APPENDIX K
SOCIOECONOMICS

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Table K-1
Mississippi Crimes by Type

	1990	1991	1992	1993	1994	1995	1996	1997
Population	2,573,216	2,592,000	2,614,000	2,643,000	2,669,000	2,697,000	2,716,000	2,731,000
Violent	8,758	10,085	10,763	11,467	13,177	13,560	13,261	12,808
Property	90,803	99,317	101,181	105,308	115,924	108,195	109,581	113,644
Murder	313	332	320	357	409	348	301	358
Forcible Rape	1,134	1,199	1,166	1,125	1,212	1,054	981	1,065
Robbery	2,217	3,015	3,254	3,683	4,336	3,530	3,646	3,741
Aggravated Assault	5,094	5,539	6,023	6,302	7,220	8,628	8,333	7,644
Burglary	32,196	34,524	33,533	33,985	34,493	30,505	30,755	32,429
Larceny-Theft	53,266	57,373	58,857	62,467	70,621	67,967	69,299	71,887
Vehicle Theft	5,341	7,420	8,797	8,856	10,810	9,723	9,527	9,328

Source: Bureau of Justice Statistics, 1998.

Table K-2
Harrison County Crimes by Type

	1992	1993	1994	1995	1996*	1997*
Population	167,982	171,426	173,109	178,305	179,558	180,546
Murder	18	22	16	11	10	8
Rape	28	19	41	30	62	65
Robbery	42	73	82	101	324	360
Aggravated Assault	66	139	163	189	337	359
Burglary	308	287	367	537	2,167	2,036
Larceny	716	1083	1,304	1,103	7,985	8,365
Vehicle Theft	32	89	74	136	701	730
Drugs	436	877	1,264	1,937	N/A	N/A
DUI	1,358	1,458	1,219	1,872	N/A	N/A

N/A = Not available.
Source: Geospatial & Statistical Data Center, 1992-1994 data, University of Michigan National Archive of Criminal Justice Data, 1996 and 1997.

Table K-3
City of Biloxi Crimes by Type

Crime Category	1993	1994	1995	1996	1997
Murder	4	6	4	2	1
Rape	14	49	29	28	23
Robbery	175	254	195	171	180
Assault	391	1,241	1,555	1,555	1,438
Burglary	819	956	767	772	757
Larceny	2,705	3,480	3,476	3,502	3,779
Auto Theft	281	364	255	224	221
Arson	27	0	17	11	8
Drug Arrests	346	579	508	712	672
DUI Arrests	310	484	906	1,125	890

Source: Metropolitan Crime Commission, 1999.

Table K-4
Jackson County Crimes by Type

	1992	1993	1994	1995	1996*	1997*
Population	117,067	122,285	123,487	127,073	127,965	128,670
Murder	4	13	22	14	7	4
Rape	11	14	29	24	28	43
Robbery	51	62	63	53	135	157
Aggravated Assault	180	120	171	183	157	183
Burglary	152	146	282	352	942	1,235
Larceny	528	441	679	860	2,236	2,629
Vehicle Theft	50	92	96	73	225	326
Arson	1	1	7	7	N/A	N/A
Drugs	221	275	622	639	N/A	N/A
DUI	531	385	476	517	N/A	N/A

N/A = Not available.
Source: Geospatial & Statistical Data Center, 1992-1994, University of Michigan National Archive of Criminal Justice, 1996 and 1997.

Table K-5
Hancock County Crimes by Type

	1992	1993	1994	1995	1996*	1997*
Population	32,259	33,651	33,980	36,978	37,237	37,441
Murder	3	1	3	3	1	1
Rape	0	1	7	5	1	6
Robbery	5	6	3	8	10	13
Aggravated Assault	6	6	29	36	18	15
Burglary	27	30	64	58	216	158
Larceny	154	136	216	227	664	570
Vehicle Theft	5	7	12	21	32	46
Arson	0	4	1	1	N/A	N/A
Drugs	348	405	459	612	N/A	N/A
DUI	146	193	353	411	N/A	N/A

N/A = Not available.

Source: Geospatial & Statistical Data Center, 1992-1994, University of Michigan National Archive of Criminal Justice Data, 1996 and 1997.

Table K-6
Housing Starts and Valuation

City/County	Year	Number	Total Valuation	Average Valuation
Hancock County	1994	102	$ 3,641,935	$ 35,705
(unincorporated)	1995	83	$ 3,614,840	$ 43,552
	1996	89	$ 4,119,630	$ 46,288
	1997	82	$ 4,715,650	$ 57,508
	1998	120	Not Available	Not Available
Bay St. Louis	1994	Not Available	Not Available	Not Available
	1995	24	$ 2,167,000	$ 90,292
	1996	26	$ 1,774,500	$ 68,250
	1997	35	$ 2,774,780	$ 79,279
	1998	51	Not Available	Not Available
Waveland	1994	65	$ 4,363,950	$ 67,138
	1995	28	$ 1,708,190	$ 61,007
	1996	31	$ 2,311,400	$ 74,561
	1997	50	$ 4,551,138	$ 91,023
	1998	48	$ 5,361,691	$ 111,702
Harrison County	1994	531	$ 38,691,673	$ 72,866
(unincorporated)	1995	363	$ 26,170,422	$ 72,095

City/County	Year	Number	Total Valuation	Average Valuation
Hancock County	1994	102	$ 3,641,935	$ 35,705
(unincorporated)	1995	83	$ 3,614,840	$ 43,552
	1996	89	$ 4,119,630	$ 46,288
	1997	82	$ 4,715,650	$ 57,508
	1998	120	Not Available	Not Available
Bay St. Louis	1994	Not Available	Not Available	Not Available
	1996	411	$ 28,491,760	$ 69,323
	1997	440	$ 30,133,879	$ 68,486
	1998	456	$ 43,243,737	$ 94,833
Biloxi	1994	145	$ 12,674,890	$ 87,413
	1995	88	$ 8,818,623	$ 100,212
	1996	138	$ 21,587,862	$ 156,434
	1997	154	$ 14,426,630	$ 93,679
	1998	149	$ 30,515,060	$ 204,799
Gulfport	1994	240	$ 24,293,286	$ 101,222
	1995	233	$ 36,215,107	$ 155,430
	1996	271	$ 23,617,304	$ 87,149
	1997	270	$ 23,525,652	$ 87,132
	1998	329	$ 33,146,094	$ 100,748
Long Beach	1994	58	$ 5,345,524	$ 92,164
	1995	92	$ 6,543,793	$ 71,128
	1996	91	$ 5,802,338	$ 63,762
	1997	76	$ 6,506,144	$ 85,607
	1998	70	$ 9,039,918	$ 129,142
Pass Christian	1994	117	$ 7,528,201	$ 64,344
	1995	68	$ 4,783,080	$ 70,339
	1996	59	$ 9,889,955	$ 167,626
	1997	40	$ 4,676,860	$ 116,922
	1998	49	$ 8,844,074	$ 180,491
Jackson County	1994	624	$ 27,539,434	$ 44,134
(unincorporated)	1995	474	$ 21,961,448	$ 46,332
	1996	591	$ 26,099,889	$ 44,162
	1997	514	$ 22,717,980	$ 44,198
	1998	597	$ 30,111,754	$ 50,438

City/County	Year	Number	Total Valuation	Average Valuation
Hancock County	1994	102	$ 3,641,935	$ 35,705
(unincorporated)	1995	83	$ 3,614,840	$ 43,552
	1996	89	$ 4,119,630	$ 46,288
	1997	82	$ 4,715,650	$ 57,508
	1998	120	Not Available	Not Available
Bay St. Louis	1994	Not Available	Not Available	Not Available
Gautier	1994	65	$ 4,469,054	$ 68,755
	1995	49	$ 3,298,075	$ 67,308
	1996	44	$ 3,957,068	$ 89,933
	1997	55	$ 3,496,555	$ 63,574
	1998	74	$ 4,569,240	$ 61,746
Moss Point	1994	23	$ 1,965,155	$ 85,442
	1995	19	$ 1,479,700	$ 77,879
	1996	13	$ 1,148,208	$ 88,324
	1997	17	$ 1,452,550	$ 85,444
	1998	9	$ 682,000	$ 75,778
Ocean Springs	1994	120	$ 6,501,680	$ 54,181
	1995	67	$ 7,289,228	$ 108,794
	1996	107	$ 9,795,691	$ 91,549
	1997	142	$ 17,349,763	$ 122,181
	1998	190	$ 23,736,443	$ 124,929
Pascagoula	1994	12	$ 1,382,800	$ 115,233
	1995	16	$ 2,295,000	$ 143,438
	1996	20	$ 1,762,600	$ 88,130
	1997	10	$ 958,000	$ 95,800
	1998	15	$ 1,690,800	$ 112,720

Source: GRPC, fax 1999.

Table K-7
1990 Occupied Housing Stock

City/County	Owner Occupied	Renter Occupied	Total	Median Home Value
Hancock County (total)	9,399	2,478	11,817	$52,800
Hancock County (unincorporated)	5,889	863	6,752	Not available
Bay St. Louis	1,943	992	2,935	$52,400
Waveland	1,507	623	2,130	$50,500
Harrison County (total)	36,554	23,003	59,557	$55,100
Harrison County (unincorporated)	13,376	3,773	17,149	Not available
Biloxi	7,279	9,365	16,644	$55,400
D'Iberville	1,671	605	2,276	$47,700
Gulfport	8,957	6,840	15,797	$52,100
Long Beach	3,801	1,801	5,602	$52,100
Pass Christian	1,470	619	2,089	$62,500
Jackson County (total)	29,738	10,716	40,454	$50,900
Jackson County (unincorporated)	13,238	2,454	15,692	Not available
Gautier	2,388	1,101	3,489	$58,400
Moss Point	4,630	1,352	5,982	$43,100
Ocean Springs	3,688	1,829	5,517	$62,100
Pascagoula	5,794	3,980	9,774	$49,100
MS Coast Total	75,631	36,197	111,828	Not available

Source: GRPC, 1998c.

Table K-8
1990 Income Distribution

Income Bracket	Hancock County Households	Harrison County Households	Jackson County Households	Gulf Coast County Households
Less than $5,000	1,279	5,776	3,493	10,548
$5,000 to $9,999	1,610	6,688	4,068	12,366
$10,000 to $12,499	859	3,819	2,016	6,694
$12,500 to $14,999	908	3,380	1,959	6,247
$15,000 to $17,4999	612	3,735	1,989	6,336
$17,500 to $19,999	421	3,254	1,860	5,535
$20,000 to $22,499	524	3,664	1,922	6,110
$22,500 to $24,999	456	2,646	1,731	4,833
$25,500 to $27,499	577	2,924	2,040	5,541
$27,500 to $29,999	437	2,607	1,668	4,712
$30,000 to $32,499	416	2,725	1,982	5,123
$32,500 to $34,999	330	2,004	1,241	3,575
$35,000 to $37,499	347	1,865	1,709	3,921
$37,500 to $39,999	331	1,534	1,387	3,252
$40,000 to $42,499	293	1,838	1,433	3,564
$42,500 to $44,999	238	1,239	1,073	2,550
$45,000 to $47,499	220	1,225	1,277	2,722
$47,500 to $49,999	195	896	726	1,817
$50,000 to $54,999	316	1,764	1,674	3,754
$55,000 to $59,999	240	1,203	1,280	2,723
$60,000 to $74,999	571	2,580	2,039	5,190
$75,000 to $99,999	278	1,315	1,173	2,766
$100,000 to $124,999	130	459	296	885
$125,000 to $149,999	31	161	93	285
$150,000 or more	61	326	304	691
Total Households	11,680	59,627	40,433	111,740
Percent of Gulf Coast	11%	53%	36%	100%
Median Household Income	$ 20,720	$ 22,157	$ 26,444	$ 23,558

Source: U.S. Bureau of Census, 1990.

