly in 1964, and again declined during 1965. Those trends thus indicated that from late 1962 through 1963 Santa Maria levels averaged 12 percent above Lompoc, and in 1964 and 1965 eight percent and nine percent below respectively.

**Business and Personal Services:**

This business type is a collectively large group which includes activities whose principal income is service-connected. Examples of this type are barber and beauty shops, repair shops, and hotels and motels.

**Land Use (Figure 25):** In 1962 most of the repair, barber, and beauty shops were located in the general downtown area and West Main with a minor development on East Main. The few hotels that existed were found in the CBD. A large grouping of motels fronted on North Broadway in the vicinity of Donovan Road, and two were situated on
BUSINESS and PERSONAL SERVICES

LAND USE CHANGES 1962-1966

Figure 25
West Main near the CBD. The larger motels and a sizeable number of others were scattered along South Broadway for almost two miles. By 1966 there was an overall decline in barber, beauty, and repair shops. West Main Street displayed some shifting but no decrease in shops. The CBD lost several shops and most of those located on East Main Street closed. Motels dropped from four to three and one of the two motels on West Main Street was vacated. Motels also declined by two in the North Broadway group, but four were added to South Broadway. Moreover, East Main Street, which had not previously sustained motel development, experienced the construction of three large motels visible from the freeway.

**Retail Sales (Figure 26):** From a 1961 peak Santa Maria endured a general decline in sales volume through 1964, but indicated a slight rise for 1965. Santa Barbara County maintained a relatively stable course throughout the 1961-1965 study period with only a minor accession in 1963 and a marginal dip in 1964. Santa Maria levels were thus 20 percent above the county in 1961. The gap between them thereafter narrowed until the second quarter of 1963 when Santa Maria dipped below the county. Santa Maria trend lines presently continue to remain lower than county levels although the 16 percent differential of 1964 was reduced to 13 percent in 1965. Lompoc's business volume reached a 1962 peak and declined in each succeeding year. Santa Maria's 1961 peak was thus somewhat above Lompoc levels for
BUSINESS and PERSONAL SERVICES

RETAIL SALES CHANGES

- SANTA MARIA
- SANTA BARBARA COUNTY
- LOMPOC

Figure 26
that year. By 1962, despite a low Lompoc third quarter, the general levels were similar. During 1963 and 1964 Santa Maria dropped beneath Lompoc, but in 1965 both Lompoc and Santa Maria levels were substantially equalized at around 30 percent below their respective peak periods.

Manufacturing, Wholesaling, and Miscellaneous:

Included within this business type are construction companies, packing sheds, wholesaling organizations, and other businesses which process or create goods for retail consumption.

Land Use (Figure 27): During 1962 manufacturing, wholesaling, and miscellaneous operations generally existed as follows: On North Broadway were a milling company and a rock and sand producer. The largest developments were located on Blosser Road and Betteravia Road where a variety of activity, such as food processing, ice production, construction and warehousing plants operated. Packing sheds for local produce were situated to the southwest and south-east of the CBD along the Santa Maria Valley Railroad. Some light manufacturing and wholesaling also took place in these latter areas. In 1966 most of the 1962 activity remained although the food processing plant on Blosser Road was removed. However, Blosser was the area for a new warehouse and a tool and machine works while Betteravia Road experienced the growth of a construction company and a petrolane outfit. Perhaps the most significant development in the post-freeway period was the selection of a Stowell
MANUFACTURING, WHOLESALING, and MISCELLANEOUS

LAND USE CHANGES 1962-1966

Figure 27
Road site within one block of the freeway for Columbia Records. That company is presently engaged in the processing and packaging of records for distribution in the Western United States.

Retail Sales (Figure 28): Business volume in Santa Maria climbed steeply from 1962 until the third quarter of 1963. A sharp drop then occurred but leveled out in the second quarter of 1964 somewhat above 1961 business volume. Santa Barbara County sales also rose in the 1961-1962 years, and similarly suffered a short-lived decline following the second quarter of 1963. The county mean, however, did not attain nor descend to Santa Maria levels during the peak and trough periods. Santa Maria thus averaged 15 percent above the county mean in the 1962 and early 1963 period, but since the first quarter of 1964 both Santa Maria and the county have maintained similar, relatively constant, levels. Lompoc presented the same basic pattern until the first quarter of 1964 although its trend lines existed at considerably higher levels. After the first quarter of 1964, whereas Santa Maria and the county sustained no further decline, Lompoc continued to drop through 1965. The patterns, therefore, indicated that during the peak period Lompoc averaged over 20 percent above Santa Maria's mean, but in 1965 Lompoc's sustained decline resulted in levels 50 percent below Santa Maria and the county.

Other Retail Stores:

This business type includes all retail activities which
cannot be otherwise classified. A few examples are pool halls, pet stores, and hobby centers.

