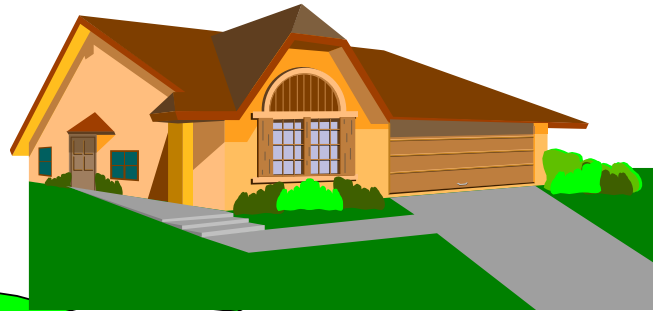


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**MONITORING AND MITIGATING
SOCIOECONOMIC IMPACTS OF
OFFSHORE RELATED OIL AND GAS DEVELOPMENT:**

1985-1995, A CASE STUDY



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EXECUTIVE SUMMARY

MONITORING AND MITIGATING THE SOCIOECONOMIC IMPACTS OF OFF-SHORE RELATED OIL AND GAS DEVELOPMENT; 1985 – 1995, A CASE STUDY

This report presents an analysis of an existing database documenting some of the local socioeconomic impacts of development due to off-shore related oil, gas, and pipeline projects in the Central Coast of California. The database was developed between 1985 and 1995 by the Tri-County Socioeconomic Monitoring and Mitigation Program (herein after abbreviated SEMP) on oil, gas, and pipeline projects. SEMP was initiated by the Santa Barbara County Board of Supervisors as a permit condition for the on-shore components of major off-shore oil, gas, and pipeline projects.

This report summarizes the existing SEMP database that describes the pertinent socioeconomic characteristics of workers involved in off-shore-related oil, gas, and pipeline projects based on a summary of data obtained from survey research. The report also describes the process developed in SEMP to monitor, assess, and, mitigate impacts on public facilities and services, schools and affordable housing.

Yearly impact monitoring reports, commencing in 1986, were prepared by the Santa Barbara County Association of Governments based on surveys of project-related employees of operating companies and contractors working on the Outer Continental Shelf related projects. The surveys were conducted at least twice a year from 1986 to 1994. The result is a database on pertinent socioeconomic characteristics of project-related workers such as household size, housing tenure, type and location, and workers per household that was derived from over 18,000 questionnaires received over the survey period.

The SEMP surveys also collected valuable data on the project-related expenditures of companies as inputs to the economic model used to estimate the population impacts of off-shore related oil and gas development. This process is articulated in the SEMP monitoring system user manual. The surveys developed a highly detailed database that enabled SEMP to transition from an expenditures-based population projection system to an employment-based system. This improved the accuracy and timeliness of population estimates and reduced survey costs.

In addition, the survey universe included the major and mid-sized contractors and subcontractors the operating companies used to construct the major off-shore projects and their on-shore supporting infrastructure. This allows an accurate representation of the type and size of the firms involved in project construction.

The SEMP program produced a series of impact monitoring reports for Santa Barbara and Ventura Counties, and impact data tables for San Luis Obispo County. The reports summarized the survey data and estimated in-migrant population impacts for each city and unincorporated community within the three counties. Impacts on specific services were also based on per capita service levels. The SEMP system provided local governments significant financial assistance and operating companies the analytical support necessary to justify budgetary allocations for impact mitigation.

The SEMP permit condition required monitored projects to maintain the survey effort, and mitigate impacts, from the commencement of construction through the first full year of project operations. This was considered to be the time required for local governments to gain control of potential project-related growth problems. Therefore, the preparation of SEMP impact monitoring reports continued until 1994, when the first year of operations at Exxon's Santa Ynez Unit project (the final project to include the SEMP condition) ended. Resolution of mitigation claims continued and, with final settlement of 1995 claims by 1997, the SEMP itself ceased operation.

In addition to the existence of the database on employment, there is an extensive history on mitigation of project-related impacts. During the implementation of the program, specific mitigation formulas were developed to address impacts on schools, campsites, public services, and affordable housing. A summary of payments inclusive of the period 1985 – 1995 indicate that the program provided \$10 million to the counties, cities, and school districts and special districts for impacts on affordable housing, schools, and public services.

The report concludes with a series of recommendations to address the socioeconomic impacts of large projects.

CHAPTER ONE

INTRODUCTION

1.1 PURPOSE OF REPORT

This report presents an analysis of an existing database documenting some of the local socioeconomic impacts of development due to off-shore related oil, gas, and pipeline projects in the Central Coast of California. Specifically, the socioeconomic characteristics of workers who constructed and operate selected Outer Continental Shelf (OCS) related oil, gas, and pipeline facilities are described based on a summary of data obtained from survey research. The database was developed over a ten-year period by the Tri-County Socioeconomic Monitoring and Mitigation Program (herein after abbreviated SEMP) on Oil, Gas, and Pipeline projects. SEMP was initiated by the Santa Barbara County Board of Supervisors as a permit condition for the on-shore components of major oil, gas, and pipeline projects. The permit condition required each operating company to participate in a Tri-county (Santa Barbara, Ventura, San Luis Obispo) monitoring and mitigation program to identify and address significant on-shore socioeconomic impacts due to off-shore projects. This permit condition was applied, between 1985 and 1988, to the following projects: Chevron/Texaco Pt. Arguello, Unocal Pt. Pedernales (now owned by Torch), All American Pipeline, Texaco's Gaviota Interim Marine Terminal, and Exxon Santa Ynez Unit¹.

Yearly impact monitoring reports, commencing in 1986, were prepared by the Santa Barbara County Association of Governments based on surveys of project-related employees of operating companies and contractors working on the OCS-related projects. The surveys were conducted at least twice a year from 1986 to 1994. The result is a database on pertinent socioeconomic characteristics of project-related workers such as household size, housing tenure, type and location, and workers per household that was derived from over 18,000 questionnaires received over the survey period.

The SEMP surveys also collected valuable data on the project-related expenditures of companies as inputs to the economic model used to estimate the population impacts of off-shore related oil and gas development. This process is articulated in the SEMP monitoring system user manual. The surveys developed a highly detailed database that enabled SEMP to transition from an expenditures-based population projection system to an employment-based system. This improved the accuracy and timeliness of population estimates and reduced survey costs.

In addition, the survey universe included the major and mid-sized contractors and subcontractors the operating companies used to construct the major off-shore projects and their on-shore supporting infrastructure. This allows an accurate representation of the type and size of the firms involved in project construction.

The SEMP program produced a series of impact monitoring reports for Santa Barbara and Ventura Counties, and impact data tables for San Luis Obispo County. The reports summarized the survey data and estimated in-migrant population impacts for each city and unincorporated community within the three counties. Impacts on specific services were also estimated and presented using per

¹ Project names and operating companies have changed over the SEMP survey periods. The names and operating companies used in the report are those in use at the time the permit condition applied to the project. Appendix VIII includes a cross reference between any project names and operating companies that have changed over time.

capita service levels. The SEMP system provided local governments significant financial assistance and operating companies the analytical support necessary to justify budgetary allocations for impact mitigation.

The SEMP permit condition required monitored projects to maintain the survey effort, and mitigate impacts, from the commencement of construction through the first full year of project operations (in Ventura County, this was extended to two years). This was considered to be the time required for local governments to gain control of potential project-related growth problems. Therefore, the preparation of SEMP impact monitoring reports continued until 1994, when the first year of operations at Exxon's Santa Ynez Unit project (the final project to include the SEMP condition) ended. Resolution of mitigation claims continued and, with final settlement of 1994 claims (1995 for Ventura County based on their mitigation program), the SEMP itself ceased operation

In addition to the existence of the database on employment, there is an extensive history on mitigation of project-related impacts. In May, 1988, the Santa Barbara County Board of Supervisors approved a set of mitigation principles which provided ground rules for subsequent negotiations between the service providers and affected oil, gas, and pipeline project representatives. The Ventura County Board of Supervisors adopted a separate mitigation program in May, 1989. Ventura County's mitigation program is similar in concept to the guidelines adopted by the Santa Barbara County Board of Supervisors. During the implementation of the program, specific mitigation formulas were developed to address impacts on schools, campsites, public services, and affordable housing. The origin and application of these formulae represent a unique consensus on impact mitigation achieved between local government representatives and representatives of the oil, gas, and pipeline industry that had not existed before. This consensus addressed both the County's concern for protecting its local infrastructure and the oil developers' concern for efficiency in addressing socioeconomic impacts.

There has been complete closure on all mitigation claims for all jurisdictions in Santa Barbara and Ventura Counties for the period 1985-1995. A summary of payments inclusive of this period indicate that the program has resulted in \$10 million in payments to the counties, cities, and school districts and special districts for impacts on affordable housing, schools, and public services.

The objectives of this report are twofold:

- 1) Summarize and analyze the existing SEMP database to describe the pertinent socioeconomic characteristics of workers involved in off-shore-related oil, gas, and pipeline development.
- 2) Summarize and analyze the process developed in SEMP to identify and mitigate impacts on public facilities and services, schools and affordable housing.

1.2 STRUCTURE OF REPORT

This report is organized into two parts. Part One, consisting of Chapters One through Four, provides an overview of the origin and structure of SEMP. Part Two consisting of Chapters Five through Eleven summarizes the survey data and mitigation of project impacts.

Part One: Origin and Structure of SEMP

Chapter One provides an overview of SEMP.

Chapter Two describes the origin of SEMP outlining the nature of oil and gas development in the Central Coast of California and the socioeconomic context in which the development took place. Particular attention is placed on the coincidence of development pressures and resource constraints that impacted the type and distribution of population growth. Chapter Two also describes the development of permit conditions on on-shore facilities related to off-shore projects and describes the initial development of the SEMP.

Chapter Three presents an overview of the monitoring phase of SEMP describing the origin and type of survey instruments, how surveys were processed, and how survey compliance was assessed.

Chapter Four presents an overview of the impact assessment phase, which used survey data as a basis to assess project-related population impacts in the Tri-county region. Initial environmental impact assessment factors are specified and the assessment system is described.

Part Two presents survey results and describes the mitigation of socioeconomic impacts.

Chapter Five summarizes the characteristics of the oil, gas, and pipeline projects subject to the SEMP permit condition by identifying their size, location and development schedule of each project. Operating company expenditures are summarized and the use of contractors and subcontractors for the individual projects is also described. The origin and distribution of the project workforce is summarized, derived from a database of over 18,000 questionnaire responses, and annual population impacts of the projects are identified.

Chapter Six describes the overall housing demand and distribution of the project-related in-migrant workforce households in particular and overall project related housing demand in general.

Chapter Seven describes overall housing characteristics of the project in-migrant workforce focusing on housing type, housing value and household characteristics including household size, and workers per household. To the extent possible, the variation in demographic characteristics by project phase and size of project is also examined. Survey results are also compared to U.S. Census and other data to allow an analysis of how the demographic characteristics of project-related workers differ from the resident population.

Chapter Eight describes school enrollment characteristics of project related households by county, project and phase.

Chapter Nine describes characteristics of the All American Pipeline project workers for which a special survey was conducted to capture a large pipeline construction project at its peak period

Chapter Ten summarizes the process of mitigating the socioeconomic impacts of development. Development of mitigation formulas are described and a summary of mitigation payments by service, by company, by year, by jurisdiction or service provider is presented.

Chapter Eleven concludes with recommendations and lessons learned from the program.

CHAPTER TWO

ORIGIN OF THE SOCIOECONOMIC MONITORING AND MITIGATION PROGRAM (SEMP)

2.1 INTRODUCTION

This chapter describes the origin of SEMP outlining the nature of oil and gas development in the Central Coast of California and the socioeconomic context in which the development took place. Particular attention is placed on the coincidence of development pressures and resource constraints that impacted the type and distribution of population growth. Chapter two also describes the development of specific permit conditions on on-shore facilities of off-shore related projects and describes the initial development of the SEMP.

Yet, before providing the specific Tri-Counties context in which this development occurred, it is important to note the regional context, which so heavily influenced the local reaction and the industry response.

The late 1970's and early 1980's saw unprecedented development of the American West's natural resources. The development was the confluence of several trends such as increasing commodity prices (oil, natural gas and minerals), a shifting of national migration patterns toward the West, the strategic decision of energy and mineral companies to develop domestic supplies (partially in response to Federal incentives), and the desire of power company officials to build mega-generating stations to meet a perception that Western electrical demands could only continue increasing. These trends, combined with the lack of knowledge about or experience in managing boom-type growth on the part of Western states, led to numerous problems.

Most illustrious were the experiences of power companies involved in oil, gas, and oil shale development, particularly with projects in Utah, Southern Wyoming and the northwest in the mid-70's. In these cases, small towns were turned literally overnight into boomtowns. Housing became scarce and community infrastructure was strained to the breaking point. All these problems overwhelmed the financial and technical capabilities of local governments.² While the Central Coast communities were quite different than the small rural towns of the Rocky Mountain states that were impacted by oil and gas development, significant impacts were anticipated by local agency representatives based on environmental assessments of the various projects.

These regional socioeconomic problems associated with resource development was recalled by some staff of local and regional agencies in the Tri-Counties as they looked toward managing the growth expected with what was anticipated to be significant off-shore oil and gas development. Consequently, the staff of the regulatory agencies in the Tri-Counties examined various growth management methods in proposing future policies, including those that predicted growth and assessed energy companies the costs associated with growth impacts in advance of the development.

² For more information see reports prepared between 1982 and 1985 by the Wyoming Industrial Siting Association and Colorado Cumulative Impacts Task Force. Some of these problems also existed with the development of the Diablo Nuclear Power Plant construction just north of Morro Bay in San Luis Obispo County.

At the same time, the companies developing off-shore oil resources were concerned, as they had been in other situations, with predictive models. During their discussions with public sector staff and at Planning Commission and Board hearings on the projects energy company representatives argued that such models seldom proved accurate, due to overestimating or underestimating impacts based on the most recent experience with natural resource development. The companies were concerned specifically with very high population growth estimates predicted by the early off-shore environmental impact documents. For example, the Exxon Santa Ynez Unit/Las Flores Canyon, Arco Coal Oil Point, and Chevron Pt. Arguello Environmental Impact Reports (EIR's) all used input-output models for calculating regional economic impacts. Because the models assume a large number of indirect employees they may have a tendency to overestimate population impacts.³ Indeed, in retrospect, the actual population growth was lower than anticipated by early models, primarily due to the fact that Santa Barbara Channel oil reserves proved a significant disappointment, oil prices plummeted, and, the expected sequencing of project development was more extended and less intense than predicted.

2.2 OCS OIL, GAS, AND PIPELINE DEVELOPMENT IN THE CENTRAL COAST OF CALIFORNIA

Oil and gas development has occurred in the Tri-Counties region for over one hundred years.⁴ The earliest off-shore oil and gas development in the world occurred in the inter-tidal area near Santa Barbara County's Summerland community and in the City of Santa Paula in Ventura County prior to and at the turn of the century. Later on other Tri-Counties' oil and gas fields in Goleta, La Conchita in Ventura County, and the Nipomo Mesa in San Luis Obispo County, produced large volumes of oil and gas prior to and during World War II. As technology developed oil and gas development evolved further off-shore in search of undersea reservoirs of crude.

By the late 60's, platforms existed in state waters along Santa Barbara County's south coast and Ventura County's north coast. Additional platforms were constructed in the Outer Continental Shelf and continuing development pressures were significant. However, in January of 1969, installation of an inadequate section of well casing led to the infamous "blowout" and oil spill at Union's Platform A near the City of Santa Barbara. The result led to increased regulation, heightened environmental awareness, and a nationally recognized concern about future development of off-shore oil and gas resources.

After a brief hiatus in the development of these resources, the late 1970's brought rising oil prices, continued improvements in technology, and a national political and economic environment that led to widespread leasing and numerous off-shore oil and gas development proposals.

Off-shore oil and gas projects are typically large and complex, consisting of several major on-shore support components designed to process, store, and transport off-shore production. The number and type of on-shore support facilities generally relate to the level of off-shore activity. Since it was the on-shore socioeconomic impacts of these various facilities that initiated the development of the SEMP a general description of their component parts is in order.

³ From a "Socioeconomic Impacts of Tri-County Oil and Gas Developments-A Comparison of Nine Environmental Impact Reports", County of Santa Barbara Department of Regional Programs [SBCAG], Kim Fulton Bennett, July 1986

⁴ A detailed historical analysis of the petroleum industries evolution in Santa Barbara as well as Ventura and San Luis Obispo Counties is contained in MMS report numbers 98-0047, No. 48 and 49 "Exploration and Production in Ventura, Santa Barbara and San Luis Obispo Counties An Industrial History" by the Ocean and Coastal Policy Center, Marine Science Institute, University of California Santa Barbara, December 1998.

On-shore oil and gas support facilities can include the following for oil and gas development can include the following⁵:

- An oil processing facility to remove water, residual gas condensate, and sediment from the raw oil stream resulting in a sales-quality crude oil ready for shipment to an oil refinery or upgrade facility;
- A gas processing facility designed to remove impurities, sulfur, and useful gas liquids, such as propane, butane, and gasoline from raw gas;
- Storage tanks for storing processed and unprocessed crude oil;
- A system of collection and transmission lines designed to carry the raw oil and gas streams, waste produce water, and electrical connections from the off-shore platform to the processing facility and, in the case of processed gas and oil, pipelines from the processing facility to marketing or refining centers;
- Significant additional pipeline capacity and/or a marine terminal to allow ship transport of crude oil to refineries;
- A coastal supply base for temporary storage of equipment and materials and a loading dock for moving supplies, equipment, and personnel to off-shore platforms.

By 1984, Santa Barbara County had received applications for four major oil and gas processing facilities, two major supply bases, three major marine terminals, and two crude oil pipelines to other areas within and outside of the state. Santa Barbara County, in cooperation with Ventura County began to perform environmental review and land use policy analysis in response to the permit requests for several of these major off-shore oil and gas projects. It was apparent that hundreds of complex permit conditions would be required to protect a spectrum of health, safety, and environmental resources at risk. Not surprisingly, local jurisdictions that were impacted by these proposed facilities, either directly or indirectly were demanding a more significant role in planning for and mitigating the on-shore socioeconomic impacts of off-shore development.

2.3 REGIONAL SOCIOECONOMIC CONTEXT

Proposed new oil and gas projects occurred within a socioeconomic context of the Tri-county region of the south central coast of California. Located north of the Los Angeles Metropolitan area is the South Central Coast Region (Ventura, Santa Barbara, and San Luis Obispo Counties [the Tri-Counties]--**Figure 2-1**). Each county has urbanizing central cities, smaller urban communities, along with large areas of productive agriculture lands that benefit from a Mediterranean type climate. **Table 2-1** portrays population data comparing the three counties. While the focus of off-shore development took place adjacent to Santa Barbara County, Ventura County served as the regional headquarters for two of the major oil companies and includes the Port of Hueneme. The Port functions as a long-standing supply base which serves the needs of the oil and gas platforms in the Santa Barbara Channel. While the concentration of existing oil and gas development was in the eastern portion of the Santa Barbara Channel, new platforms and pipelines were proposed for the western portion of the Channel and in the Santa Maria Basin which adjoins northern Santa Barbara County and southern San Luis Obispo County. Furthermore, the Santa Maria Refinery, located in San Luis Obispo County would be used to upgrade heavy crude oil from some of the new off-shore platforms.

⁵ From Anthony, Douglas K., William J. Douros, and John Zorovich, "Land Use Issues Raised by Offshore Oil and Gas Development". Coastal Zone '91 Coastal and Ocean Management Proceedings, Long Beach,

Figure 2-1
TRI-COUNTY REGION AND ITS COMMUNITIES

Table 2-1
COMPARING POPULATION DATA AMONG
SANTA BARBARA, VENTURA, AND SAN LUIS OBISPO COUNTIES

	Ventura	Santa Barbara	San Luis Obispo
1980 Population	532,000	298,700	156,900
1990 Population	650,000	366,400	213,700
1980-1990 Population	118,000	67,700	56,800
Percent Change	22%	23%	36%
1990 Urbanized Area Population	480,482	327,743	50,305
1990 Incorporated Cities	10	6	7
Cities over 50,000 population	5	2	1

Source: 1980, 1990 U.S. Census

2.4 COINCIDENCE OF DEVELOPMENT PRESSURES AND CONSTRAINTS

While the development of off-shore resources accelerated, some local jurisdictions were hard pressed to accommodate the impacts of new growth due to limited water resources, constraints on public financing of new infrastructure, and housing availability and affordability. These were the same jurisdictions that were forecast to be the most significantly affected by on-shore socioeconomic impacts of new off-shore related oil and gas development. In addition, northern Santa Barbara County was also being impacted by the construction of the launch facilities for the Space Shuttle at Vandenberg Air Force Base. The Vandenberg project was valued close to \$1 billion and was an additional economic stimulus preceding the peak of oil and gas project development proposals.

Lack of available water to support new development, concerns about the impacts of growth and overcrowded schools led some jurisdictions in the south coast of Santa Barbara County and most jurisdictions within Ventura County, to enact growth controls on new residential development, or, in the case of the Goleta Water District, a moratorium was enacted on new water hookups. These constraints, combined with existing population growth pressures which sustained demand for housing in a region that was already quite desirable due to its coastal scenery and Mediterranean climate. These factors resulted in higher than average housing prices and a scarcity of affordable housing. Mitigation of the demand for housing and measures to address impacts on temporary housing, e.g., campgrounds, were two of the issues associated with the impacts of new development that had to be examined.

Moreover, new tax spending, and revenue constraints limited the ability of local government, special districts, and school districts to raise revenues and respond to significant growth pressures. Proposition 13, enacted in 1978, imposed a one percent maximum property tax rate and limited increases in assessed value to two percent per year or upon change of ownership. Proposition 13 also imposed voter approval requirements for special taxes and allowed the state Legislature to allocate property taxes. In addition Proposition 4, enacted in 1979, imposed spending limits on local government. This latter constraint particularly impacted the County of Santa Barbara as it was unable to realize the full property tax benefits of the new oil and gas facilities since it was unable to significantly increase spending due to the Prop. 4 constraint. Finally, beyond the constraints California tax structure did not allow flexible allocations used in other Western states to deal with growth impacts. These fiscal and monetary constraints provided the impetus for local governments to use impact fees to mitigate the on-shore impacts of new off-shore development.⁶

2.5 DEVELOPMENT OF PERMIT CONDITIONS ON ON-SHORE FACILITIES OF OFF-SHORE RELATED PROJECTS

Environmental Impact Reports/Statements were prepared for the initial oil, gas, and pipeline projects in the early 1980's in response to federal and state environmental laws and in an effort to provide full disclosure of potential environmental impacts. The reports projected that under the cumulative project scenario, tens of thousands of people would temporarily move into the Tri-county region because thousands of new short-term jobs would be created by the economic stimulus of off-shore oil and gas developments. Other environmental impact reports using different economic models projected lower level of impact. Table 2-2 compares the estimates of future new platforms with the

⁶ For more information on the impacts of Proposition 13 see Michael A. Shires, "Patterns in California Government Revenues Since Proposition 13," March, 1999, Public Policy Institute of California, San Francisco, CA.

actual number constructed. The EIR estimates were significantly higher than what were actually developed because of several reasons. These reasons included low oil prices and technological advances in directional drilling that reduced the need for additional platforms to fully tap an oil and gas reserve. For example, directional drilling from Platforms Irene (Unocal) and Heritage (Chevron) eliminated the need for proposed platforms Shamrock and Heather. However, at the time all studies agreed that some residual but significant socioeconomic impacts would likely occur due to limited affordable housing, and capacity limits on public services, schools, sewer and water resources. Population growth associated with oil, gas, and pipeline development would create problems for many service providers. A series of workshops and special studies were undertaken to assess the nature of the impact and to identify options to address the potential problem. The discussions solidified an emerging interest in a long term monitoring and mitigation program that would avoid the need for industry to pay large, up-front mitigation payments and yet would provide local government with a long term insurance policy to mitigate actual impacts⁷.

**Table 2-2
COMPARISON OF ENVIRONMENTAL IMPACT REPORT ESTIMATES
OF PROPOSED AND ACTUAL (CUMULATIVE) NEW PLATFORMS**

Source	1986	1987	1988	1989	1990
Union EIR	4	9	13	16	20
Chevron EIR	2	7	11	13	15
Exxon Sup. EIR	3	7	14	16	16
Actual Cumulative	2	4	4	4	6

In late 1983, Santa Barbara County, in consultation with Ventura and San Luis Obispo Counties, entered into negotiations with project representatives from Chevron, Texaco, Exxon, and, Unocal as developers of the largest off-shore projects, to explore options for managing projected growth. The negotiations were conducted through the California Coastal Operators Group (CCOG), an association of the off-shore oil and gas developers. The negotiations developed a number of compromises to address each party's concerns. Crafters of the Socioeconomic Monitoring and Mitigation Program (SEMP) determined that the program would:

- Deal with concerns about population projections by specifically monitoring employment and expenditures associated with off-shore development. In addition, short term projections would be made based upon the specific plans of oil and gas developers as reported through SEMP;
- Avoid the necessity of up front mitigation payments by assessing mitigation costs based upon the monitored growth that occurred as a result of oil and gas development;
- Identify service factors that could translate population growth into costs incurred by local government units; and,

⁷ The concept of monitoring the impacts of large projects is not new. See for example, Leistriz, F. Larry and Robert A. Chase, 1982, "Socioeconomic Impact Monitoring Systems: A Review and Evaluation," Journal of Environmental Management, Vol. 15, pp. 333-349. However, SEMP was in operation for ten years.

- Establish a mechanism, through a joint advisory committee of local government and company representatives for program development.

The structure of the SEMP addressed these objectives. The permit condition was proposed, debated and approved as a condition imposed on a series of oil, gas, and pipeline projects. The text of the condition remained virtually the same for all the projects and is provided in **Appendix I**.

2.6 DEVELOPMENT OF MONITORING, ASSESSMENT, AND MITIGATION PROGRAM

The permit condition required that each operating company as project applicant participate in a socioeconomic monitoring and mitigation program. The duration of the participation varied by project. In general, the applicant financed the staff and technical work to implement the program and participated in the monitoring phase while their project was under construction and into the first year of operation. The operating companies participated in the mitigation phase of the program extended until all of the mitigation claims were resolved. The only exception to the applicants participation in the monitoring process occurred with the All American Pipeline project. The permit condition on the pipeline project was modified to require the company to participate in the SEMP survey process only during the construction phase of the project and not the operations phase. The limited participation was based on negligible employment impacts associated with pipeline operations.

SEMP was designed to monitor, forecast, and mitigate the socioeconomic impacts of oil and gas development in the Tri-county region. The results of this monitoring program assisted local planners in monitoring project related population growth and developed ways to mitigate the effects of this growth on local housing, services and public finances

Expenses incurred from administration of the Socioeconomic Monitoring and Mitigation Program were paid through permit compliance fees. The Santa Barbara County Association of Governments (SBCAG), a countywide Metropolitan Planning Organization, operated the SEMP program under contract to the County of Santa Barbara. During the formation and operation of SEMP, SBCAG was assisted by a Technical Advisory Committee (TAC) composed of industry and government representatives (See **Appendix II** for a list of SEMP TAC membership).

