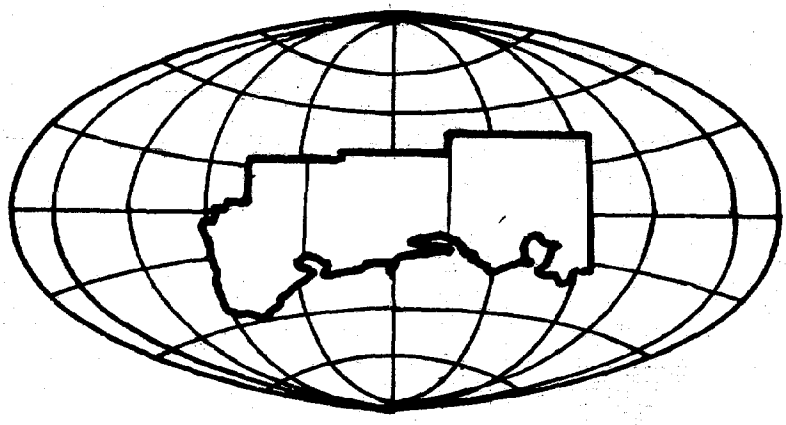
PARAMETRIC OVERVIEW OF

Land Use and Socio-Economic Activities

PREPARED FOR

MISSISSIPPI MARINE RESOURCES COUNCIL

BY



GULF REGIONAL PLANNING COMMISSION

PARAMETRIC OVERVIEW OF

LAND USE AND SOCIO-ECONOMIC ACTIVITIES

Hancock, Harrison, Jackson, and Pearl River Counties, Mississippi

by

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1976

Prepared for

MISSISSIPPI MARINE RESOURCES COUNCIL

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Long Beach, Mississippi

FOREWORD

This document constitutes the final report on the Socio-Economic Land Use Mapping Project prepared for the Mississippi Marine Resources Council by the Gulf Regional Planning Commission. The work was performed under the general supervision of Mr. Ned J. Boudreaux, Executive Director, and Mr. A. Paul Desmarais, Deputy Director.

Appreciation is expressed to the many state and local agencies for their assistance through the provision of technical and detailed information. These include the Port and Harbor Commissions and Industrial Development Commissions of Hancock, Harrison and Jackson Counties, the Jackson County Planning Commission, the Mississippi Power Company, the Mississippi Research and Development Center, the United States Geological Survey, the State Department of Education, and numerous personnel in municipal and county offices throughout the study area.

Acknowledgment is hereby given the Mississippi Marine Resources Council and its staff. Special appreciation is expressed to Mr. Jerry Mitchell, Coastal Zone Management Coordinator for MMRC for his assistance in the culmination of this work.

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INTRODUCTION

The development of a coastal zone management plan, as with all other planning processes, must first begin with an inventory of those assets within a given area. The purpose of this report, therefore, is to serve as a supplement to a land use mapping project prepared by the Gulf Regional Planning Commission for the Mississippi Marine Resources Council.

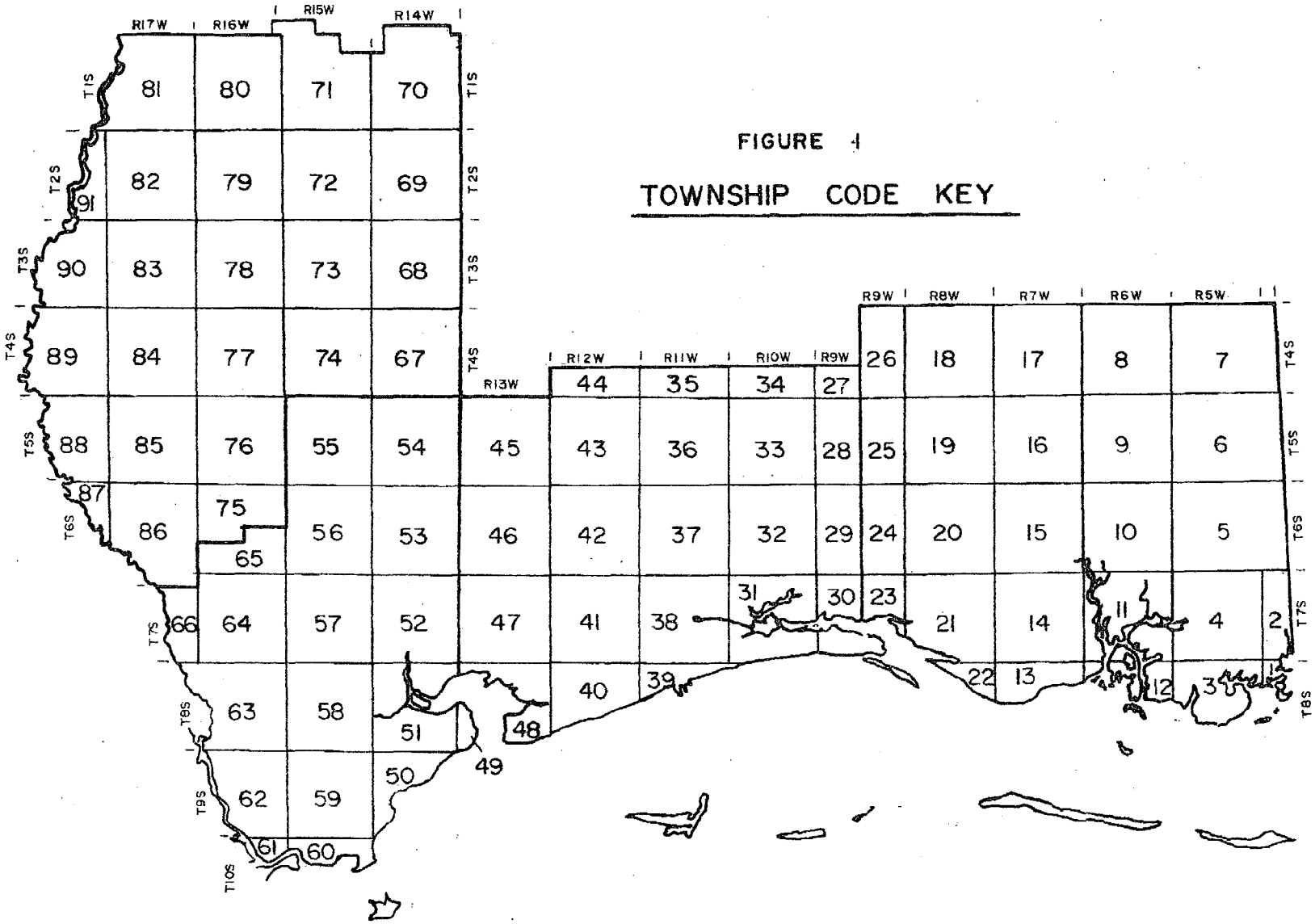
Existing land uses within the boundaries of Hancock, Harrison, Jackson, and Pearl River Counties, Mississippi, have been inventoried and the data stored for analytical purposes. The primary purpose of work to be performed under this contract is that of land use mapping. Specific mapping elements addressed include 1) existing land uses, 2) future land uses, 3) Federal and State owned lands and 4) distribution of existing and future housing and population.

Supporting data in the form of texts and tabulations are included herein to further explain and identify existing and future land use trends in the study area. Specific elements addressed in this text include areawide water supply, sanitary sewerage and solid waste disposal, industrial land uses, archaeological and historical sites of critical concern, an inventory of Federal and State owned lands, transportation, housing and population, general land uses and the mapping process, recreation and open space, and energy generation and transmission.

The land use mapping process was performed on 5 mill clear mylar overlays over 5 mill mylar base maps at a scale of 1:24000 or 1 inch equals 2000 feet. As illustrated by Figure 1, there are 91 base maps covering the four counties in the study area, with four overlays for each base map addressing the four land use mapping elements previously mentioned. Overlays have been color coded and they are further explained in this text to highlight various land use components. Since the project involved the

FIGURE 1

TOWNSHIP CODE KEY



preparation of 455 maps measuring 24" x 32", a sample township was selected, reduced and included with this report to assist in explaining the mapping process.

It was beyond the scope of the program to provide an analytical computerized model to either evaluate existing land use arrays or to predict changes in the future. But by being aware of these possibilities in the near future, the mapping process undertaken in this study was conducted to allow ultimate direct encoding of the data on to magnetic (computer) tape with minimum effort.

To facilitate the comprehension of the material involved, the data are presented by ten individual Tasks as follows:

TASK I - Areawide Water Supply, Sanitary Sewerage, & Solid Waste Disposal,

TASK II - Industrial Parks and Individual Sites,

TASK III - Archaeological and Historical Sites,

TASK IV - Regional and Local Coordination,

TASK V - Federal and State Land Ownership,

TASK VI - Transportation,

TASK VII - Housing and Population,

TASK VIII - Land Use and the Mapping Process,

TASK IX - Parks and Recreation, and

TASK X - Electrical Energy Transmission

TASK I

AREAWIDE WATER SUPPLY, SANITARY SEWERAGE, AND SOLID WASTE DISPOSAL

Because human health and well-being is so dependant on its water supply, proper disposal of sanitary sewerage, and solid waste management, these elements of regional land use must be carefully examined. In order to do this an Urban Systems Engineering Study (USE) was conducted for the Gulf Regional Planning Commission in 1972. The USE study, along with updated and standardized data, serves as a basis for the following text and tabulations. It must be understood, though, that as water, sewerage, and solid waste are individually discussed, they are only generally examined. More in-depth data can be obtained from the USE study or other sources.

Water Supply

Water demands have been increasing more rapidly than the population. It cannot be assumed, though, that such increases can continue indefintely. Available supplies of good quality water are decreasing nationwide, and since ultimate supply is more or less fixed, more efficient use of existing waters is eminent. Many areas throughout the nation are experiencing serious water shortages, but Mississippi is one of the few remaining states having large potential supplies to offer the planner, developer, and manager of water resources.

Mississippi is endowed with abundant water resources which have, for the most part, been only partially developed. Except for the Mississippi River, which passes along the west boundary of the region with a minimum discharge of 99,900 cfs (observed on September 3, 1963, at Natchez, Mississippi) very little surface water is received from outside the State. Groundwater replenishment occurs primarily from rainfall. Mean annual runoff exceeds 15 inches throughout the State while runoff in the Gulf Coast Region ranges from 24 to 32 inches annually.

In order to address water needs and supply, data collection and mapping were restricted to existing water wells and storage facilities, and existing and forecasted water demands. Each are addressed as follows:

Wells: Collection and mapping of water well data was restricted to wells with pump rates of 350 gallons per minute or greater. Such restrictions are necessary to the mapping process due to the fact that approximately 5,000 wells are identified by the United States Geological Survey (USGS) in Harrison and Jackson Counties alone. Mapping of all wells under these circumstances would be a monumental task, even at the map scale being used, and provide limited significant data.

Of an estimated seven to eight thousand wells located throughout the four county study area, only 159 wells are mapped and identified. These constitute major wells being used by various political jurisdictions, individual residential developments, industrial sites and military installations.

Table I-1 contains identification of each well by owner and corresponding map codes on the existing land use overlays. Also shown are USGS identification codes, pump rates and related water well uses. Water uses are identified in Table I-2. Water well locations are generally located on Figure I-1, and as can be seen, most are situated within the urban strip along the coast.

FIGURE I - 1

GENERAL LOCATION OF WATER WELLS AND STORAGE TANKS, SOLID WASTE DISPOSAL SITES, AND SANITARY SEWERAGE PLANTS

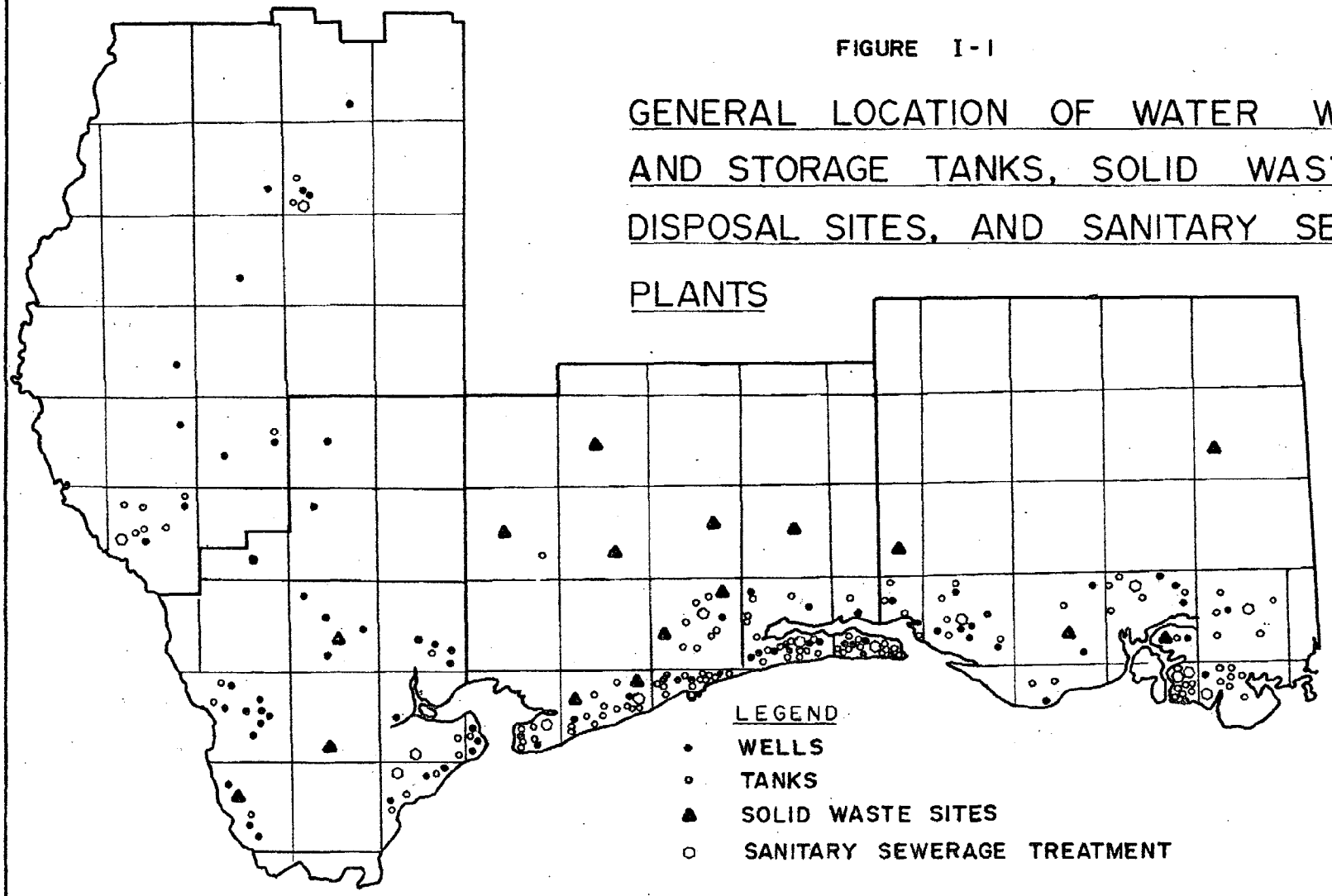


TABLE I-1

REGIONAL WATER WELL DATA

Map Code	Well No.	USGS Code	Owner	Pump Rate GPM	Water Use
HANCOCK COUNTY					
65	1	C 067	Eunice Mariana	700	H
63	2	H 003	NASA MTF	2487	P
63	3	H 004	NASA MTF	3550	Z
63	4	H 005	NASA MTF	1089	P
63	5	H 006	NASA MTF	4900	Z
63	6	H 007	NASA MTF	1254	P
63	7	H 008	NASA MTF	5000	N
63	8	H 010	NASA MTF	1100	P
63	9	H 014	NASA MTF	510	U
62	10	L 001	Hancock County Port & Harbor	1787	N
62	11	L 069	Seashore Utility Co.	888	P
62	12	L 094	W. A. Waters	487	H
55	13	A 034	A. F. Leruth	360	H
56	14	C 063	Henry Babcock	650	H
57	15	F 028	Marson	400	H
57	16	F 031	Hancock Fish Farm	1200	N
57	17	F 041	Johnny Luciux	400	H
57	18	F 047	Earl R. Lelorene	2400	H
52	19	G 013	J. S. Ware	400	H
52	20	G 043	Diamondhead Inc.	750	I
52	21	G 048	Diamondhead Inc.	750	P
52	22	G 068	Diamondhead Inc.	1100	P
51	23	K 183	Floyd Bush	1200	P
50	24	K 002	Waveland	743	P
50	25	K 067	Waveland	400	P
50	26	K 071	Clermont Harbor	500	P
49	27	K 006	Bay St. Louis	750	P
49	28	K 007	Bay St. Louis	400	P
49	29	K 040	Bay St. Louis	550	P
HARRISON COUNTY					
46	30	E 045	Lily Saucier	600	H
48	31	N 005	Pine Point	350	P
48	32	N 191	Pass Christian	600	P
48	33	N 194	Pass Christian Isles	500	H
48	34	N 196	Herbernia Bank	500	H
48	35	N 198	Pass Christian	350	P
42	36	F 066	J. W. Ferguson	600	H
40	37	N 003	Pass Christian	400	P
40	38	O 001	Long Beach	586	P
40	39	O 006	Pass Christian	356	P
40	40	O 123	Long Beach	750	P
40	41	O 162	Coast Waterworks	350	P
40	42	O 166	Long Beach	600	N
40	43	O 169	Long Beach	600	P
40	44	O 172	Long Beach	385	P
40	45	O 174	Long Beach	600	P
40	46	O 175	Long Beach	350	P
40	47	O 182	M. J. Espey	400	H
40	48	O 187	Pass Christian	500	U
38	49	L 006	Phillips Company	350	N
38	50	L 014	Gulfport	965	P
38	51	L 016	Gulfport	975	P
38	52	L 034	National Tank	602	N
38	53	L 084	Gulfport Airport	860	P
38	54	L 214	Jessie Williams	600	H
38	55	L 330	Loren D. Heights	350	P
39	56	L 002	Gulfport	1100	P
39	57	L 015	Gulfport	960	P
39	58	L 017	Gulfport	500	P
39	59	L 141	V. A. Hospital	533	T
39	60	L 146	Roy L. Stewart	360	P
39	61	L 147	Gulfport	665	P
39	62	L 149	Gulfport	710	P
39	63	L 150	Gulfport	400	U
39	64	L 152	Gulfport	450	U
39	65	L 160	U. S. Navy	822	T
39	66	L 161	U. S. Navy	526	T
39	67	L 162	U. S. Navy	500	T
39	68	L 175	Gulfport Port Authority	350	F
31	69	M 005	Biloxi	1000	P
31	70	M 023	Mississippi Power Company	350	N
31	71	M 026	Harrison County	500	N
31	72	M 033	Coast Water Works	475	P
31	73	M 040	Coast Water Works	350	P
31	74	M 049	Reichhold Chemical	527	N
31	75	M 101	U. S. Air Force	500	T
31	76	M 149	Gulf Homes Water Company	350	P
31	77	M 248	Broadwater Co.	800	T
31	78	M 249	Broadwater Co.	800	T
31	79	M 288	Mississippi Power Company	934	I
31	80	M 329	Beauvoir Shrine	400	C
31	81	M 397	Gulf Homes Water Company	500	P
31	82	M 529	Coast Water Works	350	N
31	83	M 544	Biloxi	500	P
31	84	M 576	Biloxi	900	P
30	85	M 002	Biloxi	1600	P
30	86	M 004	Biloxi	450	P
30	87	M 006	Biloxi	550	P
30	88	M 064	U. S. Air Force	620	T
30	89	M 065	U. S. Air Force	605	T
30	90	M 066	U. S. Air Force	615	T
30	91	M 067	U. S. Air Force	650	T
30	92	M 068	U.S. Air Force	560	T
HARRISON COUNTY continued					
30	93	M 075	U. S. Air Force	700	T
30	94	M 076	U. S. Air Force	740	T
30	95	M 077	U. S. Air Force	750	T
30	96	M 078	U. S. Air Force	720	T
30	97	M 079	U. S. Air Force	800	T
30	98	M 082	U. S. Air Force	1016	T
30	99	M 115	Biloxi	900	P
30	100	M 120	Biloxi	686	U
30	101	M 121	Biloxi	650	U
30	102	M 126	Capt. Desport	360	P
30	103	M 132	Mavar Fish Co.	350	N
30	104	M 147	Mavar Packing	950	N
30	105	M 354	Biloxi Canning	500	N
30	106	M 408	Westwick Utilities	760	P
30	107	M 493	DeJean Packing	500	N
30	108	M 550	Biloxi	700	P
JACKSON COUNTY					
23	109	N 029	Gulf Hills Development	350	H
23	110	N 250	Pat Anglada	750	H
23	111	N 355	Bay Water Works	350	P
21	112	N 052	Ocean Springs	350	P
21	113	N 053	Ocean Springs	630	P
23	114	N 159	Ocean Springs	400	P
21	115	N 278	Suburban Utility Company	400	P
21	116	N 279	Suburban Utility Company	420	P
21	117	N 425	Gulf Park Estates	350	P
14	118	O 139	Albert Holly	350	H
13	119	O 197	Saint Andrews	377	T
13	120	O 213	Saint Andrews	350	P
11	121	P 054	Moss Point	455	P
11	122	P 229	Moss Point	600	P
11	123	P 301	Gulf City Fisheries	370	N
11	124	P 345	Martin Bluff Water Association	500	P
11	125	P 355	Moss Point	700	P
11	126	Q 293	Pascagoula	550	P
12	127	P 108	Jackson County Port Authority	750	N
12	128	P 114	Quaker Oats Company	372	N
12	129	P 115	Quaker Oats Company	674	N
12	130	P 124	Pascagoula	873	P
12	131	P 131	Ingalls Shipbuilding	1200	N
12	132	P 138	Pascagoula	400	U
12	133	P 145	Ingalls Shipbuilding	1750	N
12	134	P 150	Pascagoula	840	P
12	135	P 291	Ingalls Shipyard	670	C
12	136	P 293	Ingalls Shipyard	682	N
12	137	P 348	Ingalls Corporation	1000	C
12	138	P 349	Ingalls Shipyard	670	N
4	139	P 261	Moss Point	577	P
4	140	Q 017	Thiokol Corporation	400	N
4	141	Q 028	International Paper	458	N
4	142	Q 057	Moss Point	500	P
4	143	Q 166	Moss Point	400	P
3	144	Q 108	Coastal Chemical Company	450	N
3	145	Q 110	Coastal Chemical Company	494	N
3	146	Q 111	Coastal Chemical Company	450	N
3	147	Q 123	Coastal Chemical Company	400	N
3	148	Q 124	Coastal Chemical Company	400	N
3	149	Q 135	Standard Oil Company	602	N
3	150	Q 137	Standard Oil Company	602	N
PEARL RIVER COUNTY					
86	151	W 002	Picayune	1000	P
86	152	W 003	Picayune	750	P
86	153	W 004	Picayune	836	P
86	154	W 011	Picayune	1000	P
86	155	W 022	Crosby Chemical Company	1000	N
86	156	W 041	General Box	584	N
76	157	V 094	Center Water Association	354	P
72	158	G 009	Poplarville	500	P
72	159	G 032	Poplarville	500	P

SOURCE: United States Geological Survey Office, Jackson, Miss., 1975; and selected USGS Publications.

TABLE I-2

WATER WELL USE

Symbol	Water Use
C	Commercial
F	Fire Protection
H	Domestic
I	Irrigation
N	Industrial
P	Public Supply
T	Institutional
U	Unused
Z	Other

SOURCE: United State Geological Survey Office, Jackson, Miss., 1975; and selected USGS Publications.

Storage: Water storage is accomplished through ground storage facilities with associated pumping equipment or by the use of elevated tanks. Water is stored primarily to equalize water pressure during peak demand and for reserves when well supply is not sufficient to meet demands.

Storage facilities are identified in Table I-3. Tank numbers correspond to numbers located on existing land use overlays. This tabulation has been prepared in order to identify tanks by location, owner and capacity. There are 71 storage facilities in the region and 33 (or 46 percent) of these facilities are classified as ground storage.

Water Demands and Forecasts: Maximum daily demands for water are computed on the basis of standard requirements and known populations. Water demands for maximum daily use and for fire protection requirements have been computed on a basis fo 250 gallons per person. Actual needs may vary with municipality.