**Land Use (Figure 29):** During 1962 the majority of other retail stores were located within the CBD and along or adjacent to West Main Street. Most other stores were found on South Broadway, a few on North Broadway, two on Stowell Road, and one on East Main. As of April 1966 a slight decline of stores was noted for the CBD and South Broadway. However, that decline was offset by a slight rise in the West Main-Blosser Road area and on North Broadway. No other changes were observed.

**Retail Sales (Figure 30):** Between 1961 and 1962 Santa Maria other retail sales ascended sharply with an absolute peak reached during the fourth quarter of 1962. Commencing with the fourth quarter of 1963, however, sales decreased steadily through the fourth quarter of 1965. Santa Barbara County maintained a progressive upward trend for the entire study period without a dominant period of rise or decline. Santa Maria thus resided twenty percentage points above the county mean during most of 1962 and 1963, but in early 1964 the two levels had equalized. The county then passed the Santa Maria mean and for 1965 averaged 18 percent over the latter's trend line. Lompoc exhibited a general upward trend similar to Santa Barbara County though not so progressive. For that reason Lompoc's late 1962 and early 1963 average was over 30 percent beneath Santa Maria and in 1965 ten percent above.
OTHER RETAIL STORES
LAND USE CHANGES 1962-1966

Figure 29
Figure 30

OTHER RETAIL STORES
RETAIL SALES CHANGES

% 

- SANTA MARIA
- SANTA BARBARA COUNTY
- LOMPOC

Mean 100

Changes in Parking Meter Revenue

Similar to most of the aforementioned business trends, the revenue obtained from downtown parking meters indicated a sharp rise from the beginning of 1961 until late 1962 (Figure 31).\textsuperscript{55} However, whereas many business types sustained a rise of sales volume into early 1963, parking meter revenue began a decline several months previously. That decline coincided almost precisely with the opening of the freeway. On a month-to-month basis, the first two months subsequent to freeway completion (November and December 1962) were the only 1962 months other than June which suffered decreases from their respective 1961 months (Table 2). Although revenue for January and February of 1963 increased over January and February of 1961 and 1962, all but three of the ensuing thirty-four months clearly demonstrated decreases from their corresponding months of each preceding year. Those continuing decreases thus reflect a loss of revenue which during 1965 was 30 percent less than for the year 1962.

According to several downtown businessmen the decline of parking meter revenue during November and December 1962 was a direct result of traffic diversion brought about by freeway completion.\textsuperscript{56} The increases for January and

\textsuperscript{55}Dollar figures, month-to-month, 1961 through 1965, were supplied by the finance office, City of Santa Maria.

\textsuperscript{56}Druggist, furniture salesman, department store manager, and motor vehicle dealer.
Figure 31

CHANGES in PARKING METER REVENUE


5 10 15 20 25 30 35 40

100 200 300 400 500 600 700 800
Table 2
PARKING METER REVENUE (in dollars)

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</tr>
</tbody>
</table>
February 1963, they felt, were related to a greater willingness of local people to shop in a less congested CBD. The revenue decline thereafter was, in their opinion, initially caused by a general economic slump in Santa Maria, and later continued by the increasing development of outlying shopping centers.

Two other factors should be noted. First, the department store which abandoned the CBD in October 1965 for the South Broadway-Stowell Road area was apparently a substantial traffic generator. That statement tends to be confirmed through a comparison of September to October parking meter revenue. From 1961 through 1964 each October indicated greater revenue than its respective September, an increased revenue that averaged 13 percent. Between September and October 1965, however, a decrease of 13 percent is noted. The importance of that department store to the CBD seems further substantiated when comparing September with December, the latter a peak month. While 1963 and 1964 indicated September versus December differences of 37 percent and 29 percent respectively, that difference in 1965 was but 13 percent. The second factor affecting the amount of parking meter revenue was the adoption of courtesy parking in July 1964. The Retail Merchants' Association, increasingly concerned over a business decline in the CBD, reached an agreement with the city administration

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57 Suggested by Mrs. Dorothy Lyman, city clerk, Santa Maria.
which, in effect, permitted a minimum of 12 minutes free parking for each vehicle in the downtown district. The free parking thus resulted, according to the city finance director, in a direct revenue loss of approximately five percent which would not have been otherwise incurred.