2.7 OVERVIEW OF MONITORING AND ASSESSMENT PHASES

The specific objectives of the monitoring and assessment phase of SEMP were to:

- Provide estimates of current Tri-county employment and population impacts related to off-shore oil and gas development and associated on-shore facilities;
- Provide estimates of annual public facilities/services impacts related to off-shore development;
- Project future employment, population, and public facilities/services impacts over the next two to five years, to allow counties, cities, school districts and special districts to plan for these impacts, if necessary;
- Provide the socioeconomic data necessary for the planning and development of cost effective mitigation programs in each county; and

- Establish, document and test a method for impact assessment, which would improve the reliability and consistency of socioeconomic impact analyses in future Environmental Impact Reports and Statements.

SEMP had four basic components. The **first** component was a monitoring system which used input data from various sources and processed the raw data through a regional economic computer model to estimate the population impacts due to off-shore oil and gas development. Such population impacts are of primary concern to local governments, since significant population growth placed additional demands on the infrastructure of the Tri-county region. The structure of the monitoring component is described in more detail in Chapter Three.

The **second** component of the SEMP was a projection system designed to provide two types of information: a) Five-year projections of total annual population impacts; and b) Two-year projections (by quarter) of employment related to each project. The annual population projections could be used to develop long-term mitigation programs. The quarterly employment projections provided short term data necessary for local officials to understand the specific direct employment effects of the next quarter's or next year's off-shore related activity.

The **third** component of the SEMP system consisted of a computer model designed to estimate the impacts of the projected in-migrant population on public facilities and services, housing and public finance. The **fourth** component was a mitigation program based on data from the previous three components.

Figure 2-2 shows the interrelationship of the monitoring system components. The **input** data: consisting of employee demographic data, employment data, employment to population multipliers, and public service level data were used in the SEMP **internal files** to develop local population impacts. The population impacts are then evaluated in terms of service level impacts in the **monitoring system output**.

The mitigation program's second component (projection system) and third component (computer model) are described in more detail in Chapter Four and the mitigation program findings are described in Chapter Ten.

Figure 2-2
COMPONENTS OF THE MONITORING SYSTEM

CHAPTER THREE

MONITORING PROGRAM

3.1. INTRODUCTION

Chapter three presents an overview of the monitoring phase of SEMP describing the origin and type of survey instruments, how surveys were processed, and how survey compliance was assessed.

The Tri-county Socioeconomic Monitoring and Mitigation Program was designed as a flexible system that was able to accommodate additional companies and projects as they came on-line and was able to respond to changing socioeconomic baseline conditions in the local communities. The Tri-county region, and the communities for which impacts were estimated, is illustrated in **Figure 2-1**. Some of the areas are incorporated cities, while others are distinct, named unincorporated regions, which roughly correspond with public service districts.

The overall goal of the Tri-county Socioeconomic Monitoring and Mitigation Program (SEMP) was the mitigation of adverse effects of off-shore oil and gas related population growth on the public facilities, services, housing, and finances of local communities. The goal of the monitoring portion of SEMP was to provide the data upon which the mitigation programs were based.

The analyses and estimates developed by SEMP were driven by the following data sources:

3.2 INPUT DATA

Socioeconomic projections in previous EIS/EIR's have been based on national models which, though in some cases were regionalized, had not consistently reflected the characteristics of the Tri-counties region or the off-shore development that had been occurring here. Additionally, local governments and off-shore developers were concerned about the level of both employment and population growth predicted by environmental documents. Therefore, SEMP developed and used several data sources, combining the best from a time-tested regionalized computer model with specific local survey data. SEMP used these data sources not only to continually improve the accuracy of its system but also to monitor and check its estimates and forecasts to ensure they were consistent with reality.

The analyses and estimates developed by SEMP were driven by the following data sources:

Employment: Particularly in the later years, employment associated with Santa Barbara off-shore oil and gas development drove the SEMP analyses. The basic employment numbers, which were derived from the surveys, measured both direct⁸ and indirect⁹ employment. “Induced” employment¹⁰ was calculated.

⁹ “Direct” employees are those working for the oil company developing the resources (e.g., Exxon, Chevron). “Indirect” employees are those working for contractors to the specific oil projects (e.g., Halliburton).

¹⁰ “Induced” employees are those working for businesses, such as restaurants or gas stations, which benefit from the dollars spent in local communities by direct and indirect employees.

Employee surveys focused on “project-related” employees, which were those employees spending more than 50 percent of their time on a particular project, though all employees were surveyed. The reason for this focus was that the demographic characteristics of project-related employees were felt to be different than those of workers spending only a small amount of time on oil and gas projects. For example, a project-related employee working for a company constructing gas processing facilities who was working more than one-half time on the project was likely to have moved into the Tri-county region for the specific project. Conversely, an employee of a landscaping company working on one job among many, such as mowing the lawn in front of an oil company office that was occupied as a result of the project, was more likely to have lived in the Tri-county region previously and would display different housing and other demographic characteristics.

The employee surveys, which were conducted under the auspices of the California Coastal Operators Group (which is now part of the Western States Petroleum Association) began as quarterly events, but quickly moved to a semi-annual basis because of the complexity and cost of the survey effort. Special surveys were conducted if a particular project was likely to have its peak employment occur at a time different from the semi-annual surveys, e.g., pipeline construction. The employee surveys were administered by Pacific Research, Inc. (PRI).

Demographic Information: A key purpose of SEMP was to allow greater accuracy in population estimates and settlement patterns by using the specific demographic characteristics of the oil and gas workers involved in the Santa Barbara Channel projects to drive projections of in-migrant impacts by community. Therefore, the employee surveys were designed to help the public sector identify key demographic characteristics and patterns. For example, surveys asked respondents to list their community of residence, housing type, school districts and household size. All these factors were important in mitigating impacts on local communities.

Operating Company Expenditures: For the first several years of the program, the SEMP projections were driven by the expenditures of the companies developing the Santa Barbara Channel resources. For the purposes of the program, they were called the “Operating Companies.” Operating company expenditures included all expenditures made in the Tri-county region on the projects during the particular 6-month reporting period. Such expenditures included both general expenditures (e.g., capital, service) and Tri-county payroll. Companies were not asked for expenditures made outside the Tri-county region (e.g., the cost of pipe fabricated in Texas). The split of expenditures proved somewhat difficult, and time consuming, for the companies.

Since much of the expenditure data for each operating company was considered to be proprietary, SBCAG and other administrative staff had to sign confidentiality agreements to gain access to the data and that data cannot be easily accessed by others. However, the SEMP annual impact reports aggregated and reported upon the expenditure data.

Because the regional model used to develop the SEMP analysis program required expenditures data in categories¹¹, the SEMP survey was structured to request companies to provide Tri-county expenditures data in 14 “project phases”:

¹¹ The regional model ideally needed expenditures by SIC code. Asking the companies to provide this breakdown was not realistic given company accounting systems and general unfamiliarity with socioeconomic models. Therefore, the contractor developing the SEMP model, consolidated general information about the types of businesses used in various phases of oil and gas development to allow the model to allocate expenditures to the various SIC codes required to run the regional expenditures-based model.

- Platform Installation and Hookup
- Development Drilling
- Platform Construction
- Platform Operations
- Oil Plant Construction
- Oil Plant Operations
- Gas Plant Construction
- Gas Plant Operations
- Off-shore Pipeline Construction
- Off-shore Pipeline Operations
- On-shore Pipeline Construction
- On-shore Pipeline Operations
- Marine Terminal Construction
- Marine Terminal Operations

The model then automatically allocated these expenditures to the various economic modeling categories to allow proper projections within the SEMP analysis program.

A number of issues arose related to the expenditures numbers. Major companies (e.g., the operating companies such as Exxon and Chevron) were able to categorize their expenditures fairly well by category since they were involved in developing the categories. However, contractors and subcontractors, particularly smaller companies, had a difficult time assigning expenditures to the proper phases. With the help of the survey contractor, the effects of these problems on survey accuracy were likely minimized. More importantly smaller companies had difficulty separating Tri-county expenditures from overall expenditures. This may have resulted in minor overstatements of population, though the level of out-of-region expenditures by contractors and subcontractors probably was not significant.

Second, accrued rather than cash expenditures were required, which proved difficult for many companies, particularly contractors and subcontractors, given the range of contract payment formats¹² that characterized the off-shore oil and gas industry. A great deal of survey contractor time was spent attempting to reconcile these inconsistencies, and the survey contractor, PRI, suggested that they were only partially successful addressing this issue. However, PRI believes generally that over time, the differences in accrued vs. cash expenditures probably did not have a significant impact on the ultimate population estimates.

Third, some contractors did not consider directly billed equipment expenses as reportable expenditures and, therefore, did not always report them.

With payroll figures, it was difficult to get contractors and subcontractors to separate out Tri-county payroll, which may have resulted in an overstatement of payroll expenditures, though this was probably not significant since the vast majority of payroll expenditures were associated with workers located at worksites within the Tri-county region.

¹² Some contracts paid on an accrued expense basis, while some paid only at the conclusion of a phase or project.

3.3 SURVEY APPROACH

To develop the data required to drive the SEMP models, surveys were conducted of oil development operating companies, service and supply companies, and their employees. Several survey models were considered as SEMP was developed:

- Entrance and/or exit surveys of all employees;
- Periodic on-site oral interviews; and,
- Periodic questionnaire surveys.

For cost efficiency, a written questionnaire administered as a contract requirement was the chosen option. Initially, the surveys were to be administered quarterly. However, after the first survey, all SEMP participants agreed that a semi-annual survey would be a more realistic and reasonable option.

PRI designed the survey forms, managed the survey process, trained survey takers and prepared survey data. The SEMP TAC reviewed the survey forms and process and the program administrator, staff at SBCAG, approved the final survey forms for distribution. SBCAG also reviewed and approved written survey procedures and addressed issues that came out of the day to day survey process. SBCAG also reviewed and approved a Coding Manual that guided the preparation of survey data.

Surveys were collected by CCOG for transmittal to PRI. Operating Company and Contractor/Subcontractor Expenditures and Employment surveys were provided to project managers or their designees for completion. Typically, several departments of each company were involved in the completion of these forms. Employee Questionnaires were administered on-site, typically by human resources personnel of the surveyed company. Each company administered the employee surveys on company time during work hours.

3.4 SURVEY QUESTIONNAIRES

Several survey forms were used in the semi-annual surveys (samples are provided in **Appendix III**):

Contractor/Subcontractor Identification Forms: These forms, administered to the Operating Companies and project contractors roughly 6 weeks in advance of each general survey allowed the survey consultant, PRI, to identify all contractors and subcontractors for each oil and gas project. These forms provided contact information for all contractors/subcontractors (by phase), and also provided information regarding the service/supply provided, the phase upon which the contractor/subcontractor worked and the industrial classification of the services provided. This allowed PRI to structure contacts properly and provided information that allowed a reality check on key data provided eventually by the survey.

Expenditures and Employment Forms (Operating Companies): The Operating Company Expenditures and Employment forms collected overall operating expenditures and direct Operating Company employment information for off-shore projects. Expenditures were reported by project phase, while employment was reported by phase by worksite. Only those employees working directly for the Operating Companies (e.g., Exxon, Chevron) were reported on these forms. The

Operating Companies also provided estimates of future project-related employment at each worksite. Estimates for 8 successive Quarters were provided on a rolling basis each survey period.

Total project related employment (all projects, all employees whether direct or indirect) was also reported in aggregate for the first, last and peak payroll periods of the survey period. The month of peak employment was also identified. Companies were asked to identify average percentages of all their employment devoted to on-shore and off-shore development.

Payroll estimates were provided by worksite by county (place of residence) for each phase for the survey period.

These forms also provided property tax estimates. However, because of inconsistencies in the way project work sites were reported, these data were not extensively used.

Expenditures and Employment Forms (Contractors/Subcontractors): The Contractor/Subcontractor version of the Employment and Expenditures form sought to obtain detailed data from the contractors and subcontractors for the Operating Companies on employment and on how these companies spent project dollars in the Tri-county region.

Through 1991, all service and supply contractors and subcontractors were surveyed. However, to simplify the survey process and reduce costs, beginning in 1991 supply companies were generally exempted unless the supply process required significant local employment for installation or similar processes¹³. During this time, the criteria for SEMP participation become:

- The contractor or subcontractor must have performed oil and gas or construction services;
- The contractor or subcontractor must have had project-related contracts worth more than \$25,000 in any calendar year. Participation would begin in the Quarter where the contractor/subcontractor reached that threshold;
- The contractor or subcontractor had to have had some permanent or temporary project-related employment impact in the Tri-counties; and/or,
- A contractor was required to participate if it had any subcontractor that met the above requirements.

The Contractor/Subcontractor Employment and Expenditures form consisted of two parts. The first sought basic information from each company including:

- Total company employment in the Tri-county region;
- Percentage of work and employment related to development of oil and gas resources;
- Property tax payments; and,

¹³ Beyond cost reduction, the data from supply companies were difficult to accurately analyze given the inability of many companies to separate out local products and manufacturers.

- General expenditures for goods and services in each county of the Tri-county region.

The second part of the form, which was most critical to the model, was an insert asking for key data about the specific off-shore projects to which the contractor/subcontractor was contracted. This insert requested information to determine:

- The phase of each project on which the contractor/subcontractor worked;
- The operator for which the contractor/subcontractor worked;
- Each worksite (and the associated employment) where the contractor/subcontractor worked;
- Payroll expenditures for each project on which the contractor/subcontractor worked; and,
- Total expenditures of the contractor/subcontractor related to the project, presented by county.

Early in the SEMP process, questionnaires attempted to determine the percent of dollars spent with local wholesalers for goods stocked or manufactured in one of the Tri-counties. However, these questions were later discarded because of difficulty by the contractors/subcontractors in providing this information with any accuracy.

Employee Questionnaire: The Employee Questionnaires were the basic information gathering device for collecting demographic data on the employees of Operating Companies and contractors/subcontractors. The Employee Questionnaires were distributed at the same time as expenditures and employment forms.

Employee Questionnaires were both anonymous and confidential.

Employee Questionnaires sought the following data:

- Employer name;
- Place of work (project and worksite);
- Percent of time spent on the relevant project(s);
- Duration of employment in the oil and gas industry;
- Duration¹⁴ of employment on the specific project and specific project phase;
- In-migrant status (e.g., whether the employee had moved into or among the Tri-counties in the past 6-12 months)¹⁵;

¹⁴ Employees were asked both the start of their work on the surveyed project and the real or expected duration.

- Housing type, ownership status and rent/value;
- Household size;
- Employment status (relative to the oil and gas industry) of other household members;
- Number, ages, grades and school of school age children in the household;
- Type of transportation taken by employee from their residence to the worksite; and,
- Workweek housing (if different from permanent residence).

Responses to the Employee Questionnaires were considered quite complete and accurate given the number and complexity of the questions.

3.5 SURVEY THRESHOLDS

It was also necessary, at the start of the program, to identify those employees required to complete a survey. As stated earlier it was not considered efficient to attempt to ensure that all part-time employees spending only a very small portion of their time on a project completed questionnaires. After much discussion it was agreed that any employee working more than 50% of their time on the project was “project-related” and therefore required to complete a survey.

One threshold that changed over time was related to those contractors and subcontractors required to complete a survey form. Initially they were surveyed if they met the following criteria:

- Had project-related contracts or provided to a project services/supplies with a value during the previous 12 months of more than \$25,000;
- Made some expenditure or received some payment related to the contract or service/supply during the survey period;
- Had some permanent or temporary employment impact or made expenditures in the tri-counties; or, had any subcontractors that fit the above criteria.

In 1997 significant complaints were raised by smaller, local contractors and subcontractors about the administrative burden of compliance. SBCAG staff as the program manager assessed the implications of raising the threshold to \$100,000. Staff determined that while the change substantially reduced the number of contractors and sub-contractors required to complete a survey, the total dollar value of “captured” expenditures that were lost was less than 10%. Since the concerns were significant enough to potentially impact the continuation of the program and the impact of the change did not significantly impact the coverage of the targeted population, the threshold was raised to \$100,000 in 1988.

¹⁵ For mitigation calculation purposes, all employees were considered in-migrants essentially for the life of the project. However, to calculate certain distribution patterns, employees moving into the Tri-county region in the previous 6-12 months were considered in-migrants for analysis purposes.

3.6 SURVEY COMPLIANCE

Because SEMP was driven entirely by survey data, compliance was essential to the accuracy of the program. With few exceptions, compliance during the nearly ten years of SEMP was excellent.

Overall “compliance” was composed of:

- Compliance with the Contractor Identification survey;
- Compliance with the Expenditures and Employment survey; and,
- Compliance with the Employee Questionnaire.

PRI required 100% compliance with the Contractor Identification survey because this questionnaire determined which companies would be provided the Employee and Employment and Expenditures questionnaires. Obtaining good compliance here was relatively less difficult because a limited number of companies (e.g., Operating Companies, key contractors) were provided the Contractor Identification Forms. PRI followed up by phone with each company to ensure these forms were returned and accurately completed. Additionally, Operating Company personnel were provided the results of the survey and queried to ensure that all key subcontractors of which they had knowledge were identified.

One hundred percent (100%) compliance with the Operating Company Expenditures and Employment Forms was also required, and achieved in every round.

Gaining good compliance on the Contractor/Subcontractor Expenditures and Employment forms was far more difficult. A key issue with Contractor/Subcontractor Expenditures and Employment forms was how to measure compliance for these forms. Early in the process, compliance was figured by the total of expenditures value measured against total expenditures reported by the Operating Companies. These numbers proved problematic, however, because of difficulties in comparing contractor/subcontractor contract expenditures vs. total billed contract amounts reported by Operating Companies. Problems occurred in the consistency of timing of expenditures/bills and in how the various companies accrued expenses. Therefore, compliance measurement was switched to a comparison of a contractor/subcontractor’s project-related employment with total reported employment on a project. This proved to be a more consistent and reasonably accurate guide.¹⁶

Overall compliance for these forms ranged from above 60% to 100%. The procedures for obtaining compliance were similar to those used for identifying subcontractor and for gaining compliance with the employee survey. Part of the compliance problem with this group was related to the six month duration between surveys, some contractors moved in or out of the project during the interval and there was no incentive to participate after completion of their contract. On an overall basis compliance was sufficient to base mitigation on the survey data. In the event compliance was low companies were penalized as the program assumed that those employees not completing surveys

¹⁶ “Total project-related employment” was a number calculated by PRI. In addition to employment figures reported by all Operating Companies and contractors/subcontractors, PRI added a number for non-complying firms to arrive at a total employment estimate. The non-complying company estimates were obtained primarily by phone discussions with both the Operating Companies and representatives of the non-complying companies. This system worked well unless a company was completely dismissed from a project before PRI had an opportunity to talk with them. This occurred in less than ten cases (all minor) over the life of SEMP.

were all in-migrants whose demographic characteristics were based on cumulative demographic data.

Achieving satisfactory compliance with the contractor/subcontractor and employee questionnaires was perhaps most difficult. Regarding compliance with the employee survey, while, at the low range some companies dipped to 44% compliance, most companies were successful in securing 70-100% compliance, **Appendix IV** shows the questionnaire compliance for all survey periods. The compliance rate was the result of several factors:

- Care was taken early in the process to review with all companies the universe of employees that needed to be surveyed.
- Survey administrators were trained and technical assistance was provided at all times. Training included sessions for individual companies and group training workshops.
- PRI staff followed Employee Questionnaire compliance throughout the survey effort each period. Numerous calls were made to all companies whose compliance was not adequate during the survey periods. These calls were made first by PRI and then by the Operating Company representatives.
- Following the first project and a report the companies had no leverage over their contractors, SBCAG staff encouraged operating companies to include contractor participation as a condition in their contracts with contractors and subcontractors. These contract conditions generally worked very well.
- Operating Companies allowed contractors to use time to complete the survey (which was a significant total amount) to be charged to the contract. In return, all employee surveys were conducted during normal working hours for all shifts.
- Monitoring by Operating Companies of survey compliance was generally good.¹⁷ The exception occurred when legal disputes between operating companies and contractors hindered compliance.
- The Santa Barbara County Association of Governments maintained close watch on compliance through PRI and did not hesitate to enforce their own project conditions requiring compliance, though only in a very few instances were calls by SBCAG necessary.
- The Santa Barbara County Association of Governments randomly selected questionnaires to review to assess quality control.

¹⁷ If PRI could not secure what it considered to be adequate compliance, after several phone calls to an inadequately complying contractor/subcontractor, the Operating Company SEMP manager was asked to contact the contractor/subcontractor. According to PRI contractors/subcontractors generally responded very well to enforcement of their contract conditions by the Operating Companies. Each Operating Company identified a specific representative to handle compliance and other matters related to the SEMP survey process.

3.7 SURVEY SCHEDULE

As indicated earlier, SEMP surveys were conducted twice annually. In early SEMP years, this occurred in roughly March and October. However, in 1990, during the peak construction years, the survey process was continual, with new contractors/subcontractors identified monthly. The general surveys were conducted according to the following schedule:

- December: Contractor Identification Forms mailed to Operating Companies and major contractors.
- January: Contractor Identification Forms due back to PRI. PRI checks with all companies to determine monthly employment for each month of the survey period to identify special peaks.
- February: Employment & Expenditures Forms and Employee Questionnaires mailed to Operating Companies and contractors and subcontractors.
- March: Surveys administered. Compliance tracking begins.
- April: Surveys for companies without special employment peaks due to PRI. Compliance enforcement continues.
- May: Compliance enforcement continues.
- June: Final survey deadline occurs.
- August: Survey data for survey period due to SBCAG.

The SEMP Impact Reports compiled and reported upon the survey data that is summarized later in the report. While all the paper copies of the actual questionnaires have been destroyed, microfilm copies of the completed questionnaires were made and could potentially be made available. SBCAG staff conducted quality controls on this process to insure the material was retained.

The next chapter describes how the survey data was used to assess the impacts of the monitored projects.

CHAPTER FOUR

IMPACT ASSESSMENT METHODOLOGY

4.1 INTRODUCTION

Chapter four presents an overview of the impact assessment phase which used survey data as a basis to assess project-related population impacts in the Tri-county region. Initially, the method used to convert project survey data to total population impact is described. Then, the method and database for estimating impacts on specific public services is presented. Finally, the methods for estimating short and long-term cumulative impacts are described.

4.2 ANALYTICAL METHODS AND POPULATION IMPACT ESTIMATES IN SEMP

Socioeconomic projections in previous EIS/EIR's had been based on national models. While in some cases the models were calibrated with local data in order to develop proper multipliers they did not consistently reflect the characteristics of the Tri-counties region or the recent history of off-shore development. Therefore, SEMP developed and used several data sources, combining the best from a time-tested locally calibrated computer model (the Regional Economic Modeling, Inc., or REMI model) with specific local survey data. SEMP used these data sources not only to continually improve the accuracy of its assessment system but also to monitor and check the estimates and forecasts.

Between the initial pilot report issued in the fourth quarter of 1985 and 1991, SEMP projections were based on the oil company's reported expenditures. Expenditures were initially used because they were required as the base data for the REMI model. Between 1991 and 1994, SEMP's estimates and projections were based on the mining and construction sector employment of each major oil and gas related project. The purpose of the change was to make the system less expensive to administer and more responsive to local governments. In addition, by using real employment data in the model rather than having the model calculate employment, it was thought accuracy would improve. The expenditure numbers obtained, especially those generated by subcontractors, may not have been consistent in the way they were developed. The employment-based survey also generated numbers that were not "one Quarter off" in timing from the demographic characteristics of the workforce as was the expenditure numbers. In other words, the population numbers generated by the expenditures-based system were based upon expenditures from the preceding 6 month period. For example, the survey administered from January through June would collect expenditures data from the July to December period of the preceding year. Yet, the demographic characteristics of the surveyed employees would be for employees at work during the January through June period. This was necessary because the companies could not provide expenditures data until at least 90 days past the end of the last Quarter to be measured, due to accounting procedures of all the major companies.

The employment-based survey was, instead, "real time" in that employment could be measured in the same period as the survey was taken. Consequently, the demographic characteristics surveyed were of the same employee base as the data to generate population estimates.

Table 4-1
Expenditures and Employment Survey, Administration Periods

Round	Survey Administration Period	Expenditures and Employment Quarters
One	Jan-Jun 1986	Fourth Quarter 1985
Two	July-Dec 1986	First and Second Quarters 1986
Three	Jan-Jun 1987	Third and Fourth Quarters 1986
Four	July-Dec 1987	First and second Quarters 1987
Five	Jan-Jun 1988	Third and Fourth Quarters 1987
Six	July-Dec 1988	First and Second Quarters 1988
Seven	Jan-Jun 1989	Third and Fourth Quarters 1988
Eight	July-Dec 1989	First and Second Quarters 1989
Nine	Jan-Jun 1990	Third and Fourth Quarters 1989
Ten	July – Dec 1990	First and Second Quarters 1990
Eleven	Jan – June 1991	Third and Fourth Quarters 1990
Twelve	Feb, 1991 -- October 1991	First and Second Quarters 1991
Thirteen	Aug 1991 – Mar 1992	Third and Fourth Quarters, 1991
Fourteen	Jan – July, 1992	First and Second Quarters, 1992
Fifteen	July – Dec, 1992	Third and Fourth Quarters, 1992
Sixteen	Jan – Dec, 1993	First and Second Quarters, 1993
Seventeen	July – Dec, 1993	Third and Fourth Quarters, 1993
Eighteen	Jan – Dec, 1994	First and Second Quarters, 1994

This did require that in 1991, two sets of surveys were conducted at the same time, in order to synchronize timing under the new employment-based system. **Table 4-1** shows the survey administration periods for both the expenditures and employment based-systems.

4.2.1 CALCULATION OF IMPACTS, 1985 TO 1990, BASED ON EXPENDITURES

As indicated, from 1985 through 1990, population impacts were based on expenditures of the companies developing off-shore resources. During each reporting period the operating companies reported service and supply expenditures in the Tri-counties region and payroll expenditures by county and by phase. These data were summarized in the annual monitoring reports by company and project phase. Population estimates for each county were calculated by first allocating the Tri-county expenditures to each county and then multiplying the county expenditures plus county payroll by an expenditure-to-population multiplier. The REMI model used to arrive at this multiplier is described in the SEMP Monitoring System User Manual.¹⁸

The county allocation of expenditures accounted for two items. First, the Tri-county expenditures were distributed to each county based on the portion of the expenditures which were estimated to be spent in each county. The expenditure allocations are developed using confidential industry data by project phase and expenditure category. The county allocations were developed by taking the ratio of county expenditures to Tri-county expenditures for each phase that information was available. Second, the SEMP system accounted in the allocations for how much of the expenditures remained in each county and how much leaked from the Tri-county region. For each project phase, the Tri-County totals do not sum to 100 percent. This is due to the leakage's out of the area associated with non-local manufacturing. For example, a company may purchase drill bits locally (and assign the total cost of the drill bits as a Tri-county expense) when in fact the drill bits are manufactured outside the Tri-counties.

A second factor associated with company expenditures is the expenditure to in-migrating population multiplier. These multipliers simply quantify the relationship between a dollar of Tri-county expenditures and payroll by the oil industry and the resulting change in the Tri-county population. For example, a multiplier of 22.3 (effective 1985) indicated that for each \$1 million in combined local payroll and purchases by an off-shore operator, the county population increases by an estimated 22.3 persons. This multiplier was derived by correlating expenditures with changes in local population predicted by REMI during the calibration phase of SEMP system development. Since this relationship was derived by measuring total predicted changes in population for various types and levels of expenditures, the multiplier implicitly took into consideration expenditures to employment factors(including direct to indirect and induced employment), employment to in-migrating population factors, household size factors, and a factor for employees per household. The system was designed to be adjusted in the future to reflect additional survey data. In fact, this is what happened. Data were collected over time and used to rerun the REMI model in 1990-91 to generate an employment to population multiplier.

