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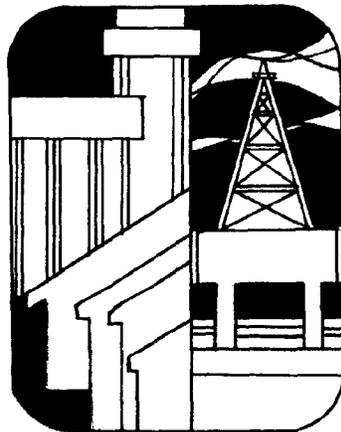
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OCS DEVELOPMENT IN COASTAL LOUISIANA: A SOCIO-ECONOMIC IMPACT ASSESSMENT

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OCS DEVELOPMENT IN COASTAL LOUISIANA:
A SOCIO-ECONOMIC IMPACT ASSESSMENT

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PREFACE

It is obvious to anyone who has visited the area and studied the state that outercontinental shelf oil and gas development activity has had broad social and economic impacts on coastal Louisiana. This study quantifies those impacts in terms of economic production, jobs, population, and public service costs. Related topics concerning the federal Coastal Energy Impact Program, the additional costs of urban development in wetlands (compared to natural drylands), local planning capabilities in the coastal zone and citizen involvement in coastal planning are also discussed. In presenting this expanded information, this study is directed toward facilitating planning for an increase as well as a decrease in OCS activity and its impacts on Louisiana.

The Louisiana Information Processing Authority provided the computerized Louisiana Input-Output Model which was used to estimate Louisiana production, by economic sector, due to OCS activity (Chapter 2). Mr. Steve Zerangue of that agency was extremely helpful in facilitating the use of the model. Mr. James Verges of the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration provided valuable background information on the Coastal Energy Impact Program (Chapter 4), and Mr. Charles Melancon and his staff at the South Central Planning and Development Commission were very cooperative in supplying information needed for the section on local planning (Chapter 6). The authors wish to thank these people and all the other persons at public and private agencies who helped in the preparation of this study.

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AJM, Jr.

August 1977

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CHAPTER 1

ABSTRACT OF THE STUDY

In the seven chapters which comprise this study, various impacts of outercontinental shelf (OCS) oil and gas development on the Louisiana coastal zone and related topics are discussed.¹ Chapter 2 deals with the OCS related production, employment, and population impacts. It begins with a discussion of input-output analysis. Louisiana economic sector production related to OCS production for the years 1956, 1959, 1964, 1967, 1972, and 1974 is computed using the Louisiana Input-Output Model. This Louisiana OCS related production is then allocated to the coastal zone parishes, and transformed into employment. From OCS related employment, CCS related parish populations are computed for the years 1967, 1972, and 1974. What are felt to be maximum and minimum estimates of Louisiana OCS related sectoral production are computed for the years 1972 and 1974 so that the maximum and minimum employment and population estimates due to OCS activity may be presented.

Because 1972 was near the peak year² for OCS oil and gas production and, therefore, related population, it is used as the basis for computing the state and local public service costs for the OCS related populations in the coastal zone parishes. The public service sectors analyzed in Chapter 3 are education, highways, police protection, fire protection, water supply, solid waste

¹The Louisiana coastal zone is made up of all or parts of the following parishes as defined by the State Planning Office's Coastal Resources Program: Ascension, Assumption, Calcasieu, Cameron, Iberia, Iberville, Jefferson, Jefferson Davis, Lafourche, Livingston, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Martin, St. Mary, St. Tammany, Tangipahoa, Terrebonne, and Vermilion. Because of data availability only on a whole parish basis, this study will use the total areas of the parishes listed above as the coastal zone.

²The peak year was 1971 according to the New Orleans States-Item of July 10, 1977 (section 1, page 13).

disposal, sewerage, health and hospitals, and parks and recreation. Also total expenditures and revenues for all governmental activities for both the entire state and the coastal zone populations are presented. Using the maximum and minimum OCS related population estimates presented in Chapter 2, a range of costs and revenues made up of high and low estimates are computed.

It may be argued that because of the state's inability to place a severance tax on OCS oil and gas production, OCS activity and related population have caused public service levels in Louisiana to be less than they could or should be. To improve the quality of public service in the coastal zone, more state and local revenues must be generated. One potential source of increased revenues would be the federal Coastal Energy Impact Program (CEIP) which was designed to mitigate onshore impacts in coastal states of OCS activity. Chapter 4 analyzes local needs, expenditures, and fiscal capabilities. It presents two possible allocation formulae for the potential CEIP grants and credit assistance, and the formulae impacts on spending in coastal parishes. This chapter also presents three "intra-state allocation schemes" for obtaining and using the CEIP credit assistance (loan guarantees). Finally the relationship between CEIP, Louisiana state and local government expenditures, and OCS impacts are discussed.

Since the coastal zone's topography is predominantly wetland, the urban development there due to OCS activity (or any other activity) is influenced by the coastal environment. Chapter 5, presents the stages of development, and the basic problems associated with development in this environment. It also identifies additional costs incurred in both initial wetlands development and continued maintenance of the developed areas (as compared to natural drylands). The material presented considers both the public and private sectors.

Since OCS activity directly and indirectly stimulates population changes in environmentally sensitive coastal areas, local areas should have the planning capability to monitor and evaluate the socio-economic and environmental effects of growth or decline and take appropriate action. The task of Chapter 6 is to assess the effectiveness of the planning and management capability of the local governments in Louisiana's coastal zone and recommend potential improvements. Used properly, this assessment

can pinpoint areas of probable concern indicating the need for more or different planning/management resources to cope with the energy-related activity.

The socio-economic and environmental impacts brought about by OCS activity affect the people of the coastal zone--both new and old residents. It is an accepted notion that people should be involved in planning for their future. Chapter 7 provides a discussion of citizen participation at both the theoretical level and the practical level through an examination of the Louisiana Coastal Resources Program's Public Participation Program. A discussion of the basic questions of citizen involvement, the components of a citizen involvement program and means for their accomplishment, and the relationship of questions and components are presented. Rather than developing a specific citizen participation program to be used state-wide, guidelines are formulated to assist planners in creating programs tailored to the needs and characteristics of their local communities and to the budget and time constraints of their agencies.

This study, then, considers the impacts, from OCS production through the provision of public services, of OCS development on coastal zone parishes. Associated with these impacts are additional costs of urban development in a coastal environment, local planning capabilities, and citizen participation in planning. The study is intended to help state and local officials plan for increased or decreased OCS activity with more informational resources at their disposal.

CHAPTER 2

ESTIMATING OCS RELATED COASTAL ZONE EMPLOYMENT AND POPULATION

INTRODUCTION

The key variable in determining the impact of OCS activity on Louisiana is OCS related population. In this chapter, that population by parish for various years is computed. In accomplishing this, the chapter begins with a general discussion of input-output analysis which is the key tool in the computation methodology. Input-output analysis is used to compute OCS related production for various years in Louisiana by sector. This production is then allocated to coastal zone parishes, transformed into employment, and finally converted into OCS related population.

INPUT-OUTPUT ANALYSIS

The input-output framework is a technique developed by Leontief (1951, 1953, 1974), Isard (1960), and others for representing and analyzing a regional or national economy usually in terms of dollar flows. The basis of the I/O formulation is the "intersectoral flow matrix" in which the economy is seen as a set of interdependent producing and consuming sectors. Each sector is represented by a row and a corresponding column in this matrix. The total output of each sector i is distributed across all sectors. Hence the equation:

$$X_i = x_{i1} + x_{i2} + \dots + x_{ii} + \dots + x_{ij} + \dots + x_{in} + Y_i \quad (1)$$

represents the distribution of the total output, X_i , across all consuming sectors, where x_{i1} is the sales from sector i to sector 1, x_{i2} is the sales from sector i to sector 2, etc. Y_i is that portion of sector i 's output sold to households, government, export and other final demand sectors of the economy.

When all sectors of the economy are represented in this format, the following equation system results:

$$\begin{array}{r}
X_1 = x_{11} + x_{12} + \dots + x_{1j} + \dots + x_{1n} + Y_1 \\
X_2 = x_{21} + x_{22} + \dots + x_{2j} + \dots + x_{2n} + Y_2 \\
\vdots \\
\vdots \\
\vdots \\
X_i = x_{i1} + x_{i2} + \dots + x_{ij} + \dots + x_{in} + Y_i \\
\vdots \\
\vdots \\
X_n = x_{n1} + x_{n2} + \dots + x_{nj} + \dots + x_{nn} + Y_n
\end{array} \tag{2}$$

This system portrays not only the distribution of the output of each sector, but also the total inputs to each sector. Put simply, the sum (column) of $x_{1j} + x_{2j} + \dots + x_{ij} + \dots + x_{nj}$ is the total of purchases from all sectors which sector j uses to produce and distribute its output. Figure 2.1 is the intersector flow matrix representation of this equation system for a four sector economy.

The row labeled F.P. (in Figure 2.1) is "final payments" which includes imports, payments to labor (households), and other final payments sectors. It is equal to the difference between total sectoral inputs and outputs. Hence the summation of the elements of row i and column i is an identity. That the sum of the final payments row is equal to total consumption by all final demand sectors (\$365) is also an obvious identity. In the national economy, total final demand is commonly known as Gross National Product.

Any equation from (2) can be rewritten as

$$Y_i = X_i - x_{i1} - x_{i2} - \dots - x_{ij} - \dots - x_{in} \tag{3}$$

When each term on the right hand side is both multiplied and divided by the X_i corresponding to the consuming sector, the following equation is derived:

$$Y_i = X_i - \frac{x_{i1}}{X_1} X_1 - \frac{x_{i2}}{X_2} X_2 - \dots - \frac{x_{ij}}{X_j} X_j - \dots - \frac{x_{in}}{X_n} X_n \tag{4}$$

FIGURE 2.1
INTERSECTOR FLOW MATRIX

	Sector (x_{ij})				Final Demand Y_i	Total Output X_i
	1	2	3	4		
Manufacturing	\$200	\$ 75	\$ 25	\$ 50	\$150	\$ 500
Services	\$100	\$ 50	\$ 10	\$ 40	\$100	\$ 300
Agriculture	\$ 20	\$ 5	\$ 10	\$ 0	\$ 65	\$ 100
Transportation	\$ 50	\$ 15	\$ 10	\$ 25	\$ 50	\$ 150
Final Payments F.P.	\$130	\$155	\$ 45	\$ 35	\$365	---
Total	\$500	\$300	\$100	\$150	---	\$1050

Source: authors.

We can assume linearity and constancy over time and across scale changes to write:

$$Y_i = X_i - a_{i1}X_1 - a_{i2}X_2 - \dots - a_{ij}X_j - \dots - a_{in}X_n \quad (5)$$

where $a_{ij} = \frac{x_{ij}}{X_j}$.

The a_{ij} 's in this formulation are the dollar requirements of industry j from industry i per dollar of j 's output. They are called "technical coefficients" because they represent direct engineering magnitudes which may be derived from the production process.

For instance (from Figure 2.1) $a_{12} = \frac{x_{12}}{X_2} = \frac{75}{300} = .25,$

$a_{43} = .1,$ and so on.

When the entire set of equations are transformed as in equation (5), a set of final demands (Y_i 's) is specified, and a_{ij} 's are known from past relationships and assumed constant over time, the system reduces to a set of n equations with n unknowns (X_i 's) and hence can be solved to yield total sectoral outputs (X_i 's) necessary to supply the given final demand structure.

$$\begin{aligned} Y_1 &= X_1 - a_{11}X_1 - a_{12}X_2 - \dots - a_{1j}X_j - \dots - a_{1n}X_n \\ Y_2 &= X_2 - a_{21}X_1 - a_{22}X_2 - \dots - a_{2j}X_j - \dots - a_{2n}X_n \\ \vdots & \\ Y_i &= X_i - a_{i1}X_1 - a_{i2}X_2 - \dots - a_{ij}X_j - \dots - a_{in}X_n \\ \vdots & \\ Y_n &= X_n - a_{n1}X_1 - a_{n2}X_2 - \dots - a_{nj}X_j - \dots - a_{nn}X_n \end{aligned} \quad (6)$$

In matrix terminology system (6) may be represented as: $Y = (X-AX)$; where the A matrix is known as the input-output matrix and contains the technical coefficients,

$$A = \begin{bmatrix} a_{11} & \dots & a_{1j} & \dots & a_{1n} \\ \vdots & & \vdots & & \vdots \\ a_{i1} & \dots & a_{ij} & \dots & a_{in} \\ \vdots & & \vdots & & \vdots \\ a_{n1} & \dots & a_{nj} & \dots & a_{nn} \end{bmatrix}, \quad X = \begin{bmatrix} X_1 \\ \vdots \\ X_i \\ \vdots \\ X_n \end{bmatrix}, \quad \text{and } Y = \begin{bmatrix} Y_1 \\ \vdots \\ Y_i \\ \vdots \\ Y_n \end{bmatrix} \quad (6')$$

The total output vector (X) may be factored out to yield: $Y - (1 - A)X$ which may be rearranged as $X = (1 - A)^{-1}Y$. The matrix $(1 - A)^{-1}$ is defined as the Leontief inverse; its computational value stems from the fact that given a final demand, total output may be calculated directly. In the same system, ΔX and ΔY may be substituted for X and Y to yield a change in total output given a change in final demand.

The ratio of the change in total output to the change in final demand yields a multiplier that summarizes the effects of the sectoral linkages (production interdependencies) in the economy. Note that because of these sectoral linkages an increase in final demand in sector i will cause an increase in total output in several other sectors besides i (Isard, 1960: 327-332).

The I/O matrix for the U. S. economy in 1967 is available in an 85 sector disaggregation (Office of Business Economics, Survey of Current Business, 1974) and a 367 sector disaggregation on computer tape from the U. S. Office of Business Economics. For Louisiana, a computerized 93 sector I/O matrix for 1967 has been constructed (Louisiana Information Processing Authority, 1976).

METHODOLOGY

The total production (output) by sector in Louisiana due to OCS activity was determined by using the input-output model of the Louisiana economy (L.I.P.A., 1976) in a fashion suggested by Isard and Kuenne (1953). First, the entire set of inputs absorbed directly by OCS production or the "bill of goods" was determined. This "bill of goods," D_j , was constructed by multiplying the cents worth

of every input from each sector, i , required per dollar output of oil and gas production (column vector A_j of the technical coefficients matrix A where $j=8$, Mining^j of Crude Petroleum and Natural Gas) by the dollar value c_j (see Table 2.1) of the OCS Production activity for the year in question (equation (1)).

$$A_j = \begin{bmatrix} a_{1j} \\ \vdots \\ a_{ij} \\ \vdots \\ a_{nj} \end{bmatrix}, \quad A_j \times c_j = D_j \quad (7)$$

$D_j =$ Direct requirements of Sector j ,
OCS production, $j=8$.

This "bill of goods" or "pseudo final demand," D_j , was multiplied by the Leontief inverse to derive change in total output by sector required by the Louisiana economic system to support OCS production, vector O in equation 8.

$$(I - A)^{-1} \times D_j = \begin{matrix} \text{New} \\ \text{Total} \\ \text{Output} \end{matrix} = 0 \quad (8)$$

This change in total output includes both direct and indirect effects. This means that not only are the goods and services used directly in OCS production included, but also the goods and services used in the production of the direct goods and services and in the production of these indirect goods and services and so on. Such goods and services include boat and drilling platform building, food catering services, etc. No induced effects, however, are included. A good example of an induced effect would be a refinery built to process OCS oil.

Vector O is comprised of the value of total production required from each of 77 sectors and households (Sector 86) in the Louisiana economy. A listing of the 93 sectors in the Louisiana input-output model are included in the Appendix, Table A.1. However, since employment data (which are used to later allocate state sectoral production to each of the coastal zone parishes) for each sector are not available separately, the 77 sectors were combined into the following nine sector groups:

TABLE 2.1
 VALUE OF PRODUCTION FROM LOUISIANA OCS (\$)

Year	Oil and Condensate	Natural Gas	(Total (cj))
1956	32,462,552	6,995,060	39,457,612
1959	113,068,516	37,403,164	150,471,680
1964	375,604,795	118,377,080	493,981,875
1967	673,249,350	210,606,727	883,856,077
1972	1,377,229,217	636,164,978	2,013,394,195
1974	2,310,968,112	844,519,248	3,155,487,360

Source: U. S. Geological Survey, 1976.

<u>Sector Group</u>	<u>Sectors</u>	<u>Sector Group Name</u>
1	1-4	Agriculture, Forestry, & Fisheries
2	5-10	Mining (excluding Sector 8)
3	11-12	Contract Construction
4	13-64	Manufacturing
5	65-68	Transportation, Communi- cations, & Utilities
6	69	Wholesale & Retail Trade
7	70-71	Finance, Insurance & Real Estate
8	72-77	Services
9	5-10	Mining (including Sector 8)

Sectors 78 and 79 represent state, local, and federal government business enterprises and since the output of these exotic sectors are small, their impacts are not included in the analysis. Sectors 80-85 had zero production due to OCS activity. Sectors 87-93 would have to be independently estimated since they are final demand (final payments) sectors and not included in I-O impact analysis. Thus the resulting production, employment and population estimates are conservative. Sector 86, households (labor) which is normally included in final demand, was included in the technical coefficients matrix and I-O impact analysis to get the full expansion of the economy (see Isard and Kuenne, 1953: 296).

For each of the six years, Sector 8 (Mining of Crude Petroleum and Natural Gas) was deleted from the A matrix, A_j , D_j and (therefore) O to avoid double counting since OCS activity is included in Sector 8. However, since Sector 8 includes other mining activity which may be affected by OCS activity, Sector 8 was included in the above in determining total output for the years 1964, 1972, and 1974, as part of a new Sector Group labeled 9. Sector Group 9 includes all of Sector Group 2

plus Sector 8. This resulted in a high and low estimate of production (Table 2.2 and Figure 2.2) due to OCS activity for those years.

As indicated in equation (1) of Figure 2.3 the total state production due to OCS activity was allocated to each of the 22 parishes by multiplying the production in each sector group (O_i in Table 2.2) by the corresponding parish share of state employment (S_i^P in Table A.2 in the Appendix) for that sector group. This step resulted in the value of total output that is due to OCS activity in each parish for each sector group (O_i^P in Table A.3, which is included in the Appendix).

In order to translate O_i^P into employment, it was necessary to determine a ratio of dollar output per employee. A study done by Rice (1976) shows 1967 total output values by sector for the state of Louisiana. These were aggregated into the nine sector groups (see Table 2.3) and each of these output values was divided by the number of employees in the corresponding sector group to get dollar/employee for 1967. The implicit price deflators shown in Table 2.4 were used to transform 1967 values to the other years assuming productivity remained the same.

Employment by sector in each parish due to OCS activity (E_i^P) was then determined by dividing production (O_i^P) by dollars per employee (M), as shown in Equation (2) of Figure 2.3 (Table A.4 in the Appendix and Figure 2.4). Since households represent labor, it would have been double counting to find the employment in the household sector and the other 77 sectors. This, then, was not done.

Parish population due to OCS activity was determined by first summing the employment in each sector group due to OCS activity to get total employment (E_t^P) (Figure 2.3 Equation (3)). Then, a population to employment ratio (P^D) was derived by simply dividing total population (from U. S. Bureau of the Census) by the total employment for each parish in 1967, 1972, and 1974 (see Table 2.5). Finally E_t^P was multiplied by P^D to get total population due to OCS activity in each parish for 1967, 1972, and 1974 (Table 2.6) (see Equation (4)). Note that high and low estimates are given, depending on whether or not Sector 8 (mining of crude petroleum and natural gas) is included (1972 and 1974 only).

TABLE 2.2
 LOUISIANA STATE PRODUCTION DUE TO OCS ACTIVITY BY SECTOR GROUP, (O_i)

Sector Group	1959		1964	
	OUT ¹	IN ²	OUT ¹	IN ²
1	586,748.60	2,237,566.98	7,360,555.19	7,674,467.07
2	69,735.99	265,938.35	874,813.55	NA
3	1,222,387.19	4,661,576.00	15,334,417.80	15,988,397.00
4	5,116,025.47	19,509,973.10	64,178,741.63	66,915,834.11
5	2,369,012.45	9,034,233.63	29,718,428.72	30,985,854.78
6	2,227,017.00	8,492,733.75	27,937,145.80	29,128,607.00
7	6,875,843.53	26,221,042.66	86,225,042.00	89,933,634.00
8	1,783,046.65	6,799,651.88	22,367,693.59	23,321,628.32
9	NA	NA	NA	22,022,021.33
TOTAL	20,249,816.88	77,222,716.35	253,996,838.28	285,970,443.61

NA = Not Applicable
¹Sector 8 excluded.
²Sector 8 included.

(CONTINUED)

TABLE 2.2
(CONTINUED)

Year Sector Group	1967		1972	
	OUT ¹	IN ²	OUT ¹	IN ²
1	13,143,251.79	29,939,882.25	31,216,754.00	NA
2	1,562,096.13	3,558,402.05	65,034,595.00	272,187,647.08
3	27,381,645.50	62,374,459.50	126,038,431.97	118,483,871.00
4	110,439,292.82	260,150,704.97	365,815,125.50	94,863,333.90
5	53,066,213.01	120,883,035.53	89,577,036.53	
6	49,885,495.50	113,637,469.00		
7	154,019,866.30	350,852,040.50		
8	39,940,496.42	60,886,405.36		
9	NA	NA		
TOTAL	449,438,357.47	1,002,282,399.16	1,163,216,794.98	

NA = Not Applicable

¹Sector 8 excluded.

²Sector 8 included.

(CONTINUED)

TABLE 2.2
(CONTINUED)

Year	1974	
	OUT ¹	IN ²
Sector Group		
1	46,923,210.66	48,924,385.32
2	5,576,897.26	NA
3	97,756,227.00	101,925,315.00
4	409,136,614.60	426,585,456.50
5	189,453,655.40	197,533,440.93
6	178,098,058.00	185,693,572.00
7	549,872,035.00	573,322,900.00
8	142,593,048.00	148,674,339.60
9	NA	140,389,400.50
TOTAL	1,619,409,745.92	1,823,048,809.85

NA = Not Applicable

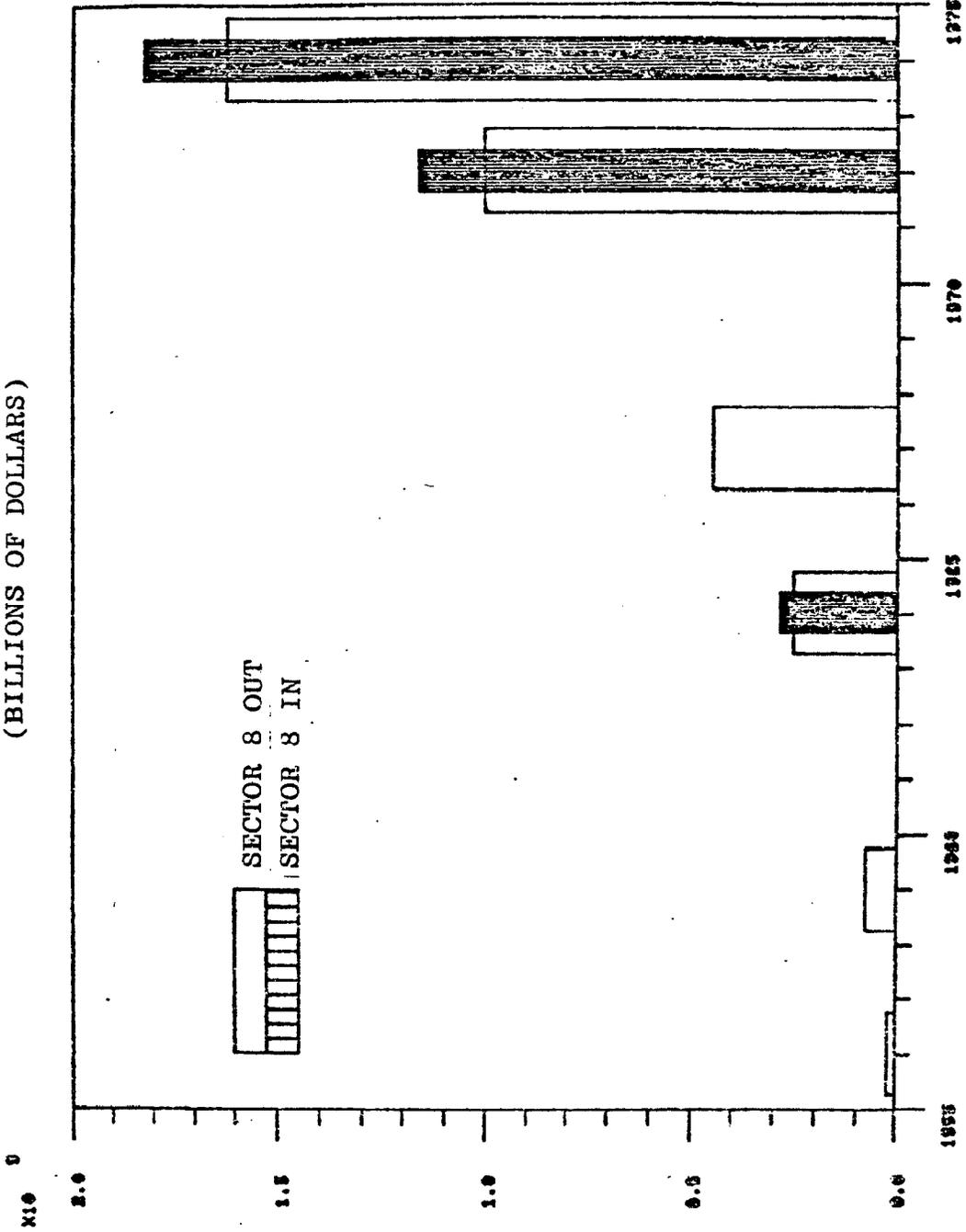
¹Sector 8 excluded.

²Sector 8 included.

Source: Computed by authors.

FIGURE 2.2

LOUISIANA TOTAL PRODUCTION DUE
TO OCS RELATED ACTIVITY
(BILLIONS OF DOLLARS)



Source: authors.

TABLE 2.3
DOLLAR PER EMPLOYEE (M_1) BY SECTOR GROUP AND YEAR FOR LOUISIANA
(IN MILLIONS)

Sector Group 1967	1967 Employees	1967 \$/Employee	1967 \$/Employee x Yearly Deflator Value				
			1956 (.7960)	1959 (.8545)	1964 (.9201)	1972 (1.2655)	1974 (1.4732)
(1) 750.32	3,651	.206	.164	.176	.190	.261	.304
(2) 226.80	3,322	.068	.054	.058	.063	.086	.100
(3) 2572.459	93,364	.028	.022	.024	.026	.035	.041
(4) 7785.05	166,216	.047	.037	.040	.043	.060	.069
(5) 2144.70	75,434	.028	.022	.024	.026	.035	.041
(6) 2179.90	212,895	.010	.008	.008	.009	.013	.015
(7) 2044.20	45,308	.045	.039	.038	.041	.057	.066
(8) 2595.10	125,160	.021	.017	.018	.019	.027	.031
(9) 3704.20	46,775	.079	.063	.068	.073	.086	.116

Source: Rice, 1976; authors.

TABLE 2.4
IMPLICIT PRICE DEFLATORS

Year	Deflator: 1972 Base	Deflator: 1967 Base
1956	.6290	.7960
1959	.6752	.8545
1964	.7271	.9201
1967	.7902	1.0000
1972	1.0000	1.2655
1974	1.1641	1.4732

Source: Council of Economic Advisors, 1976.

FIGURE 2.3

METHODOLOGY FOR COMPUTING OCS RELATED POPULATION BY PARISH

(1) $S_i^p \times O_i$ = Production in parish p in sector group i due to OCS activity (O_i^p).

(2) $O_i^p \div M_i$ = Employment in parish p in sector group i due to OCS activity (E_i^p).

(3) $\sum_{i=1}^{8 \text{ or } 9} E_i^p$ = Total employment in parish p due to OCS activity (E_t^p).

(4) $E_t^p \times p^p$ = Population in parish p due to OCS activity.

S_i^p = Parish p share of state employment in sector group i.

O_i = Value of production in sector group i in Louisiana due to OCS activity.

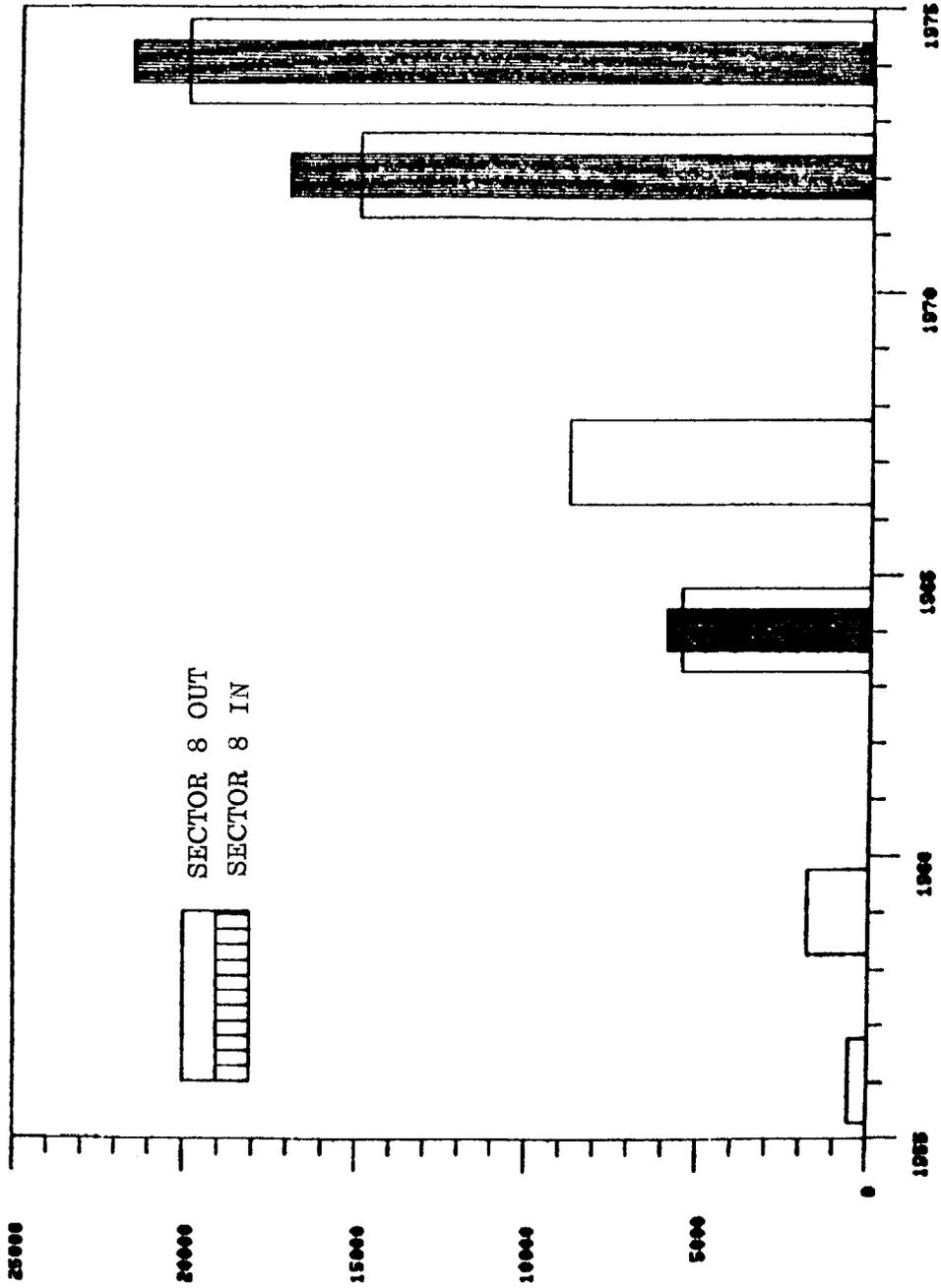
M_i = Dollar output per employee in sector group i for Louisiana.

p^p = Population per employee in parish p.

Source: authors.

FIGURE 2.4

LOUISIANA COASTAL ZONE TOTAL EMPLOYMENT
DUE TO OCS RELATED ACTIVITY



Source: authors.

TABLE 2.5

POPULATION PER EMPLOYEE BY PARISH (P^D), 1967, 1972, 1974, AND 1974

Parish	1967		1972		1974		1974	
	Population	Pop/ Employee	Population	Pop/ Employee	Population	Pop/ Employee	Population	Pop/ Employee
Ascension	34,200	4.56	39,200	6.37	39,800	8.180	8,180	4.87
Assumption	19,800	9.14	20,100	6.25	20,200	1,423	1,423	14.20
Calcasieu	140,700	4.48	148,300	4.51	150,000	37,573	37,573	3.99
Cameron	7,800	5.12	8,900	3.57	9,100	1,874	1,874	4.86
Iberia	59,700	5.75	58,900	5.57	59,500	12,516	12,516	4.75
Iberville	31,700	7.65	30,700	5.51	30,100	5,497	5,497	5.48
Jefferson	303,700	5.33	366,300	4.89	388,700	111,594	111,594	3.48
Jefferson Davis	28,200	7.58	29,600	7.40	30,100	4,628	4,628	6.50
Lafourche	66,100	5.78	72,300	6.07	71,900	13,622	13,622	5.28
Livingston	33,600	16.83	38,300	15.10	41,000	2,748	2,748	14.92
Orleans	648,900	2.83	593,700	2.51	569,100	216,985	216,985	2.62
Plaquemines	26,800	2.77	25,900	2.22	25,900	11,668	11,668	2.22
St. Bernard	46,500	6.34	55,000	6.65	57,500	9,388	9,388	6.12
St. Charles	27,100	3.44	30,800	4.81	31,800	6,777	6,777	4.69
St. James	20,300	4.79	19,000	5.45	19,500	3,699	3,699	5.27
St. John	21,800	11.63	24,800	10.25	24,600	3,076	3,076	8.00
St. Martin	32,400	13.20	33,700	9.46	34,100	4,540	4,540	7.51
St. Mary	59,500	3.46	62,200	3.47	60,100	19,374	19,374	3.10
St. Tammany	62,000	9.39	67,100	9.01	73,400	10,225	10,225	7.18
Tangipahoa	69,100	8.36	68,000	7.16	69,100	11,392	11,392	6.07
Terrebonne	75,700	4.81	78,800	3.93	81,100	26,331	26,331	3.08
Vermillion	41,600	6.55	43,900	7.65	44,200	6,546	6,546	6.75
TOTAL LOUISIANA	3,671,000	4.73	3,738,000	4.38	3,762,000	934,628	934,628	4.02

Sources: (1) U.S. Bureau of the Census, 1969
 (2) U.S. Bureau of the Census, 1968
 (3) U.S. Bureau of the Census, 1974
 (4) U.S. Bureau of the Census, 1973
 (5) U.S. Bureau of the Census, 1976.
 (6) U.S. Bureau of the Census, 1977.

TABLE 2.6
 EMPLOYMENT AND POPULATION IN LOUISIANA
 COASTAL PARISHES DUE TO
 OCS ACTIVITY, 1967

Parish	Employment	Population
Ascension	123	561
Assumption	19	174
Calcasieu	581	2,603
Cameron	12	61
Iberia	179	1,029
Iberville	76	581
Jefferson	1,021	5,442
Jefferson Davis	72	546
Lafourche	182	1,052
Livingston	38	640
Orleans	5,186	14,676
Plaquemines	95	263
St. Bernard	116	735
St. Charles	114	392
St. James	58	278
St. John	26	302
St. Martin	39	515
St. Mary	245	848
St. Tammany	132	1,258
Tangipahoa	167	1,396
Terrebonne	249	1,198
Vermilion	104	681
TOTAL	8,836	35,231

Source: authors.

TABLE 2.6
(CONTINUED)
EMPLOYMENT AND POPULATION IN LOUISIANA COASTAL PARISHES
DUE TO OCS ACTIVITY, 1972

Parish	Sector 8 IN		Sector 8 OUT	
	Employment	Population	Employment	Population
Ascension	150	955.50	135	859.95
Assumption	78	487.50	73	456.25
Calcasieu	1,099	4,956.49	986	4,446.86
Cameron	61	217.77	30	107.10
Iberia	390	1,946.10	319	1,591.81
Iberville	170	946.90	155	863.35
Jefferson	2,379	11,633.31	2,108	10,308.12
Jefferson Davis	141	1,043.40	125	925.00
Lafourche	414	2,512.98	362	2,197.34
Livingston	85	1,283.50	79	1,192.90
Orleans	9,017	22,632.67	8,074	20,265.74
Plaquemines	313	694.86	206	457.32
St. Bernard	253	1,682.45	235	1,562.75
St. Charles	321	1,544.01	299	1,438.19
St. James	93	506.85	87	474.15
St. John	82	840.50	77	789.25
St. Martin	103	974.38	80	756.80
St. Mary	554	1,922.38	439	1,523.33
St. Tammany	251	2,261.51	229	2,063.29
Tangipahoa	332	2,377.12	304	2,176.64
Terrebonne	610	2,397.30	486	1,909.98
Vermilion	204	1,560.60	177	1,354.05
TOTAL	17,100	65,278.08	15,065	57,720.17

Source: authors.

TABLE 2.6
(CONTINUED)

EMPLOYMENT AND POPULATION IN LOUISIANA COASTAL PARISHES
DUE TO OCS ACTIVITY, 1974

Parish	Sector 8 IN		Sector 8 OUT	
	Employment	Population	Employment	Population
Ascension	317	1,544	303	1,476
Assumption	54	767	52	738
Calcasieu	1,510	6,025	1,434	5,722
Cameron	49	238	24	117
Iberia	510	2,422	452	2,147
Iberville	204	1,118	189	1,036
Jefferson	4,396	15,298	4,092	14,240
Jefferson Davis	184	1,196	170	1,105
Lafourche	559	2,952	516	2,724
Livingston	260	3,879	247	3,685
Orleans	9,411	24,657	8,833	23,142
Plaquemines	333	739	240	533
St. Bernard	376	2,301	357	2,185
St. Charles	245	1,149	232	1,088
St. James	131	690	125	659
St. John	125	1,000	120	960
St. Martin	169	1,269	151	1,134
St. Mary	733	2,272	660	2,046
St. Tammany	438	3,145	421	3,023
Tangipahoa	476	2,889	454	2,756
Terrebonne	941	2,898	760	2,341
Vermilion	258	1,742	213	1,438
TOTAL	21,679	80,190	20,045	74,295

Source: computed by authors.

As might be expected, parishes with more diversified economies which are strongly linked to mining activity, such as Orleans, receive the greatest employment and population impacts.

TABLE A.1
LOUISIANA INPUT-OUTPUT MODEL
INDUSTRY SECTOR NUMBER AND TITLE

AGRICULTURE, FORESTRY, AND FISHERIES

1. Livestock and Livestock Products
2. Other Agricultural Products
3. Forestry and Fishery Products
4. Agricultural, Forestry, and Fishery Services

MINING

5. Iron and Ferroalloy Ores Mining
6. Nonferrous Metal Ores Mining
7. Coal Mining
8. Crude Petroleum and Natural Gas
9. Stone and Clay Mining and Quarrying
10. Chemical and Fertilizer Mineral Mining

CONSTRUCTION

11. New Construction
12. Maintenance and Repair Construction

MANUFACTURING

13. Ordnance and Accessories
14. Food and Kindred Products
15. Tobacco Manufactures
16. Broad and Narrow Fabrics, Yarn and Thread Mills
17. Miscellaneous Textile Goods and Floor Coverings
18. Apparel
19. Miscellaneous Fabricated Textile Products
20. Lumber and Wood Products, Except Containers
21. Wooden Containers
22. Household Furniture

TABLE A.1
(CONTINUED)

23. Other Furniture and Fixtures
24. Paper and Allied Products, Except Containers
25. Paperboard Containers and Boxes
26. Printing and Publishing
27. Chemicals and Selected Chemical Products
28. Plastics and Synthetic Materials
29. Drugs, Cleaning and Toilet Preparations
30. Paints and Allied Products
31. Petroleum Refining and Related Industries
32. Rubber and Miscellaneous Plastics Products
33. Leather Tanning and Industrial Leather Products
34. Footwear and Outer Leather Products
35. Glass and Glass Products
36. Stone and Clay Products
37. Primary Iron and Steel Manufacturing
38. Primary Nonferrous Metal Manufacturing
39. Metal Containers
40. Heating, Plumbing and Structural Metal Products
41. Stampings, Screw Machine Products and Bolts
42. Other Fabricated Metal Products
43. Engines and Turbines
44. Farm Machinery and Equipment
45. Construction, Mining and Oil Field Machinery
46. Materials Handling Machinery and Equipment
47. Metalworking Machinery and Equipment
48. Special Industry Machinery and Equipment
49. General Industrial Machinery and Equipment
50. Machine Shop Products
51. Office, Computing and Accounting Machines
52. Service Industry Machines

TABLE A.1
(CONTINUED)

- 53. Electric Industrial Equipment and Apparatus
 - 54. Household Appliances
 - 55. Electric Lighting and Wiring Equipment
 - 56. Radio, Television and Communication Equipment
 - 57. Electronic Components and Accessories
 - 58. Miscellaneous Electrical Machinery, Equipment
and Supplies
 - 59. Motor Vehicles and Equipment
 - 60. Aircraft and Parts
 - 61. Other Transportation Equipment
 - 62. Scientific and Controlling Instruments
 - 63. Optical, Ophthalmic and Photographic Equipment
 - 64. Miscellaneous Manufacturing
- TRANSPORTATION, COMMUNICATION, ELECTRIC, GAS, AND SANITARY
SERVICES
- 65. Transportation and Warehousing
 - 66. Communications, Except Radio and TV Broadcasting
 - 67. Radio and TV Broadcasting
 - 68. Electric, Gas, Water and Sanitary Services
- WHOLESALE AND RETAIL TRADE
- 69. Wholesale and Retail Trade
- FINANCE, INSURANCE AND REAL ESTATE
- 70. Finance and Insurance
 - 71. Real Estate and Rental
- SERVICES
- 72. Hotels, Personal and Repair Services Except
Auto
 - 73. Business Services
 - 74. Research and Development

TABLE A.1
(CONTINUED)

- 75. Automobile Repair and Services
- 76. Amusements
- 77. Medical, Educational Services and Nonprofit Organizations

GOVERNMENT ENTERPRISES

- 78. Federal Government Enterprises
- 79. State and Local Government Enterprises

DUMMY INDUSTRIES

- 80. Empty
- 81. Business Travel, Entertainment and Gifts
- 82. Office Supplies
- 83. Scrap, Used and Secondhand Goods

SPECIAL INDUSTRIES

- 84. Government Industry
- 85. Rest of the World Industry

FINAL DEMAND

- 86. Households
- 87. Exports
- 88. Gross Private Fixed Capital Formation
- 89. Net Inventory Change
- 90. Federal Government Purchases -- Defense
- 91. Federal Government Purchases -- Nondefense
- 92. Education
- 93. Other State and Local Government Purchases

FINAL PAYMENTS

- 86. Households
- 87. Imports
- 88. Inventory Valuation Adjustment

TABLE A.1
(CONTINUED)

- 89. Indirect Business Taxes
- 90. Property-Type Income

TABLE A.2
PARISH SHARE OF STATE EMPLOYMENT (S_iP) BY SECTOR GROUP
FOR VARIOUS YEARS

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>Ascension</u>							
1		--	0	.0036	.0014	.002	--
2		--	--	--	0	--	0
3		.002	.002	.0089	.034	.007	.013
4		.005	.008	.009	.01	.017	.0175
5		.0007	.001	.004	.003	.002	.0064
6		.005	.005	.005	.0067	.001	.0073
7		.003	.004	.0048	.007	.003	.0051
8		.002	.002	.002	.022	.007	.002
9		--	--	.002	--	.0009	.0019
<u>Assumption</u>							
1		--	--	0	0	0	--
2		0	--	0	0	--	--
3		--	.001	--	--	.002	.001
4		.004	.008	.005	.004	.012	.0029
5		.0007	--	--	.0002	.0003	.005
6		.002	.002	.0015	.0014	.001	.0014
7		.001	.00086	.0011	.001	.001	.0016
8		.002	.0024	.0014	--	.001	.0003
9		--	--	.005	--	--	--

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>Calcasieu</u>							
	1	.025	.0043	.026	.028	.02	--
	2	--	--	--	--	--	--
	3	.04	.056	.037	.064	.039	.047
	4	.05	.06	.052	.046	.054	.0564
	5	.046	.04	.04	.037	.026	.0269
	6	.04	.038	.036	.036	.038	.0412
	7	.037	.037	.032	.03	.03	.0353
	8	.04	.038	.035	.03	.034	.0176
	9	--	--	.024	--	.032	.011
<u>Cameron</u>							
	1	.01	--	.00036	--	.009	--
	2	0	--	--	--	0	0
	3	.008	.003	.0018	.002	--	--
	4	.00067	.000769	--	--	.002	--
	5	.0007	.000324	.0011	.001	.002	.0013
	6	.002	.0008	.0008	.0009	.0008	.0009
	7	--	.0006	.0005	.0007	.0006	.0005
	8	.002	.0009	.001	.001	.001	.0006
	9	--	--	.012	--	.029	.0208

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1959	1964	1967	1972	1974
<u>Iberia</u>						
	1	.005	.009	.008	.007	--
	2	--	--	--	--	--
	3	.0114	.012	.01	.009	.011
	4	.009	.01	.01	.012	.0125
	5	.008	.014	.013	.015	.0149
	6	.0145	.0137	.014	.013	.0144
	7	.0085	.009	.009	.01	.011
	8	.012	.015	.01	.01	.0043
	9	--	.006	--	.047	.0323
<u>Iberville</u>						
	1	.006	--	--	.03	--
	2	--	--	--	0	0
	3	.005	.008	.008	.011	.006
	4	.004	.008	.009	.011	.0134
	5	.003	.003	.003	.004	.0032
	6	.004	.004	.005	.005	.0038
	7	.003	.002	.003	.003	.0034
	8	.003	.003	.003	.004	.0017
	9	--	.008	--	.004	.0048

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>Jefferson</u>	1	.02	--	.016	.027	.04	--
	2	--	--	--	--	--	--
	3	.05	.051	.097	.08	.108	.163
	4	.07	.08	.084	.08	.10	.105
	5	.029	.032	.033	.04	.06	.1039
	6	.035	.053	.076	.087	.10	.1384
	7	.01	.018	.028	.04	.04	.0856
	8	.028	.054	.054	.058	.07	.053
	9	--	--	.06	--	.097	.1078
<u>Jefferson Davis</u>	1	.03	.048	.03	--	--	--
	2	--	--	--	--	--	0
	3	.008	.0057	.0046	.004	.003	.0025
	4	.003	.0019	.001	.002	.003	.005
	5	.008	.0065	.006	.006	.003	.0039
	6	.007	.0076	.007	.006	.007	.0063
	7	.004	.0039	.003	.004	.004	.0037
	8	.006	.00477	.004	.004	.005	.0021
	9	--	--	.009	--	.007	.0066