K.1 REGIONAL ECONOMIC IMPACTS OF CONSTRUCTION AND OPERATION

K.1.1 Introduction

Investments in Destination Broadwater construction and the consequent retail and amusement business would have significant positive economic effects on Harrison County and throughout the entire Mississippi gulf coast region. Short-term direct effects are generated by construction expenditures, and would include the increase in economic activity and jobs resulting directly from the new development. Long-term direct effects would include commercial spending to operate and maintain the new resort facilities, as well as consumer spending at Destination Broadwater.

The construction of a major development project like Destination Broadwater increases demand in the region for construction-related labor, equipment, materials, power, etc. These impacts extend well beyond the construction sector of the economy, indirectly stimulating virtually every sector as the purchase of materials and labor inputs tract the inter-industry links in the economy. Indeed, when both direct and indirect effects are considered, the majority of jobs and output generated by building Destination Broadwater are likely to be in non-construction sectors. The size of this effect varies with the size of the local economy – the larger the region (a state versus a county, for example) the larger the local multiplier effect.

These direct and indirect effects include new jobs and salaries that, in turn, lead to increased household spending (induced effects). Direct and indirect effects may fluctuate over time according to shifts in construction expenditures, while induced effects tend to be more stable because they lag behind construction spending.

K.1.2 Input-Output Analysis

Regional input-output (I-O) analysis was used to trace the economic ripples associated with construction and operation of Destination Broadwater throughout the regional economy of Harrison, Hancock and Jackson counties. I-O analysis is a means of examining relationships within an economy both between businesses and between businesses and final consumers. It captures all monetary market transactions for consumption in a given time period, and allows one to examine the effects of a change in one or several economic activities on an entire economy. Based on the region's industrial structure, the I-O analysis tracks the expected inter-industry flow of goods and services and calculates three types of economic effects:

Direct effects are the changes in the industry used to describe the events being analyzed (in this case, the construction and/or operation of Destination Broadwater).

Indirect effects are the changes in inter-industry purchases as they respond to the new demands of the directly affected industries.

Induced effects reflect changes in spending from households as income/population increases or decreases due to the changes in production.

The applicant has already calculated the anticipated direct effects from construction and /or operation of Destination Broadwater using alternative methodologies. The I-O analysis will therefore only focus on the indirect and induced effects of this project on the regional economy.

K.1.3 Input-Output Analysis Model Inputs

Annual project construction costs were modeled for a period of four years in order to calculate the average annual effects of the project over the planning level construction period. Annual operating revenues were also modeled in order to estimate the average annual effects of operating Destination Broadwater. The construction expenditures were allocated to different categories such as bedding, furniture, electronic casino equipment, general construction, etc. The revenues were similarly allocated to different categories such as lodging, food and beverage, retail, etc. For each expenditure/revenue category, the following information was modeled:

- A model **sector** (derived from Standard Industrial (SIC) codes and Bureau of Economic Analysis commodity codes). For example, Sector 151 is defined as: Mattresses and Bedsprings.

- The event **value** or the direct expenditure or revenue stream allocated to that category.

- The **basis** of the expenditure or revenue stream– whether it will have an Industry impact or a Commodity impact. An Industry impact allocates the entire expenditure to the industry (Sector) selected, whereas a Commodity impact splits the expenditure between all industries producing that commodity. For example, Sector 49 (New Industrial and Commercial Buildings) is assumed to have an Industry impact, because the expenditures involve direct inter-industry transactions. On the other hand, Sector 151 (Mattresses and Bedsprings) is assumed to have a Commodity Impact because the expenditures involve the purchase of a final product (bedding). This distinction is really only important in that the user can only assign Margins to Sectors with Commodity impacts.

- Whether or not to assign **margins** to the expenditure or revenue stream (for any Sectors defined as having a Commodity impact). During the input process, one must determine whether the expenditures or revenues represented in the model are in Producer or Purchaser prices. Producer prices are those paid at the factory door. This is the money an industry receives for its output. Purchaser prices are those paid at the retail level, and can include items such as markups and transportation costs. Margins represent the difference between producer and purchaser prices. Margining assigns direct expenditures to the correct I-O sector multiplier, and splits a purchaser price into the appropriate producer values, each value impacting a specific industry. Once an expenditure has been assigned to a specific Sector, the I-O model automatically allocates the funds to the appropriate underlying industries based on national and regional economic data. For example, for each dollar spent in Sector 151 (Mattresses and Bedsprings), only 53 cents is allocated to the manufacturer, and the balance of the expenditure is divided between wholesale, retail, and transportation industries. The general rule of thumb for whether or not to assign Margins to an expenditure or revenue stream is that Margins are used only for goods (but not services) purchased at the retail level.

- The percent of **local expenditures** associated with the expenditures or revenue stream. Local expenditures are the final demand changes that occur only within your study region, or the local demand purchased from local producers. For example, it is highly unlikely that there are many manufacturers of Electronic Casino Equipment in the Harrison/Hancock/Jackson County region, so that expenditure would have a fairly low local percentage value. For each type of expenditure the user can either accept the model-generated local percentage data (based on regional economic statistics) or override the model data and assume that all purchases will be made from local producers/manufacturers. The general rule of thumb to use for this input is that the purchase of goods tends to result in a local percentage figure of less than 100%, whereas the purchase of services assumes 100% local purchases. At first glance, this might seem illogical for a Sector such as Sector 49 (New Industrial and Commercial Buildings), since it is obvious that construction of a new facility will necessitate the purchase of materials (lumber, equipment, etc.) from outside of the local economic region. It should be noted, however, that the local percentage figure only pertains to the first iteration of expenditures. For example, when the model assumes that 100% of construction costs are local, that simply means that all sub-contracting duties have been assigned to local companies. In later iterations, however, the model does address the fact that not all supplies and materials are manufactured locally, and it allocates funds accordingly.

K.1.4 Input-Output Analysis Model Outputs

The I-O model generates data that describes the direct, indirect, and induced effects of a proposed project on many different sectors of the economy. As stated earlier, the project developer has already calculated the anticipated Direct effects from construction and /or operation of Destination Broadwater using alternative methodologies. The I-O analysis will therefore only focus on the Indirect and Induced effects of this project on the regional economy in the following categories.

- **Industry Output** is a single dollar amount for each industry. The dollars represent the value of an industry's total production.

- **Employment** is listed as a single number of (new) jobs for each industry.

- **Employee Compensation** describes the total payroll costs (including benefits) of each industry in the region. It includes the wages and salaries of workers who are paid by employers, as well as benefits such as health and life insurance, retirement payments, and non-cash compensation.

- **Indirect Business Taxes** consist of excise taxes, property taxes, fees, licenses, and sales taxes paid by businesses. These taxes occur during the normal operation of businesses but do not include taxes on profit or income.

K.1.5 Description of Alternatives

President Casinos has proposed five separate alternatives for development of the Destination Broadwater resort.

The No-Action Alternative. Under this alternative, the current site of the Broadwater Resort and President Casino would not be developed as a destination resort. Economic development and casino growth would continue to expand in the region in the manner it has since the state of Mississippi legalized dockside gaming in 1992. The Biloxi region would continue to benefit as it has in the past from the activity generated at the Broadwater Resort and President Casino.

The Proposed Action. Under this alternative, the developer would expand the Broadwater Resort Peninsula, creating a total developed area of 134 acres south of US 90. The resort would include six dockside casinos, six hotels, 20,000 parking spaces, a 400-slip marina, a water recreation and amusement park, movie theaters, other retail space, and a 206-acre golf course.

The Dispersed-Site Alternative. Under this alternative, all of the elements would be the same as those of the Proposed Action alternative; however, the facilities would be constructed at six, non-adjacent sites. Each site would comprise a casino, a hotel, parking, retail, marina slips, and other entertainment facilities, but at varying levels of development intensities.

The High Density Alternative. Under this alternative, a number of floating casinos (320,000 square feet of gaming space), as well as a small number of hotels, parking garages and retail space would be constructed in a higher density cluster south of US 90 (in other words, on fewer than 134 acres). Six convention-oriented hotels, a water recreation and amusement park, movie theaters, a 206-acre golf course, and other retail space would be constructed north of US 90 on existing Broadwater Resort property.

The Existing Footprint Alternative. Under this alternative, the developer would attempt to maximize casino development on the existing Broadwater Resort Peninsula footprint. All water-dependent gaming facilities would be separated from non-water dependent ancillary amenities, including parking, hotels, retail and other entertainment facilities. Visitors would gain access to the casino space by a walkway across US 90.

The I-O model was run for each of the proposed alternatives except the No-action Alternative. The results are presented in the following discussion.

K.1.6 The Proposed Action

Construction Regional Economic Impacts

Annual project construction costs of approximately $414.4 million was modeled through the Harrison/Hancock/Jackson County's current regional economic structure for a period of five years. This average annual expenditure, a direct impact, would result in an additional $98 million per year in Indirect impacts throughout the region, as industries expand to meet the

demands of this new construction project. Additional economic activity in the amount of $64 million would be created per year as a result of induced purchasing as employees added to the economy purchase goods and services. Specific economic output that is expected to take place within each aggregated economic sector is shown in Table K.1-1.

Table K.1-1
Annual Construction Impact Years 1-5
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	409,218	200,187
Ores, Mining, Gases, and Minerals	8,245	9,387
Ancillary Construction Activities	1,012,754	1,407,150
Manufacturing/Manufactured Goods	15,043,602	3,064,666
Transportation, Communications, and Public Utilities	9,107,074	5,487,932
Wholesale and Retail Trade	23,881,668	18,120,816
Finance, Insurance, and Real Estate	7,013,007	14,547,630
Medical, Legal, and Other Personal Services	3,455,994	15,816,130
Engineering, Accounting, and Other Business Services	37,743,788	4,932,905
Total	**$97,675,350**	**$63,586,803**

Source: DMA and staff analysis, 1999.

Additional employment and employee compensation resulting from construction in each year of project implementation is shown in the tables that follow. It is important to note that yearly average construction expenditures of $414.4 million provide an additional 6,641 jobs and $204 million in wages directly, although these figures are not included in the following tables.

Table K.1-2
Annual Construction Impact Years 1-5
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	19	6
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	17	22
Manufacturing/Manufactured Goods	121	13
Transportation, Communications, and Public Utilities	80	35
Wholesale and Retail Trade	609	530
Finance, Insurance, and Real Estate	67	78
Medical, Legal, and Other Personal Services	64	287
Engineering, Accounting, and Other Business Services	640	124
Total	**1,617**	**1,094**

Source: DMA and staff analysis, 1999.