It should be noted that both the expenditures to population and the employment to population numbers were greatly discussed and debated. However, the employment to population multipliers were more easily understood and more easily correlated to the real life experiences of SEMP participants.

¹⁸ Centaur Associates, Inc., October 1986, "Tri-County Socioeconomic Monitoring and Mitigation Program for Offshore Oil and Gas Development: A Monitoring System User Manual." Updated in May, 1981 by Michael L. Frankel.

4.2.2 CALCULATION OF IMPACTS, 1991 TO 1994, BASED ON EMPLOYMENT

From 1985 through 1994, each SEMP Annual Monitoring Report identified total annual population impacts for each county. Beginning in 1991 these impact estimates were calculated by multiplying the total project-related mining and construction employment for each county by the in-migrant population per employee multiplier. The change from an expenditure-based monitoring system to an employment-based system occurred because of problems with the data collection process. These problems included:

- Expenditures information was complex to prepare and difficult to present. As noted before contractors and subcontractors in particular had increasing objections to requests for this information.
- Collecting expenditures information caused significant delays in the SEMP program. Because expenditures information could not be prepared by most companies until at least three months after the close of a Quarter, the SEMP survey effort lagged at least six months behind. This in turn delayed the production of final reports for well over a year, and mitigation settlements for even longer periods.
- The demographics measured were slightly offset from the population calculated by the expenditures data.
- Because of the delays associated with the expenditures approach, securing good compliance was difficult. Frequently, by the time a company was surveyed, they may have left the employ of the operating company and, thus had little incentive to take the time to gather the data and complete the expenditures forms. The operating companies did not reimburse contractors and subcontractors for survey expenditures made after the date of contract expiration or severance.
- Using expenditures to drive a system which analyzed population in large construction projects tended to result in estimates which did not fully reflect the peaks and valleys which are characteristic of this type of development. The reason was that expenditures do not always reflect the timing of employment most accurately, particularly when companies have disparate capital equipment payment policies. Additionally, capital equipment expenditures, which significantly affect surveyed expenditures amounts, may not occur exactly when installation employment occurs.
- The expenditures based system did not always provide the most accurate population allocations among counties.
- Accounting systems for the various operating companies, contractors and subcontractors vary significantly. The analysis of these conflicting systems and the conversion of the information to a consistent format was extremely expensive and time consuming. Additionally, it simply was not possible or cost efficient to reconcile all the variations in the data.
- Because of varying accounting systems (both in type and quality) and the complexity of the information required, the operating companies, contractors and subcontractors have many subjective judgements in developing the survey information. While the variances may have balanced each other out over the long-term, the system did not provide the desired accuracy.

In switching to an employment based system, the intent was to:

- Produce more accurate and consistent population estimates;
- Produce estimates that more closely reflected the nature of the off-shore oil and gas industry;
- Reduce cost to the participants;
- Increase compliance by easing data collection requirements and complexity;
- More accurately reflect employment peaks and valleys;
- Ensure that the demographic characteristics were of the relevant population;
- Incorporate survey data into the development of the new multipliers;
- Simplify the estimation system and enhance understandability;
- Reduce the number of companies which must be surveyed; and,
- Improve the timeliness of the data collection effort, thereby improving the timeliness of SEMP reports and mitigation negotiations.

These objectives were realized in the first two rounds of employment based data collection because of the less complex data requirements necessary to drive the system. Additionally, because the new employment system was driven by employment in the mining and construction sectors, the numbers of contractors and subcontractors necessary to be surveyed were reduced.

While the new system was more cost effective, its ultimate success still depended on developing the best possible estimates of the basic employment that drove the system. As indicated, this was employment in the mining and construction sectors of the Standard Industrial Classification (SIC). Developing these accurate estimates necessitated changes in the California Coastal Operators Group (CCOG) survey effort.

The mining and construction employment to population regression equations used to calibrate the revised SEMP system, are shown in **Table 4-2**. They were used to approximate the annual population impacts that would be obtained if the total annual employment in the construction and mining sectors for all projects were input into the REMI economic model.

Table 4-2
SEMP EMPLOYMENT TO POPULATION REGRESSION EQUATIONS

$$\text{Population} = \text{Employment} \times \text{Multiplier}$$

Population	=	Total Primary and Induced Population Impacts
Employment	=	Total Project-related FTE Mining and Construction EMPLOYMENT
Multiplier	=	In-migrant population Per Employee
Santa Barbara County Multiplier	=	4.02
Ventura County Multiplier	=	4.24
San Luis Obispo County Multiplier	=	5.29

These employment to population formulas describe statistical relationships between each employee and a potential change in the county population. They were derived by correlating various levels of oil company employment with local population impacts predicted by the REMI. (A detailed description of the REMI model and the calculation of the employment to population multipliers is available in the Monitoring System User Manual). These multipliers represent the slope of the regression line that was obtained when comparing the population impacts yielded by the REMI model for various levels of oil and gas employment.

The employment to population formulas were based on ratios of employment to in-migrating population. They also involve implicit assumptions regarding average household sizes and the average number of employees per household.

The transition to a new system and the use of four years worth of survey data in updating the REMI model resulted in multipliers that generated relatively greater impacts of newer projects, e.g., Exxon, on annual population growth. While the newer projects probably saved money in monitoring costs they may have paid more in mitigation costs. The reverse was probably true of the earlier projects, e.g., Chevron-Texaco Pt. Arguello, which had a relatively higher share of costs due to project start up and monitoring and a lower relative cost burden associated with mitigation payments.

4.3 ANNUALIZATION, FULL TIME EQUIVALENT, COMPLIANCE ADJUSTMENT

The multipliers developed by the REMI model are based on "annualized/full time equivalent" employment. Therefore, to be consistent in producing annual population estimates, the employment generated by the SEMP survey system were converted to full time equivalents (e.g., two employees working halftime were converted to a single full time employee. And, they were also annualized. The objective was to identify how long an employee worked for a specific project and how long the employee was likely to work on the project. It should be noted that since two surveys were

conducted each year (in addition to special surveys to capture the peak construction work forces of short term projects) the SEMP monitoring system determined whether the employee had worked the full six months for the project, or a portion of the six month survey interval. (see Appendix III Employee Survey Question number 4). In addition to semi-annual surveys, peak period surveys were conducted whenever substantial employment peaks on existing or special construction projects occurred at times outside the normal survey periods. This required special factors for calculating annualization of these employees.

For employees working the full six months of both rounds, they were considered as one full annualized mining and construction employee. Those working just six months, were considered half an annualized employee. Those working 4 months, were considered one third of an annualized employee and so on.

Pacific Research Inc. (PRI) developed an estimate of the full time equivalent (FTE) employment by analyzing the time spent by an employee on a project by phase. For example, employees spending 50 percent of their time on a project were considered half an FTE employee. Two 50% employees, therefore, equal one FTE employee. FTE positions are equivalent to a 40 hour a week employee. Employees were also asked to identify the number of hours they worked each week. PRI then leveled the workweeks. Consequently, an employee working a 60 hour week was considered 1.5 FTE's.

Similarly the number of 40 hour workweek months an employee worked were summed and divided by 12 to provide the number of annualized FTE employees. The number of annualized FTE employees for each company also was multiplied by a "compliance factor" which adjusted the total for estimated survey compliance for that company to 100 percent (e.g., if a company's compliance was only 90%, the number of calculated annualized FTEs was divided by 90%). This total was the FTE annualized employment against which the multipliers are applied to determine the SEMP impact population.

Tables in the annual monitoring reports presented the public service impacts based on the total in-migrant population from all projects surveyed during each calendar year. All employees resulting from oil and gas projects were considered "in-migrants" for purposes of calculating impacts. While the employee surveys allowed the calculation of yearly in-migrants to the Tri-county region, all calculated employment impacts were considered in-migrant each year for impact purposes even though some employees may have lived in the Tri-counties in previous years. Because of the way the SEMP model calculated population impacts, these "impacts" were considered as "one-time" impacts. They were not additive from one year to the next. Thus a hypothetical demand for 100 permanent housing units one year could increase to 150 units or decrease to 75 units the next year and emphasized the dynamic nature of the impact. The 100, 150 (or 75) units would not be added to one another to determine the overall impact for the following year but instead represented a housing impact of 100 for the 1st year, 150 for the 2nd year, etc. However, the impacts of ongoing public services (such as police protection) for each year continued in direct proportion to the total annual population impacts for that year. This same principle applies to the cumulative service impacts discussed below.

The SEMP models only provided net population impacts for each year. They did not indicate how many people had moved into or out of each county nor did they indicate how long individuals or their families stayed in the area. This kind of information could only be collected with surveys at the end of each employees job, or follow up surveys, but these were not incorporated into the survey system. Because it was considered to expensive and time consuming to conduct employee entry and

exit surveys it was assumed that all in-migrant employees represented net impacts on the local economy and public services for the duration of the projects participation in SEMP.

4.4 SELECTION OF SOCIOECONOMIC ASSESSMENT FACTORS

For each county and its communities, the Monitoring System contained baseline data on population and existing service levels for police protection, fire protection, school enrollment, urban water use, sewage treatment, solid waste disposal, government revenues, government expenditures, number and occupancy of dwelling units, and number and occupancy of temporary dwelling units. The facilities, services, housing, and public finance data were developed with the assistance of local community and service district contacts and were checked and adjusted based upon periodic surveys of local communities and preparation of region wide environmental assessments of new off-shore oil and gas projects.

The public services listed above were selected for inclusion in the Monitoring System based on impacts identified in the EIR/EIS's prepared for the various oil and gas development and transportation projects. Although other socioeconomic impacts might have occurred (e.g., criminal justice system), they were not specifically identified in the environmental documents as potentially significant impacts and therefore were not subject to formal monitoring. However, that did not mean these "other" socioeconomic impacts were ineligible for mitigation. It did mean that the burden was on the service provider to produce data to substantiate the mitigation claims.

4.5 ESTIMATE OF BASELINE PUBLIC SERVICE LEVELS

The annual monitoring reports contained summaries of the various public service levels for each community in each of the three counties during the baseline year. Originally, the baseline data were based upon the 1985 year. During 1987, the information was updated using data from a DEIR for a proposed, but subsequently withdrawn, oil and gas project (Shell-Hercules). The 1987 baseline year was updated independently for Santa Barbara County in 1990. Baseline data for the other counties remained at the 1987 levels. Public service levels such as fire protection, housing, solid waste, sewage treatment, revenues and expenditures, groundwater etc., for Santa Barbara County were updated through telephone surveys and review of relevant literature.

The following data were presented for each community:

- Local population;
- Police protection capacity (measured as the number of sworn officers);
- Fire protection services (measured as the number of paid and volunteer fire fighters);
- Water use in acre feet per year (A-F per yr.);
- Wastewater treatment in millions of gallons per day (MGD);
- Solid waste disposal in tons per year;
- Public schools enrollment (number of students);

- Public revenues (for incorporated areas and the County);
- Public expenditures (for incorporated areas and the County); and
- Housing stock (measured as the number of permanent dwelling units, occupied dwelling units, hotel/motel units, and campsite units, along with the overall vacancy rate and the peak hotel/motel occupancy rate).

Where more than one public service district served a community, or where more than one community was served by a single public service district, the baseline data were apportioned between the districts or communities. **Table 4-3** provides a sample of this baseline data.

4.6 SELECTION OF PUBLIC SERVICE MULTIPLIERS

By dividing the public service levels by the population of each community, a set of public service multipliers were derived. These multipliers were in turn multiplied during each monitoring period by the population impacts on each community to predict the local impacts on community services, housing and public finance. All community service levels were derived in terms of the "per capita" factors shown below.

- Sworn police officers per 1,000 residents;
- Fire fighters per 1,000 residents;
- Acre-feet of annual urban water demand per resident;
- Gallons of daily sewage treatment per resident;
- Annual tons of solid waste disposal per resident;
- School enrollment per 1,000 residents;
- Total government revenues per resident;
- Permanent dwelling units per 1,000 residents;
- Occupied dwelling units per 1,000 residents;
- Hotel/motel units per 1,000 residents;
- Peak hotel/motel occupancy rate; and
- Campsite units per 1,000 residents.

Because the community service multipliers were regarded as baseline information, mitigation claims could not be used to enhance service levels above the baseline year unless required by federal or state law.

**Table 4-3
SANTA BARBARA COUNTY SOCIOECONOMIC BASELINE PUBLIC SERVICE
LEVELS**

COMMUNITY	POP	POLICE OFFICERS	FIRE FIGHTERS	SCHOOL ENROLL	URBAN WATER A-F/ YR.	SEWAGE TREAT MGD	WASTE DISPOSAL TON/YR.
-----	-----	-----	-----	-----	-----	-----	-----
CARPINTERIA	13,747	27	24	2,502	4,537	1.17	17,871
SANTA MARIA	61,284	79	36	12,196	11,644	5.76	134,825
SOLVANG	4,741	16	6	484	1,802	0.52	6,637
BUELLTON	3,506	3	4	663	1,052	0.36	4,908
LOMPOC	37,649	42	43	6,814	4,894	1.81	64,003
GOLETA WEST	60,141	56	74	5,894	12,028	2.53	78,183
SANTA BARBARA	85,571	137	105	10,012	14,547	6.08	111,242
ISLA VISTA	13,082	15	16	1,282	2,616	1.27	17,007
MONTECITO	13,496	13	33	1,134	3,914	1.00	17,545
GUADALUPE	5,479	8	12	1,529	657	0.52	12,054
SANTA YNEZ	4,200	4	5	424	2,604	0.13	5,880
SUMMERLAND	2,000	2	2	224	360	0.09	2,600
MISSION HILLS	3,119	3	4	568	624	0.21	5,302
VANDENBERG VLG.	5,971	6	7	1,093	1,493	0.45	10,151
ORCUTT	28,999	27	35	5,423	8,700	2.15	63,798
SANTA YNEZ UNINC.	6,357	6	8	604	3,941	0.00	8,900
CUYAMA	1,206	1	1	326	181	0.00	724
LOS ALAMOS	800	1	1	170	256	0.05	1,760
OTHER UNINC.	18,260	17	32	895	4,382	2.12	31,042
COUNTY UNINC.	159,073	0	0	-	-	-	-
-	-	-	-	-	-	-	-
TOTAL COUNTY	369,608	463	448	52,233	80,232	26.20	594,432

PUBLIC SERVICE LEVELS CONTINUED

	TOTAL PUBLIC REVENUES (000)	TOTAL PUBLIC EXPEND. (000)	TOTAL NO. OF PERM. DWELLING UNITS	PEAK NO. OF PERM. OCCUPIED UNITS	NO. OF HOTEL/MOTEL ROOMS	HOTEL/MOTEL OCCUP. RATE	TOTAL CAMP SITE UNITS
-----	-----	-----	-----	-----	-----	-----	-----
Carpinteria	\$6,399	\$6,157	6,660	6,414	589	95%	174
Santa Maria	34,410	38,716	21,144	20,383	2,499	91%	0
Solvang	2,814	1,514	2,076	1,976	734	98%	0
Buellton	-	-	1,424	1,353	826	98%	228
Lompoc	14,964	18,321	13,261	12,678	893	90%	0
Goleta West	-	-	20,605	20,110	985	95%	789
Santa Barbara	69,683	70,652	36,226	35,103	3,331	95%	34
Isla Vista	-	-	3,536	3,313	0	0%	0
Montecito	-	-	4,097	3,925	556	95%	0
Guadalupe	1,030	1,575	1,378	1,370	0	0%	0
Santa Ynez	-	-	1,564	1,528	23	95%	0
Summerland	-	-	826	795	26	95%	0
Mission Hills	-	-	1,023	1,010	0	0%	0
Vandenberg Village	-	-	2,368	2,316	0	0%	0
Orcutt	-	-	11,655	11,364	230	0%	0
Santa Ynez	-	-	2,580	2,492	51	95%	0
Cuyama	-	-	557	506	22	0%	0
Los Alamos	-	-	304	294	74	0%	0
Other Uninc	-	-	8,425	8,332	724	0%	323
County Unincorporated	-	324,110	372,841	-	-	-	-
-	-	-	-	-	-	-	-
Total County	-	\$453,410	\$509,776	139,709	135,261	11,563	1,548

4.7 IMPACTS ON PUBLIC FACILITIES, SERVICES AND HOUSING

The socioeconomic impact assessment included the same factors as the baseline analysis: namely, police protection, fire protection, school enrollment, urban water use, sewage treatment, solid waste disposal, government revenues and expenditures, and housing. Like the population impacts, these were annual impacts.

The first step in calculating public service impacts involved the allocation of the in-migrant population to the various cities and named unincorporated areas within each county. To accomplish this, each county's estimated total population impact was multiplied by the percentage of surveyed oil and gas employees in each community within that county. This distribution was based on survey data.

The allocation of the in-migrant population was a critical step in estimating local impacts. In this analysis, the allocation was made solely on the basis of residency data from the oil company and contractor employee surveys. In the majority of reports only the in-migrant demographic data were used. In some cases the survey population by community that formed the basis for the allocation proved to be too small. For example, in the 1994 reporting period the number of in-migrants was substantially smaller than in past surveys and resulted in an unrealistic population impact allocation. The SEMP Technical Advisory Committee discussed this issue and recommended using the larger data set of total respondents and this approach was accepted by SBCAG and it resulted in a satisfactory population allocation.

In some cases, the employee surveys reported information for community and service district boundaries (e.g., school districts, water districts, etc.) that did not coincide explicitly with city or community boundaries as reported by SEMP population impact tables. In these situations, population impacts were adjusted accordingly. The employee surveys were reported by respondents for community and service district boundaries (e.g., school districts, water districts, etc.) that may not necessarily coincide explicitly with community boundaries as reported by SEMP impact tables.

The total in-migrant population also included people who moved into the area to fill jobs created by the personal expenditures of the oil workers for food, automobiles, etc. Since people often spend money in areas other than where they live, the survey results alone may not have precisely reflected the residences of all in-migrants. However, no more accurate allocation methods on data were available.

The second step in calculating socioeconomic impacts was the assessment of community public service impacts due to the in-migrant population. This step was accomplished by multiplying the population impact for each community by the appropriate baseline public service multiplier (described previously). For example, a community having a population impact of 500 persons and a ratio of 2 police officers per 1000 residents would have a police protection impact of one additional police officer. This same process of multiplying population impacts by per capita multipliers was applied to government revenues and government expenditures as well. All impacts were derived on a per capita basis reflecting the relationship existing in each community during the base year. **Table 4-4** shows an example of the impact on Santa Barbara County during 1991 for selected services.

**Table 4-4
1993 SANTA BARBARA COUNTY
SOCIOECONOMIC IMPACTS**

COMMUNITY	POPULATION			POLICE OFFICERS			FIRE FIGHTERS			SCHOOL ENROLLMENT		
	BASELINE	IMPACT	% CHANGE	BASELINE	IMPACT	% CHANGE	BASELINE	IMPACT	% CHANGE	BASELINE	IMPACT	% CHANGE
CARPINTERIA	13,747	10	0.1%	27	0.0	0.1%	24	0.0	0.1%	2,502	1	0.0%
SANTA MARIA	61,284	114	0.2%	79	0.1	0.2%	36	0.1	0.2%	12,196	24	0.2%
SOLVANG	4,741	10	0.2%	16	0.0	0.2%	6	0.0	0.2%	484	1	0.1%
BUELLTON	2,911	114	3.9%	3	0.1	3.2%	4	0.1	3.2%	663	11	1.6%
LOMPOC	37,649	514	1.4%	42	0.6	1.4%	43	0.6	1.4%	6,814	63	0.9%
GOLETA WEST	57,084	162	0.3%	56	0.2	0.3%	74	0.2	0.3%	5,894	8	0.1%
SANTA BARBARA	85,571	323	0.4%	137	0.5	0.4%	105	0.4	0.4%	10,012	53	0.5%
ISLA VISTA	12,133	0	0.0%	15	0.0	0.0%	16	0.0	0.0%	1,282	0	0.0%
MONTECITO	11,717	29	0.2%	13	0.0	0.2%	33	0.1	0.2%	1,134	5	0.5%
GUADALUPE	5,405	0	0.0%	8	0.0	0.0%	12	0.0	0.0%	1,529	0	0.0%
SANTA YNEZ	3,940	0	0.0%	4	0.0	0.0%	5	0.0	0.0%	424	0	0.0%
SUMMERLAND	1,593	0	0.0%	2	0.0	0.0%	2	0.0	0.0%	224	0	0.0%
MISSION HILLS	3,529	0	0.0%	3	0.0	0.0%	4	0.0	0.0%	568	0	0.0%
VANDENBERG VILLAGE	6,937	0	0.0%	6	0.0	0.0%	7	0.0	0.0%	1,093	0	0.0%
ORCUTT	35,708	10	0.0%	27	0.0	0.0%	35	0.0	0.0%	5,423	3	0.1%
SANTA YNEZ UNINC.	6,285	0	0.0%	6	0.0	0.0%	8	0.0	0.0%	604	0	0.0%
CUYAMA	2,296	0	0.0%	1	0.0	0.0%	1	0.0	0.0%	326	0	0.0%
LOS ALAMOS	778	0	0.0%	1	0.0	0.0%	1	0.0	0.0%	170	0	0.0%
Other Uninc.	21,169	0	0.0%	17	0.0	0.0%	32	0.0	0.0%	895	0	0.0%
TOTAL COUNTY UNINC.	166,080	201	0.1%	0	0.2	0.0%	0	0.3	0.0%	0	17	0.0%
TOTAL COUNTY	374,477	1,286	0.3%	463	2	0.3%	448	1	0.3%	52,233	169	0.3%

Local impacts on schools and housing were calculated using a different method, which took into account the results of the employee surveys. As a result of the employee surveys half the population impact for each community was multiplied by the appropriate baseline public service multiplier to estimate the indirect/induced impacts. The other half of the population was multiplied by a factor (such as school children per in-migrant) derived from the employee survey data. This method took into account the demographic characteristics of both the direct and the indirect/induced populations.

The vacancy rates for temporary and permanent dwelling units were computed by adding the estimated permanent housing impact to the baseline number of occupied (permanent and temporary) dwelling units. Subtracting the new number of occupied units from the total number of permanent dwelling units and dividing by the total number of dwelling units yielded the overall vacancy rate.

All impacts, including the estimated change in population, were presented as absolute values and as a percent change in the baseline. For example if 100 people were forecast to move into a community of 10,000, this would represent a 1% change in the baseline. Although the increases in public service demand seemed small in comparison to the baseline data, they often represented significant additive impacts in areas where service capacities such as schools, water supplies, or sewage treatment services were already at or near capacity.

However, the monitoring system did not determine the significance of impacts at the time the reports were released because thresholds of significance were tied to service districts and no convenient mechanism existed to convert these thresholds to the community level. Furthermore, it was too difficult to update the public service capacities and deficiencies on a regular basis given the number of services and diversity of communities.

4.8 FORECASTING LONG-TERM CUMULATIVE PROJECT IMPACTS

In addition to estimating current impacts, the Tri-county Socioeconomic Monitoring System was used to make 3 to 5 year projections of impacts, based on a cumulative project schedule and estimate of mining and construction employment.

Cumulative projects included all oil and gas projects, even those not subject to the SEMP permit conditions. It represented a list of existing and hypothetical projects from the current year and ten years into the future. The cumulative project database included all major phases (e.g., development drilling, pipeline construction) related to off-shore oil and gas development. The cumulative list also included a forecast of project-related employment by county and project phase (e.g., per development well, per mile of off-shore pipeline). See **Table 4-5** for an example. These data were used to develop a comprehensive forecast of the cumulative employment effects of all off-shore development occurring in the Tri-counties region. The “Cumulative Oil and Gas Project Schedule,” **Table 4-6** summarized all major oil and gas projects assumed to begin for a selected five year period. These included projects approved and covered by SEMP, projects in various stages of review and permitting, and hypothetical projects based on hydrocarbon resource estimates. Both federal OCS and state tideland projects were included in the cumulative list. However, the list did not include exploratory drilling as this phase was not subject to the SEMP permit condition. This list was updated from time to time by an informal survey of the operating companies, and through future environmental assessments of projects. However, the long-term success of the list was limited because the system did not take into account other economic or political factors that would profoundly influence the timing and likelihood that an off-shore project would be completed.

**Table 4-5
CUMULATIVE PROJECT LIST FORECAST**

PROJECT PHASES	1992	1993	1994	1995	1996
EXPLORATORY DRILLING	0	0	0	0	0
PLATFORM INSTALLATION	23	8	0	0	0
DEVELOPMENT DRILLING	1	11	7	0	0
PLATFORM OPERATIONS	164	235	387	387	387
OFF-SHORE PIPE CONST.	1	0	0	0	0
OFF-SHORE PIPE OPER.	1	1	1	1	1
ON-SHORE PIPE CONST.	7	17	14	164	0
ON-SHORE PIPE OPER.	18	18	18	18	21
OIL PLANT CONST.	534	300	17	9	0
OIL PLANT OPER.	59	59	168	168	168
GAS PLANT CONST.	49	30	0	0	0
GAS PLANT OPER.	72	72	187	187	187
MARINE TERM. CONST.	4	0	0	0	0
MARINE TERM. OPER.	1	9	12	12	11
SUPPLY BASE CONST.	0	0	0	0	0
SUPPLY BASE OPER.	0	0	0	0	0
SANTA BARBARA CO. TOTAL EMPLOYMENT	934	760	811	946	775
TRI-COUNTY TOTAL EMPLOYMENT	1397	1223	1071	1219	1043
SB COUNTY POPULATION IMPACT:	3,755	3,055	3,259	3,803	3,116
TRI-COUNTY POPULATION IMPACT:	5,994	5,227	4,432	5,030	4,320

Table 4-6
CUMULATIVE OIL AND GAS PROJECT LIST, 1992 - 1996

PROJECT COMPONENT	UNITS	SIZE	1992	1993	1994	1995	1996
TOTAL NO. WELLS	total wells	48	92	92	92	96	113
PLATFORM INSTALL	platforms	4	1	2	0	0	0
DEVELOPMENT DRILL	new wells	48	0	0	4	17	27
PLATFORM OPER	platforms	9	5	5	7	9	9
OFF-SHORE PIPE CONST.	miles	0	0.0	0.0	0.0	0.0	0.0
OFF-SHORE PIPE OPER.	miles	41	40.8	40.8	40.8	40.8	40.8
ON-SHORE PIPE CONST.	miles	109	10.5	33.0	33.0	32.0	0.0
ON-SHORE PIPE OPER.	miles	250	128.4	140.5	152.0	250.0	250.0
OIL PLANT CONST.	MBD	170	45	0	0	125	0
OIL PLANT OPER.	MBD	386	161	261	261	261	386
GAS PLANT CONST.	MMSCFD	118	18	0	0	60	40
GAS PLANT OPER.	MMSCFD	181	60	81	81	81	181
MARINE TERM. CONST.	(term.)	0	0	0	0	0	0
MARINE TERM. OPER.	(term.)	1	1	1	1	1	1
SUPPLY BASE CONST.	(base)	0	0	0	0	0	0
SUPPLY BASE OPER.	(base)	0	0	0	0	0	0

Notes:

1. Platform installation is noted by the total number of platforms installed in each year.
2. Development drilling schedules, unless otherwise given, are based on a maximum of 9 wells per year per platform.
3. Unless otherwise noted, the number of development drilling wells is 85 percent of the number of slots for a platform.
4. Platform operation is noted by the cumulative number of platforms installed.
5. Pipeline construction and operation is noted on a per mile basis. Construction over multiple years is noted by a proportion of miles constructed in each year.
6. Oil and gas plant construction and operation is noted by the capacity of the plants. Construction of these plants over multiple years is based on a proportion of capacity.
7. Marine terminals and supply bases are noted by the number of facilities constructed and the number of years each is in operation. It is assumed that no more than one new terminal will be in operation at any one time, in accordance with Santa Barbara County Policy.