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>Lafourche</u>							
	1	.03	.112	.10	.08	.058	--
	2	0	--	0	0	0	0
	3	.01	.01	.0096	.007	.009	.0089
	4	.01	.0087	.013	.01	.01	.0154
	5	.018	.018	.019	.025	.028	.0315
	6	.013	.0139	.0135	.01	.013	.0129
	7	.008	.008	.008	.009	.01	.0098
	8	.01	.01	.013	.01	.01	.0049
	9	--	--	.05	--	.027	.017
<u>Livingston</u>							
	1	0	--	--	--	--	--
	2	0	--	--	--	--	.0012
	3	.003	.003	.003	.004	.008	.0047
	4	.037	.0037	.002	.003	.002	.0028
	5	.0007	.0009	.0009	.0007	.0011	.0315
	6	.002	.0003	.002	.003	.004	.004
	7	.001	.0013	.0015	.002	.002	.0026
	8	.0008	.00151	.0012	.002	.002	.0008
	9	--	--	.001	--	.0007	.0012

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>Orleans</u>							
	1	.10	.13	.088	.145	.196	--
	2	0	0	0	0	0	--
	3	.26	.229	.275	.204	.189	.138
	4	.24	.22	.244	.23	.18	.141
	5	.47	.45	.475	.47	.44	.4108
	6	.36	.34	.31	.29	.265	.2085
	7	.48	.45	.42	.40	.37	.3029
	8	.42	.50	.417	.39	.37	.1674
	9	--	--	.13	--	.167	.1665
<u>Plaquemines</u>							
	1	.024	.024	.023	.02	.017	--
	2	--	--	--	--	--	--
	3	.007	.0012	--	.016	.03	.017
	4	.006	.01	.005	.005	.006	.0089
	5	.004	.0077	.007	.012	.013	.0148
	6	.003	.0026	.005	.005	.006	.0046
	7	.0005	.0006	.001	.002	.002	--
	8	.002	.00077	.004	.006	.007	.0051
	9	--	--	.07	--	.088	.0695

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>St. Bernard</u>	1	--	--	--	--	.0065	--
	2	--	--	--	--	0	--
	3	.007	.0067	.01	.012	.016	.008
	4	.025	.01	.025	.02	.02	.023
	5	.002	.002	.0028	.003	.004	.0056
	6	.006	.0046	.006	.006	.008	.0092
	7	.001	.0021	.0037	.004	.004	.0069
	8	.002	.0023	.004	.004	.005	.0022
	9	--	--	.004	--	.002	.0019
<u>St. Charles</u>	1	--	--	--	--	--	--
	2	0	--	0	0	0	0
	3	.006	.004	.0077	.037	.013	.0074
	4	.018	.053	.01	.013	.016	.0159
	5	.008	.0074	.011	.009	.011	.0089
	6	.002	.002	.003	.0036	.003	.0031
	7	.0006	.0011	.001	.002	.022	.0034
	8	.001	.002	.0025	.003	.004	.0031
	9	--	--	.007	--	.004	.0027

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>St. James</u>	1	--	--	--	--	--	--
	2	--	--	--	--	--	--
	3	.001	.015	.00014	.019	.002	.0004
	4	.006	.01	.0103	.01	.012	.0132
	5	.0001	--	.0007	.0005	.002	.0003
	6	.003	.0017	.002	.002	.002	.0022
	7	.0008	.0009	.0009	.0009	.001	.0018
	8	.002	.0019	.0011	.001	.001	.0008
	9	--	--	--	--	--	--
<u>St. John</u>	1	--	--	--	--	--	--
	2	--	--	--	0	--	--
	3	.0006	.0015	--	.003	.002	.0015
	4	.006	.0068	.01	.003	.006	.0071
	5	.001	.001	.001	.001	.003	.0021
	6	.002	.0022	.003	.002	.003	.0034
	7	--	--	.001	--	.001	.0024
	8	.001	.0013	.001	.002	.002	.0008
	9	--	--	--	--	--	--

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>St. Martin</u>							
	1	--	--	--	--	--	--
	2	0	--	0	0	0	0
	3	.007	.0036	.005	.004	.01	.005
	4	.003	.0029	.002	.002	.002	.0089
	5	.0008	.0007	.0005	.0004	.0004	.0007
	6	.004	.003	.003	.004	.004	.005
	7	.001	.0015	.001	.002	.002	.0022
	8	.002	.0011	.001	.001	.002	.0012
	9	--	--	.01	--	.018	.0102
<u>St. Mary</u>							
	1	.129	.10	.083	.082	.045	--
	2	0	--	--	--	--	--
	3	.035	.024	.025	.02	.022	.019
	4	.013	.012	.014	.016	.019	.0268
	5	.014	.014	.023	.03	.024	.0261
	6	.01	.012	.013	.014	.015	.0172
	7	.004	--	.007	.008	.01	.0113
	8	.008	.007	.009	.015	.017	.0081
	9	--	--	.08	--	.076	.0361

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>St. Tammany</u>							
	1	--	--	.001	.0068	.015	--
	2	--	--	--	--	--	--
	3	.02	.0046	.009	.008	.009	.011
	4	.008	.008	.009	.01	.009	.0112
	5	.004	.0044	.0048	.005	.005	.0077
	6	.006	.0064	.009	.01	.01	.0132
	7	.004	.0034	.006	.008	.008	.0133
	8	.004	.005	.007	.009	.009	.0054
	9	--	--	.001	--	.015	--
<u>Tangipahoa</u>							
	1	--	--	.036	.03	.0276	--
	2	--	--	--	--	--	--
	3	.004	.0073	.008	.008	.008	.008
	4	.016	.017	.016	.01	.013	.0147
	5	.006	.006	.003	.004	.005	.0082
	6	.015	.015	.0159	.016	.016	.0173
	7	.005	.005	.006	.008	.009	.0103
	8	.009	.0076	.0079	.01	.009	.0042
	9	--	--	.004	--	.002	.0016

(CONTINUED)

TABLE A.2
(CONTINUED)

Parish	Sector Group	1956	1959	1964	1967	1972	1974
<u>Terrebonne</u>							
	1	.07	.028	.047	.038	.044	--
	2	--	--	--	--	0	--
	3	.01	.0095	.017	.011	.012	.018
	4	.01	.013	.012	.01	.016	.021
	5	.016	.018	.022	.02	.027	.026
	6	.015	.0157	.0179	.019	.02	.0251
	7	.007	.0095	.01	.014	.014	.0153
	8	.01	.01	.0148	.017	.017	.0103
	9	--	--	.07	--	.083	.122
<u>Vermilion</u>							
	1	.023	.016	.027	--	.02	--
	2	0	0	--	--	0	--
	3	.01	.0038	.007	.014	.0045	.0067
	4	.003	.0026	.005	.004	.004	.0035
	5	.006	.006	.006	.006	.005	.0041
	6	.002	.0085	.008	.0086	.008	.0078
	7	.002	.0045	.004	.004	.008	.0051
	8	.027	.001	.01	.007	.006	.0047
	9	--	--	.03	--	.013	.029

Source: Computed from data contained in U. S. Bureau of the Census, 1958, 1961, 1965, 1968, 1973, 1977.

TABLE A.3

TOTAL OUTPUT DUE TO LOUISIANA OCS ACTIVITY,
 BY SECTOR GROUP, BY PARISH, FOR VARIOUS YEARS IN DOLLARS, O_i^P

LEGEND

ASCEN = Ascension	AGRI = Agriculture, Forestry, & Fisheries
ASSUM = Assumption	
CALCA = Calcasieu	MININ = Mining (excluding Sector 8)
CAMRO = Cameron	
IBERI = Iberia	CONST = Contract Construc- tion
IBVLL = Iberville	
JEFSN = Jefferson	MANUF = Manufacturing
JEFDV = Jefferson Davis	
LAFUR = Lafourche	TRANS = Transportation, Com- munications, & Utilities
LIVIN = Livingston	
ORLEA = Orleans	TRADE = Wholesale & Retail Trade
PLAQU = Plaquemines	
STBER = St. Bernard	FINAN = Finance, Insurance & Real Estate
STCHS = St. Charles	
STJAS = St. James	SERVC = Services
STJON = St. John	
STMRT = St. Martin	TOTMN = Mining (including Sector 8)
STMRY = St. Mary	
STTAM = St. Tammany	
TANGI = Tangipahca	
TERRE = Terrebonne	
VERML = Vermilion	

"-9" means "no entry" due to missing data because of private firm disclosure problems or because total output was not computed.

"IN" means sector eight was included in Sector Group 9.

"OUT" means sector eight was not included in Sector Group 2.

Source: Computed by authors. See text.

1972

1967

1964

1959

1956

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT		
ASCEN AGRI	-9.	27628.	26498.	-9.	18481.	62434.	59880.
ASCEN MININ	-9.	-9.	-9.	-9.	0.	-9.	-9.
ASCEN CONST	-9.	142297.	136476.	-9.	930976.	455242.	436621.
ASCEN MANUF	-9.	156080.	577609.	-9.	1104393.	4627190.	4422562.
ASCEN TRANS	-9.	1895.	118874.	-9.	159199.	252077.	241766.
ASCEN TRADE	-9.	11135.	139686.	-9.	334233.	118484.	113637.
ASCEN FINAN	-9.	20628.	414024.	-9.	1078139.	1097445.	1052556.
ASCEN SERVC	-9.	3566.	44735.	-9.	79881.	664043.	426205.
ASCEN TOTMN	-9.	44044.		-9.	80619.		

1974

IN-OUT

ASCEN AGRI	-9.	-9.
ASCEN MININ	0.	0.
ASCEN CONST	1325029.	1270831.
ASCEN MANUF	7465246.	7159891.
ASCEN TRANS	1264214.	1212503.
ASCEN TRADE	1355563.	1300116.
ASCEN FINAN	2923947.	2804347.
ASCEN SERVC	297349.	285186.
ASCEN TOTMN	266740.	

1972

1967

1964

1959

1956

	1972	1967	1964	1959	1956
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
ASSUM AGRI	0.	-9.	0.	-9.	-9.
ASSUM MINIM	-9.	0.	0.	0.	-9.
ASSUM CONST	130069.	-9.	0.	4662.	-9.
ASSUM MANUF	3266252.	-9.	328894.	156080.	-9.
ASSUM TRANS	36265.	-9.	-9.	166.	-9.
ASSUM TRADE	113637.	-9.	41906.	16985.	-9.
ASSUM FINAN	350852.	-9.	94881.	22550.	-9.
ASSUM SERVC	60886.	-9.	31315.	16319.	-9.
ASSUM TOTM	-9.	-9.	-9.	-9.	0.

1974

IN-OUT

ASSUM AGRI	-9.
ASSUM MINIM	-9.
ASSUM CONST	97756.
ASSUM MANUF	1186496.
ASSUM TRANS	94727.
ASSUM TRADE	249337.
ASSUM FINAN	879795.
ASSUM SERVC	42778.
ASSUM TOTM	-9.

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT					
CALCA AGRI	-9.	14669.	-9.	9622.	199536.	191374.	-9.	368011.	624335.	598798.
CALCA MININ	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.
CALCA CONST	-9.	48895.	-9.	261048.	591571.	567373.	-9.	1752425.	2536349.	2432504.
CALCA MANUF	-9.	255801.	-9.	1170598.	3479623.	3337295.	-9.	5080208.	14698133.	14048138.
CALCA TRANS	-9.	108975.	-9.	361369.	1239434.	1188737.	-9.	1963450.	3276999.	3142959.
CALCA TRADE	-9.	89081.	-9.	322724.	1048630.	1005737.	-9.	1795878.	4502387.	4318224.
CALCA FINAN	-9.	2544062.	-9.	970179.	2877876.	2760161.	-9.	4620596.	10974454.	10525561.
CALCA SERVC	-9.	71322.	-9.	258387.	816257.	782869.	-9.	1198215.	3225353.	2070138.
CALCA TOTMN	-9.	-9.	-9.	-9.	528529.		-9.	-9.	2866465.	

1974

IN-OUT

CALCA AGRI	-9.	-9.
CALCA MININ	-9.	-9.
CALCA CONST	4790490.	4594543.
CALCA MANUF	24059420.	23075305.
CALCA TRANS	5313650.	5096303.
CALCA TRADE	7650575.	7337640.
CALCA FINAN	20238298.	19410483.
CALCA SERVC	2616668.	2509638.
CALCA TOTMN	1544283.	

1972

1967

1964

1959

1956

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
CAMRO AGRI	-9.	5867.	-9.	2763.	2650.
CAMRO MININ	-9.	0.	-9.	-9.	-9.
CAMRO CONST	-9.	978.	-9.	28779.	27602.
CAMRO MANUF	-9.	3428.	-9.	15003.	-9.
CAMRO TRANS	-9.	1650.	-9.	2927.	32690.
CAMRO TRADE	-9.	4454.	-9.	6794.	22350.
CAMRO FINAN	-9.	-9.	-9.	15733.	43120.
CAMRO SERVC	-9.	3566.	-9.	6120.	22300.
CAMRO TOTM	-9.	0.	-9.	264264.	-9.

1974

IN-OUT

CAMRO AGRI	-9.
CAMRO MININ	0.
CAMRO CONST	-9.
CAMRO MANUF	-9.
CAMRO TRANS	246290.
CAMRO TRADE	160280.
CAMRO FINAN	274936.
CAMRO SERVC	85556.
CAMRO TOTM	2920100.

1972

1967

1964

1959

1956

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
IBERI AGRI	-9.	11188.	69470.	66245.	218517.
IBERI MININ	-9.	-9.	-9.	-9.	105146.
IBERI CONST	-9.	53142.	191861.	184013.	273816.
IBERI MANUF	-9.	175590.	669158.	641787.	1104393.
IBERI TRANS	-9.	72274.	433802.	416058.	689861.
IBERI TRADE	-9.	33405.	399062.	382739.	698397.
IBERI FINAN	-9.	55007.	809403.	776295.	1386179.
IBERI SERVC	-9.	23180.	349824.	335515.	399405.
IBERI TOTMN	-9.	-9.	132132.	-9.	-9.

1974

IN-OUT

IBERI AGRI	-9.	-9.
IBERI MININ	-9.	-9.
IBERI CONST	1121178.	1075319.
IBERI MANUF	5332318.	5114208.
IBERI TRANS	2943248.	2822859.
IBERI TRADE	2673987.	2564612.
IBERI FINAN	6306552.	6048592.
IBERI SERVC	639300.	613150.
IBERI TOTMN	4534578.	

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
IBVLL AGRI	-9.	3520.	-9.	-9.	936503.
IBVLL MININ	-9.	-9.	-9.	-9.	0.
IBVLL CONST	-9.	6112.	127987.	122675.	715381.
IBVLL MANUF	-9.	20464.	535327.	513430.	2994064.
IBVLL TRANS	-9.	7187.	92950.	89155.	504154.
IBVLL TRADE	-9.	8908.	116514.	111749.	592419.
IBVLL FINAN	-9.	20620.	179867.	172510.	1097445.
IBVLL SERVC	-9.	5349.	69965.	67103.	379453.
IBVLL TOTM	-9.	-9.	176176.	-9.	350308.

1974

IN-OUT

IBVLL AGRI	-9.	-9.
IBVLL MININ	0.	0.
IBVLL CONST	611552.	586537.
IBVLL MANUF	5716245.	5482431.
IBVLL TRANS	632107.	606252.
IBVLL TRADE	705636.	676773.
IBVLL FINAN	1949298.	1869565.
IBVLL SERVC	252746.	242408.
IBVLL TOTM	673869.	

1956

1959

1964

1967

1972

IN-OUT IN-OUT IN-OUT IN-OUT IN-OUT

JEFNS AGRI	-9.	11735.	-9.	-9.	122791.	117769.	-9.	354868.	1248670.	1197595.
JEFNS MININ	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.
JEFNS CONST	-9.	61119.	-9.	237740.	1550875.	1487439.	-9.	2190532.	7023736.	6736442.
JEFNS MANUF	-9.	358122.	-9.	1560798.	5620930.	5391014.	-9.	8835144.	27218765.	26015070.
JEFNS TRANS	-9.	68701.	-9.	289095.	1022533.	980708.	-9.	2122649.	7562306.	7252982.
JEFNS TRADE	-9.	77946.	-9.	450115.	2213774.	2123223.	-9.	4340038.	11048387.	11363747.
JEFNS FINAN	-9.	60758.	-9.	471979.	2518142.	2415141.	-9.	6160795.	14632605.	14034082.
JEFNS SERVC	-9.	49925.	-9.	367181.	1259368.	1207855.	-9.	2316549.	6640433.	4262048.
JEFNS TOTM	-9.	-9.	-9.	-9.	1321321.		-9.	-9.	8688973.	

1974

IN-OUT

JEFNS AGRI	-9.	-9.
JEFNS MININ	-9.	-9.
JEFNS CONST	16613826.	15934265.
JEFNS MANUF	44791473.	42959345.
JEFNS TRANS	20523725.	19684235.
JEFNS TRADE	25699990.	24648771.
JEFNS FINAN	49076440.	47069046.
JEFNS SERVC	7879740.	7557432.
JEFNS TOTM	15133977.	

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT				
JEDV AGRI	-9.	17602.	-9.	107403.	230234.	220017.	-9.	-9.	-9.
JEDV MININ	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.
JEDV CONST	-9.	9779.	-9.	26571.	73547.	70538.	-9.	109527.	107123.
JEDV MANUF	-9.	15348.	-9.	37069.	66916.	64179.	-9.	220879.	816563.
JEDV TRANS	-9.	10952.	-9.	58723.	105915.	178311.	-9.	310397.	378115.
JEDV TRADE	-9.	15589.	-9.	64545.	203900.	195560.	-9.	299313.	829387.
JEDV FINAN	-9.	27503.	-9.	102262.	269801.	258765.	-9.	616079.	1463261.
JEDV SERVC	-9.	10698.	-9.	32434.	93287.	89471.	-9.	159762.	474317.
JEDV TOTM	-9.	-9.	-9.	-9.	198198.	-9.	-9.	-9.	268731.

1974

IN-OUT

JEDV AGRI	-9.	-9.
JEDV MININ	0.	0.
JEDV CONST	254013.	244391.
JEDV MANUF	2132927.	2045683.
JEDV TRANS	770380.	738869.
JEDV TRADE	1169870.	1122018.
JEDV FINAN	2121295.	2034527.
JEDV SERVC	312216.	299445.
JEDV TOTM	926570.	

1956 1959 1964 1967 1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT					
LAFUR AGRI	-9.	76277.	-9.	250608.	767447.	736056.	-9.	1051460.	1010572.	1736513.
LAFUR MININ	-9.	0.	-9.	-9.	0.	0.	-9.	0.	0.	0.
LAFUR CONST	-9.	12224.	-9.	46616.	153489.	147210.	-9.	191672.	585311.	561370.
LAFUR MANUF	-9.	51160.	-9.	169737.	869906.	834324.	-9.	1104393.	2721876.	2601507.
LAFUR TRANS	-9.	42642.	-9.	162616.	588731.	564650.	-9.	1326655.	3529076.	3384725.
LAFUR TRADE	-9.	28951.	-9.	118049.	393236.	377151.	-9.	498055.	1540290.	1477287.
LAFUR FINAN	-9.	55007.	-9.	209768.	719469.	690040.	-9.	1386179.	3658151.	3508520.
LAFUR SERVC	-9.	17830.	-9.	67997.	303181.	290780.	-9.	399405.	948633.	608864.
LAFUR TOTMN	-9.	0.	-9.	-9.	1101101.		-9.		2418580.	

1974

	IN-OUT
LAFUR AGRI	-9.
LAFUR MININ	0.
LAFUR CONST	907135.
LAFUR MANUF	6569416.
LAFUR TRANS	6222303.
LAFUR TRADE	2395447.
LAFUR FINAN	5618564.
LAFUR SERVC	728504.
LAFUR TOTMN	2386620.

	1956	1959	1964	1967	1972
LIVIN AGRI	-9.	0.	-9.	-9.	-9.
LIVIN MININ	-9.	0.	-9.	-9.	-9.
LIVIN CONST	-9.	3667.	13985.	47965.	46003.
LIVIN MANUF	-9.	189293.	72187.	133832.	128357.
LIVIN TRANS	-9.	1658.	8131.	27887.	26747.
LIVIN TRADE	-9.	4454.	2848.	58257.	55874.
LIVIN FINAN	-9.	6076.	34087.	134900.	129383.
LIVIN SERVC	-9.	1426.	10267.	27986.	26841.
LIVIN TOTHH	-9.	0.	-9.	22022.	-9.

1974

IN-OUT

LIVIN AGRI	-9.	-9.
LIVIN MININ	168467.	6692.
LIVIN CONST	479049.	459454.
LIVIN MANUF	1194439.	1145583.
LIVIN TRANS	6222303.	5967790.
LIVIN TRADE	742774.	712392.
LIVIN FINAN	1490640.	1429667.
LIVIN SERVC	118939.	114074.
LIVIN TOTHH	168467.	

1956 1959 1964 1967 1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT		
ORLEA AGRI	-9. 58675.	-9. 290884.	675353.	647729.	-9. 1905772.	6118484.	5868217.
ORLEA MININ	-9. -9.	-9. -9.	-9. -9.	-9. -9.	-9. -9.	-9. -9.	-9. -9.
ORLEA CONST	-9. 317821.	-9. 1067501.	4396809.	4216965.	-9. 5585856.	12291538.	11788773.
ORLEA MANUF	-9. 1227846.	-9. 4292194.	16327464.	15659613.	-9. 25401038.	48993777.	46827127.
ORLEA TRANS	-9. 1113436.	-9. 4065405.	14718281.	14116254.	-9. 24941120.	55456910.	53188536.
ORLEA TRADE	-9. 801726.	-9. 2887529.	9029868.	8660515.	-9. 14466794.	31398226.	30113929.
ORLEA FINAN	-9. 3300405.	-9. 11799469.	3772127.	36227118.	-9. 61607946.	135351596.	129815256.
ORLEA SERVC	-9. 748880.	-9. 3399826.	9725119.	9327328.	-9. 15576794.	35099434.	22527970.
ORLEA TOTN	-9. -9.	-9. -9.	2862863.		-9. -9.	14959365.	

1974

	IN-OUT
ORLEA AGRI	-9. -9.
ORLEA MININ	-9. -9.
ORLEA CONST	14065694. 13490359.
ORLEA MANUF	60148550. 57688263.
ORLEA TRANS	81146738. 77827563.
ORLEA TRADE	38717110. 37133445.
ORLEA FINAN	173659506. 166556240.
ORLEA SERVC	24888085. 23870076.
ORLEA TOTN	23374835.

1956

1959

1964

1967

1970

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT		
PLAOU AGRI	-9. 14802.	-9. 53742.	175513.	169293.	-9. 262865.	530685.	508978.
PLAOU MININ	-9. -9.	-9. -9.	-9. -9.	-9. -9.	-9. -9.	-9. -9.	-9. -9.
PLAOU CONST	-9. 8557.	-9. 5594.	0.	0.	-9. 430106.	1951038.	1871234.
PLAOU HANUF	-9. 30696.	-9. 195100.	334579.	320894.	-9. 552196.	16331264	1560904.
PLAOU TRANS	-9. 9476.	-9. 69564.	216901.	208029.	-9. 636795.	1638500.	1571479.
PLAOU TRADE	-9. 6681.	-9. 22081.	145643.	139606.	-9. 249427.	710903.	681825.
PLAOU FINAN	-9. 3438.	-9. 15733.	89934.	86255.	-9. 308040.	731630.	701704.
PLAOU SERVC	-9. 3566.	-9. 5236.	93287.	89471.	-9. 239643.	664043.	426204.
PLAOU TOTNN	-9. -9.	-9. -9.	1541542.		-9. -9.	7082779.	

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1974

IN-OUT

PLAOU AGRI	-9.	-9.
PLAOU MININ	-9.	-9.
PLAOU CONST	1732730.	1661856.
PLAOU HANUF	3796611.	3641316.
PLAOU TRANS	2923495.	2803914.
PLAOU TRADE	854190.	819251.
PLAOU FINAN	-9.	-9.
PLAOU SERVC	756239.	727225.
PLAOU TOTNN	9757063.	

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STBER AGRI	-9.	0.	-9.	-9.	202909.
STBER MININ	-9.	-9.	-9.	-9.	0.
STBER CONST	-9.	8557.	159884.	153344.	1040554.
STBER MANUF	-9.	127901.	1672896.	1604469.	5443753.
STBER TRANS	-9.	4738.	86760.	83212.	504154.
STBER TRADE	-9.	13362.	174772.	167623.	947871.
STBER FINAN	-9.	6876.	332754.	319144.	1463261.
STBER SERVC	-9.	3566.	93207.	89471.	474317.
STBER TOTMN	-9.	-9.	80080.	-9.	179154.

1974

IN-OUT

STBER AGRI	-9.	-9.
STBER MININ	-9.	-9.
STBER CONST	815403.	782050.
STBER MANUF	9811466.	9410142.
STBER TRANS	1106187.	1060940.
STBER TRADE	1708381.	1630502.
STBER FINAN	3955928.	3794117.
STBER SERVC	327084.	313705.
STBER TOTMN	266740.	

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STCHS AGRI	-9.	-9.	0.	-9.	-9.
STCHS MININ	-9.	0.	0.	-9.	0.
STCHS CONST	-9.	7334.	12311.	1013121.	810060.
STCHS MANUF	-9.	92088.	669150.	1435711.	4355002.
STCHS TRANS	-9.	10952.	340044.	477596.	1306423.
STCHS TRADE	-9.	4454.	07386.	179500.	340912.
STCHS FINAN	-9.	4126.	89934.	300040.	7710745.
STCHS SERVC	-9.	1783.	50304.	119021.	243546.
STCHS TOTNN	-9.	0.	154154.	-9.	350300.

1974

IN-OUT

STCHS AGRI	-9.	-9.
STCHS MININ	0.	0.
STCHS CONST	754247.	723396.
STCHS MANUF	6702709.	6505272.
STCHS TRANS	1750040.	1686130.
STCHS TRADE	575650.	592104.
STCHS FINAN	1949290.	1069565.
STCHS SERVC	460090.	440030.
STCHS TOTNN	379051.	

1972

1967

1964

1959

1956

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STJAS AGRI	-9.	-9.	-9.	-9.	-9.
STJAS MININ	-9.	-9.	-9.	-9.	-9.
STJAS CONST	-9.	1222.	69924.	2238.	2147.
STJAS MANUF	-9.	30696.	195100.	689233.	661041.
STJAS TRANS	-9.	237.	-9.	21690.	20803.
STJAS TRADE	-9.	6681.	14438.	58257.	55874.
STJAS FINAN	-9.	5501.	23599.	80940.	77630.
STJAS SERVC	-9.	3566.	12919.	25654.	24604.
STJAS TOTMN	-9.	-9.	-9.	-9.	-9.

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1974

IN-OUT

STJAS AGRI	-9.	-9.
STJAS MININ	-9.	-9.
STJAS CONST	40770.	39102.
STJAS MANUF	5630920.	5400603.
STJAS TRANS	59260.	56836.
STJAS TRADE	408526.	391816.
STJAS FINAN	1031981.	989770.
STJAS SERVC	118939.	114074.
STJAS TOTMN	-9.	-9.

1972

1967

1964

1959

1956

	1956	1959	1964	1967	1972
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STJON AGRI	-9.	0.	0.	0.	-9.
STJON MININ	-9.	-9.	-9.	-9.	-9.
STJON CONST	-9.	733.	6992.	-9.	130069.
STJON MANUF	-9.	30696.	132668.	641787.	1633126.
STJON TRANS	-9.	2369.	9034.	30986.	378115.
STJON TRADE	-9.	4454.	18684.	87386.	355452.
STJON FINAN	-9.	-9.	89934.	86255.	365815.
STJON SERVC	-9.	1783.	8840.	23322.	189727.
STJON TOTHH	-9.	-9.	-9.	-9.	-9.

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1974

IN-OUT

	IN-OUT
STJON AGRI	-9.
STJON MININ	-9.
STJON CONST	152288.
STJON MANUF	3028757.
STJON TRANS	414820.
STJON TRADE	631350.
STJON FINAN	1375975.
STJON SERVC	118939.
STJON TOTHH	-9.

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STMRT AGR	-9.	-9.	-9.	-9.	-9.
STMRT MININ	-9.	0.	0.	0.	0.
STMRT CONST	-9.	8557.	16782.	76672.	109527.
STMRT MANUF	-9.	15348.	56579.	133832.	128357.
STMRT TRANS	-9.	1895.	6324.	15493.	14859.
STMRT TRADE	-9.	8908.	25470.	87306.	83811.
STMRT FINAN	-9.	6876.	39332.	89934.	86255.
STMRT SERVC	-9.	3566.	7480.	23322.	22368.
STMRT TOTMN	-9.	0.	-9.	220220.	-9.

1974

IN-OUT

STMRT AGR	-9.
STMRT MININ	0.
STMRT CONST	509627.
STMRT MANUF	3796611.
STMRT TRANS	138273.
STMRT TRADE	928468.
STMRT FINAN	1261310.
STMRT SERVC	178409.
STMRT TOTMN	1431972.

1972

1967

1964

1959

1956

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT					
STHRY AGRI	-9.	75691.	-9.	223757.	636981.	610926.	-9.	1077747.	1464754.	1347295.
STHRY MINIM	-9.	0.	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.
STHRY CONST	-9.	42784.	-9.	111870.	399710.	383360.	-9.	547633.	1430761.	1372230.
STHRY MANUF	-9.	68508.	-9.	234120.	936022.	898502.	-9.	1767029.	5171565.	4942863.
STHRY TRANS	-9.	33166.	-9.	126479.	712675.	683524.	-9.	1591906.	3824922.	2901193.
STHRY TRADE	-9.	22270.	-9.	101913.	378672.	363183.	-9.	698397.	1777280.	1704562.
STHRY FINAN	-9.	27503.	-9.	-9.	629535.	603785.	-9.	1232159.	3658151.	3588520.
STHRY SERVC	-9.	14264.	-9.	47590.	289895.	201309.	-9.	599107.	1612677.	1835069.
STHRY TOTM	-9.	0.	-9.	-9.	1761762.	-9.	-9.	-9.	6807855.	-9.

1974

IN-OUT

STHRY AGRI	-9.	-9.
STHRY MINIM	-9.	-9.
STHRY CONST	1936501.	1857360.
STHRY MANUF	11432490.	10964861.
STHRY TRANS	5155623.	4944740.
STHRY TRADE	3193929.	3063287.
STHRY FINAN	6470549.	6213554.
STHRY SERVC	1204262.	1155004.
STHRY TOTM	5068057.	-9.

1956 1959 1964 1967 1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STTAM AGR	-9.	-9.	7674.	89374.	468251.
STTAM MININ	-9.	-9.	-9.	-9.	-9.
STTAM CONST	-9.	21443.	143096.	219053.	585311.
STTAM MANUF	-9.	40928.	602243.	1104393.	2449689.
STTAM TRANS	-9.	9476.	148732.	265331.	604415.
STTAM TRADE	-9.	13362.	262157.	498855.	1184839.
STTAM FINAN	-9.	27503.	539602.	1232159.	2926521.
STTAM SERVC	-9.	7132.	163251.	359464.	853770.
STTAM TOTM	-9.	-9.	22022.	-9.	-9.

1974

	IN-OUT
STTAM AGR	-9.
STTAM MININ	-9.
STTAM CONST	1121178.
STTAM MANUF	477757.
STTAM TRANS	152107.
STTAM TRADE	245155.
STTAM FINAN	7625195.
STTAM SERVC	802841.
STTAM TOTM	-9.

1956 1959 1964 1967 1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
TANGI AGRI	-9.	-9.	-9.	-9.	861582.
TANGI MINIH	-9.	-9.	-9.	-9.	-9.
TANGI CONST	-9.	4890.	127987.	219853.	498996.
TANGI MANUF	-9.	81856.	1070553.	1104393.	3381959.
TANGI TRANS	-9.	14214.	92958.	212265.	604415.
TANGI TRADE	-9.	33405.	463145.	798168.	1818380.
TANGI FINAN	-9.	34379.	539602.	1232159.	3157668.
TANGI SERVC	-9.	16047.	184241.	399485.	547978.
TANGI TOTAN	-9.	-9.	88889.	-9.	179154.

1974

	IN-OUT
TANGI AGRI	-9.
TANGI MINIH	-9.
TANGI CONST	615403.
TANGI MANUF	6278806.
TANGI TRANS	1619774.
TANGI TRADE	3212499.
TANGI FINAN	5905226.
TANGI SERVC	624432.
TANGI TOTAN	224623.

1972

1967

1964

1959

1956

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT					
TERRE AGRI	-9.	41072.	-9.	62652.	360700.	345946.	-9.	499444.	1373537.	1317355.
TERRE MININ	-9.	-9.	-9.	-9.	-9.	-9.	-9.	-9.	0.	0.
TERRE CONST	-9.	12224.	-9.	44285.	271803.	260685.	-9.	301190.	780415.	748494.
TERRE MANUF	-9.	51160.	-9.	253630.	802990.	770145.	-9.	1104393.	4355002.	4162411.
TERRE TRANS	-9.	37904.	-9.	162616.	681689.	653005.	-9.	1061324.	3403038.	3263842.
TERRE TRADE	-9.	33405.	-9.	133336.	521402.	500075.	-9.	947824.	2369677.	2272749.
TERRE FINAN	-9.	48131.	-9.	249100.	899336.	862550.	-9.	2156278.	5121412.	4911929.
TERRE SERVC	-9.	17830.	-9.	67997.	345160.	331042.	-9.	678988.	1612677.	1035069.
TERRE TOTMN	-9.	-9.	-9.	-9.	1541542.		-9.	-9.	7434894.	

1974

IN-OUT

TERRE AGRI	-9.	-9.
TERRE MININ	-9.	-9.
TERRE CONST	1834656.	1759612.
TERRE MANUF	8958295.	8591869.
TERRE TRANS	5135869.	4925795.
TERRE TRADE	4660909.	4470261.
TERRE FINAN	8771840.	8413042.
TERRE SERVC	1531346.	1468708.
TERRE TOTMN	17127507.	

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT					
VERNL AGRI	-9.	13495.	-9.	35801.	287211.	198735.	-9.	-9.	624335.	598798.
VERNL MININ	-9.	0.	-9.	0.	-9.	-9.	-9.	-9.	0.	0.
VERNL CONST	-9.	12224.	-9.	17714.	111919.	187341.	-9.	383343.	292656.	280685.
VERNL MANUF	-9.	15346.	-9.	58726.	334579.	328894.	-9.	441757.	1088751.	1040603.
VERNL TRANS	-9.	14214.	-9.	54205.	185915.	178311.	-9.	318397.	630192.	604415.
VERNL TRADE	-9.	4454.	-9.	72188.	233029.	223497.	-9.	429015.	947871.	909100.
VERNL FINAN	-9.	13752.	-9.	117995.	359735.	345820.	-9.	616079.	2926521.	2806816.
VERNL SERVC	-9.	48142.	-9.	6800.	233216.	223677.	-9.	279583.	569180.	365318.
VERNL TOTLN	-9.	0.	-9.	0.	660661.		-9.	-9.	1164501.	

1974

IN-OUT

VERNL AGRI	-9.	-9.
VERNL MININ	-9.	-9.
VERNL CONST	682900.	654967.
VERNL MANUF	1493049.	1431978.
VERNL TRANS	809887.	776760.
VERNL TRADE	1448410.	1389165.
VERNL FINAN	2923947.	2804347.
VERNL SERVC	698769.	670187.
VERNL TOTLN	4071293.	

TABLE A.4

EMPLOYMENT DUE TO LOUISIANA OCS ACTIVITY,
 BY SECTOR GROUP, BY PARISH, FOR VARIOUS YEARS, E_i^P

LEGEND

ASCEN = Ascension	AGRI = Agriculture, Forestry, & Fisheries
ASSUM = Assumption	
CALCA = Calcasieu	MININ = Mining (excluding Sector 8)
CAMRO = Cameron	
IBERI = Iberia	CONST = Contract Construc- tion
IBVLL = Iberville	
JEFSN = Jefferson	MANUF = Manufacturing
JEFDV = Jefferson Davis	
LAFUR = Lafourche	TRANS = Transportation, Com- munications, & Utilities
LIVIN = Livingston	
ORLEA = Orleans	TRADE = Wholesale & Retail Trade
PLAQU = Plaquemines	
STBER = St. Bernard	FINAN = Finance, Insurance & Real Estate
STCHS = St. Charles	
STJAS = St. James	SERVC = Services
STJON = St. John	
STMRT = St. Martin	TOTMN = Mining (including Sector 8)
STMRY = St. Mary	
STTAM = St. Tammany	
TANGI = Tangipahoa	
TERRE = Terrebonne	
VERML = Vermilion	

"-9" means "no entry" due to missing data because of private firm disclosure problems or because employment was not computed.

"IN" means sector eight was included in Sector Group 9.

"OUT" means sector eight was not included in Sector Group 2.

Source: Computed by author. See text.

1956 1959 1961 1964 1967 1970 1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
ASCEN AGRI	-9.	-9.	0.	0.	0.	0.
ASCEN MININ	-9.	-9.	-9.	-9.	0.	-9.
ASCEN CONST	-9.	0.	0.	5.	33.	13.
ASCEN HANUF	-9.	1.	4.	13.	23.	73.
ASCEN TRANS	-9.	0.	0.	5.	6.	7.
ASCEN TRADE	-9.	1.	5.	16.	33.	9.
ASCEN FINAN	-9.	1.	3.	11.	24.	18.
ASCEN SERVC	-9.	0.	1.	2.	4.	16.
ASCEN TOTHH	-9.	-9.	-9.	1.	-9.	1.

1974

	IN-OUT
ASCEN AGRI	-9.
ASCEN MININ	0.
ASCEN CONST	32.
ASCEN HANUF	109.
ASCEN TRANS	31.
ASCEN TRADE	90.
ASCEN FINAN	44.
ASCEN SERVC	10.
ASCEN TOTHH	2.

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
ASSUM AGRI	-9.	-9.	0.	-9.	0.
ASSUM MININ	-9.	0.	0.	-9.	-9.
ASSUM CONST	-9.	-9.	0.	-9.	4.
ASSUM MANUF	-9.	1.	8.	-9.	54.
ASSUM TRANS	-9.	0.	-9.	-9.	0.
ASSUM TRADE	-9.	1.	5.	-9.	9.
ASSUM FINAN	-9.	0.	2.	-9.	6.
ASSUM SERVC	-9.	0.	2.	-9.	2.
ASSUM TOTMN	-9.	0.	-9.	-9.	-9.

1974

IN-OUT

ASSUM AGRI	-9.
ASSUM MININ	-9.
ASSUM CONST	2.
ASSUM MANUF	18.
ASSUM TRANS	2.
ASSUM TRADE	17.
ASSUM FINAN	14.
ASSUM SERVC	1.
ASSUM TOTMN	-9.

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
CALCA AGRI	-9.	0.	-9.	0.	1.
CALCA MININ	-9.	-9.	-9.	-9.	-9.
CALCA CONST	-9.	2.	-9.	11.	23.
CALCA MANUF	-9.	7.	-9.	29.	79.
CALCA TRANS	-9.	5.	-9.	15.	46.
CALCA TRADE	-9.	11.	-9.	40.	117.
CALCA FINAN	-9.	71.	-9.	26.	70.
CALCA SERVC	-9.	4.	-9.	14.	43.
CALCA TOTNH	-9.	-9.	-9.	-9.	8.

1974

IN-OUT

CALCA AGRI	-9.
CALCA MININ	-9.
CALCA CONST	117.
CALCA MANUF	349.
CALCA TRANS	130.
CALCA TRADE	519.
CALCA FINAN	307.
CALCA SERVC	84.
CALCA TOTNH	13.

	2.
	-9.
	72.
	241.
	94.
	346.
	193.
	119.
	32.

	1956	1959	1964	1967	1972
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
CAMRO AGRI	-9.	0.	0.	-9.	1.
CAMRO MININ	-9.	0.	-9.	-9.	0.
CAMRO CONST	-9.	0.	1.	-9.	-9.
CAMRO MANUF	-9.	0.	-9.	-9.	9.
CAMRO TRANS	-9.	0.	1.	-9.	7.
CAMRO TRADE	-9.	1.	3.	-9.	7.
CAMRO FINAN	-9.	-9.	1.	-9.	4.
CAMRO SERVC	-9.	0.	1.	-9.	2.
CAMRO TOTMN	-9.	0.	4.	-9.	29.

1974

IN-OUT

CAMRO AGRI	-9.
CAMRO MININ	0.
CAMRO CONST	-9.
CAMRO MANUF	-9.
CAMRO TRANS	6.
CAMRO TRADE	11.
CAMRO FINAN	4.
CAMRO SERVC	3.
CAMRO TOTMN	25.

1956 1959 1964 1967 1972

	1956	1959	1964	1967	1972
IBERI AGRI	-9.	0.	0.	-9.	1.
IBERI MININ	-9.	-9.	-9.	-9.	-9.
IBERI CONST	-9.	1.	7.	-9.	17.
IBERI MANUF	-9.	1.	15.	-9.	51.
IBERI TRANS	-9.	1.	17.	-9.	52.
IBERI TRADE	-9.	4.	43.	-9.	114.
IBERI FINAN	-9.	2.	20.	-9.	62.
IBERI SERVC	-9.	1.	18.	-9.	35.
IBERI TOTM	-9.	-9.	2.	-9.	47.

1974

	1974
IBERI AGRI	-9.
IBERI MININ	-9.
IBERI CONST	27.
IBERI MANUF	77.
IBERI TRANS	72.
IBERI TRADE	178.
IBERI FINAN	96.
IBERI SERVC	21.
IBERI TOTM	39.

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
IBVLL AGRI	-9.	0.	-9.	-9.	4.
IBVLL MININ	-9.	-9.	-9.	-9.	0.
IBVLL CONST	-9.	0.	1.	5.	20.
IBVLL MANUF	-9.	1.	3.	12.	49.
IBVLL TRANS	-9.	0.	1.	3.	14.
IBVLL TRADE	-9.	1.	4.	13.	44.
IBVLL FINAN	-9.	1.	3.	4.	19.
IBVLL SERVC	-9.	0.	1.	4.	14.
IBVLL TOTMN	-9.	-9.	3.	-9.	4.

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1974

IN-OUT

IBVLL AGRI	-9.	-9.
IBVLL MININ	0.	0.
IBVLL CONST	15.	14.
IBVLL MANUF	83.	79.
IBVLL TRANS	15.	15.
IBVLL TRADE	47.	45.
IBVLL FINAN	30.	28.
IBVLL SERVC	8.	8.
IBVLL TOTMN	6.	

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
JEFBN AGRI	-9.	8.	-9.	1.	1.
JEFBN HINIH	-9.	-9.	-9.	-9.	-9.
JEFBN CONST	-9.	3.	-9.	57.	78.
JEFBN MANUF	-9.	9.	-9.	123.	184.
JEFBN TRANS	-9.	3.	-9.	38.	76.
JEFBN TRADE	-9.	18.	-9.	236.	434.
JEFBN FINAN	-9.	2.	-9.	59.	137.
JEFBN SERVC	-9.	3.	-9.	64.	110.
JEFBN TOTHH	-9.	-9.	-9.	20.	-9.

1974

IN-OUT

JEFBN AGRI	-9.
JEFBN HINIH	-9.
JEFBN CONST	405.
JEFBN MANUF	649.
JEFBN TRANS	501.
JEFBN TRADE	1713.
JEFBN FINAN	741.
JEFBN SERVC	254.
JEFBN TOTHH	130.

	1956	1959	1964	1967	1972
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
JEFDV AGRI	-9.	0.	1.	1.	-9.
JEFDV MININ	-9.	-9.	-9.	-9.	-9.
JEFDV CONST	-9.	0.	3.	-9.	4.
JEFDV MANUF	-9.	0.	2.	-9.	5.
JEFDV TRANS	-9.	1.	7.	-9.	11.
JEFDV TRADE	-9.	2.	23.	-9.	30.
JEFDV FINAN	-9.	1.	7.	-9.	14.
JEFDV SERVC	-9.	1.	5.	-9.	8.
JEFDV TOTMN	-9.	-9.	3.	-9.	-9.

1974

IN-OUT

JEFDV AGRI	-9.
JEFDV MININ	0.
JEFDV CONST	6.
JEFDV MANUF	31.
JEFDV TRANS	10.
JEFDV TRADE	78.
JEFDV FINAN	32.
JEFDV SERVC	10.
JEFDV TOTMN	8.

1956 1959 1964 1967 1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
LAFUR AGRI	-9.	0.	-9.	1.	4.
LAFUR MINIH	-9.	0.	-9.	-9.	0.
LAFUR CONST	-9.	1.	-9.	2.	6.
LAFUR MANUF	-9.	1.	-9.	4.	19.
LAFUR TRANS	-9.	2.	-9.	7.	22.
LAFUR TRADE	-9.	4.	-9.	15.	42.
LAFUR FINAN	-9.	2.	-9.	6.	17.
LAFUR SERVC	-9.	1.	-9.	4.	15.
LAFUR TOTHH	-9.	0.	-9.	-9.	17.

1974

	IN-OUT
LAFUR AGRI	-9.
LAFUR MINIH	0.
LAFUR CONST	22.
LAFUR MANUF	95.
LAFUR TRANS	152.
LAFUR TRADE	160.
LAFUR FINAN	05.
LAFUR SERVC	24.
LAFUR TOTHH	21.

	1956	1959	1964	1967	1972
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
LIVIN AGRI	-9.	0.	-9.	-9.	-9.
LIVIN MININ	-9.	0.	-9.	-9.	-9.
LIVIN CONST	-9.	0.	1.	2.	4.
LIVIN MANUF	-9.	5.	2.	3.	7.
LIVIN TRANS	-9.	0.	0.	1.	1.
LIVIN TRADE	-9.	1.	0.	6.	15.
LIVIN FINAN	-9.	0.	1.	3.	7.
LIVIN SERVC	-9.	0.	1.	1.	4.
LIVIN TOTMN	-9.	0.	-9.	0.	-9.

1974

	IN-OUT
LIVIN AGRI	-9.
LIVIN MININ	1.
LIVIN CONST	12.
LIVIN MANUF	17.
LIVIN TRANS	152.
LIVIN TRADE	50.
LIVIN FINAN	23.
LIVIN SERVC	4.
LIVIN TOTMN	1.