Table K.1-3
Annual Construction Impact Years 1-5
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	181,427	51,387
Ores, Mining, Gases, and Minerals	1,385	1,560
Ancillary Construction Activities	366,615	457,143
Manufacturing/Manufactured Goods	3,344,972	407,367
Transportation, Communications, and Public Utilities	2,090,415	1,193,776
Wholesale and Retail Trade	9,924,882	7,176,647
Finance, Insurance, and Real Estate	1,404,706	1,511,236
Medical, Legal, and Other Personal Services	861,445	6,377,296
Engineering, Accounting, and Other Business Services	14,650,604	2,026,123
Total	**$32,826,451**	**$19,202,535**

Source: DMA and staff analysis, 1999.

Retail, Recreation and Amusement Regional Economic Impacts

Annual revenues expected at Destination Broadwater are estimated at $1.6 billion, with an annual payroll of $273 million (13,145 jobs). Annual Indirect and Induced effects on total industry output, employment and employee compensation are shown in the tables that follow. It is important to note that these impacts are expected to be recurring long-term impacts (as opposed to construction impacts, which occur during construction activity only), and would be realized once the project is fully operational, after one to two years of start-up operations. As shown in the tables, operation of Destination Broadwater is expected to create an additional $326 million in Indirect economic activity and $273 in Induced economic activity per year throughout the regional economy. Also, over 9,500 jobs would be created by this growth in the region's

economy with employee compensation (non-Destination Broadwater) valued at over $170 million per year.

Table K.1-4
Annual Operations and Commercial Activity
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	4,245,043	862,136
Ores, Mining, Gases, and Minerals	49,416	40,497
Ancillary Construction Activities	29,081,588	6,038,029
Manufacturing/Manufactured Goods	25,842,990	13,204,537
Transportation, Communications, and Public Utilities	73,440,912	23,652,974
Wholesale and Retail Trade	19,818,454	77,906,840
Finance, Insurance, and Real Estate	72,462,256	62,471,316
Medical, Legal, and Other Personal Services	37,050,232	68,063,720
Engineering, Accounting, and Other Business Services	63,962,952	21,168,658
Total	**$325,953,843**	**$273,408,707**

Source: DMA and staff analysis, 1999.

Table K.1-5
Annual Operations and Commercial Activity
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	139	26
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	492	94
Manufacturing/Manufactured Goods	191	56
Transportation, Communications, and Public Utilities	484	151
Wholesale and Retail Trade	429	2,277
Finance, Insurance, and Real Estate	700	336
Medical, Legal, and Other Personal Services	780	1,235
Engineering, Accounting, and Other Business Services	1,580	531
Total	**4,795**	**4,706**

Source: DMA and staff analysis, 1999.

Table K.1-6
Annual Operations and Commercial Activity
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	1,228,372	220,723
Ores, Mining, Gases, and Minerals	7,598	6,728
Ancillary Construction Activities	10,651,058	1,962,315
Manufacturing/Manufactured Goods	5,412,779	1,753,264
Transportation, Communications, and Public Utilities	15,887,131	5,141,716
Wholesale and Retail Trade	7,435,866	30,857,836
Finance, Insurance, and Real Estate	10,061,052	6,509,791
Medical, Legal, and Other Personal Services	9,433,252	27,454,298
Engineering, Accounting, and Other Business Services	27,637,166	8,690,591
Total	**$87,754,274**	**$82,597,262**

Source: DMA and staff analysis, 1999.

State and Local Tax Impacts

Operation of Destination Broadwater would provide substantial direct tax and fee revenues to the State of Mississippi, Harrison County, and the City of Biloxi. Sources of these revenues and annual tax/fee amounts are shown in Table K.1-7.

Table K.1-7
State and Local Tax Impacts

Source	County	City	School	State	Total
Advalorem	13,495,453	17,004,520	11,608,825	---	$42,108,798
Gaming Tax	3,420,744	13,700,640	---	34,207,440	$51,328,824
Room Tax	---	14,504,096	---	19,988,404	$34,492,500
Entertainment/ Retail Tax	---	6,226,279	---	27,429,283	$33,655,562
Tidelands Lease	4,784,000	---	---	---	$4,784,000
Gaming Unit Fees	---	1,275,000	---	500,200	$1,775,200
Total	**$21,700,197**	**$52,710,535**	**$11,608,825**	**$82,125,327**	**$168,144,884**

Source: DMA and staff analysis, 1999.

The indirect and induced economic activity from the ongoing operations of Destination Broadwater would also generate Indirect Business Taxes throughout the region in the amount of $37 million per year. These additional taxes are outlined in Table K.1-8.

Table K.1-8
Annual Operations and Commercial Activity
Total Regional Indirect Business Taxes

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	84,184	15,518
Ores, Mining, Gases, and Minerals	3,432	2,662
Ancillary Construction Activities	122,540	24,783
Manufacturing/Manufactured Goods	352,116	229,593
Transportation, Communications, and Public Utilities	5,857,488	1,707,535
Wholesale and Retail Trade	2,629,917	10,397,698
Finance, Insurance, and Real Estate	6,597,345	6,256,646
Medical, Legal, and Other Personal Services	1,124,514	964,498
Engineering, Accounting, and Other Business Services	746,778	355,299
Total	**$17,518,314**	**$19,954,232**

Source: DMA and staff analysis, 1999.

K.1.7 The Dispersed-Site Alternative

Construction Regional Economic Impacts

Annual project construction costs of approximately $601.7 million was modeled through the Harrison/Hancock/Jackson County's current regional economic structure for a period of three years. This average annual expenditure, a direct impact, would result in an additional $140 million per year in Indirect impacts throughout the region, as industries expand to meet the demands of this new construction project. Additional economic activity in the amount of $91 million would be created per year as a result of induced purchasing as employees added to the economy purchase goods and services. Specific economic output that is expected to take place within each aggregated economic sector is shown in Table K.1-9.

Table K.1-9
Annual Construction Impact Years 1-3
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	585,768	287,500
Ores, Mining, Gases, and Minerals	11,838	13,481
Ancillary Construction Activities	1,469,473	2,020,867
Manufacturing/Manufactured Goods	21,591,884	4,401,340
Transportation, Communications, and Public Utilities	13,073,935	7,881,536
Wholesale and Retail Trade	34,167,608	26,024,186
Finance, Insurance, and Real Estate	10,090,520	20,892,498
Medical, Legal, and Other Personal Services	4,969,028	22,714,370
Engineering, Accounting, and Other Business Services	54,001,828	7,084,352
Total	**$139,961,882**	**$91,320,130**

Source: DMA and staff analysis, 1999.

Additional employment and employee compensation resulting from construction in each year of project implementation is shown in the tables that follow. It is important to note that yearly average construction expenditures of $601.7 million provide an additional 9,643 jobs and $297 million in wages directly, although these figures are not included in the following tables.

Table K.1-10
Annual Construction Impact Years 1-3
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	27	9
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	25	31
Manufacturing/Manufactured Goods	174	19
Transportation, Communications, and Public Utilities	114	50
Wholesale and Retail Trade	871	761
Finance, Insurance, and Real Estate	97	112
Medical, Legal, and Other Personal Services	92	412
Engineering, Accounting, and Other Business Services	916	178
Total	**2,315**	**1,572**

Source: DMA and staff analysis, 1999.

Table K.1-11
Annual Construction Impact Years 1-3
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	259,698	73,799
Ores, Mining, Gases, and Minerals	1,988	2,240
Ancillary Construction Activities	531,984	656,523
Manufacturing/Manufactured Goods	4,800,736	585,041
Transportation, Communications, and Public Utilities	3,000,210	1,714,448
Wholesale and Retail Trade	14,198,535	10,306,735
Finance, Insurance, and Real Estate	2,016,590	2,170,370
Medical, Legal, and Other Personal Services	1,238,655	9,158,775
Engineering, Accounting, and Other Business Services	20,962,886	2,909,797
Total	**$47,011,282**	**$27,577,728**

Source: DMA and staff analysis, 1999.

Retail, Recreation and Amusement Regional Economic Impacts

Annual revenues expected at Destination Broadwater are estimated at $983 million, with an annual payroll of $275 million (13,225 jobs). Annual Indirect and Induced effects on total industry output, employment and employee compensation are shown in the tables that follow. It is important to note that these impacts are expected to be recurring long-term impacts (as opposed to construction impacts, which occur during construction activity only), and would be realized once the project is fully operational, after one to two years of start-up operations. As shown in the tables, operation of Destination Broadwater is expected to create an additional $204 million in Indirect economic activity and $169 in Induced economic activity per year throughout the regional economy. Also, over 5,900 jobs would be created by this growth in the region's economy with employee compensation (non-Destination Broadwater) valued at over $106 million per year.

Table K.1-12
Annual Operations and Commercial Activity
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	2,727,249	532,972
Ores, Mining, Gases, and Minerals	30,744	25,036
Ancillary Construction Activities	18,718,282	3,732,446
Manufacturing/Manufactured Goods	16,224,357	8,163,112
Transportation, Communications, and Public Utilities	45,952,784	14,622,476
Wholesale and Retail Trade	10,711,849	48,160,412
Finance, Insurance, and Real Estate	45,662,640	38,617,612
Medical, Legal, and Other Personal Services	23,167,578	42,076,360
Engineering, Accounting, and Other Business Services	41,025,720	13,085,565
Total	**$204,221,203**	**$169,015,991**

Source: DMA and staff analysis, 1999.

Table K.1-13
Annual Operations and Commercial Activity
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	90	16
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	317	58
Manufacturing/Manufactured Goods	120	35
Transportation, Communications, and Public Utilities	304	93
Wholesale and Retail Trade	237	1,407
Finance, Insurance, and Real Estate	443	208
Medical, Legal, and Other Personal Services	491	763
Engineering, Accounting, and Other Business Services	1,017	328
Total	**3,018**	**2,909**

Source: DMA and staff analysis, 1999.

Table K.1-14
Annual Operations and Commercial Activity
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	795,934	136,444
Ores, Mining, Gases, and Minerals	4,727	4,159
Ancillary Construction Activities	6,859,898	1,213,026
Manufacturing/Manufactured Goods	3,400,683	1,083,854
Transportation, Communications, and Public Utilities	9,957,087	3,178,613
Wholesale and Retail Trade	4,040,817	19,075,720
Finance, Insurance, and Real Estate	6,433,794	4,024,367
Medical, Legal, and Other Personal Services	5,870,030	16,972,112
Engineering, Accounting, and Other Business Services	17,752,992	5,372,106
Total	**$55,115,962**	**$51,060,401**

Source: DMA and staff analysis, 1999.

State and Local Tax Impacts

Operation of Destination Broadwater would provide substantial direct tax and fee revenues to the State of Mississippi, Harrison County, and the City of Biloxi. Sources of these revenues and annual tax/fee amounts are shown in Table K.1-15.

Table K.1-15
State and Local Tax Impacts

Source	County	City	School	State	Total
Advalorem	11,756,664	14,813,614	10,113,114	---	$36,683,392
Gaming Tax	3,420,744	13,700,640	---	34,207,440	$51,328,824
Room Tax	---	14,504,096	---	19,988,404	$34,492,500
Entertainment/ Retail Tax	---	6,226,279	---	27,429,283	$33,655,562
Tidelands Lease	4,784,000	---	---	---	$4,784,000
Gaming Unit Fees	---	1,275,000	---	500,200	$1,775,200
Total	**$19,961,408**	**$50,519,629**	**$10,113,114**	**$82,125,327**	**$162,719,478**

Source: DMA and staff analysis, 1999.