TABLE I-3

REGIONAL WATER STORAGE TANK DATA

Map Code	Tank No.	Owner	Storage (000 gals.) Ground	Elevated
HANCOCK COUNTY				
63	1	NASA		300
63	2	NASA		300
62	3	Seashore Utility	10	
52	4	Diamondhead Utility		500
51	5	Bay St. Louis		250
51	6	Bay St. Louis		250
50	7	Clermont Harbor	18	
50	8	Clermont Harbor	18	
50	9	Waveland		55
49	10	Hancock General Hospital		100
HARRISON COUNTY				
48	11	Pass Christian Isles	10	
48	12	Pass Christian	100	50
40	13	Pass Christian		200
40	14	Long Beach		500
36	15	Saucier	55	
38	16	North Gulfport Waterworks	30	
38	17	Gulfport	500	500
39	18	U. S. Naval Base	63	
39	19	U. S. Naval Base	63	
39	20	U. S. Naval Base	64	
39	21	Gulfport		1,000
39	22	Veterans Hospital		200
31	23	Oakleigh Utility	9	
31	24	Coast Water Works		250
31	25	Coast Water Works	25	
31	26	Coast Water Works	25	
31	27	College Park	6	
31	28	College Park	6	
31	29	College Park	6	
31	30	College Park	5	
31	31	Keesler AFB		800
30	32	Keesler AFB		800
30	33	Keesler AFB		800
30	34	Keesler AFB		800
30	35	Keesler AFB		800
30	36	Biloxi	480	
30	37	Biloxi	500	
30	38	Forest Cove	20	20

Map Code	Tank No.	Owner	Storage (000 gals.) Ground	Elevated
JACKSON COUNTY				
21	39	Ocean Springs		250
21	40	Ocean Springs	2.2	
21	41	Ocean Springs		500
21	42	Ocean Springs		25
21	43	Ocean Springs		100
21	44	Gulf Coast Research Lab	25	
21	45	Gulf Park Estates	10	
21	46	Suburban Utility	26	
23	47	Bay Waterworks	25	
13	48	St. Andrews		100
14	49	Martin Bluff		75
14	50	Gulf Coast Jr. College	5	
10	51	Escatawpa		250
11	52	Escatawpa	500	250
11	53	Moss Point		100
11	54	Moss Point	2,000	
11	55	Moss Point		500
4	56	Moss Point		100
12	57	Pascagoula		350
12	58	Pascagoula		150
12	59	Pascagoula		100
3	60	Pascagoula	1,000	500
PEARL RIVER COUNTY				
71	61	Lake Hillsdale		500
72	62	Poplarville	37	85
72	63	Poplarville		260
79	64	Pearl River Jr. College		75
78	65	Derby	4.5	
76	66	Hide-Away Lake	10	
76	67	Center Water Assn.		50
84	68	Pearl River Central		75
85	69	Pearl River Central		75
86	70	Picayune		275
86	71	Picayune		125

SOURCE: U.S.G.S. Public & Industrial Water Supplies in Southern Miss. 1974. Bulletin No. 75-2, U.S.G.S. in cooperation with the Miss. Board of Water Commissioners.

Existing municipal demands and forecasts to year 2000 are shown in Table I-4. Daily demands range from 58,000 gallons per day for Poplarville (based on 1972 population estimates) to 13,070,000 gallons per day for Gulfport.

Sanitary Sewerage

Sewage is defined as a combination of liquid wastes conducted away from residences, businesses, buildings and institutions along with such ground and storm water as may be present. Sewage from residences, business buildings, and institutions is referred to as domestic or sanitary sewage while sewage from industrial establishments is commonly called industrial waste. A sewerage system is a collection of sewers with all their appurtenances, combined so as to operate together and serve a certain district. Separate sewerage systems collect only domestic sewage and/or industrial wastes while combined sewerage systems also accommodate storm run-off. The mapping phase of the inventory of existing sewerage treatment facilities in the region is restricted to systems operated by the municipal governments, (refer to Figure VIII-1). Sources indicate that in addition to the 15 municipal plants listed in Table I-5, numerous small independent systems are in operation throughout the region, but only the municipal plants are included in this study. Included in Table I-5 are treatment plant numbers and corresponding map codes on the existing land use overlays. Individual plants are identified by municipality, plant capacity and discharge points. Waste water volume-to-capacity ratios shown for 1975 and 2000 indicate that currently only Pass Christian is approaching plant capacity. However, by year 2000, five of the nine municipal systems will be overloaded.

Solid Waste Disposal

The location of solid waste disposal sites are identified on existing land use overlays, (for reference see Figure VIII-1). There are 16 sites throughout the region

TABLE I - 4

MUNICIPAL WATER SUPPLY DEMANDS AND FORECASTS
GULF REGION

County	Municipal System	Maximum Daily Demand (MGD) 1975	2000
HANCOCK	Bay St. Louis	1.71	2.73
	Waveland	1.15	1.61
HARRISON	Pass Christian	1.79	2.62
	Long Beach	2.31	3.05
	Gulfport 1 /	13.07	17.04
	Biloxi 1 /	10.76	18.12
JACKSON	Ocean Springs	3.54	5.09
	Moss Point	5.00	9.34
	Pascagoula	8.47	12.89
PEARL RIVER 2 /	Picayune	2.72	----
	Poplarville	0.58	----

1 / Excludes Military Demands & Forecasts

2 / Daily Demand is based on 1972 population. Data for future demands are not available.

TABLE I - 5

MUNICIPAL SANITARY SEWAGE
VOLUMES and FORECASTS

Map Code	Plant No.	Municipality	Plant Capacity (MGD)	Discharge Point	Waste Water Volumes 1975 (MGD)	Vol./Capacity Ratio (%)	2000 (MGD)	Vol./Capacity Ratio (%)
50	1	Waveland	0.53	Edwards Bayou	0.46	87	0.64	121
51	2	Bay St. Louis	1.25	Watt's Bayou	0.69	55	1.09	87
48	3	Pass Christian	0.75	Sutter Bayou	0.71	95	1.05	140
40	4	Long Beach	1.20	Canal No. 1	0.92	77	1.22	102
38	5	Gulfport	8.25	Bernard Bayou	5.23	63	6.82	83
31	6	Biloxi	6.00	Back Bay				
30	7	Biloxi	5.00	Back Bay	4.30	39	7.25	66
21	8	Ocean Springs	2.00	Inner Harbor	1.41	71	2.04	102
11	9	Moss Point	0.50	Escatawpa River				
4	10	Moss Point	4.50	Escatawpa River	2.00	40	3.74	75
12	11	Pascagoula		Pascagoula River				
12	12	Pascagoula	4.30	Lake Ave. Lake	3.39	79	5.16	120
3	13	Pascagoula		Bayou Casotte				
72	14	Poplarville	0.35	Jump Off Creek	0.23	66	----	----
86	15	Picayune	3.00	Mill Creek	1.09	36	----	----

which may be classified as sanitary landfills. Three of these are located in Hancock County, nine are located in Harrison County and four are located in Jackson County. Landfill operations are normally performed by placing refuse in a natural or manmade trench, compacting it and then it is covered with a layer of earth and again compacted. In several instances open dumping was found within the region but because of the magnitude and low frequency of such occurrences, no effort was made to segregate these.

Solid waste volumes and forecasts are shown in Table I-6. Included are land area requirement ranges based on population. It is estimated that with current disposal methods, normal area requirements range between 1 and 2.5 acres per 10,000 population per year. Volumes, both existing and forecasts, are estimated on normal waste loads of 5.74 lbs. per person per day.

The Mississippi State Board of Health, in conjunction with the Mississippi Research and Development Center and the Gulf Regional Planning Commission are currently conducting an inventory and analysis of disposal sites within the study area. Volumes, operation and maintenance costs, and alternate methods of disposal will be evaluated in efforts to determine the feasibility of long range disposal through a central resource recovery station. Once completed, the results of this study should prove valuable in assessing present problems and addressing needs of the future.

TABLE I-6

SOLID WASTE DISPOSAL VOLUMES AND FORECAST

Area	1975 Population	1975 Solid Waste Lbs./Day	1975 Solid Waste Tons/Year	1975 Land Area Requirements 2/ Range (Acres/Yr.)	2000 Population	2000 Solid Waste Lbs./Day	2000 Solid Waste Tons/Year	2000 Land Area Requirements 2/ Range (Acres/Yr.)
MISSISSIPPI GULF REGION 1/								
Total Population	313,605	1,800,150	328,526	31.4 - 78.8	490,092	2,813,100	513,390	48.8 - 122.2
Urban Population	204,870	1,176,000	214,618	20.5 - 51.5	303,587	1,742,550	318,014	30.2 - 75.6
Rural Population	108,735	624,150	113,908	10.9 - 27.3	186,505	1,070,550	195,376	18.6 - 46.6
HANCOCK COUNTY								
Bay St. Louis	6,854	39,350	7,181	0.7 - 1.8	10,899	62,550	11,415	1.1 - 2.8
Waveland	4,614	26,500	4,836	0.5 - 1.3	6,438	36,950	6,743	0.6 - 1.5
Rural	9,732	55,850	10,193	1.0 - 2.5	27,053	155,300	28,342	2.7 - 6.8
HARRISON COUNTY								
Pass Christian	7,149	40,050	7,492	0.7 - 1.8	10,488	60,200	10,987	1.0 - 2.5
Long Beach	9,239	53,050	9,682	0.9 - 2.3	12,204	70,050	12,784	1.2 - 3.0
Gulfport	52,291	300,150	54,777	5.2 - 13.0	68,156	391,200	71,394	6.8 - 17.0
Sea Bee Base (NCBC) 3/	1,563	8,950	1,633	0.2 - 0.5	1,563	8,950	1,633	0.2 - 0.5
Biloxi	43,025	246,950	45,068	4.3 - 10.8	72,471	416,000	75,920	7.2 - 18.0
Keesler AFB 3/	12,083	69,350	12,656	1.2 - 3.0	12,083	69,350	12,656	1.2 - 3.0
Rural	51,419	295,150	53,865	5.1 - 12.8	78,986	453,400	82,746	7.9 - 19.8
JACKSON COUNTY								
Ocean Springs	14,170	81,350	14,846	1.4 - 3.5	20,357	116,850	21,325	2.0 - 5.0
Moss Point	20,008	114,850	20,960	2.0 - 5.0	37,362	214,450	39,137	3.7 - 9.3
Pascagoula	33,874	194,450	35,487	3.4 - 8.5	51,566	296,000	54,020	5.2 - 13.0
Rural	47,584	273,150	49,850	4.8 - 12.0	80,466	461,850	84,288	8.0 - 20.0
PEARL RIVER COUNTY 4/								
Picayune	10,889	62,500	11,406	1.1 - 2.8				
Poplarville	2,317	13,300	2,427	0.2 - 0.5				
Rural	17,026	97,750	17,839	1.7 - 4.3				

1/ Excludes Pearl River County

2/ Normal Area Requirements for Sanitary Land Fill dictate that from 1 to 2.5 acres of land be available for each 10,000 persons per year. This figure is based on a compacted refuse depth of about seven feet.

3/ Includes all personnel residing in on-base housing-including group quarters, single family units, multi-family units & mobile homes. Data are accurate only at time of the study. Projected data assumes complete occupancy of total on-base housing to the year 2000.

4/ Requirements for Pearl River County based on 1972 population.

TASK II

INDUSTRIAL PARKS AND INDIVIDUAL SITES

Land use surveys conducted in 1972 by the Gulf Regional Planning Commission indicated that approximately 12,600 acres in Hancock, Harrison, Jackson and Pearl River Counties were being utilized for industrial purposes. These uses ranged from small insignificant sites such as borrow pits and automobile junk yards to major industries like the Ingalls Division of Litton Shipbuilding in Pascagoula.

It is the purpose of this section to identify and explain the delineation of major industries and industrial parks as depicted on the land use overlays. Industrial land uses were mapped in two segments covering individual industries of major significance and both existing and proposed industrial parks, (refer to Figure VIII-1).

Individual Industries

Individual Industries were mapped on existing land use overlays and numbered so as to correspond to site numbers in Tables II-1. Only the most significant sites were numbered. All industries with 50 or more employees were identified as were all industries with point sources of industrial waste discharge. Included in Table II-1 are site names, number of employees, industrial products, corresponding standard industrial classification numbers, and known points of industrial discharge. More detailed point source loadings for the Biloxi Bay watershed and the Pascagoula-Escatawpa Estuary area are contained in Tables II-2 and II-3 respectively. Similar data are not presently available for the Bay St. Louis watershed.

Industrial Parks

The term industrial parks as used in this report has two connotations - industrial parks and industrial districts. Parks may be defined as those areas legally delineated and subdivided, cleared and made void of non-conforming land uses, equipped with various

TABLE II - 1

REGIONAL INDUSTRIAL SITES

Map No.	Site No.	Site Name	No. Of Employees	Product	SIC Code	Discharge Point
		HANCOCK COUNTY				
UNINCORPORATED						
62	I- 1	J. L. Fabricating, Inc.	50	Steel Fabrication	3441	
62	I- 2	Jackson Landing Shipyard	150	Petroleum Barges	3731	
		HARRISON COUNTY				
PASS CHRISTIAN						
48	I- 3	Pass Christian Industries, Inc.	495	Ladies Jeans & Shirts	2339	
48	I- 4	Gulf Coast Pre-Stress Co., Inc.	79	Pre-stress concrete products	3272	
GULFPORT						
38	I- 5	Masonite Corp. - Alpine Division	9	Phenol Formaldehyde resin	2821	Bernard Bayou
				Phenol Formaldehyde adhesive	2891	
38	I- 6	Bayou Steel Corp.	63	Boats & Barges	3732	
				Drilling Platform Components	3533	
38	I- 7	Chattanooga Glass Company	234	Glass Bottles	3221	Brickyard Bayou
38	I- 8	Chemfax, Inc.	41	Petro. Hydrocarbon Resin	2821	Bernard Bayou
31	I- 9	Clearspan Components, Inc.	98	Wall & Roof Trusses	2452	
				Windows & Doors	2431	
38	I-10	Coast Coca-Cola Bottling Co.	56	Soft Drinks	2086	
38	I-11	Coast Materials Co.	50	Ready-Mixed Concrete	3273	
39	I-12	Colonial Baking Co.	130	Bread & Rolls	2051	
38	I-13	Conalco - Olin Corporation	168	Aluminum extrusions	3354	
38	I-14	Glenbrook Laboratories - Sterling Drugs	85	Laxatives	2834	
31	I-15	Gulf Coast Tool & Die Ltd.	100	Metal Stampings	3469	
				Custom Machine Tools	3544	
38	I-16	Gulf Paving, Inc.	125	Asphaltic Concrete	2951	
38	I-17	NATCO	231	Steel Fabrication	3443	Harrison Cty. Industrial Seaway
38	I-18	Gulfport Creosoting Co.	86	Treated Pine Poles	2491	Bernard Bayou
39	I-19	KUDA, Inc. No. 1	52	Ladies & Men's Apparel	2331	
31	I-20	Marine Systems	50	Metal Fabrication	3441	
				Wood Fabrication	2431	
39	I-21	Maybelle Dress Mfg. Co., Inc.	200	Ladies Apparel	2339	
38	I-22	PACECO	205	Heavy Steel Fabrication	3441	Harrison Cty. Industrial Seaway
				Barges & Tugboats	3731	
38	I-23	Plastifax, Inc.	24	Chlorinated Paraffin	2865	Harrison Cty. Industrial Seaway
				Metal Soaps	2869	
31	I-24	Reichhold Chemicals, Inc.	71	Hydrocarbon resins	2821	Tributary of Big Lake
				Antioxidants	2869	
31	I-25	Southern Precision Steel Co.	130	Cold-finished carbon & alloy bars	3316	Harrison Cty. Industrial Seaway
38	I-26	Struthers Wells - Gulfport, Inc.	117	Sewage treatment equipment	3443	
38	I-27	Teledyne Irby Steel	200	Pressure vessels & steel fabrication	3443	Bernard Bayou
31	I-28	McElroy Machine & Mfg. Co.	23	Marine Winches		Bernard Bayou
				Marine Propellar Shafts		
31	I-29	Miss. Power Co.-Plant Jack Watson		Electrical Generating Plant		Canal draining into Big Lake
BILOXI						
30	I-30	Barq's Bottling Co.	50	Soft Drinks	2086	
30	I-31	Biloxi Pre-Stress	47	Pre-stressed concrete products	3272	
30	I-32	Borden Company	90	Dairy Products	2026	
30	I-33	C. C. Company, Inc.	75	Canned Seafood	2091	
30	I-34	Clements Wire Mfg. Co.	51	Automotive Wire Harness	3714	
30	I-35	DeJean Packing Co., Inc.	60	Canned Seafood	2091	Mississippi Sound
				Cat Food	2047	
30	I-36	Del's Seaway Shrimp & Oyster Co.	150	Frozen Shrimp & Oysters	2092	
30	I-37	R. Fournier & Sons	40	Shrimp, Crab & Crab meat	2092	Biloxi Bay
30	I-38	C. F. Gollott & Son Seafood Co.	35	Shrimp, Crab & Crab meat	2092	Biloxi Bay
30	I-39	E. M. Gollott & Son Seafood Co.	18	Frozen Shrimp	2092	Biloxi Bay
30	I-40	Gollott & Canaan Seafood Co.	15	Frozen Crabmeat & Oysters	2092	Biloxi Bay
30	I-41	The M. H. Graham Corp.	85	Electrical Appliances	3634	
				Household Metal Products	3469	
31	I-42	Gulf Publishing Company, Inc.	270	Newspaper	2711	
30	I-43	Leckich & Feyard Seafood Co., Inc.	115	Frozen Shrimp	2092	Biloxi Bay
30	I-44	Mayar Shrimp & Oyster Co., Inc.	100	Canned Shrimp & Oysters	2091	Mississippi Sound
30	I-45	Moore Seafood Co.	55	Canned Shrimp	2091	Mississippi Sound
				Frozen Shrimp	2092	Mississippi Sound
30	I-46	Shemper Seafood Co.	75	Frozen Seafood	2092	Mississippi Sound
30	I-47	West Seafood Co.		Seafood Products	2092	Mississippi Sound
30	I-48	Kuljit's Seafood & Ice Co.		Seafood Products	2092	Mississippi Sound
30	I-49	Sea Coast Company		Seafood Products	2092	Mississippi Sound
30	I-50	Cruso Canning Company		Canned Seafood	2091	Biloxi Bay
BILOXI continued						
30	I-51	Weems Bros. Seafood Co.		Seafood Products	2092	Biloxi Bay
30	I-52	L. D. Gollott Seafood Co.		Seafood Products	2092	Biloxi Bay
30	I-53	Swarez Seafood Co.		Seafood Products	2092	Biloxi Bay
30	I-54	E. R. Gollott Seafood Co.		Seafood Products	2092	Biloxi Bay
30	I-55	Hygiene Shell Co. Seafood		Seafood Products	2092	Biloxi Bay
30	I-56	Southern Shellfish Co.		Seafood Products	2092	Biloxi Bay
30	I-57	Bayview Foods, Inc.				Biloxi Bay
30	I-58	Biloxi Canning & Packing Co., Inc.		Seafood Products	2092	Biloxi Bay
		JACKSON COUNTY				
OCEAN SPRINGS						
21	I-59	Coca Cola Bottling Co., Inc.	49	Soft Drinks	2086	
21	I-60	Ferson Optics	211	Optical Equipment	3832	
21	I-61	E. R. Moore Co.	98	Ladies Gym Suits	2339	
				Academic Gowns	2389	
21	I-62	Toche Enterprises, Inc.	82	Steel Seagoing Vessels	3732	
GAUTIER						
12	I-63	Delta Creosoting Co., Inc.	42	Creosote piling, poles, post, etc.	2491	
MOSS POINT						
11	I-64	Crossfield Products Corp.	7	Latex Industrial Flooring	2851	Discharge Point Unknown
4	I-65	The Fishmeal Co., Inc.	70	Menhaden Fish Meal	2077	Escatawpa River
4	I-66	Halter Marine Fabricators, Inc.	350	Offshore Supply Ships	3731	Escatawpa River
4	I-67	International Paper Company	1504	Paper Products	2621	Escatawpa River
11	I-68	J. M. Rogers & Sons, Inc.	82	Lumber	2426	
				Wood Pallets	2448	
4	I-69	Standard Products, Inc.	47	Fish Meal & Oil	2077	Escatawpa River
4	I-70	Thiokol Corp.	178	Polysulfide rubbers & Polyacrylates	2822	Escatawpa River
NOTE:	I-71-79	Sites 71 thru 79 were intentionally omitted because they do not meet parameters.				
4	I-80	Zapata-Haynie Products	76	Menhaden fish meal & oils	2077	Escatawpa River
4	I-81	Webb Paving		Asphalt Paving		Escatawpa River
9	I-82	Cumbest Manufacturing Co., Inc.		Lumber	2421	Escatawpa River
11	I-83	Mississippi Export Railroad				Escatawpa River
PASCAGOULA						
3	I-84	Bayou Crab Company	70	Processed Crabmeat	2091	
11	I-85	Cinderella Knitting Mills	400	Men & Boy's Knit Underwear	2322	
12	I-86	Continental Can Company, Inc.	135	Metal Bottle Caps	3466	
3	I-87	Corchem Division of Corhart Refractories Co.	80	Magnesium Oxide & dolomitic	2819	Mississippi Sound
3	I-88	First Miss. Chemical Corp.	48	Orthotoluidine	2865	Bayou Casotte
12	I-89	Frigitemp Marine Division	550	Ship sheet metal work, furniture, etc.	2599	
12	I-90	Gulf City Fisheries	400	Fresh & Frozen Seafood	2092	
12	I-91	Ingalls Shipbuilding Division	19000	Naval & large commercial vessels	3731	
3	I-92	Miss. Chemical Corporation	535	Fertilizers	2873	
				Sulfuric Acid	2819	
12	I-93	The Miss. Press Register	92	Newspaper	2711	
12	I-94	Pavco Industries, Inc.	140	Plywood paneling	2435	
				Sanded hardboard	2426	
12	I-95	The Quaker Oats Co.	175	Canned cat & dog food	2047	Pascagoula River
3	I-96	Standard Oil Co.	620	Petroleum Fuels	2911	
12	I-97	F. B. Walker & Sons Shipyard	99	Boat Building	3732	Pascagoula River
12	I-98	Castiglola		Seafood Products	2092	
12	I-99	Clark Seafood		Seafood Products	2092	
12	I-100	Graham Boats, Inc.		Boat Building	3732	Pascagoula River
		PEARL RIVER COUNTY				
PICAYUNE						
86	I-101	Crosby Chemicals, Inc.	155	Resins & Pine Oil	2861	Hobolocitto Creek
				Resins & Polymide resins	2821	
86	I-102	Crosby Forest Products Co.	45	Paints & Varnishes	2851	
86	I-103	General Box Co.	280	Wirebound shipping containers	2449	
86	I-104	Interpine Lumber Co.	75	Lumber	2421	
86	I-105	Picayune Manufacturing Co.	225	Misc. Electrical housewares	3634	
86	I-106	Standard Container Co.	133	Metal containers & food cans	3411	
POPLARVILLE						
72	I-107	Movie Star, Inc.	669	Ladies Lingerie	2341	
72	I-108	Poplarville Mfg. Co.	87	Discs, harrows & plows	3523	

TABLE II-2

POINT SOURCE LOADINGS[1]
BILOXI BAY WATERSHED AREA
EPA WASTE SOURCE SURVEY, JULY-AUGUST, 1972

Point Source	Receiving Water	Q MGD	BOD_5 lbs/day	Total N lbs/day	Total P lbs/day	Total Solids lbs/day	Phenols lbs/day	Heavy Metals lbs/day[2]	Oil and Grease lbs/day	Total coli /100ml	Fecal coli /100ml	pH	Temp °C
DeJean Packing Co[3]	Biloxi Bay	0.32	4150	590	83	4220	--	--	--	210,000	2,150	6.3	29.0
Southern Shellfish Co[3]	Back Bay	0.19	1600	217	34	3960	--	--	--	1,370,000	40,200	9.1	28.5
Biloxi Canning and Packing Co[3]	Back Bay	0.30	2400	287	57	2840	--	--	--	50,300	32,500	9.4	30.0
Kuljis Seafood Co[3]	Back Bay	0.027	18	8	1	115	--	--	--	540,000	2,300	7.9	28.5
Suarez Seafood Co[3]	Back Bay	0.02	190	33	4	339	--	--	--	79,000	33,000	7.2	29.0
Sterling Drug Co	Brickyard Bayou	0.27	11	< 2	< 1	5100	--	0	--	--	--	9.2	51.5
Chattanooga Glass Co	Brickyard Bayou	0.19	13	< 2	< 1	563	--	0	42	--	--	8.8	35.0
Olin Corporation	Brickyard Bayou	1.21	17	4	3	2020	--	0	--	--	--	8.2	32.5
Plastifax	Industrial Seaway	0.10	10	< 2	< 1	1550	0.1	--	10	--	--	1.7	30.0
Reichold Chemicals, Inc	Big Lake	0.52	161	16	2	1560	< 1	< 24	47	160,000	35,000	8.4	34.0
Biloxi STP (old)	Keegan Bayou	2.90	327	503	202	24300	0	< 9	--	170	58	7.3	30.0
Ocean Springs STP	Ocean Springs Harbor	1.27	572	388	122	5300	0	--	--	2,880	391	7.5	30.0
Keesler AFB STP	Back Bay	2.82	549	325	124	7840	1.0	< 10	--	190	32	7.1	30.0
Gulfport STP	Bayou Bernard	3.40	1410	686	188	11200	1.5	< 17	142	272	42	7.2	29.0

[1] loadings computed on a pounds added basis
[2] total of Cd, Cr, Cu, Hg, Ni, Pb, Zn
[3] may not be representative of average loadings

SOURCE: Water Resources Engineers, Inc.