1956 1959 1964 1967 1972

	1956	1959	1964	1967	1972
ORLEA AGRI	-9.	0.	2.	3.	23.
ORLEA MININ	-9.	-9.	-9.	-9.	-9.
ORLEA CONST	-9.	14.	44.	162.	351.
ORLEA MANUF	-9.	32.	105.	356.	803.
ORLEA TRANS	-9.	51.	169.	543.	1584.
ORLEA TRADE	-9.	100.	361.	962.	2415.
ORLEA FINAN	-9.	92.	311.	884.	2277.
ORLEA SERVC	-9.	44.	109.	491.	1300.
ORLEA TOTHH	-9.	-9.	-9.	-9.	166.

1974

	1974
ORLEA AGRI	-9.
ORLEA MININ	-9.
ORLEA CONST	343.
ORLEA MANUF	872.
ORLEA TRANS	1970.
ORLEA TRADE	2581.
ORLEA FINAN	2631.
ORLEA SERVC	803.
ORLEA TOTHH	262.

	1956	1959	1964	1967	1972
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
PLAOU AGRI	-9.	0.	0.	1.	1.
PLAOU MININ	-9.	-9.	-9.	-9.	-9.
PLAOU CONST	-9.	0.	0.	-9.	16.
PLAOU MANUF	-9.	1.	5.	7.	12.
PLAOU TRANS	-9.	0.	3.	8.	23.
PLAOU TRADE	-9.	1.	3.	16.	25.
PLAOU FINAN	-9.	0.	0.	2.	7.
PLAOU SERVC	-9.	0.	0.	5.	11.
PLAOU TOTMN	-9.	-9.	-9.	-9.	-9.

1974

	IN-OUT
PLAOU AGRI	-9.
PLAOU MININ	-9.
PLAOU CONST	42.
PLAOU MANUF	55.
PLAOU TRANS	71.
PLAOU TRADE	57.
PLAOU FINAN	-9.
PLAOU SERVC	24.
PLAOU TOTMN	84.

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STDR AGR	-9.	0.	-9.	-9.	-9.
STDR MINM	-9.	-9.	-9.	-9.	-9.
STDR CONST	-9.	0.	-9.	6.	12.
STDR MANUF	-9.	3.	-9.	36.	46.
STDR TRANS	-9.	0.	-9.	3.	6.
STDR TRADE	-9.	2.	-9.	19.	30.
STDR FINAN	-9.	0.	-9.	8.	14.
STDR SERVC	-9.	0.	-9.	5.	8.
STDR TOTM	-9.	-9.	-9.	1.	-9.

1974

	IN-OUT
STDR AGR	-9.
STDR MINM	-9.
STDR CONST	20.
STDR MANUF	142.
STDR TRANS	27.
STDR TRADE	114.
STDR FINAN	60.
STDR SERVC	11.
STDR TOTM	2.

	1956	1959	1964	1967	1972
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STCHS AGRI	-9.	-9.	0.	-9.	-9.
STCHS MININ	-9.	-9.	0.	-9.	0.
STCHS CONST	-9.	-9.	5.	-9.	23.
STCHS MANUF	-9.	2.	15.	-9.	68.
STCHS TRANS	-9.	1.	13.	-9.	38.
STCHS TRADE	-9.	1.	10.	-9.	26.
STCHS FINAN	-9.	0.	2.	-9.	135.
STCHS SERVC	-9.	0.	3.	-9.	9.
STCHS TOTM	-9.	0.	2.	-9.	4.

1974

	IN-OUT
STCHS AGRI	-9.
STCHS MININ	0.
STCHS CONST	18.
STCHS MANUF	98.
STCHS TRANS	43.
STCHS TRADE	38.
STCHS FINAN	30.
STCHS SERVC	15.
STCHS TOTM	3.

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STJAS AGRI	-9.	-9.	-9.	-9.	-9.
STJAS MININ	-9.	-9.	-9.	-9.	-9.
STJAS CONST	-9.	0.	0.	19.	4.
STJAS MANUF	-9.	1.	16.	23.	54.
STJAS TRANS	-9.	0.	1.	1.	7.
STJAS TRADE	-9.	1.	6.	10.	17.
STJAS FINAN	-9.	0.	2.	3.	6.
STJAS SERVC	-9.	0.	1.	2.	4.
STJAS TOTLN	-9.	-9.	-9.	-9.	-9.

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1974

IN-OUT

STJAS AGRI	-9.
STJAS MININ	-9.
STJAS CONST	1.
STJAS MANUF	82.
STJAS TRANS	1.
STJAS TRADE	27.
STJAS FINAN	16.
STJAS SERVC	4.
STJAS TOTLN	-9.

1956

1959

1964

1967

1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STJON AGRI	-9.	0.	0.	0.	-9.
STJON MININ	-9.	-9.	-9.	-9.	-9.
STJON CONST	-9.	0.	-9.	-9.	4.
STJON MANUF	-9.	1.	15.	7.	26.
STJON TRANS	-9.	0.	1.	2.	10.
STJON TRADE	-9.	1.	10.	9.	26.
STJON FINAN	-9.	-9.	2.	-9.	6.
STJON SERVC	-9.	0.	1.	-9.	5.
STJON TOTM	-9.	-9.	-9.	-9.	-9.

1974

	IN-OUT
STJON AGRI	-9.
STJON MININ	-9.
STJON CONST	4.
STJON MANUF	44.
STJON TRANS	10.
STJON TRADE	42.
STJON FINAN	21.
STJON SERVC	4.
STJON TOTM	-9.

1972

1967

1964

1955

1956

IN-OUT

IN-OUT

IN-OUT

IN-OUT

IN-OUT

	1972	1967	1964	1955	1956
STHRT AGRI	-9.	-9.	-9.	-9.	-9.
STHRT MININ	0.	0.	0.	0.	0.
STHRT CONST	18.	4.	3.	0.	-9.
STHRT MANUF	9.	5.	3.	0.	-9.
STHRT TRANS	1.	1.	1.	0.	-9.
STHRT TRADE	35.	20.	10.	1.	-9.
STHRT FINAN	12.	7.	2.	0.	-9.
STHRT SERVC	5.	2.	1.	0.	-9.
STHRT TOTLN	18.	-9.	3.	0.	-9.

1974

IN-OUT

	1974
STHRT AGRI	-9.
STHRT MININ	0.
STHRT CONST	12.
STHRT MANUF	53.
STHRT TRANS	3.
STHRT TRADE	59.
STHRT FINAN	19.
STHRT SERVC	6.
STHRT TOTLN	12.

1956 1959 1964 1967 1972

	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
STHY AGRI	-9.	0.	1.	3.	5.
STHY MININ	-9.	0.	-9.	-9.	-9.
STHY CONST	-9.	2.	5.	15.	20.
STHY MANUF	-9.	2.	6.	20.	37.
STHY TRANS	-9.	2.	5.	27.	57.
STHY TRADE	-9.	3.	13.	42.	70.
STHY FINAN	-9.	1.	-9.	15.	27.
STHY SERVC	-9.	1.	3.	11.	29.
STHY TOTAN	-9.	0.	-9.	27.	-9.

1974

	IN-OUT
STHY AGRI	-9.
STHY MININ	-9.
STHY CONST	47.
STHY MANUF	166.
STHY TRANS	126.
STHY TRADE	213.
STHY FINAN	98.
STHY SERVC	39.
STHY TOTAN	44.

1966

1959

1964

1967

1972

IN-OUT

IN-OUT

IN-OUT

IN-OUT

IN-OUT

	1966	1959	1964	1967	1972
SITAM AGRI	-9.	-9.	0.	-9.	2.
SITAM MININ	-9.	-9.	-9.	-9.	-9.
SITAM CONST	-9.	1.	6.	-9.	16.
SITAM MANUF	-9.	1.	14.	-9.	30.
SITAM TRANS	-9.	0.	6.	-9.	17.
SITAM TRADE	-9.	2.	29.	-9.	87.
SITAM FINAN	-9.	1.	13.	-9.	49.
SITAM SERVC	-9.	0.	9.	-9.	20.
SITAM TOTNH	-9.	-9.	0.	-9.	-9.

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1974

IN-OUT

	1974
SITAM AGRI	-9.
SITAM MININ	-9.
SITAM CONST	26.
SITAM MANUF	66.
SITAM TRANS	30.
SITAM TRADE	157.
SITAM FINAN	111.
SITAM SERVC	25.
SITAM TOTNH	-9.

	1956	1959	1964	1967	1972
	IN-OUT	IN-OUT	IN-OUT	IN-OUT	IN-OUT
TANGI AGRJ	-9.	-9.	1.	-9.	3.
TANGI MININ	-9.	-9.	-9.	-9.	-9.
TANGI CONST	-9.	0.	5.	-9.	15.
TANGI MANUF	-9.	2.	24.	-9.	58.
TANGI TRANS	-9.	1.	4.	-9.	18.
TANGI TRADE	-9.	4.	51.	-9.	146.
TANGI FINAN	-9.	1.	13.	-9.	58.
TANGI SERVC	-9.	1.	10.	-9.	32.
TANGI TOTMN	-9.	-9.	1.	-9.	2.

1974

IN-OUT

TANGI AGRJ	-9.
TANGI MININ	-9.
TANGI CONST	20.
TANGI MANUF	91.
TANGI TRANS	40.
TANGI TRADE	214.
TANGI FINAN	89.
TANGI SERVC	20.
TANGI TOTMN	2.

1972

1967

1964

1959

1956

IN-OUT

IN-OUT

IN-OUT

IN-OUT

IN-OUT

	1956	1959	1964	1967	1972
TERRE AGRI	-9.	0.	0.	2.	5.
TERRE MININ	-9.	-9.	-9.	-9.	0.
TERRE CONST	-9.	1.	10.	-9.	22.
TERRE MANUF	-9.	1.	10.	-9.	71.
TERRE TRANS	-9.	2.	26.	-9.	97.
TERRE TRADE	-9.	4.	58.	-9.	182.
TERRE FINAN	-9.	1.	22.	-9.	94.
TERRE SERVC	-9.	1.	18.	-9.	68.
TERRE TOTMN	-9.	-9.	24.	-9.	83.

1974

IN-OUT

	1974
TERRE AGRI	-9.
TERRE MININ	-9.
TERRE CONST	45.
TERRE MANUF	130.
TERRE TRANS	125.
TERRE TRADE	311.
TERRE FINAN	133.
TERRE SERVC	49.
TERRE TOTMN	148.

1956

1959

1964

1967

1972

IN-OUT

IN-OUT

IN-OUT

IN-OUT

IN-OUT

	1956	1959	1964	1967	1972
VERML AGRI	-9.	0.	0.	1.	2.
VERML MININ	-9.	0.	-9.	-9.	0.
VERML CONST	-9.	1.	4.	-9.	8.
VERML MANUF	-9.	0.	8.	-9.	17.
VERML TRANS	-9.	1.	7.	-9.	17.
VERML TRADE	-9.	1.	26.	-9.	73.
VERML FINAN	-9.	0.	9.	-9.	51.
VERML SERVC	-9.	3.	12.	-9.	14.
VERML TOTMN	-9.	0.	10.	-9.	13.

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1974

IN-OUT

VERML AGRI	-9.
VERML MININ	-9.
VERML CONST	17.
VERML MANUF	22.
VERML TRANS	20.
VERML TRADE	97.
VERML FINAN	44.
VERML SERVC	23.
VERML TOTMN	35.

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CHAPTER 3

PUBLIC SERVICE EXPENDITURES IN THE COASTAL ZONE

INTRODUCTION

In this chapter, the state and local expenditures in coastal zone parishes for selected public services are presented. The public service sectors included are education, highways, police protection, fire protection, water supply, solid waste disposal, sewerage, health and hospitals, and parks and recreation. For each public service sector, state and local per capita expenditures for 1972 in each coastal zone parish are discussed. These costs are then attributed to the estimated 1972 OCS related coastal zone parish populations to show total OCS population related costs by sector and parish. They include both capital and operating expenditures. None of the expenditures shown for the various public service sectors include interest on debt, unemployment compensation, or retirement benefits paid to former employees. Other fringe benefits, however, are included. To give a range, from maximum to minimum, of OCS related costs, the OCS related parish populations are given with sector 8 included and not included (see Chapter 2). Finally, in the conclusions, the total expenditures and revenues for all governmental activities in Louisiana are discussed for both the entire state and the OCS related coastal zone populations.

EDUCATION

Under the category of education are included expenditures for higher education (mainly state supported) which refers to all post high school education and local schools (mainly locally supported) which includes all education excepting higher education. Expenditures are for both capital and operating expenses. For local schools costs include school construction (including land), operation, and maintenance expenses; textbook purchases; school bus purchases; personnel salaries; school lunch program expenses; health, recreation, and library service costs; equipment; etc. Expenditures under higher education, besides personnel salaries, facilities construction, operation, and maintenance, include auxiliary activities expenses such as the costs

of operating dormitories, dining halls, and bookstores. Higher education costs do not include agricultural experiment station and extension expenditures. Interest payments on school related debts and retirement benefits paid to former employees are not included under education expenditures (U.S. Bureau of the Census, 1974: 6).

The per capita expenditures for education in 1972 in each coastal zone parish are shown in Table 3.1. The individual local per capita costs were added to the average state per capita cost to obtain total figures (Table 3.1). These total per capita costs were then multiplied by the 1972 estimated OCS related parish populations (Table 3.2) to yield education expenditures for the OCS related populations in the coastal zone parishes. The coastal zone cost figure based on the low OCS related population estimate (without sector 8) is \$14,245,406; on the high OCS related estimate (with sector 8), \$16,257,074.

HIGHWAYS

Highway expenditures are for provision and maintenance of highway facilities including bridges, tunnels, ferries, regular roads, highways, and city streets. Included are expenditures for salaries, equipment, construction, and land. Highway policing costs are classified under "police protection" and interest on highway related debt is not included (U.S. Bureau of the Census, 1974: 7).

Table 3.3 presents per capita expenditures for highways in 1972 in each coastal zone parish. The individual local costs were added to the average state per capita cost to obtain total figures (Table 3.3) and these costs were attributed to the 1972 estimated OCS related parish populations (Table 3.4). Highway costs in the coastal zone based on the population estimate without sector 8 are \$5,876,191; with sector 8 included, \$6,662,168.

POLICE PROTECTION

The per capita expenditures for police protection in 1972 in coastal zone parishes are shown in Table 3.5. Police agencies include local police departments, sheriffs' offices, and state police, but not corrections agencies. These costs include both capital and operative (basically construction, land, salary, and equipment) expenses and they were attributed to the estimated 1972 OCS related

TABLE 3.1
1972 STATE AND LOCAL EDUCATION EXPENDITURES
IN THE LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	7,627	39,204	194.55	269.78
Assumption	4,873	20,115	242.26	317.49
Calcasieu	29,133	148,328	196.27	271.50
Cameron	2,372	8,907	266.31	341.54
Iberia	11,227	58,859	190.74	265.97
Iberville	8,604	30,667	280.56	355.79
Jefferson	57,944	366,324	158.18	233.41
Jeff. Davis	6,262	29,622	211.40	286.63
Lafourche	14,001	71,958	194.57	269.80
Livingston	7,793	38,330	203.31	278.54
Orleans	84,737	593,717	142.72	217.95
Plaquemines	5,337	25,893	206.12	281.35
St. Bernard	9,624	55,043	174.85	250.08
St. Charles	6,488	30,782	210.77	286.00
St. James	3,672	19,008	193.18	268.41
St. John	4,567	24,830	183.93	259.16
St. Martin	8,093	33,701	240.14	315.37
St. Mary	13,435	62,172	216.09	291.32
St. Tammany	14,372	67,092	214.21	289.44
Tangipahoa	11,687	68,017	171.82	247.05
Terrebonne	16,840	78,835	213.61	288.84
Vermilion	8,026	43,930	182.70	257.93

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
 State Expenditure (\$1000) 281,211¹
 State Population 3,737,771²
 State Per Capita Expenditure 75.23

TABLE 3.2

1972 EDUCATION EXPENDITURES FOR THE OCS RELATED
POPULATION IN THE LOUISIANA COASTAL ZONE,
BY PARISH

	Total Per ¹ Capita Expen- ditures	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	269.78	955.5	859.95	257,774.79	231,997.31
Assumption	317.49	487.5	456.25	154,776.38	144,854.81
Calcasieu	271.50	4,956.49	4,446.86	1,345,687.04	1,207,322.49
Cameron	341.54	217.77	107.1	74,377.7	36,578.93
Iberia	265.97	1,946.1	1,591.81	517,604.22	423,373.71
Iberville	355.79	946.9	863.35	336,897.55	307,171.30
Jefferson	233.41	11,633.31	10,308.12	2,715,330.89	2,406,018.29
Jeff. Davis	286.63	1,043.4	925.	299,069.74	265,132.75
Lafourche	269.80	2,512.98	2,197.34	678,002.00	592,842.33
Livingston	278.54	1,283.5	1,192.9	357,506.09	332,270.37
Orleans	217.95	22,632.67	20,265.74	4,932,790.43	4,416,918.03
Plaquemines	281.35	694.86	457.32	195,498.86	128,666.98
St. Bernard	250.08	1,682.45	1,562.75	420,747.10	390,812.52
St. Charles	286.00	1,544.01	1,438.19	441,586.86	411,322.34
St. James	268.41	506.85	474.15	136,043.61	127,266.60
St. John	259.16	840.5	789.25	217,823.98	204,542.03
St. Martin	315.37	974.38	756.8	307,290.22	238,672.02
St. Mary	291.32	1,922.38	1,523.33	560,027.74	443,776.50
St. Tammany	289.44	2,261.51	2,063.29	654,571.45	597,198.66
Tangipahoa	247.05	2,377.12	2,176.64	558,706.05	537,738.91
Terrebonne	288.84	2,397.3	1,909.98	692,436.13	551,678.62
Vermilion	257.93	1,560.6	1,354.05	402,525.56	249,250.12
TOTAL	279.24 (unweighted average)	65,278.08	57,720.17	16,257,073.86	14,245,405.62

Sources: (1) From Table 3.1

(2) See Chapter 2.

TABLE 3. 3

1972 HIGHWAY EXPENDITURES IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	1,111	39,204	28.34	109.60
Assumption	214	20,115	10.64	91.90
Calcasieu	3,840	148,328	25.89	107.15
Cameron	375	8,907	42.10	123.36
Iberia	1,289	58,859	21.90	103.16
Iberville	597	30,667	19.47	100.73
Jefferson	15,424	366,324	42.10	123.36
Jeff. Davis	532	29,622	17.96	99.22
Lafourche	950	71,958	13.20	94.46
Livingston	449	38,330	11.71	92.97
Orleans	6,401	593,717	10.78	92.04
Plaquemines	995	25,893	38.43	119.69
St. Bernard	869	55,043	15.79	97.05
St. Charles	557	30,782	18.09	99.35
St. James	372	19,008	19.57	100.63
St. John	385	24,830	15.51	96.77
St. Martin	469	33,701	13.92	95.18
St. Mary	751	62,172	12.28	93.54
St. Tammany	1,414	67,092	21.08	102.34
Tangipahoa	1,109	68,017	16.30	97.56
Terrebonne	1,416	78,835	17.96	99.22
Vermilion	1,333	43,930	30.34	111.60

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
 State Expenditure (\$1000) - 303,733¹
 State Population - 3,737,771²
 State Per Capita Expenditure - 81.26

TABLE 3.4

1972 HIGHWAY EXPENDITURES FOR THE OCS RELATED
POPULATION IN THE LOUISIANA COASTAL ZONE,
BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	109.60	955.5	859.95	104,722.80	94,250.52
Assumption	91.90	487.5	456.25	44,801.25	41,929.38
Calcasieu	107.15	4,956.49	4,446.86	531,087.90	476,481.05
Cameron	123.36	217.77	107.1	26,864.11	13,211.86
Iberia	103.16	1,946.1	1,591.81	200,759.68	164,211.12
Iberville	100.73	946.9	863.35	95,381.24	86,965.25
Jefferson	123.36	11,633.31	10,308.12	1,435,085.12	1,271,609.68
Jeff. Davis	99.22	1,043.4	925.	103,526.15	91,778.50
Lafourche	94.46	2,512.98	2,197.34	237,376.09	207,560.74
Livingston	92.97	1,283.5	1,192.9	119,327.00	110,903.91
Orleans	92.04	22,632.67	20,265.74	2,083,110.95	1,865,258.71
Plaquemines	119.69	694.86	457.32	83,167.79	54,736.63
St. Bernard	97.05	1,682.45	1,562.75	163,281.77	151,664.89
St. Charles	99.35	1,544.01	1,438.19	153,397.39	142,884.18
St. James	100.63	506.85	474.15	51,004.32	47,713.71
St. John	96.77	840.5	789.25	81,335.19	76,375.72
St. Martin	95.18	974.38	756.8	92,741.49	72,032.22
St. Mary	93.54	1,922.38	1,523.33	179,819.43	142,492.29
St. Tammany	102.34	2,261.51	2,063.29	231,442.93	211,157.10
Tangipahoa	97.56	2,377.12	2,176.64	231,911.83	212,353.00
Terrebonne	99.22	2,397.3	1,909.98	237,860.11	189,508.22
Vermilion	111.60	1,560.6	1,354.05	174,162.96	151,111.98
TOTAL	102.31	65,278.08	57,720.17	6,662,167.50	5,876,190.66
	(unweighted average)				

Sources: (1) From Table 3.3.

(2) See Chapter 2.

TABLE 3.5

1972 POLICE PROTECTION EXPENDITURES IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	643	39,204	16.40	19.78
Assumption	194	20,115	9.64	13.02
Calcasieu	3,554	148,328	23.96	27.34
Cameron	318	8,907	35.70	39.08
Iberia	1,162	58,859	19.74	23.12
Iberville	579	30,667	18.88	22.26
Jefferson	7,692	366,324	21.00	24.38
Jeff. Davis	485	29,622	16.37	19.75
Lafourche	785	71,958	10.91	14.29
Livingston	443	38,330	11.56	14.94
Orleans	17,587	593,717	29.62	33.00
Plaquemines	915	25,893	35.34	38.72
St. Bernard	10	55,043	.18	3.56
St. Charles	725	30,782	23.55	26.93
St. James	211	19,008	11.10	14.48
St. John	235	24,830	9.46	12.84
St. Martin	129	33,701	3.83	7.21
St. Mary	1,600	62,172	25.74	29.12
St. Tammany	490	67,092	7.30	10.68
Tangipahoa	792	68,017	11.64	15.02
Terrebonne	921	78,835	11.68	15.06
Vermilion	805	43,930	18.32	21.70

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--

State Expenditure (\$1000) - 12,633

State Population - 3,737,771²

State Per Capita Expenditure - 3.38

parish populations (Table 3.6). The total police protection cost in the coastal zone based on the low population estimate is \$1,433,997; and based on the high estimate is \$1,626,965.

FIRE PROTECTION

The 1972 state and local per capita costs for fire protection in the coastal zone, which include construction, land, salaries, and equipment expenses, are shown in Table 3.7. These costs were attributed to the estimated 1972 OCS related parish populations (Table 3.8) resulting in a coastal zone fire protection cost, based on the low population estimate of \$623,984 and, on the high estimate of \$703,686.

WATER SUPPLY

The per capita expenditures for water supply (purification and distribution) in 1972 in each coastal zone parish are presented in Table 3.9. There were no state expenditures in 1972 for water supply. These costs, which include both capital and operating expenses, were attributed to the estimated 1972 OCS related parish populations (Table 3.10). The coastal zone water supply with sector 8 out (low population estimate) is \$849,782; with sector 8 in (high estimate) it is \$981,921. It should be noted, however, that supply of water does generate revenue through sales which sometimes exceeds or falls short of the cost of supplying the water.

SOLID WASTE DISPOSAL

Table 3.11 presents the per capita expenditures for solid waste disposal (sanitation other than sewerage) in 1972 in each coastal zone parish. Only local expenditures were made in 1972 and the expenditures include both capital and operating expenses. These expenditures were attributed to the estimated 1972 OCS related parish populations (Table 3.12) and the coastal zone solid waste disposal cost based on the low population estimate is \$366,796; and on the high estimate is \$416,802.

TABLE 3.6

1972 POLICE PROTECTION EXPENDITURES FOR THE
OCS RELATED POPULATION IN THE LOUISIANA
COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	19.78	955.5	859.95	18,900.	17,010.
Assumption	13.02	487.5	456.25	6,347.	5,940.
Calcasieu	27.34	4,956.49	4,446.86	135,510.	121,577.
Cameron	39.08	217.77	107.1	8,510.	4,185.
Iberia	23.12	1,946.1	1,591.81	44,994.	36,803.
Iberville	22.26	946.9	863.35	21,078.	19,218.
Jefferson	24.38	11,633.31	10,308.12	283,620	251,312.
Jeff. Davis	19.75	1,043.4	925.	20,607	18,269.
Lafourche	14.29	2,512.98	2,197.34	35,910.	31,400.
Livingston	14.94	1,283.5	1,192.9	19,175.	17,822.
Orleans	33.00	22,632.67	20,265.74	746,878.	668,769.
Plaquemines	38.72	694.86	457.32	26,905.	17,707.
St. Bernard	3.56	1,682.45	1,562.75	5,990.	5,563.
St. Charles	26.93	1,544.01	1,438.19	41,580.	38,730.
St. James	14.48	506.85	474.15	7,339.	6,866.
St. John	12.84	840.5	789.25	10,792.	10,134.
St. Martin	7.21	974.38	756.8	7,025.	5,457.
St. Mary	29.12	1,922.38	1,523.33	55,980.	44,359.
St. Tammany	10.68	2,261.51	2,063.29	24,153.	22,036.
Tangipahoa	15.02	2,377.12	2,176.64	35,704.	32,693.
Terrebonne	15.06	2,397.3	1,909.98	36,103.	28,764.
Vermilion	21.70	1,560.6	1,354.05	33,865.	29,383.
TOTAL	20.29 (unweighted average)	65,278.08	57,720.17	1,626,965.	1,433,997.

Sources: (1) From Table 3.5.

(2) See Chapter 2.

TABLE 3.7
1972 FIRE PROTECTION EXPENDITURES IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	58	39,204	1.48	3.02
Assumption	-	20,115	-	1.54
Calcasieu	1,179	148,328	7.95	9.49
Cameron	23	8,907	2.58	4.12
Iberia	478	58,859	8.12	9.66
Iberville	39	30,667	1.27	2.81
Jefferson	2,159	366,324	5.89	7.43
Jeff. Davis	60	29,622	2.03	3.57
Lafourche	87	71,958	1.21	2.75
Livingston	59	38,330	1.54	3.08
Orleans	10,658	593,717	17.95	19.49
Plaquemines	157	25,893	6.06	7.60
St. Bernard	369	55,043	6.70	8.24
St. Charles	58	30,782	1.88	3.42
St. James	2	19,008	.11	1.65
St. John	2	24,830	.08	1.62
St. Martin	32	33,701	.95	2.49
St. Mary	321	62,172	5.16	6.70
St. Tammany	60	67,092	.89	2.43
Tangipahoa	339	68,017	4.98	6.52
Terrebonne	429	78,835	5.44	6.98
Vermilion	182	43,930	4.14	5.68

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
 State Expenditure (\$1000) - 5,767⁴
 State Population - 3,737,771²
 State Per Capita Expenditure - 1.54

(4) Office of the Governor, 1973: 08-28, 08-30.
 Includes expenditures for Firemen's Supplemental
 Pay and Group Insurance, and State Fire Marshal's
 Office. 1972-73 budget is used as a good indica-
 tion of 1972 expenditures.

TABLE 3. 8

1972 FIRE PROTECTION EXPENDITURES FOR THE OCS
RELATED POPULATION IN THE LOUISIANA
COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	3.02	955.5	859.95	2,886.	2,597.
Assumption	1.54	487.5	456.25	751.	703.
Calcasieu	9.49	4,956.49	4,446.86	47,037.	42,201.
Cameron	4.12	217.77	107.1	897.	441.
Iberia	9.66	1,946.1	1,591.81	18,799.	15,377.
Iberville	2.81	946.9	863.35	2,661.	2,426.
Jefferson	7.43	11,633.31	10,308.12	86,435.	76,589.
Jeff. Davis	3.57	1,043.4	925.	3,725.	3,302.
Lafourche	2.75	2,512.98	2,197.34	6,911.	6,043.
Livingston	3.08	1,283.5	1,192.9	3,953.	3,674.
Orleans	19.49	22,632.67	20,265.74	441,111.	394,979.
Plaquemines	7.60	694.86	457.32	5,281.	3,476.
St. Bernard	8.24	1,682.45	1,562.75	13,863.	12,877.
St. Charles	3.42	1,544.01	1,438.19	5,281.	4,919.
St. James	1.65	506.85	474.15	836.	782.
St. John	1.62	840.5	789.25	1,362.	1,279.
St. Martin	2.49	974.38	756.8	2,426.	1,884.
St. Mary	6.70	1,922.38	1,523.33	12,880.	10,206.
St. Tammany	2.43	2,261.51	2,063.29	5,495.	5,014.
Tangipahoa	6.52	2,377.12	2,176.64	15,499.	14,192.
Terrebonne	6.98	2,397.3	1,909.98	16,733.	13,332.
Vermilion	5.68	1,560.6	1,354.05	8,864.	7,691.
TOTAL	5.47 (unweighted average)	65,278.08	57,720.17	703,686.	623,984.

Sources: (1) From Table 3.7.

(2) See Chapter 2.

TABLE 3.9

1972 WATER EXPENDITURES IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	121	39,204	3.09	3.09
Assumption	639	20,115	31.77	31.77
Calcasieu	347	148,328	2.34	2.34
Cameron	282	8,907	31.66	31.66
Iberia	145	58,859	2.46	2.46
Iberville	171	30,667	5.58	5.58
Jefferson	8,599	366,324	23.47	23.47
Jeff. Davis	244	29,622	8.24	8.24
Lafourche	2,349	71,958	32.64	32.64
Livingston	107	38,330	2.79	2.79
Orleans	7,332	593,717	12.35	12.35
Plaquemines	708	25,893	27.34	27.34
St. Bernard	-	55,043	0	0
St. Charles	352	30,782	11.44	11.44
St. James	469	19,008	24.67	24.67
St. John	58	24,830	2.34	2.34
St. Martin	503	33,701	14.93	14.93
St. Mary	1,455	62,172	23.79	23.79
St. Tammany	512	67,092	7.63	7.63
Tangipahoa	236	68,017	3.47	3.47
Terrebonne	4,336	78,835	55.00	55.00
Vermilion	546	43,930	12.43	12.43

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
State Per Capita Expenditure - None¹

TABLE 3.10

1972 WATER EXPENDITURES FOR THE OCS
RELATED POPULATION IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	3.09	955.5	859.95	2,952.50	2,657.55
Assumption	31.77	487.5	456.25	15,487.88	14,495.06
Calcasieu	2.34	4,956.49	4,446.86	11,598.19	10,405.65
Cameron	31.66	217.77	107.1	6,894.60	3,390.78
Iberia	2.46	1,946.1	1,591.81	4,787.41	3,916.02
Iberville	5.58	946.9	863.35	5,283.70	4,817.49
Jefferson	23.47	11,633.31	10,308.12	273,033.79	241,931.58
Jeff. Davis	8.24	1,043.4	925.	8,597.62	7,622.00
Lafourche	32.64	2,512.98	2,197.34	82,023.67	71,721.18
Livingston	2.79	1,283.5	1,192.9	3,580.97	3,328.19
Orleans	12.35	22,632.67	20,265.74	279,514.71	250,281.89
Plaquemines	27.34	694.86	457.32	18,997.47	12,503.13
St. Bernard	0	1,682.45	1,562.75	0	0
St. Charles	11.44	1,544.01	1,438.19	17,663.47	16,452.89
St. James	24.67	506.85	474.15	12,503.99	11,697.28
St. John	2.34	840.5	789.25	1,966.77	1,846.85
St. Martin	14.93	974.38	756.8	14,547.49	11,299.02
St. Mary	23.79	1,922.38	1,523.33	45,733.42	36,240.02
St. Tammany	7.63	2,261.51	2,063.29	17,255.32	15,742.90
Tangipahoa	3.47	2,377.12	2,176.64	8,248.61	7,552.94
Terrebonne	55.00	2,397.3	1,909.98	131,851.50	105,048.90
Vermilion	12.43	1,560.6	1,354.05	19,398.26	16,830.84
TOTAL	15.43 (unweighted average)	65,278.08	57,720.17	981,921.34	849,782.16

Sources: (1) From Table 3.9.

(2) See Chapter 2.

TABLE 3.11

1972 SOLID WASTE DISPOSAL EXPENDITURES IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	106	39,204	2.70	2.70
Assumption	-	20,115	0	0
Calcasieu	769	148,328	5.18	5.18
Cameron	20	8,907	2.25	2.25
Iberia	75	58,859	1.27	1.27
Iberville	48	30,667	1.57	1.57
Jefferson	2,702	366,324	7.38	7.38
Jeff. Davis	156	29,622	5.37	5.37
Lafourche	339	71,958	4.71	4.71
Livingston	89	38,330	2.32	2.32
Orleans	5,324	593,717	8.97	8.97
Plaquemines	345	25,893	13.32	13.32
St. Bernard	383	55,043	6.96	6.96
St. Charles	-	30,782	0	0
St. James	47	19,008	2.47	2.47
St. John	1	24,830	0	0
St. Martin	82	33,701	2.43	2.43
St. Mary	608	62,172	9.94	9.94
St. Tammany	144	67,092	2.15	2.15
Tangipahoa	240	68,017	3.53	3.53
Terrebonne	400	78,835	5.07	5.07
Vermilion	161	43,930	3.66	3.66

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
State Per Capita Expenditure - None¹

TABLE 3. 12

1972 SOLID WASTE DISPOSAL EXPENDITURES FOR THE
OCS RELATED POPULATION IN THE LOUISIANA
COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	2.70	955.5	859.95	2,579.85	2,321.87
Assumption	0	487.5	456.25	0	0
Calcasieu	5.18	4,956.49	4,446.86	25,674.62	23,034.73
Cameron	2.25	217.77	107.1	489.98	240.98
Iberia	1.27	1,946.1	1,591.81	2,471.55	2,021.69
Iberville	1.57	946.9	863.35	1,486.63	1,355.46
Jefferson	7.38	11,633.31	10,308.12	85,853.83	76,073.93
Jeff. Davis	5.37	1,043.4	925.	5,603.06	4,967.25
Lafourche	4.71	2,512.98	2,197.34	11,836.14	10,349.47
Livingston	2.32	1,283.5	1,192.9	2,977.72	2,767.53
Orleans	8.97	22,632.67	20,265.74	203,015.95	181,783.69
Plaquemines	13.32	694.86	457.32	9,255.54	6,091.50
St. Bernard	6.96	1,682.45	1,562.75	11,709.85	10,876.74
St. Charles	0	1,544.01	1,438.19	0	0
St. James	2.47	506.85	474.15	1,251.92	1,171.15
St. John	0	840.5	789.25	0	0
St. Martin	2.43	974.38	756.8	2,367.74	1,839.02
St. Mary	9.94	1,922.38	1,523.33	19,108.46	15,141.90
St. Tammany	2.15	2,261.51	2,063.29	4,862.25	4,436.07
Tangipahoa	3.53	2,377.12	2,176.64	8,391.23	7,683.54
Terrebonne	5.07	2,397.3	1,909.98	12,154.31	9,683.60
Vermilion	3.66	1,560.6	1,354.05	5,711.80	4,955.82
TOTAL	4.15 (unweighted average)	65,278.08	57,720.17	416,802.43	366,795.94

Sources: (1) From Table 3.11.

(2) See Chapter 2.

SEWERAGE AND DRAINAGE

Sewerage and drainage activities includes disposal of both sanitary sewage and rainwater runoff. The local per capita capital and operating expenditures for sewerage and drainage in 1972 in the coastal zone parishes (Table 3.13) were attributed to the estimated 1972 OCS related parish populations (Table 3.14). In 1972 there were no similar state expenditures. The OCS related sewerage and drainage cost based on the low population estimate is \$544,617; on the high estimate, \$613,788.

HEALTH AND HOSPITALS

Health and hospital care in Louisiana includes, besides the operation of general hospitals, services and facilities involving mental health; mental retardation; alcoholism; tuberculosis; the elderly, youth, and the handicapped; health maintenance; veterans affairs; and partial support for some private institutions. Health maintenance services are usually delivered at the parish level and deal with environmental hazards, communicable and chronic diseases and problems of special populations such as mothers and children, persons in hazardous occupations, and the indigent.

The 1972 capital and operating expenditures by the state and local governments in coastal zone parishes are shown in Table 3.15. Attributing these expenses to the estimated 1972 OCS related parish populations results in Table 3.16 where the total health and hospital cost in the coastal zone with sector 8 included is \$4,373,088 and without sector 8 is \$3,834,765.

PARKS AND RECREATION

For 1972, the expenditures by the state and local governments for programs involving parks and recreation are presented in Table 3.17. When the per capita expenditures are applied to the estimated 1972 OCS related parish populations (Table 3.18), the cost of parks and recreation programs in the coastal zone is shown to be \$871,085 with sector 8 included and \$768,660 without sector 8 included.

TABLE 3.13

1972 SEWERAGE AND DRAINAGE EXPENDITURES
IN THE LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	762	39,204	9.43	9.43
Assumption	-	20,115	0	0
Calcasieu	2,193	148,328	14.78	14.78
Cameron	-	8,907	0	0
Iberia	112	58,859	1.90	1.90
Iberville	42	30,667	1.37	1.37
Jefferson	2,740	366,324	7.48	7.48
Jeff. Davis	49	29,622	1.65	1.65
Lafourche	98	71,958	1.36	1.36
Livingston	73	38,330	1.90	1.90
Orleans	10,182	593,717	17.15	17.15
Plaquemines	375	25,893	14.48	14.48
St. Bernard	-	55,043	0	0
St. Charles	141	30,782	4.58	4.58
St. James	31	19,008	1.63	1.63
St. John	-	24,830	0	0
St. Martin	20	33,701	1.00	1.00
St. Mary	208	62,172	3.40	3.40
St. Tammany	51	67,092	1.00	1.00
Tangipahoa	44	68,017	1.00	1.00
Terrebonne	272	78,835	3.45	3.45
Vermilion	152	43,930	3.46	3.46

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
State Per Capita Expenditure - None¹

TABLE 3.14

1972 SEWERAGE AND DRAINAGE EXPENDITURES FOR
THE OCS RELATED POPULATION IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	9.43	955.5	859.95	9,010.37	8,109.33
Assumption	0	487.5	456.25	0	0
Calcasieu	14.78	4,956.49	4,446.86	73,256.92	65,724.60
Cameron	0	217.77	107.1	0	0
Iberia	1.90	1,946.1	1,591.81	3,697.50	3,024.57
Iberville	1.37	946.9	863.35	1,297.25	1,182.79
Jefferson	7.48	11,633.31	10,308.12	87,017.15	77,104.74
Jeff. Davis	1.65	1,043.4	925.	1,721.61	1,526.25
Lafourche	1.36	2,512.98	2,197.34	3,417.65	2,988.38
Livingston	1.90	1,283.5	1,192.9	2,438.65	2,266.51
Orleans	17.15	22,632.67	20,265.74	388,152.01	347,557.44
Plaquemines	14.48	694.86	457.32	10,061.58	6,621.99
St. Bernard	0	1,682.45	1,562.75	0	0
St. Charles	4.58	1,544.01	1,438.19	7,071.57	6,586.91
St. James	1.63	506.85	474.15	826.17	772.86
St. John	0	840.5	789.25	0	0
St. Martin	1.00	974.38	756.8	974.38	756.80
St. Mary	3.40	1,922.38	1,523.33	6,536.09	5,179.32
St. Tammany	1.00	2,261.51	2,063.29	2,261.51	2,063.29
Tangipahoa	1.00	2,377.12	2,176.64	2,377.12	2,176.64
Terrebonne	3.45	2,397.3	1,909.98	8,270.69	6,589.43
Vermilion	3.45	1,560.6	1,354.05	5,399.68	4,685.01
TOTAL	4.14 (unweighted average)	65,278.08	57,720.17	613,788.00	544,916.86

Sources: (1) From Table 3.13.

(2) See Chapter 2.

TABLE 3.15

1972 STATE AND LOCAL HEALTH AND HOSPITAL
EXPENDITURES IN THE LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	771	39,204	19.67	59.25
Assumption	-	20,115	-	39.58
Calcasieu	2,488	148,328	16.77	56.35
Cameron	460	8,907	51.64	91.22
Iberia	2,173	58,859	36.92	76.50
Iberville	49	30,667	1.60	41.18
Jefferson	16,457	366,324	44.92	84.50
Jeff. Davis	71	29,622	2.40	41.98
Lafourche	1,627	71,958	22.61	62.19
Livingston	78	38,330	2.03	41.61
Orleans	4,875	593,717	8.21	47.79
Plaquemines	1,549	25,893	59.82	99.40
St. Bernard	398	55,043	7.23	46.81
St. Charles	806	30,782	26.18	65.76
St. James	1,378	19,008	72.49	112.07
St. John	65	24,830	2.61	42.19
St. Martin	491	33,701	14.57	54.15
St. Mary	8,333	62,172	134.03	173.61
St. Tammany	5,251	67,092	78.27	117.85
Tangipahoa	3,766	68,017	55.37	94.95
Terrebonne	197	78,835	2.50	42.08
Vermilion	3,085	43,930	70.23	109.81

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
 State Expenditure (\$1000) - 147,926¹
 State Population - 3,737,771²
 State Per Capita Expenditure - 39.58

TABLE 3.16

1972 HEALTH AND HOSPITAL EXPENDITURES FOR THE
OCS RELATED POPULATION IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	59.25	955.5	859.95	56,613.38	50,952.04
Assumption	39.58	487.5	456.25	19,295.25	18,058.38
Calcasieu	56.35	4,956.49	4,446.86	279,298.21	250,580.56
Cameron	91.22	217.77	107.1	19,864.98	9,769.66
Iberia	76.50	1,946.1	1,591.81	148,876.65	121,773.47
Iberville	41.18	946.9	863.35	38,993.34	35,552.75
Jefferson	84.50	11,633.31	10,308.12	983,014.70	871,036.14
Jeff. Davis	41.98	1,043.4	925.	43,801.93	38,831.5
Lafourche	62.19	2,512.98	2,197.34	156,282.23	136,652.57
Livingston	41.16	1,283.5	1,192.9	52,828.86	49,099.76
Orleans	47.79	22,632.67	20,265.74	1,081,615.30	968,499.71
Plaquemines	99.40	694.86	457.32	69,069.08	45,457.61
St. Bernard	46.81	1,682.45	1,562.75	78,755.48	73,152.33
St. Charles	65.76	1,544.01	1,438.19	101,534.10	94,575.37
St. James	112.07	506.85	474.15	56,802.68	53,137.99
St. John	42.19	840.5	789.25	35,460.70	33,298.46
St. Martin	54.15	974.38	756.8	52,762.68	40,980.72
St. Mary	173.61	1,922.38	1,523.33	333,744.39	264,465.32
St. Tammany	117.85	2,261.51	2,063.29	266,518.95	243,158.73
Tangipahoa	94.95	2,377.12	2,176.64	225,707.54	206,671.97
Terrebonne	42.08	2,397.3	1,909.98	100,878.38	80,371.96
Vermilion	109.81	1,560.6	1,354.05	171,369.49	148,688.23
TOTAL	72.70 (unweighted average)	65,278.08	57,720.17	4,373,088.30	3,834,765.23

Sources: (1) From Table 3.15.

(2) See Chapter 2.

TABLE 3.17

1972 STATE AND LOCAL PARKS AND RECREATION
EXPENDITURES IN THE LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	66	39,204	1.68	4.30
Assumption	1	20,115	.05	2.67
Calcasieu	4,421	148,328	29.80	32.42
Cameron	-	8,907	-	2.62
Iberia	201	58,859	3.41	6.03
Iberville	17	30,677	.55	3.17
Jefferson	1,831	366,324	4.50	7.12
Jeff. Davis	38	29,622	1.28	3.90
Lafourche	162	71,958	2.25	4.87
Livingston	25	38,330	.65	3.27
Orleans	10,989	593,717	18.51	21.13
Plaquemines	1,149	25,893	44.37	46.99
St. Bernard	302	55,043	5.49	8.11
St. Charles	-	30,782	-	2.62
St. James	41	19,008	2.16	4.78
St. John	8	24,830	.32	2.94
St. Martin	53	33,701	1.57	4.19
St. Mary	237	62,172	3.81	6.43
St. Tammany	.55	67,092	.82	3.44
Tangipahoa	134	68,017	1.97	4.59
Terrebonne	177	78,835	2.25	4.87
Vermilion	56	43,930	1.27	3.89

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
State Expenditure (\$1000) - 9,819⁴
State Population - 3,737,771²
State Per Capita Expenditure - 2.62

(4) Operating Exp. (\$1,000) \$3,990 (from Office of the Governor, 1973: 29); Capital Exp. (\$1,000) \$5,829 (from La. Div. of Admin., 1973: 2, 12). Includes expenditures for parks, recreation, and culture. 1972-73 budget is used as a good indicator of 1972 expenditures.

TABLE 3.18

1972 PARKS AND RECREATION EXPENDITURES FOR THE
OCS RELATED POPULATION IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	4.30	955.5	4,109.	859.95	3,698.
Assumption	2.67	487.5	1,302.	456.25	1,218.
Calcasieu	32.42	4,956.49	160,689.	4,446.86	144,167.
Cameron	2.62	217.77	571.	107.1	281.
Iberia	6.03	1,946.1	11,735.	1,591.81	9,599.
Iberville	3.17	946.9	3,002.	863.35	2,737.
Jefferson	7.12	11,633.31	82,829.	10,308.12	73,394.
Jeff. Davis	3.90	1,043.4	4,069.	925.	3,608.
Lafourche	4.87	2,512.98	12,238.	2,197.34	10,701.
Livingston	3.27	1,283.5	4,197.	1,192.9	3,901.
Orleans	21.13	22,632.67	478,228.	20,265.74	428,215.
Plaquemines	46.99	694.86	32,651.	457.32	21,489.
St. Bernard	8.11	1,682.45	13,645.	1,562.75	12,674.
St. Charles	2.62	1,544.01	4,045.	1,438.19	3,768.
St. James	4.78	506.85	2,423.	789.25	2,266.
St. John	2.94	840.5	2,471	789.25	2,320.
St. Martin	4.19	974.38	4,083.	756.8	3,171.
St. Mary	6.43	1,922.38	12,361.	1,523.33	9,795.
St. Tammany	3.44	2,261.51	7,780.	2,063.29	7,098.
Tangipahoa	4.59	2,377.12	10,911.	2,176.64	9,991.
Terrebonne	4.87	2,397.3	11,675.	1,909.98	9,302.
Vermilion	3.89	1,560.6	6,071.	1,354.05	5,267.
TOTAL	8.39 (unweighted average)	65,278.08	871,085.	57,720.17	768,660.