The indirect and induced economic activity from the ongoing operations of Destination Broadwater would also generate Indirect Business Taxes throughout the region in the amount of $23 million per year. These additional taxes are outlined in Table K.1-16.

Table K.1-16
Annual Operations and Commercial Activity
Total Regional Indirect Business Taxes

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	54,730	9,593
Ores, Mining, Gases, and Minerals	2,136	1,646
Ancillary Construction Activities	78,883	15,320
Manufacturing/Manufactured Goods	220,640	141,938
Transportation, Communications, and Public Utilities	3,678,352	1,055,650
Wholesale and Retail Trade	1,428,831	6,427,680
Finance, Insurance, and Real Estate	4,131,026	3,867,546
Medical, Legal, and Other Personal Services	702,897	596,204
Engineering, Accounting, and Other Business Services	480,657	219,619
Total	**$10,778,152**	**$12,335,196**

Source: DMA and staff analysis, 1999.

K.1.8 The High-Density Alternative

Construction Regional Economic Impacts

Annual project construction costs of approximately $372.6 million was modeled through the Harrison/Hancock/Jackson County's current regional economic structure for a period of five years. This average annual expenditure, a direct impact, would result in an additional $87 million per year in Indirect impacts throughout the region, as industries expand to meet the demands of this new construction project. Additional economic activity in the amount of $57 million would be created per year as a result of induced purchasing as employees added to the economy purchase goods and services. Specific economic output that is expected to take place within each aggregated economic sector is shown in Table K.1-17.

Table K.1-17
Annual Construction Impact Years 1-5
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	364,549	178,656
Ores, Mining, Gases, and Minerals	7,357	8,377
Ancillary Construction Activities	909,403	1,255,794
Manufacturing/Manufactured Goods	13,428,653	2,735,039
Transportation, Communications, and Public Utilities	8,126,164	4,897,667
Wholesale and Retail Trade	21,270,582	16,171,736
Finance, Insurance, and Real Estate	6,265,323	12,982,862
Medical, Legal, and Other Personal Services	3,086,817	14,114,963
Engineering, Accounting, and Other Business Services	33,614,828	4,402,309
Total	**$87,073,676**	**$56,747,403**

Source: DMA and staff analysis, 1999.

Additional employment and employee compensation resulting from construction in each year of project implementation is shown in the tables that follow. It is important to note that yearly average construction expenditures of $372.6 million provide an additional 5,972 jobs and $185 million in wages directly, although these figures are not included in the following tables.

Table K.1-18
Annual Construction Impact Years 1-5
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	17	5
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	15	20
Manufacturing/Manufactured Goods	108	12
Transportation, Communications, and Public Utilities	71	31
Wholesale and Retail Trade	542	473
Finance, Insurance, and Real Estate	60	70
Medical, Legal, and Other Personal Services	57	256
Engineering, Accounting, and Other Business Services	570	110
Total	**1,441**	**977**

Source: DMA and staff analysis, 1999.

Table K.1-19
Annual Construction Impact Years 1-5
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	161,622	45,860
Ores, Mining, Gases, and Minerals	1,236	1,392
Ancillary Construction Activities	329,220	407,972
Manufacturing/Manufactured Goods	2,985,792	363,551
Transportation, Communications, and Public Utilities	1,865,007	1,065,376
Wholesale and Retail Trade	8,839,315	6,404,726
Finance, Insurance, and Real Estate	1,253,409	1,348,691
Medical, Legal, and Other Personal Services	769,449	5,691,363
Engineering, Accounting, and Other Business Services	13,048,437	1,808,187
Total	**$29,253,487**	**$17,137,118**

Source: DMA and staff analysis, 1999.

Retail, Recreation and Amusement Regional Economic Impacts

Annual revenues expected at Destination Broadwater are estimated at $1.3 billion, with an annual payroll of $273 million (13,145 jobs). Annual Indirect and Induced effects on total industry output, employment and employee compensation are shown in the tables that follow. It is important to note that these impacts are expected to be recurring long-term impacts (as opposed to construction impacts, which occur during construction activity only), and would be realized once the project is fully operational, after one to two years of start-up operations. As shown in the tables, operation of Destination Broadwater is expected to create an additional $256 million in Indirect economic activity and $214 in Induced economic activity per year throughout the regional economy. Also, over 7,400 jobs would be created by this growth in the region's economy with employee compensation (non-Destination Broadwater) valued at over $134 million per year.

Table K.1-20
Annual Operations and Commercial Activity
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	3,352,367	675,194
Ores, Mining, Gases, and Minerals	38,739	31,716
Ancillary Construction Activities	22,946,744	4,728,699
Manufacturing/Manufactured Goods	20,306,858	10,341,338
Transportation, Communications, and Public Utilities	57,622,736	18,524,218
Wholesale and Retail Trade	15,115,252	61,013,436
Finance, Insurance, and Real Estate	56,924,152	48,924,736
Medical, Legal, and Other Personal Services	29,083,958	53,304,908
Engineering, Accounting, and Other Business Services	50,455,876	16,578,301
Total	**$255,846,682**	**$214,122,546**

Source: DMA and staff analysis, 1999.

Table K.1-21
Annual Operations and Commercial Activity
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	110	20
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	388	74
Manufacturing/Manufactured Goods	150	44
Transportation, Communications, and Public Utilities	380	118
Wholesale and Retail Trade	329	1,783
Finance, Insurance, and Real Estate	550	263
Medical, Legal, and Other Personal Services	613	967
Engineering, Accounting, and Other Business Services	1,248	416
Total	**3,767**	**3,686**

Source: DMA and staff analysis, 1999.

Table K.1-22
Annual Operations and Commercial Activity
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	971,212	172,861
Ores, Mining, Gases, and Minerals	5,956	5,269
Ancillary Construction Activities	8,405,249	1,536,794
Manufacturing/Manufactured Goods	4,254,479	1,373,090
Transportation, Communications, and Public Utilities	12,467,943	4,026,809
Wholesale and Retail Trade	5,676,904	24,166,600
Finance, Insurance, and Real Estate	7,920,972	5,098,240
Medical, Legal, and Other Personal Services	7,396,493	21,501,190
Engineering, Accounting, and Other Business Services	21,808,560	6,806,051
Total	**$68,907,768**	**$64,686,904**

Source: DMA and staff analysis, 1999.

State and Local Tax Impacts

Operation of Destination Broadwater would provide substantial direct tax and fee revenues to the State of Mississippi, Harrison County, and the City of Biloxi. Sources of these revenues and annual tax/fee amounts are shown in Table K.1-23.

Table K.1-23
State and Local Tax Impacts

Source	County	City	School	State	Total
Advalorem	12,134,652	15,289,885	10,438,260	---	$37,862,796
Gaming Tax	3,420,744	13,700,640	---	34,207,440	$51,328,824
Room Tax	---	14,504,096	---	19,988,404	$34,492,500
Entertainment/ Retail Tax	---	6,226,279	---	27,429,283	$33,655,562
Tidelands Lease	4,784,000	---	---	---	$4,784,000
Gaming Unit Fees	---	1,275,000	---	500,200	$1,775,200
Total	**$20,339,396**	**$50,995,900**	**$10,438,260**	**$82,125,327**	**$163,898,882**

Source: DMA and staff analysis, 1999.

The indirect and induced economic activity from the ongoing operations of Destination Broadwater would also generate Indirect Business Taxes throughout the region in the amount of $29 million per year. These additional taxes are outlined in Table K.1-24.

Table K.1-24
Annual Operations and Commercial Activity
Total Regional Indirect Business Taxes

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	66,617	12,153
Ores, Mining, Gases, and Minerals	2,691	2,085
Ancillary Construction Activities	96,692	19,409
Manufacturing/Manufactured Goods	276,554	179,810
Transportation, Communications, and Public Utilities	4,598,958	1,337,294
Wholesale and Retail Trade	2,007,804	8,143,059
Finance, Insurance, and Real Estate	5,177,602	4,899,899
Medical, Legal, and Other Personal Services	882,533	755,348
Engineering, Accounting, and Other Business Services	589,596	278,250
Total	**$13,699,047**	**$15,627,307**

Source: DMA and staff analysis, 1999.

K.1.9 The Existing Footprint Alternative

Construction Regional Economic Impacts

Annual project construction costs of approximately $365.9 million was modeled through the Harrison/Hancock/Jackson County's current regional economic structure for a period of five years. This average annual expenditure, a direct impact, would result in an additional $85 million per year in Indirect impacts throughout the region, as industries expand to meet the demands of this new construction project. Additional economic activity in the amount of $56 million would be created per year as a result of induced purchasing as employees added to the economy purchase goods and services. Specific economic output that is expected to take place within each aggregated economic sector is shown in Table K.1-25.

Table K.1-25
Annual Construction Impact Years 1-5
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	357,306	175,164
Ores, Mining, Gases, and Minerals	7,213	8,213
Ancillary Construction Activities	892,645	1,231,251
Manufacturing/Manufactured Goods	13,166,793	2,681,590
Transportation, Communications, and Public Utilities	7,967,112	4,801,956
Wholesale and Retail Trade	20,847,200	15,855,698
Finance, Insurance, and Real Estate	6,144,088	12,729,138
Medical, Legal, and Other Personal Services	3,026,956	13,839,123
Engineering, Accounting, and Other Business Services	32,945,326	4,316,274
Total	**$85,354,639**	**$55,638,407**

Source: DMA and staff analysis, 1999.

Additional employment and employee compensation resulting from construction in each year of project implementation is shown in the tables that follow. It is important to note that yearly average construction expenditures of $365.9 million provide an additional 5,863 jobs and $182 million in wages directly, although these figures are not included in the following tables.

Table K.1-26
Annual Construction Impact Years 1-5
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	16	5
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	15	19
Manufacturing/Manufactured Goods	106	12
Transportation, Communications, and Public Utilities	70	31
Wholesale and Retail Trade	532	463
Finance, Insurance, and Real Estate	59	68
Medical, Legal, and Other Personal Services	56	251
Engineering, Accounting, and Other Business Services	559	108
Total	**1,412**	**958**

Source: DMA and staff analysis, 1999.

Table K.1-27
Annual Construction Impact Years 1-5
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	158,411	44,964
Ores, Mining, Gases, and Minerals	1,212	1,365
Ancillary Construction Activities	323,157	399,999
Manufacturing/Manufactured Goods	2,927,551	356,446
Transportation, Communications, and Public Utilities	1,828,457	1,044,556
Wholesale and Retail Trade	8,663,293	6,279,561
Finance, Insurance, and Real Estate	1,228,877	1,322,335
Medical, Legal, and Other Personal Services	754,532	5,580,141
Engineering, Accounting, and Other Business Services	12,788,649	1,772,849
Total	**$28,674,139**	**$16,802,216**

Source: DMA and staff analysis, 1999.

Retail, Recreation and Amusement Regional Economic Impacts

Annual revenues expected at Destination Broadwater are estimated at $1.3 billion, with an annual payroll of $273 million (13,145 jobs). Annual Indirect and Induced effects on total industry output, employment and employee compensation are shown in the tables that follow. It is important to note that these impacts are expected to be recurring long-term impacts (as

opposed to construction impacts, which occur during construction activity only), and would be realized once the project is fully operational, after one to two years of start-up operations. As shown in the tables, operation of Destination Broadwater is expected to create an additional $256 million in Indirect economic activity and $214 in Induced economic activity per year throughout the regional economy. Also, over 7,400 jobs would be created by this growth in the region's economy with employee compensation (non-Destination Broadwater) valued at over $134 million per year.