TABLE II-3

POINT SOURCE LOADS[1]
PASCAGOULA-ESCATAWPA ESTUARY AND CONTIGUOUS COASTAL AREAS
EPA WASTE SOURCE SURVEY, JULY-AUGUST, 1972

Point Source	Receiving Stream	Approximate River Mile	Q MGD	BOD_5 lbs/day	Total N lbs/day	Total P lbs/day	Total Solids lbs/day	Phenols lbs/day	Heavy Metals lbs/day[2]	Oil and Grease lbs/day	Total coli /100ml	Fecal coli /100ml	pH	Temp °C
International Paper Co	Escatawpa	5	32.0	39,900	428	154	324,000	188	74	--	102,000	10,800	6.2	43.0
Thiokol Chemical Co	Escatawpa	4	3.0	24,600	39	6	216,000	6	< 7	3,030	--	--	9.9	34.0
Standard Products Co[3]	Escatawpa	4	2.0	1,300	18	6	3,910	--	--	112	--	--	5.7	44.0
Haynie Products[3]	Escatawpa	4	5.0	2,370	410	22	--	--	--	306	--	--	6.5	37.0
The Fishmeal Co[3]	Escatawpa	4	0.4	144	67	--	--	--	--	8	--	--	7.8	46.5
Gulf City Fisheries[3]	Pascagoula	2	0.12	1,010	101	15	1,270	--	--	--	--	--	7.5	24.0
Quaker Oats Co[3]	Pascagoula	2	0.29	5,000	325	54	4,380	--	2	229	--	--	8.2-6.5[4]	30.0
Ingalls Shipbuilding	Pascagoula	1	0.04	0	--	--	1,440	--	4	0	--	--	6.4-0.2[4]	32.0
Delta Creosoting	West Pasc.	1	0.02	973	--	--	904	24	0	15	--	--	4.1	28.5
Continental Can Co	Bayou Chico	--	0.06	0	--	--	305	--	0	--	--	--	7.7	35.0
First Chemical Co	Bayou Casotte	--	0.01	--	127	0	2,730	20	0	--	--	--	9.5	28.0
Mississippi Chemical Co	Bayou Casotte	--	66.2	82	11,580	3,120	--	--	< 35	--	--	--	9.1-2.2[4]	40.0
Chorchem, Inc.	Miss. Sound	--	13.6	0	15	0	0	--	26	--	--	--	10.0	30.0
Standard Oil Co	Miss. Sound	--	27.5	2,110	570	42	--	10	139	0	233	30	8.1	32.0
Moss Point STP#1	Pascagoula	7	.15	44	35	10	--	--	--	--	4,870	1,480	7.2	31.0
Moss Point STP#2	Escatawpa	3	1.26	510	342	129	9,150	0.7	--	5.0	401	254	7.5	30.0
Escatawpa STP#1	Escatawpa	1	0.16	9	30	4	862	--	--	--	60	20	7.2	26.5
Escatawpa STP#2	Pascagoula	12	0.08	10	17	5.5	307	--	--	--	1,200,000	1,170,000	7.5	28.5
Pascagoula Main STP	Pascagoula	2	2.8	1,000	349	168	148,000	2.5	< 18	10.0	33,300	6,970	7.2	30.0
Pascagoula Bayou Casotte STP	Bayou Casotte	--	0.86	678	387	141	6,980	--	--	--	748	483	7.4	29.5
Pascagoula East Side STP	Pascagoula	3	0.40	107	19	22	2,400	--	--	< 5.0	354	43	7.2	28.5
Ingalls Shipbuilding STP	Pascagoula	1	0.35	41	73	9	2,980	--	--	--	114,000	65,200	7.8	26.0

[1] loadings computed on a pounds added basis

[2] total of Cd, Cr, Cu, Hg, Ni, Pb, Zn

[3] may not be representative of average loadings

[4] pH from various outfalls

facilities, utilities and services optionally supplied in parks, and otherwise made ready for immediate occupancy by industrial firms. Industrial districts may be defined as those areas which have been legally set aside or zoned for industrial use. Unlike parks, districts, used in this context, may or may not have other land uses occupying space inside the district limits.

This distinction is made in order to explain industrial park delineation on land use overlays. Where parks exist in an area, they are delineated on the existing land use overlay. In most instances, parks are not totally occupied, but since the land within the park has been prepared for immediate occupancy, it must be shown as an existing land use. Examples of this are seen in all parks in Harrison and Hancock Counties.

Districts, on the other hand, because they are zoned industrial, are shown on the future land use overlay, (see Figure VIII-2). Existing land uses within these districts were mapped and identified as they exist. In essence, the existing land uses of an area regardless of the zoning classification, are shown on the existing overlay.

In Jackson County, many of the areas zoned industrial are totally occupied by industrial or manufacturing firms. Here the land use is shown on both existing and future overlays. Other areas which have been zoned industrial, but in fact presently exhibit other land uses are shown on the future overlay.

Industrial park data are summarized in Table II-4. Individual parks are identified by name, township codes, and owners. Other data include park size and available acreage, existing utilities and services, water use and discharge and types of available transportation. Also shown is the industrial park or district classification.

Future Industrial Needs

Future industrial area needs are shown on future land use overlays. In all instances, areas zoned or otherwise set aside for industrial uses exceed present land utilizations. Therefore, it may be said that future requirements (to the year 2000) for addi-

TABLE II-4
INDUSTRIAL PARK SUMMARY
Hancock, Harrison, Jackson and Pearl River Counties
Gulf Regional Planning Commission - January 1976

Map Code	Name	Ownership	Size (Acres)	Occupied Acreage	Available Acreage	UTILITIES				Water Used (gal/day)	Waste Discharge (gal/day)	Transportation				Remarks
						Water	Gas	Electric	Sewer			Rail	Roads Water	Roads	Air	
HANCOCK COUNTY																
62	Port Bienville Ind. Park	Hancock County	1460	291	1169	x	x	x	x	8,000	2,000	x	x	x		Industrial Park
HARRISON COUNTY																
48	Pass Christian Ind. Park	Harrison County	190	94	96	x	x	x	x	10,500		x		x		Industrial Park
40	Long Beach Ind. Park	Harrison County	500	0	500	x		x	x					x		Industrial Park
39	Bayou Benard Ind. Park	Harrison County	1450	949	501	x	x	x	x		100,000	x	x	x	x	Industrial Park
30	East Harrison Co. Ind. Park	Harrison County	83	33	50	x	x	x	x	9,600		x		x		Industrial Park
JACKSON COUNTY																
21	Ocean Springs Ind. Park	Jackson County	15	6	9	x		x				x		x		Industrial Park
3	Bayou Casotte Public Terminals	Jackson County	25	0	25	x		x				x	x	x	x	Industrial Dist.
3	Bayou Casotte No. 1	Jackson County	242	0	242	x	x	x				x	x	x	x	Industrial Dist.
3	Bayou Casotte No. 2	Jackson County	649	4	645	x	x	x				x	x	x	x	Industrial Dist.
3	Greenwood Island Ind. Park	Jackson County	311	0	311	x	x	x	x				x	x	x	Industrial Dist.
12	West Bank Ind. Park No. 1	Jackson County	6	0	6	x	x	x				x	x	x		Industrial Dist.
12	West Bank Ind. Park No. 2	Jackson County	65	0	65	x		x					x	x		Industrial Dist.
PEARL RIVER COUNTY																
86	Palestine Rd., Site No. 1	Picayune	55	10	45	x	x	x	x			x		x	x	Industrial Dist.
86	Palestine Rd., Site No. 2	Picayune	53	0	53	x	x	x						x	x	Industrial Dist.
86	Thigpen Ind. Site	Private	50	0	50	x	x	x	x			x		x		Industrial Dist.
86	Stanfield Ind. Site	Private	140	20	120	x	x	x	x			x		x		Industrial Dist.
72	Poplarville-P.R.Co. Ind. Site	Pop./P.R.Co.	51	29	22	x		x	x					x		Industrial Park
		TOTALS	5345	1436	3909											

SOURCE:
1. Miss. Research & Development Center, Long Beach - General Information
2. Hancock County Port & Harbor Commission - Water Use & Discharge
3. Harrison County Development Commission - Water Use & Discharge
4. Jackson County Planning Commission - General Siting Information

tional industrial areas are incorporated into present parks and/or districts. As shown in Table II-4, of 5,345 acres set aside for industrial use only 1,436 acres are currently being used. Future demands are expected to be absorbed by the remaining 3,909 acres.

TASK III

ARCHAEOLOGICAL AND HISTORICAL SITES

Historical and archaeological sites of significance exist in all three coastal Mississippi Counties. There are numerous structures or landmarks that have witnessed events of political or military importance. Many areas once existed as camps or villages of prehistoric cultures while other sites are important because of their association with personage of historic prominance.

Presently the National Park Service, U. S. Department of Interior, recognizes 11 historically significant sites on the Mississippi Coast.

The Mississippi Department of Archives and History not only recognizes those of the National Parks Service, but also lists approximately 100 archaeological sites and approximately 60 historical sites that are of importance to local and state heritage. It is the purpose, therefore, of this section to identify and explain the significance of each of these sites.

Archaeological Sites

Mississippi's archaeological site distinctions are the product of several decades of survey work done by various governmental agencies as well as private individuals. Many of the site locations are not exact, but rather are included within a known outer boundary. Archaeological sites listed date between 9500 B. C. and 1830 A. D. All of the sites have been subsequently explored and, to a limited extent, excavated. Individual sites are identified in Table III-1 and correspond to site numbers on existing land use overlays, (refer to Figure VIII-1). As shown, several sites have neither names nor degree of significance assigned by the Mississippi Department of Archives and History. However, they have been listed in the Mississippi Statewide Comprehensive Historic Preservation plan as significant sites. Because of this they too are identified on existing land use over-

TABLE III-1

REGIONAL ARCHAEOLOGICAL SITES

Map Code	Site No.	Site Name	Significance
HANCOCK COUNTY			
60	A- 1	Campbell Bayou Site	Village site of early & mid woodland periods
61	A- 2	Jackson Landing - Mulatto Bayou Site	Historic Indian shell midden - 400 B.C. to 290 A. D.
51	A- 3	Joes Bayou Site	Shell midden
50	A- 4	Lakeshore Midden Site	Shell midden
60	A- 5	Last Site	Village site of woodland & Mississippi periods
56	A- 6	Section 20 Site	No details available
HARRISON COUNTY			
48	A- 7	Bayou Park Mound Site	No details available
48	A- 8	No Name	No details available
48	A- 9	No Name	No details available
48	A-10	No Name	No details available
48	A-11	No Name	No details available
48	A-12	Seminary Midden	Shell midden
31	A-13	Wilkes Site	Shell midden
48	A-14	Pine Hill Hotel Site	Shell midden
30	A-15	Back Bay Beach Site	Shell midden
30	A-16	Lopez Place	Shell midden
40	A-17	Tar Pits	No details available
31	A-18	Brodie Site No. II	No details available
31	A-19	Brodie Site No. I	No details available
31	A-20	O'Neal Site	No details available
31	A-21	Atcheson Site	No details available
31	A-22	Oak Lawn Site	No details available
31	A-23	Caron Site	No details available
37	A-24	Baldwin Site	No details available
29	A-25	Janus Site	No details available
30	A-26	Wilde Site	No details available
31	A-27	Fritz Site	No details available
31	A-28	Council Site	No details available
30	A-29	Brodie Site No. III	Occupied during Archaic period
31	A-30	Williams Site	Shell midden of Woodland period
48	A-31	Acadian Bayou Site No. I	No details available
48	A-32	Discovery Bay Site	No details available
48	A-33	Leon Site	No details available
48	A-34	De Metz Site	No details available
48	A-35	Sutter Site	No details available
48	A-36	Cedar Bayou Site	No details available
48	A-37	Delisle Site	No details available
48	A-38	Diane Site	No details available
JACKSON COUNTY			
12	A-39	Paquette Point Site	Shell midden of Woodland & Mississippi Period
13	A-40	Pointeux Chenes Site	Mounds
13	A-41	Green Site	Shell midden
13	A-42	Graveline Mounds	Shell midden
21	A-43	Magnolia Site	Shell midden
11	A-44	Martin's Bluff Site	Shell midden of Mississippi Period
12	A-45	Schultes Site	No details available
21	A-46	Gollotte Site	No details available
12	A-47	Delmas Place Site	Shell midden of Mississippi Period
12	A-48	Coast Guard Dock Site	Shell midden
9	A-49	Mound Field on Pascagoula	Two mounds
9	A-50	Long Lake Mound	Shell midden
17	A-51	Brodus Old Field Site	Mound
12	A-52	Gautier Site	Shell midden of Mississippi Period
3	A-53	Greenwood Island Site	Shell midden-Periods of Palco Indian, Poverty Point, Tchula & Marksville
21	A-54	Taneksanya Site	No details available
10	A-55	Indian Site	No details available
10	A-56	Champigne Site	Mound
12	A-57	Shirley Site	No details available
11	A-58	Rudloff Site	No details available
3	A-59	Standard Oil Site	No details available
3	A-60	Coastal Chemical Site	No details available
12	A-61	Spanish Fort Site	No details available
11	A-62	Fulmer Site	No details available
13	A-63	Arqvilles Site	No details available
13	A-64	Apple Site	No details available
13	A-65	North Street Site	No details available
21	A-66	Soy Caphil Point Site	No details available

Map Code	Site No.	Site Name	Significance
JACKSON COUNTY continued			
23	A-67	Fort Maurepas Site No. I	No details available
23	A-68	Lemon Site	No details available
10	A-69	Portico	No details available
3	A-70	Bone Yard Site	Ceramics of Tchula period & large quantities of animal bone
23	A-71	Fort Maurepas Site No. I B	No details available
23	A-72	Fort Maurepas Site No. II	No details available
23	A-73	Ocean Springs Site No. I	No details available
11	A-74	Borries Site	Woodland period
23	A-75	French Vessel - Biloxi Bay	No details available
4	A-76	Escatawpa Sites I, II & III	No details available
5	A-77	No Name	No details available
10	A-78	Dumas Isle Site	Shell midden of Mississippi Period
11	A-79	Martin Bluff Site No. II	Shell midden of Mississippi & Historic periods
12	A-80	No Site	No details available
3	A-81	Pt. Aux Chenes Site	Mounds
12	A-82	Wallace Site	No details available
11	A-83	Griffin Point Site	No details available
13	A-84	Stone Site	No details available
13	A-85	Old Shell Landing Site	No details available
12	A-86	Shepard's Island Site	No details available
12	A-87	Mrs. C. M. Shepard Site	No details available
12	A-88	Steve's Site	No details available
13	A-89	Cedar Point Site	No details available
12	A-90	Camp Lamotte	No details available
11	A-91	McInnis Bayou Site	No details available
2	A-92	Bayou Heron Site	No details available
10	A-93	Patticaw Site	No details available
2	A-94	Betty's Site	No details available
11	A-95	Bob's Site	No details available
9	A-96	Parker's Lake Site	No details available

SOURCE: Mississippi Statewide Comprehensive Historical Preservation Plan, Second Edition, Volume II, Mississippi Department of Archives & History, April, 1974.

lays. The general locations of archaeological sites are shown in Figure III-1.

Historical Sites

Fifty eight sites were identified by the Mississippi Department of Archives and History as areas of particular historic or cultural significance. These sites are of distinct historic, aesthetic or cultural value to both the State of Mississippi and the Gulf Coast. Many of the sites were also identified as historically important by local governments, civic organizations, and concerned citizens residing within the urbanized area. This is especially relevant as communities and private concerns often place a sentimental value on structures and sites which reflect past accomplishments deemed vital to the area's heritage.

Table III-2 identifies 58 historical sites in the coastal area. Each site number corresponds to numbers on existing land use overlays from which general locations and concentrations may be found. The general locations of historical sites are illustrated in Figures III-1.

FIGURE III-1

GENERAL LOCATION OF SIGNIFICANT ARCHAEOLOGICAL AND HISTORICAL SITES

HANCOCK, HARRISON & JACKSON COUNTIES

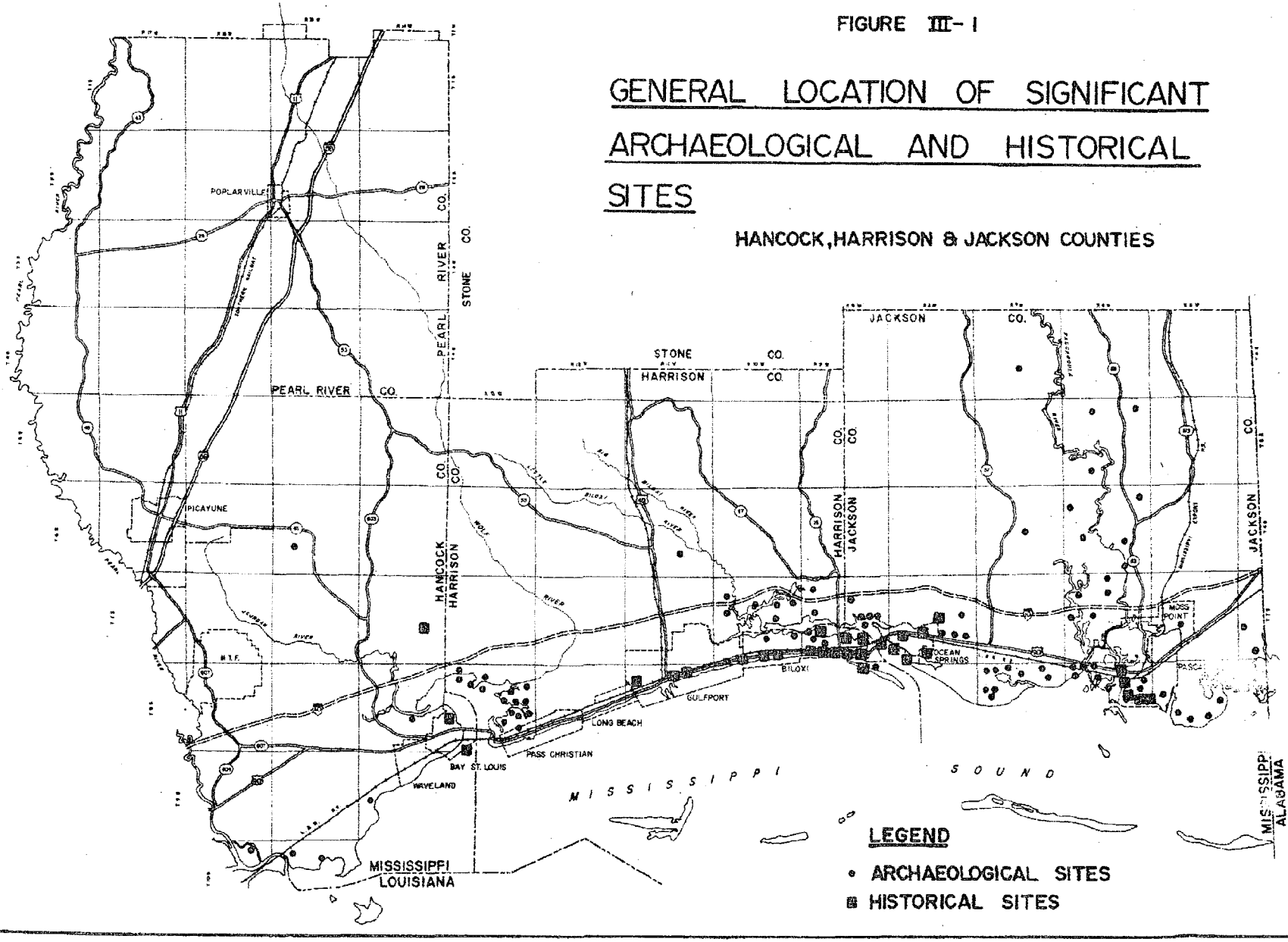


TABLE III-2

REGIONAL HISTORIC SITES

Map Code	Site No.	Site Name	Significance
HANCOCK COUNTY			
49	H- 1	Our Lady of the Gulf Church	Largest Catholic Parish in Mississippi–Architecturally Unique
49	H- 2	Elmwood Manor	2 story brick residential structure typical of many early Louisiana examples in its use of brick piers to support front & back galleries at ground level
62	H- 3	Simon Favre House	Constructed during period when Pearlington was a major logging town.
52	H- 4	Rotten Bayou Cemetery	From 1700's period - one of the oldest cemetaries on the Gulf Coast - contains graves of many early French settlers.
HARRISON COUNTY			
31	H- 5	The Anchorage	Built in 1850's; used as a children's home for eight years.
30	H- 6	Antebellem Howard & Wood Home	Creole plantation cottage built with wooden pegs in 1807
39	H- 7	Barrett House	Oldest house in Gulfport; 1843 two-story Greek Revival style
31	H- 8	Beauvoir [1,2,3]	Last home of Jefferson Davis
30	H- 9	Biloxi First Baptist Church	Church organized in 1845
30	H-10	Biloxi Garden Center	Built in 1840's; home of John Henley, Mayor of Biloxi during Civil War
30	H-11	Biloxi Lighthouse	Historical lighthouse operated 1847-1931
30	H-12	Chamber of Commerce Building	Brick in walls reclaimed from destroyed house of lighthouse keeper.
30	H-13	Church of the Redeemer	Gothic Church built in 1854 & still in use; Jefferson Davis worshipped here
30	H-14	Deer Island	Inhabitants have included Indians, Pirates, & Federal troops during Civil War
30	H-15	Father Abram Ryan Home	Residence of Father Ryan, Civil War Poet, Soldier & Teacher - 1870's
30	H-16	Tullos, Filbrick or Pradat House [2]	1854 - two story Greek Revival Home
31	H-17	Gillis House [1,2]	1838 - Greek Revival Home
30	H-18	Grass Lawn [1]	Built by Dr. Hiram Roberts in 1850's as Summer home.
39	H-19	Gulfport Lutheran Church	Woodrow Wilson worshipped here in 1913
30	H-20	Magnolia Hotel [1]	Last remaining pre-Civil War hotel (1847) on Mississippi Coast
30	H-21	"Margaret Emilie" Museum[1]	Sailing schooner monument to schooner sailors & shipbuilders (1912)
30	H-22	Moran Site - Original Biloxi	Site of the original Biloxi settlement & associated burial grounds
30	H-23	Old Biloxi Cemetery	Active cemetery dating from the late 1700's
30	H-24	Old Brick House	House built in 1790 now being restored
30	H-25	Old Fort Lewis Site	No details available
30	H-26	Old French House	Old French house built in 1737 with wine cellar & slave quarters in basement; currently a restaurant
30	H-27	Old Spanish House	House built in 1790 by Spanish Army Captain when Spain controlled the area.
30	H-28	Red Brick House	No details available
39	H-29	St. Mark's Episcopal Church	1855 church attended by Jefferson Davis
48	H-30	Wharton House	House completed in 1850; used to quarter Federal officers during the Civil War.
JACKSON COUNTY			
21	H-31	Anderson Home	Built in 1839; presently location of Shearwater Pottery Industry
12	H-32	Boster's Place	Old home originally used as a boarding house for Sea Captains
12	H-33	Chastant - Fuselia House (Warren Home)	Built by wealthy New Orleans plantation owner in 1852; writing on walls dates to Civil War period; Greek Revival details.
15	H-34	Dees Store	Built by Dantzler Lumber Company during late 1800's.
12	H-35	Delmas House	Greek Revival structure - 1823
12	H-36	Dupont House	Built in 1836 by Admiral David Farragut; given to Elizabeth Farragut & Celeste Dupont as wedding present.
12	H-37	Estabrook House	Raised Cottage (1½ story) from 1840-1860 period
11	H-38	Farragut Home	Last home of Major George Farragut built in 1808; his son became first Admiral of U. S. Navy.
23	H-39	French Vessel Site	1723 shipwreck remains; still present but original cargo removed
12	H-40	Frentz House	Classic Revival home built in 1878
12	H-41	Grant Cemetery	Old family cemetery.
12	H-42	Hilaire Krebs House	Classic Revival structure built around 1850
12	H-43	Krebs Cemetery	Oldest known cemetery still in use in the Mississippi Valley (1764)
12	H-44	Lewis House	Classic Revival structure built in 1889; said to be the site of a battle between Pascagoula & Biloxi Indians
3	H-45	Longfellow House [2]	Constructed in 1854; questionable legend claims Longfellow wrote a poem here.
21	H-46	Louis Sullivan House	Coastal retreat of Louis Sullivan until 1908; built around 1890.
12	H-47	Morgan House	Colonial house built 1865-1867
23	H-48	Old Fort Maurepas Site	First permanent settlement in Central U.S.; established by D'Iberville in 1699.
21	H-49	Old Indian Springs	Prehistoric Springs used by Indians for health purposes.
21	H-50	Old L & N Railroad Station	Old Station on L & N Railroad used from 1907-1935.
12	H-51	Old Spanish Fort [1,2]	Oldest existing building in lower Mississippi Valley - 1710-1770.
12	H-52	Parquet House	Classic Revival summer home for New Orleans inventor.
21	H-53	Presbyterian Church	Oldest church in Ocean Springs; used since 1889.
21	H-54	Ruskin Oak	One of the oldest oak trees on the Gulf Coast
21	H-55	St. John's Episcopal Church	Church unofficially organized in 1865, formally in 1891; building shows touch of Louis Sullivan architectural style.
JACKSON COUNTY continued			
12	H-56	USS Cairo [1,4]	One of the original city-class-ironclad gunboats built in 1861; first U.S. warship sunk by electricolly ignited Torpedos during Civil War.
12	H-57	Walter Denny House	Colonial house said to be over 200 years old.
12	H-58	Washington Grant House	Built prior to Civil War; fired upon by Admiral Farragut

1 National Register of Historic Places
2 Historical American Building Survey
3 National Historic Landmark
4 National Park Service

SOURCE: Mississippi Statewide Comprehensive Historical Preservation Plan, Second Edition, Volume II, Mississippi Department of Archives & History, April, 1974.