Sources: (1) From Table 3.17.

(2) See Chapter 2.

CONCLUSIONS

For the nine programs considered in this chapter, the 1972 cost to state and local governments in coastal zone parishes for the estimated 1972 OCS related population with sector 8 included (65,278 people) is \$32,506,577. For the estimated population without sector 8 (57,720) the total expenditures are \$28,544,497. However, state and local governments make other services and function expenditures which are not discussed here. These expenditures include interest on debt, unemployment compensation, retirement benefits to former employees, housing, welfare, corrections, libraries, financial administration, etc. costs. The total expenditures for all activities by all Louisiana state and local government in 1972 was \$2,905,402,000 or \$777 per capita. Revenues were 3,008,745, or \$805 per capita (U.S. Bureau of the Census, 1974: 94). The cost of providing all public services to the 1972 estimated OCS related population in coastal zone parishes was \$50,962,119 with sector 8 included and \$44,954,182 without sector 8 included (Tables 3.19 and 3.20).

The revenues generated by these people was \$52,964,115 (with sector 8) and \$46,669,513 (without sector 8) as shown in Tables 3.21 and 3.22. For the parishes of Ascension, Iberville, St. James, St. John, and Terrebonne total state and local per capita expenditures exceeded per capita revenues (Tables 3.19 and 3.21) which means that the OCS related populations in these parishes (and the parishes' total populations, in general) did not generate enough revenue in 1972 to pay for public service expenditures brought about by them (Tables 3.20 and 3.22). For Ascension, Assumption, Iberville, Jefferson, Lafourche, St. James, St. John, St. Martin, St. Tammany, Terrebonne, and Vermilion Parishes, local expenditures exceeded local revenues (Tables 3.19 and 3.21). The Coastal Energy Impact Fund discussed in Chapter 4 might be used to diminish such deficits and enhance the provision of public services in all parishes.

TABLE 3. 19
1972 STATE AND LOCAL EXPENDITURES
IN THE LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	13,801	39,204	356.62	738.16
Assumption	6,773	20,115	336.71	718.25
Calcasieu	61,623	148,328	415.45	796.99
Cameron	4,338	8,907	487.03	868.57
Iberia	19,802	58,859	336.43	717.97
Iberville	52,608	30,667	1,715.46	2,097.00
Jefferson	146,505	366,324	399.93	781.47
Jeff. Davis	9,210	29,622	310.92	692.46
Lafourche	25,200	71,958	350.20	731.74
Livingston	10,198	38,330	266.06	647.60
Orleans	220,394	593,717	371.21	752.75
Plaquemines	18,191	25,893	702.55	1,084.09
St. Bernard	15,765	55,043	286.41	667.95
St. Charles	10,387	30,782	337.44	718.98
St. James	11,921	19,008	627.16	1,008.70
St. John	9,798	24,830	394.60	776.14
St. Martin	11,851	33,701	351.65	733.19
St. Mary	31,117	62,172	500.50	882.04
St. Tammany	24,911	67,092	371.30	752.84
Tangipahoa	20,913	68,017	307.47	689.01
Terrebonne	28,276	78,835	358.67	740.21
Vermilion	16,687	43,930	379.85	761.39

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
 State Expenditure (\$1000) - 1,426,115¹
 State Population - 3,737,771²
 State Per Capita Expenditure - 381.54

TABLE 3.20

1972 STATE AND LOCAL EXPENDITURES FOR THE
OCS RELATED POPULATION IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	738.16	955.5	859.95	705,311.88	634,780.69
Assumption	718.25	487.5	456.25	350,146.88	327,701.56
Calcasieu	796.99	4,956.49	4,446.86	3,950,272.97	3,544,102.95
Cameron	868.57	217.77	107.1	189,148.49	93,023.85
Iberia	717.97	1,946.1	1,591.81	1,397,241.42	1,142,871.83
Iberville	2,097.00	946.9	863.35	1,985,649.30	1,810,444.95
Jefferson	781.47	11,633.31	10,308.12	9,091,082.77	8,055,486.54
Jeff. Davis	692.46	1,043.4	925.	722,512.76	640,525.50
Lafourche	731.74	2,512.98	2,197.34	1,838,847.99	1,607,881.57
Livingston	647.60	1,283.5	1,192.9	831,194.60	772,522.04
Orleans	752.75	22,632.67	20,265.74	17,036,742.34	15,255,035.79
Plaquemines	1,084.09	694.86	457.32	753,290.78	495,776.04
St. Bernard	667.95	1,682.45	1,562.75	1,123,792.48	1,043,838.86
St. Charles	718.98	1,544.01	1,438.19	1,110,112.31	1,043,029.85
St. James	1,008.70	506.85	474.15	511,259.60	478,275.11
St. John	776.14	840.5	789.25	652,345.67	612,568.50
St. Martin	733.19	974.38	756.8	714,405.67	554,878.19
St. Mary	882.04	1,922.38	1,523.33	1,695,616.06	1,343,637.99
St. Tammany	752.84	2,261.51	2,063.29	1,702,555.19	1,553,327.24
Tangipahoa	689.01	2,377.12	2,176.64	1,637,859.45	1,499,726.73
Terrebonne	740.21	2,397.3	1,909.98	1,774,505.43	1,413,786.30
Vermilion	761.39	1,500.6	1,354.05	1,188,225.23	1,030,960.13
TOTAL	834.43 (unweighted average)	65,278.08	57,720.17	50,962,119.24	44,954,182.21

Sources: (1) From Table 3.19.

(2) See Chapter 2.

TABLE 3. 21

1972 STATE AND LOCAL REVENUES IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	1972 Local ¹ Expenditures (\$1000)	1972 ² Population	1972 per Capita Expenditures	Total per ³ Capita Expenditures
Ascension	11,912	39,204	304	728
Assumption	6,465	20,115	321	745
Calcasieu	62,196	148,328	419	843
Cameron	4,887	8,907	549	973
Iberia	21,088	58,859	358	782
Iberville	20,592	30,667	672	1,096
Jefferson	144,790	366,324	395	819
Jeff. Davis	9,273	29,622	313	737
Lafourche	24,954	71,958	347	771
Livingston	10,610	38,330	277	701
Orleans	234,083	593,717	394	818
Plaquemines	20,431	25,893	789	1,213
St. Bernard	16,130	55,043	293	717
St. Charles	11,114	30,782	361	785
St. James	5,653	19,008	297	721
St. John	7,503	24,830	302	726
St. Martin	11,083	33,701	328	752
St. Mary	31,231	62,172	502	926
St. Tammany	24,839	67,092	370	794
Tangipahoa	21,258	68,017	313	737
Terrebonne	24,822	78,835	315	739
Vermilion	16,255	43,930	370	794

Sources: (1) U.S. Bureau of the Census, 1974: 94, 410-15.

(2) Denton, 1974: 3-4.

(3) State plus local expenditures--
 State Expenditure (\$1000) - 1,584,233¹
 State Population - 3,737,771²
 State Per Capita Expenditure - 424

TABLE 3. 22

1972 STATE AND LOCAL REVENUES FOR THE OCS
RELATED POPULATION IN THE
LOUISIANA COASTAL ZONE, BY PARISH

	Total Per Capita Expen- ditures ¹	OCS Related Population ²		Cost for OCS Related Population	
		With Sector 8	Without Sector 8	With Sector 8	Without Sector 8
Ascension	728	955.5	859.95	695.604	626.044
Assumption	745	487.5	456.25	363,188	339,906
Calcasieu	843	4,956.49	4,446.86	4,178.321	3,748,703
Cameron	973	217.77	107.1	211,890	104,208
Iberia	782	1,946.1	1,591.81	1,521,850	1,244,795
Iberville	1,096	946.9	863.35	1,037,802	946,232
Jefferson	819	11,633.31	10,308.12	9,527,681	8,442,350
Jeff. Davis	737	1,043.4	925.	768,986	681,725
Lafourche	771	2,512.98	2,197.34	1,937,508	1,694,149
Livingston	701	1,283.5	1,192.9	899,734	836.223
Orleans	818	22,632.67	20,265.74	18,513,524	16,577,375
Plaquemines	1,213	694.86	457.32	842,865	554,729
St. Bernard	717	1,682.45	1,562.75	1,206,317	1,120,492
St. Charles	785	1,544.01	1,438.19	1,212,048	1,128,979
St. James	721	506.85	474.15	365.439	341,862
St. John	726	840.5	789.25	610,203	572,996
St. Martin	752	974.38	756.8	732,734	569,114
St. Mary	926	1,922.38	1,523.33	1,780,124	1,410,604
St. Tammany	794	2,261.51	2,063.29	1,795,639	1,638,252
Tangipahoa	737	2,377.12	2,176.64	1,751,937	1,604,184
Terrebonne	739	2,397.3	1,909.98	1,771,605	1,411,475
Vermilion	794	1,560.6	1,354.05	1,239,116	1,075,116
TOTAL	814 (unweighted average)	65,278.08	57,720.17	52,964,115	46,669,513

Sources: (1) From Table 3. 21.

(2) See Chapter 2.

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CHAPTER 4

THE FISCAL IMPACTS OF CEIP AND OCS RELATED DEVELOPMENT

INTRODUCTION

The Coastal Zone Management (CZM) Act of 1972, as amended (16 U.S. Code 1541, et seq.) created a Coastal Energy Impact Program (CEIP) to assist states and eligible units of local government in dealing with "new or expanded OCS energy activity." There is a definite funding sequence established for assistance under Section 308 (CEIP).

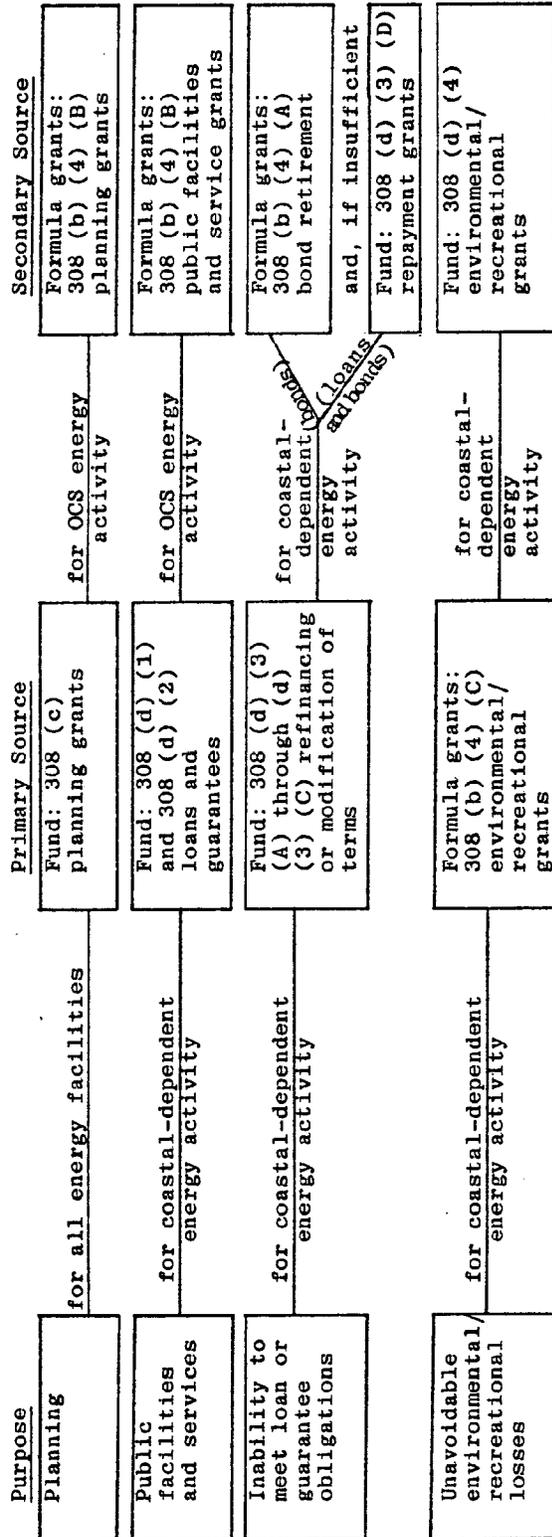
Louisiana is presently receiving monies under Section 305 of the CZM Act for the purpose of planning for coastal zone management including new or expanded OCS energy activity. In order to qualify for formula grants, loan guarantees, or repayment assistance under CEIP, the state must first have a "coastal management program" which has been approved under Section 306 or by making satisfactory progress toward the development of such a program (Federal Register; Interim Final CEIP Guidelines, 1977). Currently, the State of Louisiana does not have an approved program (Ryan, 1977).

Assuming that Louisiana continues to "make satisfactory progress" toward adopting a coastal zone management plan, the state will be eligible to receive funds from the CEIP fund (Figure 4.1). The first year allotment for Louisiana is as follows (Murphy, 1977):

1. <u>Formula Grants</u>	\$ 5,458,584
Louisiana*	
2. <u>Planning Allotments</u>	125,522
Louisiana	

*\$120,020 is being withheld pending resolution of a boundary dispute between Louisiana and the United States Government. \$35,882 is being withheld pending resolution of a boundary dispute between Louisiana and Mississippi (Murphy, 1977).

FIGURE 4.1
COASTAL ENERGY IMPACT PROGRAM: PRIMARY AND SECONDARY FUNDING SOURCES



Source: Federal Register, Interim Final CEIP Guidelines, 1977.

- | | | |
|----|-----------------------------|------------|
| 3. | <u>Credit Assistance</u> | 19,412,574 |
| | Louisiana | |
| 4. | <u>Environmental Grants</u> | 264,717 |
| | Louisiana | |

The credit assistance is available for individual project award until September 30, 1979. The planning funds are available for award until September 30, 1978, and the environmental grants until September 30, 1977. The formula grants are available through FY 1984 (Murphy, 1977).

While the CEIP funds are provided to help communities deal with the effects of new or expanded coastal energy activity, the guidelines clearly establish that the primary responsibility for funding the necessary facilities and services to support such activity rests with state and local government. The Coastal Resources Plan being developed by Louisiana officials must meet this assigned responsibility by identifying what facilities and services will be needed, where, and how they will be financed. The federal government expects to provide funds only to supplement--not supplant--state and local efforts.

This chapter begins by discussing the financing of local parish capital improvements. Following that, two formulae for allocating CEIP funds among the parishes in the state are put forth. Next, a discussion of local needs and fiscal capabilities is presented along with a discussion of state and local government expenditures compared to the nation and other states. After that, three schemes for using CEIP funds are discussed. Finally, the relationship between CEIP, Louisiana state and local government expenditures, and OCS impacts are summarized in the concluding section.

BASIS FOR FINANCING LOCAL IMPROVEMENTS

The Louisiana Constitution (Article VI) of 1974 requires the legislature to fix by statute the limits of municipal bonded indebtedness payable solely from ad valorem taxes. The first Extraordinary Session of the 1975 Legislature re-established the previously set limit of 10% of assessed value of taxable property within the municipality dedicated to any purpose (Louisiana

Revised Statutes (L.R.S.) 39:562).¹ The local governing body is required to impose and collect annually, or cause to be levied and collected, a property tax in excess of all other taxes that would be sufficient to pay principal, interest, and redemption premium if any, on such bonds as they mature (Article VI, Part II. Section 33, Louisiana State Constitution of 1974).

General obligation bonds, because they are secured by ad valorem (at value) property taxes, are underwritten by the full faith and credit of the municipality. They may be issued only after an affirmative vote of the majority of all qualified electors voting in an election called for that purpose (L.R.S. 39:551 et seq.). No bonds issued by any subdivision shall run for longer than a forty (40) year period, or bear a greater rate of interest than eight (8) per cent per annum (L.R.S. 39:561 et seq.). The approval of the State Bond Commission must be obtained prior to the issuance of any bonds.

Under certain circumstances, local governing bodies may also issue certificates of indebtedness for periods up to twenty (20) years to cover that portion of the cost of public improvements which are to be borne and paid out of subsequent fiscal years' revenues. These certificates may bear no interest in excess of nine (9) per cent per annum, payable in annual or semi-annual installments (Act 19 of the First Extraordinary Session of 1975). Because such pledges may create general obligations without providing compensating tax revenues to meet their fixed repayment schedules, local governing bodies should use caution in pledging their credit to them. Sound fiscal policy would dictate the establishment of a "sinking fund" to which some general fund revenues might be allocated annually (L.R.S. 33:3307). The most common use of such certificates has traditionally been for municipal and parish streets and sidewalks although no specific limitation to this use is found.²

¹This has been interpreted to mean that each specific improvement--water, sewer, etc.--is a separate "purpose" Houssiere V. Jennings, 195 La. 1042, 197 So. 750.

²Specific procedures involving a public hearing must be followed when such certificates are issued as front-foot assessment obligations to fund street improvements (L.R.S. 33-3301-3318, 3689-3689.19).

As part of the local budgetary process, a five (5) year capital improvements budget should be prepared by local officials (e.g., Planning Commission, Municipal Clerk). (There appears no actual statute requiring such a budget.) Good fiscal practice would dictate adoption of a capital budget, however. Certainly, if CEIP funds were to be channeled to public improvement projects at the local level, the existence of an approved local budget (capital and operating) in proper form would seem to be a minimum condition for fund receipt. A substantial number of parishes and small municipalities in Louisiana's coastal area have no approved capital budget at present or have only the most minimal information published on projected capital improvements. This condition serves to make comprehensive review of proposed projects quite difficult. The state's capital budgeting procedures have also come in for criticism by the Public Affairs Research Council in 1977.

As is evident in this discussion, procedures and regulations do exist that serve to direct local government capital improvement expenditures. Since the primary thrust of the Coastal Energy Impact Program is to assist state and local governments by way of loans and bond guarantees, rather than a heavier reliance on grants, the discussion of local procedures for debt management is important. The application of those procedures is presented in the next section which discusses analysis of fiscal capacity.

CAPITAL IMPROVEMENTS--A CASE ANALYSIS OF FINANCIAL CAPACITY

A most urgent need of local governments in the Louisiana coastal area is for upgraded water and sewer facilities. For example, the proposed Louisiana Superport and the continued upgrading of Port Fouchon in Lafourche Parish to accomodate energy-related activity must cope with the difficulty of getting drinkable water to support the activity (Mumphrey, et al., 1976a: 250). A project to upgrade this water supply, including the water supply of nearby Grand Isle which comes through Lafourche Parish, has been given the highest priority by the Honorable "Lindy" Boggs (D-La.). A recent visit to the area by Ms. Joellen Murphy, who oversees the CEIP program, brought a pledge to help deal with this need (personal communi-

cation; Ms. Boggs, 1977). The Houma-Terrebonne Regional Water and Sewer project has also been given a top priority by the U. S. Environmental Protection Agency (EPA) but appears delayed by the need for a complete Environmental Impact Statement (Abrams, 1977: Sec. 2, p. 4). These examples are cited to illustrate the need for water and sewer projects.

Although a definite need is seen for water and sewer projects in the Louisiana coastal zone, few studies have been made as to the financial capacity of local government to meet the cost of such projects. Using the model of the South Central Planning and Development Commission (six parishes), a test of comparison of legal bonded indebtedness to project cost was made (T. Baker Smith, 1975). The 1972 total assessed valuation (before Homestead Exemption) was multiplied by 10% (the Constitutional debt limitation) to obtain maximum allowable debt. Current bonding capacity was then calculated by subtracting from maximum allowable debt the current bonded indebtedness. The Smith study then calculated costs of providing water/sewer projects as needed in the South Central area. Those costs were next compared to the bonding capacity of the parishes in the district. (Municipalities would have their separate bonding capacities, but EPA regulations and funding eligibility call for regional efforts. Therefore, a parish debt capacity is a reasonable estimate of actual capacity.) See Tables 4.1 and 4.2.

With respect to these two selected critical areas--sewer and water--the South Central parishes, except Assumption, are projected to be able to carry the bonded indebtedness needed to upgrade their environment. However, two cautions appear in order:

1. Local taxation in Louisiana consists primarily of the property tax, and certain other specific excise and license taxes. Under the provisions of the 1974 Constitution, all property in Louisiana is to be re-assessed in 1978 and triennially thereafter. The rate of assessment is 10% of fair market value for residential property and 15% of fair market value for non-residential property. The effect of this reassessment--which affects debt limitations--is not known at this time. Legal bonding capacity could be reduced if the total level of assessments decreases.

TABLE 4.1

SOUTH CENTRAL PARISH WATER PROJECTS RELATIVE TO BONDING CAPACITY

Parish	1972 ¹ Assessed Valuation	Lower- Maximum Allowed Debt (.10%)	Water Existing ² Debt (1974)	Current Bonding Capacity- Water	10 year Water ² Project Costs (1974)	Excess Capacity Over Costs	% of Total Total Cost That Local Could Furnish
Assumption	\$ 27,444,440	\$ 2,744,444	\$1,282,000	\$1,472,444	\$2,116,000	- 643,556	.70
Lafourche	95,214,800	9,521,480	1,530,000	7,991,480	3,319,000	+4,672,480	2.87
St. Charles	65,858,091	6,585,809	2,892,000	3,693,809	2,440,000	+1,253,809	1.19
St. James	41,390,300	4,139,030	274,000	3,865,030	3,270,000	+ 595,030	1.18
St. John the Baptist	24,652,904	2,465,290	271,000	2,194,290	2,206,000	- 11,710	.99
Terrebonne	132,520,600	13,252,060	7,655,000	5,597,060	3,398,000	+2,199,060	1.65

Sources: ¹Louisiana Tax Commission, 1974.

²T. Baker Smith & Son, Inc., 1975.

TABLE 4.2
SOUTH CENTRAL PARISH SEWER PROJECTS RELATIVE TO BONDING CAPACITY

Parish	1972 ¹ Assessed Valuation	Sewer- Maximum Allowed Debt (10%)	Sewer Existing ² Debt (1974)	Current Bonding Capacity- Sewer	10 year Sewer ² Project Costs (1974)	Excess Capacity Over Costs	% of Total Cost That Local Could Furnish
Assumption	\$ 27,444,440	\$ 2,744,444	0	\$ 2,744,444	\$ 3,822,000	-\$1,077,556	.72
Lafourche	95,214,800	9,521,480	0	9,521,480	6,898,000	+ 2,623,480	1.38
St. Charles	65,858,091	6,585,809	892,000	5,713,809	3,628,000	+ 2,085,809	1.57
St. James	41,390,300	4,139,030	0	4,139,030	2,709,000	+ 1,430,030	1.53
St. John the Baptist	24,652,904	2,465,290	805,000	1,293,000	1,660,290	+ 367,290	1.28
Terrebonne	132,520,600	13,252,060	177,000	12,631,000	13,075,060	+ 444,060	1.04

Sources: ¹Louisiana Tax Commission, 1974.

²T. Baker Smith & Son, Inc., 1975.

2. L.R.S. 39:563 provides that no bonds issued by any subdivision.. "shall bear a greater rate of interest than eight per cent per annum." The effect of this limitation will be discussed more thoroughly in another part of this chapter.

DISCUSSION OF FINANCIAL IMPLICATIONS IN THE SOUTH CENTRAL DISTRICT

While the simple analysis preceding indicates that the model South Central coastal parishes could support the debt load of at least two major improvement functions, a pertinent question is whether they would so choose. L.R.S. 39:501 et seq. provides that: "no subdivision may incur any debt, issue any bonds, levy any special tax, or assume any indebtedness unless it has been authorized by a vote of a majority of qualified voters." A reasonable hypothesis is that Louisiana voters would react cautiously to major tax increase proposals beyond their current level of effort.

Table 4.3 depicts the 1972 debt obligations of the South Central parishes along with their assigned millage for water purposes and a projection of millage to support allowed debt.

The average 1972 millage for water projects only in the six parish area is 7.75. Projecting what millage would be necessary to support the maximum allowable debt capacity for one purpose alone (water) would cause the average millage to jump to 28.5 or 368%. This is no indication that the maximum allowable debt capacity would have to be used to build or re-build water projects. However, to meet the water requirements outlined in the Smith study would require an average parish capital expenditure of \$2,791,500 over a ten year period. The current average millage (7.75) supports an average debt of \$2,317,333. The millage levy would have to roughly double (83% increase) to 14.18 mills on the average to finance the water improvements needed.³ A similar analysis

³No attempt was made to calibrate for bond issues that might be paid off in the ten year (1972-1982) study period. Inclusion of this factor could adjust downward somewhat the projected millage increase but over a long period increase and decrease would even out.

TABLE 4.3

DEBT ANALYSIS OF SOUTH CENTRAL LOUISIANA PARISHES

Parish	Capital 1974 Debt/Water	Debt ¹ 1974 Millage/Water	Allowed 1972 Debt/Water	Millage Required To Support 1972 Maximum Debt
Assumption	\$1,282,000	5.00	\$ 2,744,444	10.70
Lafourche	1,530,000	7.00	9,521,480	43.56
St. Charles	2,892,000	8.50	6,585,809	19.36
St. James	274,000	0.75	4,139,030	11.33
St. John the Baptist	721,000	5.75	2,465,290	52.31
Terrebonne	7,655,000	19.50	13,252,060	33.76

Source: ¹Derived from Louisiana Tax Commission, 1974. (See Table 4.1.)

can be made of other purposes (e.g. sewer, roads) and for other regions or parishes. There is no precise way of calculating, however, local willingness to tolerate tax increases for improvements.

Lafourche Parish, for example, in 1972 levied 140.25 mills (exclusive of an acreage tax of \$2.50/acre for drainage) on its tax base. Assuming no major change in the value of its tax base resulting from the ongoing re-assessment, an increase of approximately seven mills for a capital improvement might not be viewed as alarming. However, Assumption Parish has the bonding ability to carry only 70% of its projected 10 year water needs and 72% of its projected 10 year sewer needs. No adjustment to millage would allow them to circumvent the legal debt limit. Their tax base is simply not up to the task. A cooperative financing arrangement will have to be devised. (A suggested model will be developed later in this chapter.) Problem #1 is thus identified as a lack of knowledge as to what level of taxation local residents in Louisiana's coastal zone parishes will accept to build the public improvements projected as needed to support OCS activity.

Problem #2--OCS Impact is projected to be in specific areas of any parish, but in order to get support for passage of bond issues or other debt instruments, improvements may have to be provided to a dispersed population. This is the political feasibility problem.

Using Lafourche Parish as an example, it is clear that impacts of oil and gas OCS activity are mainly on the southern portion of the parish (below Highway 90--especially Ward 10) (Mumphrey et al., 1976a). About 50% of the assessed valuation and property taxes for Lafourche Parish are provided by oil and gas related industries and Ward 10 alone provides over 25% of the parish's assessed valuation and property taxes (Mumphrey et al., 1976a: iii). While the area of most direct impact from OCS is obviously in one portion of the parish (Ward 10), only 27% of the parish population lives in that area (1970 Census). Further, the population of Lafourche and the entire South Central region is not concentrated in a few areas but is spread rather thinly over a considerable area. Most of the rural and small town population is located along major roads and bayous in the lower three parishes of Assumption, Lafourche, and Terrebonne, and

along major roads paralleling the Mississippi River in the upper three parishes of St. Charles, St. James, and St. John the Baptist.

The net result of this population dispersal, which is predicted to continue, is that the per capita cost of installing facilities or providing public services is considerably higher than in more densely settled communities. Two questions thus arise relative to CEIP funding:

- (a) Should investment be made contingent on less dispersal of population into the wetland areas the state is trying to protect? This would involve an intervention of some sort into the current and projected population patterns-- and would be resented and resisted.
- (b) If the higher per capita costs for public facilities are acceptable, should expenditures from CEIP funds be channelled in the main to the areas of direct OCS impact? A dispersed population living directly or indirectly from energy-related activity can hardly be said not to qualify for CEIP assistance even if they are not all in the direct impact zone.

Problem #3 -- How and on what basis should CEIP funds be distributed in the State?

The first year CEIP allotment for Louisiana was detailed earlier. If the state received the total allotment and distributed all of the formula grants (\$5.45 million) and apportioned all the credit assistance \$19.41 million) to local government, these funds would have to be distributed among 22 coastal parishes. However, there needs to be devised a formula upon which to base the allotment of grants and credit assistance. The basis on which a formula is computed will likely be a controversial topic but a formula must be adopted to allow for sensible programming of funds to local government projects. If no formula exists, it is likely that "laundry lists" of projects will be submitted to the state. When added up, these lists could request funding far in excess of what is likely to be available for allotment. Someone is bound to be very disappointed.

POSSIBLE FORMULAS FOR ALLOTMENT OF CEIP FUNDS

Formula A--Population based

Table 4.4 lists all 22 coastal parishes in Louisiana, their OCS related population, and the part of total coastal OCS population that their OCS population represents.

Assuming the total amount of CEIP funds is allocated directly to coastal parishes, the 1977 CEIP allotment would be distributed as shown in Table 4.5, using an OCS population-based formula.

Formula B--OCS Employment based

Table 4.6 lists all 22 coastal parishes in Louisiana and the part of coastal OCS employment which their OCS employment is. Assuming that the total amount of CEIP funds is allocated directly to coastal parishes, the 1977 CEIP allotment would be distributed as follows (Table 4.7), using an OCS employment based formula. The difference between population and employment based parish allotments is depicted in Tables 4.8 and 4.9.

ANALYSIS OF FORMULAS

Formula Grants

Under an employment based formula, over half the credit assistance (53%) and the formula grants (51%) go to Orleans Parish alone. Three parishes (Orleans, Calcasieu, and Jefferson) would receive 73% of all the formula grant monies using an employment-based formula.

The situation changes considerably under a population based formula. Orleans Parish, for example, receives 31% less (a decline of \$876,000), but Jefferson gets a 30% increase (\$218,343) and Calcasieu goes up 25%. Plaquemines Parish is the other big loser with a population based formula (44% or \$43,640), although St. Mary declines slightly (6%). The same three parishes (Orleans, Calcasieu, and Jefferson) that received 73% of

TABLE 4.4

ANALYSIS OF OCS POPULATION IN COASTAL LOUISIANA, 1972

Parish	1972		1974		Part of C.Z. OCS Pop. (High Estimate)		Part of C.Z. OCS Pop. (Low Estimate)	
	Population Total	OCS Pop. (High Estimate)	OCS Pop. (Low Estimate)	1972 OCS Pop. (Low Estimate)	1974 OCS Pop. (High Estimate)	1972 OCS Pop. (High Estimate)	1974 OCS Pop. (Low Estimate)	
Ascension	39,204	956	860	.010	.010	.010	.010	
Assumption	20,115	488	488	.010	.010	.010	.010	
Calcasieu	148,328	4,957	4,447	.080	.080	.080	.080	
Cameron	8,907	218	107	.003	.003	.003	.003	
Iberia	58,859	1,946	1,592	.030	.030	.030	.030	
Iberville	30,667	947	863	.015	.015	.015	.015	
Jefferson	366,324	11,633	10,308	.180	.180	.180	.180	
Jefferson Davis	29,622	1,043	925	.016	.016	.016	.016	
Lafourche	71,958	2,513	2,197	.040	.040	.040	.040	
Livingston	38,330	1,284	1,193	.020	.020	.020	.020	
Orleans	593,717	22,633	20,266	.350	.350	.350	.350	
Plaquemines	25,893	695	457	.010	.010	.010	.010	
St. Bernard	55,043	1,682	1,563	.030	.030	.030	.030	
St. Charles	30,782	1,544	1,438	.023	.023	.023	.023	
St. James	19,008	507	474	.010	.010	.010	.010	
St. John	24,830	841	789	.013	.013	.013	.013	
St. Martin	33,701	974	757	.015	.015	.015	.015	
St. Mary	62,172	1,922	1,523	.030	.030	.030	.030	
St. Tammany	67,092	2,262	2,063	.035	.035	.035	.035	
Tangipahoa	68,017	2,377	2,177	.036	.036	.036	.036	
Terrebonne	78,835	2,397	1,910	.037	.037	.037	.037	
Vermilion	43,930	1,561	1,354	.024	.024	.024	.024	

Source: Population figures from Denton, 1974. OCS populations derived in this study. See Chapter 2.

TABLE 4.5
DISTRIBUTION OF CEIP FUNDS TO COASTAL PARISHES BASED ON OCS POPULATION

Parish	Formula Grants (\$)		Credit Assistance (\$)	
	OCS High	OCS Low	OCS High	OCS Low
Ascension	54,585	54,585	194,130	194,130
Assumption	54,585	54,585	194,130	194,130
Calcasieu	436,687	436,687	1,530,006	1,530,006
Cameron	16,376	10,917	58,237	38,825
Iberia	163,758	163,758	582,377	582,377
Iberville	81,879	81,879	291,189	291,189
Jefferson	982,545	982,545	3,494,263	3,494,263
Jefferson Davis	87,337	87,337	310,601	310,601
Lafourche	218,343	218,343	776,503	776,503
Livingston	109,172	109,172	388,251	388,251
Orleans	1,910,504	1,910,504	6,794,401	6,794,401
Plaquemines	54,585	54,585	194,130	194,130
St. Bernard	163,758	163,758	582,377	582,377
St. Charles	125,547	125,547	446,489	446,489
St. James	54,585	54,585	194,130	194,130
St. John	70,961	70,961	252,363	252,363
St. Martin	81,878	70,961	291,189	252,363
St. Mary	163,758	141,923	582,377	504,727
St. Tammany	191,050	191,050	679,440	679,440
Tangipahoa	196,509	207,426	679,440	737,678
Terrebonne	201,968	180,133	718,265	640,615
Vermilion	131,006	125,547	465,902	465,902
TOTAL*	5,458,584	5,458,584	19,412,574	19,412,574

Source: CEIP information provided by Murphy (1977). Computed by authors.

*For all tables in this chapter, columns may not add to totals because of rounding.

TABLE 4.6

ANALYSIS OF OCS EMPLOYMENT IN LOUISIANA, 1972

Parish	1972 Empl. Total	1972 OCS		1972 OCS		Part of C.Z. OCS		Part of C.Z. OCS	
		Empl. (High)	Empl. (Low)	Empl. (High)	Empl. (Low)	Empl. (High) (Rounded)	Empl. (Low) (Rounded)	Empl. (High) (Rounded)	Empl. (Low) (Rounded)
Assumption	6,156	150	135	.009	.009	.009	.009	.009	.009
Assumption	3,215	78	73	.004	.004	.004	.004	.004	.004
Calcasieu	32,870	1,099	986	.064	.064	.064	.064	.064	.065
Cameron	2,444	61	30	.003	.003	.003	.002	.003	.002
Iberia	11,798	390	319	.022	.022	.022	.021	.022	.021
Iberville	5,511	170	155	.009	.009	.009	.010	.009	.010
Jefferson	74,858	2,379	2,108	.140	.140	.140	.140	.140	.140
Jefferson Davis	4,000	141	125	.008	.008	.008	.008	.008	.008
Lafourche	11,916	414	362	.024	.024	.024	.024	.024	.024
Livingston	2,991	85	79	.004	.004	.004	.004	.004	.004
Orleans	236,785	9,017	8,074	.527	.527	.527	.534	.527	.534
Plaquemines	11,686	313	206	.018	.018	.018	.014	.018	.014
St. Bernard	8,266	253	235	.015	.015	.015	.015	.015	.015
St. Charles	6,404	321	299	.019	.019	.019	.019	.019	.019
St. James	3,485	93	87	.005	.005	.005	.005	.005	.005
St. John	2,419	82	77	.005	.005	.005	.005	.005	.005
St. Martin	3,562	103	80	.006	.006	.006	.006	.006	.006
St. Mary	17,904	554	439	.032	.032	.032	.029	.032	.029
St. Tammany	7,447	251	229	.015	.015	.015	.015	.015	.015
Tangipahoa	9,497	332	304	.019	.019	.019	.020	.019	.020
Terrebonne	20,033	610	486	.036	.036	.036	.032	.036	.032
Vermilion	5,736	204	177	.011	.011	.011	.012	.011	.012
TOTAL	488,992	17,100	15,065						

Source: Employment figures from County Business Patterns, 1972. OCS Employment figures derived in this study; see Chapter 2.

TABLE 4.7
 DISTRIBUTION OF CEIP FUNDS TO COASTAL PARISHES USING OCS EMPLOYMENT FORMULA

Parish	Formula Grants (\$)		Credit Assistance (\$)	
	OCS High	OCS Low	OCS High	OCS Low
Ascension	49,127	49,127	174,713	174,713
Assumption	21,834	21,834	77,650	77,650
Calcasieu	349,349	349,349	1,242,404	1,261,817
Cameron	16,376	10,917	58,237	38,825
Iberia	120,089	114,630	427,077	407,664
Iberville	49,127	54,586	174,713	194,125
Jefferson	764,202	764,202	2,717,760	2,717,760
Jefferson Davis	43,669	43,669	155,300	155,300
Lafourche	131,006	131,006	465,901	465,901
Livingston	21,834	21,834	77,650	77,650
Orleans	2,876,674	2,914,884	10,230,426	10,366,315
Plaquemines	98,225	76,420	349,426	271,776
St. Bernard	81,879	81,879	291,189	291,189
St. Charles	103,713	103,713	368,839	368,839
St. James	27,293	27,293	97,063	97,063
St. John	27,293	27,293	97,063	97,063
St. Martin	32,752	32,752	116,475	116,475
St. Mary	174,675	158,299	621,202	562,964
St. Tammany	81,879	81,879	291,188	291,188
Tangipahoa	103,713	109,172	368,838	388,251
Terrebonne	196,509	174,675	698,852	621,203
Vermilion	60,044	65,503	213,538	232,950
TOTAL	5,458,584	5,458,584	19,412,574	19,412,574

Source: CEIP information provided by Murphy (1977). Computed by authors.

TABLE 4.8
DIFFERENCE IN DISTRIBUTION OF FORMULA GRANTS
USING TWO FORMULAS

Parish	OCS Empl. (High)	OCS Pop. (High)	Difference (\$)	% Difference
Ascension	49,127	54,585	(+) 5,458	(+)
Assumption	21,834	54,585	(+) 32,751	(+)
Calcasieu	349,349	436,687	(+) 87,338	(+)
Cameron	16,376	16,376	--	--
Iberia	120,089	163,758	(+) 43,669	(+)
Iberville	49,127	81,879	(+) 32,752	(+)
Jefferson	764,202	982,545	(+) 218,343	(+)
Jefferson Davis	43,669	87,337	(+) 43,668	(+)
Lafourche	131,006	218,343	(+) 87,337	(+)
Livingston	21,834	109,172	(+) 87,338	(+)
Orleans	2,786,674	1,910,504	(-) 876,170	(-)
Plaquemines	98,255	54,585	(-) 43,640	(-)
St. Bernard	81,879	163,758	(+) 81,879	(+)
St. Charles	103,713	125,547	(+) 21,834	(+)
St. James	27,293	54,585	(+) 27,292	(+)
St. John	27,293	70,961	(+) 43,668	(+)
St. Martin	32,752	81,878	(+) 49,126	(+)
St. Mary	174,675	163,758	(-) 10,917	(-)
St. Tammany	81,879	191,050	(+) 109,171	(+)
Tangipahoa	103,713	196,509	(+) 92,796	(+)
Terrebonne	196,509	201,968	(+) 5,459	(+)
Vermilion	60,044	131,006	(+) 70,962	(+)

Source: Computed by authors.

TABLE 4.9
DIFFERENCES IN DISTRIBUTION OF CEIP
CREDIT ASSISTANCE USING TWO FORMULAS

Parish	OCS Employment (High)	OCS Population (High)	Difference (\$)	% Difference		
Ascension	174,713	194,130	(+)	19,417	(+)	11
Assumption	77,650	194,130	(+)	116,480	(+)	150
Calcasieu	1,242,404	1,530,006	(+)	287,602	(+)	23
Cameron	58,237	58,237	--	--	--	--
Iberia	427,077	582,377	(+)	155,300	(+)	36
Iberville	174,713	291,189	(+)	116,476	(+)	67
Jefferson	2,717,760	3,494,263	(+)	776,503	(+)	29
Jefferson Davis	155,300	310,601	(+)	155,301	(+)	100
Lafourche	465,901	776,503	(+)	310,602	(+)	67
Livingston	77,650	388,251	(+)	310,601	(+)	400
Orleans	10,230,426	6,794,401	(-)	3,436,025	(-)	34
Plaquemines	349,426	194,130	(-)	155,296	(-)	44
St. Bernard	291,189	582,377	(+)	291,188	(+)	100
St. Charles	368,839	446,489	(+)	77,650	(+)	21
St. James	97,063	194,130	(+)	97,067	(+)	100
St. John	97,063	252,363	(+)	155,300	(+)	160
St. Martin	116,475	291,189	(+)	174,714	(+)	150
St. Mary	621,202	582,377	(-)	38,825	(-)	6
St. Tammany	291,188	679,440	(+)	388,252	(+)	133
Tangipahoa	368,839	679,440	(+)	310,601	(+)	84
Terrebonne	698,852	718,265	(+)	19,413	(+)	3
Vermilion	213,538	465,902	(+)	252,364	(+)	118

Source: Computed by authors.

the total grant monies with an employment-based formula get 61% of the total shifting to a population-based formula. The loss from Orleans and Plaquemines goes to all other parishes which, except for St. Mary, gain by the population based formula.

Credit Assistance

Once again, Orleans gets 53% of the total credit assistance if an employment based formula is used and the "big three" of Orleans, Jefferson and Calcasieu take 73% of the total credit assistance allotment. Shifting to a population based formula drops the Orleans allocation by one-third while cutting Plaquemines Parish 44%. All others, except St. Mary, gain at their expense.

It is, obviously, possible to disaggregate the components such as "population" or "employment" and give weights to different factors. Then, those factors most associated with OCS impact could be weighted more heavily and the result would be to direct CEIP monies most accurately in accord with the aims of the law. However, precise as this formulation sounds, it is not possible to operationally define OCS impact adequately and completely, apart from related impacts. Few impacts are likely to be clearly and unarguably OCS-related or not as the case might be. As a starting point, however, projected needs might be analyzed and compared to the ability of the impacted local governments to meet them. If gaps are identified, it may then be possible to use CEIP funds to make up the deficiencies. With that information, it may also be possible to develop a better formula for distributing CEIP funds to areas in relation to documented OCS-related need.

NEEDS ANALYSIS OF LOUISIANA'S COASTAL PARISHES

Any projection of "need" will suffer from being overly general. Using average costs and anticipated demand levels derived from on-going activities can easily lead to underestimation of expenses. However, it is necessary to project need in certain critical areas in order to have vital services in place when needed. Certain crucial points must be made relative to the financing of "needs" however:

1. Needs arise when population or employment or both increase. In some cases, needs arise in one area when another area has a surplus (or excess capacity) of a particular service or facility. You can justify--or not--building new facilities in an area when a surplus exists elsewhere but this should be a conscious policy choice and not allowed to occur by accident.
2. Needs are often predicated on the basis of the "nuclear" family idea and using existing technology. A large number of single males or single females relative to the remainder of the population can skew the "mix" of needs toward activities sympathetic to the dominant group. Most local governments are reluctant to plan for in-migration of other than "nuclear" families, so facilities for families are likely to be oversupplied in many areas relative to need. There is no foolproof way to correct for this phenomenon even if the population "mix" is accurately projected.

Introduction

The primary "need" is to insure that the OCS population is receiving equivalent or better services and has access to equivalent or better facilities as the existing coastal population. One component of need, therefore, is to know existing per capita public expenditures. Table 4.10 summarizes the existing per capita levels of local expenditures in 1972. If there existed an "official" figure for OCS population by parish, updated annually, the actual calculation of OCS "need" would be simple: multiply per capita expenditure figure by OCS population. However, there are several major reasons why this would be an over-simplification of OCS need: (1) in part, need is to make up deficiencies and not just insure that everyone shares equally in inadequate services and facilities. An "improvement factor" is needed; (2) CEIP funds seem more targeted to the "expected to reside" OCS population rather than past and current uncompensated impacts, as in Louisiana; and (3) the actual difference between "OCS" and "non-OCS" needs is simply not known.

Another caution: because a need exists does not mean that the local government will act to satisfy this

TABLE 4.10

SUMMARY OF REVENUES AND EXPENDITURES OF LOUISIANA COASTAL PARISHES, 1972

Parish	Revenue Total (Millions \$) ¹	Intergovernment Revenue ¹ (Millions \$)	Local Revenue Per Capita	Per Capita Expenditures		Per Capita Debt Outstanding ²
				Excluding Capital Outlay ¹	--Local Funds	
Ascension	6.4	4.00	\$ 173	\$ 152	\$	151
Assumption	3.3	2.19	168	139		198
Calcasieu	36.7	15.70	252	215		657
Cameron	2.7	0.53	330	304		183
Iberia	11.3	5.71	197	191		411
Iberville	7.5	4.37	244	188		198
Jefferson	62.0	28.95	184	490		196
Jefferson Davis	7.7	4.37	261	230		288
Lafourche	15.1	7.26	219	192		425
Livingston	6.5	4.60	178	175		156
Orleans	153.5	46.05	259	193		578
Plaquemines	9.8	2.63	389	181		266
St. Bernard	9.8	5.54	191	173		479
St. Charles	6.4	2.90	217	203		274
St. James	4.4	2.60	223	218		531
St. John	3.6	2.76	151	128		181
St. Martin	4.8	2.91	148	130		234
St. Mary	14.4	5.80	237	206		281
St. Tammany	12.9	7.70	203	190		209
Tangipahoa	11.7	8.13	178	163		248
Terrebonne	15.4	7.15	203	190		518
Vermilion	10.2	4.82	237	202		244
TOTAL	416.10	176.23				
AVERAGE	18.91	8.01	\$ 220	\$ 189	\$	327

¹City-County Data Book, 1972.

²Derived by authors using City-County Data Book and 1970 Census Data.

need or that CEIP funds could be so expended. Until the CEIP program has existed for a few years and the NOAA has interpreted funded requests, it must be assumed that all local needs are potentially valid and therefore eligible for CEIP consideration. Thus, in this analysis all needs of OCS population--such as for public protection, recreation, sewer and water, etc.--are considered equally valid and of similar priority. Obviously, this may not be true in real life. But, as suggested earlier, the state must adopt a rating scale to evaluate eligibility and urgency before any "need" can be legitimately downgraded or disqualified under CEIP.

Local and state governments, however, must use their budgets to sort out their actual priorities and arrange to satisfy some needs, reject others, and defer still others. If CEIP is to be a success, it must be factored into the local and state budget process as an extension of existing fiscal capacity and therefore available for expenditure in line with local and state needs. To be so viewed, CEIP funds must first be incorporated into the funding stream available to state and local government in Louisiana. Then, those funds must be targeted at jointly agreed upon areas of OCS related need.