Table K.1-28
Annual Operations and Commercial Activity
Total Regional Economic Output

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	3,352,367	675,194
Ores, Mining, Gases, and Minerals	38,739	31,176
Ancillary Construction Activities	22,946,744	4,728,699
Manufacturing/Manufactured Goods	20,306,858	10,341,338
Transportation, Communications, and Public Utilities	57,622,736	18,524,218
Wholesale and Retail Trade	15,115,252	61,013,436
Finance, Insurance, and Real Estate	56,924,152	48,924,736
Medical, Legal, and Other Personal Services	29,083,958	53,304,908
Engineering, Accounting, and Other Business Services	50,455,876	16,578,301
Total	**$255,846,682**	**$214,122,546**

Source: DMA and staff analysis, 1999.

Table K.1-29
Annual Operations and Commercial Activity
Total Regional Employment (Jobs)

Economic Sector	Indirect Effect	Induced Effect
Agriculture, Food Products, and Food Warehousing	110	20
Ores, Mining, Gases, and Minerals	0	0
Ancillary Construction Activities	388	74
Manufacturing/Manufactured Goods	150	44
Transportation, Communications, and Public Utilities	380	118
Wholesale and Retail Trade	329	1,783
Finance, Insurance, and Real Estate	550	263
Medical, Legal, and Other Personal Services	613	967
Engineering, Accounting, and Other Business Services	1,248	416
Total	**3,767**	**3,686**

Source: DMA and staff analysis, 1999.

Table K.1-30
Annual Operations and Commercial Activity
Total Regional Employee Compensation

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	971,212	172,861
Ores, Mining, Gases, and Minerals	5,956	5,269
Ancillary Construction Activities	8,405,249	1,536,794
Manufacturing/Manufactured Goods	4,254,479	1,373,090
Transportation, Communications, and Public Utilities	12,467,943	4,026,809
Wholesale and Retail Trade	5,676,904	24,166,600
Finance, Insurance, and Real Estate	7,920,972	5,098,240
Medical, Legal, and Other Personal Services	7,396,493	21,501,190
Engineering, Accounting, and Other Business Services	21,808,560	6,806,051
Total	**$68,907,768**	**$64,686,904**

Source: DMA and staff analysis, 1999.

State and Local Tax Impacts

Operation of Destination Broadwater would provide substantial direct tax and fee revenues to the State of Mississippi, Harrison County, and the City of Biloxi. Sources of these revenues and annual tax/fee amounts are shown in Table K.1-31.

Table K.1-31
State and Local Tax Impacts

Source	County	City	School	State	Total
Advalorem	12,134,652	15,289,885	10,438,260	---	$37,862,796
Gaming Tax	3,420,744	13,700,640	---	34,207,440	$51,328,824
Room Tax	---	14,504,096	---	19,988,404	$34,492,500
Entertainment/ Retail Tax	---	6,226,279	---	27,429,283	$33,655,562
Tidelands Lease	4,784,000	---	---	---	$4,784,000
Gaming Unit Fees	---	1,275,000	---	500,200	$1,775,200
Total	**$20,339,396**	**$50,995,900**	**$10,438,260**	**$82,125,327**	**$163,898,882**

Source: DMA and staff analysis, 1999.

The indirect and induced economic activity from the ongoing operations of Destination Broadwater would also generate Indirect Business Taxes throughout the region in the amount of $29 million per year. These additional taxes are outlined in Table K.1-32.

Table K.1-32
Annual Operations and Commercial Activity
Total Regional Indirect Business Taxes

Economic Sector	Indirect Effect ($)	Induced Effect ($)
Agriculture, Food Products, and Food Warehousing	66,617	12,153
Ores, Mining, Gases, and Minerals	2,691	2,085
Ancillary Construction Activities	96,692	19,409
Manufacturing/Manufactured Goods	276,554	179,810
Transportation, Communications, and Public Utilities	4,598,958	1,337,294
Wholesale and Retail Trade	2,007,804	8,143,059
Finance, Insurance, and Real Estate	5,177,602	4,899,899
Medical, Legal, and Other Personal Services	882,533	755,348
Engineering, Accounting, and Other Business Services	589,596	278,250
Total	**$13,699,047**	**$15,627,307**

Source: DMA and staff analysis, 1999.

K.1.10 Summary of the Alternatives

The following table summarizes the anticipated direct, indirect and induced regional economic effects of the construction and operation of Destination Broadwater under the Proposed Action and its alternatives.

Table K.1-33
Regional Economic Effects of Construction and Operations
Comparison of Alternatives ($ in millions)

	Proposed Action		Dispersed Site		High Density		Existing Footprint	
	Direct	Indirect and Induced	Direct	Indirect and Induced	Direct	Indirect and Induced	Direct	Indirect and Induced
Construction								
Years of Construction		Five		Three		Five		Five
Average Total Output	$414	$161	$602	$231	$373	$144	$366	$141
Average Employment	6,641	2,711	9,643	3,887	5,972	2,417	5,863	2,370
Average Employee Compensation	$204	$52	$297	$75	$185	$46	$182	$45
Operations								
Total Output	$1,636	$599	$983	$373	$1,274	$470	$1,274	$470
Employment (Jobs)	13,145	9,501	13,225	5,927	13,145	7,453	13,145	7,453
Employee Compensation	$273	$170	$275	$106	$273	$134	$273	$134
Taxes and Fees	$168	$37	$163	$23	$164	$29	$164	$29

Source: DMA and staff analysis, 1999.

K.2 Socioeconomic Impacts in the ROI as a Result of New Jobs Generated by Alternatives 2, 3, 4, and 5

K.2.1 Introduction

In order to estimate and characterize the socioeconomic impacts of each of the alternatives, the following methodology was used. First, direct construction, employment, and employee compensation were input to the Impact Analysis for Planning (IMPLAN) input-output (I-O) model to estimate economic output, employment, and employee compensation generated by the alternatives. The results of the IMPLAN I-O analysis are included in Section K.2.2. Second, population, labor force, employment, and household estimates were projected for the no-action or baseline condition. Third, planners projected population, labor force, employment and households for each of the alternatives by adding I-O model impacts on employment to the baseline condition. Lastly, the distribution of the baseline population and the distribution of the additional population growth created by the alternatives were analyzed using a population growth allocation model. Each part of the analysis is discussed below, and supporting tables are provided.

K.2.2 Impact Analysis for Planning (IMPLAN) Input-Output Model

The IMPLAN I-O model considers interrelationships between industrial sectors and how those relationships affect economic changes in a particular region. I-O models are used to measure the economic changes resulting from proposed public or private sector actions. Types of actions include public policies (such as tax changes and natural resource management), construction and operation of new facilities, and industry relocation. Final consumption (or final demand) drives the I-O model.

Transaction tables form the framework for I-O models like IMPLAN. These tables summarize the trade among industry sectors. IMPLAN uses national I-O tables produced by the Bureau of Economic Analysis, which are based on extensive survey data. The national I-O tables are updated approximately every 5 years. Similarly, regional transactions tables are generated through both survey and non-survey techniques.

The trade or transaction information is displayed in a matrix with producing industries listed down the side of the table and purchasing industries listed across the top of the table. The I-O system is a double entry accounting system tracking income (receipts) and expenditures (expenses) on goods and services in dollars. The receipts must balance the expenditures. In short, the transaction tables describe the supply and demand relationships of an economy in equilibrium. The transaction tables also include final demand sectors, such as households. The household column represents total purchases of finished goods and services by sector, while the household row reflects wages and salaries paid to workers.

The analytical utility of the transaction table arises from its use in deriving the direct coefficients matrix, which is used to estimate the direct and indirect requirements table. It is the direct requirements table that provides the total value of the change in each sector's output per dollar

change in final demand. For example, a total requirements table will provide estimates of increases in economic output in every sector resulting from a one dollar increase in demand for construction. Depending on the availability of data, I-O models can be used to trace how impacts originating in one sector multiply throughout the economy.

The IMPLAN model is derived by using local data combined with national input-output accounts. IMPLAN software and databases are used to construct regional economic accounts of any zip code, state, or county in the United States. The model assumes that the set of inputs an industry uses in its production process does not differ substantially across regions. Hence, the industrial technology implied by the national accounts is applicable to sub-national regions. The regional model is differentiated from the national model through adjustment of trade flows between the region and the rest of the world.

Estimating the volume of trade for a sub-national area is accomplished using a variety of techniques, including the regional purchase coefficient (RPC), location quotients, and supply-demand pooling. The RPC employed in the IMPLAN system is based on the characteristics of the region and describes the actual trade flows for a region mathematically. An RPC represents the proportion of local demand purchased from local producers. An RPC of 0.25 for a given commodity means that for each $1 of local need for that commodity, 25 percent will be supplied by local producers. Each commodity produced in a region has an associated RPC that is determined via a set of econometric equations and used to estimate trade flows (imports and exports).

Trade flow affects the amount of local commodity production available to industries and thus affects the elements of the transactions matrix, which in turn affects the direct requirements matrix. Location quotients are based on commodity output. They are based on comparing the ratios of local production to national production ratios. Supply-demand pooling assumes that local demand will buy as much as possible locally. All local needs that can possibly be met by local producers will be. The IMPLAN model assumes that changes occur over a one-year period.

The IMPLAN model employs the above methodology to trace economic changes in a regional economy arising from changes in the level of activity in one or more identified sectors. The model uses county-level data to adjust the national income accounts to fit the trade flow characteristics of the sub-national region of influence (ROI) for the study. The analyst develops an ROI based on various factors, including residential distribution of the directly affected workforce, and trading and commuting patterns. ROIs are typically an aggregation of one or more counties, since the county is the smallest jurisdiction for which most economic data are collected. IMPLAN estimates economic changes for the region and quantifies changes to the following economic indicators:

Sector (Economic) Output. Sector output represents the value of an industry's total productions. Output can be measured either by the total value of purchases by intermediate and final consumers, or by intermediate outlays, plus value added. Output can also be thought of as value of sales, plus or minus inventory. Data for use in the IMPLAN model were derived from Bureau of Census data and Bureau of Labor Statistics employment projections.

Employment. Employment is the number of jobs expected. Data for use in the IMPLAN model were derived from employment security data, Bureau of Economic Analysis county business patterns, and Regional Economic Information System data.

Employee Compensation. Employee compensation describes total payroll costs (including benefits) of each industry in the region.

Proprietor Income. Proprietor income consists of payments received by self-employed individuals as income.

Personal Income. Personal income represents all forms of employment income. In I-O analysis, personal income is defined as the sum of employee compensation and proprietor income.

Other Property Income. Other property type income consists of payments from rents, royalties, and dividends paid by corporations.

Indirect Business Taxes. Indirect business taxes consist primarily of excise and sales taxes paid by individuals to businesses.

Total Value Added. Total valued added involves payments made by industry to workers, such as interest, profits, and indirect business taxes. It is a sum of the four other indicators: employee compensation, proprietor income, other property type income, and indirect business taxes.

Source: Minnesota IMPLAN Group, Inc. 1997. IMPLAN Professional-Social Accounting and Impact Analysis Software. Stillwater, Minnesota.