When using the Monitoring System as a forecasting tool, the procedure for predicting socioeconomic impacts for future projects was identical to that used for the monitoring of ongoing projects, with the exception that the actual reported company employment for each phase was replaced by estimated employment. The forecasted cumulative socioeconomic impacts were based on the same employment-to-in-migrant population formulae used to assess annual surveyed (monitored) impacts. However, distribution of in-migrant population was based on the compiled results of all previous employee surveys rather than just the most recent survey.

The model used employment data for each project phase estimated by Pacific Research, Inc., the oil companies and the Energy Division of the Santa Barbara County Planning and Development Department. The sum of employment for all project phases was used in the employment-to-population formula for each county to arrive at estimated county-wide population impacts. These population impacts represented annual changes from a baseline value and were not additive from one year to the next.

The county-wide forecast of population impacts derived from the cumulative projects list were distributed among the communities on the basis of combined data from all previous employee surveys. Once the in-migrant population had been allocated to local communities, the local public service multipliers were used to estimate the public service impacts. The format and units used in this approach were identical to the method for estimating annual impacts.

Since the Cumulative Project List did not include an estimate of the number of employees that would be working directly on each project, these data were collected directly from the oil and gas firms participating in the current SEMP surveys. The majority of these employees were involved with the continued operation of existing facilities, not with the construction of additional facilities. These data were summarized by project.

In summary, cumulative projects were all oil and gas projects including but not limited to those subject to SEMP. It was a list of existing and hypothetical projects that spanned the 1995 through 2005 time period and included all major phases (e.g., development drilling, pipeline construction). The cumulative list also forecasts project-related employment by county and project phase (e.g., per development well, per mile of off-shore pipeline). These data were used to develop a comprehensive forecast of the cumulative employment effects of all off-shore development occurring in the Tri-Counties region.

4.9 FORECASTING SHORT TERM PROJECT IMPACTS

The operating company employment data were used to develop estimates of average annual population growth. However, this technique could not tell local officials how many oil and gas workers would be working on a particular project or at a particular site in the next quarter or next year. Therefore, SEMP also requested that the operating companies provide estimates of quarterly project-related employment. These were 2-year estimates, updated semi-annually, or at a time when manpower estimates became more precise. These 2 year estimates included only SEMP monitored projects not the others included in the cumulative project. The 2 year estimates did not include the indirect impacts as did the cumulative project list. **Table 4-7** provides an estimate of average quarterly employment by work site prepared during 1991 to illustrate this data set.

**Table 4-7
AVERAGE QUARTERLY EMPLOYMENT BY WORKSITE**

Tri-County Socioeconomic Monitoring Program
C/COG Twelfth Round Survey
Third/Fourth Quarters, 1991

AVERAGE QUARTERLY EMPLOYMENT *)
By Worksite

Project	Worksite	Average Quarterly Employment							
		1991				1992			
		1	2	3	4	1	2	3	4
Chevron Point Arguello									
	Gaviota Facility-	215	215	211	211	206	206	206	206
	Office-Ventura	12	12	12	12	12	12	12	12
	Oxnard Shorebase-Oxnard	5	5	5	5	5	5	5	5
	Platform Hermosa	42	41	46	40	40	40	40	40
	Platform Hidalgo	69	38	44	38	38	38	38	38
	none-	0	0	0	0	0	0	0	0
	none-none	0	0	0	0	0	0	0	0
	Total for Project	343	311	318	306	301	301	301	301
Texaco Point Arguello									
	Office-Ventura	10	8	8	8	8	8	8	8
	Platform Harvest	82	80	78	78	78	78	78	78
	warehouse-Port Hueneme	4	4	4	4	4	4	4	4
	Total for Project	96	92	90	90	90	90	90	90
EXXON Santa Ynez Unit									
	Office-Santa Barbara	2	2	2	2	2	2	2	2
	Office-Thousand Oaks	40	44	37	37	34	34	34	34
	Office-Ventura	7	0	0	0	0	0	0	0
	Office-lfc	33	20	20	19	15	15	15	15
	Offshore Pipe - SYU-	260	0	0	0	0	0	0	0
	Platform Harmony	0	25	25	67	125	125	125	50
	Platform Heritage	0	25	25	67	125	125	125	50
	las flores canyon-	286	255	245	145	64	15	15	15
	las flores canyon-lfc	428	376	356	218	97	21	21	21
	Total for Project	1056	747	710	555	462	337	337	187
	Totals	1495	1150	1118	951	853	728	728	578

*)Average quarterly employment by worksite was derived from question c of the Operating Company Expenditures and Employment for administered in November 1991.

Source: SBCAG, 1991 SEMP Monitoring Report, Page 36

CHAPTER FIVE

CHARACTERISTICS OF OIL, GAS, AND PIPELINE PROJECTS, EXPENDITURES, AND PROJECT WORKFORCE

5.1 INTRODUCTION

This chapter summarizes the characteristics of the oil, gas, and pipeline projects subject to SEMP, identifying their size, location and development schedule. The local economic impact of operating company expenditures and the type and use of contractors and subcontractors for the individual projects are summarized. See **Figure 5-1** to locate the projects in the County. For a more complete project chronology see **Appendix IV**.

5.2 PROJECT DESCRIPTIONS

This section briefly describes the projects subject to the SEMP permit condition. Project development schedules are summarized in Appendix IV based on a variety of data sources.¹⁹

5.2.1. UNOCAL POINT PEDERNALES

The Unocal Point Pedernales project consisted of one off-shore platform connected by off-shore oil, gas, and wastewater on-shore pipelines to an upgraded processing facility. The project was located north of Pt. Conception. The project was approved by the County in 1985 and Platform Irene was installed during the last half of that same year in 242 feet of water. Approximately 10 miles of 20" diameter off-shore pipeline were laid in the last half of 1986 from the platform to the beach, as was another 10 miles of on-shore pipeline from the beach to the Heating, Separation and Processing (HS&P) Facility just north of Lompoc. Off-shore drilling from Platform Irene began in the second quarter of 1986 and continued through 1991. A total of 22 wells were drilled. Construction of the 36MBPD oil plant (HS&P) began in the third quarter of 1986 and the plant was brought on-line a year later.

The Unocal project was subject to the SEMP permit condition from 1985 through 1988.

5.2.2 CHEVRON POINT ARGUELLO

In 1979 and 1981 Chevron and its partner Texaco paid \$574 million for four OCS leases during Lease Sales 48 and 53 and later claimed the discovery of the Pt. Arguello field estimated to be the largest discovery in the Santa Maria basin.^{20 21} The Chevron Point Arguello project consisted of

¹⁹ County of Santa Barbara, Department of Planning and Development, Energy Division, Newsletters, Oil and Gas Status Report, 1985-1999 and SBCAG, 1990 Oil and Gas Development Construction/Operation Survey.

²⁰ Hershman, Marc J., David Fluharty, and Scott L Powell and others, 1988, State and Local Influence Over Offshore Oil Decisions, Washington Sea Grant Program, University of Washington., Seattle.

²¹ U.S., Department of Interior, Minerals Management Service, January 24, 2000, "Status of Leases and Qualified Companies, Pacific OCS Region."

three off-shore oil and gas platforms, off-shore and on-shore oil and gas pipelines, and an on-shore oil and gas processing facility. Valued at over 2 billion dollars, the project represented the size and complexity of the development scenario that initiated the development of the SEMP permit condition. The project was given final approval by the County of Santa Barbara in August, 1985. Texaco installed Platform Harvest in approximately 675 feet of water just off Pt. Conception during the last half of 1985, and followed with 6.5 miles of off-shore pipeline construction in early 1986. On-shore oil and gas pipelines of approximately 8.5 miles were constructed in early 1987 to connect the off-shore line with the on-shore Gaviota Oil and Gas Plant. Platforms Hildalgo and Hermosa were installed further off-shore in water depths of 430 and 603 feet respectively. Installation of these platforms began in the fourth quarter 1985 and continued into early 1987. Next, the off-shore pipelines were laid to shore, a distance of 10 miles. Initial site work on the on-shore oil (100mpd) and gas (60mmscfd) processing facility started in the first quarter of 1986. Construction of the oil and gas processing facility continued throughout the year and was generally completed in 1987. However, start up of the facility was delayed due to unexpectedly high level of hydrogen sulfide (H₂S) levels in the natural gas. While the work at the main Gaviota facility was complete, subsequent work on the Chevron Point Arguello project continued in future years with tie in of the Gaviota facility to the All American Pipeline and Gaviota Marine Terminal. Off-shore drilling by one of the partners, Texaco, began on Platform Harvest in 1986 and finished in 1988 with a total of 19 wells. Drilling at the other platforms, Hermosa and Hildalgo began in 1987 and ended in 1988 with a total of 19 wells. The Chevron Pt. Arguello project was the first project subject to the SEMP permit condition. Chevron participated in SEMP from 1985 through 1992.

5.2.3 GAVIOTA MARINE TERMINAL

The County of Santa Barbara approved the Gaviota Interim Marine Terminal project in the second quarter of 1987 on the condition that the terminal would be phased out with the completion of pipelines to the Gulf Coast or Los Angeles or development of a new consolidated marine terminal at Las Flores Canyon. Grading began later that same year. Construction was completed on the Interim Marine Terminal in the third quarter of 1988. The “interim” Marine Terminal was located adjacent to the Chevron Pt. Arguello facility at Gaviota, approximately 30 miles due west of Santa Barbara, just to the south of Highway 101. The project involved construction of a spread mooring system in 65 feet of water to accommodate tankers of the size 40–50,000 DWT, near shore and on-shore pipelines, and large storage tanks to store oil and accommodate oil throughput of 100,000 barrels per day.

Between 1988 and 1993 the partners submitted and revised various project modifications to establish the site as a consolidated marine terminal and to increase the throughput to 125,000 barrels per day.

The regulatory agencies reviewed these proposals. The final modifications would enable the terminal to accept crude oil from the Chevron and Exxon projects. The project was approved and construction began in 1991 and continued into 1992. A transportation permit for Chevron Point Arguello crude was not approved by the Coast Commission until 1993 with the condition that tankering cease if progress on an alternative pipeline project failed to meet predetermined milestones. Tankers offloaded Pt. Arguello project crude oil for transport to refineries in Long Beach between August, 1993 and January 1994. In January, 1994 all operations ceased as the predetermined milestones had not been reached. However, the facility continued to provide storage for crude oil processed at Chevron’s oil processing facility and still operates in that capacity today.

The Gaviota Marine Terminal Company participated in SEMP from 1987 through 1992.

Figure 5-1
ON AND OFF-SHORE OIL AND GAS PROJECTS
IN SANTA BARBARA AND VENTURA COUNTIES

5.2.4 ALL AMERICAN PIPELINE

The Tri-county portion of the Celeron - All American Pipeline project was approved in the second quarter of 1985. Construction of the 62 mile, 30-inch diameter main line with an optimal throughput of 300,000 BPD began in the second quarter of 1986 and lasted approximately one year. This pipeline was the originating section (though last section built) of a pipeline that connected off-shore Santa Barbara to existing pipelines in West Texas and, ultimately Gulf Coast refineries. Oil began its journey at Chevron's Pt. Arguello facility in Gaviota, moved to Pentland and on to Los Angeles via. Arco's line 90. In later years, much of this oil transferred at Pentland to travel through the Pacific Pipeline to Los Angeles refineries.

Following construction of the line, from Pentland to Gaviota, All American began construction on a pipeline pump station located at Sisquoc in central Santa Barbara County in 1987. Construction continued in 1988 at the Gaviota Pump Station, located near the Chevron Pt. Arguello processing facility. Construction of a short tie-in from the AAPL Gaviota Booster Station to the Gaviota Marine Terminal took place in 1990. In 1991 the 24" diameter Coastal Segment of the All American Pipeline was constructed. This project extended the pipeline from the Chevron Pt. Arguello processing facility to the Exxon Las Flores Canyon facility, a distance of 10.5 miles. In 1993, the Las Flores Canyon Pump Station was constructed and the new Coastal Pipeline Segment was placed into full service the first quarter of 1990.

The Celeron - All American Pipeline project was subject to the SEMP from 1986 through 1991, and again during 1993. The SEMP permit condition on the All American Pipeline project was modified to require the company to participate in the SEMP survey process only during the construction phase of the project, not the operations phase, based on limited employment impacts associated with pipeline operations. Another unique feature of the pipeline monitoring effort was the timing of the survey activity for Celeron/All American. Because of the relatively quick nature of pipeline construction (as many as 1,500 feet or more of pipeline like this can be built in a day in rural areas) and construction of the ancillary facilities, employment peaks in several years did not coincide with the normal survey period. Special schedules and procedures were required to ensure that the maximum number of pipeline employees were "caught" by the survey.

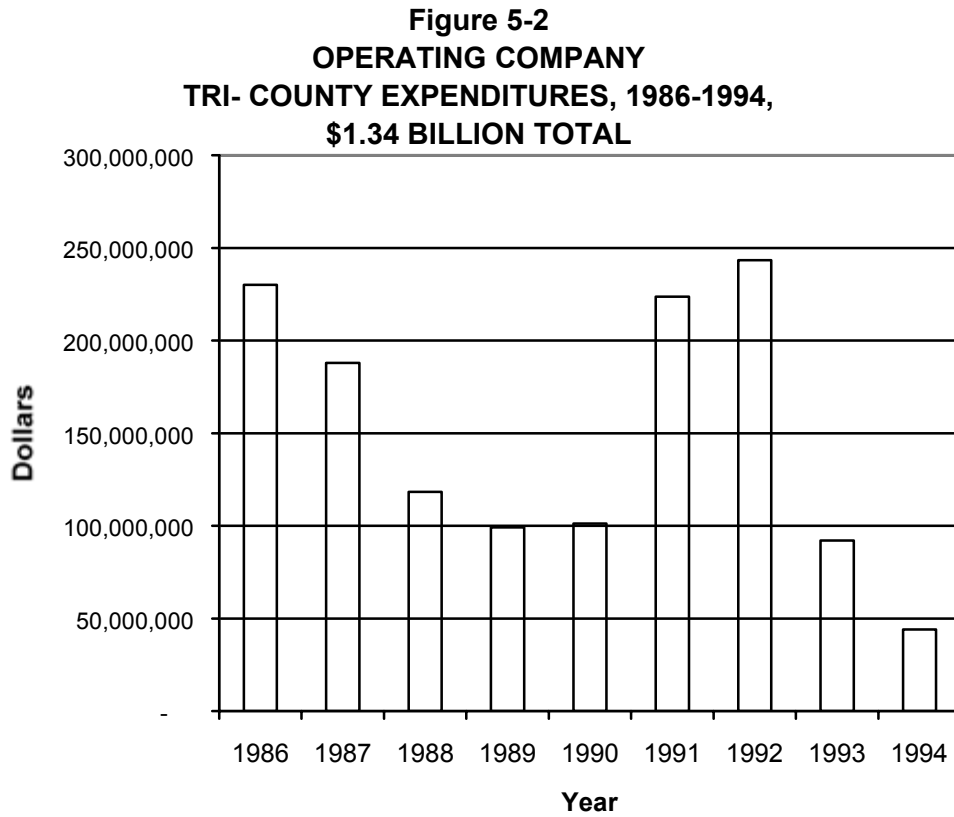
5.2.5 EXXON SANTA YNEZ UNIT (SYU)

The Exxon SYU project involved two new off-shore platforms, on-shore oil and gas processing facilities, crude oil storage tanks, and connecting pipelines. The Exxon project was similar in size and complexity to the Chevron Pt. Arguello project. The project was given final approval by the County in September 1987. Installation of platform Harmony in 1,198 feet of water began in the second quarter of 1989 and was finished by the end of the year when the installation of Platform Heritage began. Installation of the second platform continued through 1992 when all the topside work was completed. Off-shore pipelines interconnecting the platforms and connecting the platforms to shore took place during 1989 and 1990. Construction at the Las Flores Canyon (LFC) on-shore facility began in April 1988 with site development (grading). Grading took approximately 18 months to complete and involved excavation of nearly 4 million cubic yards of earth. Installation of near shore and on-shore pipelines occurred in 1989 -1990. Main facility construction began in the fall of 1990. Initially this involved construction of the foundation and supports for the oil and gas (60mmscfd) plant and continued with the development of an electrical substation and large oil storage tanks. During 1991 construction continued on the foundation racks and steel components of the NGL/LPG pipes. In 1992 structural work came to an end and electrical work and finish work started in early 1993. Construction was complete by the fourth quarter of 1993 and facility start up occurred in the same period. Off-shore drilling from Platforms Harmony and Heritage began in November 1993. Exxon participated in SEMP from 1988 to 1997.

5.3 PROJECT EXPENDITURES

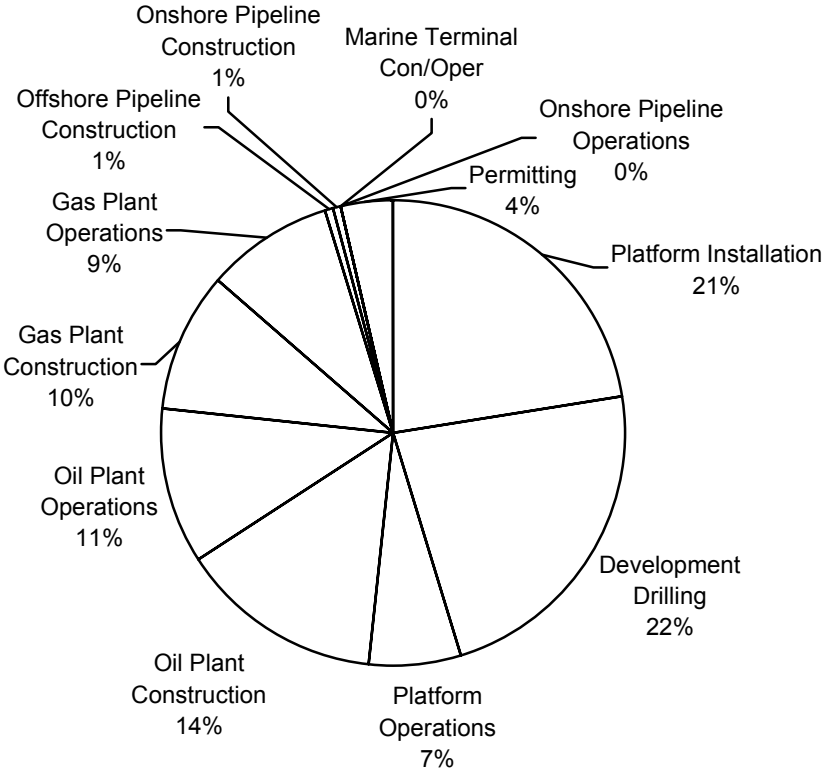
Operating Company Expenditures were collected and reported as the total amount of money spent in the Tri-County region for each project phase by each operating company for a particular reporting period. The expenditures do not include payroll and are one time expenditures. The expenditure data was reported between from 1986-1994 including several years after the system was redesigned to use employment and the expenditure data was no longer critical.

The following two figures show the range of project related expenditures between 1986, and 1994. Peak years in 1986, 1991, and 1992 saw expenditures in excess of \$200 million per year.



Expenditures by phase for the entire reporting period is shown in the following figure. Platform development was 44 percent of the total 1986-1994 period expenditures. Oil and gas plant construction was 24 percent and permitting was amounted to 4 percent of the total expenditures.

Figure 5-3
TRI-COUNTY EXPENDITURES, BY PHASE, 1986-1994,
\$1.34 BILLION TOTAL



5.4 USE OF CONTRACTOR AND SUB-CONTRACTOR FIRMS

A variety of contractor and subcontractor firms were utilized in the development of on and off-shore related oil, gas, and pipeline development projects subject to the Socioeconomic Monitoring Program. For example, there were approximately 450 contractors and subcontractors in the Tri-county region working on oil, gas, and pipeline projects from 1986 to 1989. Examples of contractor and subcontractor services include the following: barges, boat rentals, communications, construction, and construction services, maintenance services, etc. A more detailed list of contractor and subcontractor services is included in the 1994 SEMP Coding Manual. The following data represent SEMP survey rounds 1 - 8 only. Changes in later survey procedures did not include similar fields for contractor subcontractor codes and thus do not enable further analysis without considerable data massaging. Rounds 1 - 8 represent SEMP reporting years 1986 -1989.

The phases using the largest percentage of contractors and subcontractors were development drilling at 23 percent, platform installation and hookup at 18 percent, and, platform operations at 16 percent. Note that these off-shore phases were found typically to utilize a larger number of smaller contractors and subcontractors. This likely results from the numerous, very specialized, tasks required to develop off-shore resources.

On-shore construction was found to be more typified by large A/E (Architect/Engineering) firms such as Hood or Bechtel. On-shore operations used primarily company employees. As the following figure shows, nearly 80% of the number of contractor/subcontractor firms in Rounds 1-8 were associated with off-shore work. However, on-shore contractors/subcontractors typically completed contracts of far greater value in terms of Tri-county expenditures, and with larger employee bases. The largest percentage of contractors and subcontractors were categorized in the miscellaneous business services, drilling and production equipment sector, and, drilling and production services sectors. These three categories comprised over 50 percent of all contractor/subcontractor firms utilized in rounds 1-8. The miscellaneous business services sector includes 44 various categories such as consultants, security, laboratory testing, and inspection services.

Figure 5-4
CONTRACTOR AND SUBCONTRACTOR FIRMS,
FOR ON AND OFFSHORE PHASES,
1,031 TOTAL CONTRACTOR AND SUBCONTRACTOR FIRMS,
ROUNDS 1-8

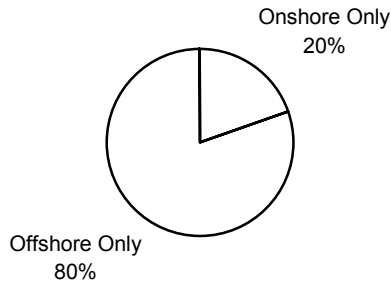
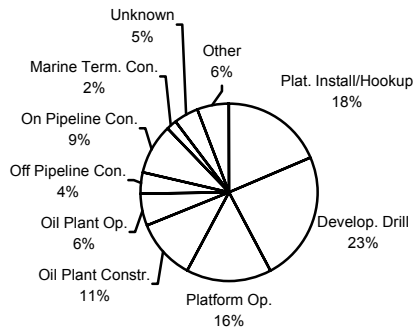


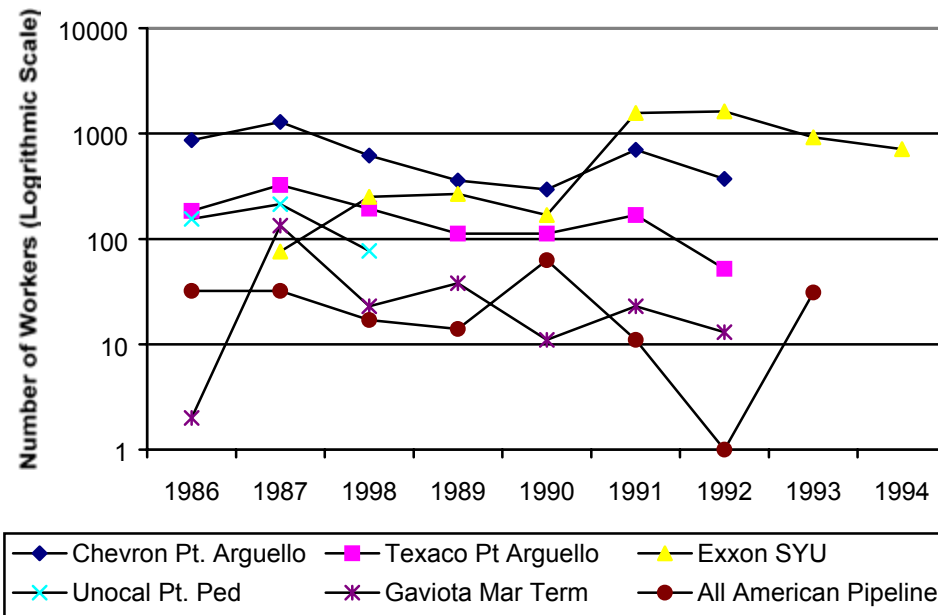
Figure 5-5
CONTRACTOR AND SUBCONTRACTOR FIRMS USED BY PHASE
1,031 TOTAL CONTRACTORS AND SUBCONTRACTOR FIRMS
ROUNDS 1-8



5.5 WORKERS BY PROJECT

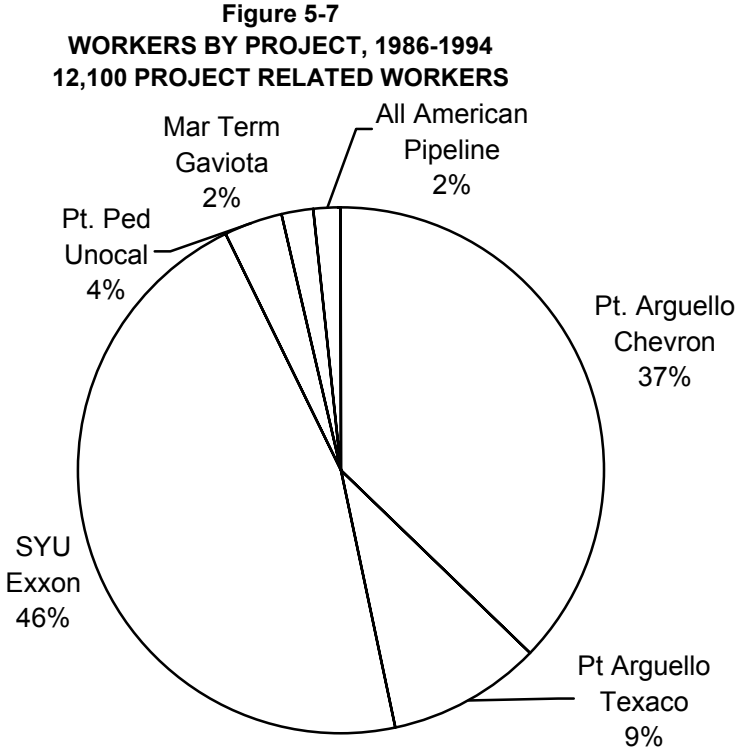
The number of project related workers²² varied considerably over the survey period and show Chevron, Texaco Pt. Arguello, and Exxon Santa Ynez Unit as being the largest employers over the 1986-1994 period

Figure 5-6
WORKERS BY PROJECT AND YEAR,



²² Project related workers are those who identified a specific project on question 3 of the employee questionnaire.

Exxon Santa Ynez Unit comprised 46 percent and Chevron Pt. Arguello comprised 37 percent of the project related workers over the 1986-1994 time period.