Fiscal Capacity

The definition of fiscal capacity is partly related to the economic base of an area and is partly related to the willingness of an area to tax itself and raise revenues for public projects. Table 4.10 summarizes the revenue and expenditures for Louisiana's coastal parishes in 1972. Local revenue per capita (Column 3) is estimated at an average of \$220 per person in the coastal parishes. Column 4 then notes the per capita expenditure of local funds exclusive of capital outlays. This is estimated at \$189 per capita.

A government is not a profit-making enterprise; revenue should equal expenditures. Since we know \$220 per capita is the local revenue (Table 4.10), the difference between \$220 and \$189 (\$31) should equate to local government capital outlays (or debt service) for public projects. For Louisiana's coastal parishes, using an unweighted average, the per capita debt outstanding is \$327. For the State of Louisiana, the parish average is \$362 (City-County Data Book, 1972). Roughly then, about

\$345 per capita debt existed in Louisiana's coastal zone in 1972. It appears that the per capita debt service amount at the local level (\$31) can be used as a crude predictor of per capita debt outstanding using the ratio of 1:11 (31/345). If we thus know, or can project, future population, we should be able to project local tax revenues and even estimate debt likely to result from any given population. At that point, it is possible to compare maximum expected debt to current debt outstanding. If a parish is above the expected debt level, it is likely that there will be some reluctance to go still further in debt. A parish below expected debt levels may be willing to incur some additional debt although the local factors would have to be examined very closely to determine if the likelihood was high or just barely possible.

Table 4.11 shows, however, that eight coastal parishes, including all the larger OCS parishes, are carrying debt outstanding in amounts greater than we might predict. Many factors will doubtlessly enter into their judgment as to whether and in what amount to incur additional debt. The coastal parishes are carrying significant debt loads now. For comparison, Louisiana coastal parishes average of \$345 debt per capita is measured against the U. S., the region, and the northeast U. S.

<u>Jurisdiction</u>	<u>Debt Per Capita</u>
Louisiana (coastal)	\$345
U. S.*	317
South*	272
Northeast*	424

*City-County Data Book, 1972.

The conclusion is that Louisiana's coastal parishes have not been lagging in capital expenditures relative to the country, the region, or other regions. In fact, weighting the higher income and tax base of the northeast against that of Louisiana's coastal parishes indicates the actual level of effort in Louisiana to be higher than in most of the country. Further, capital improvements are being paid for from revenues largely derived from current oil and gas activities. These revenues are declining as the natural resources are depleted. As those revenues decline, so will the expected level of capital indebtedness,

TABLE 4.11

DEBT ANALYSIS OF LOUISIANA COASTAL PARISHES, 1972

Parish	Total Debt (Local) 1972 (Millions \$) ¹	Parish Population (1972) ²	Maximum Expected Debt (Millions \$) ²	Difference Between Maximum Expected Debt and 1972 Debt
Ascension	5.6	39,204	13.5	(+)
Assumption	3.9	20,115	6.9	(+)
Calcasieu	95.6	148,328	51.2	(-)
Cameron	1.5	8,907	3.1	(+)
Iberia	23.6	58,859	20.3	(-)
Iberville	6.1	30,667	10.6	(+)
Jefferson	165.4	366,324	126.4	(-)
Jefferson Davis	8.5	29,622	10.2	(+)
Lafourche	29.3	71,958	24.8	(-)
Livingston	5.7	38,330	13.2	(+)
Orleans	342.9	593,717	204.8	(-)
Plaquemines	6.7	25,893	8.9	(+)
St. Bernard	24.5	55,043	19.0	(-)
St. Charles	8.1	30,782	10.6	(+)
St. James	10.5	19,008	6.6	(-)
St. John	4.3	24,830	8.6	(+)
St. Martin	7.6	33,701	11.6	(+)
St. Mary	17.0	62,172	21.4	(+)
St. Tammany	13.3	67,092	23.1	(+)
Tangipahoa	16.4	68,017	23.5	(+)
Terrebonne	39.4	78,835	27.2	(-)
Vermilion	10.5	43,930	15.2	(+)
TOTAL	846.4	1,915,424	600.7	(-)

Sources: ¹City-County Data Book, 1972.²Denton, 1974.³Population times average per capita parish debt (\$345).

roughly in the ratio of 1:11 (a \$1 decline in revenue = \$11 decline in per capita debt obligations). This decline will not occur immediately but is predicted over a long period.

Unless OCS activity generates a visible increase in state-local revenues, the willingness of local governments in Louisiana's coastal zone to use CEIP credit assistance is open to question. Most of Louisiana's coastal population is near their expected debt level at present. CEIP funds must be factored into the revenue projection to be used by local government.

EXPENDITURE ANALYSIS

Table 4.12 is an analysis of the per capita expenditures in Louisiana's coastal parishes in 1972. The total depicted in the table (\$512.11 per capita) was derived from studies of individual functions such as education, health, etc. which are discussed in detail in another chapter of this study. This figure is then compared with Louisiana's state and local per capita total expenditures given in the Census publication, Governmental Finances in 1972-1972 which is \$723.36. Since the census figure is on a fiscal year basis and this study's data are oriented to a calendar year basis, the census figure is inflated by 3.15% to make the data comparable in periods covered. (The implicit price deflator for GNP, Government Purchase of Goods and Services, is used and halved for a partial year adjustment.) Thus, the census figure for Louisiana per capita expenditures in 1972 is estimated at \$746.15. The difference (of \$234.04 per capita) is attributed to such items as interest, housing, welfare, corrections, libraries, financial administration, general control, etc., which are local government functions but not covered in this study. (See Governmental Finances in 1971-72.) Louisiana coastal parish expenditures per capita are then compared to the U. S., the median state, two major ore and gas activity states (California and Texas), and two states where drilling is expected to occur (New Jersey and Maryland). These figures are adjusted as cited earlier to make the 1972 data comparable. (See Table 4.13.)

Louisiana's total per capita expenditure in 1972 is 90% that of the United States average while per capita

TABLE 4.12

PER CAPITA EXPENDITURES FOR SELECTED SERVICES IN LOUISIANA COASTAL PARISHES, 1972

Parish	Per Capita Education	Per Capita Highways	Per Capita Health and Hospitals	Per Capita Parks and Recreation	Per Capita Police Protection	Per Capita Fire Protection	Per Capita Sewerage & Drainage	Per Capita Water Supply	Per Capita Solid Waste Disposal
Ascension	269.78	109.60	59.25	3.99	19.78	3.02	9.43	3.09	2.70
Assumption	317.49	91.90	39.58	2.36	13.02	1.54	0.00	31.77	0.00
Calcasieu	271.50	107.15	56.35	32.11	27.34	9.49	14.78	2.34	5.18
Cameron	341.54	123.36	91.22	2.31	39.08	4.12	0.00	31.66	2.25
Iberia	265.97	103.16	76.50	5.72	23.12	9.66	1.90	2.46	1.27
Iberville	355.79	100.73	41.18	2.86	22.26	2.81	1.37	5.58	1.57
Jefferson	233.41	123.36	84.50	6.81	24.38	7.43	7.48	23.47	7.38
Jefferson Davis	286.63	99.22	41.98	3.59	19.75	3.57	1.65	8.24	5.37
Lafourche	269.80	94.46	62.19	4.56	14.29	2.75	1.36	32.64	4.71
Livingston	278.54	94.97	41.61	2.96	14.94	3.08	1.90	2.79	2.32
Orleans	217.95	94.04	47.79	20.82	33.00	9.49	17.15	12.35	8.97
plaquemines	281.35	119.69	99.40	46.68	38.72	7.60	14.48	27.34	13.32
St. Bernard	250.08	97.05	46.81	7.80	3.56	8.24	0.00	0.00	6.96
St. Charles	286.00	99.35	65.76	2.31	26.93	3.42	4.58	11.44	0.00
St. James	268.41	100.63	112.07	4.47	14.48	1.65	1.63	24.67	2.47
St. John	259.16	96.77	42.19	2.63	12.84	1.62	0.00	2.34	0.00
St. Martin	315.37	95.18	54.15	3.98	7.21	2.49	1.00	14.93	2.43
St. Mary	291.32	93.54	173.61	6.12	29.12	6.70	3.40	23.79	9.94
St. Tammany	289.44	102.34	117.85	3.13	10.68	2.43	1.00	7.63	2.15
Tangipahoa	247.05	97.56	94.95	4.28	15.02	6.52	1.00	3.47	3.53
Terrebonne	288.84	99.22	42.08	4.56	15.06	6.98	3.45	55.00	5.07
Vermillion	257.93	111.60	109.81	3.58	21.70	5.68	3.46	17.43	3.66
AVERAGE (Non-weighted)	279.24	102.31	72.70	8.38	20.29	5.47	4.14	15.43	4.15
									512.11

Source: See Chapter 3.

TABLE 4.13
COMPARISON OF PER CAPITA EXPENDITURES, 1972

Jurisdiction	1972 Per Capita Expenditures (Total) (\$)	1972 Per Capita Expenditures (Capital) (\$)	1972 Per Capita Expenditures (Other) (\$)
Louisiana	746	159	587
United States	827	155	672
Median State	764	150	619
California	1,011	131	879
Texas	641	144	498
New Jersey	828	140	688
Maryland	863	182	680

Source: Governmental Finances in 1971-72, Table 22, p. 45; adjusted for inflation.

income was 79% that of the U. S. average. Louisiana, however, spends 103% of the per capita national average for capital outlays, but only 87% of the per capita national average on non-capital (service or operating) items. In that same year, 1972, Louisiana's per capita income (\$3,543) was only 79% that of Texas, the neighboring state with oil and gas activity while per capita expenditures were 116% those in Texas. A crude measure of level of spending effort is shown in Table 4.14.

It appears that Louisiana, adjusted for income to reflect level of effort, is spending a greater proportion of its income for public services and facilities than the average state. Louisiana is able to sustain this level of effort partly because the state takes the bulk of the responsibility for services (welfare, health, highways) that are more locally financed elsewhere. In turn, the state is able to sustain the level of effort because it receives such a great proportion of its revenues (50% of tax receipts in 1972: State Government Finances in 1972) from severance taxes on oil and gas extraction. Absent this source of financing--which was only developed in the 1920s--and Louisiana would not have been able to generate the requisite revenues to construct and maintain the infrastructure needed to sustain the coastal energy activity that she does. The oil and gas population has had their needs met by revenues from onshore severance tax sources.

NEW PUBLIC FACILITIES AND SERVICES

The question then arises as to what new facilities and services will be required in Louisiana's coastal parishes to offset the effects of accelerated OCS activity. As discussed earlier, a rough estimate of fiscal "willingness" to incur more debt was derived. No attempt was made then to determine in what functional categories the additional funds would be directed. Obviously, citizens are often unwilling to support more expenditures in some areas despite the obvious signs of need (e.g. education). In other areas, the citizenry supports capital expenditure almost automatically since taxes are collected specifically for a single purpose not subject to referendum (highways). The only way to predict--however clumsily--what categories will receive public support is to look at how Louisiana currently

TABLE 4.14
SPENDING EFFORT, 1972

	Per Capita Income (1972) (\$)	Per Capita Expenditures As % of Income	Per Capita Capital Expenditure As % of Income
Louisiana	3,543	21	4
U. S. (Average)	4,492	18	3

Source: Statistical Abstract of Louisiana, 1974.

spends its money, compared to the national average. Chapter 2 of this study deals in detail with the specifics of various "need" areas such as education, sewer, etc. A general analysis of expenditure trends is thus sufficient if used as an "indicator"--not anything more--as to where Louisiana's spending desires be.

The pattern is that Louisiana is spending about 85% of the national per capita average in most categories except in highways where Louisiana is spending \$12 more per capita than the average state (Table 4.15). Apart from welfare, which is not an eligible CEIP expenditure anyway, Louisiana appears to need to upgrade sewer/water, parks and recreation, and education by increasing the expenditures in those categories to closer to the national average. Whether the coastal parishes or the state choose to upgrade areas of deficiency such as recreation or to spend on services such as highways is not known. The state may be helped to make this decision by the Coastal Zone CEIP regulations.

CEIP FUNDING IN LOUISIANA

The four purposes for which CEIP funds can be used (public facilities and services, repayment assistance, environmental and recreational amelioration, planning) were cited earlier in this chapter. The OCZM regulations also make it very clear that "the federal role should be complementary in nature" to the state-local efforts. It is now important to discuss what the state and local roles might be and how the CEIP funding process might operate.

The State Role--Local Role Question

Current OCZM regulations provide a good deal of flexibility to the state in shaping its role in coastal zone management. There are also several major assigned responsibilities, the most compelling of which is to devise an intra-state allocation formula for CEIP funds which correlates with areas of expected OCS "need" (impact) (Sect. 931.112 of Interim Final CEIP Guidelines, Federal Register, 1977). As noted earlier, the selection of a distribution formula based on either OCS population or employment has certain distributional characteristics. Louisiana should move to experiment with disbursement

TABLE 4.15

COMPARISON OF PER CAPITA EXPENDITURES, 1972

	Educa- tion	High- ways	Welfare	Hospitals	Health & Police	Fire	Sewer	Parks & Recreation
Nat'l. Avg.	\$312	\$ 91	\$101	\$62	\$29	\$12	\$15	\$11
Louisiana	262	103	83	61	22	8	9	7

Source: Governmental Finances in 1971-72, Table 22.

formulas even though NOAA-OCZM is supposed, under law, to provide annual data on a "need factor" for each (OCS) impacted area (931.46; esp. (b) (c) (e) (1) (2)). On the basis of that NOAA data, a rough estimate of OCS need will be determined; the intra-state allocation formula used should be sensitive to the "need" so calculated. However, the "need" factors have not yet been calculated for intra-state need areas a state could be in a better position to comment on these factors once derived if an independent estimate of need areas were available).

Beyond the establishment of an intra-state allotment scheme, the state is expected to designate a lead agency for NOAA-OCZM application (931.26) and then arrange to pass the credit assistance through to state agencies and units of general purpose local government. The "pass-through" provisions (931.113(c)) can be exercised in one of the following ways:

1. State agencies may borrow to provide public facilities and services necessary to meet either state or local needs; (Option 1)
2. State agencies may borrow to reloan or to grant this assistance to units of general purpose local government for public facilities and services; (Option 2)
3. State agencies and units of general purpose local government may submit applications to the state to borrow from the fund to provide needed public facilities and services. (Option 3)

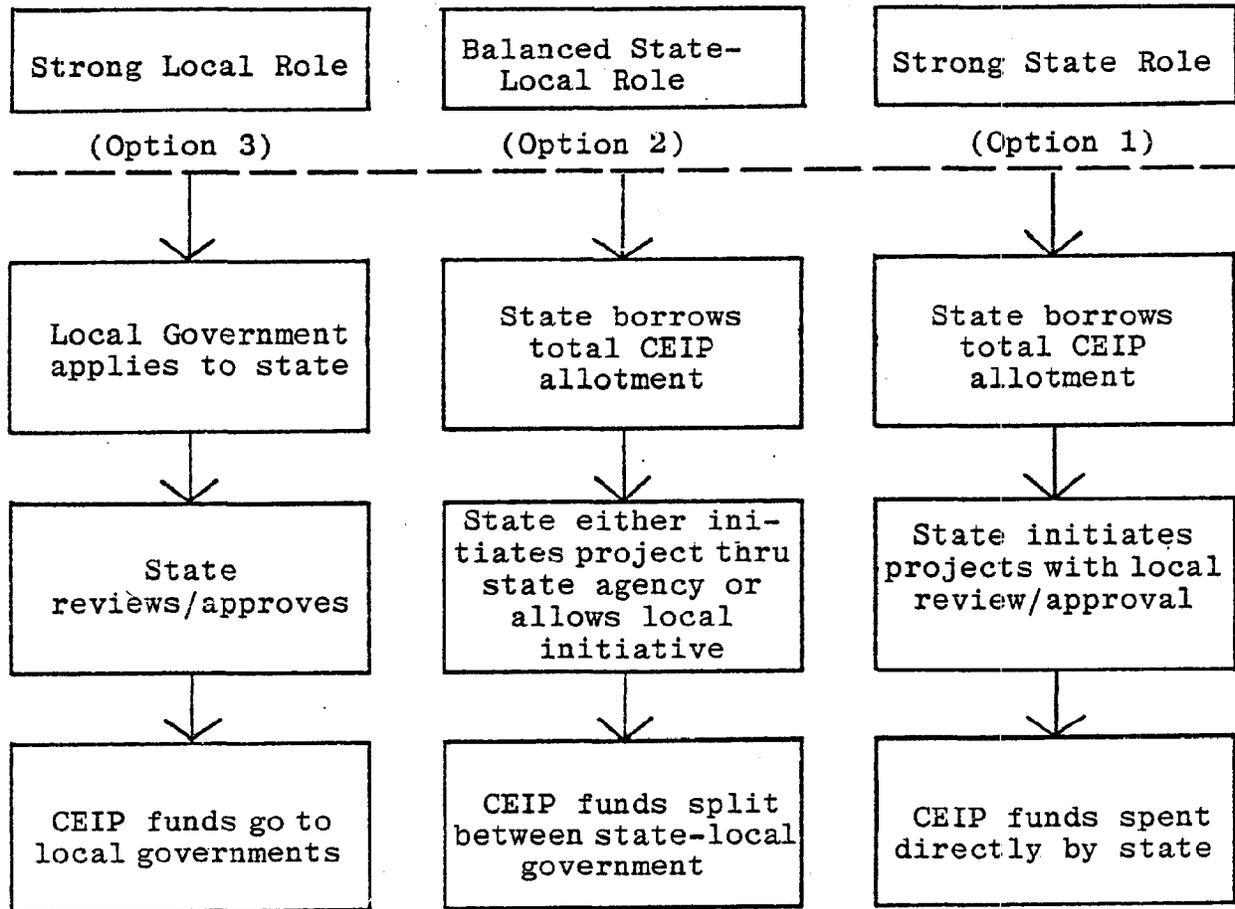
In effect, the state is given its choice of three methods of operation or roles that she might play. The model is as follows in Figure 4.2.

In determining how the needed OCS related public facilities and services will be provided and financed, the question of the appropriate state-local role is central. There are certain advantages and disadvantages to each option. Selection of a particular course of action will go a long way to determining the method used as the primary means to finance OCS improvements.

Rather than delving deeply into each of the three cited options, the more productive approach is to analyze that role model most likely to be developed and adopted. It is likely that the "balanced state-local" option (2) will be chosen, even though a good case could be made for option (3), given the existing political climate.

FIGURE 4.2

INTRASTATE ALLOTMENT SCHEMES



Source: Authors.

Existing Conditions

As noted in Chapter 6, which discusses planning and management capabilities in the Louisiana coastal zone, the level of planning and evaluation expertise below the regional level is very low and, in many areas, virtually non-existent. A review of the CZM regulations clearly establishes that the state is required to assign priority to projects partly based on "the establishment of resource or fiscal management capacity of units of local government" (931.112 (g)). Since OCS funds are not intended to be used for the development of a long term planning/fiscal management capability at the local level, maximum use will have to be made of the existing levels of proficiency. Realizing this, it is best that CEIP funds be made available in a manner very similar to, if not identical with, the current funding vehicle used by local governments. This is particularly true when considering credit assistance. The state should consider borrowing the entire CEIP credit assistance allotment direct from NOAA and then re-lending it to agencies of state government or units of local government.

Such a procedure would allow use of the existing procedures of the state and local government with respect to bonded indebtedness. Prudent fiscal management would caution against the possibility of a separate category of bonded indebtedness operating in an ad hoc manner. The similarity in proposed debt review procedures could act as a deterrent to the possibility of the unplanned evolution of a category of "second-order debt" not ranking on a par with other state-local obligations.

Another concern relative to the relatively low level of local planning/management capacity is "project initiation and monitoring." Statements have been made that the CEIP credit assistance program is of absolutely no benefit to Louisiana; CEIP simply replicates funds that are available at competitive rates in the bond market. Whether this sentiment is true or not remains to be determined. What is apparent is that there is no overwhelming sentiment to make use of the credit assistance program which is the main thrust of CEIP. To offset this inertia will require an initiative by the state to motivate the submission of projects for CEIP funding.

Finally, the formula grant provision of CEIP is likely to be seriously misunderstood and heavily over-

subscribed. To take but one example: the formula grant allotment for the entire state of Fiscal Year 1977 is \$5.48 million. A New Orleans City Councilman has already proposed that the entire amount could be used to build a badly needed additional water intake for the city. It is not even clear that this proposed project would qualify under 308 (b) (4) (c) even if the other local areas and the state were agreeable to this apportionment of grant monies.

The State Incentives

1. The Loan Subsidy

The "balanced" state-local role will not evolve unless the state can provide strong incentives to cooperate in the framework required for CEIP. Since the agency to be designated the administrator of CEIP funds in Louisiana is not likely to be large enough to provide technical assistance on any grand scale or to be powerful enough to direct other state agencies to provide additional or "tailored" services, the creation of an incentive will be difficult. The financing provisions of CEIP may, however, provide at least a mild incentive.

Section 931.113 (c) (2) of the CEIP guidelines provides that: "state agencies may borrow to reloan or to grant credit assistance to units of general purpose local government for public facilities and public services." As mentioned earlier, there are advantages inherent in a designated state agency borrowing the entire allocation of CEIP credit assistance. The precise interest rate to be charged is likely to vary according to conditions of the market. Assume that the current rate of interest which the state would have to pay is 6½%. To get local governments to participate in the spirit of the program, it might be possible for the state to subsidize the interest rate charged local governments down to a lower level which would make local participation more attractive (e.g. 5½%). The amount of the subsidy might be made to vary to motivate projects in areas, or of such function, as deemed necessary to cope with OCS need. Since the full faith and credit of neither the state nor the local government would be pledged (Public Law 94-370: Section 308 (d) (1)), a loan at this interest rate with a repayment schedule tied to additional OCS projected revenues (308 (d) (3)) could be attractive. (It is really impossible to predict how attractive or whether "additional" revenues will be

forthcoming.) The magnitude of the state appropriation to subsidize the interest rate to an attractive level would not be overly large. For example: assume that the state were able to borrow CEIP funds at 6% and re-lend them at 5% for local projects. If the state borrowed the entire \$19 million credit assistance allotment for FY 1977, the annual cost of the subsidy over a 20 year period would be \$132,000. The figures in Table 4.16 show subsidies that would be required at representative interest rates and based on a total loan amount of \$19,000,000 over a 20-year period.

Subsidizing the interest rate charged on debt monies would allow local governments to borrow at less than market interest rates which would be a real incentive to undertake projects. The amount of the subsidy could vary (a "deep" subsidy to, e.g. 3% in the first years and then have the subsidy phase out over the life of the project) or could be tied to a priority system to encourage spending on a function such as recreation/leisure wherein Louisiana's per capita expenditures fall well below the national average. Loans made under this provision might be viewed as a source of "risk capital" since the intent is to install facilities and services prior to the need reaching acute proportions. The facility can then be capitalized over its life span with the federal government through its repayment assistance provisions of CEIP (309 (d) et seq.) serving as a de facto insurance policy against the facility or service provided not reaching projected user levels.

2. Coordination With Other Fund Sources

It is clear that CEIP funding will not be allowed where it duplicates other sources of federal funds (Federal Register, V. 42, No. 3, 931.98 (a) (2)). However, it is permissible to use CEIP funds in addition to (931.98 (a) (1) or to augment (931.98 (b) (2)) other federal funds. These provisions should be used to create a state initiated incentive for local participation in CEIP.

What local planning and management capacity that does exist in Louisiana's coastal parishes is particularly sensitive to federal funding sources and procedures. Major programs such as the Environmental Protection Agency's "208" water/sewer programs and the Economic Development Administration efforts in building industrial parks and related facilities are already operating in the coastal parishes and are, to some extent, surviving many of the needs that CEIP will be aimed to cover.

TABLE 4.16
STATE INTEREST SUBSIDIES FOR BALANCED STATE-LOCAL SCHEME

Period	Interest Rate	Annual Repayment Due	Annual Subsidy to 5%
20 years	5%	\$ 1,524,617	--
20 years	6%	\$ 1,656,515	\$ 131,898
20 years	7%	\$ 1,793,467	\$ 268,850
20 years	8%	\$ 1,935,188	\$ 410,571
20 years	9%	\$ 2,081,374	\$ 556,757

Source: Authors.

Since there are other programs operating, it will be necessary in drawing up the application for CEIP funds to consider other federal sources (as above) (931.47 (a) (3)) and how the proposed project will be paid off (931.47 (b) (2) (ii)). The only way such information can be derived is through a knowledge of the present and projected usage of related facilities and services. The amount of technical computation in such a projection is considerable; the other factor to consider is that the regional level is the first place wherein information on other facilities might be available. However, absent some assistance to increase the size of regional staffs, it is unlikely that they could provide more than slight assistance to the CEIP program. (See Chapter 6.)

The state agency designated to administer the CEIP program will have to develop (or adopt the use of) a procedure to determine what other federal funds are being used or anticipated for a particular area. It is but another step to offer coastal parishes--through the regional planning bodies--assistance in determining what sources of funds might be available and how the CEIP funds might be best incorporated into the funding stream to local government. As was noted earlier in this report, the CEIP funds must be incorporated carefully into local spending plans to reach maximum effectiveness. The state CZM agency will have a "selling job" to do to get CEIP funds used properly and aggressively. State assistance in formulating and packaging the financing in accord with local priorities would be an incentive to local governments to participate in CEIP. Combined with the use of the subsidy incentive cited in the preceding section, the state agency administering the CEIP funds would be on more solid ground to promote usage of the credit assistance.

THE FORMULA GRANTS

As is the case in virtually any program wherein money is given--not lent--there is little need for incentives to get participation! Certainly this will be true in Louisiana. Where the 1977 allotment of \$5.45 million in formula grants equates to about \$1.40 per capita for the existing population, as it does in Louisiana, the result is likely to be either severe disappointment in some areas or spreading the funds over too wide an area to have any impact. The projected effects of distribution formulas

based on either population or employment were discussed earlier. To use grant funds effectively in line with CEIP objectives and regulations will require that the state agency take an active partner role in promoting the subsidy incentive cited earlier to get more usage of federal credit assistance loans and loan guarantees. To develop this role will call for the state CZM agency to help develop the financial management schedule which will allow allocation of formula grant monies to the projects most pressing and eligible for CEIP assistance. The combination of credit assistance and a formula grant to achieve a jointly agreed upon objective will magnify the impact of CEIP funds if the attractiveness of such a package can be established.

SUMMARY AND CONCLUSION

The CEIP program is not tailored to Louisiana's needs but no major changes are likely so long as we are outvoted by other areas with projected needs congruent with the CEIP program. Many major pitfalls exist which will have to be overcome before this program is a viable funding source for coastal zone improvements.

One vexing question is how does one provide for funding of additional population apart from existing. Without getting into very elaborate formulations of different types of need and being more specific than is possible about the timing and magnitude of OCS impact, it is only possible to calculate in rough terms what the additional persons will cost. The need calculation is based on per capita expenditures at present compared with national averages or, if standards exist, compared with national standards to achieve a "deficiency rating." Standards, however, are promulgated by organizations which benefit from more attention to one area of expenditure over another (e.g., health v. recreation). As a result, standards are often artificially high partly to encourage additional expenditure. The generalist finds it inordinately difficult to debate such "standards." Even specialists disagree with levels and methods of provision. From a local perspective, the standards are secondary at best to the willingness of local citizens to reach those levels by authorizing expenditures. Because a standard exists does not mean that it will be reached or even that it will be taken seriously, this uncertainty factor makes needed calculation very subjective.

Second, it is apparent that Louisiana spends approximately the national average per capita on capital projects but somewhat below the average in the per capita expenditure on services. In part, the deficiency is attributable to lower than average salaries. (See Chapter 6 for example.) This raises two important considerations.

- (1) A capital expenditure almost always involves a companion expenditure in the operating budget. CEIP funds are largely allocated to capital expenditures but local governments will have to make provision for increments in their operating budgets to insure that the facility or service will be safely and continuously available to the public. The state agency procedures to disburse the CEIP funds will have to insure that this consideration is made by local governments in some form or another. There are considerations relative to civil service, pension obligations, etc. that need to be answered.
- (2) On a "level of effort" basis, adjusting Louisiana's per capita expenditures for income, the state and local governments spend more than the national average at present in providing facilities. The 1975 per capita income of the 22 Louisiana coastal is \$4,744 (Department of Commerce, Bureau of Economic Analysis, 1977) while it is \$4,904 for the entire state and \$5,902 per capita for the entire United States (Statistical Abstract of the U. S., 1975). Thus, the Louisiana coastal parishes' per capita income is only 80% that of the United States. What kind of a debt structure this level of income can/should carry is a question that defies easy answer.

Another concern is that the identification of additional "OCS related revenues" that will be forthcoming as a result of accelerated OCS activity (for determining repayment schedules) is very difficult in Louisiana. The state's coastal zone already supports a massive oil/gas related industry that services OCS activity nationwide and similar activity on an international scale. In Louisiana, where OCS activity is declining at present, it is unlikely that there will be additional OCS related revenues. The determination of what additional revenue will be forthcoming will be very open to error. It does not seem particularly advisable for a relatively unsophisticated local government to attempt to develop a financial

plan that essentially treats people in different categories depending on what "revenue-stream" they are assumed to generate. Local governments in Louisiana (if anywhere) simply do not have the capacity or incentive to have a fund tracking mechanism of this complexity. It would be exceptionally difficult to establish when the "projected OCS revenues" had not measured up to predicted levels and the community was therefore eligible for some form of repayment assistance as provided in the law. Either the local, the state, or the federal government, will end up absorbing the payments but it is likely that considerable bad feeling will result.

A final matter for consideration is that of the role of Louisiana's coastal zone. In contrast to states with relatively unspoiled coastlines and well developed economies otherwise, Louisiana is currently living largely from the proceeds of its coast. Oil and gas revenues from state wells are declining at a rate of about 5% per year, a decline that is predicted to continue and, indeed, accelerate. Louisiana's need appears to be the development of alternatives to the oil/gas based economy so that some of its coastal population can be shifted to other occupations. New jobs--in other than the oil and gas industries--must be developed in preparation for the day when oil/gas reserves no longer can support the employment structure they now carry. Any investment made by state-local government in Louisiana's coastal zone should be grounded on a comprehensive economic development strategy. Obviously, CEIP was not created to, nor should it assume the sole burden of, economic development. However, if the CEIP credit assistance idea is not to ripen into a series of expensive public facilities or public services beyond the local ability to support them, new revenues related to new economic development must come on stream. If economic growth and incentives to use credit assistance to foster it are not developed, the bulk of the CEIP program in Louisiana may prove to be of no value.

It is clear that Louisiana's per capita expenditures compare favorably to national levels. However, with Louisiana's smaller 1975 per capita personal income (\$4,094) when compared to the nation (\$5,902), one must search to find how this is accomplished. The answer, as pointed to above, is that the on shore severance tax provides for facilities and services for the entire population of Louisiana, including the OCS related population. As this revenue source declines, so will Louisiana's ability to

finance necessary services and facilities. CEIP, where not tied to new OCS activity, may be useful to fill in the gap occasioned by declining revenues.

On a statewide basis, Louisiana's per capita expenditures compare reasonably well with the nation's. In high growth areas, however, such as the OCS impacted coastal zone, needs for facilities and services still exist as discussed earlier in this chapter. Creative use by the state of CEIP grants and credit assistance may help to alleviate this need somewhat. For many years, Louisiana almost solitarily bore the brunt of OCS activity. Surely for the coastal zone population to enjoy facilities and services comparable to the rest of the nation, additional impact funds programs are necessary to make up for past OCS impacts which resulted in inadequate planning, services, and facilities.

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CHAPTER 5

ADDITIONAL COSTS OF CONSTRUCTION AND MAINTENANCE IN WETLAND ENVIRONMENTS

INTRODUCTION

In many instances, the population related to OCS activity will require the development of wetlands to support their housing and other needs. The additional steps necessary for development in a wetlands environment versus natural drylands were documented in a recent study, Urban Development in the Louisiana Coastal Zone: Problems and Guidelines (Mumphrey, et al., 1976). Maintenance problems associated with wetlands development were also discussed in the study. This chapter expands on the basic problem areas presented in the previous report through identification of additional costs incurred in both initial wetlands development and continued maintenance of the developed area. Both the public and private sectors are considered.

Material detailing additional wetlands development costs which are not normally incurred in drylands development are presented on the following four areas:

- (1) Costs associated with each stage of urban development in a wetland which are predominantly borne by the developer and passed on in the price of a house (or lot) to the purchaser;
- (2) Additional costs which are directly borne by homeowners following home occupancy (e.g., repair of subsidence-caused damages and flood insurance);
- (3) Public capital costs required to meet the special needs of communities built on former wetlands (e.g., storm water pumping stations, extensive sewage collection and treatment facilities, etc.);

- (4) Public maintenance costs necessary for the upkeep of public services and facilities and their repair when damaged through subsidence, flooding, or other wetlands-related causes.

Information presented on each of these four areas of concern includes the most current cost figures available for each given item. Unless otherwise indicated, cost figures are for the New Orleans region. However, after some adjustment for the cost of living differences, these costs are applicable to other coastal Louisiana urban areas.

COSTS OF THE DEVELOPMENT PROCESS

Preparation of wetlands for development and actual construction on the reclaimed lands involve a number of additional steps which are unnecessary in natural drylands. The costs of each of these additional land preparation and construction steps illustrate the greater cost of developing wetlands over drylands for urban uses.

While most of these wetlands development costs are paid for by the developer in the initial cost of land preparation and construction, ultimately the additional price is passed down to the homebuyer. Taxpayers bear a large part of the financial burden of levee construction and other public capital improvements which the federal and state governments subsidize. Homeowners also pay indirectly for additional utility construction costs through the utility rates (Earle, 1975: 12).

The costs of various stages involved in the conversion of nonfast lands,¹ fast lands and natural drylands

¹For the purposes of this study, a distinction is made between the terms nonfast land and fast land. Nonfast land is defined as an area in its wetland state subject to tidal inundation. Fast land is defined as a former wetland which has been separated from the estuarine system by means of a levee or floodwall and is no longer subject to frequent flooding (Mumphrey et al., 1976: 3).

into a residential subdivision are illustrated in Figure 5.1. For nonfast lands, the development process begins at Stage 1. For fast lands which are already protected by a levee system, the process starts at Stage 3. Cost for developing natural drylands can also be determined from Figure 5.1 through elimination of certain identified stages. The costs associated with these unnecessary stages comprise the difference in price of initially developing wetlands over drylands. For natural drylands, the development process starts at Stage 3.

Stages of Development and the Associated Costs

Prior to the first stage of development, the subdivision project is conceived by a developer and a determination is made as to whether or not a levee must be constructed. If the proposed project area is currently nonfast land, then levee construction is necessary to meet subsequent subdivision ordinance and flood insurance requirements. (See Mumphrey et al., 1976: 12-34 for further explanation of these requirements.) Development to be placed on natural dryland need not incur levee permitting and building expenses.

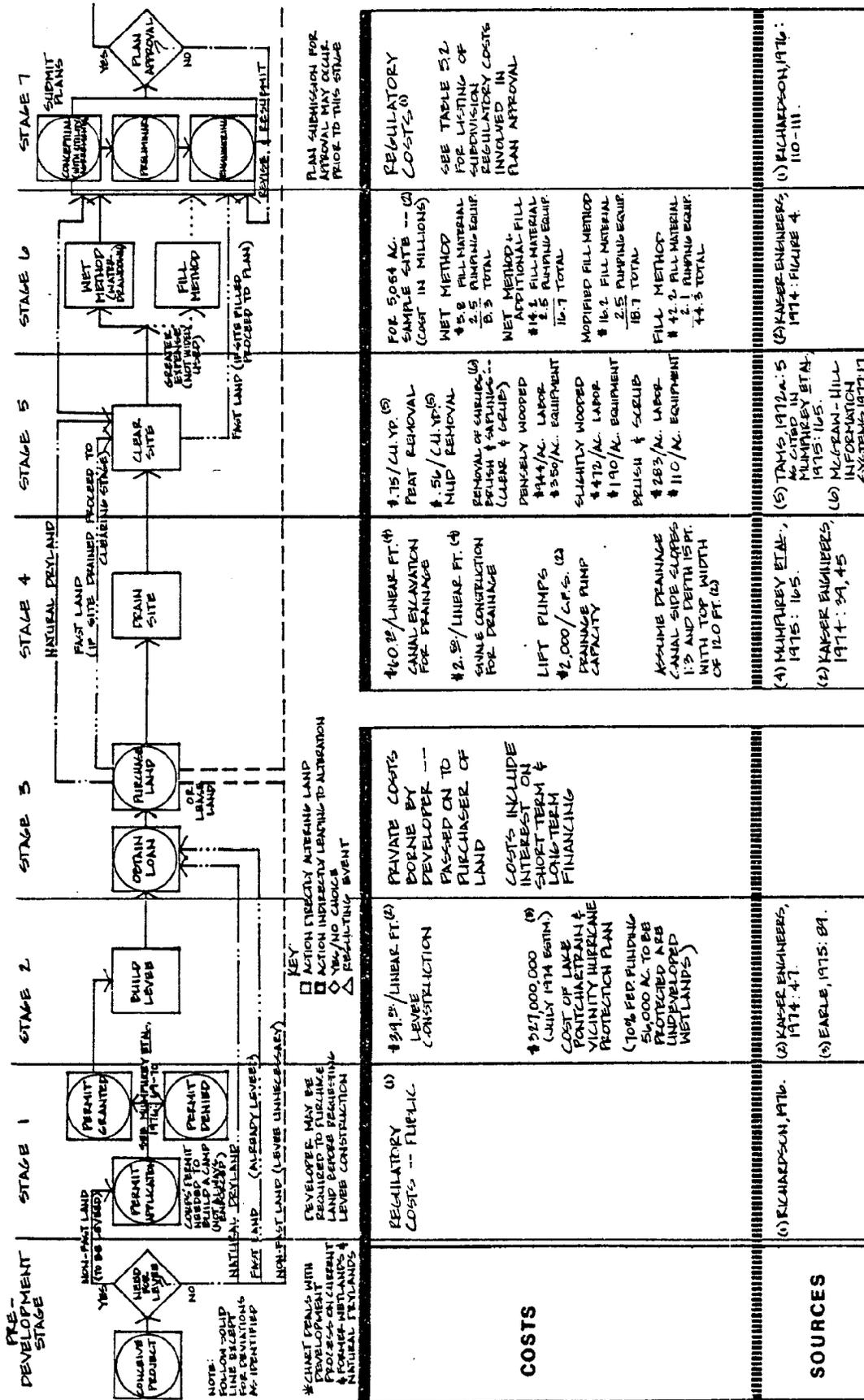
Stage 1 -- Apply for Corps of Engineers' Permit

Regulatory costs are incurred in Stage 1 as part of the levee permit application and review procedure for development proposed on nonfast land. This process is currently handled through the U. S. Army Corps of Engineers, making it a federal expenditure payable to taxpayers (see Mumphrey et al., 1976: 34-41, 69-70 for further description of this procedure).

Stage 2 -- Build Levee

The majority of land area of coastal Louisiana is subject to inundation by high tides and/or wind-driven waters. Hence, extensive flood and storm protection systems are necessary to help protect existing and projected urban developments. Adequate drainage and flood control systems involve costs for the installation and maintenance of protection levees, canals, and pumps. Stage 2 of the development process shows the cost of building an earth levee to be \$39 per linear foot (Kaiser Engineers, 1974: 47).

FIGURE 5.1 -- COSTS OF URBAN DEVELOPMENT*



In 1974, the U. S. Army Corps of Engineers estimated that the cost of the Lake Pontchartrain and Vicinity Hurricane Protection Plan would be \$327 million, with the federal government paying about 70 percent. At least 56,000 acres of the area to be protected with levees by this plan were undeveloped wetlands (Earle, 1975: 89).

Stage 3 -- Obtain Loan and Purchase Land

Stage 3 involves application by the developer for a loan in order to purchase the land. In most cases, the developer will apply for a loan from a federally insured lending institution and will then be subject to the construction requirements of the National Flood Insurance Program. (See Mumphrey *et al.*, 1976: 24-34 and later in this chapter for further explanation of these requirements.) The developer's cost in this stage, consisting of the interest on financing the property, is the same for both wetlands and drylands.

Stage 4 -- Drain Site

Drainage of the site in Stage 4 involves the dredging of drainage canals and installation of pumps to lower the water table. The cost of canal excavation for drainage was estimated at \$60.20 per linear foot with swale construction estimated at \$2.50 per linear foot (Mumphrey *et al.*, 1975: 165). Once canals have been dredged to a depth of 4 to 6 feet, lift pumps must be used to pump the water up and over the levee. The price for adequate drainage has been quoted as \$2,000 per c.f.s. (cubic feet/second) pumping capacity required (Kaiser Engineers, 1974: 45). Following the initial drop in the water table, land protected within the levee subsides to an elevation below its natural state (see later in this chapter). Therefore, pumps must be used regularly to remove storm water which falls on lands within the perimeter levee.

Stage 5 -- Clear Site

Clearing and grubbing, or brush removal, for the site follows in Stage 5 and may be necessary in natural drylands or reclaimed wetlands. Estimates range from \$1,294 per acre for clearing of densely wooded areas such as former swamp lands to \$393 per acre for the grubbing of brush and scrub growth (McGraw-Hill Information Systems, 1977: 17). More involved clearing practices in wetlands

such as peat removal (at \$.75 per cubic yard) and mud removal (at \$.56 per cubic yard) neglecting disposal cost may also be necessary in preparation of the land for development (TAMS, 1972a: 5, as cited in Mumphrey et al., 1975: 165).

Peat removal is normally necessary in the construction of highways that are subject to repeated heavy live loads. However, due to the cost of removal of large quantities of humus, disposal problems once removed, and the cost of replacing the humus with sand, the practice is rarely employed in general development work. Cost calculations involving peat removal also should consider the monetary value of the developable land lost in dredging the necessary sand fill (Kaiser Engineers, 1974: 14, 21).

Stage 6 -- Fill Site

Stage 6 covers the filling methods employed in wetlands reclamation. Two very different methods of land preparation are available to the developer, along with variations of each method. Differences are in terms of the overall cost based on the amount of fill added to the site, and the flood hazard potential of the filled site as well as the amount of subsidence each includes. Table 5.1 shows the comparative features and costs of various land preparation methods for a 5,054 acre site in eastern New Orleans. This was a part of the now defunct Pontchartrain New Town development. Development methods and cost comparisons for this sample site are detailed below.

The "Wet Method" or "Water Drawdown Method" of land preparation is the most commonly used technique by developers. It involves lowering of the water table by means of drainage canals and pumps which work to maintain the depressed water table level. Water removed from the site is pumped from the canals into some large water body (e.g., a lake). Some fill is placed on the site to offset subsidence (Kaiser Engineers, 1974: 6). For the sample site, 7.7 million cubic yards of fill would be required to produce a finished first floor elevation of +0.6 feet mean sea level (M.S.L.) for structures. Fill cost with the "Wet Method" was estimated at \$5.8 million.

TABLE 5.1

SUMMARY OF LAND DEVELOPMENT ALTERNATIVES AND ASSOCIATED COSTS
(for proposed Pontchartrain New Town)

Item	DRAINAGE DISTRICT 2				
	1 Wet Method ¹	2 Modified Wet Method	3 Wet Method + Addit. Fill Method	4 Modified Fill Method	5 Fill Method
Free Water Surface Elev. (MSL)	-7'	-9'	-7'	-3.5'	0.0'
First Floor Elev. (MSL)	+0.6'	-1.4'	+2.6'	+3.1'	+7.6'
Total Area in Districts (acres)	5,054	5,054	5,054	5,054	5,054
Lagoon Area Available for Drainage (acres)	140	353	140	353	140
New Lagoons Required for Drainage (acres)	160	20	160	282	--
Developable Area for PNT (acres)	3,200	3,200	3,200	3,200	3,200
Depth of Fill (inches) ²	18"+6"	18"+6"	44"+6"	50"+6"	132"+6"
Predicted Ultimate Settlement	3.1'	2.4'	3.2'	2.2'	4.1'
Fill Borrow Required:					
Acreage	170	170	420	480	1,250
Cubic Yards (M.C.Y.)	7.7	7.7	18.9	21.6	56.3

(CONTINUED)

TABLE 5.1 CONTINUED

Item	DRAINAGE DISTRICT 2				
	1 Wet Method ¹	2 Modified Wet Method	3 Wet Method + Addit. Fill	4 Modified Fill Method	5 Fill Method
Fill Sources:					
Blind Lagoon (orig. 200 ac.)	86 ac	86 ac	86 ac	86 ac	86 ac
Blind Lagoon (expanded)	84 ac	84 ac	200 ac	200 ac	200 ac
New Lagoon Areas	--	--	134 ac	134 ac	134 ac
Off Site Sources	--	--	--	60 ac	830 ac
Sub-total	170 ac	170 ac	420 ac	480 ac	1250 ac
Pumping Capacity Req'd. (CFS)	1,250	1,250	1,250	1,250	1,050
Estimated Costs: (millions)					
Fill Material	5.8	5.8	14.2	16.2	42.2
Pumping Equipment ³	2.5	2.5	2.5	2.5	2.1
Total	\$8.3	\$8.3	\$16.7	\$18.7	\$44.3

¹The wet method includes an average fill of 2 ft. placed 3 years prior to construction. Placement of a surcharge will accelerate land consolidation. Later, the excess fill can be relocated to other areas within the district.

²The additional 6" of fill is to be placed by builders after construction activities.

³Estimate does not include pumps for area N. of U.S. I-10 or area S. of U.S. 90.

Source: Kaiser Engineers, 1974: Figure 4.

The "Fill Method" or "Dry Method" dictates that the water table be maintained at mean sea level and several feet of fill be placed upon the site. With this method, land is drained through a system of artificially created swales and surface runoff into a canal system (Kaiser Engineers, 1974: 6-7 and Villavaso, 1975). The New Town site would require 56.3 million cubic yards of fill at a cost of \$42.2 million if the "Fill Method" was employed. This would achieve a first floor elevation of +7.6 feet M.S.L., providing the greatest safety from flooding of all the proposed methods.