When the courtesy parking variable is deducted from the 1962 to 1965 parking meter revenue decline, the resulting 25 percent decrease compares favorably with the 20-25 percent decrease in traffic volume on Broadway at Main Street for the same time period. Moreover, both of these decreases correspond to an approximate 25 percent general decline in CBD sales volume during the post-freeway period.58

**Interview Information and General Conclusions**

**Concerning Land Use and Retail Sales**

It is obvious that land use and retail sales changes have occurred. On the basis of the statistical data presented, however, it was difficult to quantitatively relate those changes directly to freeway impact. In a general sense the rise and decline of business activity was largely brought on by Vandenberg spending, the magnitude of which was outlined in Chapter IV. Although that magnitude is decreasing, the Vandenberg expenditures still dominate the economic base to the extent that fluctuations in the

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58 Collective estimate of those businessmen cited in footnote 56.
spending appreciably affect local businesses. Unfortunately, the Vandenberg spending figures, released on a monthly basis, do not clearly chronologically coincide with changing business use and volume in Santa Maria. For that reason local businessmen were consulted for qualitative information to aid in interpreting the available statistical materials.

Retail Sales:

Business people indicated that the steeply rising retail trends of 1961, 1962, and early 1963 resulted from extensive construction of facilities at Vandenberg, housing construction in Santa Maria, and freeway construction. In most instances considerable overtime work was either desirable or mandatory. The wages and salaries earned therefrom brought on a greater absolute and per capita spending in Santa Maria than ever previously experienced. By mid-1963 the majority of Vandenberg facilities were finished, the Santa Maria housing boom was decreasing rapidly, and the freeway had been completed. The number of construction workers thus declined but their departure did not produce a population decrease since they were more than replaced by technical and service personnel and their families. In any event, with little authorized overtime pay and fewer total workers in Santa Maria, the absolute and per capita income declined, as did spending, despite a population increase of 4,000 for Santa Maria and 1,200 in the Orcutt area.
It appears, therefore, that the local financial impact initially induced by Vandenberg sustained growth until the middle of 1963. Since the freeway was completed in October 1962 the continued high spending associated with Vandenberg overlapped the freeway opening by at least six months. That overlap critically colored the degree of both initial and subsequent freeway impact. No doubt the freeway immediately affected the retail growth of some business types, particularly in an areal sense, but that affect is largely hidden in the data available.

In general, however, businessmen feel that the freeway contributed to a retail sales decline within the CBD, and to even a greater extent on North Broadway. West Main Street, by virtue of its more removed geographical position both before and after the freeway, has endured no overall freeway-caused business decrease. The two areas of increased business volume are East Main Street and South Broadway. South Broadway has incurred the greatest retail sales growth in Santa Maria primarily resulting from a locational advantage with respect to local markets. East Main Street growth, while less, is more directly related to the freeway.

Land Use:

Many of the commercial land use changes were directly associated with the growth and location of population. Recent population growth in Santa Maria was essentially attributable to Vandenberg, and the location of that growth
was principally dictated by the location of housing created before, during, and immediately following freeway completion. There was no evidence to suggest that the location or amount of population growth has been appreciably altered subsequent to freeway completion. For that reason the commercial growth along South Broadway was a direct response to population growth in southern Santa Maria and the 17,000 individuals residing in the commercially poorly-developed Orcutt area. Moreover, it was demonstrated that the freeway has improved the accessibility of South Broadway from other city sectors. The freeway thus enlarges the potential market area of the South Broadway commercial complex by enhancing a development whose chief impetus was non-freeway oriented.

Increasing commercial land use along East Main Street more clearly reflects freeway impact. Although East Main serves a nearby population and another 2,000 inhabitants northeast of the freeway, traffic volume in the area is rising at a considerably higher rate than population growth. In addition, East Main now provides one of the easier and faster routes to the CBD.

The general decline of commercial land use on North Broadway is principally associated with the diversion of traffic to the freeway. That diversion includes not only through-traffic but local traffic as well through the greater accessibility afforded the northern population to commerce located on East Main and South Broadway.
Land use shifting within and out of the CBD is mainly caused by the South Broadway development which has captured a considerable portion of the Orcutt area business in addition to becoming more the geographical center of all local population. To some extent the freeway has influenced CBD land use shifting by reducing CBD advantage with respect to northern, northeastern, and eastern city sectors.

West Main land use changes are not generally influenced by freeway factors, but have reacted more generally to the fundamental shifting of population and consequent rearrangements of city business activity.

**Interview Information and Specific Conclusions Concerning Each of the Fourteen Business Types**

A precise statistical measurement of freeway impact at the specific level of each business type has not been obtained. Changes wrought by the freeway cannot be totally isolated from Vandenberg despite comparisons with Santa Barbara County and the city of Lompoc. However, interviews with Santa Maria businessmen again aided in the drawing of associations and inferences of freeway impact on each business type.

**Apparel stores** indicated no fundamental freeway influence. The CBD land use shifting and development on South Broadway were adjustments related to local locational advantage caused by population change. Retail sales fluctuated primarily in accordance with general economic condi-
tions and individual desire. As a group, then, apparel stores suffered a gradual sales decline related to Vandenberg's declining influence in Santa Maria beginning in 1963.