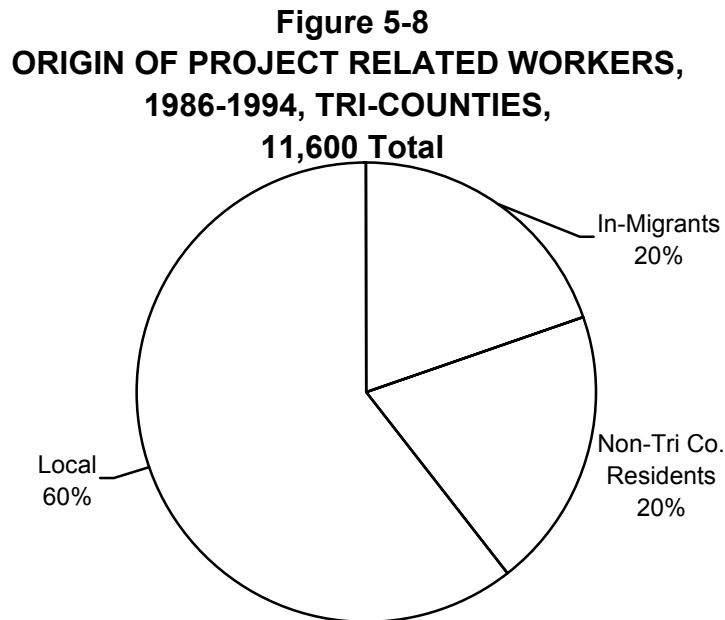


5.6 ORIGIN OF PROJECT WORKERS

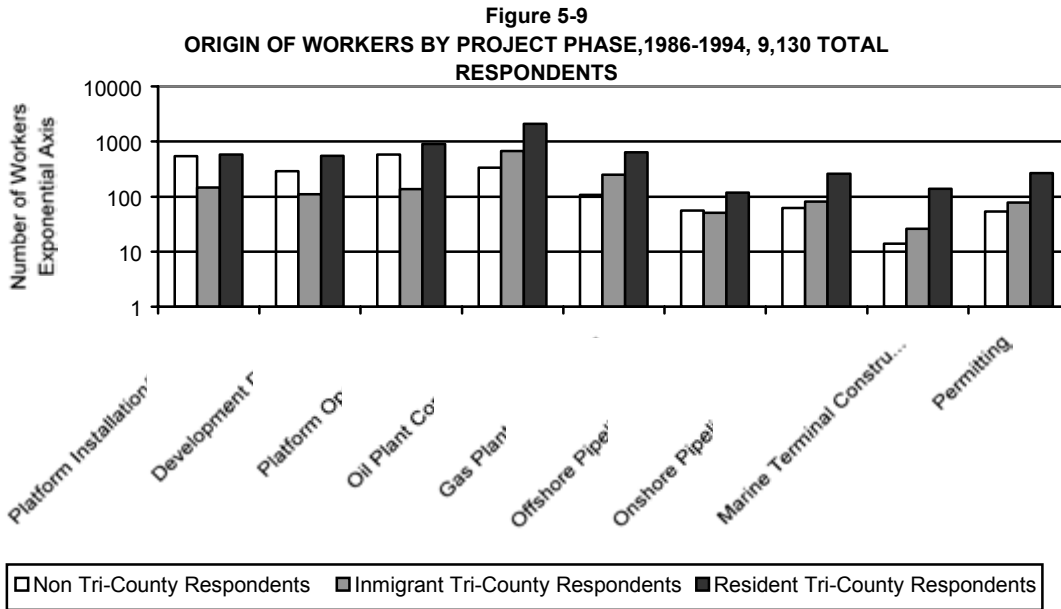
A broad spectrum of oil and gas employees filled out survey forms. However, only data on "project-related surveyed in-migrants" was used directly in the Assessment System model. The other employment groups included the resident workers already living in the Tri-Counties region and those who commuted to work sites in the Tri-Counties region from residences elsewhere.

What was the origin of the project related workers? SEMP classified workers by origin into three basic categories:

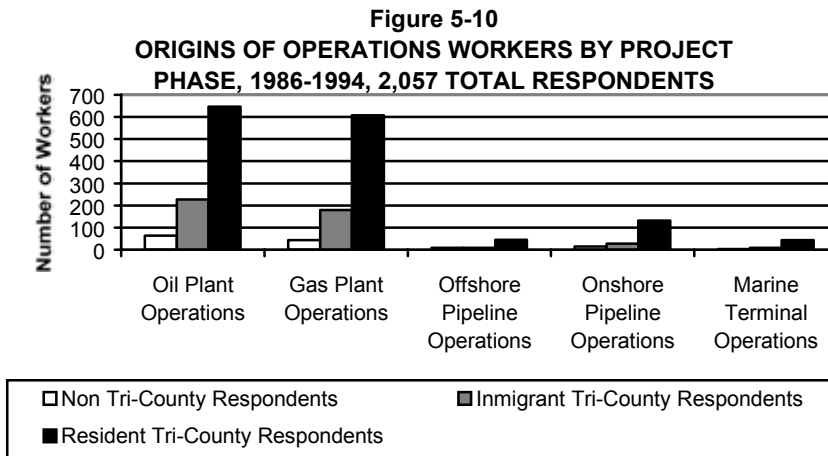
- In-migrants are tri-county project related workers who lived in a different county, or state, one year before the date of the employee questionnaire survey. Although most of these in-migrants moved into the Tri-count Region from outside, a few simply moved from one county to another, within the region.
- Non tri-county respondents lived outside the region at the time of the employee survey, commuting to worksites or off-shore staging areas on a daily or weekly basis. Some of these non-residents may have even lived on off-shore barges for the duration of their work on a project.
- Local respondents have lived in the county for a least one year.



The origin of project related workers can vary by project phase. For phases involving off-shore construction or platform operations there is a tendency for workers to live outside the Tri-Counties region commuting directly onto the platforms. On-shore phases have a tendency to use existing resident workers.



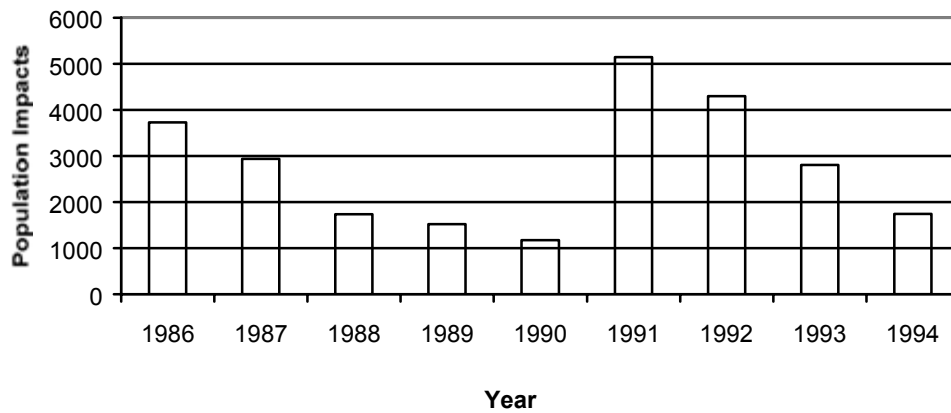
Other operations that are on-shore such as oil and gas plant operations etc.. are predominantly resident workers as shown in the following figure.



5.7 ANNUAL POPULATION IMPACTS

In addition to the direct project workers there were indirect and induced employment impacts resulting from using the SEMP multipliers to insure the economic impact of expenditures or total employment were considered. The following figure shows the total SEMP direct, indirect and induced annual population impacts associated with the use of economic multipliers²³. The peaks in 1986 and 1991 coincide with the large SEMP projects during that time and include Point Arguello and Exxon Santa Ynez Unit respectively.

Figure 5-11
ANNUAL POPULATION IMPACTS
TRI-COUNTY AREAS 1986-1994



Population Impacts are annual and not additive from one year to the next

²³ Total impacts from Table 2 SEMP Annual Reports. Calculated by multiplying the total project related FTE mining and construction employment or expenditures for each county by the in-migrant population per employee multiplier.

CHAPTER SIX

HOUSING LOCATION

6.1 INTRODUCTION

This chapter describes housing characteristics of the project-related workforce, derived from a database of questionnaire responses taken over a decade from new in-migrant employees and resident workers. In addition, this chapter also describes the direct, indirect, and induced housing impacts resulting from the SEMP model multipliers. For example, as you may recall from Chapter Two, the SEMP multipliers are used in determining the total impacts on service levels resulting not only from the new worker in-migrants but also by their family members and additional workers induced by their purchases and the impact of project related expenditures on the local economy.

There were approximately 3,500 Tri-county in-migrant employees over the 1986-1994 period impacting approximately 2,000 housing units. The questionnaire responses contain data identifying the number of workers by place of residence, employee housing type, ownership and value as well as household and school enrollment characteristics. This chapter will focus on housing location only. Later chapters will describe other survey results from the employee questionnaire.

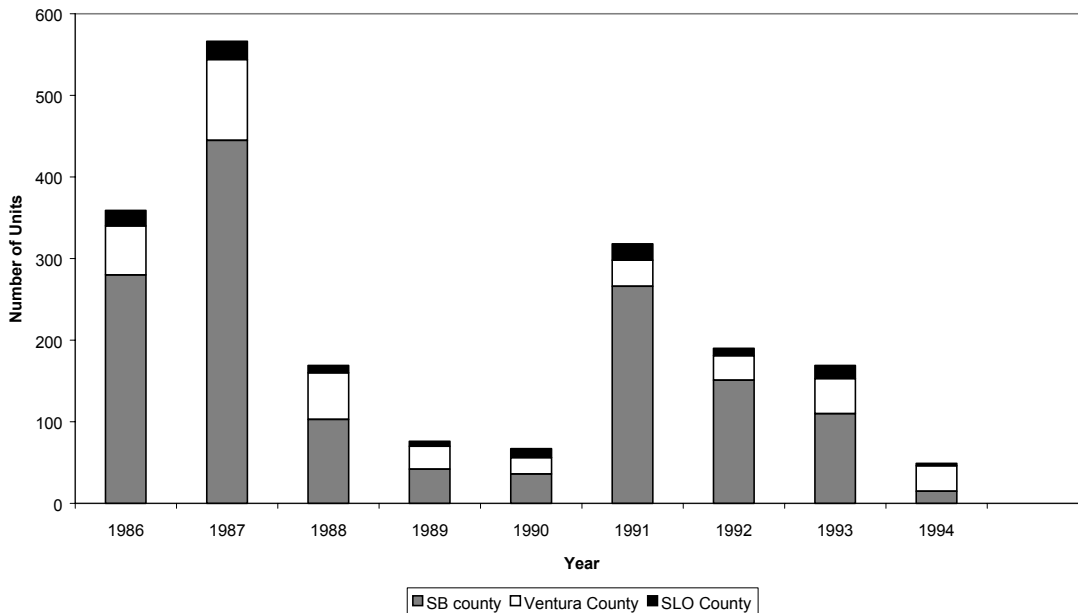
Housing availability and affordability were the concerns addressed by the examination of housing choice by employees. Local growth management ordinances, water moratoriums, and buildout of older communities limited housing choices, particularly in the south coast of Santa Barbara County. These factors reduced the vacancy rate and increased the relative price of housing. Mitigation of housing impacts required an understanding of housing location and type of housing demand, both temporary and permanent type of units.

The chapter begins with an overview of housing location over the survey period from 1986 to 1994, by county, city and year. Housing location is also described for the large Exxon Santa Ynez Unit, a project with significant housing impacts over various years. In addition, a series of maps portray housing location for all projects combined and for other individual SEMP projects such as All American Pipeline, and Chevron-Texaco Gaviota Facility.

6.2 HOUSING IMPACTS BY YEAR

Housing impacts due to new project-related in-migrants²⁴ varied throughout the survey period.²⁵ In 1987 the Tri-county region shows the in-migrants demanding 600 units. This period was the peak employment of the Chevron-Texaco Pt. Arguello project. This demand drops significantly in later years to 300 units in 1991. Santa Barbara County has the greatest demand during 1987 and 1988. In 1989 and 1990 Ventura and San Luis Obispo counties combined accommodated one-half of the housing demand in the Tri-Counties region. During the 1991-1993 period Santa Barbara County again shows the majority of impacts associated with the construction of the Exxon Santa Ynez Unit project, and, in the final survey period in 1994 Ventura County had the largest percentage of the demand, although the total number of units was less than 100. While the graph indicates a lessening of housing demand during the years of lower oil and gas development activity, it unknown whether housing was actually freed up as a result of lower demand. SEMP did not survey employees after they left the specific SEMP projects. Consequently, while oil and gas-related demand dropped, that may or may not translate to any change in housing vacancy.

Figure 6-1
HOUSING DEMAND, 1986-1994 BY COUNTY
PROJECT RELATED INMIGRANTS ONLY

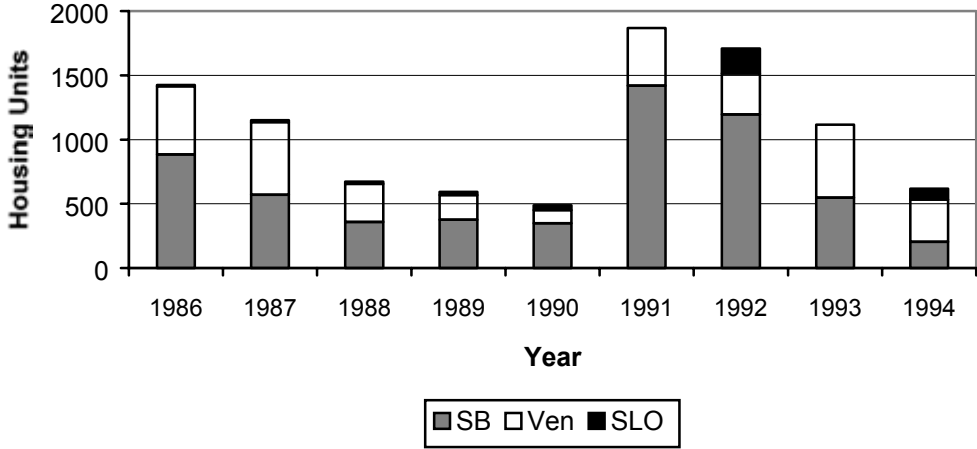


²⁴ Employees were considered “in-migrants” for the purpose of analyses like these if they moved into the Tri-county area within the year previous to first being surveyed. However, as indicated earlier, for mitigation purposes, all workers were considered permanent “in-migrants”.

²⁵ Housing impacts are derived from question 10 of the employee questionnaires and are provided for project-related in-migrants. Project-related is defined as any respondent indicating they spent at least 50 percent of their time on a specific project. In-migrant is defined as any respondent indicating a tri-county residence which differs from the county of residence 12 months earlier.

The direct, indirect and induced housing demand was substantially greater than the project related immigrants. The highest demand occurred in 1991 with approximately 1,800 housing units.

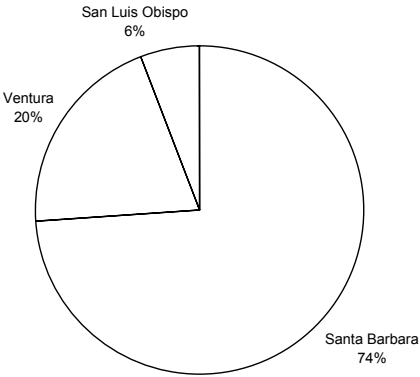
Figure 6-2
DIRECT, INDIRECT AND INDUCED,
HOUSING IMPACTS,
1986-1994



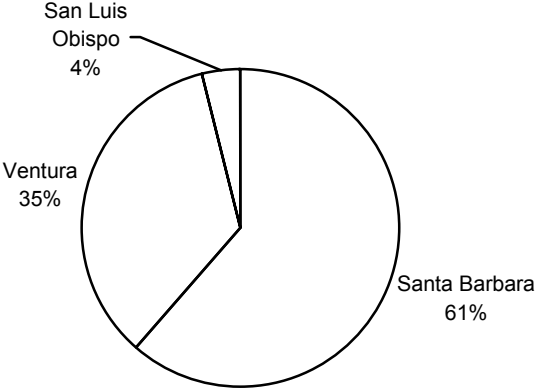
6.3 HOUSING DEMAND BY AREA

Santa Barbara County received 74 percent of the total 1986-1994 housing demand²⁶ while Ventura and San Luis Obispo Counties received 20 percent and 6 percent respectively. Ventura's relatively greater share of the demand is related to the fact that Ventura was a major oil and gas service area, providing service not just to the off-shore projects but to many other oil and gas projects, both on-shore and off-shore.

Figure 6-3
HOUSING DISTRIBUTION BY COUNTY,
1986-1994, PROJECT RELATED INMIGRANTS
1,960 TOTAL UNITS



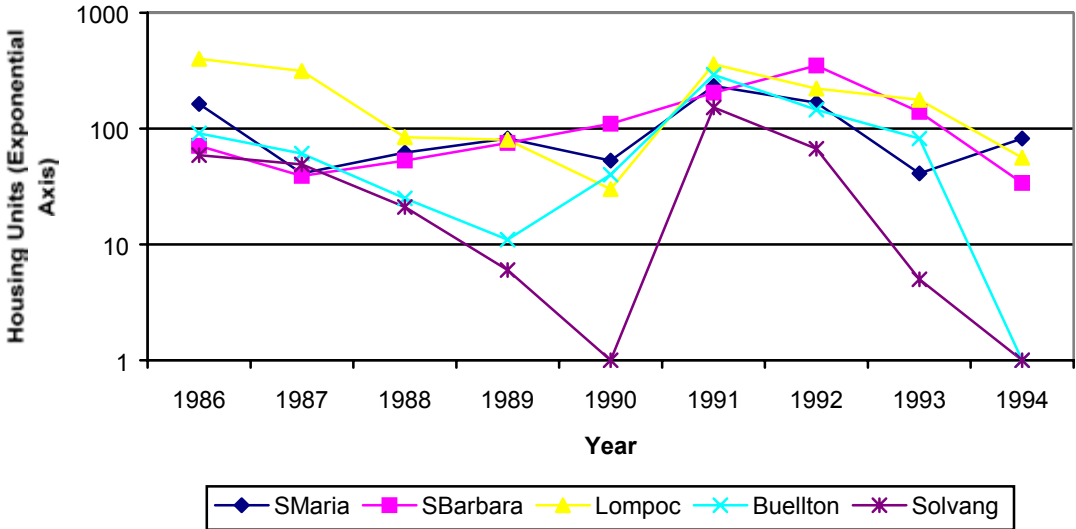
HOUSING DISTRIBUTION BY COUNTY,
DIRECT, INDIRECT, AND INDUCED,
9,600 TOTAL UNITS



²⁶ Project-related in-migrants from question 10 of employee questionnaire and Table 17 of SEMP reports.

Housing demand²⁷ was the greatest in the Santa Barbara County cities of Lompoc and Santa Barbara. In all jurisdictions the demand was greatest in 1987 and 1991 and dropped significantly by 1994. The overall demand on large individual cities was *relatively* small. For example, the City of Lompoc has 14,000 housing units and the largest annual SEMP demand was 400 units or 2.8 percent of the total housing stock. However in 1991 Buellton, as a smaller city, had a absolute oil and gas project impact on its total housing stock of 12.8 percent.

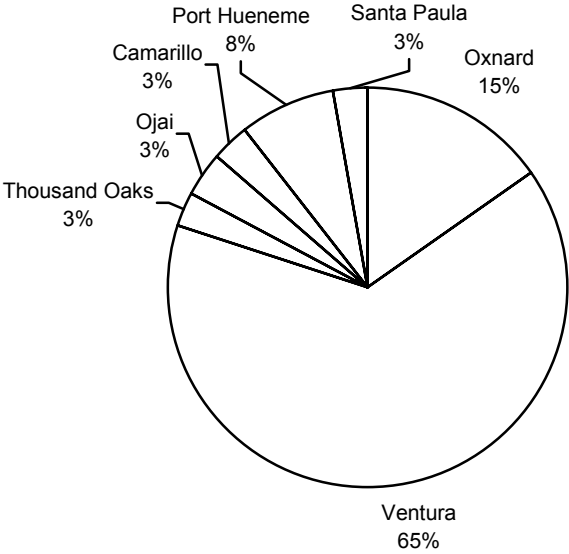
Figure 6-4
SANTA BARBARA COUNTY JURISDICTIONS,
DIRECT, INDIRECT, AND INDUCED IMPACTS BY AREA,
1986-1994, 5,900 TOTAL UNITS



²⁷Direct, indirect and induced housing impacts resulting from the SEMP multipliers. From SEMP Impact Report Table 6.

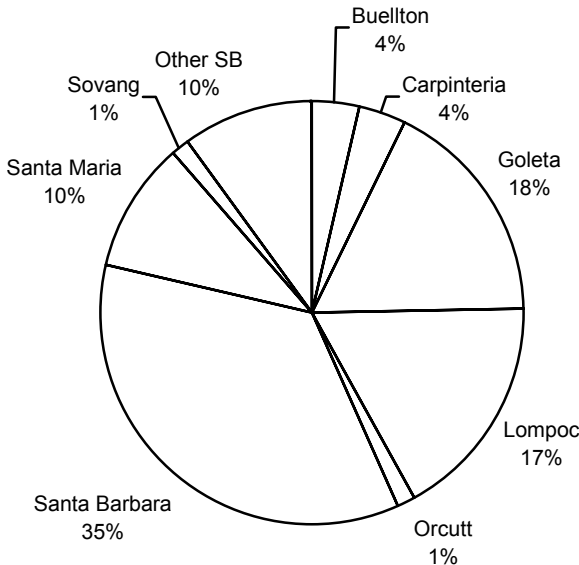
In Ventura County, the City of Ventura experienced the largest 1987 housing demand. (San Luis Obispo County demands were negligible).

Figure 6-5
VENTURA COUNTY JURISDICTIONS 1987,
DIRECT, INDIRECT, AND INDUCED HOUSING IMPACTS
518 TOTAL HOUSING UNITS



The location of housing demand can change over time with the same project. For example, the Santa Ynez Unit²⁸ project related housing demands for 1989 were centered in the Santa Barbara's South Coast with Santa Barbara City receiving the majority of demand, at 35 percent, and Goleta receiving 18 percent of the housing demands. The following three figures show a distribution of project related worker (project related includes both resident workers and new immigrants) demands that differ throughout construction of the Santa Ynez Unit in 1989, 1991 and 1994. These differences are likely due to a combination of factors including: 1) Differing average pay rates for the different phases; 2) the types of jobs dominating the phase; 3) by the type of housing the employee chooses; and, 4) the length of time an employee was working for, or perceives he/she will work for, the project (e.g., longer term employees tend to utilize a different type of housing than short term employees). For example, the early years of the project were associated with site development work that required clearing and grubbing but later years required a lot more workers with specialized skills associated with facility construction.

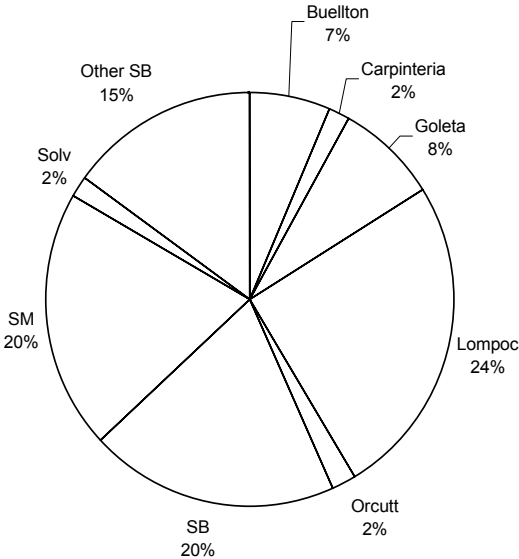
Figure 6-6
1989 SANTA YNEZ UNIT, HOUSING IMPACTS,
PROJECT RELATED WORKERS
140 TOTAL HOUSING UNITS



²⁸ Employee residents by community are derived from the Employee Questionnaire responses by project-related respondents. Project-related is any respondent indicating they spent at least 50 percent of their time on a specific project (from question 3).

By 1991 housing demand²⁹ due to the Exxon Santa Ynez Unit project was more evenly distributed throughout Santa Barbara County with the communities of Santa Maria, Lompoc, and Buellton, in north county receiving over 50 percent of the countywide demand.

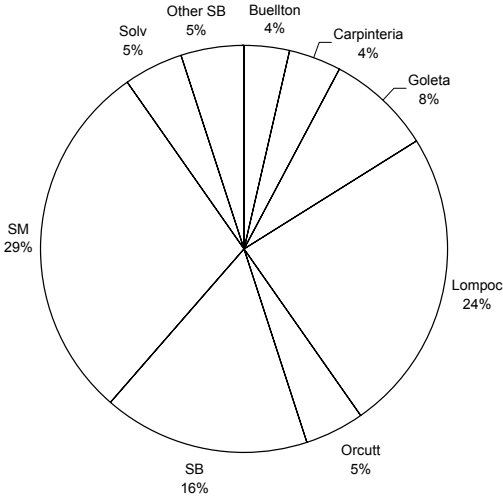
Figure 6-7
1991 SANTA YNEZ UNIT, HOUSING IMPACTS,
PROJECT RELATED WORKERS,
721 Total HOUSING UNITS



²⁹ Employee residents by community are derived from the Employee Questionnaire responses by project-related respondents. Project-related is any respondent indicating they spent at least 50 percent of their time on a specific project from question 3.

By 1994 the north county jurisdictions share of housing demand³⁰ had increased to 67 percent of the countywide total. Demand for the communities of Santa Maria rose from 20 to 29 percent over the three year period.

Figure 6-8
1994 SANTA YNEZ UNIT, HOUSING IMPACTS,
PROJECT RELATED WORKERS,
142 TOTAL HOUSING UNITS



A series of maps follow that portray in-migrant housing distribution by community, for all 1986-1994 projects combined, as well as for individual projects such as the Chevron Gaviota Facility, and Exxon Las Flores Canyon.³¹

Map 6-1 shows the geographical distribution over the Tri-county region for the 3,492 in-migrant employees for the 1986-1994 SEMP survey period. The immigrant population was used in this analysis because the SEMP model uses their distribution to allocate the indirect and induced impacts. Immigrant demand was greatest in the Santa Barbara County areas of Lompoc, Santa Maria and Santa Barbara. Many of the projects shown in the following maps have additional sites associated with them such as clerical and technical support offices and staging areas which may be located in other areas than the project itself.

³⁰ Employee residents by community are derived from the Employee Questionnaire responses by project-related respondents. Project-related is any respondent indicating they spent at least 50 percent of their time on a specific project on question 3.

³¹ Maps show project-related in-migrants (lived in different county previous year) that spent over 70 percent of their time on a specific project.

Map 6-1
INMIGRANT DEMAND BY COMMUNITY, 1986-1994,
3,492 TOTAL INMIGRANT EMPLOYEES

Housing demand associated with Chevron Gaviota Facility was concentrated in the City of Lompoc, which is the largest city closest to the Gaviota worksite that also provides some of the least costly housing. In comparison, the Exxon Santa Ynez Unit project shows a concentration of demand in Lompoc, but a relatively greater concentration in the areas of Goleta and Santa Barbara. Perhaps this reflects a tradeoff in travel distance to the job site and housing costs since housing is more expensive in Santa Barbara/Goleta than Lompoc.