Other reclamation systems include the "Modified Wet Method" using the same amount of fill at the same cost as the "Wet Method" but lowering the finished grade elevation by two feet. The "Wet Method with Additional Fill" would require 18.9 million cubic yards of fill at a cost of \$14.2 million for the sample site. The first floor elevation would be +2.6 feet M.S.L. Use of the "Modified Fill Method" would lower the water table more and reduce the amount of fill material required as compared to the "Fill Method." For a finished floor elevation of +3.1 feet M.S.L. with the "Modified Fill Method," 21.6 million cubic yards of fill would be required at a cost of \$16.2 million (Kaiser Engineers, 1974: Figure 3). Appendix 5.1 includes further definition and diagrams of the alternative reclamation methods herein discussed. Fill costs for each of these land preparation methods include dredging the required fill material at a unit cost of \$.30 to \$.50 per cubic yard for a total of \$.75 per cubic yards, with the mobilization cost for equipment included (Kaiser Engineers, 1974: 40). This does not include transportation to site costs. The estimated costs of pumping equipment are also taken into consideration in the cost totals for the various methods listed in Table 5.1.

The major fill processes presented in Stage 6 are unnecessary for development on natural drylands, thus reducing development costs substantially.

Stage 7 -- Submit Plan for Approval

Regulatory costs involved in Stage 7 are common to both wetlands and drylands development. Governmental regulatory fees paid by developers involved in development processing are imposed to guarantee the essentials of public health, safety and welfare. The costs detailed

in Table 5.2 for New Jersey² are intended to ensure that roads are properly aligned, fire equipment can maneuver, storm water does not cause frequent flooding or pollution, traffic is not impeded by individual property access to major thoroughfares, etc. (Richardson, 1976: 110).

Regulatory costs are shown for various phases of subdivision regulations including the conceptual plan or sketch plat (\$58 per single family unit); the preliminary plan (\$127 per single family unit) with more specific street and lot arrangements; and the engineering plan or final plat (\$127 per single family unit), showing exact dimensions for streets and lots, placement of underground utilities, etc. in accordance with current applicable zoning ordinances and subdivision regulations (Richardson, 1976: 110).

Stage 8 -- Layout of Site

Stage 8, site layout, involves the actual staking out of streets, lots and utility rights-of-way on the site prior to commencing improvements. The developer employs surveyors for this task which involves the same costs on both wetlands and drylands.

Stage 9 -- Lay Utilities

Utility installations in Stage 9 do present certain additional costs in wetlands environments. The standard procedure for laying water and sewerage pipes in former wetlands includes trench excavation, placement of several feet of shell fill, and construction of board frames to support the sewer tiles or water mains. These board structures or "cradles" help to balance out local settling and prevent pipes from sinking or floating toward the surface (Earle, 1975: 87).

Soil-related engineering problems such as high water table and unstable trench walls due to fluid soils result in a substantial increase for utility installation charges. Additional measures such as pumping to reduce ground water levels at installation sites, shoring to prevent collapse of trenches, and excavation of large trees and other buried swamp debris in preparation for underground utility lines increase the price of utilities substantially.

²Dover Township, New Jersey (sample during the 1972-1975 period).

TABLE 5.2
SUBDIVISION REGULATION COSTS IN THE COASTAL ZONE

(Dover Township, N.J. - 1975)

Regulation	Single Family		Multi-Family		Cost Sources
	Per Unit	Typical Project (100 d.u.)	Per Unit	Typical Project (100 d.u.)	
<i>Township:</i>					
Sketch Plat	58.00	5,800.00			E
Preliminary Plat	127.00	12,700.00			ELg
Final Plat	127.00	12,700.00			ELg
Inspection Fees	188.00	18,800.00			G
Cash Improvement Bond	515.00	51,500.00			G
Performance Improvement Bond	54.00	5,400.00			G
Site Plan Review			25.00	2,500.00	E
Site Plan Approval			107.00	10,700.00	ELg
Zoning Variances			30.00	3,000.00	eLg
Performance Improvement Bond			28.00	2,800.00	G
Preliminary Sewer Plan	9.00	900.00	7.00	700.00	eG
Tentative Sewer Plan	11.00	1,100.00	6.00	600.00	eG
Final Sewer Plan	20.00	2,000.00	11.00	1,100.00	eG
Sewer Connection	250.00	25,000.00	250.00	25,000.00	G
Sewer Inspection	50.00	5,000.00	30.00	3,000.00	G
Cash Sewer Bond	69.00	6,900.00	53.00	5,300.00	G
Performance Sewer Bond	11.00	1,100.00	8.00	800.00	G
Water Company					
Telephone Company					
Electric Company					
Fire Commission Review	7.00	700.00	3.00	300.00	E
Soil-land Disturbance Permit	20.00	2,000.00	8.00	800.00	EG
Tree Removal Permit	16.00	1,600.00	7.00	700.00	EC
Floodplain Permit*					
Wetlands Permit*	8.00	800.00			E
Shade Tree Bond	12.00	1,300.00			eG
<i>County:</i>					
Preliminary Plans Review	2.00	200.00	1.00	100.00	E
Final Plans Review	2.00	200.00	1.00	100.00	E
Drainage Assessment*	61.00	6,100.00			G
Sewer System Permit	2.00	100.00	1.00	100.00	G
<i>State:</i>					
CAFRA Permit	50.00	5,000.00	33.00	3,300.00	EL
Stream Encroachment Permit					
Riparian Rights Permit*			14.00	1,400.00	ELg
Wetlands Permit					
Road Access Permit*	3.00	300.00	2.00	200.00	Eg
Road Drainage Permit*	3.00	300.00	2.00	200.00	Eg
Water System Review Series					
Sewer System Review Series					
TOTAL	\$1,600.00	\$160,000.00	\$609.00	\$60,400.00	

E, e -major, minor contribution of engineer or consultants
L, l -major, minor contribution of legal counsel
G, g -major, minor contribution of government fee
* -special permits not included in total

Source: Richardson, 1976: 110-112.

The cost of sanitary sewers in a former wetland area has been estimated at \$4,820 per acre with a \$2,620 per acre cost for water supply. Underground electric power distribution costs of \$4.60 per linear foot of road are estimated for former wetland areas (Kaiser Engineers, 1974: 44-45). Installation of natural gas and telephone utilities along with water and sewerlines may be expected to incur additional costs of 25-84% in a wetlands environment over a drylands environment (private communication, local contractor, 1976). Maintenance problems caused by subsidence and flooding increase wetlands utility costs over time.

Stage 10 -- Fill and Grade Roadbeds and Build Streets

Street construction in Stage 10 involves a number of additional steps due to the need for increased road base preparation, additional drainage capacity and the necessity for bridging numerous small water bodies and canals in wetlands. Construction normally involves "mucking" or removal of the top several inches of organic material and placement of a sand and shell base course, but not pilings. For larger streets and highways, the base preparation may be more extensive, including removal of the top several feet of organic matter and laying of a much thicker base course. Costs for peat removal when necessary are estimated at \$.75 per cubic yard (TAMS, 1972a: 5). Base course installation consisting of six inches of water-bound macadam is estimated at \$4.57 per square yard, including labor (McGraw-Hill Information Systems, 1977: 27).

Concrete paving costs run \$57.12 per linear foot for a 48 foot width roadway down to \$23.04 per linear foot for a 24 foot width (nonmajor) street. Road drainage charges are estimated at \$56.10 per linear foot for a 48 foot width arterial and \$19.46 per linear foot for smaller streets. In addition, bridge costs for one 48 foot width span are approximately \$375,000.00 (Kaiser Engineers, 1974: 41-43, 46). Costs for these additional street construction measures increase the price of initial roadway installation by 25-84% over drylands (Private communication, local contractor, 1976). Higher maintenance costs over the life of the roadway due to subsidence and other soil problems can also be expected in former wetlands versus natural drylands.

Stage 11 -- Fill and Grade Lots

To achieve the required minimum lot grade before piles can be driven and construction can begin, fill must be brought onto the site in Stage 11. While some fill is normally required prior to construction on drylands, a much larger amount is necessary in former wetlands, especially if some organic material has already been removed. Site borrow from local pits costs approximately \$1.46 per cubic yard for labor and machinery for a 1,000 yard one-way haul and up to \$2.12 for a three mile haul. The cost of the fill itself at \$.25 per cubic yard for earth and \$.66 per cubic yard for sand must be added to these prices. Site grading to achieve the minimum lot grade as specified in the local building code and/or federally insured flood insurance program costs from \$.39 per square yard for sites less than one acre to \$.26 per square yard for sites greater than five acres, including both labor and equipment, but not fill materials costs (McGraw-Hill Information Systems, 1977: 18-19).

Stage 12 -- Obtain Building Permit

Stage 12 consists of obtaining a building permit from the proper parish and/or local authorities before actual improvements on each house lot can begin. Regulatory charges involved in this stage are assessed equally without regard to the environment in which the development is taking place. (See Stage 7 for further discussion of this type of regulatory cost.)

Stage 13 -- Drive Piles

The driving of pile foundation supports in Stage 13 is a sizeable expenditure necessary for construction in former wetlands. Treated wood piles 12 inches in diameter and 40 to 60 feet in length cost approximately \$2.80 per linear foot for materials and an additional \$1.97 per linear foot for installation labor (McGraw-Hill Information Systems, 1977: 23). These piles are driven to a specified depth or until they reach "refusal" and cannot be driven any deeper. "Skin friction" or the cohesion between the pilings and the soil particles actually creates the supporting capability. Steel sheet piling driven and left in place along canals and other water bodies is frequently necessary to stabilize construction on the bank.

Costs for this type of piling amount to \$9.37 per square foot for labor and \$1.57 per square foot for materials (McGraw-Hill Information Systems, 1977: 23).

Stage 14 -- Lay Foundation

These pile support expenses in wetlands increase the cost of structural foundations as installed in Stage 14. For a single family residence foundation, the cost difference is \$2.27 per square foot for a pile-supported foundation versus \$1.00 per square foot for a slab on sand foundation. For townhouses or garden apartments, the difference is \$3.36 versus \$1.93 per square foot for pile-supported and slab on sand foundations respectively (TAMS, 1972a as cited in Mumphrey *et al.*, 1975: 145). Similar cost differences were noted in the F. W. Dodge publication, Costs and Trends in Current Building Projects (1974 as cited in Mumphrey *et al.*, 1975: 139). In that source, piling foundation costs for a small doctor's clinic were reported at \$2.40 per square foot with costs for a similar building slab on natural dry ground at \$1.28 per square foot. These costs include the costs of piles.

Stage 15 -- Build Structure

It is these additional piling foundation costs which comprise the major cost difference in building in wetlands environments. The remainder of the charges for Stage 15, actual building construction, are the same in wetlands as in natural drylands. However, maintenance costs for structural repairs due to wetlands-related problems make the overall cost for this step greater in wetlands.

Stage 16 -- Lay Sidewalks, Driveways, Etc.

Stage 16, the laying of sidewalks and driveways in a development, is normally carried out to the same specifications in both wetlands and drylands. A shallow sand bed is usually the only base preparation provided, with reinforced concrete as a surface treatment. Cast-in-place concrete walks with steel mesh reinforcement are estimated at \$2.07 per square foot for material and labor on a five inch thick finished walk (McGraw-Hill Information Systems, 1977: 28). Overall development costs for sidewalks and paths run approximately \$315.00 per acre (Kaiser Engineers, 1974: 46). Due to the fact

that no special base support preparation is made for landscape features such as sidewalks and driveways in former wetlands, they are subject to warping and cracking with continued subsidence of the land surface.

Stage 17 -- Collect and Dispose of Sewage, Storm Water,
and Solid Waste

With completion of the development and sale of the houses, local government and private companies assume responsibility for the roads and utilities in the community. During occupancy in Stage 17, costs are incurred to deal with the collection and disposal of sewage, storm water, and solid waste which cause special problems in former wetlands.

Because of the extremely poor soils of former wetlands with the accompanying high water table, use of septic tanks for sewage disposal is not allowed in most urban developments. The soils cannot perform an adequate job of filtering sewage effluent, and bacterial contamination of ground water is the inevitable result. Even in low density developments where septic tanks are marginally allowable, there is a constant problem of system back-ups and actual floating to the surface of waste materials during periods when the water table is particularly high. A sanitary sewerage system with primary and possibly secondary treatment of effluent is usually necessary with any type of urban development in former wetlands (Stocks, 1974). The cost for an 11,000,000 gallons per day (g.p.d.) capacity sewage treatment plant has been estimated at \$5,725,000 (Kaiser Engineers, 1974: 44).

Waste water collected as street runoff during periods of heavy rainfall must be pumped from the numerous collection canals into a larger body of water which is usually at a higher elevation. This necessitates costs for pumping and lift station facilities (see earlier in this chapter). Treatment of this waste water may be required at additional expense before it is pumped. If not treated, receiving water bodies are likely to be highly polluted by this effluent.

Solid waste disposal poses another problem for communities built on former wetlands. Again, the poor soils and high water table make the use of sanitary landfills undesirable. Unless greater expense is outlaid for sealing the landfill site with an impermeable material

such as clay, there is always the danger that leachate will escape and contaminate the groundwater (Brunner and Keller, 1972: 19). The most commonly used method of solid waste disposal in coastal communities is open dumping, which is cheap but undesirable for health reasons. Incineration is sometimes used and this not only adds to the public tax burden because it is an expensive disposal method, but also contributes to air pollution and resulting health hazards.

Normal costs (excluding transportation) for sanitary landfill disposal of solid waste range from \$1 to \$5 per ton (Liptak, 1974: 515, as cited in Landerkin, 1977: 79). In coastal Louisiana, landfill costs usually exceed \$5 per ton due to the need for expensive site improvements and for cover material which is not available on site (Landerkin, 1977: 79). However, incineration costs in coastal Louisiana were reported at \$6 per ton in 1968 and have risen steadily since then due to general increases in labor, materials, and replacement costs (Bureau of Environmental Health, 1972: 42). It was estimated to cost between \$15 and \$25 per ton to incinerate the solid wastes from a city of 100,000 in 1974 (excluding transportation) (Liptak, 1974: 194, as cited in Landerkin, 1977: 80).

HOMEOWNER COSTS IN WETLANDS ENVIRONMENTS

In addition to the increased costs of converting areas within the coastal wetlands to urban lands, certain maintenance costs must be met by private individuals as well as the public sector. Those added costs which are paid directly by homeowners living in former wetlands include the repair of subsidence-caused property damages and the payment of flood insurance.

Subsidence Costs

Strongly associated with the reclamation of Louisiana's coastal wetlands for urban use is the problem of land subsidence. Subsidence is a term used to describe a negative land surface change. In the context of urban expansion in coastal Louisiana, it is generally a regional or area-wide lowering of surface elevation due to local factors (Earle, 1975: 77). These factors include lowering of the water table during the reclamation process with dredging of canals and pumping to reduce the water level

in the area. This, in turn, causes wet mineral soils to dry out and shrink and organic soils to decompose, oxidize, and shrink.

Oxidation of organic material plays a very important role in urban coastal subsidence problems. As oxygen levels in the organic soils of drained wetlands are increased with lowering of the water table, bacterial decomposition of the organic materials is accelerated. Wetland mucks high in organic matter can undergo as much as an 85 percent volume loss when dried, and continue to shrink at a fairly uniform rate through oxidation until a subsurface mineral layer or the water table is reached (U.S. Soil Conservation Service, 1976: V-3). For further discussion of subsidence causes, see Mumphrey et al., 1976: 72-86.

Various costs to homeowners result from property deterioration associated with subsidence conditions. These involve the following elements:

- (1) landscape related elements such as step, sidewalk and driveway repairs, as well as landfill costs;
- (2) architectural related elements such as structural tilting, floor, wall and roof repair costs; and
- (3) utility related elements such as water, sewerage, electric and gas system repair costs (Earle, 1975: 237).

Table 5.3 describes the types of problems and their associated costs for two of the soil conditions found in wetlands. Organic soils containing organic surface layers (made up of decomposed or partially decomposed plant remains) are characteristic of reclaimed marsh areas. These soils subside through a process of drying, shrinking, and oxidation of organic matter which is a biochemical decomposition process (U.S. Soil Conservation Service, 1976: V-1, V-4). Mean yearly costs related to subsidence in organic soils equal approximately \$120 per household (Earle, 1975: 294).

TABLE 5.3

COSTS AND PROBLEMS ASSOCIATED WITH MAINTENANCE OF HOMES IN AREAS OF BOTH ORGANIC AND MINERAL SOILS

	COSTS	LANDSCAPE CONDITIONS	BUILDING CONDITIONS	UTILITIES CONDITIONS	LAND BASE CONDITIONS	FUTURE EXPECTATIONS
MARSH ¹	mean yearly costs related to subsidence = \$120 per household	high incidence of yard, walk, and driveway sinkage. Widespread problem of space under foundation where land has sunken away from piling supported slab (which settle relatively little).	floor and wall damage frequently reported conditions	All utilities systems except gas highly affected by subsidence.	The most serious subsidence conditions in the Earle study area. Composed of primarily 8 or more feet of organic soil (Lafitte) covered by a surface of sandy loam fill—brought in by the home-owner.	A subsidence process of 20 to 50 years will continue at a very gradually decreasing rate. Short-term relief not in sight for residents of the area.
RECLAIMED MARSH UNIT ²						
ORGANIC SOIL ³						
SWAMP ¹	mean yearly costs related to subsidence = \$80 per household	high incidence of reports of a variety of problems: driveway warping, general land sinking, soil pot holes, and extensive street cracking. Problems of a more subtle nature, thus, may be missed by an untrained observer.	very high incidence of building tilt and associated floor and wall damage. Extremely high reports of need for slab jacking and addition of piling supports.	All systems affected by subsidence.	Majority of soils made up of Sharkey Clay. Subsidence problems associated with mineral soils. Shrink/swell characteristics of clays thought to cause some observed damage; dewatering of saturated clays at depth is thought to be linked to the more serious damage.	Little can be done about the shrink/swell problems of clay other than reduction of soil moisture variability. Drainage of higher surrounding areas will affect ground water levels in the swamp area and may cause more subsidence problems.
SWAMP PRINCE UNIT ²						
MINERAL SOIL ³						

(1) Soil Conservation Service (SCS) terminology (see Soil Association Maps).

(2) Earle study terminology.

(3) In all cases soil associations labeled "Marsh" on the SCS maps contain such phrases as "consists of organic material...of various thicknesses (2' to 8')." In every description of soil associations labeled "Swamp" on the SCS maps, terms such as "Clayey soils" and/or "Sharkey soils" are used. These are both mineral soils which can cause problems for future development.

Source: Earle, 1975: 293-299, as cited in Mumfrey et al., 1975: 150-155.

Mineral soils dominated by fine rock fragments of sand or silt size along with still smaller particles of clay minerals are characteristic of swamp areas. Subsidence in mineral soils is due to the process of consolidation which is removal of water due to loading of the soil (U. S. Soil Conservation Service, 1976: V-1, V-4). Yearly mean costs related to subsidence in mineral soils amount to approximately \$80 per household. There is a definite relationship between soil type and repair cost in coastal Louisiana. Both organic and mineral soils are involved in causing damage and subsequent costs (Earle, 1975: 274, 293-299).

The overall best cost estimates for repair items requiring additional homeowner expense are listed in Table 5.4. Landfill is the most frequently reported repair needed with an overall best estimate of \$162 per job. However, the cost of labor is not considered in this item since much of the labor is supplied by the homeowner or paid for in addition to the fill cost (Earle, 1975: 243).

The most expensive repair item listed in Table 5.4 is that dealing with major structural damage from tilting of the house slab due to uneven subsidence. The best estimate for foundation repair to correct house tilt was calculated by Earle (1975: 243) to be \$1906--a very sizeable homeowner investment.

Earle determined the average yearly repair cost mean per homeowner to be \$61 for subsidence-caused damage in the East New Orleans area. For the segment of other New Orleans areas surveyed by Earle, the mean repair cost was even higher \$92 per year (Earle, 1975: 317).

Flood Insurance Costs

Flooding is a constant threat to many urbanized areas within Louisiana's coastal zone, and the necessity for flood insurance provides an additional expense to homeowners. Under the National Flood Insurance Program, flood insurance is required for homebuyers in flood risk areas by lending institutions with federally insured deposits as a condition for obtaining a loan. This requirement is made by federally insured lending institutions for identified special flood hazard areas within communities under the Flood Disaster Protection Act of 1973 (U. S. Congress, Senate, 1966).

TABLE 5.4

REPAIR ITEMS REQUIRING ADDITIONAL HOMEOWNER EXPENSE--
THE OVERALL BEST ESTIMATE OF REPAIR COST

PARAMETER SET	REPAIR ITEM	ESTIMATED MEAN COST FROM REPORT OF HAVING HAD EXPENSE TOPICS	ESTIMATED MEAN COST FROM REPORT OF ITEM AS SINGLE BIGGEST EXPENSE BY HOMEOWNERS	ESTIMATED COST FOR REPAIRS NEEDED MADE BY HOMEOWNERS	(AVERAGE) OVERALL 'BEST' ESTIMATE OF MEAN COST
LANDSCAPE ELEMENTS	land fill	\$204	\$116	\$166	\$162
	steps	90	NA	NA	
	sidewalk	154	combined as paying 560	667	629
	driveway	505			
ARCHITECTURAL ELEMENTS	house tilt	\$1872	\$1835	\$2007	\$1906
	floor	203	NA	combined as building 570	636
	walk	264	175		
	roof	517	178		
	UTILITY ELEMENTS	water system	\$80	combined as utilities \$171	\$400
sewerage system		182			
electric system		111			
gas system		40			
OTHER		\$80	other	\$150	\$115

Source: Earle, 1975: 243.

Many wetland areas within the coastal zone lie at elevations below sea level in their natural state. When such areas are developed, there is constant danger of flooding by subtropical rainfall, river flooding, and frequent hurricanes. Depending upon the method of land preparation utilized in converting a wetland for development, the area is elevated relative to mean sea level to meet specific first floor levels in order to minimize this flooding danger (Kaiser Engineers, 1973: A-10).

The first floor elevation³ of a structure above or below the 100-year flood level³ determines the appropriate flood insurance rate. A land preparation or building construction method which raises the first floor elevation significantly higher above this base flood level would require much smaller insurance payments. (Additional discussion of flood insurance regulations is found in Mumphrey et al., 1976: 23-34).

Table 5.5 represents the Federal Insurance Administration subsidized rates applicable to all types of structures and contents in existence or under construction before December 31, 1974 or prior to the effective date of the Flood Insurance Rate Map (FIRM), whichever was later. These subsidized rates are also available for all structures and contents outside of special flood hazard areas regardless of the date of construction (National Flood Insurers Association, 1975: B-2).

Zone rates listed in Table 5.6 apply to all buildings in a community except those located in special flood hazard zones. Elevation rates apply to buildings located within the special flood hazard zones. An example of an elevation rate table for one story residential structures is presented in Table 5.7 (National Flood Insurers Association, 1975: B-3, B-5).

It should be noted that flood insurance rates differ not only according to the zone in which a structure is built and the first floor elevation, but also are based on whether the structure is residential or nonresidential, and whether the coverage is for the structure itself or for contents.

³The "100-year flood" or base flood level is the highest level of flooding that is estimated to have a 1-percent chance of occurring each year in a given location (U. S. Department of Housing and Urban Development, 1974: 47).

TABLE 5.5

FIA SUBSIDIZED RATE TABLE
(Rates per \$100 Insurance)

Under the Emergency Program, Subsidized Rates apply to all types of structures and contents which were in existence, or on which construction or substantial improvement was started on or before December 31, 1974, or prior to the effective date of the Flood Insurance Rate Map (FIRM), whichever is later. Subsidized Rates also continue to be available for all structures and contents outside the special flood hazard area Zones A, AO, A1-A30, or V1-V30¹, regardless of date of construction.

	Rates	
	Structure	Contents
A. Single-Family Dwelling	.25	.35
B. Other Residential (except single-family)	.25	.35
C. Any Other Structures	.40	.75

¹FIRM Zone Definitions

A flood insurance map displays the zone designations for a community according to areas of designated flood hazards. The zone designations used by FIA are:

<u>Zone</u>	<u>Explanation</u>
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding; flood depth 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined.

(CONTINUED)

TABLE 5.5 CONTINUED

¹FIRM Zone Definitions Continued.

<u>Zone</u>	<u>Explanation</u>
B	Area between limits of 100-year flood and 500-year flood; areas of 100-year shallow flooding where depths less than 1 foot.
C	Areas outside 500-year flood.
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V0	Areas of 100-year shallow flooding with velocity; flood depth 1 to 3 feet; product of depth (feet) and velocity (feet per second) more than 15.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

Source: National Flood Insurers Association, 1975: B-2.

TABLE 5.6

FIA ZONE RATE TABLE
 (Applicable Only for Communities in the Regular Program)
 (Rates per \$100 Insurance)

Zone rates apply to all buildings in a community in the Regular Program, except those buildings located in Zones A1-A30, and V1-V30. A building which was constructed or substantially improved on or before December 31, 1974, or before the effective date of the FIRM, whichever is later, may be insured for first layer amounts of insurance using Subsidized Rate Table 1, if lower than the following Zone Rates.

SECTION A--STRUCTURE--ONE-TO FOUR-FAMILY RESIDENTIAL

<u>Type of Structure</u>	Zone ¹				
	A	A0	B	C	D
One story--no basement	.35	.30*	.03	.01	.20
Two or more stories--no basement	.30	.25*	.02	.01	.15
Split level--no basement	.30	.25*	.02	.01	.15
One story--with basement	2.05	2.00	.15	.10	1.10
Two or more stories--with basement	1.30	1.35	.10	.10	.70
Split level--with basement	1.30	1.35	.10	.10	.70
Mobile home on foundation	1.40	.65*	.15	.15	.80

NOTE: The maximum actuarial rate payable by the insured on 1-4 family residential structures is \$.50 for

(a) first layer limits of insurance on new construction, if first floor elevation is at or above the base flood elevation, or

(b) second layer limits of insurance on all structures.

¹See Table 5.5 for zone definitions.

*For structures without basement located in Zone A0, where the first floor is eighteen inches (18") or more above the crown (highest point) of the nearest street, use Zone B rates.

TABLE 5.6 CONTINUED

SECTION B--ALL OTHER STRUCTURES					
	A	AO	Zone B	C	D
One story--no basement	.60	.50*	.05	.02	.30
Two or more stories--no basement	.50	.40*	.04	.02	.25
Split level--no basement	.45	.40*	.04	.02	.35
One story--with basement	3.40	3.30	.25	.20	1.85
Two or more stories--with basement	2.15	2.25	.15	.20	1.15
Split level--with basement	2.15	3.00	.15	.20	1.25
Mobile home on foundation	2.30	1.10*	.30	.25	1.30
SECTION C--CONTENTS--RESIDENTIAL					
<u>Location in Structure</u>	A	AO	Zone B	C	D
All in basement	41.50	26.00	2.60	.20	22.00
All on 1st floor	.90	.75*	.10	.05	.50
All on 1st two or more floors	.60	.50*	.10	.05	.35
All on 1st floor and basement	5.65	4.00	.40	.10	3.00
All on 1st two or more floors and basement	5.90	3.50	.35	.10	3.10
All above 1st floor	.15	.05*	.01	.01	.08
All in mobile home on foundation	1.35	.55*	.10	.05	.75

*For structures without basement located in Zone AO, where the first floor is eighteen inches (18") or more above the crown (highest point) of the nearest street, use Zone B rates.

TABLE 5.6 CONTINUED

SECTION D--ALL OTHER CONTENTS

<u>Location in Structure</u>	Zone				
	A	AO	B	C	D
All in basement	50.00	39.00	3.90	.30	50.00
All on 1st Floor	1.35	1.10*	.10	.10	.75
All on 1st two or more floors	.85	.75*	.10	.10	.50
All on 1st floor and basement	8.50	6.00	.60	.15	4.55
All on 1st two or more floors and basement	5.90	5.25	.55	.15	3.20
All above 1st floor	.20	.08*	.01	.01	.10
All in mobile home on foundation	2.00	.85*	.10	.10	1.05

*For structures without basement located in Zone AO, where the first floor is eighteen inches (18") or more above the crown (highest point) of the nearest street, use Zone B rates.

Source: National Flood Insurers Association, 1975: B-3.

TABLE 5.7
 FIA ELEVATION RATE
 SECTION A--ONE TO FOUR FAMILY RESIDENTIAL STRUCTURE
 ONE STORY

ELEVATION OF FIRST FLOOR ABOVE OR BELOW BASE FLOOD ELEVATION	NO BASEMENT ZONES ¹						WITH BASEMENT ZONES									
	A1-A7		A8-A14		A15-A17		A18-A30		A1-A3		A4-A7		A8-A9		A10-A30	
+ 5 OR MORE	.01	.01	.01	.01	.01	.01	.01	.01	.10	.10	.10	.10	.10	.10	.10	.10
+ 4	.01	.01	.01	.01	.01	.01	.01	.01	.10	.10	.10	.10	.10	.10	.10	.10
+ 3	.01	.01	.01	.01	.02	.02	.04	.04	.10	.10	.10	.10	.10	.10	.10	.10
+ 2	.01	.02	.02	.02	.05	.05	.08	.08	.10	.10	.10	.10	.11	.11	.13	.13
+ 1	.01	.07	.07	.07	.10	.10	.15	.15	.90	.90	.30	.30	.24	.24	.22	.22
0	.12	.16	.16	.16	.19	.19	.23	.23	4.78	4.78	.84	.84	.49	.49	.33	.33
- 1	.48	.31	.31	.31	.31	.31	.34	.34	13.13	13.13	2.13	2.13	.95	.95	.49	.49
- 2	1.59	.55	.55	.55	.47	.47	.48	.48	*	*	4.95	4.95	1.77	1.77	.71	.71
- 3	*	.93	.93	.93	.70	.70	.64	.64	*	*	6.73	6.73	3.15	3.15	.98	.98
- 4	*	1.48	1.48	1.48	1.00	1.00	.83	.83	*	*	*	*	5.16	5.16	1.36	1.36
- 5	*	2.34	2.34	2.34	1.40	1.40	1.07	1.07	*	*	*	*	*	*	1.87	1.87
- 6	*	2.86	2.86	2.86	1.91	1.91	1.34	1.34	*	*	*	*	*	*	2.52	2.52
- 7	*	*	*	*	2.62	2.62	1.66	1.66	*	*	*	*	*	*	3.40	3.40
- 8	*	*	*	*	3.53	3.53	2.02	2.02	*	*	*	*	*	*	4.56	4.56
- 9	*	*	*	*	*	*	2.48	2.48	*	*	*	*	*	*	5.21	5.21
-10	*	*	*	*	*	*	3.03	3.03	*	*	*	*	*	*	*	*
-11 OR LOWER	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ZONE RATE	.35	.55	.55	.55	.73	.73	.95	.95	7.36	7.36	2.01	2.01	1.33	1.33	1.12	1.12

*USE \$25.00 RATE.

¹See Table 5.5 for zone definitions.

Source: National Flood Insurers Association, 1975: B-7.

In the New Orleans region, 60 percent of the area within the perimeter levees is classified as an area of special flood hazard with the highest insurance rates for homeowners. Of the remaining land, 16 percent is classified as having moderate flood hazard, and 24 percent is classified as an area of minimal flood hazard. This minimal flood hazard zone is primarily along the natural levee of the Mississippi River and flood insurance rates are the lowest in this area (Earle, 1975: 88).

PUBLIC CONSTRUCTION COSTS

In addition to the private sector costs of developing in wetlands previously discussed, there are a number of additional costs which the public sector must bear. These include the special costs of building, operating and maintaining pumping stations to handle storm water runoff collected in drainage canals; sewage treatment facilities and lift stations to treat and pump sewage (sanitary and sometimes runoff) effluent into receiving water bodies; highway and major road systems, road drainage and bridges to provide necessary access to areas; and levees, flood-walls and floodgates to minimize flood danger. Costs for various projects needed in developing a wetlands area are included in Figure 5.1. Additional public costs are incurred in the construction of all public buildings (e.g., administrative offices, schools, health facilities, public protection headquarters, etc.). These structures are subject to the same higher construction costs and maintenance problems as private structures built in former wetlands.

The financing of needed public improvements is normally shared by federal, state, and local governing bodies and (in the case of new developments) developers. Thus, if the cost of capital improvements is higher in a wetland over a dryland area, the public share is ultimately more. Table 5.8 summarizes the distribution of one example of projected public improvements financing for the proposed Pontchartrain New Town development in eastern New Orleans.⁴

⁴Since the developer bears so little of the capital costs of public improvements and none of the maintenance costs, it is no wonder that developers seldom hesitate to initiate projects. In wetland areas both the capital and operating costs are greater than in dryland areas. These additional costs, of course, accrue to many more citizens than the ones who ultimately live in the project area.

TABLE 5.8

PUBLIC IMPROVEMENTS FINANCING
(As Projected)

	Federal	Local (Parish)	Developer
Sewage Treatment Plants	60-70% (Possible)	30-40%	--
Sanitary Collectors	50%	50%	--
Sanitary Pumping Stations (Area of Collection > 300 Acres)	50%	50%	--
Major Water Distribution	50%	50%	--
Water Tanks	--	100%	--
Storm Pumping Stations	50%	50%	--
Local Street Drainage	--	--	100%
Major Internal Road System*	50%	50%	--
Road Drainage*	50%	50%	--
Bridges*	50%	50%	--
Street Lights and Signs	--	100%	--

*With possible state participation.

Source: Derived from TAMS, 1972b: 6-7.

Federal participation in the construction of sewage treatment plants may be between 60 and 70 percent of the construction cost (TAMS, 1972b: 6). The remainder of the cost is borne by local government. Sewage collection and treatment can legitimately be considered an additional cost of wetlands development because in a natural dryland with proper development density and adequate soil and water conditions, much less expensive on-site waste treatment systems such as septic tanks can be used effectively and without danger to public health. (See Bender, 1971 for further explanation of septic tank soil constraints.)

As projected for the Pontchartrain New Town development, the local parish was expected to contribute 50 percent to the construction cost for major sanitary collectors, sanitary pumping stations, and major water distribution lines where the area of collection and service exceeded 300 acres. The construction costs of storm water pumping stations, required in all low-lying urbanized areas, was also to be shared by federal and local government on a 50/50 basis (TAMS, 1972b: 6-7).

Financial aid for the major internal road system, road drainage and bridges within the Pontchartrain New Town development was to be funded through the Federal-Aid Highway Program on a 50/50 basis after required state legislative authorization. Developers must bear the costs for local street drainage (TAMS, 1972b: 6-7). Major roadway construction costs are higher in a wetlands environment due to necessary peat removal, more extensive roadbed preparation and piling foundation support for elevated sections.

Another public cost associated solely with development that occurs in a wetland environment is that of mosquito control. Using the New Orleans Mosquito Control Program as a model, costs have averaged 51¢ per capita per year for its first twelve years of operation (Wagner and Magee, 1977: 17).

In considering the public costs herein discussed, it should be remembered that these costs are ultimately absorbed by the individual taxpayers within coastal Louisiana.

PUBLIC MAINTENANCE COSTS

Maintenance problems are not limited to the private sector of a developed wetland area. Public facilities including streets, sewers, utility lines, and public buildings all require periodic maintenance expenditures due to the problems of subsidence and flooding attributed to the wetlands environment. However, the degree and effect of these problems on maintenance costs has not been measured nor documented in the past.

For example, maintenance costs within the New Orleans Department of Streets were found to be unavailable by Mumphrey et al. (1975: 162) in Louisiana Metropolitan Wetlands: A Planning Perspective for two reasons. First, no record is maintained as to the cause of problems, all being categorized as simply "maintenance." Weed control, street cracks due to subsidence, and chuck-hole repair were all found to be recorded the same with respect to costs. Second, the total maintenance costs on a district basis are not computed. This makes it extremely difficult to compare differences on a cost basis for each district which may be related to whether or not the district was at one time predominantly a wetland. Similar negative results were also reported by Mumphrey et al. in attempting to gather information on wetlands-related maintenance costs for sewerage and water lines built in a wetlands environment (Mumphrey et al., 1975: 162-163).

It was therefore felt that a repair reporting form should be developed for use by agencies that maintain public facilities. This would help to institute more systematic recordkeeping on wetlands-related maintenance problems. In turn, the information collected could help to determine the extent to which these public maintenance costs relate to specific land base conditions.

Figure 5.2 illustrates a proposed reporting form for wetlands-related damages. In the design of this reporting form it was kept in mind that expert analysis of each repair situation should not be required in order to fill out the form. Instead, it is felt that an educated attempt at separating wetland from nonwetland related maintenance costs will be all that is necessary to achieve the desired data.

FIGURE 5.2

PROPOSED REPAIR REPORTING FORM FOR
WETLANDS-RELATED DAMAGES

AGENCY PERFORMING REPAIR

- _____ SEWERAGE DEPARTMENT
- _____ WATER DEPARTMENT
- _____ STREET DEPARTMENT
- _____ ELECTRIC UTILITY
- _____ GAS UTILITY
- _____ TELEPHONE
- _____ OTHER . . . _____
(please specify)

DAMAGE REPORT

- DATE OF DAMAGE REPORT _____
- DAMAGE LOCATION _____

DAMAGE DESCRIPTION

- _____ MANHOLE ABOVE ROAD LEVEL
- _____ CRACKED OR TILTED SECTION OF ROADWAY
- _____ OPEN JOINT IN PIPE
- _____ WATER DAMAGE TO UTILITY LINE
- _____ STRUCTURAL DAMAGE TO UTILITY LINE
- _____ STRUCTURAL DAMAGE TO PUBLIC BUILDING
- _____ OTHER . . . _____
(please specify)

(continued)

The proposed form in Figure 5.2 is intended for use in soliciting information on the cause of damage reported (whether or not it is wetlands related), the actual damage resulting, the cost of repair, and the location of the needed repair.

CONCLUSIONS

This chapter has dealt with both the public and private aspects of additional capital and maintenance costs necessary in developing wetlands over drylands for urban uses. Additional wetlands development costs are passed on to the consumer, except in the case of public facilities costs, which are passed on to everyone in the area. Costs may be direct, as in the higher purchase price of a house or lot, or relatively hidden, as in the additional price of insurance needed and maintenance costs due to subsidence.

One caution in employing the costs listed is that they are taken from different source years. It would be necessary to update some of these figures to the present time in order to work with them more extensively.

In developing urban wetlands, everyone bears the loss of their ecological value for assimilating urban runoff pollutants, for providing a buffer from storm velocity wind and water, for contributing to the local economy as a habitat for fish and game, and for serving as a recreation area. Therefore, it is most important to be able to weigh all of the related costs of wetlands development with the benefits to be gained by urban expansion into wetland areas of the coastal zone in order to make informed development decisions. This discussion clarifies those added construction and maintenance costs which are involved.

APPENDIX 5.1

ALTERNATIVE WETLANDS RECLAMATION METHODS (FOR PROPOSED PONTCHARTRAIN NEW TOWN)

I. Wet Method

This method proposes that the water level of the drainage canals and lagoons be drawn down to elevation -7.0 msl and that the developable land surface must be covered with 2 feet of fill. This fill blanket would be applied prior to land sale rather than by the builder during construction.

II. Modified Wet Method

This method proposes that the water level of the drainage canals and lagoons be drawn down to elevation -9.0 msl and that the developable land surface be covered with approximately 2 feet of fill. This method would produce finished grade elevations that would be approximately 2 feet lower than with the Wet Method.

III. Wet Method with Additional Fill

This method proposes that the water level of the drainage canals and lagoons be drawn down to elevation -7.0 msl and that the developable land surface be covered with approximately 4 feet of fill. In this case the additional 2 feet of fill material would act as an accelerator for the consolidation of underlying materials. The excess fill would be progressively shifted to adjacent fill areas after the desired consolidation has taken place.

IV. Modified Fill Method

This method proposes that the water level of the drainage canals and lagoons be drawn down to an elevation of -3.5 msl and that the developable land surface be covered with approximately 4.5 feet of fill.

V. Fill Method

This method proposes that the water level of the drainage canals and lagoons be maintained at an elevation of approximately 0.0 msl and that the developable land surface be covered with 11.5 feet of fill.

Source: Kaiser Engineers, 1974: 13-14.

APPENDIX 5.1 CONTINUED

ILLUSTRATIONS OF
ALTERNATIVE WETLANDS RECLAMATION METHODS

FIGURE 5.1.1 -- WET METHOD*

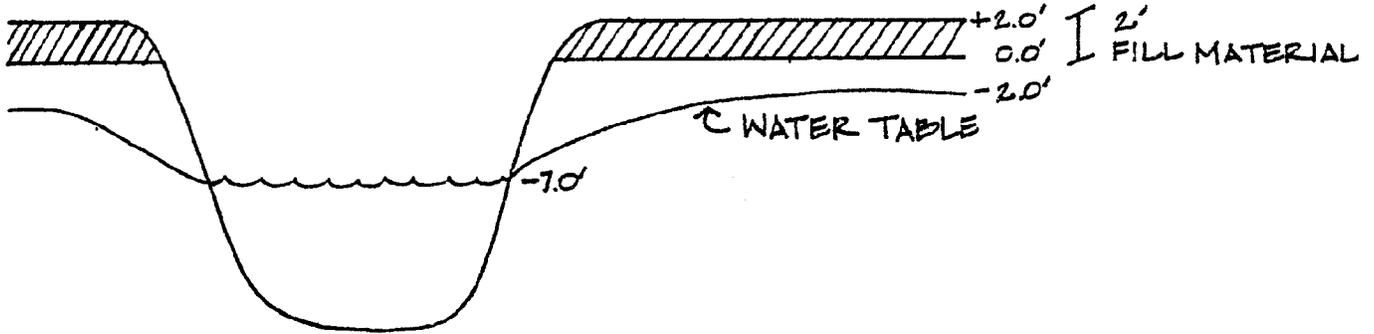


FIGURE 5.1.2 -- MODIFIED WET METHOD*

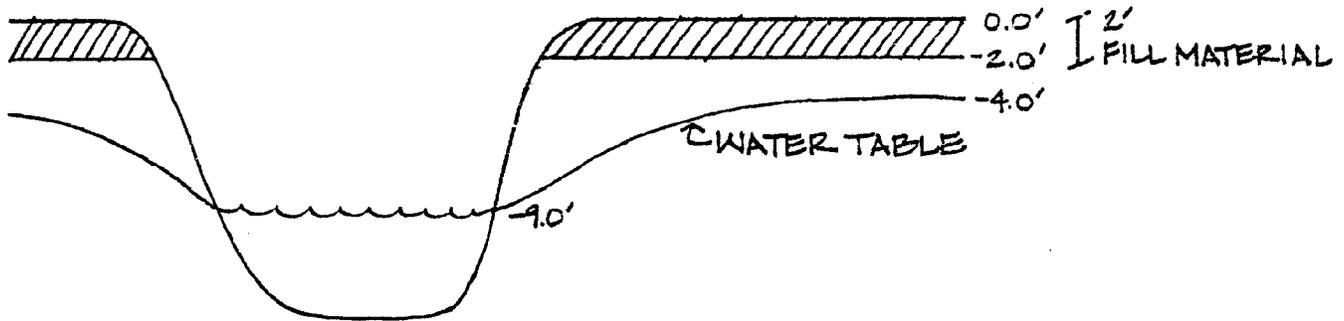
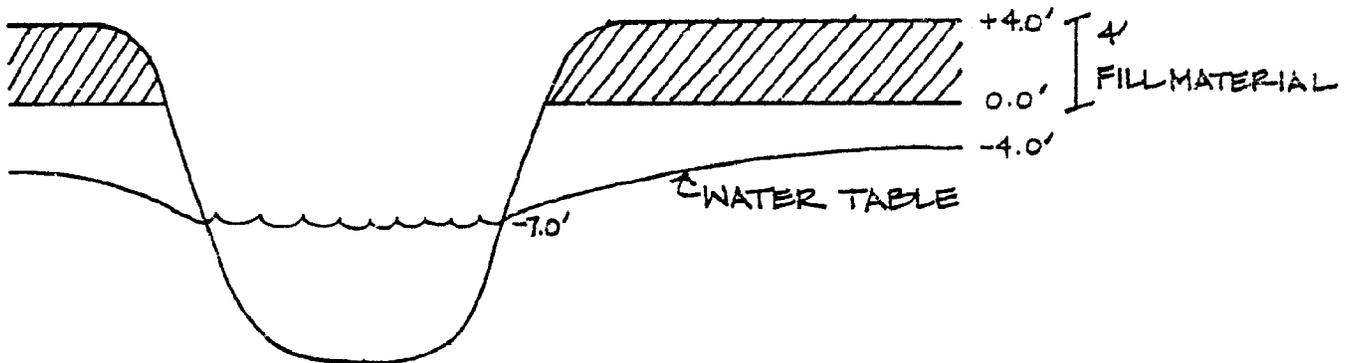


FIGURE 5.1.3 -- WET METHOD WITH ADDITIONAL FILL*



*LAND DRAINED THROUGH AN EXTENSIVE SYSTEM OF UNDERGROUND PIPES INTO CANAL SYSTEM.
WATER PUMPED FROM CANALS INTO LARGE LAKE OR SOME OTHER LARGE WATER BODY.

(CONTINUED)

APPENDIX 5.1 CONTINUED

FIGURE 5.1.4 -- MODIFIED FILL METHOD**

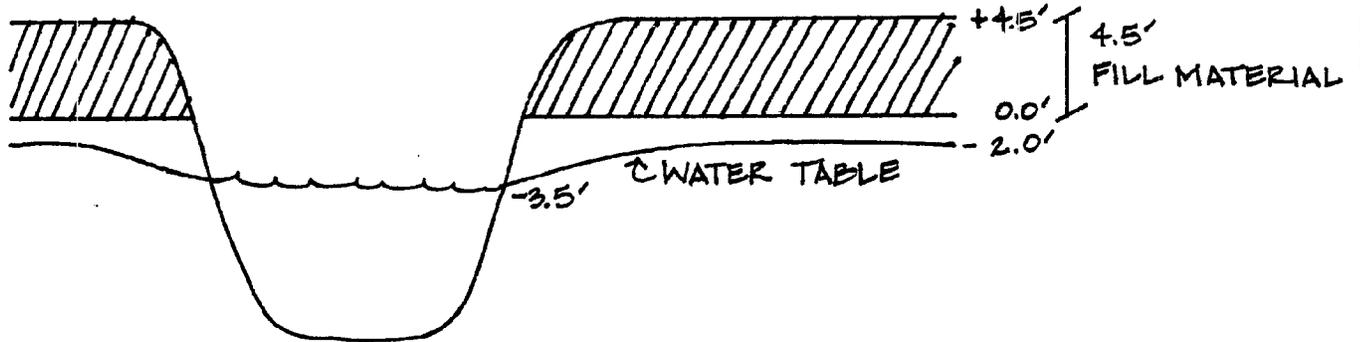
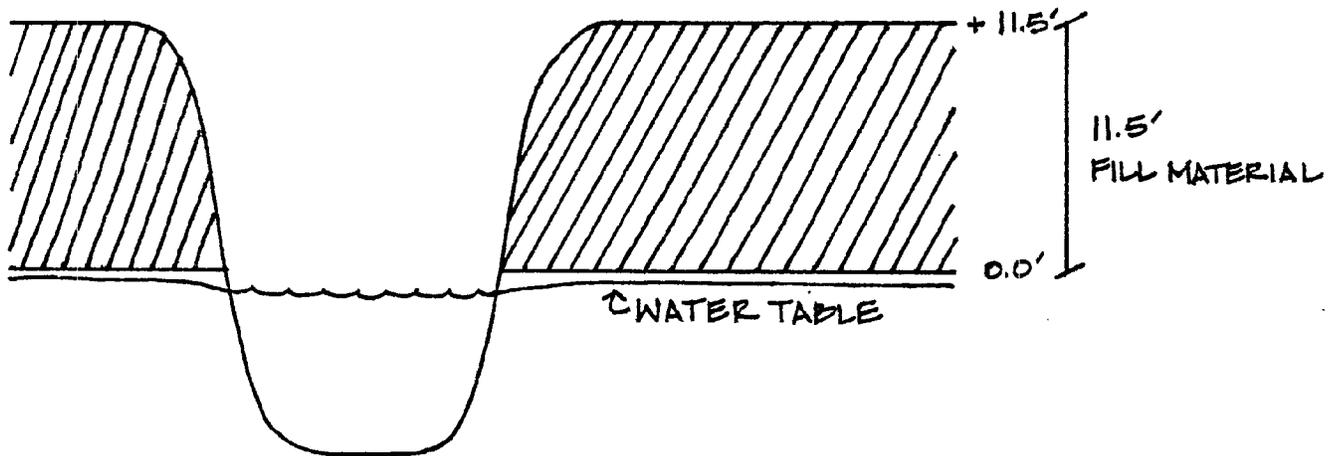


FIGURE 5.1.5 -- FILL METHOD**



** LAND DRAINED VIA SYSTEM OF SWALES AND SURFACE RUNOFF INTO CANAL SYSTEM.

SOURCE : ADAPTED FROM KAISER ENGINEERS, 1974 .