TASK IV

REGIONAL AND LOCAL COORDINATION

Coordination of planning activities with the local population is vital to the insured success of any proposed management project. Today, with the advent of federal requirements aimed at protection of the environment and general improvement of human health and well-being, there is skepticism on the part of smaller governmental bodies and private citizens. Such skepticism is seen as a fear of loss of personal rights and abolishment of the just compensation clause of the U. S. constitution.

Because of this it is imperative that the CZM planning process be coordinated with local agencies, public bodies and private citizens groups. Under this task, the GRPC is working on a continuing basis with the Mississippi Marine Resources Council in identifying concerned agencies and organizations and helping to establish question and answer sessions whereby public input to the planning process is achieved.

Under other elements of the CZM planning program, State and Regional agencies through which coordination can be achieved, have been identified. Currently local participation is being achieved by MMRC through planned public meetings and scheduled public hearings.

One major area of involvement concerns the ongoing Environmental Protection Agency Sec. 201 Facilities Plan for Harrison and Jackson Counties. Representatives of the MMRC have been attending the monthly meeting of participating engineering firms and the MMRC is kept abreast of all developments as they pertain to plans and programs to manage, on a regional basis, the point source waste discharges.

TASK V

FEDERAL AND STATE LAND OWNERSHIP

Land use analysis conducted by the GRPC in 1972 indicated that approximately 1,673,000 acres of land are contained within the jurisdiction of Hancock, Harrison, Jackson and Pearl River Counties, Mississippi. Of this acreage, it is estimated that as much as 6,365 acres are under state ownership and 247,421 acres belong to or are leased by the federal government, (refer to Figure V-1 for general distribution of Federal and State Lands).

As seen in Table V-1, federal and state land uses range from state parks to military bases. But, by far the greatest single federal or state land use is found within the National Space Technologies Laboratory (NSTL) buffer zone. Here 109,820 acres, or approximately 35 percent of the Hancock County land area, is under federal ownership or lease. Federal forests occupy another 84,799 acres in the four county area, and military bases and veteran hospital centers account for 2,802 acres. Of the total land area within the region, 14 percent is occupied by the federal government while less than one percent is owned by the State of Mississippi, most of which is university forest lands.

Federal and State land ownership is shown by township for each county on land use overlays, (refer to Figure VIII-4). An analysis of land use overlays will show that not all townships contain federal or state lands. Those that do are shown in Figure V-1. Where such lands are found, each parcel is identified by owner and, where possible, by land use. Abbreviations are often used to denote ownership and use and are defined as follows; USF - United State Forests; UML - University of Mississippi forest lands; US-Federally owned lands with use not known (aerial photography of these areas generally indicate that the land is presently in forest); STATE - state owned lands with use not known (as with US lands, these appear to be forest). Other federally or state owned lands such as VA Hospitals, military bases and state parks are usually identified by name.

TABLE V - 1

FEDERAL & STATE LAND OWNERSHIP

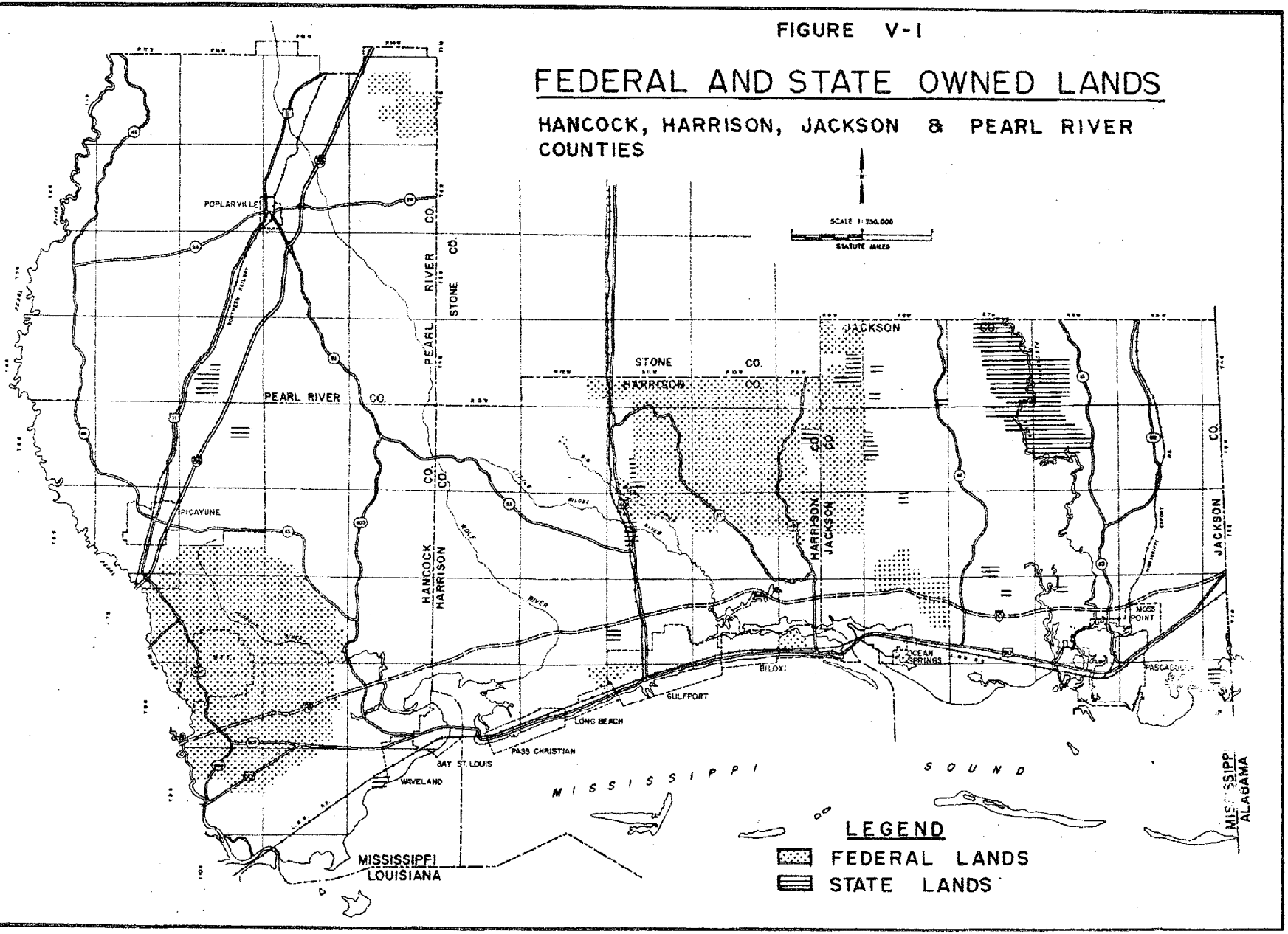
County	Acreage State	Acreage Federal	Type of Land Use
HANCOCK	315		Buccaneer State Park
		109,820	NSTL Buffer Zone & Fee Area
HARRISON		59,209	Forrest Lands - DeSoto National Forrest
		2,802	Military Bases, V.A. Hospitals
	450		University Forrest Lands & Other
JACKSON		20,050	Forrest Lands - DeSoto National Forrest & Gulf Island's National Seashore
	5,200		University Forrest Lands & Other
PEARL RIVER		5,540	Forrest Lands - DeSoto National Forrest
	400		University Forrest Lands & Other
TOTALS	6,365	147,421	

SOURCE: Harrison County Mississippi Ownership Maps, 1972
Jackson County Mississippi Ownership Maps, 1973
Pearl River County Mississippi Ownership Maps, 1975
Prepared by TAB Mapping Company, Lucedale, Miss., from Offices of Tax Assessors and Land Rolls. Hancock Data were obtained by GRPC from in-house files and from County Land Rolls, 1975.

FIGURE V-1

FEDERAL AND STATE OWNED LANDS

HANCOCK, HARRISON, JACKSON & PEARL RIVER COUNTIES



TASK VI

TRANSPORTATION

Transportation within the study area involves a series of networks and systems that occupy approximately 36,600 acres of land excluding those requirements of airports. An analysis of streets and highways, railroads, and utility rights-of-way such as pipelines and electrical power transmission lines reveals the following facts. Railroads occupy approximately 2,680 acres of land throughout the four county area; streets and highways account for 28,636 acres; and utility rights of way utilize 5,320 acres (GRPC 1972 Land Use). Air transportation facilities, including the airport of Gulfport, the air traffic section of Keesler AFB, Stennis International Airport in Hancock County, the Jackson County Airport, and the public air facility in Picayune utilize another estimated 2,500 acres or less than 3 percent of the region. Increases in transportation rights-of-way have amounted to approximately 4 percent since 1970 (GRPC 1972 Land Use).

The mapping process of this task has been summarized so that major existing transportation routes are highlighted on land use overlays, (refer to Figures VIII-1 and VIII-2). Routes of lesser importance are shown on the base maps accompanying each set of overlays. Other land uses which must be considered under this task are ports and harbors and navigable waterways. The following text and tabulations are included to explain and identify transportation routes and related systems as they are seen on the land use overlays.

Streets and Highways

A Gulf Coast Area Transportation Plan developed for the GRPC in 1971 identified and classifed each transportation route within the urban area. Also included were projections and roadway classifications which would be needed to meet future demands. Routes within the urban area, both existing and future, were highlighted on overlays based on the Gulf Coast Area Transportation Plan and taking into account collectors, arterials

and freeways and expressways. Routes in rural areas were highlighted based on recommended county plans with minor modifications.

Major roadways shown on the existing land use maps are defined categorically as they relate to areas they serve. Collectors, identified as smaller dotted lines, move traffic within communities. They tie in with arterials, identified as solid lines, which transfer traffic over larger areas and between communities. These in turn may connect with freeways, interstates or expressways which are identified as larger dashed lines. Freeways, interstates and expressways, are controlled access routes designed to move larger volumes of traffic at maximum speeds.

Airports

The four county study area is comprised of three distinct types of airport facilities: Air Carrier Facilities, General Aviation Facilities and Military Installations. This grouping is necessary and significant in terms of the traffic levels handled by such installations, by the types of aircraft which make use of these various airfields, by the runway, airspace and terminal requirements, and by the degree and type of interaction with other fields in the area.

The air carrier airports are located to serve large concentrations of population and/or commerce, mainly because that is where the demand for their services exist. They require runways of considerable length, width, and some type of instrumentation and lighting, as well as passenger terminal and/or cargo handling facilities, and adequate ground access. These facilities do, however, accommodate and encourage operations by general aviation aircraft. Presently only the facility at Gulfport, serving most of the coastal area falls into this category.

General aviation airports may and frequently do serve smaller population centers or industrial or recreational areas. These airports generally require less runway width, length and strength. Some have runway lighting and a published VOR or ADF approach. Such

airports are owned and operated by municipalities as well as private individuals. Those in the study area which fall into this group include the one at Picayune, Stennis International Airport, Diamondhead Airport in Hancock County, the Gulf Park Facility east of Ocean Springs and the Jackson County Airport. Within the general aviation grouping, one must further distinguish between "public" and "private" use airports. The former (of interest in this study) serve aviation by offering services, charter, rental, instruction, etc. to the public. The latter are relatively few in number in the Gulf Coast Region and do not offer service to the public. Although patronage of the public is not solicited by private fields, they are available to any aircraft in case of emergency.

Finally, military installations must be considered in relation to operations of military flight missions within the study area. Here only Keesler Air Force Base need be considered.

This inventory, therefore, seeks to examine these facilities in terms of what exists and where they are located relative to other social and economic activities.

Airports are delineated and named on existing land use overlays by townships in which they are situated (refer to Figure VIII-1). With the exception of Jackson County, no known plans exist for construction of additional airport facilities. Plans have been made for the construction of a new general aviation terminal in Jackson County but at this time no definite location has been selected.

The Upper Gulf Coast Regional Air Transportation Study conducted in 1970 resulted in comparative data for selected air carrier airports in the Gulf Coast region from Mississippi to Florida. Data in Table VI-I are included to emphasize acitivites at the Gulfport Airport and to provide comparative data between local air transportation and that of Mobile.

Railroads

Rail transportation lines have been delineated on existing and future land use overlays just as they are seen on individual base maps, (refer to Figure VIII-1). Research indicated that with the general decline in rail transport, no new facilities can be anticipated in

TABLE VI-1

SELECTED AIR TRAFFIC DATA FOR GENERAL AVIATION AIRPORTS

Gulfport and Mobile

HISTORY OF AVERAGE AND PEAK HOUR COMMERCIAL AIR MOVEMENTS

Airport	Year	Annual Aircraft Movements	Average Hour Rate	Peak Hour Rate	Peak/ Average Hour Ratio
Mobile	1960	20,149	2.3	11	4.8
	1965	18,165	2.1	9	4.3
	1967	18,225	2.1	8	3.8
	1968	17,407	2.0	9	4.5
Gulfport	1960	(3,400)	(0.4)	N/A	N/A
	1965	7,483	0.9	10	11.1
	1967	7,478	0.9	7	7.8
	1968	6,958	0.8	6	7.5

FORECAST OF AVERAGE AND PEAK HOUR COMMERCIAL AIR MOVEMENTS

1970 - 1995

Airport	Year	Annual Aircraft Movements	Average Hour Rate	Peak Hour Rate	Peak/ Average Hour Ratio
Mobile	1970	20,100	2.3	11.3	4.9
	1975	25,310	2.9	13.3	4.6
	1980	29,660	3.4	15.0	4.4
	1985	34,920	4.0	16.8	4.2
	1990	43,820	5.0	19.5	3.9
	1995	49,980	5.7	20.5	3.6
Gulfport	1970	10,000	1.1	7.3	6.6
	1975	10,422	1.2	7.8	6.5
	1980	12,100	1.4	8.1	5.8
	1985	13,986	1.6	9.1	5.7
	1990	15,874	1.8	9.9	5.5
	1995	16,666	1.9	10.3	5.4

FORECAST OF TYPICAL PEAK HOUR PASSENGERS (TPHP)

Airport	Year	Peak Hour Air Carrier Movements	Average Aircraft Size	Load Factor	Typical Peak Hour Passengers
Mobile	1970	11.3	85	28	270
	1975	13.3	103	30	410
	1980	15.0	124	33	610
	1985	16.8	150	35	880
	1990	19.5	180	35	1,230
	1995	20.5	220	35	1,580
Gulfport	1970	7.3	65	15	70
	1975	7.8	79	18	110
	1980	8.1	95	21	160
	1985	9.1	115	24	250
	1990	9.9	140	24	370
	1995	10.3	170	30	530

SOURCE: Upper Gulf Coast Regional Air Transportation Study, Vol. 1, 1970

the near future.

Data obtained from the L & N Railroad Central Office in Mobile, Alabama indicate that approximately 12 trains, all of which are freight service, pass through the coast between Mobile and New Orleans each day.

It was also determined that two switch trains operate in the area and may be seen passing through the area at various times. While schedules are subject to fluctuation, the following time periods account for most rail transportation movements.

TABLE VI-2
L & N RAILROAD SCHEDULE

South out of Mobile	North out of New Orleans
5:05 A. M.	1:00 A. M.
9:30 A. M.	5:30 A. M.
11:59 A. M.	8:30 A. M.
4:00 P. M.	10:00 A. M.
5:00 P. M.	12:30 P. M.
10:00 P. M.	8:00 P. M.

SCURCE: L & N Central Office, Mobile, Alabama, Dec., 1975

A general increase in rail passenger service in the area is not anticipated. However, efforts being sponsored by the Mississippi Coast Transportation Authority and other interested groups are currently underway to determine the feasibility of establishing passenger service between Ingalls Shipbuilding facility and strategic points along the Coast.

Ports and Harbors

Eight maritime ports are found in the three coastal counties of Mississippi. Of these, only two are given significant consideration relative to transportation. Included here are the port facilities of Pascagoula and the State Port at Gulfport. Because of their

commercial import and export capabilities these ports have been examined in terms of tonnage handled during the period July through September, 1975. It is realized that the following data provide little basis for determining trends in port activities. However, it is intended that this information provide some insight into the magnitude of current maritime transportation.

As shown in Table VI-3 the vast majority of Gulf Coast maritime transport activities occurred at the Pascagoula port facilities. Here the largest shipments were soybean and wheat; while in Gulfport the largest shipments were bananas. It must be noted that these figures represent a three month period and not the total year. In order to accurately access ocean transport and shipping trends of the two ports, historical data over several years should be analyzed.

The remaining six harbors on the Mississippi Coast may be more accurately described as marinas. These serve the purpose of providing docking facilities, gas, oil and various other marine services as well as protection for small craft. These types of harbors are recreational in nature and are identified by name and number under the recreation section of this text. They are found in Bay St. Louis, Pass Christian, Long Beach, Gulfport, at the Broadwater Hotel, Biloxi, Ocean Springs and Pascagoula.

Interior Navigation

Ocean transportation routes, though not specifically identified, provide access to the two major commercial harbors previously mentioned. Interior navigation routes must be given special attention, however, because of their ability to provide access to an unlimited number of inland destinations.

TABLE VI-3
REVENUE TONNAGE
MARITIME PORTS OF PASCAGOULA AND GULFPORT
July 1, 1975 through September 30, 1975

PASCAGOULA	Tonnage		GULFPORT	Tonnage	
Cargo	Inbound	Outbound	Cargo	Inbound	Outbound
Rolled Oats		771	Bananas	111,824	
Soybean Meal	6,093	6,093	Cocanuts & Pineapples	1,611	
Alumina Hydrate	6,030		Fishmeal	5,818	
Flour		6,461	Cotton Bagging	567	
			Misc. Cargo	207	
			Jute Fiber	20	
Copper Matte		429	Coil Steel	5,650	
Copper Conct.		1,393	Lumber	954	
Lead Dross		1,677	Linerboard		17,407
Lead Conct.		5,690	Frozen Meat		5,778
Molybdenum		4,911	General Cargo		4,543
Potash	40,070		Cowhides		2,084
Fertilizer		3,407	Cotton		4,459
Zinc Conct.	4,229		Military Cargo		101
Firebrick		1,150	Urea		15,300
			Fertilizer		16,617
			Misc. Cargo		109
			Scrap Metal		5,525
			Fishmeal		8,416
Rubber	18,237		Ammo. Phos.		9,898
				126,651	90,237
USDA Cargo		5,507		216,888	
Soybeans	107,693	126,401			
Wheat	283,105	445,171			
TOTAL	965,457	646,729			
	1,112,186				

SOURCE: Port of Pascagoula Tonnage Reports obtained through the Miss. Research & Development Center, Long Beach, Miss. and "Port of Gulfport Manifest", Third Quarter, 1975.

Mississippi State laws define navigable streams as follows;

> All rivers, creeks and bayous in this state, twenty-five miles in length that have sufficient depth and width of water for thirty consecutive days in the year for floating a steamboat with carrying capacity of two hundred bales of cotton.....(Mississippi' Code 1972 - 51-1-1.)

While it appears that this definition is somewhat antiquated, it is in keeping with navigable limits as defined for the purpose of this report. Navigable limits as referred to herein mean those points on major streams beyond which it is hazardous for commercial fishing boats or industrial barges to proceed. Major streams and their navigable limits as identified by the U S. Corps of Engineers, Mobile, are shown in Table VI-4.

TABLE VI-4
NAVIGABLE INLAND WATERWAYS
MISSISSIPPI COASTAL COUNTIES

Stream	Navigable from	to	Type of COE Maintenance
Pearl River West	mouth	Bogalousa	Bar at mouth & river channel
Pearl River East	mouth	NSTL	Bar at mouth & river channel
Bayou Cadet	mouth	Lower limits	Bar at mouth & river channel
Jourdan River	mouth	8 miles inland	Bar at mouth
Wolf River	mouth	8 miles inland	Bar at mouth
Bay St. Louis	mouth	Mouth of Jourday	Channel & river bars
Harrison Co. Industrial Canal	mouth	Three Rivers Road	Maintained by the Harrison County Development Commission
Bayou Benard	mouth	Three Rivers Road	Bar at mouth
Biloxi River	mouth	Miss. Power Plant	Bar at mouth
Tchoutacabouffa River	mouth	I-10 bridge	Bar at mouth
Biloxi Bay	mouth	Mouth at Bayou Benard	Channel & river bars
Fort Bayou	mouth	5 miles inland	Bar at mouth
Pascagoula River			
Deep water	mouth	Railroad Bridge	Channel
Barge traffic	mouth	Moss Point	Channel
Shallow draft	mouth	Merrill	Snagging
Escatawpa River	mouth	Moss Point	Channel
* Intercoastal Waterway & Harbors			Channel

* Intercoastal Waterway - located off shore in the Mississippi Sound is maintained by the Corps of Engineers on a regular basis.

SOURCE: U. S. Corps of Engineers - Operations Division, Mobile Office, Jan. 1976.

TASK VII

HOUSING & POPULATION

Under this task population and housing have been considered concurrently. The reason for this lies in the fact that existing housing data has been used as a tool to estimate current population and, to a lesser extent, to forecast population growth. In making population forecasts, housing, as well as historic data, census information, and existing and proposed land use regulations, have been utilized. The following text and tabulations address population and housing separately, but it must be noted that they are inseparable when considering the socio-economic elements of land use.

Population

Population in the study area experienced considerable growth during the period 1940 to 1970. As shown in Table VII-1, the region experienced a growth of 163 percent over the 30 year period while the State of Mississippi experienced less than 2 percent growth. The largest individual county growth was seen in Jackson County where population increased by 327 percent.

It is obvious from these facts that the coastal area, particularly Harrison and Jackson Counties is growing at a rapid rate. Because of this, special attention must be given the area in providing services and meeting growing socio-economic demands brought on by these increases.

Housing

As with population, housing in the study area experienced considerable growth during the period 1940 to 1970. Table VII-2 indicates that housing in the region increased by 205 percent. It is interesting to note that the housing growth rate increased more rapidly than did the population growth rate for the same period. One explanation for this lies in the

TABLE VII-1
POPULATION GROWTH PATTERNS
1940 to 1970

Area	Population				Percent change
	1940	1950	1960	1970	1940 to 1970
Hancock Co.	11,328	11,891	14,039	17,387	53
Harrison Co.	50,799	84,073	119,489	134,582	165
Jackson Co.	20,601	31,401	55,522	87,975	327
Pearl River Co.	19,125	20,641	22,411	27,802	45
Region	101,853	148,006	211,461	267,746	163
State	2,183,796	2,178,914	2,178,141	2,216,912	2

SOURCE: GRPC, "1973 Housing Program" based on Census Data for the years 1940, 1950, 1960, and 1970.

TABLE VII-2
HOUSING GROWTH PATTERNS
1940 to 1970

Area	Housing				Percent Change
	1940	1950	1960	1970	1940 to 1970
Hancock Co.	3,602	4,505	6,413	7,330	103
Harrison Co.	14,062	23,164	35,227	41,579	196
Jackson Co.	5,451	9,838	16,226	27,513	404
Pearl River Co.	4,750	5,724	6,633	8,850	86
Region	27,883	43,231	64,499	85,272	205
State	557,246	609,329	628,445	699,178	25

SOURCE: GRPC "1973 Housing Program", based on Census Data for the years 1940, 1950, 1960, and 1970.

fact that family sizes decreased creating a greater demand for housing. To illustrate this, it was found that in 1940 there were 3.65 persons per household in the region. In 1950 the ratio had dropped to 3.42; in 1960, to 3.27; and in 1970 the ratio was 3.13.

Current Population and Housing Overview

Since 1970 few variations have been found in the pattern. In 1975 the GRPC conducted its annual housing inventory and analysis. Using data gathered through land use surveys in 1972 and building permits for 1973 and 1974, along with updated vacancy rates provided through postal surveys conducted by the Department of Housing and Urban Development (DHUD), several conclusions were reached. Foremost among these was that trends established between 1940 and 1970 were currently the same. It was found that presently there are between 2.89 and 3.13 persons per household. Such is in keeping with the general belief that family sizes are becoming smaller while the housing market is becoming over saturated.