K.2.3 Population, Labor Force, Employment, and Household Projections for the Baseline (No-Action) Forecast

This section describes information contained in Tables K.2-1 through K.2-4, in the section titled "Socioeconomic Impacts in the ROI as a Result of New Jobs Generated by the Alternative." A table for each alternative is included at the end of the appendix.

Population projections for the No-action Alternative or baseline are derived from the Mississippi Institutions of Higher Learning (IHL) and the U.S. Bureau of Census. All projections were summarized for the three-county ROI. Employment, labor force, and household projections were calculated as a ratio of population based on the latest regional information available. The assumptions concerning the projections in the table section titled "Baseline (No-Action) Forecast" are discussed in more detail below.

Population Forecast. The IHL generated projections for the years 2000, 2005, and 2010. The projections illustrate plausible courses of future population change based on assumptions about future births, deaths, international migration, and domestic migration. Projected numbers are based on an estimated population consistent with the most recent decennial census as enumerated

and projected forward using a variant of the cohort-component method. Population growth between the years 2000 and 2005, and between 2005 and 2010 is assumed to be linear (increasing at a constant increment).

Number in Labor Force. The labor force-to-population ratio (50.4 percent) was calculated based on regional information. The number in the labor force for the ROI was calculated from the respective yearly population forecasts. From the MESC Quick Reference Guide (1999).

Number in Labor Force Employed. The number in the labor force employed in the three-county ROI (96.1 percent) was calculated by subtracting those that are unemployed. From the MESC Quick Reference Guide (1999).

Employment Forecast. The employment-to-population ratio (46.7 percent) was calculated based on regional information. The employment forecast for the ROI was calculated from the respective yearly population forecasts. The employment forecast represents the number of jobs in the three-county ROI by place of employment rather than place of residence. From the MESC Quick Reference Guide (1999).

Number of Resident Households. An average household size (2.79) was used to determine the number of households for the respective yearly population forecasts. The average household size is from the MESC Quick Reference Guide (1999).

Housing Requirement. The housing requirement or housing demand for the number of resident households equals the number of resident households plus 7 percent - the existing vacancy rate of houses in the three-county ROI.

K.2.4 Population, Labor Force, Employment, and Household Projections with the Alternative's Impact

Population, labor force, employment, and household projections for each of the alternatives were calculated starting with the baseline projection and adding new employment (direct jobs) generated by the alternative. The population-to-labor force, population-to-employment, and household ratios discussed above were used to calculate the net and total impact on these factors from the alternatives. The assumptions concerning the calculations in Tables K.2-1 through K.2-4 (located at the end of the appendix) in the section titled "Input-Output Model Results and Additional Calculations" are discussed in more detail below.

New Employment in the Current Forecast. The new employment in the current forecast is the projected increase in employment from the previous year - the difference in employment between the years 2000 and 2001, for example.

New Employees in the Current Forecast. The new employees in the current forecast are the increase in employees from the previous year - the difference in number of employees between the years 2000 and 2001, for example.

Construction Direct Jobs. The number of direct construction jobs estimated by the applicant. Number of jobs was given as an annual average. The annual number of jobs was calculated using an implied build up, peak, and then reduction in the number of construction jobs over the construction period (a bell-shaped curve).

Construction Indirect and Induced Jobs. The number of indirect and induced construction jobs estimated by using the IMPLAN I-O model (refer to Section K.1.2 for definitions of indirect and induced effects). Again, the annual number of jobs was calculated using an implied build up, peak, and then reduction in the number of construction jobs over the construction period (a bell-shaped curve).

Operational Direct Jobs. The number of direct operational jobs estimated by the applicant. Full operation of the project does not occur until 1 to 2 years after the end of construction. Thus, only one-third of the total number of jobs was used in year 1 of operation, and two-thirds of the total number of jobs was used in year 2 of operation. Year 3 and subsequent years include the total number of jobs.

Operational Indirect and Induced Jobs. The number of indirect and induced operational jobs estimated by using the IMPLAN I-O model (refer to Section K.1.2 for definitions of indirect and induced effects). Again, full operation of the project does not occur until 1 to 2 years after the end of construction, so year 3 and subsequent years include the total number of jobs.

Total Direct Project Jobs. The total direct project jobs is the sum of the total direct construction jobs and total direct operational jobs.

Total Indirect and Induced Project Jobs. The total indirect and induced project jobs is the sum of the total indirect and induced construction jobs and the total indirect and induced operational jobs.

Total Project Jobs. Total project jobs is the sum of all direct, indirect, and induced construction jobs and all the direct, indirect, and induced operational jobs.

Indirect and Induced Jobs as a Percentage of Forecasted New Employees. The indirect and induced jobs as a percentage of forecasted new employees is the percentage of forecasted employees in indirect and induced jobs compared to new employees in the current forecast (discussed above).

Direct Jobs as a Percentage of Forecasted New Employees. The direct jobs as a percentage of forecasted new employees is the percentage of forecasted employees in direct jobs compared to new employees in the current forecast (discussed above).

Total Project Jobs as a Percentage of Forecasted New Employees. The total project jobs as a percentage of forecasted new employees is the percentage of forecasted employees for total project jobs compared to new employees in the current forecast (discussed above).

The calculation of the "percentage of forecasted new employees" discussed above was used to determine the level of economic activity without the project (the baseline) and the level of economic activity with the project. If the total project jobs as a percentage of forecasted new employees was 100 percent or greater, this would mean that the forecasted project jobs account for all the jobs projected in the baseline forecast. It is unlikely that the project would account for all economic activity in the three-county ROI. Therefore, it was assumed that the indirect and induced jobs created by the project were accounted for in the baseline forecast, while the direct jobs were unaccounted for in the baseline forecast and represent new jobs (employment).

The assumptions concerning the calculations in Tables K.2-1 through K.2-4 (located at the end of the appendix) in the section titled "Additional Impact of the Alternative" are discussed in more detail below.

Net Additional Jobs (Direct Jobs Only). Net additional jobs is equal to the total number of direct project jobs (construction and operational).

Net Additional Labor Force Requirement. Net additional labor force requirement is the additional labor force required to fill the number of net additional jobs (see above). The requirement was calculated using the labor force-to-employment ratio (92.7 percent) from the MESC Quick Reference Guide (1999).

Net Additional Population. Net additional population is the additional population required to provide the necessary labor force. The requirement was calculated using the labor force-to-population ratio (50.4 percent) from the MESC Quick Reference Guide (1999).

Net Additional Job-based Households. Net additional job-based households is the additional number of households that would comprise the net additional population. The average household size (2.79) is from the MESC Quick Reference Guide (1999).

Net Housing Requirement (with Residential Vacancy Rate). Net housing requirement (with residential vacancy rate) is the additional housing required for the new households. A vacancy rate (7 percent) is added to the housing required. The existing housing market typically has vacancies, which allows the population to move around.

The assumptions concerning the calculations in Tables K.2-1 through K.2-4 (located at the end of the appendix) in the section titled "Additional Impact of the Alternative" are discussed in more detail below.

New Population Forecast. The new population forecast is the net additional population generated by the alternative added to the population forecast of the baseline condition.

New Labor Force Requirement. The new labor force requirement is the net additional labor force requirement generated by the alternative added to the number in the labor force forecast of the baseline condition.

New Employment Forecast. The new employment forecast is the net additional jobs generated by the alternative added to the employment forecast of the baseline condition.

New Resident Households. The new resident households is the net additional job-based households generated by the alternative added to the number of resident households in the baseline condition.

New Housing Requirement. The new housing requirement is the housing generated by the alternative added to the housing requirement in the baseline condition.

Table K.2-1
Alternative 2 - Socioeconomic Impacts in the ROI as a Result of New Jobs Generated by the Alternative

	Year	Percent/Number	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Baseline (No-Action) Forecast	Population Forecast		369,447	374,362	379,278	384,193	389,109	394,024	398,401	402,778	407,155	411,532	415,909
	Number in Labor Force	50.4%	186,201	188,679	191,156	193,633	196,111	198,588	200,794	203,000	205,206	207,412	209,618
	Number in Labor Force Employed	96.1%	178,939	181,320	183,701	186,082	188,462	190,843	192,963	195,083	197,203	199,323	201,443
	Employment Forecast	46.7%	172,532	174,827	177,123	179,418	181,714	184,009	186,053	188,097	190,141	192,185	194,230
	Number of Resident Households	2.79	132,418	134,180	135,942	137,704	139,465	141,227	142,796	144,365	145,934	147,503	149,071
	Housing Requirement	7%	141,688	143,573	145,458	147,343	149,228	151,113	152,792	154,470	156,149	157,828	159,506
Input-Output Model Results and Additional Calculations	Phase		Construction						Operational				
	new employment in current forecast		0	2,295	4,591	6,886	9,182	11,477	13,522	15,566	17,610	19,654	21,698
	new employees in current forecast		0	2,381	4,761	7,142	9,523	11,904	14,024	16,144	18,264	20,384	22,504
	Construction direct jobs		0	4,416	6,641	11,090	6,641	4,416	0	0	0	0	0
	Construction indirect and induced jobs		0	1,803	2,711	4,527	2,711	1,803	0	0	0	0	0
	Operational direct jobs		0	0	0	0	4,338	8,807	13,145	13,145	13,145	13,145	13,145
	Operational indirect and induced jobs		0	0	0	0	3,135	6,366	9,501	9,501	9,501	9,501	9,501
	Total direct project jobs		0	4,416	6,641	11,090	10,979	13,223	13,145	13,145	13,145	13,145	13,145
	Total indirect and induced project jobs		0	1,803	2,711	4,527	5,846	8,168	9,501	9,501	9,501	9,501	9,501
	Total project jobs		0	6,219	9,352	15,618	16,825	21,392	22,646	22,646	22,646	22,646	22,646
	Indirect & Induced jobs as % of forecasted new employees		0%	76%	57%	63%	61%	69%	68%	59%	52%	47%	42%
	Direct jobs as % of forecasted new employees		0%	185%	139%	155%	115%	111%	94%	81%	72%	64%	58%
	Total project jobs as % of forecasted new employees		0%	261%	196%	219%	177%	180%	161%	140%	124%	111%	101%
Additional Impact of the Alternative	net additional jobs (direct jobs only)		0	4,416	6,641	11,090	10,979	13,223	13,145	13,145	13,145	13,145	13,145
	net additional labor force requirement	92.7%	0	4,766	7,167	11,969	11,849	14,271	14,186	14,186	14,186	14,186	14,186
	net additional population	50.4%	0	9,457	14,221	23,748	23,509	28,316	28,148	28,148	28,148	28,148	28,148
	net additional job-based households	2.79	0	3,389	5,097	8,512	8,426	10,149	10,089	10,089	10,089	10,089	10,089
	net housing requirement (with residential vacancy rate)	7%	0	3,627	5,454	9,108	9,016	10,859	10,795	10,795	10,795	10,795	10,795
Baseline with the Alternative's Impacts	New Population Forecast		369,447	383,819	393,498	407,942	412,618	422,340	426,549	430,926	435,303	439,680	444,057
	New Labor Force Requirement		186,201	193,445	198,323	205,603	207,959	212,859	214,981	217,187	219,393	221,599	223,805
	New Employment Forecast	92.7%	172,532	179,244	183,764	190,509	192,693	197,233	199,198	201,242	203,286	205,330	207,375
	New Resident Households	2.79	132,418	137,570	141,039	146,216	147,892	151,376	152,885	154,454	156,022	157,591	159,160
	New Housing Requirement		141,688	147,199	150,912	156,451	158,244	161,973	163,587	165,265	166,944	168,623	170,301

Source: IHL (baseline population forecasts), DMA (I-O model results), and staff analysis, 1999.