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CHAPTER 6

EVALUATION OF AND RECOMMENDATIONS FOR COASTAL ZONE PLANNING IN LOUISIANA

INTRODUCTION

The coastal zone of the State of Louisiana comprises all or part of twenty-two parishes (counties), with a population close to 2,000,000 (Denton, 1977: 4-5). Within that area are three metropolitan areas (the New Orleans SMSA, a portion of the Baton Rouge SMSA, and the Lake Charles SMSA), and thirty incorporated municipalities of over 5,000 population (Appendix 6.1). Approximately 52% of the total Louisiana population resides in or adjacent to the defined coastal zone.

OCS energy activity directly or indirectly stimulates population changes in the sensitive coastal areas. Many communities are not prepared to absorb a rapid influx of new residents and, in fact, are only minimally able to cope with slow increases of population in sensitive land areas. That does not mean energy-related growth will not occur. It does mean that growth may very poorly relate to either the capacity of the community to adjust to the population increase or the ability of the coastal land environment to sustain the added population burden without serious risk of environmental damage.

If we were able to say precisely how many people were going to live in an area and how many could live in that area without exceeding ecological or institutional capacities, it might be possible to meter the flow of population accordingly. Such precise statements are not available. In their place, it is necessary to develop a competent and responsive local planning capability to monitor and evaluate the effects of growth, both before and as it occurs. Done correctly, this activity can highlight areas of future concern in time for the decision makers to take preventive or ameliorative action. An "early warning system" is, obviously, no better than its operators. The task of this chapter is to assess the effectiveness of the planning and management capability of the local governments in Louisiana's coastal zone and

and recommend improvements. Used properly, this assessment can pinpoint areas of probable concern wherein the need exists for more or different planning/management resources in order to cope with energy-related activity.

EVALUATION

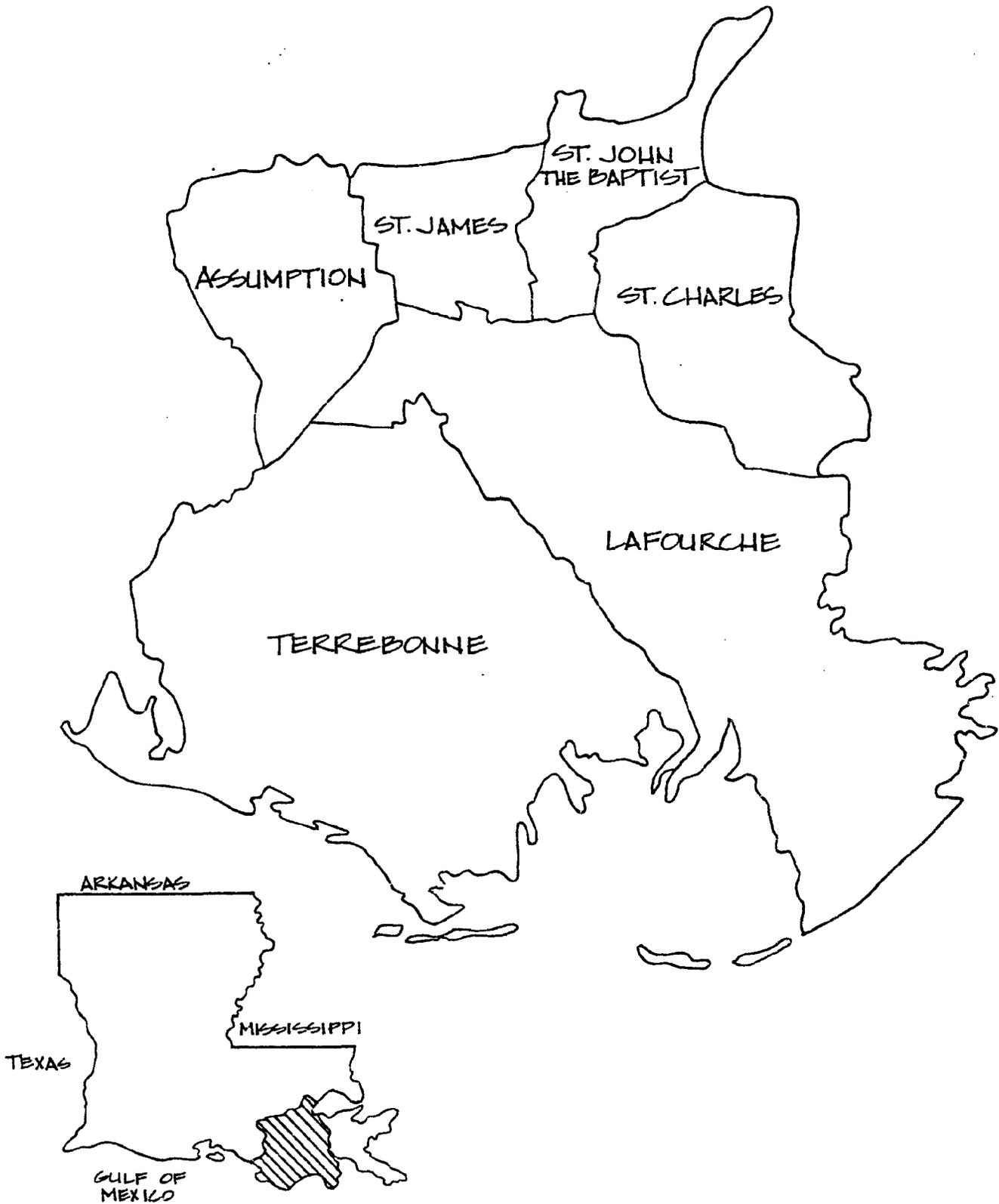
Louisiana State Planning District 3, shown in Figure 6.1, was selected as the model for evaluation of local planning and management capability. There were two major reasons for the selection: (1) this region is the site of the Louisiana Superport and a region heavily impacted by OCS activity, and (2) the region represents a good balance of rural and urban conditions that permit analysis of impact in different environments. Conclusions drawn from the evaluation of capability in the model region can be used to infer capability in other regions.

As a surrogate for measuring planning capabilities/effectiveness of the model State Planning District 3, a comparison of existing expenditures, staff, and salaries with national averages was necessary. National data were derived from the Expenditures, Staff, and Salaries of Planning Agencies, 1976 (ASPO, 1976). This American Society of Planning Officials' report by George C. Turnbull, Jr. notes that the activities and organization of planning agencies defy easy classification and comparison. In addition, a questionnaire survey such as the one used to derive the ASPO report cannot present all of the existing special cases and inconsistencies; thus, the data should be used as guidelines for relative comparisons, not as standards for measurement (ASPO, 1976: 2). Finally, it is noted that the data are not drawn from a random sample of all planning agencies, but do nevertheless represent a good cross-section of agencies in the United States (ASPO, 1976: 1).

Perhaps the most valid index is per capita expenditures for planning (ASPO, 1976: 3). Table 6.1 shows the per capita total planning expenditures for U. S. city, county, city-county, and metropolitan and regional jurisdictions. The percentage of expenditures from federal sources, and staff categorization are also shown. Per capita expenditures tend to decrease within a jurisdiction type as agency size increases--probably attributable to economies of scale (ASPO, 1976: 3). The number

FIGURE 6.1

LOUISIANA STATE PLANNING DISTRICT 3



Source: Louisiana State Planning Office, 1976.

TABLE 6.1

SUMMARY OF EXPENDITURES AND STAFF BY JURISDICTION AND POPULATION GROUP, 1976

Jurisdiction and Population Group	Per Capita ¹ Total Expenditures (Dollars)	Median Agency ¹ Expenditures From Federal Sources (Percent)	Mean Number of Authorized Positions ²				Total Staff	# of Positions Per 1000 Population ²
			Professional Planners	Draftsmen	Para-Professionals	Clerical		
City								
50,000-99,999	1.818	23	5	0.7	1.1	2.0	9.3	
25,000-49,999	2.070	18	3	0.4	0.7	1.3	5.9	
10,000-24,999	3.265	14	2	0.2	0.4	1.0	4.0	
under 10,000	13.856	--	1	0.3	0.3	1.0	2.8	
County								
250,000-499,999	0.932	11	11	3.0	3.5	6.0	24.4	
100,000-249,999	1.556	12	10	2.2	2.3	3.9	18.9	
50,000-99,999	1.476	20	4	0.8	1.3	2.3	9.7	
25,000-49,999	1.963	18	3	0.6	2.4	1.8	7.9	
10,000-24,999	5.462	22	3	0.4	0.7	1.2	5.5	
City-County								
500,000-999,999	1.299	12	34	7.3	4.7	17.3	63.9	
100,000-249,999	1.475	32	11	2.6	1.8	3.9	20.3	
50,000-99,999	1.408	18	4	0.9	0.6	1.5	7.1	
24,000-49,999	1.438	--	2	0.3	0.7	1.2	5.1	
Metro. & Reg.								
1,000,000 +	1.027	42	41	2.7	8.3	25.5	78.5	
250,000-499,999	0.883	45	13	2.6	1.2	4.8	22.6	
100,000-249,999	1.709	60	11	1.6	1.1	6.4	20.7	
50,000-99,999	1.395	49	4	0.8	0.4	3.4	8.9	
500,000-999,999	0.954	75	20	3.1	4.3	10.9	39.3	

Sources: 1ASPO, 1976: Table 2.

2ASPO, 1976: Table 6.

of professional planners per capita and the total staff per capita almost invariably decrease as the population increases. It should be mentioned that while agencies are becoming increasingly diversified in their staff specializations, inconsistency in the way the figures were reported was prevalent (ASPO, 1976: 4). For example, an economist or waste disposal engineer might be employed by a planning agency and given a planning series title. Employment in another agency would result in another job title.

Table 6.2 shows the median salary by qualification level and region. Louisiana is included in the West South Central region along with Arkansas, Oklahoma, and Texas. As before, the salaries shown should be used as general indicators and not as precise measurement standards (ASPO, 1976: 5). In addition, the figures are statistically more valid at the lower level positions than at the higher levels, because in the higher positions, minimum job requirements tend to be the absolute minimum and do not reflect the actual level of education and experience commensurate with the position (ASPO, 1976: 5). Table 6.2 supports a trend that--even at the lower levels--experience is valued as much or more than education. Finally, Table 6.2 gives regional comparisons that may aid agencies wishing to compare their salary scale with other agencies inside or outside of the region. The data appear too inconsistent to draw regional comparisons except at particular levels (ASPO, 1976: 6).

Table 6.3 shows the range of salaries by position level in relation to the number of levels in the agency. If regional differences are taken into account, the data may aid in establishing salary levels (ASPO, 1976: 6).

The planning capabilities of local agencies in State Planning District 3 were difficult to determine. Lack of response from either a questionnaire (see Appendices 6.2 and 6.3) survey or telephone interviews necessitated that the analysis concentrate on one agency. The most extensive and effective planning agency in State Planning District 3 is the South Central Planning and Development Commission which is nonmetropolitan in character and jurisdictionally identical to State Planning District 3. A comparison of the Commission's expenditures, staff, and salaries with the ASPO information are shown in Tables 6.4 and 6.5. Table 6.4 indicates that per capita expen-

TABLE 6.3

RANGE OF SALARIES AT PROFESSIONAL POSITION LEVEL, BY NUMBER OF LEVELS IN AGENCY, 1976

Position Level	Range *	Number of Levels in Agency							
		One	Two	Three	Four	Five	Six	Seven	Eight
FIRST	HIGHEST	\$25,295	\$22,500	\$27,696	\$32,628	\$39,411	\$37,695	\$42,552	\$49,047
	75TH PERCENTILE	18,902	22,550	23,400	26,000	26,952	29,340	30,966	34,000
	MEDIAN	17,000	19,500	20,696	22,800	24,425	26,198	26,816	31,250
	25TH PERCENTILE	15,360	17,160	18,000	19,510	20,844	22,560	23,695	27,000
SECOND	LOWEST	10,000	11,688	12,500	15,180	14,850	17,376	18,000	14,248
	HIGHEST	21,121	25,728	25,728	25,794	33,512	29,388	35,412	42,887
	75TH PERCENTILE	15,288	17,069	17,069	20,100	22,196	23,580	25,844	30,304
	MEDIAN	12,943	15,000	15,000	17,052	16,912	21,678	22,687	26,197
THIRD	25TH PERCENTILE	11,250	13,440	13,440	15,086	15,571	18,745	19,051	22,225
	LOWEST	8,200	8,320	8,320	10,300	9,716	13,600	16,500	12,950
	HIGHEST	19,832	19,832	19,832	22,505	29,284	27,202	28,088	38,502
	75TH PERCENTILE	13,260	13,260	13,260	16,860	17,817	20,892	22,416	26,400
FOURTH	MEDIAN	12,000	12,000	12,000	14,682	16,183	18,381	19,470	23,874
	25TH PERCENTILE	10,200	10,200	10,200	12,275	14,000	15,953	17,415	19,000
	LOWEST	7,155	7,155	7,155	8,082	9,000	11,502	12,624	11,100
	HIGHEST	20,184	20,184	20,184	22,505	21,608	22,915	23,736	36,898
FIFTH	75TH PERCENTILE	13,950	13,950	13,950	16,000	15,624	18,000	21,000	24,228
	MEDIAN	12,000	12,000	12,000	14,000	13,564	16,056	18,580	21,441
	25TH PERCENTILE	10,023	10,023	10,023	11,880	11,880	13,179	15,002	17,897
	LOWEST	7,680	7,680	7,680	7,680	7,500	10,000	12,312	11,000
SIXTH	HIGHEST	17,705	17,705	17,705	20,048	17,705	20,048	21,948	34,598
	75TH PERCENTILE	13,624	13,624	13,624	15,376	13,624	15,376	16,880	21,421
	MEDIAN	11,648	11,648	11,648	13,200	11,648	13,200	14,966	18,818
	25TH PERCENTILE	10,162	10,162	10,162	11,494	10,162	11,494	13,000	15,995
SEVENTH	LOWEST	7,875	7,875	7,875	8,375	7,875	8,375	11,208	10,000
	HIGHEST	18,676	18,676	18,676	20,388	18,676	20,388	20,388	30,276
	75TH PERCENTILE	13,328	13,328	13,328	15,048	13,328	15,048	15,048	18,862
	MEDIAN	11,637	11,637	11,637	13,169	11,637	13,169	13,169	16,584
EIGHTH	25TH PERCENTILE	10,175	10,175	10,175	11,124	10,175	11,124	11,124	14,091
	LOWEST	7,510	7,510	7,510	8,585	7,510	8,585	8,585	9,240
	HIGHEST	17,592	17,592	17,592	17,592	17,592	17,592	17,592	25,682
	75TH PERCENTILE	12,500	12,500	12,500	12,500	12,500	12,500	12,500	17,105
EIGHTH	MEDIAN	11,739	11,739	11,739	11,739	11,739	11,739	11,739	14,572
	25TH PERCENTILE	9,648	9,648	9,648	9,648	9,648	9,648	9,648	12,650
	LOWEST	7,175	7,175	7,175	7,175	7,175	7,175	7,175	8,500
	HIGHEST	21,492	21,492	21,492	21,492	21,492	21,492	21,492	21,492
EIGHTH	75TH PERCENTILE	15,174	15,174	15,174	15,174	15,174	15,174	15,174	15,174
	MEDIAN	12,299	12,299	12,299	12,299	12,299	12,299	12,299	12,299
	25TH PERCENTILE	10,440	10,440	10,440	10,440	10,440	10,440	10,440	10,440
	LOWEST	7,200	7,200	7,200	7,200	7,200	7,200	7,200	7,200

*Salaries below \$7,000 were deleted.

Source: ASPO, 1976.

TABLE 6.4

SOUTH CENTRAL REGIONAL PLANNING AND DEVELOPMENT COMMISSION
EXPENDITURES AND STAFF
(1976)

	South Central Planning and Development Commission ¹	ASPO Information for Metropolitan and Regional Areas of 100,000 to 249,999 Persons ²
Per Capita Total Expenditures (Dollars/Person)	0.775	1.709
Percentage of Expenditures from Federal Sources	48 (23% 701) (25% Other)	60
Number of Authorized Positions ³		
Professional Planners	4	11
Draftsmen	1	1.6
Paraprofessionals	4	1.1
Clerical	6	6.4
Total Staff	15	20.7
Number of Positions Per 1,000 Population		
Staff	0.058	0.106
Professional Planners	0.016	0.056

Sources and Notes: ¹ Questionnaire. See Appendices 6.2 and 6.3.

² Table 6.1.

³ Does not include Executive Director for South Central Planning and Development Commission.

TABLE 6.5

SOUTH CENTRAL REGIONAL PLANNING AND DEVELOPMENT COMMISSION
 PROFESSIONAL PLANNER SALARIES
 (1976)

Qualifications	South Central Regional Planning and Development Commission ¹	Information ²	
		U.S.	West South Central ³
B.A. or B.S. (No Experience)	\$ 8,500	\$11,049	\$ 9,571
Master of City or Urban Planning (No Experience)	\$ 8,500	\$13,800	\$12,390
Master of City or Urban Planning (Three Years Experience)	\$13,000	\$17,012	\$16,154

Sources and Notes: ¹ Questionnaire. See Appendix 6.2. Data do not include Executive Director.

² Table 6.2

³ The West South Central Region includes Arkansas, Louisiana, Oklahoma, and Texas.

ditures for planning amount to only 45% of the national average for comparable agencies. Dependence upon federal sources for funding is below the national average. The number of authorized professional planner positions, however, falls short of the national average by a large margin. In addition, the agency appears to rely more heavily upon paraprofessionals and less heavily upon professional planners for the completion of tasks. Table 6.5 indicates that salaries for inexperienced planners with a Bachelor of Arts or Science degree are only 89% of the West South Central region median and 77% of the national median. The salary levels for planners with three years' experience and a Master of City or Urban Planning fared similarly. Comparably degreed planners with no experience, however, earned only 69¢ of the regional median and 69% of the national median.

These deficiencies may be corrected by doubling the amount of expenditures and the number of professional planners on the staff--assuming that the national averages are creditable goals for which to strive for planning excellence. The financial requirements for such an undertaking would require roughly \$241,139 per year, as is shown in Table 6.6. The allocation of these new funds to increase salaries for new and present planners could be distributed as shown in Table 6.7. The changes would bring the salary levels nearer to the median for each position level in Table 6.3. The remainder (\$171,629) could be allocated to hire new and upgrade salaries of clerical staff and other employees, to consultant contracts based on need, etc. It must be noted that any new allocation of monies--for salaries, consultant contracts, etc.--should be used in a way to best serve the planning needs of a region. The simple creation of new planning positions may not be either adequate or efficient, if reputable consulting firms could do the job as well.

RECOMMENDATIONS

The previous section indicates that the primary planning agency in State Planning District 3, namely the South Central Regional Planning and Development Commission, is deficient in expenditures, staff size, and salary levels when compared to suggested national standards. Many local District 3 governments (parishes and municipalities) have no planning agency. Assuming that District 3

TABLE 6.6

SOUTH CENTRAL REGIONAL PLANNING AND DEVELOPMENT COMMISSION
EXPENDITURES NEEDED FOR UPGRADE
(1976)

ASPO National Standard Per Capita Expenditures ¹ (Dollars Per Person)	(-) Capita Expenditures ¹ (Dollars Per Person)	(=) Required Additional Per Capita Expenditures ² (Dollars Per Person)	(x) South Central (=) Population ³	Additional Required South Central Expenditures ²
1.709	0.775	0.934	258,179	\$241,139

Sources: ¹Table 6.4

²Computed by authors.

³Denton, 1977: 4.

TABLE 6.7

SOUTH CENTRAL PLANNER SALARY ALLOCATION

Planner Category	ASPO Salary ¹	(-)	Existing Salary	(=)	Salary ² Increase
<u>Existing Planners</u> ³					
Highest Level (1)	\$17,012		\$13,000		\$ 4,012
Second Level (1)	\$16,000 ⁴		\$13,000		\$ 3,000
Third Level (1)	\$13,800		\$ 8,500		\$ 5,300
Fourth Level (1)	\$11,049		\$ 8,500		\$ 2,549
<u>New Planners</u> ⁵					
Second Level (1)	\$16,000		\$ 0		\$16,000
Third Level (2)	\$13,800		\$ 0		\$27,600
Fourth Level (1)	\$11,049		\$ 0		\$11,049
					\$69,510

Sources and Notes: ¹Table 6.5. ²Computed by authors.³Does not consider Executive Director. ⁴Arbitrarily chosen.

⁵After the Questionnaire was administered, three new positions were added, one at a salary of \$13,000, one at \$12,000, and one at \$8,500 per year (Strausser, 1977). They would correspond, at existing salary levels, to one highest level, one second level, and one fourth level positions. Thus, three of the suggested four new positions have been added and \$33,500 of the proposed \$69,510 salary increase expended. Remaining needs are for one third level planner and across the board upgrading of the salary structure.

is similar to the remainder of Louisiana's coastal zone,¹ it can be concluded not only that planning improvement is necessary, but that it is expensive as well. (See Appendix 6.3 and Table 6.1.) The implementation of a planning improvement operation--financially supported from whatever source--will require a new comprehensive organizational structure in order to achieve better efficiency and representation of all interests.

It is recommended that, as a basis for organization, the regional planning agency should be given a greater role in the guidance and direction of local planning projects that are proposed rather than instituting new or enhanced local planning agencies.² In addition, a state agency qualified to give planning assistance should serve as a broker of information for consultants, universities, and regional planning agencies. Data are not systematically collected or used at present. The operational scheme suggested is shown in Figure 6.2. The federal Office of Coastal Zone Management will outline project requirements, regulations, and specifications to be met for funding eligibility for coastal zone planning projects. The state assistance office will help interpret the guidelines in specific cases and help regional agencies prepare their projects to receive funding. In addition, the state assistance office would provide basic research and specialized technical support to the regional level and to firms or individuals working on OCS-related contracts. Finally, the state agency would serve as a mediating/appeals mechanism when conflicts arise between local and regional agencies.

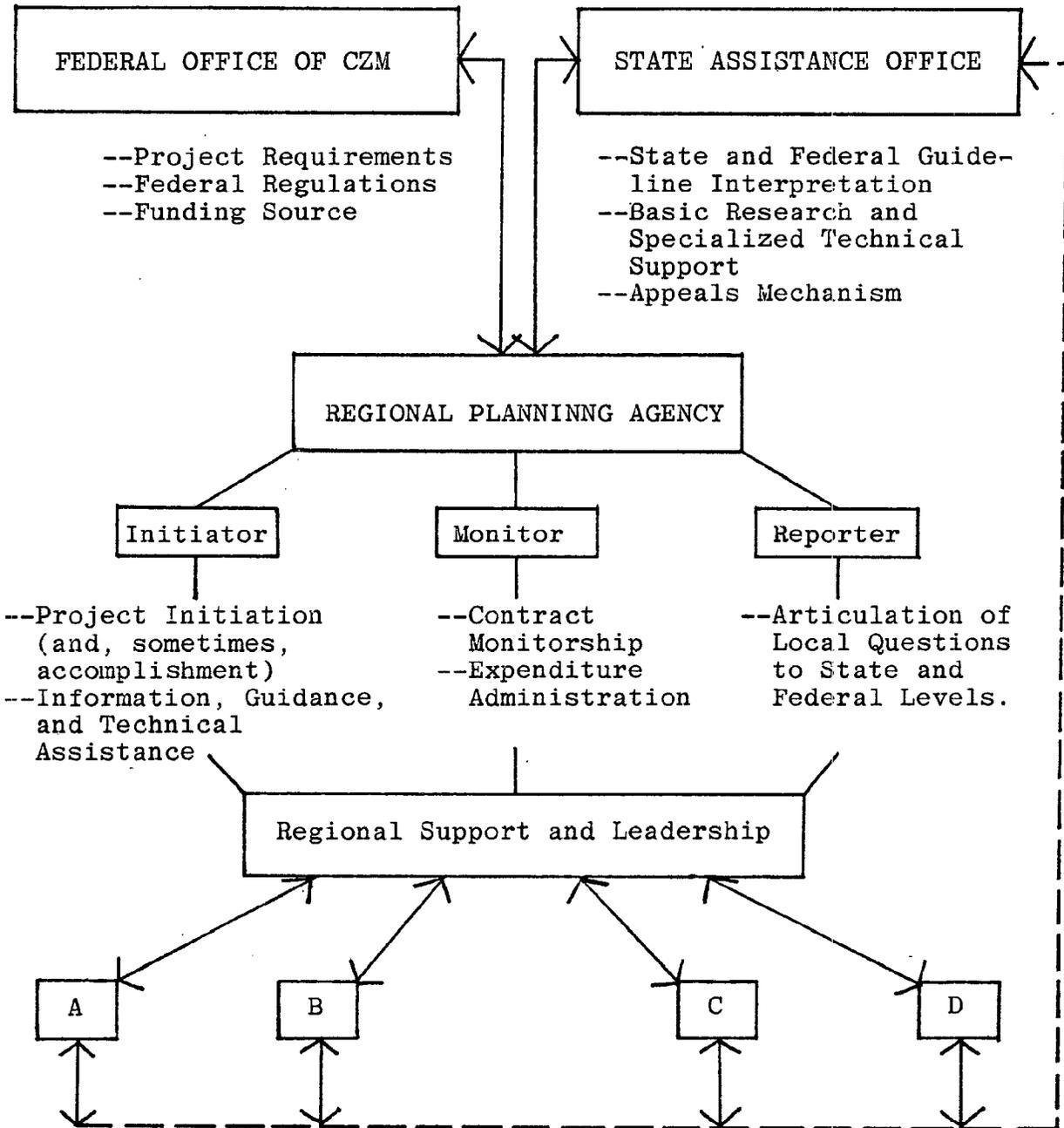
The regional planning agency would provide local planning project initiation and monitorship and would report back to the state and federal levels on work done "in house" or by consultants. Initiation of projects could be accomplished best at this level of planning. The regional office would be more familiar with the needs of

¹The New Orleans area should be excluded from this statement. The regional planning agency of State Planning District 1 (Regional Planning Commission for Jefferson, Orleans, St. Bernard, and St. Tammany Parishes) and its more urban counterpart in New Orleans (New Orleans City Planning Commission) both compare favorably to the suggested national standards (see Appendix 6.3 and Table 6.1).

²Local sentiments do not necessarily favor an upgrading of local planning capacity because of fears of increasing governmental control of local public and private activities.

FIGURE 6.2

COASTAL LOUISIANA PLANNING OPERATION SCHEME



Source: Authors.

its jurisdiction than the state level would, and federal guidelines interpretation and technical information availability would be greater than at the local level. It is important that the regional level be given power of contract monitorship and expenditure administration since closer scrutiny would be possible than at the state level. By the same token, special needs of local work could be better understood and resolved to everyone's satisfaction. In its reports to higher levels, the regional planning agency could convey unanswerable questions regarding specific projects posed by local representatives. These three regional functions, coupled with the state's mediation/appeals mechanism, would allow for regional support and leadership in coastal zone management and would create a planning capability for local areas that would combine the resource availability existing at the state level with the monitorship ability and sensitivity that exists at the regional level. The local level would be able to benefit from federal funds supplied to eligible projects with a regional planning body able to help initiate and carry out their local projects.

CONCLUSION

The evaluation of one regional planning agency in the coastal zone indicates expenditures and staff size suffer in comparison to a national sample of similar agencies. Increased expenditures and staff are needed if the planning capability and effectiveness of this agency are to be comparable to the other agencies and equal to the complex energy-related planning tasks that must be accomplished. The same situation exists for many planning agencies throughout the Louisiana coastal zone. However, given scarce resources and established spending patterns, it is unlikely that all local and regional planning agencies can be improved. It is recommended here that the regional planning agencies be upgraded and assume many of the tasks of the local agencies. With increased resources and role, the regional level will, in turn, generate more funds through planning grants and regional capabilities should further increase. Planning at the regional level will take advantage of economies of scale not possible at the local level leading to efficiency while the regional agencies' closeness to local problems will result in an equitable representation of local interests.

APPENDIX 6.1

COASTAL LOUISIANA MUNICIPALITIES
WITH POPULATIONS GREATER
THAN 5,000

Municipality	Parish	Population (1970)
Abbeville	Vermilion	10,966
Bayou Cane	Terrebonne	9,077
Bayou Vista	Terrebonne	5,121
Covington	St. Tammany	7,170
Donaldsonville	Ascension	7,367
Franklin	St. Mary	9,325
Gretna	Jefferson	24,875
Hammond	Tangipahoa	12,487
Harahan	Jefferson	13,037
Harvey	Jefferson	6,347
Houma	Terrebonne	30,922
Jeanerette	Iberia	6,322
Jefferson Heights	Jefferson	16,489
Jennings	Jefferson Davis	11,783
Kenner	Jefferson	29,858
Lake Charles	Calcasieu	77,998
Laplace	St. John	5,953
Little Farms	Jefferson	15,713
Marrero	Jefferson	29,015
Metairie	Jefferson	136,477
Morgan City	St. Mary	16,586
New Iberia	Iberia	30,147
New Orleans	Orleans	593,471
Plaquemine	Iberville	7,739
Reserve	St. John	6,381
St. Martinville	St. Martin	7,153
Slidell	St. Tammany	16,101
Sulphur	Calcasieu	14,959
Thibodaux	Lafourche	15,028
Westwego	Jefferson	11,402

Source: 1970 Census of Population.

APPENDIX 6.2

PLANNING AGENCY QUESTIONNAIRE

1. Planning agency functions for (circle one):

Municipality Parish Region

2. Population of jurisdiction: _____

3. Total planning expenditures during last fiscal year: _____

4. Percentage of expenditures from federal sources: _____

5. Where applicable, what percentage of answer (4) is from the "701" program? _____

6. Where applicable, what percentage of answer (4) is from other sources (e.g., 208)? _____

7. Number of authorized positions in planning staff:

(a) professional planners _____

(b) draftsmen _____

(c) paraprofessionals _____

(d) clerical _____

(e) total staff _____

8. Salaries of professional planners

<u>Position Level</u>	<u>Salary</u>	<u>Qualification*</u>
Highest	_____	_____
Second	_____	_____
Third	_____	_____
Fourth	_____	_____
Fifth	_____	_____
Sixth	_____	_____

COMMENTS: _____

*Qualification code: The first digit represents the minimum degree required for the position as follows: 1=BA or BS; 2=MCP or MUP, or similar degree; 3=MA/MS in a field other than planning; 4=other degree. The second digit represents the minimum number years experience required, as follows: 0=no experience, 1=1year; 2=2 years; 3=3 years; 4=more than 4 years.

Source: Authors.

APPENDIX 6.3

RESPONDING PLANNING AGENCY EXPENDITURES AND STAFF

Municipality Parish or Region	Per Capita Total Expenditures	Percentage of Expenditures from Federal Sources		NUMBER OF AUTHORIZED POSITIONS					Number of Positions Per 1000 Population			
		701	Other	Profes- sional Planners	Draftsmen	Parapro- fessionals	Clerical	Total Staff	Total Staff	Professional Planners		
DISTRICT 1												
New Orleans Regional	0.930	50.0	50.0	20	3	0	4	39	0.038	0.019		
New Orleans City-Parish	1.330	0.0	0.0	25	7	5	8	45	0.080	0.044		
St. Tammany Parish	0.185	42.5	42.5	4	1	0	2	7	0.086	0.049		
Jefferson Parish	0.984	0.0	0.0	5	3	3	5	16	0.056	0.018		
Mandeville City	0.000	0.0	0.0	0	0	0	1		-- 1 Part-Time			
DISTRICT 2												
Livingston Parish				Planning Commission Dissolved								
Tangipahoa Parish	0.171	0.0	66.0	0	0	2	1	3	0.040	0.000		
DISTRICT 3												
South Central Regional	0.775	23.0	25.0	4	1	4	6	15	0.058	0.016		
DISTRICT 4												
St. Mary # 1 Parish	0.010	0.0	0.0	0	0	0	1	1	0.029	0.000		
Abbeville City				No Active Planning Commission Exists								
DISTRICT 5												
Cameron Parish	3.000	0.0	0.0	1	0	0	0	1	0.111	0.111		

Source: Questionnaire. See Appendix 6.2.

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CHAPTER 7

GUIDELINES FOR CREATING A CITIZEN INVOLVEMENT PROGRAM

INTRODUCTION

The term "citizen participation" has been used so extensively in the past decade that it is easy to forget that it is not new in American political life. Saul Alinsky introduced the concept in the late 1940s when he suggested that the poor organize to seek solutions to their problems. This tactic was then used by civil rights and reform organizations in the 1950s and 1960s. Some federally sponsored, locally administered programs have used citizen advisory boards for years, including agricultural extension programs and urban renewal programs. When the Office of Economic Opportunity developed in the 1960s, it incorporated the concept of "maximum feasible participation" of the poor. Although the concept was never clearly defined, the idea of citizen participation in the formation of programs and policies began to be incorporated into other federal programs and was adopted by state and local agencies (Hutcheson and Shevin, 1976: 1; also see Hallman, 1972, for a detailed account of the historical development of citizen participation in federal programs).

This chapter provides a discussion of the theoretical underpinnings of the concept of citizen participation; a brief examination of the Public Participation Program of the Louisiana Coastal Resources Program; a description of the four basic components of a citizen involvement program, including various techniques and mechanisms that can be used to accomplish each component; and a discussion of variables to be considered in designing specific citizen involvement programs on the local level. Rather than developing a specific citizen participation program to be used state-wide, guidelines have been formulated to assist planners in creating programs tailored to the needs and characteristics of their local communities and to the budget and time constraints of their agencies.

THEORETICAL UNDERPINNINGS OF CITIZEN PARTICIPATION

The current controversy surrounding citizen participation stems in large measure from three unanswered questions related to basic policy. These questions are important at all stages of the citizen participation program, from planning of the program through implementation. Confronting these questions should be the responsibility of the planners in conjunction with the affected citizens and the general public. The first question is, who should participate? As government agencies established citizen participation programs, self-initiating groups have become more aggressive in demanding access to governmental decision-making. Citizen group activity has expanded rapidly in the past ten years. With this growth in activity has come the realization, however, that certain segments of the population--usually those most affected by a new program or project--are usually not among the active participants. Two separate groups of citizens can be identified--the interested and the affected. The emphasis in Federal programs that stress citizen participation is how to involve the affected citizenry; this group is usually poor, with few resources, and without access to power-holders (Mogulof, 1969).

The second question centers around power. That is, how much weight should be given to the preferences of citizens in the overall formulation and implementation of a program or project? Arnstein (1969) has pointed out that the term "citizen participation" has been used to refer to situations ranging from virtual nonparticipation to degrees of tokenism to citizen control. The degree of "participation" encouraged is related to the purpose to be served by enlisting citizen input. Purposes range from a form of therapy in order to cure alienation to decentralizing governmental authority to redistributing power and resources. Typologies have also been developed to identify those variables, such as leadership, cohesiveness, and goals, which determine how effective a group is likely to be in winning some influence in the decision-making process (see, for example, Kansas City Urban Observatory, n.d.).

The third question centers around how a group should participate. That is, what mechanisms must be available to the group if it is to have adequate access to the decision-making process. The mechanism used is tied closely to the problem of power. Sometimes the mechanism is designed deliberately to keep effective participation

at a minimal/token level. At other times an honest attempt is made to incorporate citizen input, but the mechanism chosen does not lend itself to effective participation. The relationship between the mechanism and the group is also crucial; some groups need more prodding and technical assistance than others to be able to participate effectively. Choosing the proper mechanism entails an interactive process between planners and citizen groups.

General Discussion

Historically, most citizen participation has been on the political level and expressed in such ways as voting, writing letters to public officials and running for public office. Today, citizens are seeking participation on the administrative level; they seek involvement in program formulation, evaluation, and implementation. Most ideas on administrative participation have their antecedents in political participation. But even among political theorists there is no consensus on what "participation" means. One school of thought sees participation as denoting influence that ordinary people have over the selection of their representatives (see Verba and Nie, 1972). The other school of thought sees participation as referring to the direct involvement of citizens in making decisions and policies (see Pateman, 1970).

The former school is the more prevalent, chiefly because many modern theorists fear the dangers inherent in wide popular participation in politics. Berelson *et al.* (1954: Chapter 14), for instance, conclude that high levels of participation and interest are required from only a minority of citizens, while the apathy and disinterest of the majority play a valuable role in maintaining the stability of the democratic system as a whole. The apathetic citizens are like a reserve force which becomes activated when circumstances warrant added involvement. Pateman (1970), on the other hand, demonstrates that the socialization aspects of a participant environment enhance the stability of the political system. Participation increases feelings of political efficacy, broadens outlooks and interests, and creates familiarity with democratic procedures and the learning of political skills.

Theorists have suggested a number of factors which increase the likelihood of political involvement by the citizenry. Pateman demonstrates that institutional factors greatly influence the degree of interest a citizen has in

the political processes around him/her. An environment that has been structured to encourage active involvement (such as the Workers' Councils in Yugoslavian industries or the collective farms in Peru) creates more participant members. Almond and Verba (1963) found that those countries which provided mechanisms for their citizens to participate in the local governmental processes produced citizens with high levels of political participation and sense of political efficacy. This finding has been corroborated by small group theorists who demonstrated that the kind of social climate created by leaders can promote or inhibit participation by the members of the group (see White and Lippitt, 1960).

Organizational factors are also important in influencing participation. Verba and Nie found that organizational affiliation increases political participation (1972: 174-208). The Community Action Programs failed because the poor had little past experience with being members of an organization and they grew impatient with the inordinate amount of time and effort required to organize. Many of the poor also did not wish to bear the costs required of engaging in aggressive bargaining with government agencies (Kafoglis, 1968). Other studies have shown that citizen groups can be effective if the group has a dedicated leadership cadre within a larger general membership (Steggert, 1975). Effectiveness has also been shown to be related to funding and goal definition (Steinbacher and Solomon, 1971). Crenson (1974) demonstrates that government-sponsored community organizations are generally less effective than privately initiated groups in developing defined agendas, and ill-defined agendas produce few demands on officials. If groups are going to participate effectively, they need a source of relevant information, as well as technical assistance in assimilating and formulating this information, and research capabilities (see Henderson, 1974).

An individual's social characteristics affect his/her decision to participate and the method of participation chosen. The social characteristics generate sets of attitudes conducive to or inhibitory of political participation. Most studies have shown that those who are most likely to participate are male, better educated, urban, between 35 and 55, married, members of organizations, and from higher socio-economic status (see Lipset, 1960; Lane, 1959; Berelson et al., 1954). Verba and Nie (1972: 70-73) identify four modes of political activity--voting, campaign activity, communal activity and particularized activity, and find that different modes of participation correlate

with different social characteristics.¹ Unlike the other modes, those who engage in particularized activity come from throughout the socio-economic spectrum (p. 132). Such activity confirms that if an individual can be shown how an issue directly affects him/her then he/she will react in such a way as to attempt to ameliorate the problem. It is not that most citizens are apathetic, but that they must be: (1) shown why an issue is important to them, and (2) given an opportunity to express their preferences and seek their preferred course of action. One without the other--lack of information or lack of a mechanism--will not result in meaningful participation by citizens. The lack of information will result in apathy; the lack of a mechanism will result, eventually, in defiance.

Having a broad spectrum of the public participate in local policy-making serves several purposes. First, it provides for a qualitative assessment of the proposed policy by complementing technical knowledge with the personal knowledge of those to be affected. Second, it serves as an educative process assisting in community development. Third, it provides for those being affected by a proposed policy to contribute to its assessment, which should be a basic right in a democratic society. Moreover, studies have found that participation brings measurable benefits to those who participate. For instance, officials are more responsive to the preferences of participant citizens than to nonparticipants. In fact, the more participation there is in a community, the more officials concur with citizens on community priorities (Verba and Nie, 1972: 332-333; also see Cole, 1974).

CITIZEN INVOLVEMENT PROGRAMS IN THE LOUISIANA COASTAL ZONE

In 1972 the United States Congress passed the Coastal Zone Management (CZM) Act, which provides monetary grants to coastal states to assist in the development of programs

¹Voting and campaign activity are both concerned with participation in the electoral process and are usually conflictual. Communal activity is composed of all the acts of participation that aim at influencing broader social issues in the community and is usually nonconflictual. Particularized activity refers to contacts with government officials in which the issue refers only to the individual or his/her immediate family, and in which the governmental decision responsive to that contact would presumably have little or no direct impact on others in the society.

to protect, develop, and, where possible, to restore coastal resources. To be eligible for funds a state must, among other requirements, provide for the inclusion of public participation in coastal zone management programs. Section 1454 of the Act requires that open public hearings be held prior to any plan approval, with public notice given 30 days prior to the hearing, and that all pertinent agency material be made available for public review during that time (U.S. Congress, 1972).

In 1973 Governor Edwin Edwards announced that the State Planning Office would be the agency responsible for formulating a coastal zone management program for Louisiana. The Coastal Resources Program, established within the State Planning Office in June 1974, is responsible for administering CZM grants, monitoring contractual activities, and assisting with information dissemination to legislators, local officials, and other interested parties. It is also responsible for drafting legislation for a CZM program (State Planning Office, 1976: 1).² A public participation program was created to provide for a dialogue among state agencies, local elected officials, user groups and the general public on what CZM means to them and to the state as a whole.

A variety of techniques have been used to open up this communication process. The program began with orientation meetings for elected officials and regional planners held in four different areas of the coastal zone. Later, five information meetings for officials and the public were held in different coastal communities. Represented most heavily at these meetings were environmentalists, sportsmen, and the oil and gas industry. At both sets of meetings, questionnaires were distributed to those attending to ascertain their attitudes and opinions about the coastal zone and its management. The results were tabulated to help prepare CZM legislation. In conjunction with this, a statewide survey of citizens' opinions on coastal resources was done in the summer of 1974 (see Lindsey *et al.*, 1976).

After the proposed legislation was drafted, presentations explaining its details were made to service groups, environmental groups, interest groups and police juries. During these meetings, comments made for revising the legislation were recorded for future reference. All legislators received a package of information on major issues

²The Coastal Resources Program has recently been transferred to the Louisiana Department of Transportation and Development.

and a briefing on coastal resources management. At this point, newsletters were being sent out to a mailing list of over 3000 people, brochures describing how citizens could get involved in the planning of a CZM program were distributed, and slide shows were produced for use at public meetings (State Planning Office, 1976: 33-40).

The proposed legislation was not passed in the 1976 session of the Legislature. Two major reasons were given for nonpassage of the bill: first, major user groups and local officials felt that they had not been given an adequate opportunity to express their preferences in the initial steps of the bill's formulation; in other words, they felt that the Coastal Resources Program was trying to get them to accept what was essentially a fait accompli. Second, the public meetings were not well-attended and therefore the program lacked a broad constituency and failed to develop one. The results of the statewide survey showed that most Louisianaians have a general, but imprecise, awareness of the coastal zone and a vague concept of coastal zone management (Lindsey et al., 1976:1; also see Pinkey and Paterson, 1976). Attendance at the public information meetings was mostly by groups with vested interests in the coastal zone and with a tendency towards not wishing to make compromises with each other.

In the summer of 1976 the Coastal Resources Program decided that there was a need to work at the local level, with local officials and groups, to incorporate their opinions and advice in the formation of new CZM legislation. The program now has advisory committees on the local level, with regional or local planning commissions responsible for coordination. There was also created, at the close of the 1976 legislative session, a state advisory committee to make recommendations and advise the natural resources committees of the legislature on an appropriate coastal zone management program. The Louisiana Coastal Commission consisted of ten members from coastal parishes (i.e., one representative from the police jury in each of the ten parishes), ten members representing interest/user groups and municipalities of coastal Louisiana appointed by the Governor, and the Director of the Department of Wildlife and Fisheries (see Appendix 7.1). The commission was structured so as to provide a "fair and balanced approach to devising a management plan" (Côte de la Louisiane, 1976: 1). As one interest group representative commented, it transformed local officials and interest groups "from observers and commentators into active participants charged with the responsibility of developing a coastal management

program" (Côte de la Louisiane, 1976: 2). The Coastal Resources Program provided technical and legal research to the Commission. The Commission has reported its recommendations to the legislature and now is defunct. Its proposed legislation was passed in the 1977 Legislature.

The local advisory committees continue to function. These committees are composed of influential citizens attempting to represent a balance between developmental and environmental interest groups (see Appendix 7.2). They are responsible for identifying issues, goals, problems and their solutions at the local level in preparation for parishes developing individual coastal management programs. One of their functions is to act as a communication center for public opinion and technical information. Their chief method for carrying out that function is to hold their meetings in public, in various locations within the parishes. Promotional and information programs have not been developed and the general public has not been provided with any mechanism for systematic input and criticism. Some promotional activities, usually in the form of speakers' bureaus, have been undertaken within the parishes by the regional planning commissions. The state Coastal Resources Public Participation Program is planning to conduct a series of workshops within the parishes that stress the varied activities and uses that occur within the coastal zone.