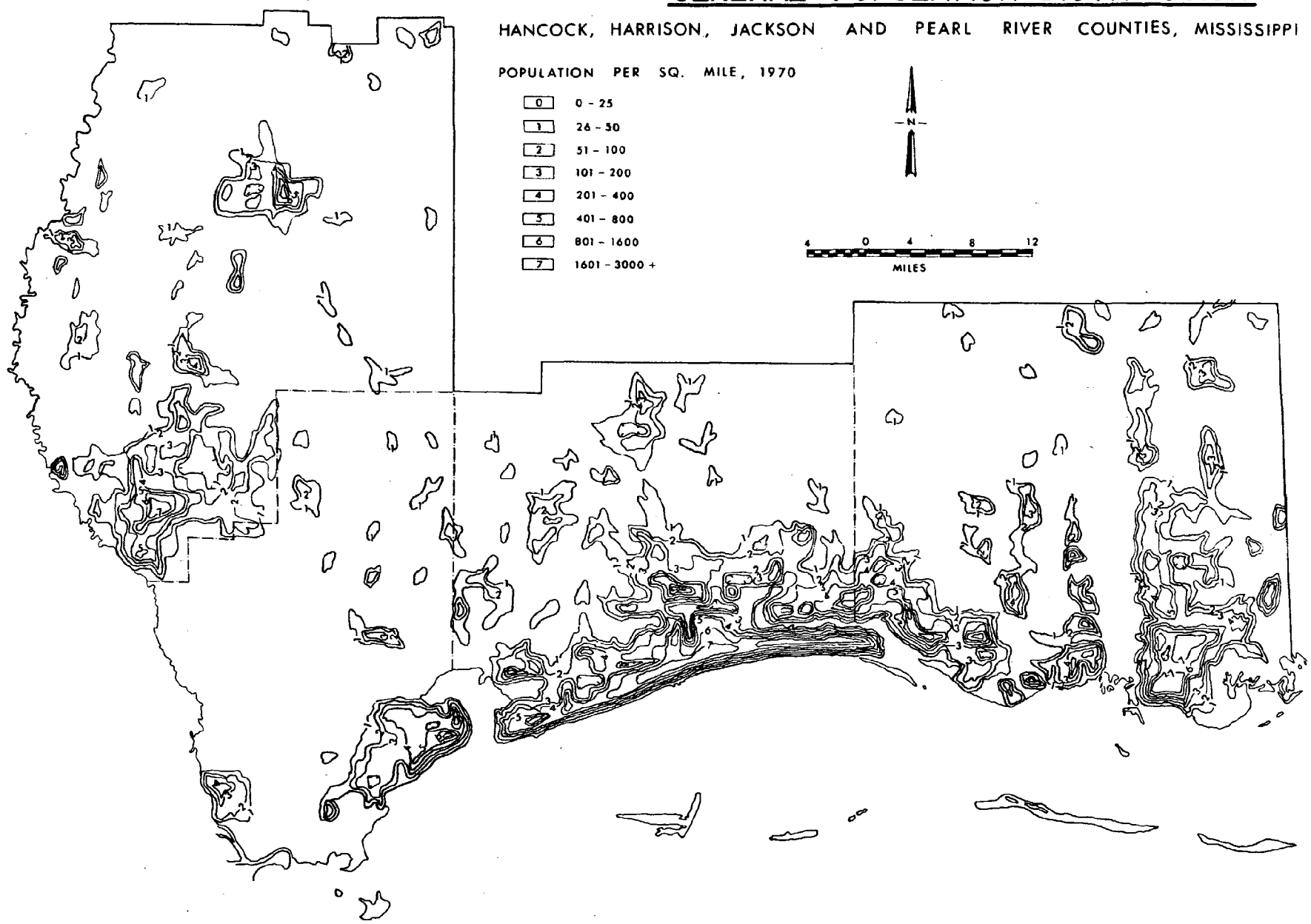
These facts were emphasized in order that selected historical background data might be combined with population and housing estimates and forecast being provided under TASK VII of this program. Such information can be useful in analyzing forecasted growth in the study area, (for general population distributions, refer to Figure VII-1).

Detailed Population and Housing Characteristics

Population and housing characteristics as mapped on population density overlays, (Figure VIII-3), have been coded in order that various concentrations may be looked at rather than individual totals by geographical area. Codes were designed so that one code applies to both housing and population as well as present and future (to the year 2000) concentrations. Codes are defined in Table VII-3 and are explained as follows. Code 1 means that the density range for a particular area is between 0 and 500 people per square mile and between 0 and 160 houses per square miles. (NOTE: Housing density is based on the number of persons per household as defined by the 1970 census and varies between counties,

FIGURE VII-1 **GENERAL POPULATION DISTRIBUTION**

HANCOCK, HARRISON, JACKSON AND PEARL RIVER COUNTIES, MISSISSIPPI



Traffic Analysis Zones (TAZ) and townships throughout the study area.) For purposes of coding, however, a ratio 3.13 persons per household is uniformally applied. Actual housing counts by township and traffic zones are found in Tables VII-4 and VII-5.

TABLE VII-3

POPULATION AND HOUSING DENSITY CODING SYSTEM

Code	People Per Sq. Mile	Houses Per Sq. Mile
1	0- 500	0- 160
2	501-1000	161- 319
3	1001-2500	320- 799
4	2501-5000	800-1597
5	Over-5000	Over-1597

Each section in the unincorporated area and each TAZ in the municipalities is coded to define existing and future population and housing characteristics. For example, a code of 2/3 means that the present population density is between 501 and 1000 people per square mile (denoted by Code 2) and the future population density is expected to be between 1001 and 2500 people per square mile (denoted by Code 3). Likewise, present and anticipated housing densities by geographical areas may be found.

For more detailed population and housing characteristics, the following tabulations have been compiled in accordance with requirements under TASK VII of this project. Table VII-4 depicts existing and forecasted population and housing by selected areas (TAZ) identified on the population density overlays in which municipalities are found. Unincorporated area population and housing estimates are shown on Table VII-5. These estimates cover the total township for which corresponding township codes are shown.

Population estimates at 5 year intervals (Table VII-6) have been computed for each municipality in the Coast counties in order to address socio-economic demands where they are most frequently found. Countywide estimates and forecasts to the year 2000 are shown in Table VII-7.

TABLE VII-4

MUNICIPAL POPULATION & HOUSING

EXISTING and FORECASTED

Municipality	TAZ	Population 1975	Population 2000	Housing 1975	Housing 2000
BAY ST. LOUIS	288	34	232	14	98
	289	60	467	25	197
	291	703	971	297	409
	292	821	1,228	346	518
	293	612	1,019	258	430
	294	870	898	367	379
	295	626	760	264	321
	296	309	309	130	130
	297	406	813	171	343
	298	1,574	1,982	664	836
	299	423	829	178	350
	300	204	611	86	258
	301	169	576	71	243
	302	43	194	18	82
Total		6,854	10,899	2,889	4,594
WAVELAND	299	17	180	7	77
	301	22	98	9	41
	303	321	576	135	243
	304	894	1,060	377	447
	305	606	771	255	325
	306	1,234	1,397	520	589
	307	619	749	250	316
	308	38	240	16	101
	309	0	166	0	70
	310	223	389	94	164
	311	640	809	271	341
Total		4,614	6,438	1,934	2,714
PASS CHRISTIAN	268	588	827	182	250
	249	1,550	1,790	480	554
	2501	264	503	82	155
	2502	26	265	8	82
	260	859	1,098	266	340
	261	517	756	160	234
	262	627	862	194	267
	263	775	1,011	240	313
	264	610	849	189	263
	265	391	630	121	195
	267	565	804	175	249
	270	161	400	50	124
	271	168	406	52	126
	274	48	287	15	89
Total		7,149	10,488	2,214	3,247
LONG BEACH	223	71	517	22	160
	2411	1,960	2,404	607	744
	2412	103	155	32	48
	242	1,337	1,779	414	551
	243	572	572	177	177
	244	507	778	157	241
	245	1,547	1,990	479	616
	246	1,850	2,261	573	700
	248	1,292	1,748	400	541
Total		9,239	12,204	2,861	3,778
GULFPORT	175	2,578	2,578	798	798
	176	2,164	2,913	670	902
	177	439	1,189	136	368
	181	0	0	0	0
	182	1,118	1,867	346	578
	183	853	853	264	264
	184	1,777	2,529	550	783
	185	2,203	2,396	682	742
	186	2,303	3,004	713	930
	187	1,670	2,419	517	749
	191	1,324	1,763	410	546
GULFPORT cont'd.	192	927	1,680	287	520
	193	2,161	2,913	669	901
	194	843	1,589	261	492
	195	1,205	1,957	373	606
	196	1,764	2,516	546	779
	197	1,757	2,504	544	775
	198	2,025	2,781	627	861
	199	4,596	5,356	1,423	1,658
	200	898	1,644	278	509
	201	527	1,102	163	341
	202	1,473	1,489	456	461
	203	924	1,137	286	352
	204	614	614	190	190
	205	937	1,134	290	351
	206	97	97	30	30
	207	23	23	7	7
	208	65	65	20	20
	209	3	3	1	1
	210	0	0	0	0
	211	0	0	0	0
	212	0	0	0	0
	213	0	0	0	0
	214	52	52	16	16
	215	32	32	10	10
	2161	769	769	238	238
	2162	39	39	12	12
	217	2,222	2,456	688	760
	218	2,019	2,771	625	858
	219	1,618	2,370	501	734
	220	937	1,686	290	522
	2211	1,069	1,299	331	402
	2212	88	88	27	27
	222	1,137	1,886	352	584
	223	2,590	3,347	802	1,036
	224	0	749	0	232
	225	2,177	2,926	674	906
	2261	162	162	50	50
	2262	113	113	35	35
Total		52,291	68,156	16,188	21,936
BILOXI	102	1,327	2,746	411	850
	103	733	981	227	304
	104	0	0	0	0
	105	372	1,789	115	554
	106	1,447	2,174	448	673
	107	788	1,448	244	448
	108	1,176	1,983	364	614
	109	1,870	2,807	579	869
	110	1,582	1,582	490	490
	111	1,157	1,157	358	358
	112	1,273	1,528	394	473
	113	107	107	33	33
	114	149	149	46	46
	115	91	91	28	28
	116	29	29	9	9
	117	29	29	9	9
	118	0	0	0	0
	119	110	110	34	34
	120	19	19	6	6
	121	1,101	1,101	341	341
	122	1,841	2,591	570	802
	123	1,076	3,036	333	940
	124	1,127	1,712	349	530
	125	1,221	1,221	378	378
	126	652	862	202	267
	127	917	1,127	284	349
	128	1,379	1,379	427	427
BILOXI cont'd.	129	0	0	0	0 (A)
	130	1,725	2,322	534	719
	131	1,140	1,502	353	465
	132	0	0	0	0
	133	2,755	2,755	853	853
	134	1,941	1,941	601	601
	1350	2,006	2,904	621	899
	1351	0	0	0	0 (A)
	136	1,076	3,443	333	1,065
	137	1,770	4,144	550	1,282
	138	414	3,656	128	1,132
	139	1,686	2,413	522	747
	140	2,281	3,282	706	1,016
	141	0	0	0	0
	142	681	3,049	211	944
	143	2,067	4,428	640	1,371
	188	578	2,765	179	856
	189	843	1,579	261	489
	190	578	578	179	179
Total		43,025	72,471	13,350	22,450
OCEAN SPRINGS	83	837	1,727	263	543
	87	779	1,669	245	525
	88	5,085	5,975	1,599	1,879
	89	2,242	3,129	705	985
	90	3,062	3,959	963	1,245
	91	1,723	2,610	542	821
	92	442	1,288	139	405
Total		14,170	20,357	4,456	6,403
MOSS POINT	6	0	477	0	150
	7	197	1,809	62	569
	15	529	2,185	189	687
	16	0	83	0	26
	17	1,189	2,433	374	765
	18	674	525	212	165
	19	0	0	0	0
	23	1,126	2,317	354	729
	24	140	140	44	44
	25	79	79	25	25
	26	760	2,373	239	746
	27	4,410	6,004	1,387	1,888
	28	3,654	5,269	1,149	1,657
	29	1,937	3,568	609	1,116
	30	0	0	0	0
	33	2,235	3,848	703	1,210
	34	1,743	3,355	548	1,055
	35	1,285	2,897	404	911
Total		20,008	37,362	6,299	11,743
PASCAGOULA	30	39	48	12	15
	31	401	938	126	295
	32	750	2,171	236	683
	36	881	2,108	277	663
	37	1,577	2,678	496	842
	38	70	70	22	22
	39	3,021	4,716	950	1,473
	40	1,533	2,631	482	827
	41	86	137	27	43
	42	1,141	2,509	359	789
	43	1,711	2,938	538	924
	44	1,574	2,803	495	880
	45	3,978	4,767	1,251	1,499
	46	5,670	5,813	1,783	1,828
	47	925	925	291	291
	48	913	1,285	287	404
	49	1,179	2,200	371	694
	50	1,698	2,035	534	640
	51	1,177	1,943	370	611
	52	1,390	1,784	437	561
	53	893	1,746	281	549
	54	19	105	6	33
	55	773	1,527	243	478
	56	665	1,307	209	411
	57	1,218	1,409	383	443
	58	156	277	49	87
	59	0	0	0	0
	60	0	0	0	0
	61	0	0	0	0
	62	283	283	89	89
	63	153	413	48	130
	64	0	0	0	0
	65	0	0	0	0
Total		33,874	51,566	10,652	16,204
PICAYUNE 1/	---	10,889	---	3,468	---
POPLARVILLE 1/	---	2,317	---	738	---

(A) Keesler AFB

1/ Population and Housing Data reflect 1973 counts for total municipalities in Picayune and Poplarville. No forecasts to 2000 are available.

TABLE VII - 5

UNINCORPORATED AREA POPULATION AND HOUSING
EXISTING AND FORECASTED
Gulf Region

County	Township Code	Population 1975	Population 2000	Housing 1975	Housing 2000
HANCOCK COUNTY	66	0	0	0	0
	65	164	164	69	69
	64	0	0	0	0
	63	0	0	0	0
	62	976	1,369	412	577
	61	0	0	0	0
	60	0	0	0	0
	59	510	1,285	214	542
	58	147	147	62	62
	57	236	619	100	261
	56	514	514	217	217
	55	348	348	146	146
	54	481	481	203	203
	53	672	672	283	283
	52	1,634	15,467	690	6,526
	51	2,096	13,923	884	5,871
	50	1,235	2,013	521	849
	49	Urban Area - See Municipal Population & Housing			
County Total		9,013	37,002	3,801	15,606
HARRISON COUNTY	48	2,526	5,898	782	1,826
	47	1,225	2,639	379	817
	46	646	646	201	201
	45	351	351	110	110
	44	79	79	24	24
	43	709	709	220	220
	42	999	999	311	311
	41	2,444	5,372	736	1,663
	40	5,937	8,944	1,847	2,769
	39	32	184	10	57
	38	17,843	22,167	5,586	6,873
	37	2,238	4,138	693	1,296
	36	1,158	1,158	360	360
	35	180	180	56	56
	34	9	9	3	3
	33	100	100	31	31
	32	1,600	1,600	497	497
	31	5,974	13,908	1,847	4,306
	30	6,575	8,779	2,036	2,718
	29	600	1,059	186	328
	28	12	35	4	11
	27	32	32	10	10
County Total		51,451	78,986	15,929	24,487

County	Township Code	Population 1975	Population 2000	Housing 1975	Housing 2000
JACKSON COUNTY	26	16	16	5	5
	25	156	156	49	49
	24	1,673	3,161	526	994
	23	8,350	12,224	2,626	3,844
	22	1,066	2,605	335	819
	21	3,672	10,846	1,154	3,411
	20	774	774	243	243
	19	124	124	39	39
	18	184	184	58	58
	17	134	134	42	42
	16	698	892	219	281
	15	2,559	2,814	805	885
	14	4,969	10,348	1,562	3,254
	13	4,786	8,217	1,505	2,584
	12	1,022	1,905	321	599
	11	5,186	7,883	1,631	2,479
	10	2,653	4,342	837	1,365
	9	1,599	2,063	503	648
	8	594	594	186	186
	7	1,354	1,294	426	407
	6	820	820	258	258
	5	2,989	4,490	940	1,412
	4	1,928	4,309	605	1,355
	3	32	32	10	10
	2	239	239	75	75
	1	0	0	0	0
County Total		47,584	80,466	14,960	25,302

County	Township Code	Population 1972	Housing 1972
PEARL RIVER COUNTY	91	29	9
	90	517	163
	89	526	166
	88	469	148
	87	105	33
	86	3,261	997
	85	2,184	689
	84	748	236
	83	374	118
	82	181	57
	81	232	73
	80	162	51
	79	1,173	370
	78	653	206
	77	659	208
	76	1,252	395
	75	1,164	366
	74	276	87
	73	466	147
	72	278	88
	71	434	137
	70	482	152
	69	205	64
	68	276	87
	67	392	122
County Total		16,498	5,082

TABLE VII-6
MUNICIPAL POPULATION
FIVE YEAR INTERVALS
1975 through 2000
Gulf Region

Municipality	1975	1980	1985	1990	1995	2000
	(Population)					
HANCOCK COUNTY						
Bay St. Louis	6,854	7,654	8,454	9,254	10,054	10,899
Waveland	4,614	4,979	5,344	5,709	6,074	6,438
HARRISON COUNTY						
Pass Christian	7,149	7,828	8,507	9,208	9,908	10,488
Long Beach	9,239	9,353	9,467	10,252	11,037	12,204
Gulfport 1/	52,291	54,081	55,870	60,557	65,243	68,156
Biloxi 1/	43,025	49,387	55,749	61,295	66,840	72,471
JACKSON COUNTY						
Ocean Springs	14,170	15,078	15,985	17,771	19,557	20,357
Moss Point	20,008	23,986	27,964	31,091	34,218	37,362
Pascagoula	33,874	36,251	38,628	42,949	47,271	51,566

1/ Figures for Gulfport & Biloxi do not include population residing in on-base housing at Keesler Air Force Base & the Naval Construction Battalion Center.

SOURCE: Existing population figures are based on current housing accomodations. Forecasted populations are straight line projections based on historical data.

TABLE VII-7
COUNTYWIDE POPULATION ESTIMATES
EXISTING & FORECASTED

County	Population 1975	Population 2000
HANCOCK		
Total County	20,481	54,339
Total Unincorporated	9,013	37,002
Total Municipal	11,468	17,337
Bay St. Louis	6,854	10,899
Waveland	4,614	6,438
HARRISON		
Total County	163,155	242,305
Total Unincorporated	51,451	78,986
Total Municipal	111,704	163,319
Pass Christian	7,149	10,488
Long Beach	9,239	12,204
Gulfport	52,291	68,156
Biloxi	43,025	72,471
JACKSON		
Total County	115,636	189,751
Total Unincorporated	47,584	80,466
Total Municipal	68,052	109,285
Ocean Springs	14,170	20,357
Moss Point	20,008	37,362
Pascagoula	33,874	51,566
COASTAL REGION		
Total Region	299,991	476,446
Total Unincorporated	108,767	186,505
Total Municipal	191,224	289,441

TASK VIII

LAND USE & THE MAPPING PROCESS

Land use in the Gulf Region may be broadly grouped into eight classifications. These classifications, along with accompanying mapping explanations are addressed below. For reference purposes, a representative map has been reproduced, reduced, and included with this report, (see Figures VIII-1 and VIII-2). Figures VIII-3 and VIII-4, also included for reference purposes cover population densities by Section and TAZs and Federal and State land ownership by township and range. A total of 91 base maps and 364 accompanying overlays depicting existing land use, future land use, population distributions and Federal and State land ownership were prepared under this task.

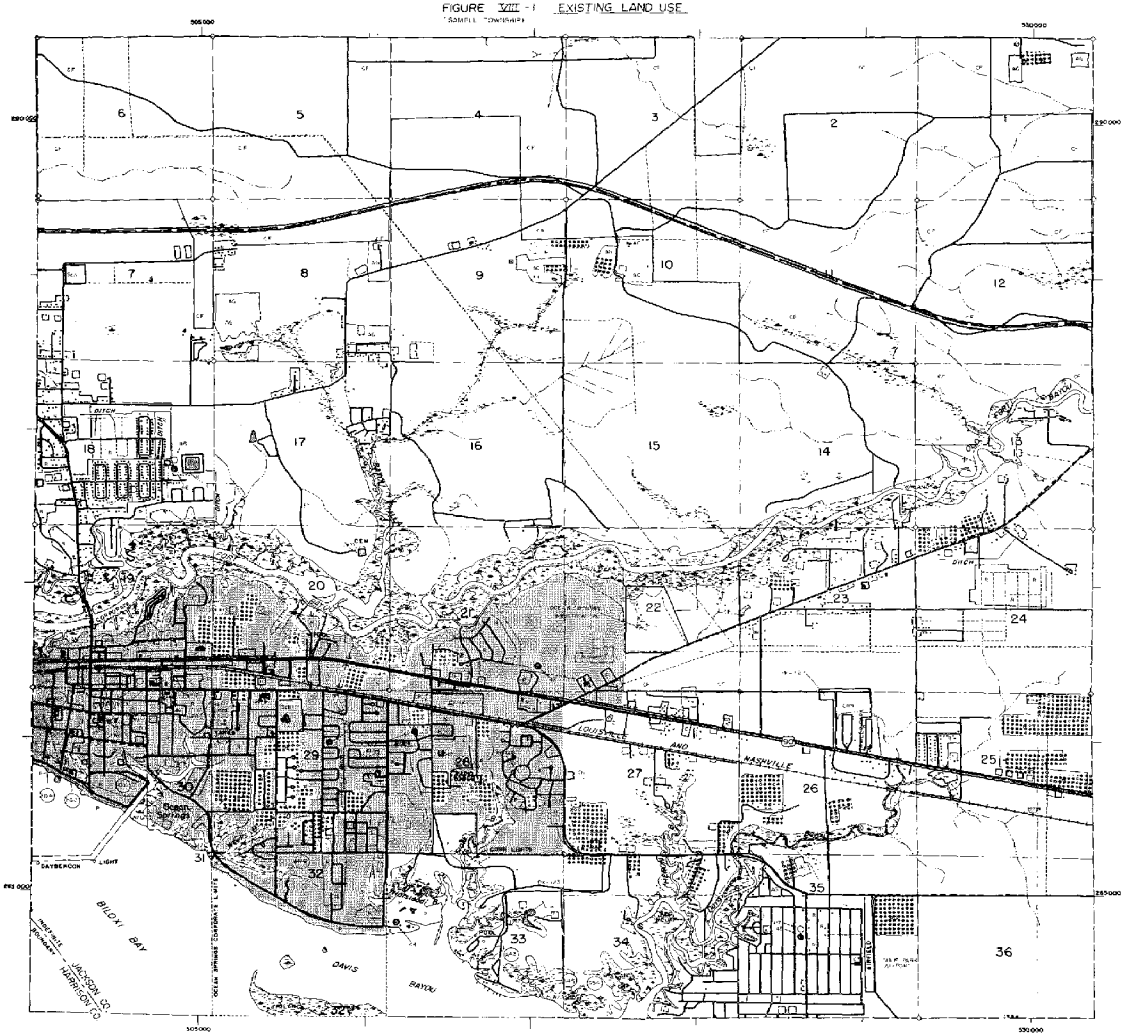
1. Residential contains five sub-categories; single family, mobile home, duplex, multi-family and mobile home parks. For mapping purposes, residential land uses may be identified as those areas in existing and future land use overlays outlined in yellow and designated residential by the symbol "R" (refer to Figures VIII-1 and 2). All five sub-categories are grouped under one heading for residential.

2. Commercial, covering all types of commercial activity including central business districts, neighborhood commercial, community and regional shopping centers, and general highway commercial are outlined in existing and future land use overlays in red and denoted commercial by the symbol "C" (Figures VIII 1 and 2).

3. Industrial classifications embrace all existing industries including all forms of manufacturing, open storage of raw materials, semi-finished and finished products, salvage yards and excavation activities. Industrial land uses are outlined in blue and symbolized by the letter "I" (Figures VIII 1 and 2).