Table K.2-2

Alternative 3 - Socioeconomic Impacts in the ROI as a Result of New Jobs Generated by the Alternative

	Year	Percent/Number	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Baseline (No-Action) Forecast	Population Forecast		369,447	374,362	379,278	384,193	389,109	394,024	398,401	402,778	407,155	411,532	415,909
	Number in Labor Force	50.4%	186,201	188,679	191,156	193,633	196,111	198,588	200,794	203,000	205,206	207,412	209,618
	Number in Labor Force Employed	96.1%	178,939	181,320	183,701	186,082	188,462	190,843	192,963	195,083	197,203	199,323	201,443
	Employment Forecast	46.7%	172,532	174,827	177,123	179,418	181,714	184,009	186,053	188,097	190,141	192,185	194,230
	Number of Resident Households	2.79	132,418	134,180	135,942	137,704	139,465	141,227	142,796	144,365	145,934	147,503	149,071
	Housing Requirement	7%	141,688	143,573	145,458	147,343	149,228	151,113	152,792	154,470	156,149	157,828	159,506
Input-Output Model Results and Additional Calculations	Phase		Construction				Operational						
	new employment in current forecast		0	2,295	4,591	6,886	9,182	11,477	13,522	15,566	17,610	19,654	21,698
	new employees in current forecast		0	2,381	4,761	7,142	9,523	11,904	14,024	16,144	18,264	20,384	22,504
	Construction direct jobs		0	7,232	14,465	7,232	0	0	0	0	0	0	0
	Construction indirect and induced jobs		0	2,915	5,831	2,915	0	0	0	0	0	0	0
	Operational direct jobs		0	0	0	0	4,364	8,861	13,225	13,225	13,225	13,225	13,225
	Operational indirect and induced jobs		0	0	0	0	1,956	3,971	5,927	5,927	5,927	5,927	5,927
	Total direct project jobs		0	7,232	14,465	7,232	4,364	8,861	13,225	13,225	13,225	13,225	13,225
	Total indirect and induced project jobs		0	2,915	5,831	2,915	1,956	3,971	5,927	5,927	5,927	5,927	5,927
	Total project jobs		0	10,148	20,295	10,148	6,320	12,832	19,152	19,152	19,152	19,152	19,152
	Indirect & Induced jobs as % of forecasted new employees		0%	122%	122%	41%	21%	33%	42%	37%	32%	29%	26%
	Direct jobs as % of forecasted new employees		0%	304%	304%	101%	46%	74%	94%	82%	72%	65%	59%
	Total project jobs as % of forecasted new employees		0%	426%	426%	142%	66%	108%	137%	119%	105%	94%	85%
Additional Impact of the Alternative	net additional jobs (direct jobs only)		0	7,232	14,465	7,232	4,364	8,861	13,225	13,225	13,225	13,225	13,225
	net additional labor force requirement	92.7%	0	7,805	15,611	7,805	4,710	9,563	14,273	14,273	14,273	14,273	14,273
	net additional population	50.4%	0	15,487	30,973	15,487	9,345	18,974	28,319	28,319	28,319	28,319	28,319
	net additional job-based households	2.79	0	5,551	11,102	5,551	3,350	6,801	10,150	10,150	10,150	10,150	10,150
	net housing requirement (with residential vacancy rate)	7%	0	5,939	11,879	5,939	3,584	7,277	10,861	10,861	10,861	10,861	10,861
Baseline with the Alternative's Impacts	New Population Forecast		369,447	389,849	410,251	399,680	398,454	412,998	426,720	431,097	435,474	439,851	444,228
	New Labor Force Requirement		186,201	196,484	206,767	201,439	200,821	208,151	215,067	217,273	219,479	221,685	223,891
	New Employment Forecast	92.7%	172,532	182,059	191,587	186,650	186,078	192,870	199,278	201,322	203,366	205,410	207,455
	New Resident Households	2.79	132,418	139,731	147,043	143,254	142,815	148,028	152,946	154,515	156,084	157,653	159,222
	New Housing Requirement		141,688	149,512	157,336	153,282	152,812	158,390	163,652	165,331	167,010	168,688	170,367

Source: IHL (baseline population forecasts), DMA (I-O model results), and staff analysis, 1999.

Table K.2-3

Alternative 4 - Socioeconomic Impacts in the ROI as a Result of New Jobs Generated by the Alternative

	Year	Percent/Number	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Baseline (No-Action) Forecast	Population Forecast		369,447	374,362	379,278	384,193	389,109	394,024	398,401	402,778	407,155	411,532	415,909
	Number in Labor Force	50.4%	186,201	188,679	191,156	193,633	196,111	198,588	200,794	203,000	205,206	207,412	209,618
	Number in Labor Force Employed	96.1%	178,939	181,320	183,701	186,082	188,462	190,843	192,963	195,083	197,203	199,323	201,443
	Employment Forecast	46.7%	172,532	174,827	177,123	179,418	181,714	184,009	186,053	188,097	190,141	192,185	194,230
	Number of Resident Households	2.79	132,418	134,180	135,942	137,704	139,465	141,227	142,796	144,365	145,934	147,503	149,071
	Housing Requirement	7%	141,688	143,573	145,458	147,343	149,228	151,113	152,792	154,470	156,149	157,828	159,506
Input-Output Model Results and Additional Calculations	Phase		Construction						Operational				
	new employment in current forecast		0	2,295	4,591	6,886	9,182	11,477	13,522	15,566	17,610	19,654	21,698
	new employees in current forecast		0	2,381	4,761	7,142	9,523	11,904	14,024	16,144	18,264	20,384	22,504
	Construction direct jobs		0	3,971	5,972	9,973	5,972	3,971	0	0	0	0	0
	Construction indirect and induced jobs		0	1,608	2,418	4,038	2,418	1,608	0	0	0	0	0
	Operational direct jobs		0	0	0	0	4,338	8,807	13,145	13,145	13,145	13,145	13,145
	Operational indirect and induced jobs		0	0	0	0	2,459	4,994	7,453	7,453	7,453	7,453	7,453
	Total direct project jobs		0	3,971	5,972	9,973	10,310	12,779	13,145	13,145	13,145	13,145	13,145
	Total indirect and induced project jobs		0	1,608	2,418	4,038	4,877	6,601	7,453	7,453	7,453	7,453	7,453
	Total project jobs		0	5,579	8,390	14,011	15,187	19,380	20,598	20,598	20,598	20,598	20,598
	Indirect & Induced jobs as % of forecasted new employees		0%	68%	51%	57%	51%	55%	53%	46%	41%	37%	33%
	Direct jobs as % of forecasted new employees		0%	167%	125%	140%	108%	107%	94%	81%	72%	64%	58%
	Total project jobs as % of forecasted new employees		0%	234%	176%	196%	159%	163%	147%	128%	113%	101%	92%
Additional Impact of the Alternative	net additional jobs (direct jobs only)		0	3,971	5,972	9,973	10,310	12,779	13,145	13,145	13,145	13,145	13,145
	net additional labor force requirement	92.7%	0	4,286	6,445	10,763	11,127	13,791	14,186	14,186	14,186	14,186	14,186
	net additional population	50.4%	0	8,504	12,788	21,356	22,077	27,363	28,148	28,148	28,148	28,148	28,148
	net additional job-based households	2.79	0	3,048	4,584	7,654	7,913	9,808	10,089	10,089	10,089	10,089	10,089
	net housing requirement (with residential vacancy rate)	7%	0	3,261	4,904	8,190	8,467	10,494	10,795	10,795	10,795	10,795	10,795
Baseline with the Alternative's Impacts	New Population Forecast		369,447	382,866	392,066	405,549	411,185	421,387	426,549	430,926	435,303	439,680	444,057
	New Labor Force Requirement		186,201	192,965	197,601	204,397	207,237	212,379	214,981	217,187	219,393	221,599	223,805
	New Employment Forecast	92.7%	172,532	178,799	183,095	189,391	192,024	196,788	199,198	201,242	203,286	205,330	207,375
	New Resident Households	2.79	132,418	137,228	140,525	145,358	147,378	151,035	152,885	154,454	156,022	157,591	159,160
	New Housing Requirement		141,688	146,834	150,362	155,533	157,695	161,607	163,587	165,265	166,944	168,623	170,301

Source: IHL (baseline population forecasts), DMA (I-O model results), and staff analysis, 1999.

Table K.2-4

Alternative 5 - Socioeconomic Impacts in the ROI as a Result of New Jobs Generated by the Alternative

	Year	Percent/Number	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Baseline (No-Action) Forecast	Population Forecast		369,447	374,362	379,278	384,193	389,109	394,024	398,401	402,778	407,155	411,532	415,909
	Number in Labor Force	50.4%	186,201	188,679	191,156	193,633	196,111	198,588	200,794	203,000	205,206	207,412	209,618
	Number in Labor Force Employed	96.1%	178,939	181,320	183,701	186,082	188,462	190,843	192,963	195,083	197,203	199,323	201,443
	Employment Forecast	46.7%	172,532	174,827	177,123	179,418	181,714	184,009	186,053	188,097	190,141	192,185	194,230
	Number of Resident Households	2.79	132,418	134,180	135,942	137,704	139,465	141,227	142,796	144,365	145,934	147,503	149,071
	Housing Requirement	7%	141,688	143,573	145,458	147,343	149,228	151,113	152,792	154,470	156,149	157,828	159,506
Input-Output Model Results and Additional Calculations	Phase		Construction						Operational				
	new employment in current forecast		0	2,295	4,591	6,886	9,182	11,477	13,522	15,566	17,610	19,654	21,698
	new employees in current forecast		0	2,381	4,761	7,142	9,523	11,904	14,024	16,144	18,264	20,384	22,504
	Construction direct jobs		0	3,899	5,863	9,791	5,863	3,899	0	0	0	0	0
	Construction indirect and induced jobs		0	1,576	2,370	3,958	2,370	1,576	0	0	0	0	0
	Operational direct jobs		0	0	0	0	4,338	8,807	13,145	13,145	13,145	13,145	13,145
	Operational indirect and induced jobs		0	0	0	0	2,459	4,994	7,453	7,453	7,453	7,453	7,453
	Total direct project jobs		0	3,899	5,863	9,791	10,201	12,706	13,145	13,145	13,145	13,145	13,145
	Total indirect and induced project jobs		0	1,576	2,370	3,958	4,829	6,570	7,453	7,453	7,453	7,453	7,453
	Total project jobs		0	5,475	8,233	13,749	15,030	19,276	20,598	20,598	20,598	20,598	20,598
	Indirect & Induced jobs as % of forecasted new employees		0%	66%	50%	55%	51%	55%	53%	46%	41%	37%	33%
	Direct jobs as % of forecasted new employees		0%	164%	123%	137%	107%	107%	94%	81%	72%	64%	58%
	Total project jobs as % of forecasted new employees		0%	230%	173%	193%	158%	162%	147%	128%	113%	101%	92%
Additional Impact of the Alternative	net additional jobs (direct jobs only)		0	3,899	5,863	9,791	10,201	12,706	13,145	13,145	13,145	13,145	13,145
	net additional labor force requirement	92.7%	0	4,208	6,328	10,567	11,009	13,713	14,186	14,186	14,186	14,186	14,186
	net additional population	50.4%	0	8,349	12,555	20,966	21,843	27,208	28,148	28,148	28,148	28,148	28,148
	net additional job-based households	2.79	0	2,992	4,500	7,515	7,829	9,752	10,089	10,089	10,089	10,089	10,089
	net housing requirement (with residential vacancy rate)	7%	0	3,202	4,815	8,041	8,377	10,435	10,795	10,795	10,795	10,795	10,795
Baseline with the Alternative's Impacts	New Population Forecast		369,447	382,711	391,832	405,159	410,952	421,232	426,549	430,926	435,303	439,680	444,057
	New Labor Force Requirement		186,201	192,886	197,484	204,200	207,120	212,301	214,981	217,187	219,393	221,599	223,805
	New Employment Forecast	92.7%	172,532	178,726	182,986	189,209	191,915	196,715	199,198	201,242	203,286	205,330	207,375
	New Resident Households	2.79	132,418	137,172	140,442	145,218	147,295	150,979	152,885	154,454	156,022	157,591	159,160
	New Housing Requirement		141,688	146,775	150,273	155,384	157,605	161,548	163,587	165,265	166,944	168,623	170,301

Source: IHL (baseline population forecasts), DMA (I-O model results), and staff analysis, 1999.