BASIC COMPONENTS OF A CITIZEN INVOLVEMENT PROGRAM

The state's present Public Participation Program has been moderately successful in identifying key user/interest groups involved in activities related to the coastal zone. However, unless a systematic attempt is made also to inform the public-at-large of the benefits and costs involved in a coastal zone management program and to create mechanisms for ensuring quality input from the public, then many of the affected groups and the impacts upon them will not be identified during the planning stages. The planning and implementation processes will lack vital information and possibly, cooperation and understanding. A more systematic citizen involvement program needs to be developed.

As used in this report, citizen involvement is "a continuing, dynamic process of two-way communication between the public and the planning agencies/decision-makers during which choices are continually narrowed until

a final solution/plan/program is arrived at" (Appleby, 1977). A citizen involvement program consists of four major components:

- (a) keeping the public-at-large adequately informed;
- (b) identifying the affected publics;
- (c) creating mechanisms for eliciting citizen input; and
- (d) accounting for governmental decisions.³

Keeping the Public Informed

The most basic component in any citizen involvement program is to keep the public adequately informed about a proposed program or project. This task involves two subcomponents (see Rosenbaum, 1976: 43-50). The first is to provide the public with basic educational background on the issue area, such as coastal zone management, and on how the government is set up to deal with such issues, so that the public can make a constructive and informed contribution to policy-making. The second subcomponent is to provide accurate, understandable information about how the proposed program is developing and notify the public about opportunities to participate. It is vital that an adequate flow of information be maintained throughout the planning process.

Traditional procedures for providing basic background information include speaker's bureaus, distributing brief brochures to citizen groups and soliciting background coverage from the news media. Such procedures tend not to attract the attention of large numbers of citizens and do not present the information systematically. Some agencies have also used other resources; for example, schools offer both credit and non-credit courses in coastal zone management, the news media develop documentaries and broadcasts, and citizen groups hold community meetings. More

³This section on "Basic Components of a Citizen Involvement Program" is heavily indebted to Rosenbaum (1976), especially the ideas on keeping the public informed and government accountability. Rosenbaum divided his citizen involvement program into three basic components: (1) public preparation, (2) citizen participation, and (3) governmental accountability.

innovative educational methods to capture public attention include the production of a simplified land use curriculum designed specifically for citizens, such as the Princeton Planning and Design Workbook for Community Participation (Research Center for Urban and Environmental Planning, 1969), and special television programming, such as the "Choices for '76" educational campaign conducted by the planning commission of New York, coordinated with "Town Meeting Groups" organized in schools, homes, and churches (Rosenbaum, 1976: 45). Both methods tried to present the information systematically and emphasize basic concepts clearly.

The second subcomponent of keeping the public informed involves notifying citizens about current policy issues and providing useful, comprehensible information on the stakes involved in these decisions. This requires giving citizens ample notice of pending meetings and decisions, communicating in clear-cut, nontechnical language, and providing current information in a variety of formats suitable for different levels of sophistication. The traditional methods include depositing informational materials in local public libraries, posting public notices, holding public hearings and soliciting media coverage. More systematic distribution of information include developing and updating a registry of interested individuals and groups to whom detailed materials on current planning matters in specific areas are sent; using a mass mailing approach, such as that undertaken by the Vermont Environmental Board in which every household was mailed a newsprint copy of a draft land use plan (see Scoville and Noad, 1973, as cited in Rosenbaum, 1976: 47); combining mass mailings with public information meetings; and creating a permanent planning information center, which mounts continuous exhibitions on proposed plans and projects, often supplemented by mobile exhibitions.

Identifying Affected Publics

The next component in a citizen involvement program is to identify the segments of the public who are likely to be affected by, or have an interest in, the proposed project or program. The public is not a unitary mass; the segments of the public are identifiable on the basis of location, interest, or social characteristics such as age, sex, ethnicity, education, income and occupation. Methods for identifying publics may include self-identification, third-party identification or staff

identification (see Willeke, 1977). Using a combination of the three methods provides the richest amount of information. An important ingredient in facilitating self-identification is the use of multiple channels of communication to and from the public so that maximum opportunity for self-identification is afforded. In third party identification any person who is aware of the proposed project and knows of some other individual or group that should be involved may identify that person or group to the planner.

In staff identification, nearly all the work involved in identifying publics is done by the planning staff itself. Techniques that can be used in staff identification include:

- (a) analysis of association--a process of consulting available lists of organized groups; e.g., Yellow Pages of the telephone directory, Chamber of Commerce, newspaper lists, etc. and picking out those which appear to have possible interest in being involved;
- (b) geographic analysis--the study of maps and photographs to determine areas that should be singled out for special attention in the planning process (e.g., flood plain dwellers, those downstream from a dam or sewage treatment plant, etc.);
- (c) demographic analysis--the definition of a public as that group of persons having a given set of demographic characteristics (e.g., the elderly, minorities, middle-class, etc.);
- (d) comparative analysis--a process of consulting the record of studies and projects in closely related fields or comparable geographical areas and determining what groups were affected;
- (e) field interviews--a process of asking specific individuals for their views. The two methods used are (1) the "snowball effect," in which the planner begins by interviewing a group of people (usually opinion leaders) known to have some interest in the topic and asking them to identify others likely to be interested; those persons are subsequently interviewed and asked the same question and the process is repeated until no new names are received; and (2) concentration on the community and its problems with publics being identified as a matter of course (Willeke, 1977: 320-322).

Identification is more than naming specific groups; it implies learning about the characteristics and concerns of the identified segments. Such information is necessary to ensure social equity (Deckert and Sorensen, 1974). That is, the planner must determine which groups are likely to experience beneficial impacts from a proposed project and which ones will experience adverse impacts. To gain a thorough assessment of these impacts requires the active involvement of the affected citizens themselves. There are a variety of mechanisms that can be used to elicit citizen input (see later in this chapter). As an interim step, and one that will help the planner begin to appreciate the ramifications of the proposed project, a brainstorming session (see Finsterbusch, n.d.) among the staff and other key persons should be held. At this session, an identification should be made of the specific kinds of groups likely to be affected by the proposed project and the impacts they are likely to experience as a result of the proposed project. Brainstorming sessions should complement, not replace, citizen participation activities.

As an example of a brainstorming session, Table 7.1 identifies 27 specific kinds of groups that could expect to be affected, whether positively or negatively, by increased offshore and onshore activity related to OCS development in the state of Louisiana.⁴ This table places each group within either the economic or environmental categories and describes each as being either for or against increased OCS activity. Also included in the table are the possible objectives of each group as it engages in its day-to-day activities. Knowing a group's normal activities allows a better understanding of the potential impacts that could occur as a result of the proposed project. Again, as a result of a brainstorming session, Table 7.2 presents the potential impacts that can be expected from increased OCS activity and matches the impacts with the segments of the

⁴The question of whether there should be increased outer continental shelf (OCS) activity (i.e., increased oil and gas production) is a key example of the conflict between pro-development and pro-environment groups. OCS activity is potentially damaging to the ecologically delicate coastal zone (see Mumphrey *et al.*, 1976: 162-225; St. Amant, 1971), while being productive economically. For example, in 1975 oil and gas pipeline companies in the state had an assessed value of \$491.5 million for tax purposes (Louisiana Tax Commission, 1976: 102).

TABLE 7.1

PUBLICS AFFECTED BY OCS ACTIVITY

		(+ = for increased activity; - = against increased activity)	
Category of Group	Specific Groups	Objective	
Environmental (-)	1. Environmentalists	1. To prevent negative impacts on environment	
Economic (-)	2. Commercial Fishing/Trapping	2. To maintain safe habitats for the spawning/ breeding of fish and animals (represents an economic benefit to fishermen and community)	
Environmental (-)	3. Sport Fishing/ Hunting	3. To maintain variety and population of fish and wildlife (a recreational activity); good management techniques	
Environmental (-)	4. Outdoor Recreation	4. Good maintenance of area; adequate access; convenient facilities	
Environmental (-)	5. Wilderness Enthusiasts	5. To maintain natural habitats	
Economic (-)	6. Seafood Restaurants	6. To have close (proximity), abundant, and non-contaminated supply of seafood; supply of cheap and reliable workers (catching, processing and shipping)	
Economic (-)	7. Agriculture	7. Maintain environment for adequate production levels (number of acres in cultivation decreasing)	
Economic (-)	8. Forestry	8. Maintain and increase productivity of forest reserves on a sustained yield basis; enhance other uses (recreational/wildlife)	

TABLE 7.1 CONTINUED

(+ = for increased activity; - = against increased activity)

Category of Group	Specific Groups	Objective
Economic (+/-)	9. Tourism	9. To maintain attractive sites and other points of interests; easy access to sites; adequate supportive services (fast foods, hotels/motels, entertainment and shopping areas); manageable number of visitors
Economic (+)	10. Ports and Shipping	10. More efficient and greater number of industrial-loading facilities; adequate shipping lanes (dredging allowed); adequate transportation from docking to distribution and processing centers
Economic (+)	11. Shell Dredging/Sand	11. Access to readily available sand and gravel deposits (ability to get dredging permits so that areas can be excavated)
Economic (+)	12. Realtors, home-builders and land developers	12. Constantly expanding access to new areas; well-defined permitting process; supply houses at a price the market will pay
Economic (+)	13. Landowners	13. To derive the greatest profit possible from the selling or subdividing of their land; to maintain low tax rates on unused land
Economic (-)	14. Homeowners	14. To have stable house foundations with few maintenance problems; access roads; utilities; low maintenance of roads, sidewalks, utilities, etc.

TABLE 7.1 CONTINUED

(+ = for increased activity; - = against increased activity)	
Category of Group	Objective
Specific Groups	Objective
Environmental (-)	21. Neighborhood/Community Groups 21. To maintain neighborhood quality, maintain property values
Economic (+)	22. Transient Workers 22. To have access to inexpensive housing and public services
Environmental (-)	23. Preservation-ists 23. To maintain the quality/ambience of the area; to preserve historic, cultural and archaeological sites
Economic (+)	24. Permanent Workers/New Residents 24. To have access to adequate housing and public services
Economic (-)	25. Service Industry (schools, police, medical) 25. To have adequate support personnel and facilities; to serve more densely populated areas.
Economic (+/-)	26. Public Transportation 26. To have riders (potential and actual) in densely populated areas
Economic (+)	27. Labor Unions 27. To maintain adequate employment levels and working conditions for its members
Environmental (-)	28. Ethnic Groups 28. To maintain ethnic solidarity and cultural integrity

Source: Authors. Format adapted from Francis, 1975: 400.

TABLE 7.1 CONTINUED

(+ = for increased activity; - = against increased activity)		Objective
Category of Group	Specific Groups	
Economic (+)	15. Industrial	15. To have federal permitting process relaxed (environmental constraints); low tax rates; cheap and easily available facilities for transporting goods (receipt, dispersal of goods); cheap and readily available supply of workers--skilled and unskilled
Economic (+)	16. Commercial Interests	16. To have minimum restricted access to new marketing areas
Economic (+)	17. Oil and Gas/ Sulphur	17. To have access to new leases and support yards; to have relaxed federal and state constraints on exploration, leasing and piping; to have a readily available pool of workers for the exploration and pipe-laying phases and a stable supply of workers for the drilling and production phases
Economic (+) and Environmental (-)	18. Technical Experts (Government agencies)	18. To keep control at their respective levels
Economic (+/-)	19. Local Government	19. To have complete control over all activities in the coastal zone; to maintain an adequate tax base; to minimize municipal costs
Economic (+) and Environmental (-)	20. Consumer Groups	20. To ensure all materials and resources derived from coastal zone are available at a good price in adequate supply

TABLE 7.2

KEY ISSUES AND POTENTIAL IMPACTS OF OCS

Key Issues and Impacts	Concerned Publics
<p>1. <u>Ecological Impacts</u> Channelization leads to saltwater intrusion, marsh destruction, etc. Reclamation leads to subsidence, saltwater intrusion, etc. Water Pollution (including oil spills, urban storm drainage, sewage)</p>	<p>Environmentalists Commercial & Sport Fishing Agriculture Seafood Restaurants Outdoor Recreation Agriculture and Forestry Homeowners Local Government</p>
<p>2. <u>Economic Impacts</u> Increased number of workers (temporary and permanent) Changes in job mix (unskilled to skilled; displacement of workers; retraining workers) Effects on residential and commercial rents Effects on local industries (esp, seafood, shipping, oil and gas) Changes in land value Changes in tax base</p>	<p>Labor Unions Local Governments Landowners Commercial Interests Shipping and Ports Commercial Fishing Seafood Restaurants Homeowners Homebuilders Transient and Permanent Workers Oil and Gas</p>
<p>3. <u>Municipal Impacts</u> Increased provision of services (schools, hospitals, fire and police, etc.) Increased costs for services Increased costs for crime prevention and detection Changes in tax base Effects of new urban development (ensure provision of sewerage, utilities, etc.)</p>	<p>Local Governments Homeowners Land Developers Consumer Groups Transient and Permanent Workers Technical Experts</p>

TABLE 7.2 CONTINUED

Key Issues and Impacts	Concerned Publics
<p>4. <u>Transportation Impacts</u> Impacts on public transit (increased ridership, increase number of lines to non-central areas) and improvements to old roads Increase in new road systems (new construction and improvements to old roads) Increased traffic in coastal areas Increased need for parking (esp. in non-central areas)</p>	<p>Transient and Permanent Workers Labor Unions Transit Companies Neighborhood Associations Commercial Interests Landowners Homebuilders Local Government Environmentalists</p>
<p>5. <u>Historical and Archaeological Impacts</u> Effects on historical areas and structures Effects on archaeological remains (esp. Indian mounds) Effects on tourism</p>	<p>Tourism Preservationists Neighborhood Associations</p>
<p>6. <u>Cultural Impacts</u> Impacts on cohesiveness of ethnic communities (esp. the Acadians in coastal areas) Impact on life-styles of ethnic groups Effects on the relationship between older residents and transient/new residents</p>	<p>Ethnic Groups Preservationists Consumer Groups Transient and Permanent Workers Tourism</p>
<p>7. <u>Legal Impacts</u> Impacts on zoning ordinances and building codes Effects of complying with Federal regulations (e.g., Coastal Energy Impact Program, CZM Act of 1972, Clean Air Act, NEPA, etc.)</p>	<p>Local Government Technical Experts Homebuilders Landowners Consumer Groups Environmentalists</p>

TABLE 7.2 CONTINUED

Key Issues and impacts	Concerned Publics
<p>8. <u>Public Health Impacts</u> Changes in air and water quality Increased need for water treatment and waste disposal facilities Increased need for clinics, public health officials, etc.</p>	<p>Technical Experts Local Government Environmentalists Commercial & Sport Fishing Seafood Restaurants Outdoor Recreationists</p>
<p>9. <u>Visual/Aesthetic Impacts</u> Effects of commercial strip development Impact on area during stay of transient workers and on their departure Impact on olfactory and auditory senses</p>	<p>Homeowners Tourism Outdoor Recreationists Environmentalists</p>

Source: Authors. Format adapted from Francis, 1975: 402.

public that are likely to be affected or concerned. Having such preliminary information provides the planner with a better appreciation of the scope of the proposed project and should encourage him to seek more carefully for the identity of specific groups.

Whether self-identification, third-party identification or staff identification is encouraged, the process of identifying publics should be on-going, with new groups urged to participate as they are identified. To aid in the identification of publics, especially when the self-identification method is used, an adequate amount of information about the proposed project must be circulated among the citizens.

Mechanisms for Eliciting Citizen Input

Once the planner has a preliminary idea of what groups are likely to be impacted and in what areas, he or she should begin considering the type of mechanism(s) to be used in eliciting citizen input. Local governments and agencies have reacted to increased levels of citizen participation by creating various mechanisms. Some have established grievance procedures, citizen boards and commissions; others have implemented structural changes like little city halls, neighborhood governments and other forms of political and administrative decentralization. Some have experimented with techniques utilizing survey research, mass media, workshops, and simulations and games. The type of mechanism chosen will depend on the purpose that citizen participation is to serve because purpose and mechanism are closely linked together (see Heberlein, 1976). For instance, the public hearing is used most often when the planner wishes only to inform the public about a new program and has no plans to react to public opinion and concern. Or, the public hearing may be used when citizen participation is required by law or administrative code, but there is no general demand for public involvement. On the other hand, if the purpose of citizen participation is to redistribute power and resources, then a more interactive process is required, such as workshops and administrative decentralization.

The mechanism used should also be matched with the kind of citizen group involved (see Kansas City Urban Observatory, n.d., for a typology of citizen groups). For example, a poorly-organized group with limited resources and expertise

may require technical assistance to help it formulate its preferences and make its presentations (see Sloan, 1974). Advocacy planning developed from the idea that the most disadvantaged groups are the least prepared to deal with technical matters and, therefore, need to be assisted in articulating their interests (Peattie, 1968). An example of a successful advocacy planning center in New Orleans was Metro Link, which worked with the New Orleans Tenants Organization to produce an alternative to the housing authority's plan for the redevelopment of the Desire housing project. On the other hand, a group that maintains a friendly/professional relationship with an agency may not need an elaborate mechanism through which to articulate its preferences. Attending a public hearing or sitting on a citizen review board may work quite well for such a group. The mechanism used should also be matched with the particular stage in the planning process. For instance, when the idea for a new program has just been proposed, the agency may choose to hold a public meeting for the purpose of informing the public about the proposal. Later, to determine if the public feels the program is needed, or to create the details of the program, the agency may conduct a survey and hold a series of workshops. When it is time to implement the program, the agency may choose to decentralize the administration through neighborhood organizations or create citizen review boards.

Three widely-used mechanisms for gaining citizen involvement are the public hearing, public opinion survey and the public meeting or workshop (Heberlein, 1976). The public hearing is the most traditional mechanism used for establishing communication between the planning agency and the general public. The function most often served by the hearing is informational, but it can be made to serve an interactive function if the agency is committed to discovering public needs and responding to those needs as expressed in the hearing. The most serious problem of the public hearing is that views presented are likely to be unrepresentative of the range of individuals who are affected by the project. Lack of knowledge and motivation are chiefly responsible for the unrepresentativeness.

One strategy to eliminate the unrepresentativeness of participation at the public hearing is the public opinion survey, which can ensure a representative sample of a given population within statistical estimates of probable error (see Webb and Hatry, 1973). However, the proper collection of data is costly and requires high levels of expertise, involving complex sampling procedures, proper wording of

questions, and analysis of data. Since many respondents are unknowledgable about any particular program and its implicaitons, they may form their opinions at the time they fill out the questionarie. Such opinions are extremely unstable and are seldom good indicators of "true" preferences formed once individuals have had experience with the project itself.

The central notion of the workshop is to involve the public actively in the planning process by bringing groups of citizens together with planners in serious working sessions. The workshop is so structured that it is interactive and the participants can be given sufficient amounts of information to make meaningful input. Several communities have attempted to improve the usefulness of workshops and public meetings by using more systematic techniques to analyze citizen viewpoints. In general these techniques allow for structured brainstorming, exemplified best by the Delbecq method (Delbecq and de Ven, 1971), in which participants are assigned to small groups of six to nine individuals. Each participant in the small group is asked to identify all the desirable and undesirable aspects of a proposed project and to suggest options for dealing with the undesirable aspects. The group makes a master list of the problems identified. The group discusses the list, during which time group participants are urged to elaborate on and defend particular items, make additions or suggest deletions. The group then votes on which aspects of the proposed project are most critical and which the most feasible options. All the small groups then meet together and the votes of each group are reported to the entire audience. A final vote among the audience is taken. The final vote provides a clearer ranking of priorities and preferences among a substantial group of citizen participants than would have been possible with discussion alone.

Besides Delbecq, other techniques include Delphi (Sackman, 1975), developed to elicit the opinion(s) of a group of individuals without meetings or direct discussion, using repeated waves of questionnaires and feedback reports; "Charette" (Chase, 1973), intensive activity directed towards accomplishing a stated goal; and Interpretive Structural Modelling (ISM) (Malone, 1975; Kawamura and Malone, 1975), in which participants respond to a sequence of queries generated by the computer based on the pattern of relationships among a set of elements (problems, goals, etc.) as defined by the participants during the course of the ISM session--the responses lead to prioritizing the elements and/or defining the support relationship among them.

The problem with the workshop is its lack of representativeness. One remedy for this problem is to locate community opinion leaders and ask them to participate. Another, more innovative, remedy is to select impacted individuals from jury rolls or from voter registration lists to serve as "expert" representatives of public review. They should be reimbursed for their time and effort. Another method similar to the workshop is to use a workbook which presents the alternatives, a visual display of the impact, information about costs and a postcard reply. These can be mailed out to random samples drawn from voter registration lists or to other appropriate publics (examples of such workbooks are Spring, 1971: and Heder, Karen and Francis, 1974).

Other approaches being considered by communities include the use of gaming and simulation, in which large-scale urban systems are modeled, sometimes with the intent of predicting the future effect of specified interventions, and usually focusing on quantifiable human activity (see Lee, 1973); panels of citizen reviewers (e.g., in California, copies of successive drafts of coastal zone plan elements were circulated to review panels across the state for review and comment); election of citizen advisory groups--typically on a neighborhood basis (Rosenbaum, 1976: 52); and subsidizing the drawing up of alternative plans--plans that reflect the uncompromised views of a particular individual or citizen group (see Davidoff, 1965).

In the beginning stages of participation, citizens should be encouraged to express their preferences as freely as possible, defining the stakes of the issue as they see them. After the full diversity of distinctive positions among the public have been brought out, the planner must then attempt to impose a structure on the process by highlighting the common elements among public viewpoints and weeding out the options that are not feasible on legal or technical grounds. At that point, the planner and the public can focus on a small number of options and make their decision from among those (Rosenbaum, 1976: 24).

Governmental Accountability

The major aspect of governmental accountability is explaining to the public the rationale for particular policy decisions. First, every individual or group that takes time to express a policy preference in detail should receive an official response, explaining what action was

taken and why. This type of feedback is a crucial means of building both public trust in the responsiveness of government and feelings of political efficacy. A number of jurisdictions have demonstrated that such replies need not be excessively burdensome (Rosenbaum, 1976: 62-63).

Second, the agency must explain how citizen input was used in making the final decision. Providing this information demonstrates that the agency is aware of the basic direction of majority preference and has incorporated this knowledge into its deliberations. It also builds greater support for a policy decision among affected citizens who do not personally favor the final course of action, but who might support the decision if shown that it was arrived at in a fair, sensitive and responsive manner. The traditional method is to circulate the final plan to all officially recognized "interested parties" and to provide public access to all records and transcripts of decision-making bodies. These procedures are essentially passive in that they impose no obligation on an agency to explain directly the reasons for its actions and decisions. The state of Oregon expanded its accountability through a different approach. Upon completion of a year-long process of soliciting citizen participation on statewide goals and guidelines, the Conservation Commission held a special "mark-up session" to reach its decision and explain it to the citizens. The audience was free to ask questions. After the session the Commission printed copies of a tabloid newspaper explaining the decision and mailed them to every individual and group that participated in the decision-making process (Rosenbaum, 1976: 63).

Another aspect of governmental accountability involves providing opportunities for appeal and reconsideration of decisions that citizens may feel are unfair and unresponsive. Generally, this is done through automatic legislative or executive review of administrative decisions. However, many groups have expressed discontent with the rubber-stamp quality of local legislative review, or have faulted the composition of legislative bodies. Alternative procedures which maximize input from the citizens include internal review of administrative decisions by ombudsmen or citizen advocates, citizen access to courts, and citizen-initiated referenda (Rosenbaum, 1976: 64-70).

Appendix 7.3 lists the various mechanisms that are appropriate for each of the components of a citizen involvement program. It also provides important points to remember about each component.

IMPORTANT VARIABLES FOR DESIGNING LOCAL CITIZEN INVOLVEMENT PROGRAMS

Every citizen involvement program should include the four basic components discussed in the section above. The specific techniques and mechanisms used by a specific government to accomplish each component should be determined by the

- (1) characteristics of the local community, and
- (2) resources of the local planning agency.

No one program can be packaged and used throughout the state; if it is, the needs of the specific communities will be overlooked. One of the problems with Louisiana's original public participation program was that the same information and format were used for meetings held in various locations around the state. Having local advisory committees could remedy this shortcoming, provided each committee structures its own public participation program according to its needs and resources, rather than having the specifics of a program imposed on it by the state.

Characteristics of the Local Community

Each community is unique, consisting of its own mix of those factors considered important in determining level of participation. The characteristics of the specific community should determine the kind of citizen involvement program developed. A profile of the community can be gleaned from census data and other compiled statistics, surveys, monitoring the mass media, interviewing local officials and opinion leaders, and published reports. Characteristics considered to be important in describing a local community include: size of the community, age distribution, ethnic/racial divisions, income levels, employment distributions, degree of literacy, degree of urbanization, degree of cohesiveness, and level of organizational activity. A cohesive community composed of young professionals, active in many community organizations would be able to handle survey questions, acquire adequate information from the mass media and function well in a public meeting. On the other hand, a community of older, less literate individuals with few (if any) organizational ties would require more innovative techniques, such as an

advocate planner to provide expertise, informational material explaining basic concepts, and a workshop format through which the opinions of the participants can be freely expressed. A highly-stratified community would require mechanisms that allow for conflict resolution and consensus building.

Resources of the Agency

The three most important resources to be considered when developing a citizen involvement program are cost, time and staff.

The various mechanisms that are available differ widely in cost. A properly conducted sample survey of parish residents could cost approximately \$10,000 (Webb and Hatry, 1973: 86). A public meeting held in a government office building could cost less than \$100. Cost is associated with the kind of individual participating; some individuals have enough resources to be able to volunteer their services, while others require stipends and allowances. Costs will also vary depending on how far the program attempts to reach out to inactive citizens, and how intensive and systematic the program is. Knowing whether the costs of a program will be borne by one agency or divided among several is also important. Therefore, before designing a citizen involvement program, the planner must be aware of the agency's budget constraints. Even with a minimal budget, an involvement program can still be developed, for many of its aspects may be subsumed under the normal and necessary expenditures of administrative decision-making. Planners may take calls from citizens or conduct meetings without significant impact on their work. Hearing notices and decision documents are usually printed in substantial quantity even if they are never systematically distributed to citizens. Most citizen involvement programs are conducted primarily through such indirect expenditures.

When there are direct expenses, usually arising from preparing and distributing educational or informational material, such costs can be controlled by exploiting existing resources in the community. Free media coverage can be sought, colleges and universities can be tapped for assistance in developing materials, and community organizations can be used for free dissemination. Costs for the basic aspects of a program--such as meetings, hearings,

and workshops--tend to be much less than the costs for supplementary and more innovative mechanisms, such as surveys or high-technology approaches (i.e., two-way cable television or teaching computers).

Knowing whether the citizen involvement program is to be a permanent or temporary aspect of the planning agency will also determine the kinds of mechanisms chosen. The staff of a program that is to last only several months may have to rely on meetings and workshops. The staff of a permanent program has the time to develop workbooks geared to its specific community; design, conduct and analyze surveys; and maintain an updated registry of interested persons to be sent informational materials.

Developing a systematic program to be implemented in a short period of time puts a greater burden on the staff and, therefore, may require hiring additional personnel. The various mechanisms also require different levels of expertise among the staff. Some of this expertise can come from resources within the community, such as colleges and universities, local organizations and from other agencies working in the area. For instance, analyzing surveys requires a knowledge of the computer; developing films or using cable television requires a communications expert. Whether the expertise comes from within the planning agency or outside, there must be someone on the staff to coordinate the various efforts who understands the overall program.

Because of these different variables, it is important that a citizen involvement program be developed at the local level. A local program is better able to cater to the needs of the community, while maximizing the use of its own resources. It will also ensure that input into the proposed project stems from the local level and from the affected publics.

CONCLUSION

The four components of the public involvement program respond to the theoretical policy questions concerning the concept of citizen participation. The three basic questions discussed earlier are (1) who should participate; (2) with how much power; and (3) through what mechanism. The questions are related closely to each other.

During the stage(s) of identifying publics (the second component), a determination is made of who the participants are to be. It is clear that those to be affected by a proposed project or program should participate. Deciding who will be affected by a project, however, is a difficult task, especially in a metropolitan area where so much of what happens in one location affects those living in another location. For example, building a low-cost housing project affects not only the new tenants and the old residents who are to be relocated, but taxpayers who subsidize the rents and services to the area. The question then becomes, should everyone in the community be encouraged to participate? Such a question is difficult to answer, especially in the abstract. However, on the local level, as the members of the community learn more about the proposed project (as a result of component one, keeping the public adequately informed) and planners increase their knowledge and understanding of potential impacts, then an answer to the question of who should participate can be approached. However this question of participation is linked to the "power" and "mechanism" questions as shown below.

The question of how much power the citizen groups should have in the decision-making process is related to and determined by the kind of mechanisms available to citizens for expressing their preferred alternatives. Varying degrees of effectiveness in expressing the preferences of citizens are possible according to the specific mechanisms created (the third component). If the traditional public hearing is used, then the group in effect is given no power because the emphasis is on one-way communication from the planner to the community. If the planning agency encourages political or administrative decentralization, then the group is given much power. Other mechanisms between the public hearing and decentralization schemes provide varying degrees of power, for the mechanism chosen is the outward manifestation of the amount of power held by the citizen groups. The power held by a group is a product of the group's internal resources and the recognition of those resources (for whatever reasons) by the decision-makers of the community. Thus, the question of who participates in the decision-making process is determined in part by the amount of power held by the various citizen groups in the community. Those with an adequate amount of power will participate. The mechanism of participation can either enhance or diminish the amount of power held by a particular group.

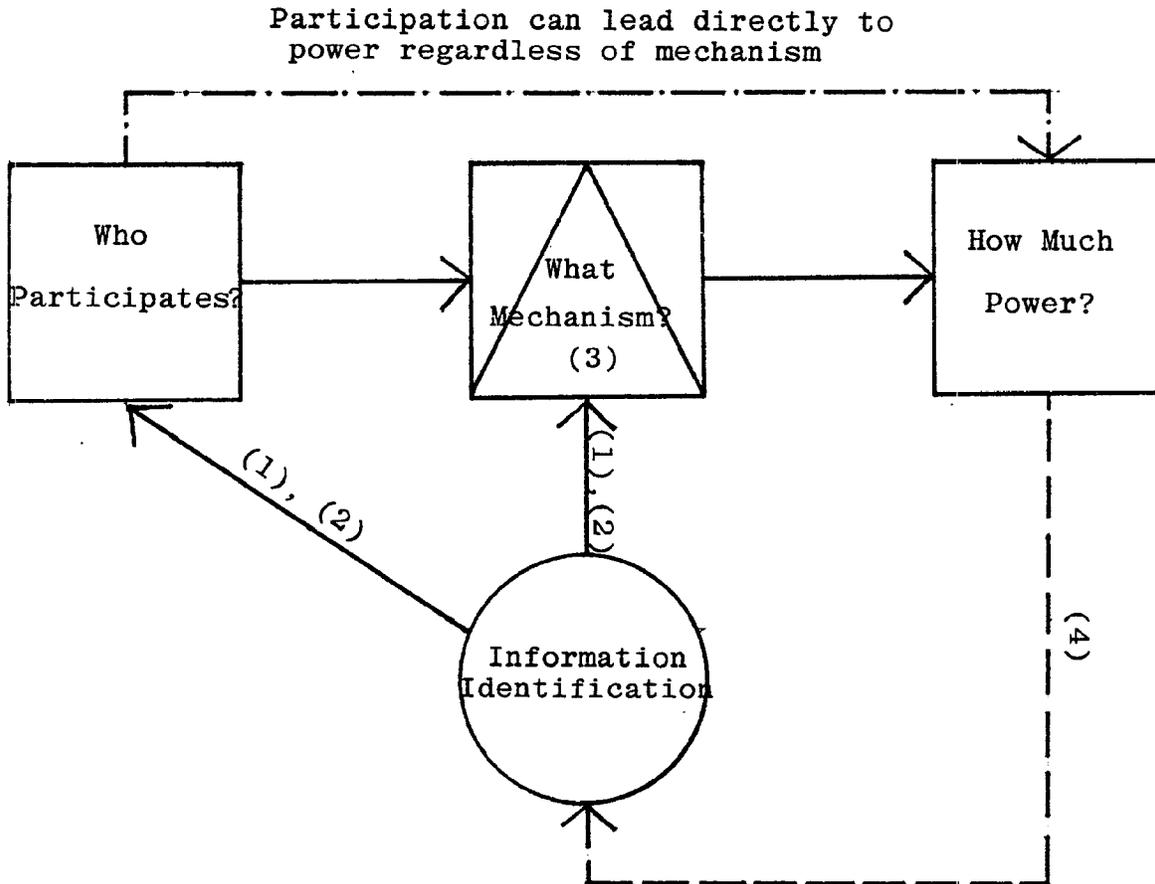
The question of power, or deciding whose resources are to be recognized and to what degree, is a central problem throughout the citizen involvement program. Those affected by the proposed project tend to want as much power as possible; that is, once they understand the project's ramifications and potential impacts upon them, then they would like to have the ultimate decision-making authority. Planners, on the other hand, tend to want to give citizen groups as little power as possible. They sometimes feel that they have the expertise necessary to be able to decide what is best for the public interest. In such a stalemate situation it may be wise that representatives from the general public act as arbiters. The general public includes those indirectly affected by a project; it does not include so amorphous a group as all the voters of a state. For example, if the proposed project is a new highway that will cut through a settled neighborhood, then the residents of the area who feel the direct impact through relocation, noise and threat to safety are considered the directly affected public; those who are likely to use the highway are considered the general public. Thus, when the general public is included the participation question raises its head again.

Even if the general public is seen as arbiters, are they to exercise an amount of power equal to that exercised by the affected public? The question is one of social equity. For the general public the benefits of a project may be only slightly greater than the costs. For the affected public the costs usually are much greater than the benefits. Under such circumstances it would be inequitable for the principle of "one man, one vote" to be operative since the more advantaged and larger general public will outvote the more disadvantaged affected public. Whatever the voting principle--"one man, one vote" which is central to democratic theory, or some other procedure in which votes are weighted by impact--strict measures of accountability (component four) become necessary. The citizen needs to know not only what the final decision is, but what specific impact he/she has had on the decision-making process. In the true sense of the concept, citizen participation has to do with the involvement of citizens in the making of decisions about activities that affect their lives.

Figure 7.1 summarizes the discussion. The three boxes in the diagram correspond to the basic policy questions. The citizen involvement process begins by, first, informing the public about the proposed project (component one) and, second, identifying the affected publics (component two).

FIGURE 7.1

CITIZEN INVOLVEMENT PROCESS



- Motivating Variable
- △ Intervening Variable
- Basic Policy Question

Components of a Citizen Involvement Program

- (1) = Information
- (2) = Identification
- (3) = Mechanism
- (4) = Accountability

Source: Authors.

The effect of these two components is to generate interest in the proposed project, so that citizens will want to get involved and express their preferences. Who these citizens are (i.e., who participates) depends on the effectiveness of components one and two. These components are a continuous part of the process which in turn increase the degree of participation.

Once a certain amount of interest in the proposed project has been generated among the citizens, it becomes necessary to structure that interest in some meaningful way. Thus, the third component of the process, creating mechanisms for citizen input, becomes important. Mechanisms determine to a large extent if the groups are to have adequate access to and impact on the decision-making process. Some mechanisms, such as small group workshops, enhance participation, while others, such as public hearings, diminish participation. If the mechanism is determined after participation begins, the participating groups will likely attempt to shape the mechanism. If the mechanism is determined by the planners before, during, or after identification, the groups who subsequently participate may attempt to reshape the mechanism. Planners should not hope to mold the mechanism singularly if the participation process is to be seen as legitimate by the groups.

The mechanism may be the intervening variable between power and participation. The mechanism chosen can either increase or decrease the power of a particular group. For example, providing traditionally inarticulate groups with advocate planners increases their ability to express preferences and formulate options. In the process the groups become more effective participants. They become more powerful to the extent that it becomes difficult to discount their input in the decision-making. Under these circumstances it becomes more likely that the final decision will be compatible with their preferences. On the other hand, when groups that are traditionally a part of the established order have to share their input with less established groups, it works to decrease the power of the more established groups. Having citizen participation also means that the power of the planning agency to make decisions is decreased--the agency must be willing to make concessions on the basis of new input. Therefore, it is possible for the mechanism to act as a power equalizer.

The more one participates, the more power one gets. This is true regardless of the mechanism, which is what the dot-dash line in Figure 7.1 indicates. For instance, if a person conscientiously participates in public hearings (a weak mechanism), he/she is likely nonetheless to increase in power because of the information and skills learned. Even a situation in which no participation is envisioned by the planners, a person who interjects himself/herself into the planning process is likely to gain power--the interest shown increases the chances of his/her preferences being adopted. The less one participates, the more likely it is that others will make the decision that affects him/her. In a participant environment, all the decisions that are being made are open to public scrutiny, with the institutional practices and underlying social and political values fully understood by all the actors (see Bachrach and Baratz, 1962: 948-49). One way for citizens to determine the amount of power they have exercised in the decision-making process is through the accountability procedures available to them. Component four of the process allows citizens to know how and why the final decision was made, as well as to seek a remedy if the decision does not meet their approval.

The process has a feedback mechanism in the sense that the more power one has, the more one participates. Traditionally, the participants in decision-making are those from the established power elite. The reason for structuring citizen involvement programs is to make it possible for those whose lives are affected by decisions to have input in the making of those decisions. In the process they become more effective members of the community.

Incorporating citizen input into the planning process serves several other basic functions. First, it enhances the rationality of the process by gathering systematically the viewpoints of a large and diverse number of persons, many of whom will be affected directly by the proposed project. Secondly, it lessens the distance between citizens and their government, thus increasing citizens' trust in government. When there is greater trust and understanding, citizens are less likely to become militant and contest every decision made by government. Citizen participation efforts are often charged with being costly and time-consuming. What fails to be seen, however, are the even greater resources spent by government agents when they work against the wishes of citizens and find their agencies facing lawsuits, hostile clients, or an

apathetic citizenry. As stated above, many of the citizen involvement mechanisms can be adopted by government agencies using limited funds and a small staff. Finally, citizen involvement programs enhance the well-being of the citizen, for it encourages feelings of political efficacy and self-esteem and teaches political skills.

APPENDIX 7.1

LOUISIANA COASTAL COMMISSION MEMBERS - 1976

Governor's Appointees

<u>Name and Address</u>	<u>Parish</u>	<u>Representing</u>
Everett Berry 4312 Cantrelle Drive Berwick, LA 70342	St. Mary	Sport fishing, hunting and recreation
Leland Bowman S.B.A. Shipyards P.O. Box 1311 Jennings, LA 70546 (318) 824-1519	Jefferson Davis	Ports, shipping, and transportation
Charles Broussard Flying J. Ranch Kaplan, LA 70548 (318) 642-5287	Vermilion	Agriculture and forestry
Dr. C. R. Brownell, Mayor City Hall Morgan City, LA 70380 (504) 385-1770	St. Mary	Municipalities
Vernon Langlinais Morton Chemical Company Weeks Island Plant P.O. Box 280 New Iberia, LA 70560 (318) 365-3453	Iberia	Producers of solid minerals
Robert Liles, Jr. 1240 Seville New Orleans, LA 70122 (504) 288-9222	Orleans	Oil and Gas
Mrs. Bethlyn McCloskey 5113 Bissonet Metairie, LA 70003 (504) 887-2554 (home)	Jefferson	Nature preservation and environmental protection

APPENDIX 7.1 CONTINUED

Governor's Appointees

<u>Name and Address</u>	<u>Parish</u>	<u>Representing</u>
William Manning Louisiana Land & Exploration Co. P.O. Box 60350 New Orleans, LA 70160 (504) 525-7500	Orleans	Coastal landowners
O. V. (Sonny) Moss Delcambre, LA 70528 (318) 685-2573	Iberia	Commercial fishing and trapping
William Clifford Smith P.O. Box 2266 Houma, LA 70361 (504) 868-1050	Terrebonne	Industrial develop- ment
J. Burton Angelle, Director Louisiana Wildlife and Fisheries Commission 400 Royal Street New Orleans, LA 70130 (504) 527-5126		

Parish Representatives

Alternate

<u>Name and Address</u>	<u>Parish</u>	
Ernest Meyers Rt. 1, Box 179 Lake Arthur, LA 70549 (318) 774-2742	Cameron	
Clifton Aucoin 212 Parkview Drive New Iberia, LA 70560 (318) 365-3028	Iberia	Elverse Trahan P.O. Box 35 Avery Island, LA 70513 (318) 364-8851
Doug Allen 4909 Henican Place Metairie, LA 70003 (504) 367-6611 (office) 834-7700 (E. Bank office)	Jefferson	Lloyd F. Giardina 81 Derbes Drive Gretna, LA (504) 367-0968

APPENDIX 7.1 CONTINUED

<u>Parish Representatives</u>		<u>Alternate</u>
<u>Name and Address</u>	<u>Parish</u>	
Octave Bruce, Jr. P.O. Box 426 Cut Off, LA 70345 (504) 798-2175	Lafourche	Irving E. Legendre, Jr. P.O. Box 551 Thibodaux, LA 70301 (504) 447-3210
Harold Katner Room 9 W City Hall New Orleans, LA 70112 (504) 586-4751	Orleans	Randolph Clement Same
Chalin O. Perez Braithwait, LA 70040 (504) 682-3343	Plaquemines	Michael E. Kirby P.O. Box 5 Port Sulphur, LA 70083 (504) 333-4343 Ext. 248
R. J. Bergeron, Jr. Box 38 St. Bernard, LA 70085 (504) 682-5034	St. Bernard	Henry J. Rodriquez, Jr. P.O. Box 316 St. Bernard, LA 70085 (504) 682-0776
Gregory Hamer 1620 Parlange Place Morgan City, LA 70380 (504) 384-4411	St. Mary	Ned Russo 1202 Second St. Morgan City, LA 70380 (504) 384-8446
Ken Watkins 100 General Lee Houma, LA 70360 (504) 868-2333 (Office) 868-4926 (Home)	Terrebonne	E. P. "Bubba" Lyons 108 Jane Street Houma, LA 70360 (504) 872-2937
Ray Morvant P.O. Box 331 Kaplan, LA 70548 (318) 643-8900 (Office) 643-8992 (Home)	Vermilion	N. R. Broussard Rt. 3, Box 166 Abbeville, LA 70310 (318) 893-5303 or 893-4518

APPENDIX 7.2

CATEGORIES FOR CZM LOCAL ADVISORY COMMITTEES

Except for state agencies, persons should be domiciled in the parish. State agency appointees should be locally based whenever possible.

1. Oil-Gas Industry
2. Agriculture & Forestry
3. Fishing & Trapping, Commercial
4. Sport Fishing, Hunting & Recreation
5. Ports & Shipping
6. Nature Preservation-Environmental Protection
7. Landowners
8. Municipalities
9. Solid Minerals
10. Industrial Development
11. Police Jury Member(s)
12. La. Department of Public Works
13. Agriculture Extension Agent
14. Wildlife and Fisheries
15. La. Conservation Department
16. State Health Department
17. State Recreation Department
18. Tourism Commission
19. Fish or Shellfish Processors
20. Parish Coastal Zone Management Agency
21. La. Forest Commission

APPENDIX 7.3

CITIZEN INVOLVEMENT PROGRAM

KEEPING PUBLIC INFORMED

Important Points to Remember

- (1) Maintain an on-going flow of information throughout the planning process, using a variety of techniques.
- (2) Provide citizens with ample notice of hearings, meetings, and pending decisions.
- (3) Use clear-cut, nontechnical language.
- (4) Present information in a variety of formats suitable for different levels of sophistication.
- (5) Distribute information systematically to all interested and affected groups.

Mechanisms

Speakers' bureaus

Brochures, newsletters, fliers

Community resources (e.g., schools, organizations, unions, etc.)

Media coverage (including advertisements, news reports, feature articles, documentaries, talk shows, etc.)

Special TV programming held in conjunction with small group meetings

Specially designed curriculum in workbook style

Registry of interested individuals and groups

Mass mailings combined with public information meetings

Permanent information center

APPENDIX 7.3 CONTINUED

IDENTIFYING AFFECTED PUBLICS

Important Points to Remember

- (1) Determine criteria for identifying affected publics.
- (2) Separate citizens into identifiable publics on the basis of location, interest and/or social characteristics.
- (3) Use a variety of methods in identifying the publics.
- (4) Learn about the characteristics and concerns of the identified groups (general objectives, potential impacts, intensity of impacts).
- (5) Create a process for continuous identification of publics.

Mechanisms

Self-Identification

media coverage, voluntary associations, interest groups, etc.

Third-Party Identification

opinion leaders, voluntary associations, etc.

Staff Identification

lists of organized groups

census data and other statistical information

field interviews

analysis of comparable plans, programs and reports, etc.

Brainstorming Sessions

APPENDIX 7.3 CONTINUED

ELICITING CITIZEN INPUT

Important Points to Remember

- (1) Choose a mechanism that is congruent with purpose, citizen group, and particular stage in the planning process.
- (2) Stress interaction and feedback between planner and citizen groups.
- (3) Encourage representation of the full range of community interests and viewpoints.
- (4) Avoid manipulation of citizen groups by planning/government staff.
- (5) When possible, use techniques that systematically analyze citizen viewpoints (i.e., that provide for a clear ranking of priorities and preferences).
- (6) Encourage a wide range of policy options and gradually narrow them down to those that are popular and legally and technically feasible.

Mechanisms

Hearings and other large public meetings

Small group meetings

Workshops (using various techniques such as structured brainstorming, nominal group process, Delphi, "Charette")

Public opinion surveys (telephone, in-person, mail)

Workbooks

Citizen advisory groups (elected on neighborhood basis, nomination process)

Citizen review boards

Gaming and simulation

Subsidized alternative plans (including the use of advocacy planning centers, where necessary)

Grievance boards

Administrative decentralization (e.g., little city halls, field offices, etc.)

APPENDIX 7.3 CONTINUED

ACCOUNTING FOR GOVERNMENT DECISIONS

Important Points to Remember

- (1) Ensure that the public understands the final policy decision.
- (2) Provide an official explanation of the policy decision to every active participant.
- (3) Explain to the public how citizen input was incorporated in making the final decision.
- (4) Keep an accurate record of citizen participation proceedings.
- (5) Provide opportunities for citizens to appeal or reconsider decisions felt to be unfair.

Mechanisms

Records and transcripts accessible to public (e.g., deposited in public libraries, agency library, etc.)

Final plan distributed to "interested" parties

"Mark-up" sessions (to finalize and explain plan)

Official responses to active participants (individual responses or report summarizing changes in preliminary report made in response to citizen input)

Legislative/executive review

Internal review (using ombudsmen, citizen advocates, etc.)

Citizen-initiated referenda

Judicial review (citizen access to courts)

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