4. Public and semi-public land uses cover all governmental activities including schools, colleges, fire stations, courthouses, city halls, libraries, and tax supported institutions, churches, non-profit hospitals, community centers, public recreation, parks,

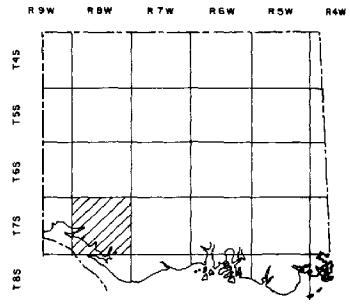
FIGURE VIII - 1 EXISTING LAND USE



OVERLAY LEGEND

- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- PUBLIC
  - CHURCHES
  - SCHOOLS
  - CEMETERIES
  - PARKS
  - LIBRARIES
  - CITY HALLS
  - HOSPITALS
  - PUBLIC OTHER
- ARCHAEOLOGICAL & HISTORICAL
- TRANSPORTATION
  - FREEWAYS/EXPRESSWAYS
  - ARTERIALS
  - COLLECTORS
  - POWER LINES
  - PIPELINES
  - RAILROADS
  - MAJOR STREAMS
- FACILITIES & UTILITIES
  - WELLS
  - TANKS
  - TREATMENT PLANTS
  - SOLID WASTE DISPOSAL SITES
- RESOURCES
  - AGRICULTURAL
  - ORCHARDS
  - WETLANDS
  - SWAMPS
  - COMMERCIAL FORESTS
  - CONSERVATION AREAS
- UNUSED

SHEET INDEX



T 7 S – R 8 W

TRUE NORTH
MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION 1960

SCALE 1:24000

BASE MAP LEGEND

- INTERSTATE HIGHWAY
- U. S. HIGHWAY
- STATE HIGHWAY
- ROADS
- PROPOSED INTERSTATE
- TRAILS
- RAILROAD
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE LIMITS
- CLAIM LINES
- TOWNSHIP LINE
- SECTION LINE
- POWER LINE
- PIPELINE
- STREAMS
- DITCH
- PONDS
- LAND MARK BUILDING
- BUILDINGS
- SCHOOLS
- CHURCHES
- CEMETERY
- TANKS
- WELLS
- PECAN GROVE
- TUNG GROVE
- MARSH & SWAMP

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TOWNSHIP NUMBER T7S R8W OVERLAY NO. 1

TITLE EXISTING LAND USE CODE 21

PLANIMETRIC MAP

JACKSON COUNTY MISSISSIPPI

prepared for

MISSISSIPPI MARINE RESOURCES COUNCIL

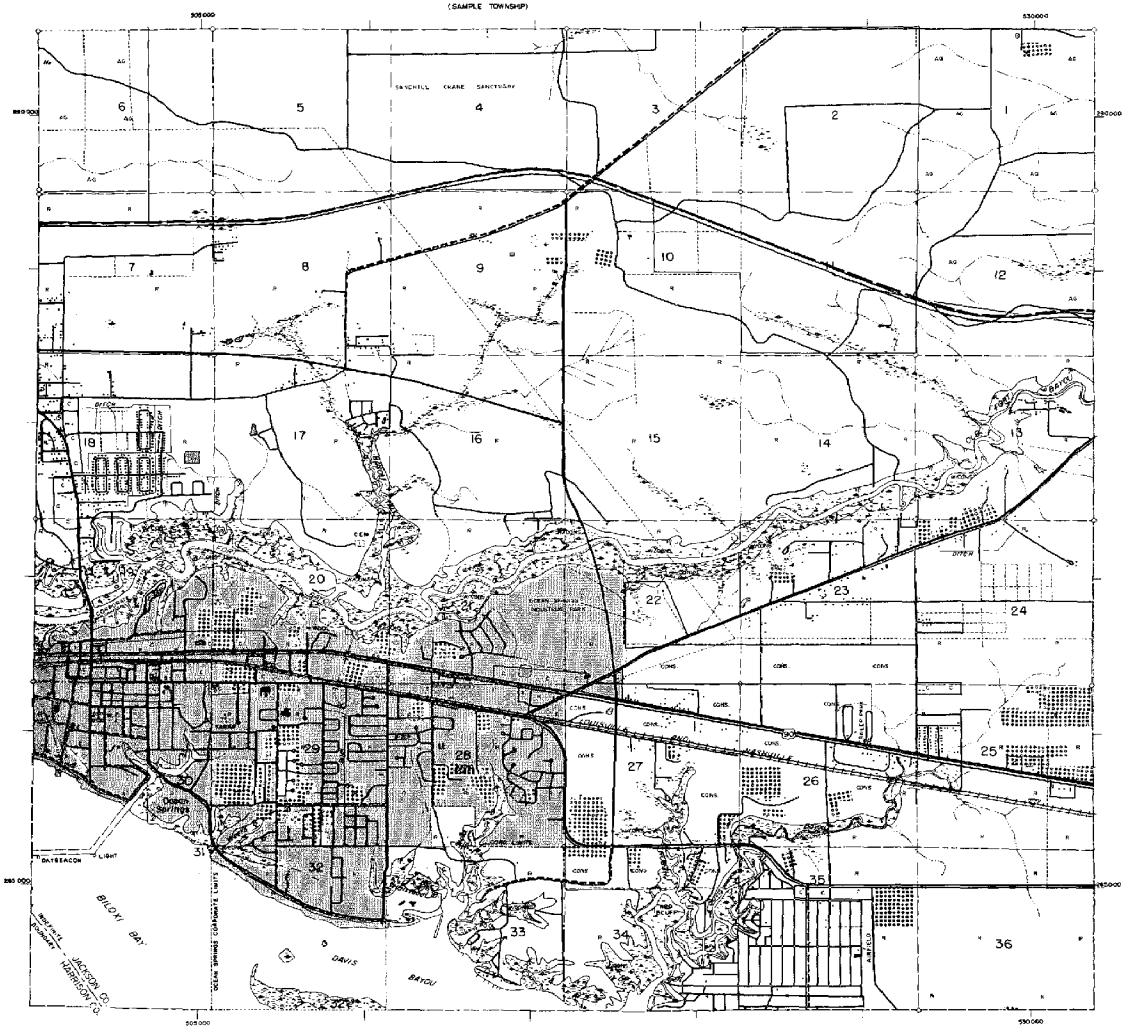
by

Gulf Regional Planning Commission

map source

GULF COAST AERIAL MAPPING CO. INC.

FIGURE VIII - 2 FUTURE LAND USE
(SAMPLE TOWNSHIP)

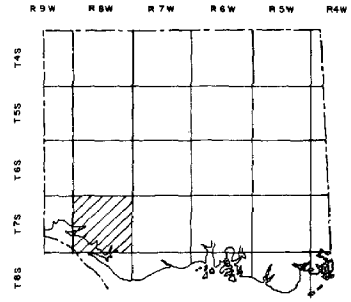


OVERLAY LEGEND

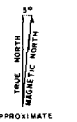
- RESIDENTIAL — R
- COMMERCIAL — C
- INDUSTRIAL — I
- PUBLIC
  - CHURCHES — Ch
  - SCHOOLS — Sch
  - CEMETERIES — Cem
  - PARKS — PK
  - LIBRARIES — Lb
  - CITY HALLS — CH
  - HOSPITALS — Hos
  - PUBLIC OTHER — P
- ARCHAEOLOGICAL & HISTORICAL
- TRANSPORTATION
  - FREEWAYS/EXPRESSWAYS
  - ARTERIALS
  - COLLECTORS
  - POWER LINES
  - PIPELINES
  - RAILROADS
  - MAJOR STREAMS
- FACILITIES & UTILITIES
  - WELLS
  - TANKS
  - TREATMENT PLANTS
  - SOLID WASTE DISPOSAL SITES
- RESOURCES
  - AGRICULTURAL — AG
  - ORCHARDS — H
  - WETLANDS — W
  - SWAMPS — SW
  - COMMERCIAL FORESTS — CF
  - CONSERVATION AREAS — Cons
- UNUSED

TOWNSHIP NUMBER T7S-R8W OVERLAY NO. 2
TITLE FUTURE LAND USE CODE 21

SHEET INDEX



T7S - R8W



APPROXIMATE
MEAN DECLINATION
1960

SCALE 1:24,000

BASE MAP LEGEND

- INTERSTATE HIGHWAY
- U.S. HIGHWAY
- STATE HIGHWAY
- ROADS
- PROPOSED INTERSTATE
- TRAILS
- RAILROAD
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE LIMITS
- CLAIM LINES
- TOWNSHIP LINE
- SECTION LINE
- POWER LINE
- PIPELINE
- STREAMS
- DITCH
- PONDS
- LAND MARK BUILDING
- BUILDINGS
- SCHOOLS
- CHURCHES
- CEMETERY
- TANKS
- WELLS
- PECAN GROVE
- TUNG GROVE
- MARSH & SWAMP

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PLANIMETRIC MAP

JACKSON COUNTY MISSISSIPPI

prepared for

MISSISSIPPI MARINE RESOURCES COUNCIL

by

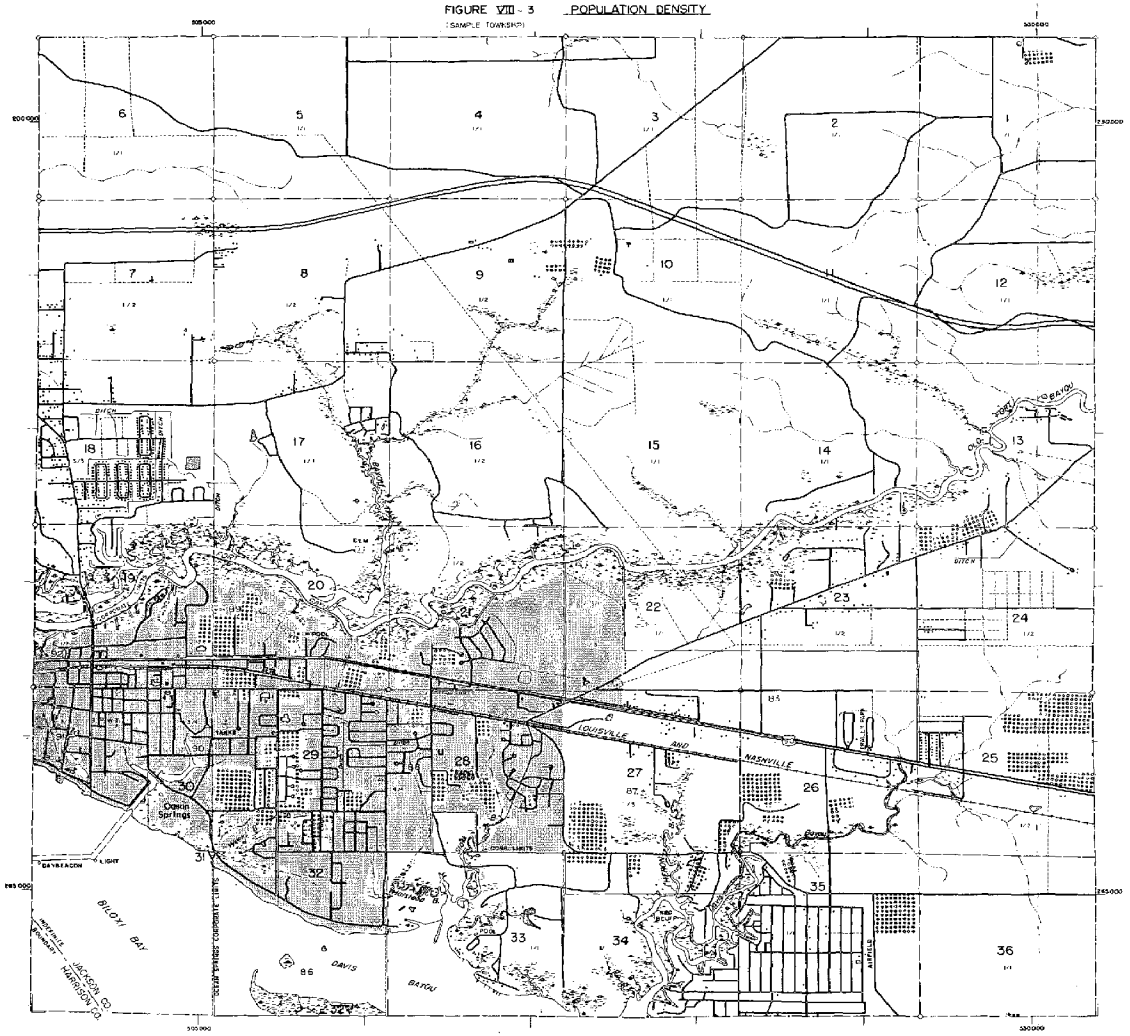
Gulf Regional Planning Commission

map source

GULF COAST AERIAL MAPPING CO. INC.

FIGURE VII - 3 POPULATION DENSITY

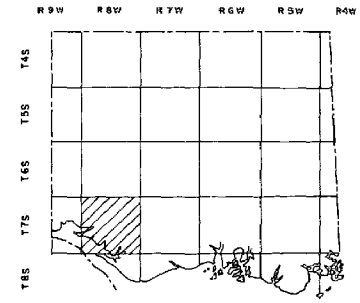
(SAMPLE TOWNSHIP)



OVERLAY LEGEND

- RESIDENTIAL — R
- COMMERCIAL — C
- INDUSTRIAL — I
- PUBLIC
  - CHURCHES — Ch
  - SCHOOLS — Sch
  - CEMETERIES — Cem
  - PARKS — Pk
  - LIBRARIES — Lib
  - CITY HALLS — Ch
  - HOSPITALS — Hos
  - PUBLIC OTHER — P
- ARCHAEOLOGICAL & HISTORICAL — ①
- TRANSPORTATION
  - FREEWAYS/EXPRESSWAYS
  - ARTERIALS
  - COLLECTORS
  - POWER LINES
  - PIPELINES
  - RAILROADS
  - MAJOR STREAMS
- FACILITIES & UTILITIES
  - WELLS — ○
  - TANKS — ○
  - TREATMENT PLANTS — ①
  - SOLID WASTE DISPOSAL SITES — △
- RESOURCES
  - AGRICULTURAL — Ag
  - ORCHARDS — H
  - WETLANDS — W
  - SWAMPS — Sw
  - COMMERCIAL FORESTS — Cf
  - CONSERVATION AREAS — Cons
- UNUSED

SHEET INDEX



T 7 S - R 8 W

5°
TRUE NORTH
MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION 1960

SCALE 1:24000

1 0 1000 2000 3000 4000 5000 6000 7000 FEET

BASE MAP LEGEND

- INTERSTATE HIGHWAY
- U.S. HIGHWAY
- STATE HIGHWAY
- ROADS
- PROPOSED INTERSTATE
- TRAILS
- RAILROAD
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE LIMITS
- CLAIM LINES
- TOWNSHIP LINE
- SECTION LINE
- POWER LINE
- PIPELINE
- STREAMS
- DITCH
- PONDS
- LAND MARK BUILDING
- BUILDINGS
- SCHOOLS
- CHURCHES
- CEMETERY
- TANKS
- WELLS
- PECAN GROVE
- TUNG GROVE
- MARSH & SWAMP

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TOWNSHIP NUMBER T7S-R8W OVERLAY NO. 3

TITLE POPULATION DENSITIES CODE 21

PLANIMETRIC MAP

JACKSON COUNTY MISSISSIPPI

prepared for

MISSISSIPPI MARINE RESOURCES COUNCIL

by

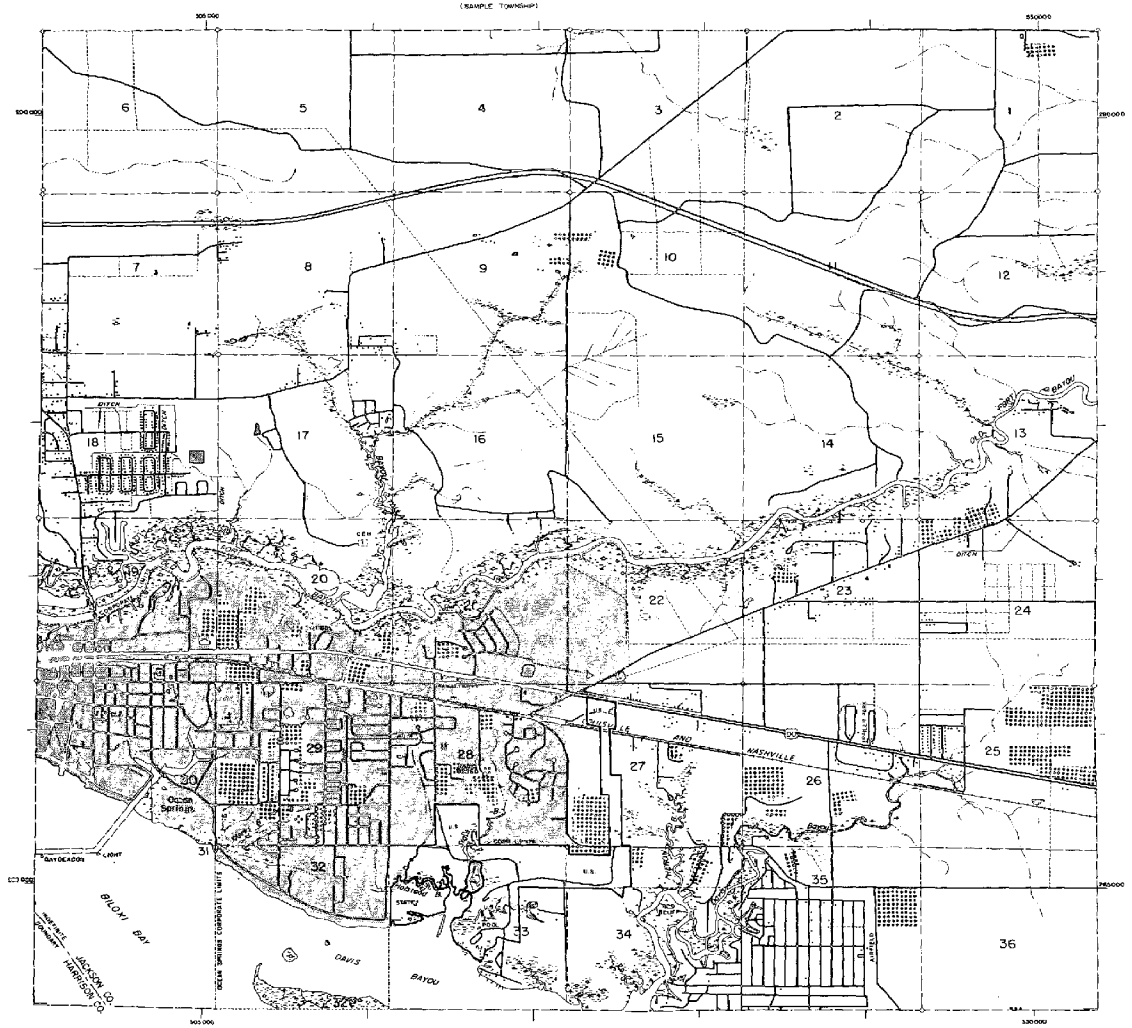
Gulf Regional Planning Commission

map source

GULF COAST AERIAL MAPPING CO. INC.

FIGURE VII - 4 FEDERAL - STATE OWNERSHIP

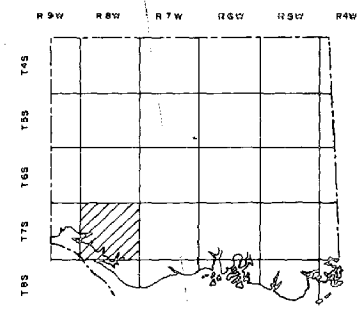
(SAMPLE TOWNSHIP)



OVERLAY LEGEND

RESIDENTIAL	R
COMMERCIAL	C
INDUSTRIAL	I
PUBLIC	
CHURCHES	Ch
SCHOOLS	Sch
CEMETERIES	Cem
PARKS	Pk
LIBRARIES	Lib
CITY HALLS	CH
HOSPITALS	Hsp
PUBLIC OTHER	P
ARCHAEOLOGICAL & HISTORICAL	①
TRANSPORTATION	
FREEWAYS (EXPRESSWAYS)	
ARTERIALS	
COLLECTORS	
POWER LINES	
PIPELINES	
RAILROADS	
MAJOR STREAMS	
FACILITIES & UTILITIES	
WELLS	○
TANKS	○
TREATMENT PLANTS	Ⓣ
SOLID WASTE DISPOSAL SITES	△
RESOURCES	
AGRICULTURAL	AG
ORCHARDS	H
WETLANDS	
SWAMPS	SWP
COMMERCIAL FORESTS	CF
CONSERVATION AREAS	Cons
UNUSED	

SHEET INDEX



T7S - R8W

TRUE NORTH
MAGNETIC NORTH

APPROXIMATE MEAN DECLINATION 1960

SCALE 1:24000

BASE MAP LEGEND

INTERSTATE HIGHWAY	I-10	PIPELINE	
U.S. HIGHWAY	US-90	STREAMS	
STATE HIGHWAY	MS-609	DITCH	DITCH
ROADS		PONDS	
PROPOSED INTERSTATE		LAND MARK BUILDING	LB
TRAILS		BUILDINGS	
RAILROAD		SCHOOLS	S
STATE BOUNDARY		CHURCHES	†
COUNTY BOUNDARY		CEMETERY	†
CORPORATE LIMITS		TANKS	○
CLAIM LINES		WELLS	○
TOWNSHIP LINE		PECAN GROVE	
SECTION LINE		TUNG GROVE	
POWER LINE		MARSH & SWAMP	

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TOWNSHIP NUMBER T7S-R8W OVERLAY NO 4

TITLE FEDERAL - STATE OWNERSHIP CODE 21

PLANIMETRIC MAP

JACKSON COUNTY MISSISSIPPI

prepared for

MISSISSIPPI MARINE RESOURCES COUNCIL

by

Gulf Regional Planning Commission

map source

GULF COAST AERIAL MAPPING CO. INC.

stadiums, public beaches and similar uses. These are outlined in green and are denoted by a series of symbols identified on the overlay legend on accompanying base maps (see Figures VIII-1 and 2).

5. Rights-of-way identify lands delineated for streets, roads, highways, railroads, and utility lines. Major routes are identified by brown lines and correspond to symbols shown on the overlay legend (Figures VIII 1 and 2).

6. Resource production activities include all types of farming, crops, pastures, dairies, orchards, commercial forests, national forests and tidal marshes. These are identified in black and are classified according to symbols contained on the overlay legend (Figures VIII- 1 and 2).

7. NASA-Military lands include the National Space Technologies Laboratory, Keesler Air Force Base and the Naval Construction Battalion Center (NCBC). As public institutions, these are shown in green and usually named accordingly (Figures VIII-1 and 2).

8. Water and Unclassified make up the remainder of land uses within this classification. These areas are usually left void of any classification and may be generally identified by lack of activity.

Land use surveys conducted by the GRPC in 1969 and 1972 serve as a basis for determining trends in land use acitivites. In the following paragraphs each county is addressed separately relative to land use changes between the years 1969 and 1972. Such comparisons may be used to analyze current activities and to plan future land uses within the study area.

Hancock County

Hancock County has two incorporated cities within its boundaries, Bay St. Louis and Waveland, both having comprehensive community plans by which growth may be guided. Between 1969 and 1974, Bay St. Louis updated its zoning regulations while Waveland adopted a completely new zoning ordinance. Hancock County has adopted subdivision regulations and is considering a county zoning plan.

The County's economy is directly linked with tourism but the degree of linkage is uncertain. With the opening of Interstate 10 during 1973, the urban areas (Bay St. Louis and Waveland) were by-passed by this major thoroughfare. The extent of economic consequences is undetermined at this time; however, an I-10 Impact Study conducted by GRPC in 1973 predicted minimum long term adverse impact.

Initial data for Hancock County was collected in 1969 while data for updating purposes was accumulated in 1972. A comparative analysis of these data revealed some interesting findings that are discussed below.

Residential land use showed an over-all increase of 47% from 1969 to 1972 (see Table VIII-1). An increase of this magnitude could possibly have had an undesirable effect on the County as a whole, due to the overloading of existing public facilities, such as streets, sewage, water systems, police and fire departments, schools and libraries. Fortunately, deficiencies have not been too severe, although sewage collection and water systems constitued somewhat significant problems. More recently efforts have been made to alleviate these deficiencies, the results of which are found in a new treatment plant for Waveland and experiments with new treatment concepts in the form of water hyacinths in Bay St. Louis. At present, Hancock County is utilizing only 19% of the total residential acreage that will be needed by 1990. To date, subdivision regulations have not been adequte to prevent or resolve most of the major deficiencies. County-wide zoning should, when adopted, alleviate many of the land use conflicts.

TABLE VIII-1

EXISTING LAND USE SUMMARIES

With Percent Changes from 1969 - 1972

County	Residential		Commercial		Industrial		Public, Semi-Public		Rights-of-Way		Resource Production		NASA Military		Water and Unclassified		Total
	Acreage	% Change	Acreage	% Change	Acreage	% Change	Acreage	% Change	Acreage	% Change	Acreage	% Change	Acreage	% Change	Acreage	% Change	Acreage
Hancock	3,865.9	47	231.6	18	4,442.6	1	1,480.3	95	6,835.8	4	59,018.1	50	109,820.7	0	122,165.6	-15	307,410.6
Harrison	14,239.3	18	1,434.2	13	2,389.3	15	5,366.6	0	10,193.4	3	187,449.3	3	2,802.1	0	155,467.4	- 4	379,341.6
Jackson	11,403.3	17	938.7	13	5,181.8	8	6,401.3	3	10,407.2	3	178,230.4	20	00.0	0	253,325.1	-10	465,887.8
Pearl River	5,291.8	44	288.3	18	601.5	0	2,662.0	- 1	9,346.1	7	252,334.2	0	2,678.3	0	246,792.4	- 1	519,994.5
REGION	34,800.3	--	2,892.8	--	12,665.2	--	15,910.2	--	36,782.5	--	677,032.1	--	115,301.1	-	777,750.5	--	1,673,134.5

SOURCE: GRPC - Regional Lane Use Plan, 1973.

Commercial acreage showed an over-all gain of 18% from 1969 to 1972. The increase was necessary to adequately provide goods and services for the large residential influx. Although the rise in commercial property is inevitable, it is vital that commercial zones be closely monitored in the future to guard against "spot zoning" and "strip commercialism".

Industrial land use increased only slightly over the past three years; nevertheless, a great amount of progress was accomplished in this category. Considerable development occurred at the Industrial Park and Seaway (Port Bienville) located south of Pearlington near the mouth of Pearl River. By means of this development, Hancock County, under the direction of the Port and Harbor Commission, is attempting to further diversify the County's economic base. Industrial development also occurred at Stennis International Airport which is located adjacent to the eastern boundary of the Buffer Zone (NASA-MTF).