Map 6-2
INMIGRANT DEMAND BY COMMUNITY, 1986,
CHEVRON GAVIOTA FACILITY,
229 TOTAL INMIGRANT EMPLOYEES

The 1991 Exxon, Santa Ynez Unit, Las Flores Canyon immigrant demand was scattered throughout the Tri-county region with Ventura City, Goleta, Arroyo Grande and Nipomo getting the majority of demand. Unlike other projects there was a notable lack of demand in the north Santa Barbara County areas.

Map 6-3
INMIGRANT DEMAND BY COMMUNITY, 1991,
EXXON LAS FLORES CANYON FACILITY,
286 TOTAL INMIGRANT EMPLOYEES

CHAPTER SEVEN

HOUSING CHARACTERISTICS

7.1 INTRODUCTION

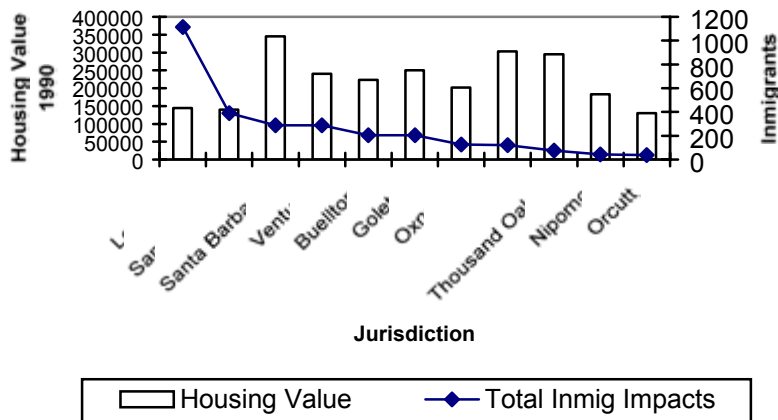
This chapter identifies variations in housing characteristics such as value, type, tenure, and household size. Survey results are compared to U.S. Census and other data where possible to show differences between the SEMP surveyed and general population.

7.2 HOUSING COST

Median housing values from the 1990 Census are shown on **Map 7-1**. They demonstrate the relative differences in the cost of housing in the communities of the Tri-county region during the period of off-shore oil and gas development. The South Coast of Santa Barbara County has some of the more expensive housing in the Tri-county region.

The following figure shows housing cost for jurisdictions with the greatest in-migrant demand. This figure shows high housing costs for some areas with high demand. According to the 1990 census results median monthly rents ranged from \$600 to \$800 throughout the Tri-county region with Ventura County the highest at \$750 and San Luis Obispo County the lowest at \$573. With the notable exception of Lompoc which was reasonably close to many project sites the cost of housing did not seem to be the primary deciding factor in worker location, though such costs are important. More than 44 percent of workers choose to settle in high housing cost areas. Based on State Employment Development Department Data, oil and gas workers receive some of the highest wages and, therefore may choose and be able to pay for housing in the more expensive parts of the Tri-county region.

Figure 7-1
COMPARISON OF INMIGRANT HOUSING DEMAND AND HOUSING VALUE



Travel distance was an additional factor considered by workers in choosing where to live relative to the worksite. **Table 7-1** shows the approximate distance in miles between Santa Barbara County Communities and principle project worksites. The City of Lompoc with the highest immigrant worker impact and lowest housing value also in close proximity to all project sites.

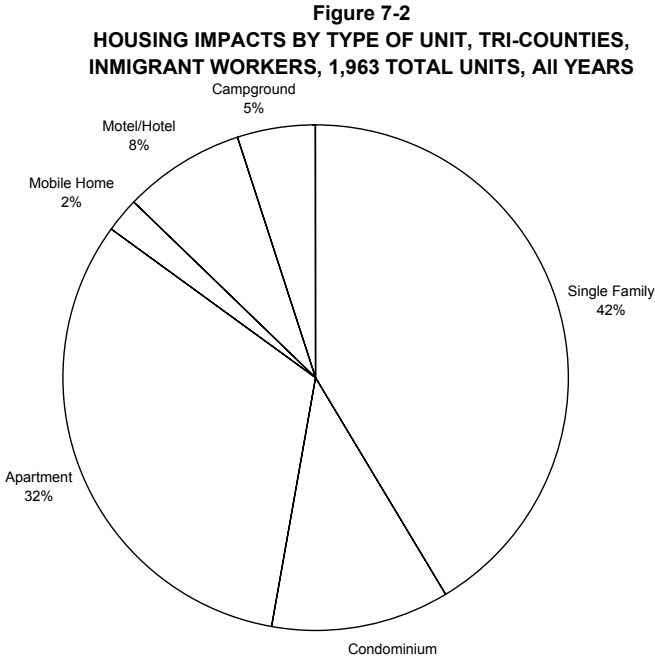
Table 7-1
APPROXIMATE ROADWAY DISTANCE BETWEEN COMMUNITIES
IN SANTA BARBARA COUNTY AND PRINCIPLE
ON-SHORE PROJECT WORK SITES
(MILES)

Community	Unocal Pt. Pedernales, Heating and Seperation Plant	Chevron Gaviota Plant	GTC Gaviota Marine Terminal	Exxon Las Flores Canyon
Cuyama	91	109	109	126
Guadalupe	28	50	50	67
Santa Maria	24	42	42	59
Orcutt	18	35	35	52
Los Alamos	17	22	22	39
Buellton	17	9	9	26
Lompoc	2	23	23	37
Mission Hills	1	27	27	44
Vandenberg Village	2	29	29	46
Santa Ynez	22	14	14	31
Solvang	20	12	12	29
Isla Vista	56	30	30	13
Goleta West	57	31	31	14
Santa Barbara	66	40	40	23
Montecito	68	42	42	25
Carpinteria	80	54	54	37

Map 7-1
MEDIAN HOUSING VALUE
1990 CENSUS

7.3 HOUSING DEMAND BY TYPE

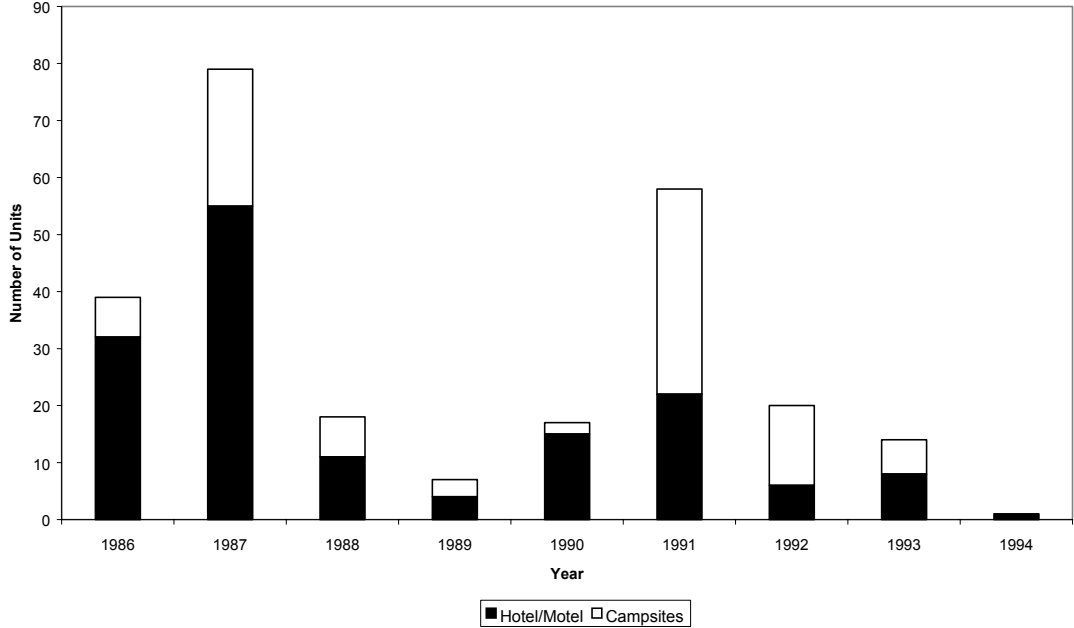
Housing demand³² varies by type, with single family units and apartments accounting for the majority of structure choice at 43 percent and 30 percent respectively. Considering the urbanized nature of the region, campgrounds were surprisingly well utilized at 5 percent of the total. This may be due in part to the high cost and lower vacancy rates for conventional housing, short term nature of the work, and moderate Mediterranean climate. Off-shore platforms did not contribute to this demand because they are not considered within county boundaries.



³² Project-related in-migrants, employee housing characteristics from SEMP table 17.

The use of temporary housing³³ such as hotel/motels and campsites provides a viable alternative to more conventional and permanent housing such as single family dwellings etc.. The peak year for hotel/motels was 1987 and the peak year for campgrounds was 1991.

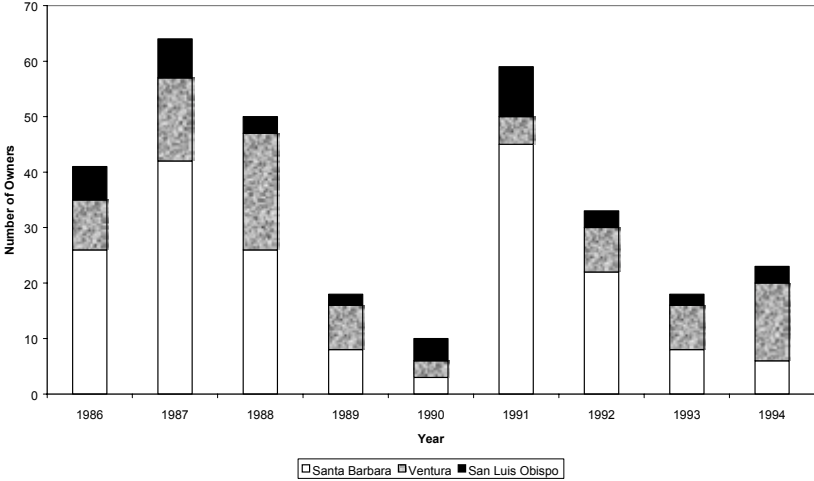
**Figure 7-3
TEMPORARY UNITS, TRI-COUNTY
INMIGRANT WORKERS,
1986-1994**



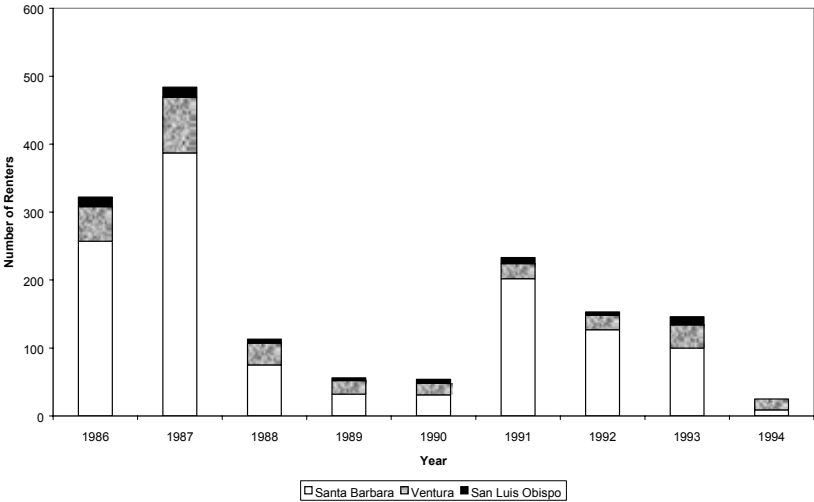
³³ Project-related in-migrants, employee housing characteristics from SEMP table 17.

Typifying the short term nature of the project workforce, the number of renter occupied units far exceeds owner occupied³⁴ at 1,266 units vs. 275 for the tri-counties over the 1987-1994 period. In terms of the distribution between the counties, Santa Barbara had the majority of both renter and owner occupied units over the same time period as compared to Ventura or San Luis Obispo Counties.

Figure 7-4
OWNERS 1986-1994



RENTERS 1986-1994



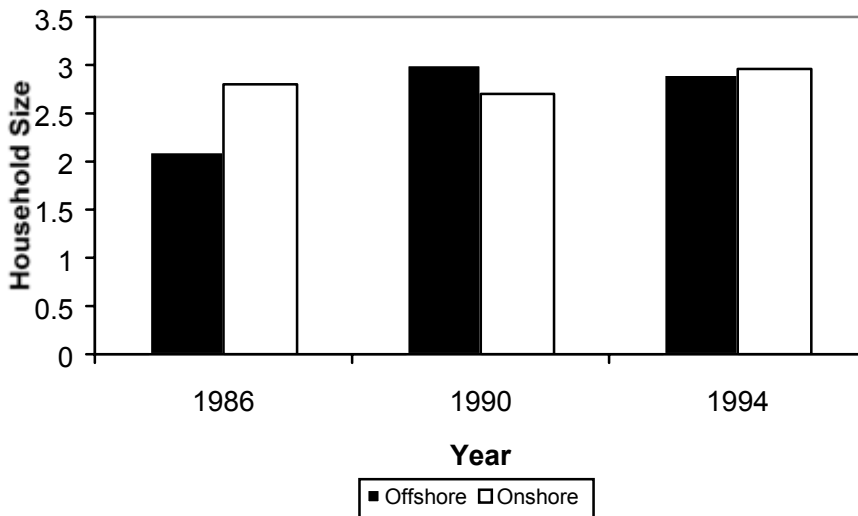
³⁴ The total number of project-related in-migrant employees who identified a housing type on question 11 of employee questionnaire. In some cases respondents indicated they owned a campground. Instead it is likely they owned the RV, or camper at the campground.

7.4 HOUSEHOLD SIZE

Household size³⁵ of workers involved in on and off-shore activity was fairly consistent in the range of 2 to 3 persons per household. Household size of in-migrants in various cities and unincorporated communities was compared with 1990 Census household size. This comparison did not show many similarities. The sample from the SEMP annual household size estimates was too small on the city level for a valid comparison with 1990 Census data. However, it is possible to aggregate all SEMP data reporting periods and calculate an overall average household size that represents a much larger sample size. When this is done the household size from the SEMP data base and the 1990 Census data base are similar:

- Average household size for the cities of Santa Maria and Thousand Oaks are the same as Census estimates at 3.0 and 2.8 respectively.
- For the cities of Lompoc and Ventura the average household size for oil and gas workers are .4 and .2 higher than the Census and the average household size for the City of Santa Barbara is .2 higher than the Census.
- Countywide household size estimates from the 1990 SEMP survey data was 2.2 persons per household for each of the three counties while the 1990 Census showed 2.72 for Santa Barbara County, 3.02 for Ventura and 2.53 for San Luis Obispo.

Figure 7-5
HOUSEHOLD SIZE
FOR ONSHORE AND OFFSHORE HOUSEHOLDS



³⁵ Average residents per household was derived by dividing the total number of project-related (project-related is defined as any respondent indicating they spent at least 50 percent of their time on a specific project) residents per project by the total number of tri-county project-related employee responses indicating that phase. This figure includes related and non-related occupants.

CHAPTER EIGHT

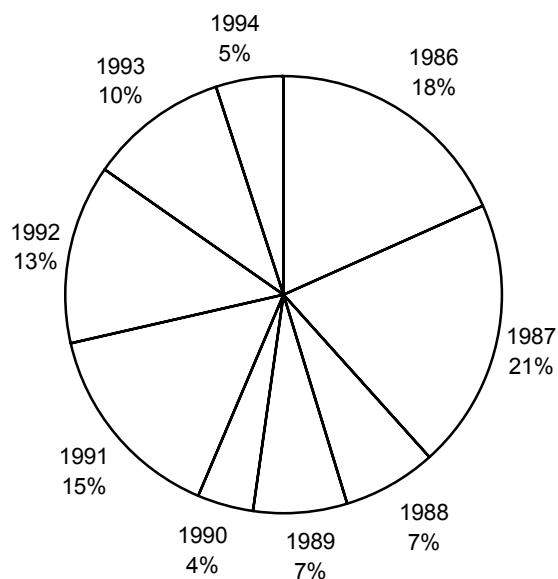
SCHOOL ENROLLMENT CHARACTERISTICS

8.1 INTRODUCTION

School enrollment data obtained from survey questionnaire responses between the 1986 to 1994 period are reviewed in this chapter. Included is a analysis by county, by project, and by phase.

School enrollment of new in-migrant oil and gas employee children is shown in the following figure³⁶ for the Tri-county region based on 1986-1994 survey data. School enrollment includes both public and private schools and grades K-12. The highest proportion of demand was during the 1986-87 and 1991-92 periods associated with construction of the Chevron Pt. Arguello and Exxon Santa Ynez Unit projects.

Figure 8-1
ENROLLMENT DISTRIBUTION BY YEAR, 1986-1994,
EMPLOYEE QUESTIONNAIRE, 785 TRI-COUNTY INMIGRANTS ONLY

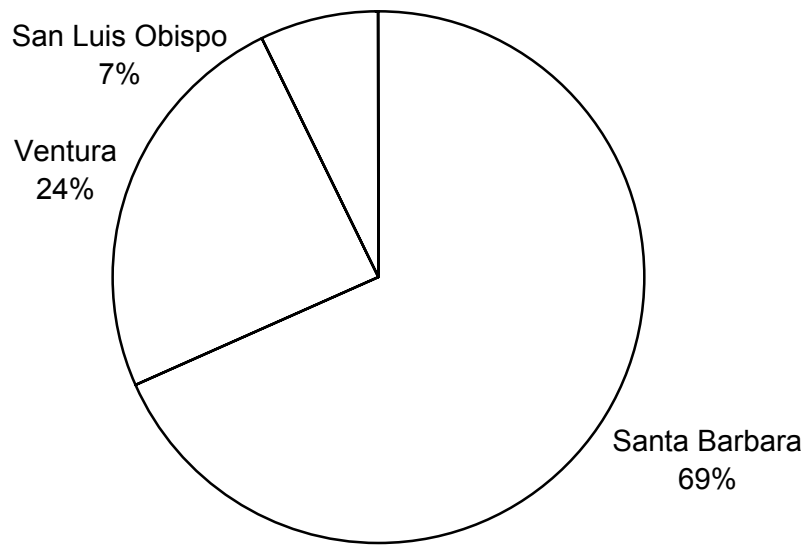


³⁶ Number of school children obtained from Table 13 in the SEMP report. Source is the employee questionnaire all projects combined in-migrants only.

8.2 SCHOOL ENROLLMENT BY AREA

Among the three counties, Santa Barbara County had the highest percentage (69%) of new immigrant employee school children³⁷ over the 1986-1994 period. Ventura and San Luis Obispo Counties had 24% and 7% of the remaining school children.

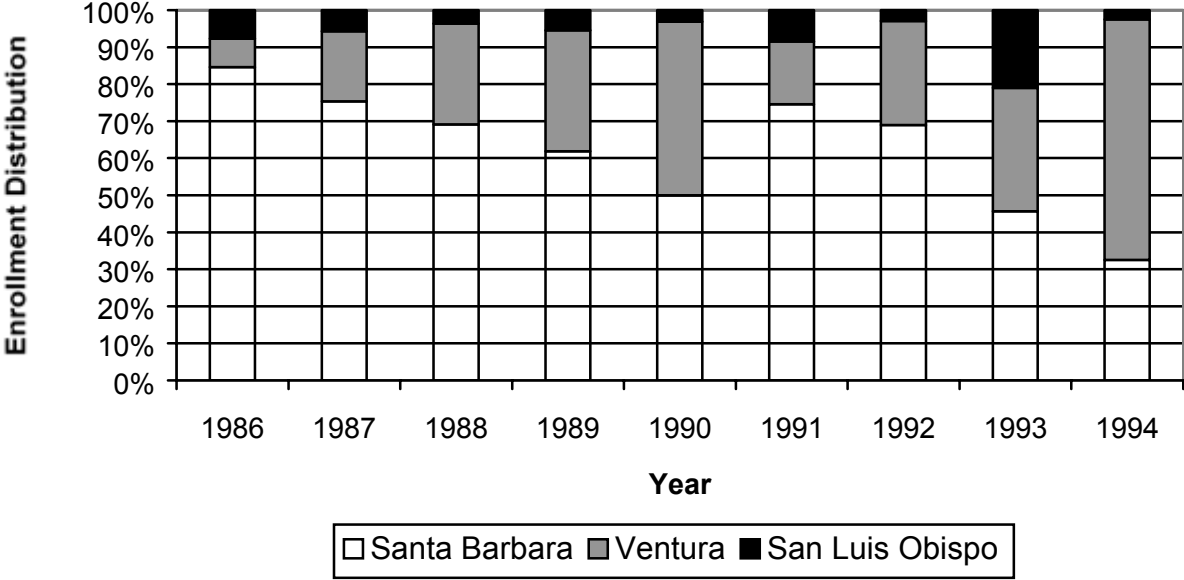
Figure 8-2
SCHOOL ENROLLMENT DISTRIBUTION BY COUNTY,
INMIGRANTS ONLY, 1986-1994,
785 SCHOOL CHILDREN



³⁷ From SEMP report Table 13, Employee Questionnaire all projects combined new in-migrants only.

School enrollment by county shows Santa Barbara County's distribution ranging from a high of 80 percent in 1986 to 35 percent in 1994. The peaks coincide with the peak construction period of various SEMP projects.

**FIGURE 8-3
ENROLLMENT BY COUNTY,
EMPLOYEE IMMIGRANTS ONLY, 1986-1994, ALL PROJECTS**



The direct, indirect and induced impact of population growth on school enrollment for Santa Barbara County is shown in the following two figures. The year 1991 represented the peak impact on school enrollment when approximately 50 percent of the impact occurred in northern Santa Barbara County. The 1991 year shows the largest enrollment with 57 percent in the Cities of Lompoc and Santa Maria.

Figure 8-4
DIRECT, INDIRECT AND INDUCED SCHOOL ENROLLMENT,
SANTA BARBARA COUNTY, 1986-1994

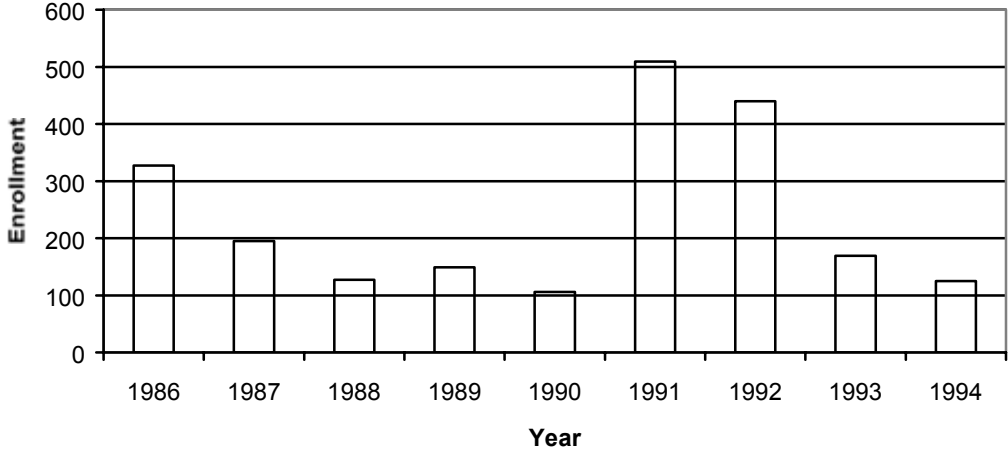
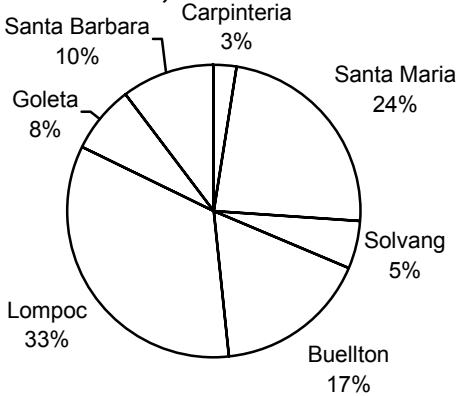


Figure 8-5
SANTA BARBARA COUNTY JURISDICTIONS
1991 DIRECT, INDIRECT, AND INDUCED SCHOOL
ENROLLMENT, 500 SCHOOL CHILDREN



8.3 SCHOOL ENROLLMENT COMPARITIVE DATA

The distribution of 1990 Tri-county immigrant student enrollment from the SEMP data base can be compared to several other enrollment data sources such as the California Basic Educational Data System (CBEDS) and Census data. Tri-county enrollment distribution was similar for both CBEDS and Census according to the following table. The SEMP distribution however, shows a relatively higher distribution in Santa Barbara County corresponding to more oil development activity.

**Table 8-1
TRI-COUNTY K-12
ENROLLMENT DISTRIBUTION
COMPARISON FOR 1990**

County	SEMP	CBEDS	Census
Santa Barbara	59%	27%	27%
Ventura	32%	57%	58%
San Luis Obispo	9%	16%	15%
Total	100%	100%	100%
Tri-County Immigrant Only Enrollment	257	198,430	235,050

Note: CBEDS (California Basic Educational Data System) Public School enrollment only.
1990 Census data

8.4 SCHOOL ENROLLMENT BY PROJECT

Exxon Santa Ynez Unit and the Chevron Point Arguello projects had the largest number of project related school age children³⁸. These are the children of project-related workers, whether those workers are in-migrants or from the local workforce. Note the progressively increasing number of school age children up to the year 1992 when a dramatic decline occurs. This decline was simply tied to long-term construction workers (these were significant construction projects taking several years to complete) who finally left the completed projects. It was not known whether these school children actually left the school districts since they also represent children of local workers who likely remained in the area after the project ended.

Figure 8-6
SCHOOL AGED CHILDREN BY PROJECT,
1986-1994, TOTAL NUMBER OF PROJECT RELATED

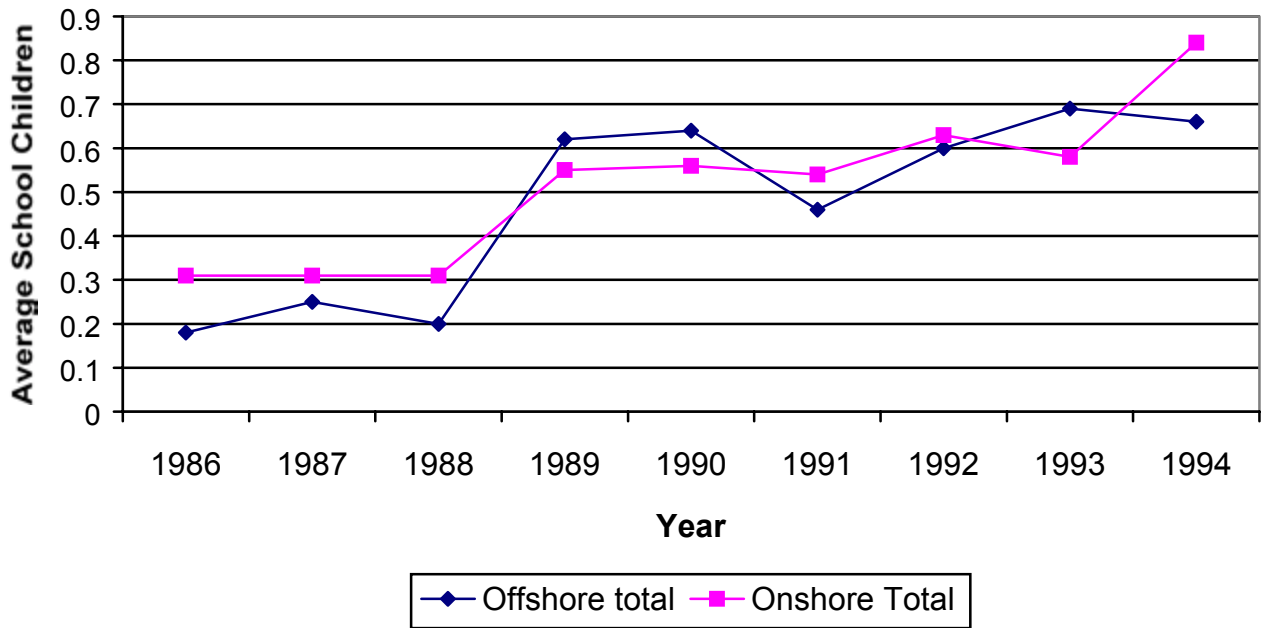


³⁸ Project-related respondents represents all project-related school age children (5 years and older), from SEMP report Table 14.