**General merchandise stores** demonstrated relatively little freeway impact. Although stores on East Main Street undoubtedly have some freeway orientation, the bulk of land use change was associated with attempts to secure more favorable local positions with respect to potential markets. Retail sales also reflected general economic conditions and thus declined in 1963. Since general merchandise stores stock many necessities, however, an upward sales trend occurred thereafter.

**Food stores** were not largely affected by the freeway. It was true that the opening of stores on East Donovan and East Main derived indirect freeway influence, but the majority of stores maintained non-freeway locations. The impending construction of a large grocery store on South Broadway was further evidence of that area's locational relationship with local population development. The general retail sales decline of food stores since 1963 was not freeway caused, but primarily brought on by the Vandenberg decline and grocery development in the unincorporated Orcutt area. This latter development consequently reduced Santa Maria sales while not basically decreasing sales in the immediate area.
Packaged liquor stores were only lightly influenced by the Santa Maria Freeway. The major use change occurred on East Main where some freeway impact was reported. Several liquor store owners indicated that the high sales of 1962 were mainly brought about by purchases of construction workers. Lesser sales occurred from motel tenants along North Broadway and South Broadway. Since the freeway opened, however, the construction worker sales have diminished sharply while motel-oriented liquor sales have almost disappeared except for a growth on East Main. Still, most sales are currently conducted with local people so that the freeway exerts only a minor direct influence on packaged liquor.

Eating and drinking establishments have sustained some decline related to the freeway bypass. Land use additions on East Main were basically freeway-caused while the increased number of cafes on South Broadway reflected the southerly growth of local population. The decline of establishments in the CBD and on North Broadway was at least in part the result of a locational disadvantage forced upon them by the freeway. Peak sales for 1962 were associated with many construction workers in the area, a shortage of housing which impelled non-home consumption, and by travelers. By late 1963 only the traveler market was strong and it had been reduced by the relocation of US 101. Sales along North Broadway, within the CBD, and in the West Main-Blosser Road area have apparently dipped
markedly, whereas eating and drinking trade has risen lightly on South Broadway and quite rapidly on East Main Street adjacent to the freeway.

**Drug stores** do not normally receive direct influence from freeway traffic. The removal of three small drug stores in the CBD was caused by a loss of business chiefly to the new East Main store, and the large chain drugs on South Broadway. The extremely high 1962 peak sales are not clearly understood, even by local businessmen, although it was known that the tax on prescription drugs was abolished soon thereafter. That the freeway does exert a partial affect, however, was noted from a statement made by the manager of the East Main Street store who indicated that approximately one percent of his total business was earned from nearby motel foot traffic.

**Home furnishings and appliance dealers** were not in aggregate affected by the relocation of US 101. Locational shift within the CBD and the decline of stores on North Broadway was, of course, associated with disadvantaged accessibility to other stores. Dealers stated that their commodities do not normally produce impulse buying and for that reason the sales decline following freeway completion was not directly freeway-induced but engendered by a general economic decline. Increased retail sales for 1964 and 1965, they stated, tended to refute all but a marginal freeway impact.
Building material and farm implement stores have thus far been only indirectly affected by the freeway. These stores generally utilize larger space than most retail organizations and the shift toward Blosser Road provides that requirement. According to one company, Blosser Road also serves as a generator of business since that road is one of the chief routes traveled by local Vandenberg workers. The manager of a farm equipment store on South Broadway indicated his business was no longer compatible with the type and extent of commercial development in that area. For this reason he was petitioning the city council for a zoning variance to permit the construction of facilities in the northeast quadrant of Donovan Road and the freeway. He clearly stated that the freeway location would provide improved accessibility for his type of business in addition to an enlarged market created by an advertising potential. Retail sales in general followed the construction boom which toward the end of 1963 fell drastically and has remained at relatively low levels since. Businessmen contended, however, that the freeway has not produced any measurable affect on total sales of building material and farm equipment.

Motor vehicle dealers have not been markedly influenced by the freeway. The addition of two dealers on South

59 Substantiated by Mr. John Marshall, chief statistician, Research and Statistics Unit, California State Board of Equalization, Sacramento, California.
Broadway and one on East Main indicated market possibilities in those areas as well as available space requirements. One dealer remarked that sales were dominantly local and that, perhaps, but one or two automobiles were sold to a traveling non-local public. As mentioned previously, one dealer is currently constructing new facilities on East Main Street with freeway access. The losses sustained at his current location, however, are in the service end which is more properly reflected in automotive supply data. In any event, he anticipates his relocation will further draw other commercial activity eastward along East Main Street adjacent to the freeway. Whether the relocation of his dealership to a freeway location will produce increased automobile sales cannot at this time be ascertained.