Public and Semi-Public acreage grew enormously over the period of analysis (1969-1972). Actual increase of this category was almost 100%. Two facilities were primarily responsible for this increase. First was the addition of Stennis International Airport which was not considered in the initial survey since the facility was not then in operation. The other major addition came with the donation of several hundred acres as a Boy Scout Camp which is placed in the Semi-Public category. The Boy Scout facility is now completed and includes a large lake providing additional recreational activities. These facilities, combined with the construction of Buccaneer State Park in Waveland, constitute three very substantial assets for Hancock County.

Resource Production land use reflected an increase of 50% from 1969 to 1972. The actual increase was a result of Tidal Marsh becoming a protected resource, thus allowing tidelands to be placed in Resource Production. Tidal Marsh and its nutrients serve as spawning ground and feeding areas for many species of fishes that are vital to the seafood industry. Many acres of these marshes had been reclaimed for uncontrolled development purposes, mak-

ing it necessary to adopt restraining legislation. Agricultural and orchard acres remained stable with very little variation demonstrated in survey statistics.

Water and Unclassified decreased by 15% with several townships revealing a decrease of over 30%. Primary responsibility for the dramatic loss is due to the removal of Tidal Marsh from this category, which was recommended by the Regional Land Use Plan. Unclassified areas sustained the loss with water remaining the same.

Harrison County

As stated previously, base figures for Harrison County were obtained in 1969 with later statistics being accumulated in 1972. Harrison County has four incorporated cities; Biloxi, Gulfport, Long Beach, and Pass Christian, accounting for a major portion of the County's urban area. A comparison of base figures with present computations revealed no extraordinary trends (see Table VIII-1). The county, while appearing to be economically diversified, is at present highly dependant on military activities.

Residential acreage showed on overall increase of 18% from 1969 to 1972 with the urban area showing the greatest increase (22%). This growth was considered healthy and in accordance with the regional plan. The Regional Land Use Plan (1971) provides for a greater growth rate within the urban area to maintain a balanced land use pattern. Rural residential acreage increased significantly due to the increase of non-farm residences and the influx of mobile home dwellers.

Commercial acreage increased 13% through the County with a 9% gain in the urban area and a 29% gain in the rural area in the past three years (see Table VIII-2). Commercial acreage increased at a faster rate than anticipated in the land use plan, particularly in the rural area.

TABLE VIII-2
HARRISON COUNTY
RESIDENTIAL-COMMERCIAL ANALYSIS

	No. of Acres		Percent
	1969	1972	Increase
URBAN (incorporated area)			
Residential	6,500.16	7,907.55	22
Commercial	997.73	1,084.50	9
RURAL (unincorporated area)			
Residential	5,564.94	6,331.78	14
Commercial	270.88	349.71	29

Industrial land use rose substantially in three years (15%). The main addition came with the development of the Long Beach Industrial Park.

Public and Semi-Public land use show no appreciable increase; however, this does not indicate a lack of constructive activity in the category. New parks were constructed and others received much needed restoration efforts. Other public and semi-public activities involve plans for construction of the Coast Coliseum on Highway 90 in Biloxi and a new County Courthouse in Gulfport.

Resource Production acreage increased by 3%. This figure is substantial when the amount of acres involved is considered, amounting to an actual increase of more than 5,000 acres. The tremendous increase is attributable to the addition of Tidal Marsh. Tide lands or those lands below ordinary mean high tide are now protected and regulated under 1973 state legislative action, which had been recommended by the initial GRPC land use plan. Commercial and National forests remained constant with no noticable variance in the land use.

Water and Unclassified areas decreased 4% primarily because of tidal marsh being reclassified and placed in Resource Production. As other land uses expand, unclassified areas will obviously decrease. The rate of decrease will be rapid as all unclassified lands are programmed to be integrated with productive land uses, as illustrated by tidal marsh being reclassified as Resource Production. By 1990 all land in the County should be in a productive status.

Jackson County

Jackson County was the first County in the Region to adopt a County-wide zoning ordinance and subdivision regulations. Each of the three cities, Moss Point, Ocean Springs, and Pascagoula, have comprehensive plans and corresponding zoning ordinances. It was important that Jackson County be completely zoned because of the rapid growth over the past decade. Early action in land use controls has already made it possible to anticipate and avert potential problems.

Survey data obtained in 1969 and again in 1972 revealed, as suspected, that Jackson County is growing rapidly in most areas. However, monitoring of certain indicators revealed that accelerated growth has probably reached its peak and is now continuing at a more normal rate.

Residential land use had a tremendous increase of 44% between 1969 and 1972. Survey findings also revealed a 30% increase in the total number of dwelling units within the same period. One explanation for a larger increase in residential acreage than in number of dwelling units is that a greater number of homes were being built in the County where lot sizes tend to be larger than within the cities. The County economy has expanded rapidly and in an effort to keep up with this expansion, developers have worked vigorously to provide a supply of residential property adequate to meet current demands. During 1972 and early 1973 residential construction became so intensive that oversaturation resulted. More recent data, however, indicate some stabilization is beginning to take place.

The Pascagoula City Planning Commission previously took action to prevent excessive development in the city by requesting a moratorium on the issuance of building permits for multi-family rental dwellings. The proposed moratorium was to last only until the City could be reasonably sure that the total number of rental units would not exceed occupancy demands. As of this writing the moratorium is still in effect; however, indications are that it may soon be lifted due to declining vacancies in apartments.

Commercial land uses showed an increase of approximately 13 percent. This increase was essential in order to supply the rapid residential growth with goods and services. Even with comprehensive zoning to regulate and guide commercial expansion, portions of this increase are seen as "strip commercialism" resulting from the continuing development of commercial property along U. S. Highway 90 between the cities of Ocean Springs and Pascagoula.

Industrial land use increased by 8% as the County continued to broaden its economic base. To the already existing industrial areas around Bayou Casotte, Moss Point and Ingalls shipyards, other plans were developed for additional industrial acreage. The City of Ocean Springs made preparations to create an Industrial Park that will provide job opportunities for residents of the western segment of the County and efforts are being initiated to make optimum use of land already set aside for industrial purposes.

Public and Semi-Public land use was 3% over the previous survey computations of 1969. The creation of the Gulf Islands National Seashore Park, although not appreciably increasing land area, was a monumental change. The headquarters for the National Park was formerly the Magnolia State Park located adjacent to Ocean Springs and bordering the Mississippi Sound. Other areas where increases occurred were in public utilities and services.

River.

The construction of a reservoir that would provide recreation and supplement existing water supplies has been the subject of continuing deliberation. There is already documented need for a new source of water in the Pascagoula-Moss Point area.

The City of Ocean Springs has undertaken a project to have Fort Maurepas (erected by D'Iberville in 1699) reconstructed to serve as a museum and historic attraction as a part of the National Bicentennial. The Fort will be a tremendous asset to the cultural and tourist interests of the Gulf Coast region and the State.

Plans are also in the initial stage for a major recreational facility to be built on Bluff Creek near the community of Vancleave. As population increases in Jackson County, a concentrated effort will be needed to obtain more recreational facilities for residents of the County as well as the region. The Regional Plan for Open Space, Recreation and Environmental Appearance has a number of recommendations to aid the County in acquiring more recreational facilities.

Resource Production remained a stable land use with the exception of the addition of Tidal Marsh which amounted to over twenty-seven thousand acres (20%), emphasizing the timeliness of recent state legislation to preserve coastal wetlands in the region.

Water and Unclassified areas had an over-all decrease of 9%, with the largest loss attributed to the removal of Tidal Marsh from this category. Increased residential land use also accounted for a portion of the decrease. The reduction of acreage in this land use was not unexpected, but predicted, in order to remain consistent with the Regional Land Use Plan. Unclassified areas incurred the decrease, while water areas remained virtually the same.

Pearl River County

Pearl River County has two cities, Poplarville and Picayune, which contain almost half of the County's population. Both cities have comprehensive plans and zoning ordinances. Zoning regulations for the county are still under advisement at this time.

Picayune has a stable economy with a number of industries to provide jobs and maintain a diversified economy. Picayune, located immediately north of NSTL, suffered an economic depression as did Hancock County when the Test Facility experienced operational cutbacks in 1970. The city has now overcome the setback due to its diversity and stability. Poplarville contains industry as well as a two-year college to compliment its industry. Plans are now in process whereby the city of Poplarville, in cooperation with the County, will construct a general aviation airport to be used by local industries for transport and by Pearl River Junior College for educational purposes.

Data obtained in 1969 and again in 1972 prove that Pearl River County is growing steadily and, barring any unforeseen changes, it should continue to do so.

Residential acreage proved to be the most rapidly expanding land use in the County, having an increase of 44% (see Table VIII-1). Survey statistics indicated that Picayune had a significant increase in residential acreage of 31%, but the major increase occurred in subdivisions located outside of Picayune. This additional growth will place a greater demand on supporting land uses, especially commercial and industrial. Public utilities will also need to be expanded, with emphasis upon water and sewage facilities.

Commercial land use increased by 18% over a period of three years. Survey data revealed that the greatest amount of commercial increase occurred within the cities of Poplarville and Picayune. This increase was essential in order to provide adequate retail trade facilities for the area, as required by the large residential expansion.

Industrial acreage had a zero percent change over-all; however, there was decisive activity in this category. Several townships reveal an increase, while others show a decrease. "Borrow Pits" were abandoned in some instances and a sawmill in the McNeil Community was vacated and removed. Picayune constructed an Industrial Park in addition to other industries that located elsewhere in Picayune. Although the County had no actual increase in industrial acreage its capacity to produce has increased substantially.

Public and Semi-Public acreage increased by only 1%. Plans for public and semi-public uses have been recommended in the Regional Plan for Open Spaces, Recreation and Environmental Appearance. By virtue of the sharp rise in residential acreage the county should consider implementing a number of the proposals set forth by the aforementioned Regional Plan. Pearl River County has numerous potential sites for recreational areas that would enhance the County's environment as well as its economy.

Resource Production had no appreciable change, which was not unexpected. However, survey findings did indicate one very important change with this category: the conversion of orchards to farmland. Acreage in orchards, primarily tung groves, diminished 93% during the survey analysis period.

There were a number of reasons for this gross reduction in orchards. Many orchards in the initial survey were in a dormant or non-productive status. Even though winters are mild they were often too severe for tung trees. Hurricanes also dealt severe damage to this crop in the past decade. Less expensive synthetic products replaced tung oil on the market, thus delivering another crucial blow to the tung industry.

Water and Unclassified acreage decreased by 1% due to the large increase in residential and commercial land use (water area remained the same). The decrease was consistent with the Future Land Use Plan for Pearl River County and can be noted as a favorable reduction.

Offshore Islands

There are six islands located in the Mississippi Sound which must be given consideration in light of the purpose of this project. Petit Bois, Horn, Round, Deer, Ship and Cat Islands. Of these islands only Deer Island was placed in the existing and future land use computations, due to its proximity to the mainland and the City of Biloxi.

Petit Bois, Horn, and Ship Islands have been placed in the National Park system by congressional action; these islands are now part of the Gulf Islands National Seashore. Plans

are being prepared now to develop the islands for recreational purposes including overnight camping, fishing, swimming and related activities, with visits to Ship Island and historic Fort Massachusetts.

Round Island, one of the smaller and less significant islands, serves as an ideal area to be preserved in its natural state with no development necessary other than a small park with a minimum harbor and docking space.

Cat Island, though privately owned, has seen limited development in recent years. The area has been subdivided into lots for summer home dwellings and includes a series of dredged canals for residential docking facilities. More recently, there has been some interest in the inclusion of this island in the Gulf Islands National Seashore. At this time no definite action has been taken, however.

TASK IX

PARKS AND RECREATION

Recreational movements and activities are profoundly affected within any given area by trends in growth and development. Industiralization, commercialization, population concentrations and shifts, and urban and sub-urban development are most often accomplished by the absorption of open space. This being true, it can be said that growth patterns are directly influenced by availability of open space. It follows logically that planned and managed open space in turn can influence growth patterns, adding further emphasis to the importance of a regional plan for open space management and conservation.

Recreational trends also reflect patterns of increasing personal income, and an increasing involvement of the private sector in recreation-oriented development.

Other more subtle factors which exert an influence on recreation desires, activities, and potentials include governmental policies and on going recreation programs.

Concern on the part of public officials is reflected in the numerous park and playground commissions active in most municipalities throughout the region.

In order to provide an overview of existing public recreation facilities, Table IX-1 was developed. Data reflected therein are the results of work performed in the summer of 1975 by GRPC.

Because of map limitations only public recreation and major semi-public and commercial activities are identified.

Recreation areas and facilities, identified in Table IX-1 and corresponding to facility numbers on existing land use overlays, have been divided into six major classifications. These include, as shown in Tables IX-2 through IX-4, large community parks,

TABLE IX-1

REGIONAL PARKS & RECREATION AREAS

Map Code	Facility Number	Facility Name	Type of Facility	Ownership	Acreage
		HANCOCK COUNTY			
BAY ST. LOUIS					
51	PK- 1	Bay High School	School Playfield	City School System	15
49	PK- 2	Bay Jr. High	School Playfield	City School System	4
49	PK- 3	North Bay Elem. School	School Playground	City School System	5
49	PK- 4	Christ Episcopal	Parochial School Playground	Church	4
49	PK- 5	Devine Word Seminary	Parochial School Playfield	Church	3
49	PK- 6	Our Lady of the Gulf	Parochial School Playground	Church	2
49	PK- 7	St. Joseph Academy	Parochial School Playground	Church	4
49	PK- 8	St. Stanislaus College	Parochial School Playfield	Church	25
49	PK- 9	Ingram Elem. School	School-City Playground	City of Bay St. Louis	1
49	PK-10	Dunbar & Ulman Field	City Playfield	City of Bay St. Louis	2
49	PK-11	Julia & Dunbar Park	City Mini-Park	City of Bay St. Louis	1
49	PK-12	Main & Necaise Park	City Mini-Park	City of Bay St. Louis	1
49	PK-13	St. Francis & Booker Park	City Mini-Park	City of Bay St. Louis	1
WAVELAND					
50	PK-14	Waveland Elem. School	School Playground	City School System	3
50	PK-15	St. Clares' Elem. School	Parochial School Playground	Church	3
50	PK-16	Elmwood Park	City Playfield & Park	City of Waveland	5
UNINCORPORATED AREA					
53	PK-17	Hancock North Central School	School Playfield & Playground	County School System	30
62	PK-18	C. B. Murphy School	School Playground	County School System	3
50	PK-19	Hancock Co. Beaches	Public Beach	County	135
50	PK-20	Buccaneer St. Park	State Park	State of Miss.	394
		HARRISON COUNTY			
PASS CHRISTIAN					
48	PK-21	Pass Christian High School	School Stadium	City School System	---
40	PK-22	Parker Memorial Park	Community Playfield	City of Pass Christian	---
48	PK-23	Pass Christian Harbor	Small Craft Harbor	City of Pass Christian	3
40	PK-24	Camp Robinson Park	Community Park	City of Pass Christian	25
48	PK-25	Harbor Park	Community Park	City of Pass Christian	1
48	PK-26	Church St. Park	Neighborhood Playfield	City of Pass Christian	5
48	PK-27	War Memorial Park	Neighborhood Playfield	City of Pass Christian	4
48	PK-28	Pass Christian Yacht Club	Yacht Club & Marina	Club-Semi-Public	3
LONG BEACH					
40	PK-29	Long Beach High School	School Playfield,Gym, Tennis Courts & Stadium	City School System	---
40	PK-30	O'Malley Park	Community Playfield	City of Long Beach	10
40	PK-31	Church Street Park	Community Playground	City of Long Beach	6
40	PK-32	Skeltie Park	Neighborhood Playfield	City of Long Beach	3
40	PK-33	Railroad St. Park	Neighborhood Playfield	City of Long Beach	2
40	PK-34	Long Beach Basketball Court	Neighborhood Playfield	City of Long Beach	1
40	PK-35	Long Beach Recreation Center	Recreation Center	City of Long Beach	1
40	PK-36	Small Craft Harbor	Small Craft Harbor	City of Long Beach	2
GULFPORT					
31	PK-37	Handsboro School	School Playfield	City School System	4
31	PK-38	Anniston Avenue School	School Playfield	City School System	2
39	PK-39	Mississippi City School	School Playfield	City School System	4
38	PK-40	28th Street School	School Playfield	City School System	8
39	PK-41	Gulfport High School	Gym & Related Facilities	City School System	---
38	PK-42	Gulfport East High School	Gym, Tennis Courts & Related Facilities	City School System	---
38	PK-43	Bayou View Jr. High School	Gym, Playfield & Realted Facilities	City School System	---
38	PK-44	Gulfport East Jr. High	Gym, Tennis Courts & Related Facilities	City School System	---
39	PK-45	West Gulfport Jr. High	School Playfield	City School System	---
39	PK-46	Milner Stadium	Stadium	City of Gulfport	---
39	PK-47	Fairgrounds Playfield	Playfields & Fairgrounds	City of Gulfport	26
39	PK-48	33rd Avenue Playfield	Community Playfield	City of Gulfport	14
38	PK-49	Bayou View Playfield	Community Playfield	City of Gulfport	8
39	PK-50	Beach Blvd. Playfield	Community Playfield	City of Gulfport	18
38	PK-51	Bayou View Park	Community Park	City of Gulfport	10
39	PK-52	Westside Community Park	Community Park & Center	City of Gulfport	19
39	PK-53	Gaston Point Playfield	Neighborhood Playfield	City of Gulfport	3
38	PK-54	North Gulfport Playfield	Neighborhood Playfield	City of Gulfport	2
39	PK-55	2nd Street Playfield	Neighborhood Playfield	City of Gulfport	3
39	PK-56	19th Street Playfield	Neighborhood Playfield	City of Gulfport	3
31	PK-57	Hill Park	Neighborhood Park	City of Gulfport	37
39	PK-58	Jones Park	Memorial Park	City of Gulfport	4
39	PK-59	Broadmore Place Park	Neighborhood Mini-Park	City of Gulfport	.3
GULFPORT continued					
39	PK-60	East Side Mini-Park	Neighborhood Mini-Park	City of Gulfport	.5
39	PK-61	Hewes Recreation Center	Community Center	City of Gulfport	4
39	PK-62	East Side Community Center	Community Center	City of Gulfport	.5
39	PK-63	Moses Pier	Public Fishing Pier	City of Gulfport	---
39	PK-64	Small Craft Harbor	Public Marina	City of Gulfport	30
39	PK-65	Gulfport Yacht Club	Yacht Club & Private Marina	Yacht Club - Private	4
38	PK-66	Bayou View Golf Course	Golf Course	Private-lease from City	140
38	PK-67	Gulfport Par-Three Course	Par-Three Golf Course	Commercial	39
31	PK-68	Broadwater Golf Course	Golf Course	Commercial	160
39	PK-69	Marine Life	Marine Aquarium	Commercial	2
BILOXI					
30	PK-70	Biloxi High School	School Playfield & Related Facilities	City School System	---
30	PK-71	Central Jr. High School	School Gym & Related Facilities	City School System	---
31	PK-72	Fernwood School	School Gym & Related Facilities	City School System	---
30	PK-73	Michel Jr. High School	School Gym & Related Facilities	City School System	---
30	PK-74	Biloxi Municipal Stadium	Municipal Stadium	City of Biloxi	---
31	PK-75	Hiller Park	Community Park	City of Biloxi	75
31	PK-76	Tanglewood	Community Park	City of Biloxi	2.5
30	PK-77	Brian Park	Community Park & Center	City of Biloxi	---
30	PK-78	Circle Park	Community Park	City of Biloxi	---
30	PK-79	Biloxi Community Center	Community Center	City of Biloxi	---
30	PK-80	Division Street Community Center	Community Center	City School System	---
30	PK-81	Meaut Center	Community Center	City of Biloxi	---
30	PK-82	West Biloxi Center	Community Center	Lutheran Church	---
30	PK-83	East End Center	Community Center	City of Biloxi	---
30	PK-84	Back Bay Little League Park	Little League Playfield	City of Biloxi	5.5
30	PK-85	Lee Street Baseball Park	Neighborhood Playfield	City of Biloxi	5
30	PK-86	McDonnell Playfield	Neighborhood Playfield	City of Biloxi	7
30	PK-87	Rose Street Playfield	Neighborhood Playfield	City of Biloxi	3.3
30	PK-88	St. Michael Playfield	Neighborhood Playfield	City of Biloxi	3.5
30	PK-89	West End Park	Little League Playfield	City of Biloxi	2.5
30	PK-90	Business Men's Club Playground	Neighborhood Playground	City of Biloxi	3
31	PK-91	St. Mary's Playground	Neighborhood Playground	City of Biloxi	1.5
30	PK-92	Biloxi International Plaza	Neighborhood Plaza & Park	City of Biloxi	2
30	PK-93	Miramic Mini-Park	Neighborhood Mini-Park	City of Biloxi	1
30	PK-94	Guice Park	Neighborhood Plaza-Park	City of Biloxi	1
30	PK-95	Biloxi Small Craft Harbor	Small Craft Harbor & Marina	City of Biloxi	12
30	PK-96	Biloxi Fishing Bridge	Fishing Bridge	City of Biloxi	---
30	PK-97	Biloxi Yacht Club	Yacht Club & Marina	Private	5
31	PK-98	Broadwater Beach Marina	Small Craft Harbor	Private-Commercial	10
31	PK-99	Amusement Park	Amusement Park	Commercial	2
31	PK-100	Deer Ranch	Amusement Park	Commercial	7
31	PK-101	Goofy Golf	Amusement Park	Commercial	2
31	PK-102	Broadwater Sun-Golf Course	Golf Course	Commercial	160
31	PK-103	Edgewater Golf Course	Golf Course	Commercial	125
31	PK-104	Sunkist Golf Course	Golf Course & Club	Private	120
UNINCORPORATED AREA					
35	PK-105	Airey Lake Recreation Area	Camping & Picnic	U. S. Forest Service	6
36	PK-106	Big Biloxi River Recreation Area	Camping & Picnic	U. S. Forest Service	27
35	PK-107	Big Foot Horse Trail	Riding Trail	U. S. Forest Service	7
35	PK-108	Tuxachanie Hiking Trail	Hiking Trail	U. S. Forest Service	17
31	PK-109	Ship Island Park	National Park	National Park Service	120
30-48	PK-110	Harrison County Beach	Public Beach	Harrison County/Miss.	---
36	PK-111	Saucier Little League Field	Little League Playfield	Unknown	2
30	PK-112	D'Iberville Little League Field	Little League Playfield	Unknown	2
46	PK-113	Lizanna Little League Field	Little League Playfield	Unknown	2
38	PK-114	Orange Grove Little League Field	Little League Playfield	Unknown	2
40	PK-115	Pineville Little League Field	Little League Playfield	Unknown	2
39	PK-116	Harrison County Fishing Pier	Public Fishing Pier	Harrison County	2
31	PK-117	Camp Wilkes	Boy Scout Camp	Boy Scout Council	89
31	PK-118	Biloxi Par-Three Golf Course	Golf Course	Commercial	32
36	PK-119	Harrison Central High School	School Playfield & Related Facilities	County School System	---
		JACKSON COUNTY			
OCEAN SPRINGS					
21	PK-120	Freedom Field	School Playfield	City School System	4
21	PK-121	Vermont St. Playground	School Playground	City School System	1
21	PK-122	Greyhound Stadium	Stadium	City & School	19
21	PK-123	Magnolia Park	Community Park	City of Ocean Springs	20
21	PK-124	Pecan Park	Community Park	City of Ocean Springs	21
21	PK-125	Little Children's Park	Neighborhood Playground	City of Ocean Springs	4

TABLE IX-1

REGIONAL PARKS & RECREATION AREAS (CONTINUED)