8.4 SCHOOL ENROLLMENT BY PROJECT PHASE

The average number of school children³⁹ for both on-shore and off-shore phases was fairly similar over time. It is interesting to note however that the average number increased over time from a low range of .2 to .3 school children per household in 1986-1988 to a high of .7 to .8 by 1994.

Figure 8-7
AVERAGE NUMBER OF PROJECT RELATED
SCHOOL CHILDREN PER HOUSEHOLD,
ONSHORE vs. OFFSHORE, 1986-1994



³⁹ Project-related respondents with school age children 5 years of age and older. From SEMP report Table 15.

CHAPTER NINE

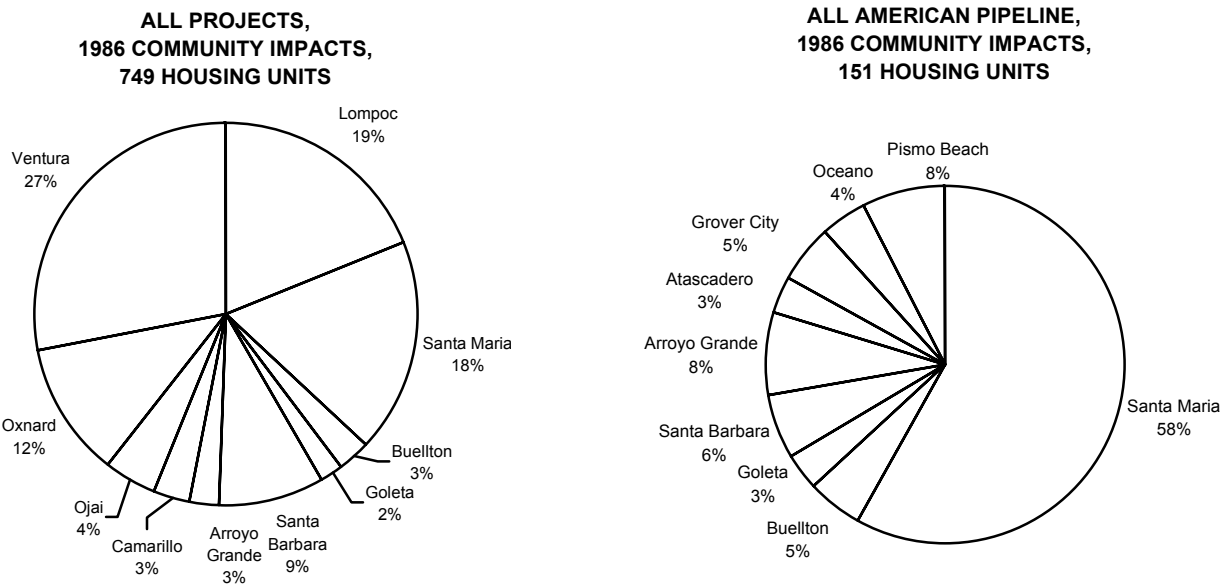
CHARACTERISTICS OF ALL AMERICAN PIPELINE WORKFORCE

9.1 INTRODUCTION

This chapter evaluates a specific project, the Celeron/All American Pipeline. This project is reviewed because it included a special survey during the project's peak employment period which had 140 employee responses, approximately one-half of the total workforce. This unique project may provide a reasonably complete picture of impact characteristics associated with the pipeline construction phase.

The All American Pipeline housing demand⁴⁰ (based on employee responses from both immigrants and existing workers) was focused in the northern Santa Barbara County cities of Santa Maria and Buellton which accommodated over 60 percent of the demand. South San Luis Obispo County communities also impacted were Pismo Beach and Arroyo Grande both accommodating 8 percent of housing demand. Other projects during that period had relatively greater demand in the City of Ventura and Oxnard in Ventura County and the cities of Lompoc and Santa Maria in Santa Barbara County.

Figure 9-1



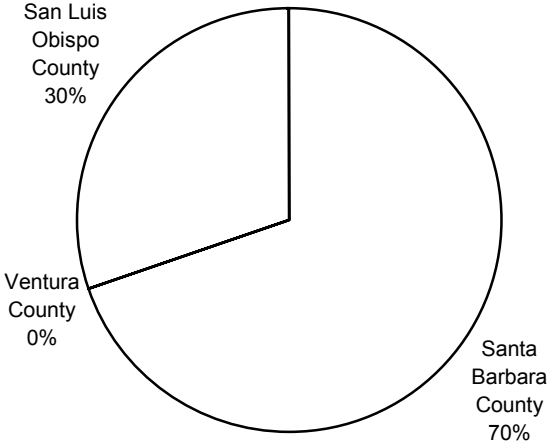
⁴⁰ Total number of employee responses from question 12 on employee questionnaire October 1986 second round survey.

The All American Pipeline 1986 immigrant employees are almost all in the City of Santa Maria with a few in the Grover City and Pismo Beach area. The pipeline however extended from Gaviota to Sisquoc. Not surprisingly pipeline employees travel to the pipeline worksites as it progresses along its route.

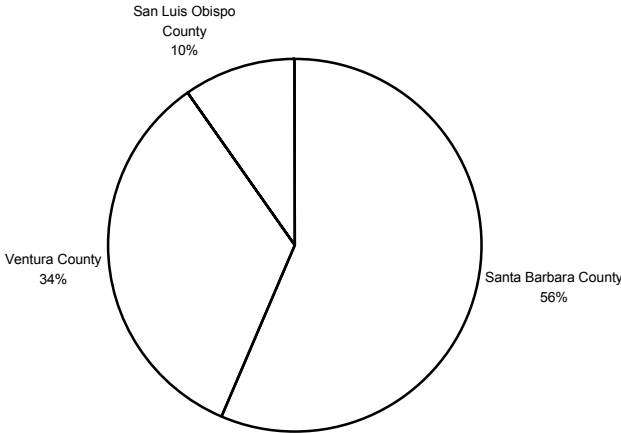
Map 9-1
INMIGRANT DEMAND BY COMMUNITY, 1986 ROUND 2,
ALL AMERICAN PIPELINE,
151 TOTAL INMIGRANT EMPLOYEES

The impacts of school enrollment⁴¹ associated with the All American Pipeline project was most prominent in the northern Tri-Counties region of San Luis Obispo and Santa Barbara County. All other projects during 1986 accounted for a more even distribution of project related school children throughout the Tri-Counties region.

**Figure 9-2
SCHOOL IMPACTS BY COUNTY
ALL AMERICAN PIPELINE, 1986
PROJECT RELATED STUDENTS 56**



**SCHOOL IMPACTS BY COUNTY,
1986, ALL PROJECTS COMBINED,
PROJECT RELATED STUDENTS 335**

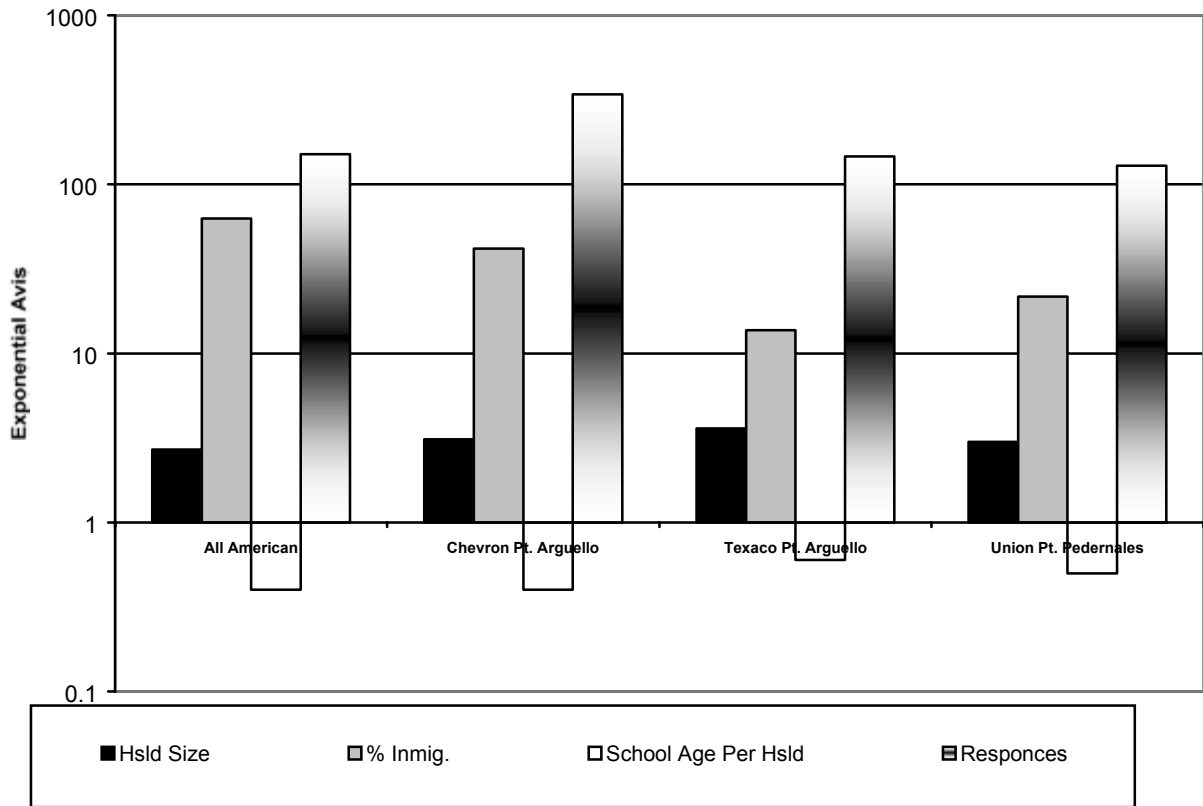


⁴¹ Number of school age children (5 or older) identified as attending a school district or private school on question 19 employee questionnaire.

9.2 VARIATION IN DEMOGRAPHIC FACTORS BY PROJECT TYPE AND SIZE

A comparison of factors⁴² such as household size, school age children per household, percent in-migrants, and, number of survey responses by project in 1986 is displayed in Figure 9-3. The All American Pipeline project had a higher proportion of workers that were from outside the Tri-Counties region than the other projects. Note that the figure has an exponential y-axis.

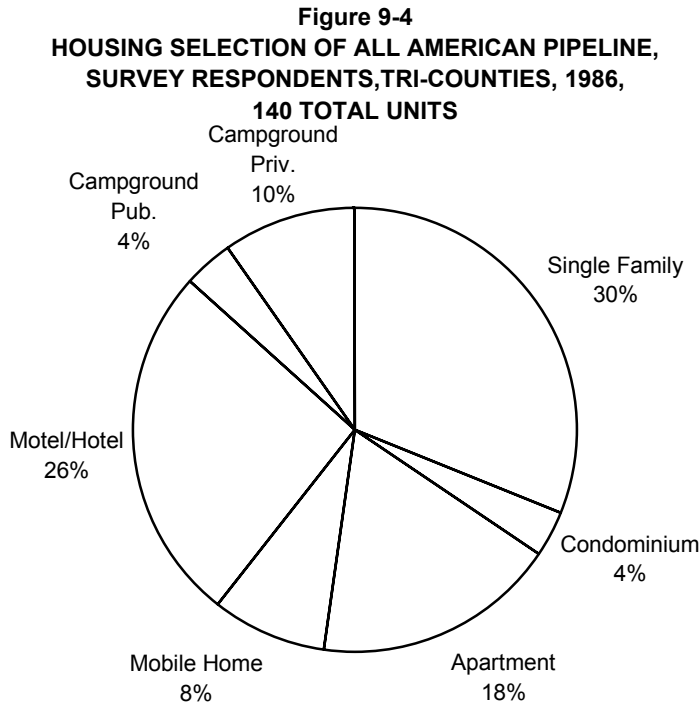
Figure 9-3
Demographic Factors for all Projects in 1986



⁴² Key factors are derived from the Employee Questionnaires. Average residents per household taken from question 16. Percent in-migrants taken from questions 7 and 8. Average school age children taken from question 19. Employee responses is the number of employees who identified each phase on question 4.

9.3 HOUSING CHARACTERISTICS

The most common housing structure type demanded by All American Pipeline project employees⁴³ was single family and motel units. Note also the significant portion of employees that used both private and public campgrounds (14 percent). These characteristics are probably due to the highly specialized and transient construction workforce. Pipeline construction is a relatively short process and most key workers such as welders come from out of the area.



⁴³ Project-related employee housing is taken from question 12 on the employee questionnaire and is provided for only project-related employees. These are employees who identified a specific project on question 3 of the employee questionnaire. Total number of employee responses to employee questionnaire is the number of employees who identified a housing type on question 12 of the employee questionnaire.

CHAPTER TEN

MITIGATION OF SOCIOECONOMIC IMPACTS

10.1 INTRODUCTION

Chapter 10 summarizes the process and results of mitigating the socioeconomic impacts of oil, gas, and pipeline project. This Chapter describes the use of the monitoring reports in determining subsequent impact mitigation, the formulas used to estimate mitigation costs, and the dynamics of negotiating mitigation settlements. A summary of mitigation payments by service, by company, by year, by jurisdiction or service provider is also provided. The discussion describes the responsibility of:

- The public applicants (e.g., cities, counties, school districts) who were requesting impact mitigation assistance;
- SBCAG and Ventura County Resource Management Agency (VCRMA) staff who administered the two counties mitigation program; and,
- The affected companies who reviewed mitigation claims and paid the claims.

10.2 MITIGATION GUIDELINES

Mitigation of the on-shore impacts of off-shore related oil, gas, and pipeline projects recognized the unique nature of these projects. These projects have a significant, but relatively short term, socioeconomic impact. The impacts are associated primarily with the development and construction phases of the project. However, the significance of the development impact of one project is strongly related to the coincident development of other projects. In general, socioeconomic impacts from long-term operations were determined to be relatively minor due to the relatively small size of the operations employment compared to the fairly large economy and population of the Tri-County region. The mitigation process had to respond to these challenges.

The SEMP monitoring reports (described in Chapter three and four) provided the basis for estimating population-related impacts due to oil, gas, and pipeline projects, which of course, drove the need for mitigation. These reports were distributed by SBCAG staff to affected communities and service districts, the oil and gas industry representatives and VCRMA and San Luis Obispo County staff. SBCAG staff prepared the Ventura County monitoring reports and staff of the VCRMA distributed the Ventura report to interested agencies in Ventura County.

A major first step in addressing impact mitigation occurred In May, 1988 when the Santa Barbara County Board of Supervisors approved a set of mitigation principles which provided ground rules for subsequent negotiations between the claimants and affected oil, gas, and pipeline project representatives. The Ventura County Board of Supervisors also adopted mitigation guidelines in May, 1989. Ventura County's guidelines are similar in concept to those adopted by the Santa Barbara County and include both principles and procedures for filing mitigation claims.

10.3 MITIGATION CLAIMS SUBMISSION AND REVIEW

The mitigation process for Santa Barbara County consisted of the following steps:

- Affected cities, counties, school districts and special districts identified specific services and facilities that were affected by population impacts associated with SEMP-covered developments and submitted a request for mitigation assistance.
- SBCAG, who received the requests from affected service providers, reviewed the claims, and requested more information, rejected the claim, or, forwarded the claim to oil and gas project representatives.
- Negotiations, facilitated by SBCAG, occurred between service providers and oil, gas, and pipeline company representatives.
- Formal offers to settle the claim were made by oil and gas project representatives and considered, rejected, or modified by service providers.
- Final agreements were concluded and payments from oil, gas, and pipeline project representatives to the applicants for assistance satisfied the company's obligation to the permit condition.

Ventura County's mitigation process was similar to Santa Barbara County (e.g., the VCRMA provided administrative and facilitator services to Ventura County service providers.), though SBCAG served as the information clearing house and technical assistant for all counties. The responsibility of those public agencies (service providers) receiving the monitoring reports was to assess their need for mitigation by:

- Identifying the extent to which they were affected;
- Assessing if they had capacity or service limitations;
- Reviewing the impacts in the context of mitigation guidelines; and,
- Contacting SBCAG staff for additional information.

SEMP enabled local agencies to determine which impacts were significant and why. Thus, the program recognized the importance of strictly local factors, such as policies, attitudes toward development, community-specific goals and resource constraints in mitigating impacts of new off-shore development. Interestingly, some communities were impacted but were opposed to programs that attempted to address "socioeconomic" issues (primarily a philosophical bias on the part of local elected officials). Other communities withheld their participation because of very strong opposition to any off-shore development and a belief that acceptance of mitigation payments might suggest the community was being "bought off" by "Big Oil." These philosophies were apparent in communities in San Luis Obispo County, where no mitigation payments were requested over the course of SEMP, despite continued interest by the County in receiving monitoring program reports.

By design and SEMP policy, impact mitigation assistance could only be requested within one year (Santa Barbara County) or two years (Ventura County) of the issuance of the impact monitoring report. This was to limit the obligation of the participating companies and establish fixed

benchmarks for the program. Unfortunately, many service providers waited until the end of the eligibility period to make requests. SBCAG spent considerable time reminding service providers of deadlines.

The process for making a claim required the applicant to submit a written claim, which needed to:

- Identify impact(s) based on estimates of population, public service and public facility impacts in the annual SEMP monitoring report (e.g. 47 students);
- Identify the affected activity, facilities, services, resources, or operations (e.g. classrooms);
- Describe the significance of the impact in terms of capacity limitations, costs to the agency and/or residents and users, or reduced levels of service (e.g. overcrowding of classrooms);
- Outline the method to mitigate impact (e.g. portable classroom);and,
- Estimate the cost of mitigation, including time frame and basis for cost (e.g. recent project costs) to provide or upgrade necessary facilities, services, etc.

There were a number of times in which applications for assistance were returned by Santa Barbara and Ventura County staff to applicants with a request for more information. All participants (service providers and oil companies) could appeal staff decisions to the respective County Board of Supervisors. In a few instances, applications were rejected by staff, however, while there were follow-up discussions with the claimants, there were no appeals of these discretionary decisions by staff to either the Santa Barbara County or Ventura County Boards of Supervisors.

In the beginning of the program, staff had to contact local agencies to encourage claims from impacted jurisdictions. Initially, the fear of fighting “Big Oil” and the work, though minimal, required to file a mitigation claim, inhibited some smaller agencies from participating in the mitigation program. Staff from Santa Barbara and Ventura Counties had to act as advocates for the program and encouraging the participation of smaller agencies. In addition, in some cases, the lack of a predetermined “canned” formula was seen as a barrier to participating in the program. In the case of some school districts, a group of independent school districts joined together and hired a consultant to develop a formula they could support. The formula was negotiated with the oil and gas project representatives and agreed to by all participants. Subsequent claims followed the formula and led to expedited settlements. In the case of public service impacts (e.g., police and fire protection), staff from the VCRMA and several cities worked with the oil company representatives, and developed a public service formula “model”. As in the case of school district impacts, subsequent claims followed this formula which again aided settlement negotiations.

Unfortunately, particularly in the early days of SEMP, considerable periods of time passed between issuance of the monitoring reports that identified impacts and the issuance by companies of the impact mitigation checks. For example, payments for the first year’s impacts were settled only after prolonged negotiations that consumed one and a one half to two years. Consequently, until this problem was rectified, the credibility of SEMP was question. Perhaps one of the reasons the negotiation process took so long was that very few of the negotiating parties understood the others business and financial processes. In addition, the parties involved in mitigating socioeconomic impacts lacked a background in this area and few understood the complexities of public finance,

affordable housing, and other aspects of the science of socioeconomic impact mitigation development and application. At one point, SBCAG staff became so concerned with the protracted negotiation process that a report was made to the Santa Barbara County Board of Supervisors calling attention what staff perceived as a lack of good faith progress by the operating companies. Once the mitigation formulas were established, future negotiations took a matter of months and a number of settlements were reached in both Santa Barbara and Ventura Counties. This fixed the problem and restored SEMP's credibility. In retrospect, the environmental review process could have been used more effectively as a means to identify potential mitigation formula options.

10.3 MITIGATION FORMULAS

The formulas eventually used to calculate mitigation payments were based partially on the monitored data, such as population and its distribution, housing by type, school enrollment, etc. However the applicants also provided data for mitigation assistance. For example, impacts on school facilities required the development of cost estimates for leasing portable classrooms, and impact mitigation of sewer and water services had to account for a pro-rata share of capital facility costs amortized over a period of time. The applicants were clearly best suited to provide this type of data. A summary of the mitigation formulas, which combine monitored and supplemental data, is portrayed in **Table 10-1**.

**Table 10-1
GENERIC SEMP MITIGATION FORMULAS
FOR SANTA BARBARA AND VENTURA COUNTIES**

JURISDICTION	IMPACT AREA	FORMULA
School Districts	Classrooms	New schoolchildren divided by children per classroom x Amortized cost of relocateable module
Community Service Districts	Water Supply and Sewer Capacity	Unit Demand x Amortized capital cost of capacity increase
County Parks	Campgrounds	Unit Demand x Amortized value of campsite development
City and County	Affordable Housing	Unit demand x 40% affordable x \$35,000/unit amortized over 10 yrs.
Cities and County	Public Services	Fiscal impact model emphasizing un-accrued and lagged revenue

The time period selected for amortizing capital facilities also was subject to negotiation during the development of the impact mitigation program. A ten-year period was selected as appropriate for amortization because the schedule for development of off-shore resources required about this amount of time. The same ten-year period was selected in estimating the impacts on affordable housing. Impacts on affordable housing were initially estimated by identifying the proportion of demand attributed to low and moderate income households and multiplying this by the development costs of low moderate income housing, amortized over ten years. Delays in achieving agreement on the mitigation formulas resulted in all final settlements being adjusted for inflation using the Consumer Price Index (CPI) – for example payments made in 1990 were adjusted to reflect 1988 dollar values because the impacts occurred in 1988.

Companies could reduce their potential mitigation obligation in certain impact categories by encouraging their workers to locate in areas where housing costs were more moderate. Santa Barbara County's permit conditions attempted to encourage new in-migrant workers to locate in North Santa Barbara County, such as the Lompoc and Santa Maria Valleys. These geographic areas had higher vacancy rates and the relative price of housing was significantly lower than the South County. Santa Barbara County's housing mitigation program, which required in-lieu affordable housing payments, only applied to the South Coast and Santa Ynez Valley. Consequently, those in-migrant employees living in the North County would not subject the oil companies to the housing mitigation program.

One particular element of the mitigation program proved to be of special interest to Ventura County – mitigation of public service fiscal impacts to general-purpose governments. The measure of public service fiscal impacts is based on the premise that local government annually spends a relatively fixed amount of money on a per capita basis to provide a consistent level of public services. When large numbers of temporary in-migrants arrive in an area, and do not fully contribute (e.g., through taxes) to the funding of the services they use, shortfalls result which, if not mitigated, create reduced levels of service. In-migrants need services right away but it may be some time until their tax and fee payments catch up with their service demands. The Ventura County Socioeconomic Monitoring and Mitigation Program (VCSEMP) established procedures and formulas for determining the extent of the revenue shortfalls and established a basis for calculating the annual per capita mitigation claim for each affected jurisdiction. These procedures were also used by Santa Barbara County agencies to mitigate impacts on city services. However, mitigation guidelines for both Ventura and Santa Barbara Counties did not allow service providers to enhance their facility/service levels above a given baseline level unless required by federal or state law. For example, if the City of Pleasantville's "baseline ratio" was 1.22 sworn police officers per 1,000 residents in 1990, this per capita ratio could not be enhanced in 1994 at the oil industry's expense.

A per-capita reimbursement figure can be calculated annually based on each jurisdiction's revenue. The figure is derived using a methodology that accounts for the revenues which are delayed or remain un-accrued while the jurisdiction spends money to provide on demand services associated with in-migrant population growth due to oil and gas projects. However, the formula also recognizes some revenues are independent of any increase in demand for services. Examples are user fees, interest income, some enterprise funds such as special assessment districts and other sources independent of either population growth or net increase in service demand. These revenue categories are excluded from the calculation in order to "net out" impacts.

Revenue lags were also incorporated in the development of the per capita revenue multiplier. These lags were determined by identifying the difference between the time a revenue stream begins and the ability of a jurisdiction to spend the revenues based upon a jurisdiction's customary collection process. Each revenue source was examined to determine if significant time lags occurred. This lag can be short (30 to 60 days) in the case of court fees, medium (180 days) in the case of sales and property taxes, or long (360+ days) in the case of business licenses and franchise taxes.

In addition, some revenues remain un-accrued because some of in-migrants are very transient and do not remain in the area long enough to generate revenue though they require services. For example, the regional road system is financed in part by revenues from registered motor vehicles. When short term residents retain their original state vehicle registration, this revenue source does not flow to local government, while vehicle code enforcement and road maintenance costs are still incurred.

Each jurisdiction examines its revenue accounts according to the California State Controller's Annual Report of Financial Transactions and classifies its revenue sources according to the classification scheme described above. The mitigation claim for public service impacts equals the annual number of in-migrants determined from the monitoring report multiplied by the adjusted per-capita expenditure multiplier. The per capita public services impact calculations used the following formula:

$$Ma = M + Mir$$

Ma - Adjusted per capita multiplier

M - Per Capita Multiplier-represents the unaccrued revenues associated with in-migrants.

Mir - Per Capita Revenue Lag Multiplier- costs to serve providers for the interval of time between the provision of services to an in-migrant and the receipt of revenues by local government.

10.5 MITIGATION PROGRAM PARTICIPANTS AND PAYMENTS

In all, approximately twenty-six jurisdictions in Santa Barbara and Ventura Counties received mitigation payments from the oil, gas, and pipeline projects subject to SEMP. A total of seventeen jurisdictions in Santa Barbara County received mitigation payments; five were incorporated cities, one was a sewer and water district which became a city during the course of the program, ten were school districts, and, the County. In Ventura County, eight jurisdictions received mitigation payments including the County, four incorporated cities, and three school districts.

Participation in the program varied by level of impact. The two counties, the larger cities, and a few school districts were involved throughout the life of the program. Some of the smaller school districts were only involved for one or two years. **Tables 10-2 and 10-3** indicate those jurisdictions in Santa Barbara and Ventura Counties that participated in SEMP between 1985 and 1995.

The level of involvement of staff and elected boards in approving and negotiating mitigation payments for local jurisdictions varied widely. In some cases departmental and agency managers were involved in negotiations, particularly during the outset of the mitigation program. In other cases, local elected representatives formally authorized submission of mitigation claims. In this latter case, the negotiations were closely monitored by agency staff and settlements were more quickly reached with the oil, gas, and pipeline project representatives.