Automotive supply stores, as an inclusive business type, were partially influenced by the freeway. Land use change exhibited a tendency from a locational disadvantage on West Main to a greater potential along South Broadway. Sales in retail stores apparently have not declined, but those establishments dealing in service, such as garages, have suffered decreases as a result of traffic diversion to the freeway.

Service stations most clearly demonstrated freeway impact. The decline of stations on North Broadway, both north and south of the CBD, and on West Main Street was probably related to decreased business volume caused by traffic flows. On South Broadway the numerical increase
was chiefly associated with population growth in that area. Along the on and off freeway ramps, however, the rise of six stations plus the current construction of another were the clearest expressions of freeway-induced land use change. The continued decrease of total retail sales was largely produced by the freeway. According to one dealer the freeway-caused losses were approximately one-third on North Broadway, one-third on West Main, and one-half in the CBD groups.\(^{60}\) A rise of ten percent was estimated for South Broadway but that was not directly attributable to freeway causes. Since the freeway stations have operated only in the post-freeway period no change could be measured. However, their business volume, with respect to other stations, is substantial. In addition, it was meaningful to note that the freeway stations conducted 40-60 percent of their business with local consumers.

Business and personal services were a difficult group to measure inasmuch as they comprised such varied individual types. No general reason could be determined for the decline of barber and beauty shops. Motel and hotel land use changes though have been influenced by the freeway. The declining number on North Broadway and West Main Street now reflect a locational disadvantage while the rise of

\(^{60}\)Information furnished by the retail sales representative of a major oil company who indicated he keeps close contact with other companies and with the changing character of service station demands by the public.
three motels on East Main indicate an advantage created by the freeway. The new motels on South Broadway were built immediately following the freeway but before any beneficial or detrimental effect was evident. Retail sales were difficult to generalize in terms of freeway impact. With respect to motels, however, it was learned that the average occupancy rate for June 1962 was 79.51 percent while in June 1963 that rate was 49.05 percent. How much of that decrease was attributable to freeway causes is speculative for in the period preceding freeway completion motels still contained many local Vandenberg workers who could not obtain other quarters. By June 1963 that number had been reduced as a result of increased housing available. For that reason any attempt to separate a declining Vandenberg occupancy from a highway-oriented transient occupancy is hazardous. Motel owners were reluctant to discuss occupancy rates with this writer, but in general they indicated that North Broadway, the CBD, and West Main have been seriously affected by the freeway. South Broadway endured less extensive loss while East Main motels have gained the most.

Manufacturing, wholesaling, and miscellaneous activities have not been basically affected by highway relocation. Land use changes and growth along Betteravia Road and Blosser Road resulted essentially from zoning requirements.

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61 Surveys conducted by the Santa Maria Chamber of Commerce.
It was suspected that the location of Columbia Records on Stowell Road was freeway influenced. However, an interview with the head of Western United States operations for that company indicated that the selection of Santa Maria was made in order to gain a middle position between their largest markets, Los Angeles and San Francisco. The specific site in Santa Maria was chosen almost entirely for its modern light manufacturing compatibility with a nearby natural gas company. Freeway considerations were distinctly secondary although the company certainly recognizes advantages associated with transportation and advertising. Retail sales for the diverse businesses within manufacturing, wholesaling, and miscellaneous can only be generalized to the extent that those companies with Vandenberg contracts tended to decline subsequent to mid-1963. Other establishments did not sustain an overall decrease while those connected to agricultural processing increased. The freeway, however, exerted no measureable force on sales.

Freeway impact on other retail stores is poorly understood. Land use decline in the CBD may be related to a general CBD decline while Blosser Road and North Broadway offer more desirable locations, but the variety of businesses within this type preclude further land use analysis. Peak retail sales in 1962 and 1963 apparently coincide with Vandenberg expenditures. The decline thereafter is no doubt partly associated with a Vandenberg decline. Other
reasons are not known and businessmen could not state any measurable freeway impact.

In this chapter, despite the paucity of data to substantiate certain of the preceding conclusions, it was shown that the freeway has altered accessibility through changed traffic volume and travel patterns. Those changes in turn have undoubtedly influenced the location and retail sales of the aforementioned fourteen business types. Further statements on the basis of existing information are unwarranted, however.

The principal analytic difficulties concerning freeway impact arise from many unmeasurable variables caused by Vandenberg Air Force Base and through the lack of more specific retail sales data. Vandenberg variables include fluctuating expenditures which do not more than generally coincide with local spending and with comparative sales in Lompoc and Santa Barbara County. The enormous growth of Vandenberg in a relatively short period of time first created a housing shortage and later a housing excess, both with their many ramifications, overlapping the before and after freeway periods. A rapid population growth during the period under study, principally caused by Vandenberg, also brought on a shifting center of population which induced land use changes not inherently related to freeway effects.
CHAPTER VII

LAND VALUES

The last chapter demonstrated that land use and retail sales changes in Santa Maria were but partially understood. That limitation, when enjoined to problems of measuring land values outlined in Chapter II, posed the rather formidable question of how much land value change is related to other causes. Research additionally disclosed that the number of commercial property sales in Santa Maria during the before and after freeway periods was insufficient for the development of reasonably accurate comparative data. It was observed, however, that ample sales of residential property had been transacted in recent years. For the above reasons, therefore, the ensuing discussion will essentially be directed toward residential land values rather than to commercial property.