Map Code	Facility Number	Facility Name	Type of Facility	Ownership	Acreage
OCEAN SPRINGS continued					
21	PK-126	Ocean Springs Recreation Center	Community Center	City of Ocean Springs	1
21	PK-127	Parktown East	Neighborhood Park	City of Ocean Springs	3
21	PK-128	Clayboy Park	Neighborhood Playfield	City of Ocean Springs	5.5
21	PK-129	Hallstead Rd. Tennis Courts	Tennis Courts	City of Ocean Springs	8
21	PK-130	Ocean Springs Small Craft Harbor	Small Craft Harbor	City of Ocean Springs	---
MOSS POINT					
4	PK-131	Mayo Elementary School Playground	School Playground	City School System	2
11	PK-132	Bellview Park	Community Park	City of Moss Point	19
11	PK-133	Magnolia Park	Community Park	City of Moss Point	9
4	PK-134	Curt Street Playfield	Community Playfield	City of Moss Point	13
4	PK-135	Frederick St. Playfield	Community Playfield	City of Moss Point	10
11	PK-136	Moss Point Recreation Center	Community Center	City of Moss Point	1
4	PK-137	Goutier Field	Semi-Public Playfield	Dixie Youth Baseball League	4
4	PK-138	St. Joseph Church Playfield	Semi-Public Playfield	Church	2
PASCAGOULA					
3	PK-139	Colmer Jr. High Playfield	School Playfield	City School System	10
12	PK-140	Pascagoula City Park	Community Park	City of Pascagoula	8.5
12	PK-141	Davenport Playfield	Neighborhood Playfield	City of Pascagoula	2
12	PK-142	Flannegan Playfield	Neighborhood Playfield	City of Pascagoula	2
12	PK-143	Gibson Playfield	Neighborhood Playfield	City of Pascagoula	2
12	PK-144	Ingalls Playfield	Neighborhood Playfield	City of Pascagoula	2
12	PK-145	John Ingalls	Neighborhood Playfield	City of Pascagoula	2
12	PK-146	War Memorial Stadium	Stadium	City of Pascagoula	4
12	PK-147	Parsley St. Mini-Park	Neighborhood Mini-Park	City of Pascagoula	1
12	PK-148	Live Oak Mini-Park	Neighborhood Mini-Park	City of Pascagoula	.5
12	PK-149	Pascagoula Recreation Center	Recreation Center	City of Pascagoula	7
12	PK-150	Pascagoula Inner Harbor	Harbor & Marina	City of Pascagoula	4
3	PK-151	Longfellow House & Gardens	Pool, Golf & Tennis	Litton Industries	70
12	PK-152	Pascagoula Country Club	Golf Course	Private - Club	200
12	PK-153	Aquatic Club Pool	Swimming Pool	Private - Club	1
3	PK-154	Coastline Pool	Swimming Pool	Private - Club	1
4	PK-155	Fun Spot	Miniature Golf	Commercial	4
UNINCORPORATED AREA					
4	PK-156	Softball Field	Community Playfield	County-Community	10
22	PK-157	Gulf Park Estates	Marina, Golf Course & Pool	Private Corporation	---
11	PK-158	Hickory Hills Country Club	Golf Course & Pool	Private Corporation	---
13	PK-159	St. Andrews on the Gulf	Golf Course, Tennis & Pool	Private Corporation	---
23	PK-160	Gulf Hills Dude Ranch	Golf Course, Tennis & Stables	Private Corporation	1000
		PEARL RIVER COUNTY			
PICAYUNE					
86	PK-161	Picayune Memorial High School	School Playfield & Related Facilities	City School System	---
86	PK-162	Picayune Jr. High	School Playfield & Related Facilities	City School System	---
86	PK-163	Roseland Park	Neighborhood Playfield	City of Picayune	9
86	PK-164	Railroad Park	Neighborhood Park	City of Picayune	4
86	PK-165	YMCA	Semi-Public Recreation Center	YMCA	---
POPLARVILLE					
72	PK-166	Pearl River Jr. College	School Playfield & Related Facilities	County/State	---
72	PK-167	Poplarville Jr./Sr. High School	School Playfield & Related Facilities	City School System	---
72	PK-168	Poplarville Community Park & Center	Community Playfield & Center	Semi-Public Organization	10
72	PK-169	Raine Street Recreation Center	Community Center	Semi-Public Organization	13
UNINCORPORATED AREA					
87	PK-170	Walkiah Bluff Park	State Park	State-Pearl River Basin Development District	18
76	PK-171	Anchor Lake	Fishing Lake	Private Camp	400
76	PK-172	Hideaway Lake	Fishing Lake	Private Corporation	200
71	PK-173	Hillsdale Lake	Fishing Lake & Golf Course	Private Corporation	150
85	PK-174	Millbrook Country Club	Lake, Pool, Clubhouse & Picnic area	Private Corporation	150

TABLE IX-2
RECREATION STANDARDS & REQUIREMENTS
SELECTED ACTIVITIES
HANCOCK COUNTY

Community Facilities	Standards		Supply	Requirements	
	Units	Units per 1000 Pop.	1975	1975	2000
Large Community Parks	Acres	5.00	394	106	222
Community Parks	Acres	1.25	5	27	56
Community Playfields	Acres	1.25	74	27	56
Neighborhood Parks	Acres	1.00	22	21	44
Neighborhood Playfields	Acres	1.00	8	21	44
Sub-Neighborhood Mini-Parks	Acres	0.25	3	5	11
Selected Activities					
Basketball Courts	Courts	1.00	10	21	44
Tennis Courts	Courts	0.50	11	11	22
Baseball Fields	Fields	0.20	3	4	9
Football Fields	Fields	0.10	4	2	4
Softball Fields	Fields	0.20	4	4	9
Boat Launching Ramps	Ramps	0.20	7	4	9
Golf Courses (18 hole)	Course	0.02	1	1 / 0	1
Swimming Pools	Sq.Feet	500.00	0	10,600	22,195

1 / Semi-Public Course at Diamondhead. Note: Other Facilities include only those which may be termed public use.

SOURCE: GRPC - The Regional Plan for Open Space, Recreation, and Environmental Appearance , 1971. Updated by Selected Activities, Summer 1975.

TABLE IX-3
RECREATION STANDARDS & REQUIREMENTS
SELECTED ACTIVITIES
HARRISON COUNTY

Community Facilities	Standards		Supply	Requirements	
	Units	Units per 1000 Pop.	1975	1975	2000
Large Community Parks	Acres	5.00	166	815	1,212
Community Parks	Acres	1.25	119	204	303
Community Playfields	Acres	1.25	98	204	303
Neighborhood Parks	Acres	1.00	73	163	242
Neighborhood Playfields	Acres	1.00	59	163	242
Sub-Neighborhood Mini-Parks	Acres	.25	3	41	61
Selected Activities					
Basketball Courts	Courts	1.00	42	163	242
Tennis Courts	Courts	0.50	38	82	121
Baseball Fields	Fields	0.20	27	33	48
Football Fields	Fields	0.10	13	16	24
Softball Fields	Fields	0.20	19	33	48
Boat Launching Ramps	Ramps	0.20	29	33	48
Golf Courses (18 hole)	Course	0.02	7 1/	3	5
Swimming Pools	Sq.Feet	500.00	9,900	81,550	121,150

1/ Semi-Public Courses at various hotels. Note: Other facilities include only those which may be termed public use.

SOURCE: GRPC, The Regional Plan for Open Space, Recreation, & Environmental Appearance, 1971; Updated by Selected Activities, Summer 1975.

TABLE IX-4
RECREATION STANDARDS & REQUIREMENTS
SELECTED ACITIVITIES
JACKSON COUNTY

Community Facilities	Standards		Supply	Requirements	
	Units	Units per 1000 Pop.	1975	1975	2000
Large Community Parks	Acres	5.00	3,449 1 /	578	949
Community Parks	Acres	1.25	78	145	237
Community Playfields	Acres	1.25	55	145	237
Neighborhood Parks	Acres	1.00	18	116	190
Neighborhood Playfields	Acres	1.00	60	116	190
Sub-Neighborhood Mini-Parks	Acres	0.25	0	29	47
Selected Activities					
Basketball Courts	Courts	1.00	13	116	190
Tennis Courts	Courts	0.50	23	58	95
Baseball Fields	Fields	0.20	8	23	38
Football Fields	Fields	0.10	9	12	19
Softball Fields	Fields	0.20	16	23	38
Boat Launching Ramps	Ramps	0.20	35	23	38
Golf Courses (18 hole)	Courses	0.02	7	2	4
Swimming Pools	Sq.Feet	500.00	40,100	57,800	94,850

1 / Includes the Gulf Island National Seashore & Related Areas.

SOURCE: GRPC, The Regional Plan for Open Space, Recreation & Environmental Appearance, 1971; Updated by Selected Activities, Summer 1975.

community parks, community playfields, neighborhood parks, neighborhood playfields, and sub-neighborhood mini-parks. These may be generally defined as follows:

Large community parks are semi-active recreation facilities which offer a variety of activities aimed at serving a cross section of age groups. Land requirements are high (5 acres per 1000 people) and as a result few such facilities are seen. Here are found such facilities as Buccaneer State Park and the Gulf Islands National Seashore headquarters.

Community Parks are semi-active recreation facilities aimed at serving major portions of the city. Numerous age groups may be served but on a smaller scale than large community parks. Land requirements are low (1.25 acres per 1000 people); however, many cities are deficient in community parks.

Community playfields are active recreation facilities serving major portions of the city. These are playfields for organized baseball and softball. As with other recreation classifications, community playfields, though more numerous than community parks, are also in short supply.

Neighborhood parks are semi-active areas designed to provide recreation facilities to smaller areas or neighborhoods. Often times school playgrounds fall into this category; however, the majority of such parks are non-school associated. Land area requirements are relatively low and where population densities are high, usually school facilities are utilized.

Neighborhood playfields are active recreation areas that usually require larger tracts of land. Most neighborhood playfields are associated with neighborhood school facilities. As a result, multiple use of land reduces total citywide recreation costs and provides, to a limited extent, needed facilities.

Sub-neighborhood mini-parks, the smallest of all facilities, are designed as close to home passive (low activity as compared to high activity baseball fields) recreation facilities. Many times such facilities are provided solely for use by small children and are sometimes referred to as tot-lots.

Major recreation facilities are identified in Table IX-1. While not intended as a comprehensive listing, it is felt that this tabulation identifies all major public facilities as well as high public use commercial and semi-public recreation areas. Included are facility names and corresponding map numbers, the type of facility, its owner and estimated acreage.

Supplemental to Table IX-1 are recreation standards and requirements. Here are listed the standard requirements per 1000 population, the existing supply, and the requirements for acreage or units needed to bring the existing supply up to standards. As shown in Table IX-2 through IX-4 few counties (including municipalities) currently have sufficient facilities. Also included are requirements for the year 2000, based on estimated population.

Selected activities, or those activities which are currently most popular throughout the region, have also been analyzed. As can be seen in Tables IX-2 through IX-4, most county supplies fall below the standards based on units per 1000 population. Such information can be useful in predicting future needs and to a lesser extent, determining trends in recreation development.

TASK X

ELECTRICAL ENERGY TRANSMISSION

The following information was prepared by the Mississippi Power Company for purposes of this task at the request of GRPC. The Power Company is to be commended for their participation.

Description of Existing Mississippi Power Company Generating Facilities

Mississippi Power Company owned and operated at December 31, 1974, three steam-electric generating stations and one combustion turbine generating station and related equipment. The Company also has a 200,000 kilowatt share of a 500,000 kilowatt steam-electric generating plant on the Black Warrior River in Greene County Alabama, owned by Mississippi Power Company and Alabama Power Company as tenants in common in the proportions of 40% and 60% respectively. The total installed capacity of these generating plants, excluding the portion owned by or leased to others is 1,465,760 kilowatts, (for reference see Figure X-1).

Plant Sweatt, located near Meridian, has two 40,000 kilowatt steam electric turbine generators and one 39,400 kilowatt comubstion turbine in service. At Plant Eaton, near Hattiesburg, there are three 22,500 kilowatt steam electric turbine generators in service. At Plant Jack Watson, located near Gulfport and Biloxi, there are two 75,000 kilowatt units, one 112,000 kilowatt unit, one 250,000 kilowatt unit, and one 500,000 kilowatt unit, all of which are steam electric turbine generators, and one 39,360 kilowatt combustion turbine in service. In the Standard Oil Generating Station near Pascagoula, there are two 13,750 kilowatt combustion turbines, which are a part of the aggregate installed capacity stated above. In addition, the Company owns two combustion turbines in the Standard Oil location with an installed capacity of 32,200 kilowatts which are leased to the Standard Oil Refinery and are operated by Mississippi Power Company under an agreement with Standard. The entire output of the leased units is used by the customer

and the capacity of these units is not included in the above statement of Mississippi Power Company's generating capacity. All four of the units at Standard Oil have heat recovery boilers to supply process steam.

Primary and alternate fuels used in the Company's generating stations vary in the different plants. Plant Sweatt is equipped to utilize natural gas as the primary fuel for the steam units and the combustion turbine. The boilers of the steam units are equipped to burn No. 6 oil for short periods of time and to supplement gas fuel. The combustion turbine utilizes No. 2 oil as the alternate fuel. Natural gas has been curtailed by the supplier.

The three units at Plant Eaton operated for many years with natural gas as the primary fuel and No. 6 oil as the alternate fuel. The gas contract at this location has been terminated by the supplier.

At Plant Jack Watson the two 75,000 kilowatt units and the one 112,000 kilowatt steam units and the 39,360 kilowatt combustion turbine utilize gas as the primary fuel and No. 2 oil as the alternate fuel. The 250,000 kilowatt unit uses coal as the primary fuel with natural gas as the alternate fuel and the 500,000 kilowatt unit uses coal as its fuel with no alternate provided. Natural gas at this location is being increasingly curtailed by the supplier.

All units in the Greene County, Alabama plant utilize coal as the primary fuel and no alternate fuel is provided. Combustion turbines in the Standard Oil Generating Station near Pascagoula utilize natural gas exclusively as fuel.

Description of Existing Mississippi Power Company Transmission Facilities

At December 31, 1975, the Company's transmission system consisted of 2,042 circuit miles of high voltage transmission lines. This total consisted of 518 miles of 230,000 volt lines, 997 miles of 115,000 volt lines and 528 miles of 46,000 volt facilities.

The Company's generating and transmission system is operated in parallel with the interconnected systems network. The interconnected systems network is made up of essentially all of the electric power systems in the United States and part of Canada east of the Rocky Mountains, with the exception of parts of Texas. The Mississippi Power Company has four 230,000 volt interconnections and three interconnections operated at 115,000 volts each with the Alabama Power Company to the east, and on the western side of its system, there are in operation two 230,000 volt interconnections with Louisiana Power & Light Company and two 115,000 volt interconnections with Mississippi Power & Light Company. In addition, one 230,000 volt and one 115,000 volt interconnection are provided with the South Mississippi Electric Power Association in the Purvis and Moselle areas for the purpose of providing firm power sales and emergency backup power supply to that system.

Since December 31, 1974, the Company has completed or presently has under construction 21 miles of transmission line rated at 230,000 volts and 6.6 miles of transmission line rated at 115,000 volts. The location of these new facilities, as well as existing transmission facilities of the Company, can best be seen by referring to the attached Map entitled "Electric System - Mississippi Power Company" dated January 1975.

Operating in conjunction with the Company's generation and transmission system are 177 substations with an aggregate installed capacity of 5,779,587 kilovolt amperes.

Statement Concerning Mississippi Power Company's Load Growth

The annual rate of growth of Mississippi Power Company's territorial peak hour load was reasonably uniform for many years. In 1969 a slight loss of load was experienced as a result of Hurricane Camille, and in the years 1970 and 1971, the Company's load was further reduced from its normal trend due to the loss of approximately 100 megawatts of REA Cooperative loads to the South Mississippi Electric Power Association. The growth rate, corrected for REA load transfer, was approximately 12% per year compounded over the 20 year period, 1952 - 1972.

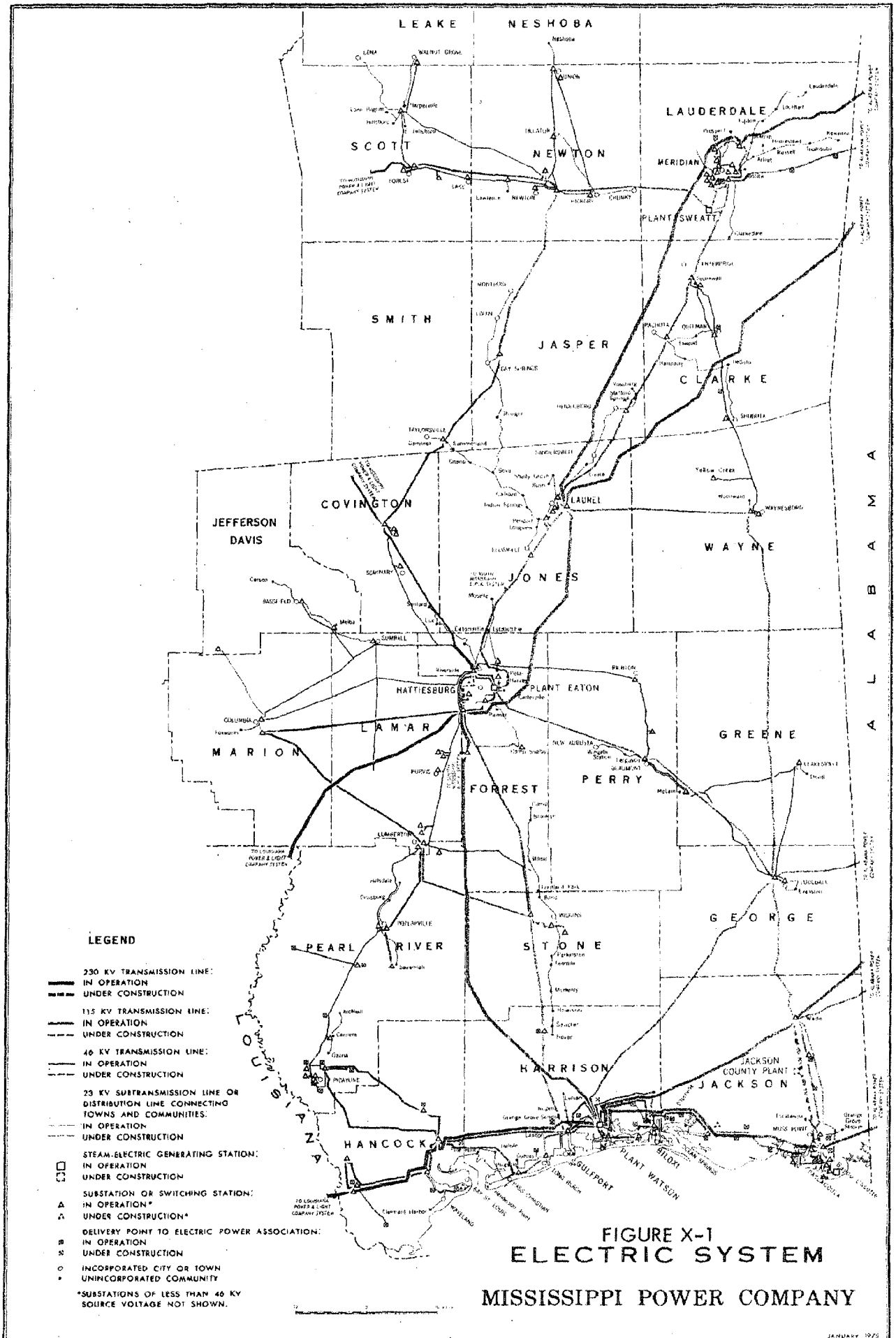

FIGURE X-1
ELECTRIC SYSTEM

MISSISSIPPI POWER COMPANY

JANUARY 1975

For the years 1973, 1974 and 1975, the total growth in system demand was only 8.4% and in energy use only 12.06%. This is far below the historic growth rate which would be about 40% for three years. The lower growth rate is believed to be the result of economic conditions and conservation efforts of consumers in our service area. Lower than normal summer temperatures associated with above normal rainfall has also tended to reduce loads in recent years.

During the last three years, the cost of energy has increased faster than other segments of the economy, with the cost of oil and natural gas leading the way. Coal has also increased dramatically in price. Other factors in the increased cost of electricity are additional construction requirements to meet environmental standards, escalation of construction costs and higher cost or invested capital needed to finance the construction. Due to the short period of time in which the cost of electric power has been significantly rising and because of the other forces acting at the same time, it is impossible to determine the exact degree to which price elasticity, conservation, the state of the economy and the weather have contributed individually to the abrupt change in growth rate.

For planning purposes, load growth is projected for ten years beyond the current year. A tabulation of actual peak hour demands for the years 1972 - 1975, inclusive and estimated demands for the years 1976 - 1985, inclusive, is given in Table X-1.

TABLE X - 1
ELECTRICAL ENERGY NEEDS
EXISTING AND FORECASTED

	Peak Hour Demand In Megawatts	% Increase Over Previous Year
1972	1070	10.5
1973	1120	4.67
1974	1154	3.04
1975	1162	.69
1976	1235	6.28
1977	1346	8.99
1978	1405	4.4
1979	1475	4.98
1980	1554	5.36
1981	1636	5.28
1982	1731	5.81
1983	1840	6.3
1984	1961	6.58
1985	2100	7.09

Planned New Generating Facilities

The Mississippi Power Company has underway the construction of two new 500 MW steam-electric generating units stationed in Jackson County. The Company's designation of the initial units is Jackson County Steam Plant - Unit No. 1 and Unit No. 2.

The site is located approximately 11 to 12 miles north of the city of Pascagoula and lies on the east bank of the Pascagoula River. The site encompasses approximately 3000 acres.

Site investigation and clearing was initiated in 1972 and construction of the facilities began in 1973. Construction is scheduled for completion of Unit No. 1 in 1977, and completion of Unit No. 2 is scheduled for 1979.

Present estimated cost for the construction of the units and related facilities is approximately $300 million. These costs include acquiring the site, clearing, purchasing and installing two complete 500,000 Kw steam-electric generating units with all auxiliaries including a step-up substation having spaces for four (4) 230 Kv transmission lines.

The turbine units are to be 500,000 Kw, 3,600 rpm, tandem compound, four (4) flow reheat steam turbines with 25-inch last stage blades designed for steam conditions of 2,400 psig, 1000° F, with reheat of 1000° F, 3.5" Hg. Abs. exhaust pressure and 3% make-up, extracting for seven (7) stages of feedwater heating and auxiliary turbine drive of the boiler feed pumps.

The generator ratings are 645 MVS, 18 Kv, 3,600 rpm, 60 cycle, 0.85 power factor and 0.5 short circuit ratio.

The boilers will be controlled circulation, radiant reheat, pressurized steam generating units having a capability of producing continuously 3,611,242 lbs. of steam per hour at full load at a steam pressure of 2,500 psig and temperature of 1000° F at the superheater header outlet and steam pressure of 516 psig and temperature of 1000° F at the reheater outlet.

Cooling water for the steam condensers will be provided by a closed system utilizing a cooling water reservoir for recycling the water.

For the operation of the plant, average monthly water balance studies indicate that 11.45 MGD of make-up water for the closed cooling system will be withdrawn from the Pascagoula River. This make-up will be needed in addition to the water added by rainfall and watershed to equate the losses due to evaporation and seepage.

The ultimate plant site generating capacity would require an estimated withdrawal rate from the Pascagoula River of 74.55 MGD of which 14 MDG will be returned.

The boilers will be arranged to have the capability of being fired with either fuel oil until late 1978, after which coal would become the primary fuel. Unit No. 2 is expected to use coal as the primary fuel when it begins operation in early or mid 1979.

The boilers and their auxiliaries will be so designed and constructed to include, to the extent of technological means reasonably available, such facilities as may be necessary for compliance with all valid and lawful air quality regulations that may ultimately be applicable to such operation. A tall stack of 350 feet height will be employed to disperse flue gases at high level to meet the currently proposed ground level ambient air regulations.

It should be noted that plant construction was delayed for most of 1975 because of financing difficulties, and although construction has resumed, Mississippi Power Company is still seeking a long-range solution to its financing requirements.

Land and Water Requirements for Generating Plant Sites

With the total load demand of customers served by electric utilities historically doubling every ten (10) years nationally, the industry is faced with increasing requirements of installing larger generating facilities to meet these loads. Technological advancements in providing better materials and manufacturing techniques permit the fabrication of larger, more efficient, and economical units to be installed in various size ranges up to 1000 Mw each to meet this load growth.

In view of the increasing Federal and State environmental requirements, industry practices, today, dictate the location of new generating facilities remote from urban areas whenever possible and to acquire the site for the ultimate facility development. With planned generating stations total installed capabilities approaching 3,000 to 4,000 Mw

each, land requirements as compared to past practices, are increasing proportionately. The major reasons that demand the increased land and water requirement at new plant sites are:

1. Each turbo-generating unit of a given nominal rating has a definite physical size. Therefore, as a unit increases in size there is a corresponding incremental increase in its physical dimensions. Correspondingly, as the turbo-generating unit sizes increase, so must the boiler, condenser, and their related auxiliary equipment increase in size to meet the operating steam requirements.

2. With decreasing availability of natural gas supplies for use as a boiler fuel, utilities are relying more and more on other types of fossil fuels for firing its steam-electric generating facilities. Coal and oil are thus the basic fossil fuels presently being utilized due to their being more readily available at reasonable costs. With the customary means for delivering coal and oil being by rail, barge, or pipeline it is necessary to stockpile adequate quantities of fuel at a plant site to insure continuity of service. There are several methods used to determine the quantities of fuel to be stored. As an example, the Mississippi Power Company presently maintains a normal 450,000 ton supply of coal at its Plant Jack Watson. This quantity represents a 90 day supply for its Units No. 4 and 5. If fuel oil were the primary fuel, on the same basis, it would require the storage of approximately 1,770,000 barrels of oil at 42 gallons per barrel for 750 Mw of capacity.

   Regardless of which of the two fuels are used, large areas of land are required at a plant site for unloading, storage and, in the case of coal, disposal of the ashes on the site. These fuel facilities must, by necessity, be reasonably remote from the generating plant facilities to insure added protection in case of fire.

3. As turbo-generating unit and plant sizes increase to meet the loads the water requirements of a steam-electric generating station increase in a like manner.

To meet the increasingly restrictive Federal and State regulations limiting the temperatures and dissolved oxygen content of cooling waters discharged into public bodies of water it is becoming necessary to plan on-site facilities for cooling and recycling the water.

Devices such as cooling towers and ponds are being employed for this purpose since they minimize the amount of make-up water required and the amount of water discharged into a public body. Regardless of which on-site system is employed for cooling and recycling the plant's cooling water, large areas of land are required to accommodate the facilities to effectively transfer the heat from the cooling water to the ambient air.

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