Impact mitigation areas addressed included traditional public services provided by the cities and counties; water supply and sewer treatment facilities provided by counties, cities, and special districts; school facilities; campgrounds; and, affordable housing. Campground mitigation payments occurred in Santa Barbara County but not in Ventura County. Affordable housing mitigation value was significant in Santa Barbara County, and insignificant in Ventura County, whereas general public service mitigation was significant in Ventura County and less significant in Santa Barbara County. This later case reflected the fact that Santa Barbara County received property tax payments from the new on-shore facilities, whereas Ventura County received no significant property tax benefit. However, due the existence of an oil and gas service and supply industry, a deep water harbor and supply base, and relatively affordable housing, Ventura County received a significant proportion of the in-migrant population.

Oil, gas, and pipeline company project mitigation payments varied by the development schedule of the individual projects. **Table 10-4** indicates those projects that paid mitigation claims between 1985 and 1995.

Table 10-2
SEMP MITIGATION PARTICIPATION, BY YEAR, SANTA BARBARA COUNTY

Shaded Area Denotes Participation

JURISDICTION	IMPACT AREA	1986	1987	1988	1989	1990	1991	1992	1993	1994
CITY OF LOMPOC	PUBLIC SERVICES									
CITY OF SANTA MARIA	PUBLIC SERVICES									
BUELLTON UNION SCHOOL DISTRICT	SCHOOL FACILITIES									
SANTA MARIA BONITA SCHOOL DISTRICT	SCHOOL FACILITIES									
LOMPOC UNIFIED SCHOOL DISTRICT	SCHOOL FACILITIES									
COLLEGE SCHOOL DISTRICT	SCHOOL FACILITIES									
SOLVANG SCHOOL DISTRICT	SCHOOL FACILITIES									
GOLETA UNION SCHOOL DISTRICT	SCHOOL FACILITIES									
BUELLTON COMMUNITY SERVICES DISTRICT (incorporated 1992, city of Buellton)	WATER SUPPLY AND SEWER TREATMENT									
	HOUSING									
CITY OF SOLVANG	WATER SUPPLY AND SEWER TREATMENT									
CITY OF S. B.	WATER SUPPLY									
	HOUSING									
COUNTY OF S. B.	CAMPGROUNDS									
	HOUSING (South Coast)									
	HOUSING (Santa Ynez Valley)									
SANTA MARIA JT. HIGH SCHOOL	SCHOOLS									
S.B. CITY SCHOOLS	SCHOOLS									
CARPINTERIA SCHOOL DISTRICT	SCHOOLS									
SANTA YNEZ HIGH SCHOOL	SCHOOLS									
CARPINTERIA	HOUSING									

Table 10-3
SEMP MITIGATION PARTICIPATION, BY YEAR, VENTURA COUNTY

Shaded Area Denotes Participation

JURISDICTION	IMPACT AREA	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
COUNTY OF VENTURA	PUBLIC SERVICES										
CITY OF VENTURA	PUBLIC SERVICES										
	PUBLIC FACILITIES										
	HOUSING										
THOUSAND OAKS	PUBLIC SERVICES										
CITY OF OXNARD	PUBLIC SERVICES										
	HOUSING										
OXNARD UNION HIGH SCHOOL DISTRICT	SCHOOLS										
PLEASANT VALLEY	SCHOOLS										
OXNARD SCHOOL DISTRICT (ELEM)											

Table 10-4
OIL, GAS, AND PIPELINE PROJECT INVOLVEMENT IN SEMP

Shaded Area Denotes Participation

COMPANY	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
UNOCAL PT. PEDERNALES											
CHEVRON PT. ARGUELLO											
GAVIOTA MARINE TERMINAL											
ALL AMERICAN PIPELINE											
EXXON SANTA YNEZ UNIT											

Table 10-5
CUMULATIVE SEMP MITIGATION PAYMENT SUMMARY BY COMPANY, 1986-1994
SANTA BARBARA COUNTY

JURISDICTION	IMPACT AREA	CHEVRON/ TEXACO	UNOCAL	ALL- AMERICAN	GAVIOTA TERMINAL	EXXON	TOTAL
CITY OF LOMPOC	PUBLIC SERVICE	\$241,446	\$13,853	\$23,521	\$5,651	\$209,625	\$494,096
	WATER SUPPLY	\$16,911	\$1,249	\$1,904	\$374	\$1,915	\$22,353
CITY OF SANTA MARIA	PUBLIC SERVICE	\$92,750	\$9,277	\$6,217	\$2,460	\$89,697	\$200,401
BUELLTON UNION SCHOOL DISTRICT	SCHOOL FACILITIES	\$29,180	\$747	\$6,634	\$683	\$44,660	\$81,904
SANTA MARIA BONITA SCHOOL DISTRICT	SCHOOL FACILITIES	\$74,352	\$3,721	\$13,730	\$1,863	\$62,532	\$156,198
LOMPOC UNIFIED SCHOOL DISTRICT	SCHOOL FACILITIES	\$113,488	\$5,847	\$10,135	\$2,705	\$147,146	\$279,321
COLLEGE SCHOOL DISTRICT	SCHOOL FACILITIES	\$5,703	\$269	\$174	\$538	\$3,705	\$10,389
SOLVANG SCHOOL DISTRICT	SCHOOL FACILITIES	\$17,327	\$314	\$56	\$270	\$14,867	\$32,834
GOLETA UNION SCHOOL DISTRICT	SCHOOL FACILITIES	\$11,019	\$604	\$949	\$2,477	\$8,787	\$23,836
BUELLTON COMMUNITY SERVICES DISTRICT	WATER SUPPLY AND SEWER TREATMENT	\$53,823	\$1,987	\$8,732	\$2,203	\$97,397	\$164,142
	HOUSING	\$5,216	\$0	\$0	\$0	\$210,724	\$215,940
CITY OF SOLVANG	WATER SUPPLY AND SEWER TREATMENT	\$67,705	\$3341	\$718	\$508	\$40,191	\$112,463
CITY OF SANTA BARBARA	WATER SUPPLY	\$151,815	\$7,768	\$33,776	\$17,208	\$266,980	\$477,547
	HOUSING	\$536,986	\$25,354	\$115,693	\$58,205	\$1,959,322	\$2,695,560
COUNTY OF SANTA BARBARA	CAMPGROUNDS	\$52,988	\$7,228	\$2,929	\$1,466	\$34,421	\$99,032
	HOUSING	\$681,535	\$45,113	\$92,235	\$54,775	\$1,092,953	\$1,966,611
SANTA MARIA JT. HIGH SCHOOLS	SCHOOLS	\$21,269	\$0	\$675	\$361	\$31,446	\$53,751
SANTA BARBARA CITY SCHOOLS	SCHOOLS	\$11,788	\$0	\$2,160	\$1,275	\$89,833	\$105,056
CARPINTERIA	SCHOOLS	\$708	\$0	\$0	\$0	\$8,910	\$9,618
SANTA YNEZ HIGH	SCHOOLS	\$13,394	\$0	\$0	\$0	\$13,573	\$26,967
CARPINTERIA	HOUSING	\$8,886	\$0	\$0	\$0	\$187,515	\$196,401
TOTAL		\$2,208,289	\$126,672	\$320,238	\$153,022	\$4,616,199	\$7,424,420

A series of tables and figures summarize cumulative SEMP mitigation payments. **Tables 10-5 and 10-6** present cumulative payments for all jurisdictions in both counties, and for each oil, gas, and pipeline company subject to the SEMP permit condition. **Figures 10-1 and 10-2** summarize SEMP mitigation payments, by year, by company, for each county. **Figure 10-3** summarizes total mitigation payments for each county, and by functional (impact) category. A summary of payments inclusive of the impact years 1985 – 1995 indicate that the program resulted in approximately \$10 million in impact assistance payments to the two counties, the cities, and special districts for impacts on affordable housing, public facilities, (schools and other infrastructure) and public service.

**Table 10-6
CUMULATIVE SEMP MITIGATION PAYMENT SUMMARY BY COMPANY, 1986-1994
VENTURA COUNTY**

JURISDICTION	IMPACT AREA	CHEVRON/ TEXACO	UNOCAL	ALL- AMERICAN	GAVIOTA TERMINAL	EXXON	TOTAL
COUNTY OF VENTURA	PUBLIC SERVICES	\$754,909	\$75,649	\$21,058	\$9,022	\$1,166,326	\$2,026,964
CITY OF VENTURA	PUBLIC SERVICES	\$293,998	\$16,781	\$1,612	\$943	\$518,882	\$832,216
	PUBLIC FACILITIES	\$228,123	\$40,149	\$4,464	\$936	\$0	\$273,672
	HOUSING	\$2,625	\$359	\$0	\$19	\$0	\$3,003
CITY OF OXNARD	PUBLIC SERVICES	\$66,763	\$8,255	\$831	\$183	\$43,453	\$119,485
	HOUSING	\$0	\$0	\$0	\$0	\$0	\$0
CITY OF THOUSAND OAKS	PUBLIC SERVICES	\$0	\$0	\$0	\$0	\$39,825	\$39,825
OXNARD HIGH	SCHOOLS	\$46,392	\$4,486	\$417	\$412	\$20,820	\$72,527
PLEASANT VALLEY	SCHOOLS	\$0	\$0	\$0	\$0	\$5,155	\$5,155
OXNARD SCHOOL DISTRICT (ELEM)	SCHOOLS	\$44,573	\$6,473	\$568	\$170	\$6,654	\$58,438
TOTAL		\$1,437,383	\$152,152	\$28,950	\$11,685	\$1,801,115	\$3,431,285

Figure 10-1
SEMP IMPACT MITIGATION PAYMENTS, BY COMPANY,
AND COUNTY, 1986-1995

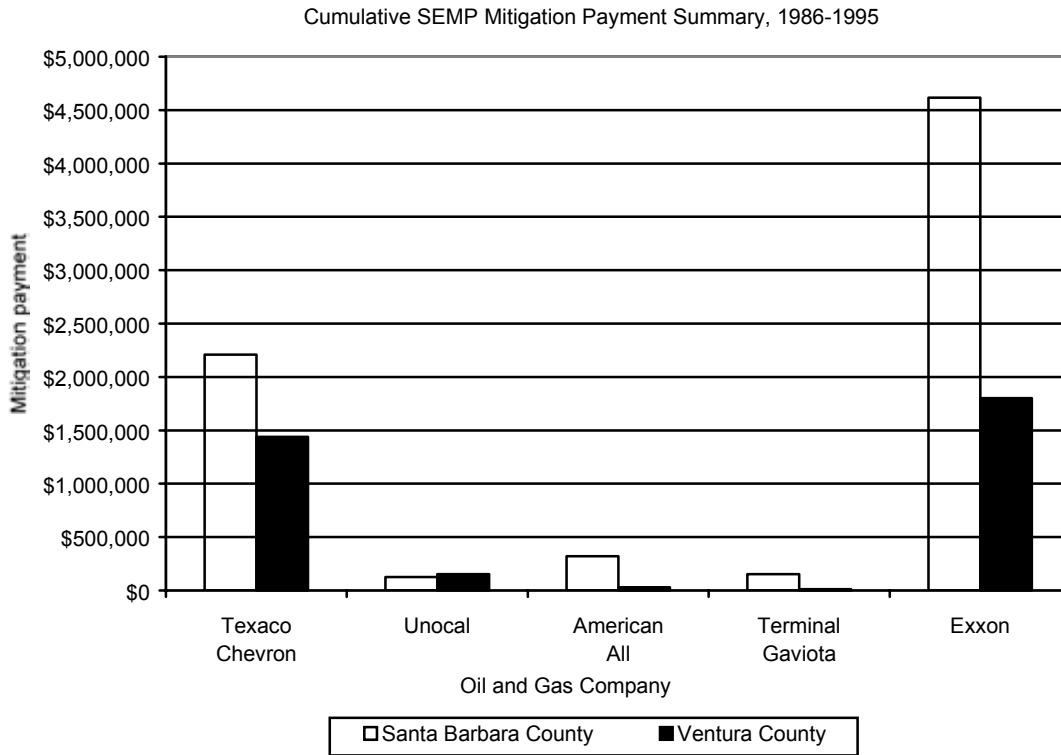


Figure 10-2
SEMP IMPACT MITIGATION PAYMENTS,
BY COUNTY, BY YEAR OF IMPACT

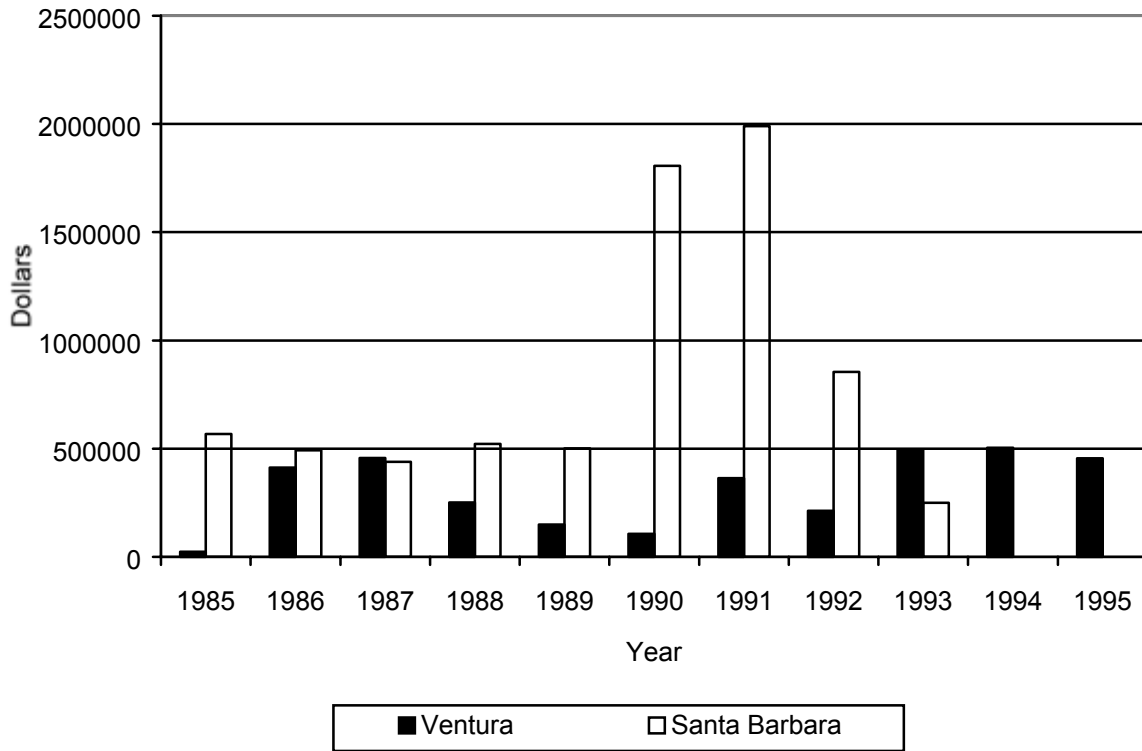
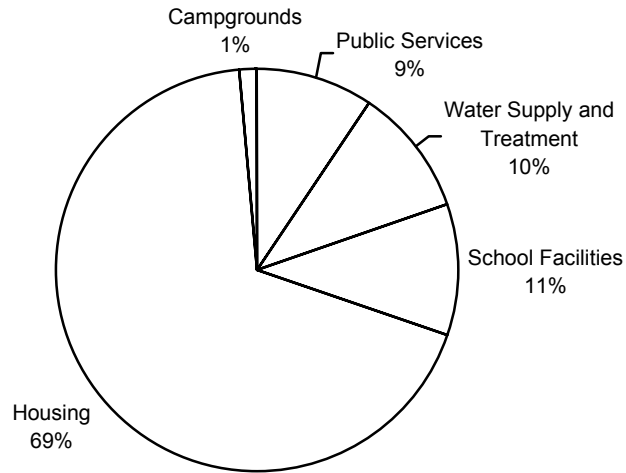
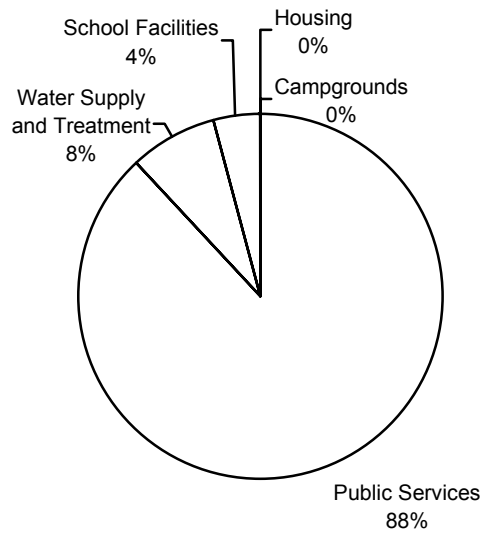


Figure 10-3
SEMP IMPACT MITIGATION PAYMENTS BY FUNCTIONAL CATEGORY,
1985-1995

SANTA BARBARA COUNTY, \$7,424,420 TOTAL
MITIGATION PAYMENTS



VENTURA COUNTY, \$3,431,285 TOTAL
MITIGATION PAYMENTS



CHAPTER ELEVEN

CONCLUSIONS AND RECOMMENDATIONS

11.1 CONCLUSIONS

Chapter Eleven summarizes the lessons learned from the SEMP program and provides some recommendations in addressing socioeconomic impacts with a monitoring and mitigation program.

As indicated in Chapters One and Two, SEMP was one of several models used to deal the socioeconomic impacts associated with natural resources-related growth in the 70's and 80's. These models included: 1) No mitigation letting the existing structure address new impacts; 2) mitigation in advance of anticipated, and estimated, growth; 3) mitigation partially in advance and partially during growth; and 4) mitigation as the result of specific monitoring of growth (the SEMP model). The SEMP model proved to be a reasonable approach to mitigating the impact of oil and gas development despite the significant time requirements of the system.

The SEMP model did yield, however, significant benefits for local governments, as is evidenced by the more than \$10 million in mitigation payments. Yet, the SEMP model, by measuring past growth rather than anticipating future growth, did not always provide the most effective assistance to mitigate impacts.

Given the size of the Tri-county economy, this weakness did not prove a significant problem. However, certainly in areas with smaller economies and infrastructures less capable of absorbing significant growth, it may be better for local governments to balance some up-front grants against final charges determined by specific monitoring data.

As indicated in Chapter Ten, mitigation formulae, negotiated up-front may have speeded mitigation payments and reduced the time and effort required to negotiate on every grant application. Such formulae do not work in every case (one size does not always fit all). However, standard, pre-negotiated formulae, with the flexibility to adapt to specific needs may prove a better model for the future. The environmental review and mitigation process should lead to better specification of formulas.

The expenditures system did not seem to be as effective as the employment-based system which SEMP adopted in its later years. There were a number of reasons for this, most of which have been detailed in earlier chapters. However, it is important to note that the task of collecting expenditures data and attempting to reconcile variances in the data is significant and, therefore, expensive and not entirely cost efficient. From the political perspective, the burden on small local contractors and the perceived intrusion of government in one's business was not well received.

Most importantly, it seemed that, throughout the SEMP use of an expenditures base, participants found it difficult to understand the multipliers generated by the expenditures model (e.g., 22 in-migrants were generated for each \$1 million of direct expenditures). At no point during the period in which SEMP used expenditures data was this issue resolved.

The employment-base, beyond addressing many of the logistical and consistency issues, generated multipliers that appeared to be more understandable by the majority of SEMP participants.

Despite its complexity, and the effort it required, the SEMP survey system did seem to capture a significant portion of the workforce. As indicated earlier, compliance was quite good for an effort of this size and complexity. Much of this was due to the contract requirement placed on contractors and subcontractors by SEMP Operating Companies and the willingness of the Operating Companies to reimburse contractors and subcontractors for the personnel costs (e.g., the hour twice each year it took employees to complete the forms, the time of accountants to complete the Expenditures and Employment Forms) associated with the survey program. The aggressiveness of the Operating Company representatives in enforcing the contract requirement was also a key factor in the survey's success.

Employees did not generally object to completing the survey questionnaires. While approximately 2-3 percent of surveys contained "interesting" hand-written comments, which in most cases provided survey data entry staff a bit of comic relief, nearly all employees of Operating Companies and contractors and subcontractors did a thorough job of completing survey questions. SBCAG audits of selected questionnaires did not indicate any evidence of fraud.

The survey model of asking employees twice each year to complete a questionnaire during working hours was one model of several that SEMP could have used. Entry/exit interviews is an example of another model. In retrospect, the SEMP model probably was among the most efficient and easiest to enforce, but perhaps not the most complete. The nature of regular surveys twice a year results in a number of employees being missed.

During the course of SEMP, survey training was provided primarily at the beginning and when the expenditures system was replaced with the employment-based system. Additional training, in the form of yearly sessions would have assisted both Operating Company and contractor/subcontractor representatives.

The SEMP coordinating group, which consisted of representatives of the counties, operating companies, survey contractors, seemed effective in negotiating both analysis and substantive mitigation issues. The group met 2-4 times each year during the height of the survey program and developed and reviewed all aspects of model and survey development, and dealt with issues related to non-company specific mitigation questions. The addition of public service representatives, apart from the public sector program administrators were useful additions to the Technical Advisory Committee; however, their participation was usually short lived. Company representatives also met separately to review various issues related to the survey process.

The impacts of oil, gas, and pipeline projects are closely related to the coincident timing of other resource development projects and the dynamic economic context. Phasing of development has a significant impact on the ability of an area to accommodate socioeconomic impacts. SEMP was created out of a condition of multiple projects proposed at a similar time. Phasing of resource development respond to the needs of local communities which require a long lead time to develop public services required by new in-migrants. Phasing is probably the most effective mitigation measure to reduce the severity of socioeconomic impacts.

While phasing of resource development is clearly attractive from a public perspective, it may not be readily accepted by private sector operators. This is particularly true if those operators have had to make significant up front investments such as lease payments to secure the rights to recover the resource.

One of the key problems in the Tri-county situation was the very poor tax structure in place in California at the time. In other states around the West (e.g., Wyoming, Colorado) during the natural

resources boom of the late 70's and early 80's, tax laws allowed the use of the normal property tax revenues accruing from oil and gas development to be used to deal with significant portions of the attendant impacts. Additionally, these states impose significant severance taxes and other levies to fund mitigation programs. In these states, the tax system could be adjusted (e.g., mineral impact grants, pre-payment of taxes) to provide very significant assistance to local communities. California did not allow this and, therefore, companies were forced to bear nearly all the burden through impact mitigation fees.

Little attention in SEMP was given, either by the government participants or by the Operating Companies, to innovative methods to finance impact mitigation, e.g., loans.

11.2 RECOMMENDATIONS

What is the best model for addressing socioeconomic impact mitigation? Perhaps a hybrid based primarily on the a monitoring and mitigating system that measures impacts and then addresses costs using direct measures of those costs with another model that includes an up front pool of funds to quickly address short term needs.

To deal with the key weakness of the system (that communities need funds for critical infrastructure needs when the impacts are first occurring), the direct measurement system might be augmented by an "emergency fund" established at the time of initial permitting. The size of such a fund would depend upon the size of the population and economies in primary host communities, and critical infrastructure needs. For example, in areas similar to the Tri-county region, the emergency fund might be \$2-5 million. It might be replenishable under certain circumstances. Grants from the emergency fund might be allocated by an "impact board", established as a temporary body to deal with short-term mitigation issues.

Grants might be restricted to items truly of an short term nature, such as school facilities, water and sewer improvements, etc. that need to respond to the impacts of growth.

Contributions to the emergency fund would be credited toward the ultimate mitigation bill of a company as determined through the direct measurement aspect of the program.

More attention should be given to identifying innovative financing methods to allow bonding and other financial instruments to supplant direct grants. For example, Operating Companies might be given the opportunity to manage impact assistance through loans, or through buy-down of bonding interest rates, or other non-grant options. What might help in facilitating such options is to form an impact assistance team, similar to the SEMP coordinating body, as soon as it is apparent that growth problems are likely, and devote early discussion to financing options. The state could also be a participant on such a group.

Before embarking on any type of monitoring and mitigation process, all of the stakeholders should spend some effort in gaining some understanding of socioeconomic issues such as public finance structure and affordable housing availability and development. It would also be beneficial for both public and private sector participants to familiarize their counterparts with the most critical financial and administrative boundaries within which they must work.

Local governments (e.g., cities, school districts) should be represented on formal impact mitigation or coordination bodies.

Regarding survey recommendations, the SEMP model should be considered in future situations, recognizing that each case differs. Chief among recommendations is enforcing participation through a contract clause with project contractors and subcontractors and assertive “enforcement” by Operating Company representatives.

Phasing of resource development activities must be used as a tool to lessen the magnitude of socioeconomic impacts since infrastructure development requires a long lead time.

The federal and state government need to share mineral resource revenues with locally impacted communities to lessen the burden on those jurisdictions impacted by state and national energy policy. Mitigation of socioeconomic impacts often receive less attention than impacts on the physical and biological environment.

APPENDICES

- I SEMP PERMIT CONDITION
- II SEMP TAC COMMITTEE MEMBERSHIP
- III SEMP QUESTIONAIRES
 - A. Operating Company
 - B. Contractor/Subcontractor
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- VIII CURRENT AND REVISED SEMP PROJECT NAMES AND OPERATING COMPANIES
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**MEMBERSHIP
SEMP TECHNICAL ADVISORY COMMITTEE
1985-1997**

AGENCY/COMPANY	CONTACT PERSON	DURATION
Santa Barbara County Association of Governments	Gerald R. Lorden, Director Michael G. Powers, Deputy Director Program Manager Kim W. Fulton-Bennett Brian Bresolin	1985-1997 1985-1997 1985-1987 1987-1997
Santa Barbara County Energy Division	Mark Bubriski Deborah Fleischer Doug Anthony Colin Fallat	1985-1987 1986-1987 1987-1988, 1994-1997 1989-1993
Ventura County Resource Management Agency	Gene Kjellberg Lynee Kada	1985-1997 1992-1995
San Luis Obispo County Planning	Andy Back Pat Beck David Church Richard Murphy John Euphrat	1985-1986 1986-1987 1986-1989 1992-1994 1995-1996
California Coastal Operators Group WSPA	Terry Covington Frank Holmes	1986-1994 1995-1996
Unocal	Darwin Sainz Larry Waterman Jeff Graff	1985-1992 1986-1989 1992
Texaco	Bill Peters Dianne Brand Frank Peet	1985-1987, 1991 1989-1990 1992-1995
Chevron	Lee Bafalon Ralph Mayo John Dowling	1985-1987, 1991-1996 1990 1987-1989
Exxon	Jim Flynn	1987-1997
GTE	Dan Mikalik	1989-1991
All American	Mike Madden Karen Olsson Cindy Dahl	1987-1988, 1992-1996 1989-1991 1993-1996

SEMP Project/ Revised Name	Operating Company/ Revised Name
Santa Ynez Unit-Las Flores Canyon	Exxon
Point Arguello	Chevron
Point Arguello	Texaco
Gaviota Marine Terminal/ Gaviota Storage Terminal	Gaviota Marine Terminal Co.
Point Pedernales	Unocal/ Torch
All American Pipeline, L.P.	Celeron Pipeline Company of California All American Pipeline Limited Partnership (AAPLP) , Plains All American Inc; General Partner

APPENDIX IX

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