Study and Control Areas:

Eight areas within Santa Maria were selected for study (Figure 32). The presumably affected areas, five in number, were either tangent or adjacent to the freeway. Unaffected areas, of relatively comparable land values, were located in western sections of the city and removed

\[62\text{Areas were chosen on the basis of recommendations made by local realty agents and field observations.}\]
LAND VALUE
Study and Control Areas

Figure 32
at least one and one-half miles from the freeway. Both the affected and unaffected areas were, in addition, approximately equidistant from old US 101 (Broadway).

Over 700 residential property transfers were investigated of which about 400 were judged usable. Land value for each property sale was determined through an application of the property's assessed building-land ratio and conversion to a unit area. The values thus derived were placed within their respective study or control area and refined, by date of sale, as to before and after. Sales occurring in the 1960-1961-1962 period were separated into the "before" group, and sales during the 1963-1964-1965 period were classified as "after." In each area the average of the before was compared to the average of the after, and the results obtained are noted in the table below. Unfortunately, sufficient sales were lacking for the important period immediately preceding and following the freeway announcement data.

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63 Property transfers and their dates were determined from the Santa Barbara County Assessor's Office and the Santa Barbara County Recorder's Office. Only when the transfer document was finally located and examined could its usability be determined. About 300 of those documents were unusable inasmuch as they represented foreclosures, quit-claims, inheritances, or did not possess internal revenue stamps. Ten property sales were considered an absolute minimum for each before and each after in all eight areas.
counterpart, area eight, decreased 12.63 percent or twelve percent greater. Areas three and four decreased an average of three percent. Their planned control area, area seven, dropped 10.01 percent or seven percent more. Area five land values fell 4.25 percent while its selected control area, area six, declined more than ten percent greater at -14.67.

It would thus appear that in absolute terms, with respect to the five freeway-adjacent areas, that the least decline occurred in northeastern Santa Maria, the greatest decline in southeastern Santa Maria, and the median decline in east central Santa Maria. In a comparative sense between the freeway-adjacent areas and their respective control areas, the greatest difference (12 percent) occurred in northern Santa Maria; the least difference (seven percent) in central Santa Maria; and the median difference (10 percent) in southern Santa Maria.

**Qualitative Analysis:**

To infer that land value differences between the control areas and the presumably affected areas were totally freeway-caused is too simple. As indicated in previous chapters the concurrent impact of a large and fluctuating economic force, Vandenberg Air Force Base, induced population, traffic volume and travel patterns, land use, and retail sales changes not directly relatable to freeway effects. Considerable evidence thus existed that other
than freeway causes were also involved in changed land values. For that reason knowledgeable local individuals were consulted for qualitative information with which to correlate with the established land value changes.65

According to informants the pre-freeway period was characterized by excessive housing demands. Land and property could be sold whenever available, a condition which produced a tendency toward inflated land values. When the excess housing situation became apparent in early 1963, however, a basic decline in property and land values followed. Faced with unsold and vacated homes, developers were forced, in general, to reduce selling prices in order to satisfy existing encumbrances. These statements thus provide an explanation for the general decline in land values for all eight study areas.

The next question was obvious. Each of the study and control areas declined in different amounts. If the freeway did not entirely cause the varying land value changes between them in the post-freeway period what did? Local sources suggested that one factor was the general construction of better homes toward the east which produced a competitive advantage over the west. As a second and more important factor they indicated that the western portions of the city were not, for socio-economic reasons, as desirable as the east. During the pre-freeway period this

65 Three realty agents, a housing developer, and the manager of a large land company.
factor was not evident since the acute housing shortage throughout the entire Santa Maria area caused a western development that initially sustained increased land values. In the post-freeway period, with excess housing in all areas, a greater selectivity in land and property purchases occurred. This selectivity thus produced more purchases and fewer vacancies toward the east than the west. Therefore, although a general decline in land values has taken place in all eight study and control areas, that decline was appreciably less in the five eastern areas. When questioned regarding the role and degree of freeway impact within these land value changes they indicated, to the best of their knowledge, that the western areas (six, seven, and eight) were not freeway-influenced. Land values in the eastern areas, however, would probably have decreased an additional two to four percent were it not for the potential value afforded by freeway proximity.

Why differences in land value changes should exist among the five freeway-adjacent areas was more difficult to assess. Areas one and two apparently suffered the least decline because of better homes, freeway accessibility, or policies of the individual developer. Although area three contains good homes its access streets to the freeway were not as favorable as area four. Area four, moreover, was closer to East Main Street, a factor which helps to explain its small decline of but 2.33 percent. Area five, which sustained the greatest land value decrease of the freeway-
influenced areas, evidently maintained less expensive residences and was located farther from the freeway.

**Right-of-Way Purchases and Commercial Sales:**

In an added effort to determine land value changes the freeway right-of-way purchases were examined. These figures shed light on land values during the years 1955-1960. For example, at the point where the freeway presently crosses both Stowell Road and Donovan Road the right-of-way purchases averaged $4,000 and $2,500 per acre respectively. At Main Street and the freeway those purchases averaged about $7,000 per acre. In the post-freeway period the few available sales showed substantial land value gain. During late 1964 open land in the southwest quadrant of Stowell Road and the freeway sold at the rate of $12,000 per acre, a tripling increase over the average right-of-way purchases. Open land in the northeast quadrant of Main Street and the freeway sold in late 1965 for the equivalent price of $11,500 per acre, or a 65 percent gain. The land space presently occupied by one of the four service stations at Main Street and the freeway was purchased for $67,000 in early 1965, a sales price which

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66 Average right-of-way land purchases by the State of California were provided from official records by Mr. Robert Wright, right-of-way agent, California State Division of Highways, San Luis Obispo, California.

67 Santa Barbara County Recorder's Office, Book 2084, p.433.

68 Statement of purchaser, Mr. Hal McBride, Home Motors.
was equivalent to more than $100,000 per acre. Another service station at that same crossing is currently leasing their space for a cost based on a land valuation of $100,000 per acre. Unfortunately, these transactions cannot be associated with a control area since usable sales could not be secured for a presumed unaffected area. Any specific quantitative inferences drawn would, therefore, be subject to considerable error. Qualitatively, however, and supported by conversations with realtors and the principals involved, there is no question that a land value increment has been created by the freeway. This is particularly true on corner lots of an important thoroughfare adjacent to a freeway. In the Santa Maria situation the 15-fold increase on those lots was to a large extent freeway-caused.

**Conclusions**

On the basis of existing data land value conclusions must remain tentative. The two basic problems preventing a more specific statement of freeway-induced land value change were (1) economic instability caused by Vandenberg, and (2) insufficient land sales in adequate control areas. If the statements of local individuals were valid it might then be proposed that the freeway has directly generated a residential land value benefit of two to four percent for

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69 Santa Barbara County Recorder's Office, Book 2092, p.266.
70 Statement of lessor, Mr. Coleman, mgr., LaBrea Securities.
nearby property. Commercial land value changes could not be compared for want of a control area with adequate sales. It was clear to realtors, however, that important streets with freeway access derived an enhanced commercial land value beyond that incurred by a non-freeway commercial location.

It should further be noted that considerable open space still exists along both sides of the freeway within Santa Maria. The open space has not been utilized for urban purposes despite claims of freeway-benefited land use. This apparent anomaly once again stems from the force of Vandenberg upon local housing. During the pre-freeway period housing developers did not generally build next to the freeway for although the general location of the freeway had been established in 1955 the precise footage had not. Developers could not, therefore, risk the last minute loss of land or houses completed or under construction to right-of-way requirements. In the post-freeway period the open land has largely remained vacant since contractor’s hesitate to construct housing that will face severe competition from existing vacancies. It was the general belief of the consulted individuals, however, that as commercial development spreads eastward on East Main Street and when housing vacancies are reduced that the freeway will exert its locational advantage through freeway-adjacent housing construction.
CHAPTER VIII

CONCLUSIONS

The objective of this study was to seek out and explain freeway impact upon specific commercial land use, retail sales, and land values in Santa Maria, California. On the basis of traditional methods of impact research an analytic framework was formulated within which a variety of indicators could be measured. Each indicator was given a before and after analysis and subjected to a control area comparison in an attempt to isolate freeway impact from other economic factors. When statistical measures produced uncertain and conflicting results, qualitative information was sought in order to exact more precise answers.

An analysis of both the statistical and qualitative data clearly revealed that freeway impact has taken place. Nonetheless, statements regarding that impact remained, for the most part, general because the quality and quantity of research could not precisely separate a host of dynamic variables interjected by Vandenberg Air Force Base from freeway effects. Moreover, it was apparent that the internal spatial adjustments of land use, retail sales, and land values to the impact of both Vandenberg Air Force Base and the freeway have not run their course. This ongoing lag in adjustment thus precluded the development of a viable demographic and economic situation which, in turn, contemporarily prevented the specific measurement of either
current or ultimate freeway impact.

It is not the intent here to recapitulate the conclusions outlined in previous chapters. Rather, because of research limitations encountered, it seems appropriate to review the analytic methods as they apply to Santa Maria in particular and to impact studies in general.

As indicated in Chapter II the heart of impact research embodies time and space comparisons through the employment of a before and after concept and the control area device. The before and after concept is inherently sound, but problems arose over its time continuum. Clearly, a time continuum of five years was inadequate for retail sales in Santa Maria, yet quite adequate for traffic volume. What specific time interval should be employed is not certain, but surely a five year before and five year after in Santa Maria would not be unreasonable. The control area device is also sound. Difficulties emerged, however, in the selection of supposedly comparable areas which had not sustained freeway impact. With respect to retail sales again, the county is not questioned as a valid control area but, perhaps, contiguous counties ought to be compared as well. The "dummy city" concept, in this context Lompoc, quite obviously did not serve its intended purpose.

If impact research is aimed at specific objectives, as in the Santa Maria study, then the handling of indicator techniques and the acquisition of data must also be refined. This refinement should fundamentally revolve about securing
areally differentiated data within the subject community rather than the aggregate unbroken data of city-wide classification. The areally differentiated data could then be compartmentalized into freeway areas and non-freeway areas. This method not only permits county and inter-county comparisons but allows a meaningful interpretation of changing intra-city relationships. The assumption involved in this refinement is that freeway impact is not identical throughout a community; and that specific freeway-caused changes may be greater, lesser, or non-existent dependent upon geographical position with respect to the old and new highway locations.

In this connection population changes offer significant before and after comparisons if zonal densities can be acquired. County and inter-county changes would act as controls for association with city and intra-city population totals. This kind of data was partially collected for Santa Maria but could, no doubt, be more precisely secured and elaborated upon.

Traffic volume in the Santa Maria study was given a fairly comprehensive before and after areal treatment. That treatment might have been enhanced, perhaps, had control areas been established on US 101 both north and south of the city.

Travel patterns were but broadly generalized, a distinct weakness in this impact study. The importance of travel patterns was pointedly emphasized by Garrison; this
writer would further suggest that extensive surveys be conducted in which the before and after travel and shopping patterns of many individuals residing in each of the selected intra-city areas be itemized. Control areas would be difficult to organize, but if the chorographic interpretations can be associated with other indicators, the absence of control areas should not inhibit statements of impact results.

Land use change for the before period (1962) and the after period (1966) was not a serious shortcoming in the Santa Maria study. However, a four-year interval between the before and after periods did preclude a specific temporal knowledge of land use change. In order to better correlate land use change with other impact indicators it seems clear that land use should be reconstructed, on yearly terms, for a five-year span which equally overlaps the freeway completion date.

Parking meter revenue cannot be largely expanded upon although the obtainment of revenue data on a block-by-block basis might permit one to discern relationships between travel and shopping patterns and CBD land use and retail sales changes.

Retail sales data need considerable modification. Within Santa Maria the fourteen business types proved insufficient because (1) the data frequently represented many different kinds of businesses within each type, and (2) the data were supplied on a city-wide nature rather
than chorographically differentiated. The first problem prohibited an understanding of impact at the level of each and every business type, and the second problem effectively prevented specific intra-city zonal comparisons. What is needed is to secure state legislative or executive approval to investigate tax records of the individual business. If this information were collectable disclosure laws could be respected by converting the data to percentage changes and by areal classification. The before and after data thus derived and modified could thereafter be compared at the county, inter-county, and intra-city levels.

Land value changes might present difficulties beyond the scope of most researchers. If few property sales have been recorded, the substitution of purely assessed value might be required. A reliance on assessed value, to the exclusion of actual property sales, however, would produce merely an appraisal value and possibly lead to serious error. In the Santa Maria situation sufficient sales occurred in the before and after freeway completion periods but not in the before and after freeway announcement periods. The latter difficulty might be overcome with a physical expansion of the study and control areas which would probably increase the number of sales for each area. The enlargement of those areas, however, would no doubt force increasing statistical generalization concerning land value change.

Beyond statistical correlations between the various
indicators it seems readily apparent that few specific impact statements can be finalized without seeking qualitative information. Without that information a statistical change could be erroneously attributed to freeway causes when, in fact, that change is explainable in social, political, or other economic terms. This study of Santa Maria substantiates the value of qualitative information which, by uniting theoretical and empirical aspects of impact research, provided insight into changes of direct, indirect, and unrelated freeway causes.

The aforementioned proposals embrace comprehensively exhaustive research projects with high time-consuming potential. Financial support would probably be required to conduct certain study problems and some data might prove impossible to obtain. Yet, if specific quantitative statements about freeway impact are contemplated it seems evident that the expanding of considerable effort must be anticipated.


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