K.3 Population Growth Allocation Model for Hancock, Harrison, and Jackson Counties 2000 to 2010

The population growth allocation model used in this analysis is nearly identical to the accepted methodology used by the Department of Marine Resources to perform geographic analyses of projected population increases. The geographic units of analyses are the block group (defined by the U.S. Bureau of Census). Data for individual block groups can be added together to produce information at the county and watershed levels. Population forecasts from IHL (the baseline or No-action Alternative) and population projections with the Proposed Action or its alternatives for the years 2000, 2005, and 2010 were used to study development patterns in Hancock, Harrison, and Jackson Counties (see Tables K.3-1 and K.3-2). The population growth allocation model assesses an area's capacity to accommodate projected population growth, identifying areas where future growth may be constrained or areas where future growth opportunities may occur.

First, the model was run with the existing population projections from IHL from 2000 to 2010 to establish the baseline condition. Then, the model was run again using the projected population growth associated with Alternative 2 to describe the impact of the additional increment of population growth and where the population would likely occur in the three-county region. It was determined that the population impacts of Alternatives 2, 3, 4, and 5 did not vary enough to warrant running the model for each alternative.

The population growth allocation model contained the following assumptions:

1) Population growth tends to build on previous growth trends and patterns. People tend to migrate to locations where friends and family have migrated before. Traditional human settlement patterns along corridors and at crossroads tend to be self-perpetuating. The infrastructure needed to support new development is usually easier to extend from existing locations (CEI and staff analysis, 1999).

2) Population projections can be disaggregated to a geographic sub area in the same proportion as existing population.

3) Future growth would occur at the same average density as is presently evident (i.e., future development will continue to consume resources at present rates). The model distributes population at 3.0 persons/acre.

4) The calculation of land presumed available for development is conservative (CEI and staff analysis, 1999).

A basic spatial allocation model distributes the projected population increases across a geographic area (e.g. a county or block group). For this analysis, U.S. Census block groups were the unit for allocation for the population projections.

A Landsat Thematic Mapper land use/land cover classification (at 30-meter resolution), a sensitive environmental factors coverage, and potential wetlands coverage were used to

determine the areas that would most likely be developed (see Table K.3-3). The model then allocated the population projections to specific areas using the following methodology:

1) The total development capacity of each block group was calculated.
   a) Total Area of a block group, Developed Area, and Undeveloped Area presumed not available for future development (in acres) were calculated.
      i. Developed areas were identified using Landsat TM land use/land cover classification which includes 95% of High Density Urban classification + 40% of Low Density classification + Transportation classification
      ii. Undeveloped area presumed not available for future development was calculated using Landsat TM land use/land cover classifications, a sensitive environmental factors coverage, and a potential wetlands coverage (refer to Table K.3-2 for specific percentages excluded).

   b) Area presumed available for development = Total area of block group – Developed area – Area presumed not available.
   c) Average Density, Remaining Capacity, and Total Capacity were calculated.
      i. Average Density (Persons/Acre) = 1990 Block Group population/Developed Area (in acres)
      ii. Remaining Capacity = Average Density * Area presumed available for development (in acres)
      iii. Total Capacity = 1990 Block Group population + Remaining Capacity

2) The population increase was then proportionally distributed among the block groups.
3) The model performed iterations in 5-year increments to determine allocations (beginning in the year 2000 and ending in the year 2010).

Table K.3-1
Population Projections for Mississippi Gulf Coast Region for the No-Action Alternative

County	2000	2005	2010
Hancock	43,624	49,955	55,117
Harrison	187,315	196,175	204,164
Jackson	138,508	147,894	156,628
Total	**369,447**	**394,024**	**415,909**

Source: IHL, 1999.

Table K.3-2
Population Projections for Mississippi Gulf Coast Region for the Proposed Action and its Alternatives

County	2000	2005	2010
Hancock	43,624	53,553	58,837
Harrison	187,315	210,283	217,988
Jackson	138,508	158,504	167,232
Total	**369,447**	**422,340**	**444,057**

Source: staff analysis, 1999.

Table K.3-3
Areas Considered Not Available for Development

Variable	Source
Palustrine Emergent Excluded 100%	Landsat TM
Estuarine Emergent Excluded 100%	Landsat TM
Bottomland Hardwood Forest Excluded 100%	Landsat TM
Riverine Swamp Excluded 100%	Landsat TM
Freshwater Scrub/Shrub Excluded 100%	Landsat TM
Palustrine Non-Vegetated Excluded 100%	Landsat TM
High Density Urban Excluded 90%	Landsat TM
Low Density Urban Excluded 25%	Landsat TM
Pine Forest Excluded largest, most remote tracts, not included are smaller tracts, closest to existing urban development.	Landsat TM
Deciduous Forest Excluded 0 % (100 % developable)	Landsat TM
Cropland Excluded 0 % (100 % developable)	Landsat TM
Pasture/Grassland Excluded 0 % (100 % developable)	Landsat TM
100 Yr. Floodplain Excluded 75%	FEMA Q3
National Forest and In-holdings Excluded 100 %	Environmental Factors Coverage
State Parks Excluded 100 %	Environmental Factors Coverage
National Park (none) Excluded 100 %	Environmental Factors Coverage
Proposed Preservation Areas (covered in Floodplain) Excluded 100 %	Environmental Factors Coverage
Environmentally Sensitive Areas (included in other categories) Excluded 100 %	Environmental Factors Coverage
Pascagoula SMA (included in Estuarine Emergent) Excluded 100%	Environmental Factors Coverage

Source: CEI and staff analysis, 1999.

The results of the population growth allocation model for Hancock, Harrison, and Jackson Counties, by watershed, for the years 2000, 2005, and 2010 are shown in Tables K.3-4 through

K.3-9. The population distribution for Hancock, Harrison, and Jackson Counties for the year 2010 is shown in Figures K.3-1 through K.3-3. The figures show the percent change in population capacity between the No-action Alternative and the Proposed Action or its alternatives (or the population capacity absorbed by the Proposed Action or its alternatives). Since the additional population growth did not vary greatly among the alternatives, the additional population growth for Alternative 2 was used as the added increment of population to be distributed among census block groups in the three-county ROI.

Table K.3-4
Hancock County Population Growth Allocation by Watershed for the No-Action Alternative

Watershed Sub-unit	Total Population Capacity	Distributed Population 2000	% of Total Capacity 2000	Distributed Population 2005	% of Total Capacity 2005	Distributed Population 2010	% of Total Capacity 2010
Cedar Island	6,690	3,493	52%	3,708	55%	3,858	58%
Mulatto Bayou	10,099	2,385	24%	2,531	25%	2,633	26%
Bayou La Croix	16,035	6,317	39%	7,145	45%	7,659	48%
Edwards Bayou	8,167	8,167	100%	8,167	100%	8,167	100%
Jourdan River	205,678	14,160	7%	16,222	8%	17,664	9%
Wolf River	39,277	1,954	5%	2,301	6%	2,544	6%
Waveland	7,157	7,157	100%	7,157	100%	7,157	100%
Total	**293,103**	**43,632**	**15%**	**47,230**	**16%**	**49,681**	**17%**

CEI and staff analysis, 1999.

Table K.3-5
Hancock County Population Growth Allocation by Watershed for the Proposed Action or its Alternatives

Watershed Sub-unit	Total Population Capacity	Distributed Population 2000	% of Total Capacity 2000	Distributed Population 2005	% of Total Capacity 2005	Distributed Population 2010	% of Total Capacity 2010
Cedar Island	6,690	3,492	52%	4,095	61%	4,438	66%
Mulatto Bayou	10,099	2,385	24%	2,794	28%	3,036	30%
Bayou La Croix	16,035	6,315	39%	8,472	53%	9,154	57%
Edwards Bayou	8,167	8,167	100%	8,167	100%	8,167	100%
Jourdan River	205,678	14,155	7%	19,942	10%	23,379	11%
Wolf River	39,277	1,953	5%	2,928	7%	3,506	9%
Waveland	7,157	7,157	100%	7,157	100%	7,157	100%
Total	**293,103**	**43,624**	**15%**	**53,553**	**18%**	**58,837**	**20%**

CEI and staff analysis, 1999.

Table K.3-6
Harrison County Population Growth Allocation by Watershed for the No-Action Alternative

Watershed Sub-unit	Total Population Capacity	Distributed Population 2000	% of Total Capacity 2000	Distributed Population 2005	% of Total Capacity 2005	Distributed Population 2010	% of Total Capacity 2010
Bernard Bayou	133,832	49,367	37%	51,990	39%	54,338	41%
Biloxi River	180,468	17,991	10%	18,957	11%	19,971	11%
North Biloxi	18,784	15,881	85%	16,403	87%	16,788	89%
Old Fort Bayou	15,981	9,910	62%	10,464	65%	11,060	69%
Tchoutacabouffa	48,472	9,712	20%	10,194	21%	10,714	22%
Gulfport/Biloxi	57,251	48,975	86%	50,709	89%	51,845	91%
Pass Christian	17,241	13,273	77%	14,014	81%	14,672	85%
Bayou Portage	30,246	14,840	49%	15,668	52%	16,556	55%
Jourdan River	30,912	917	3%	968	3%	1,024	3%
Wolf River	164,982	6,448	4%	6,808	4%	7,196	4%
Total	**698,169**	**187,315**	**27%**	**196,175**	**28%**	**204,164**	**29%**

CEI and staff analysis, 1999.

Table K.3-7
Harrison County Population Growth Allocation by Watershed for the Proposed Action or its Alternatives

Watershed Sub-unit	Total Population Capacity	Distributed Population 2000	% of Total Capacity 2000	Distributed Population 2005	% of Total Capacity 2005	Distributed Population 2010	% of Total Capacity 2010
Bernard Bayou	133,832	49,367	37%	56,126	42%	58,217	44%
Biloxi River	180,468	17,991	10%	20,811	12%	22,002	12%
North Biloxi	18,784	15,881	85%	17,089	91%	17,483	93%
Old Fort Bayou	15,981	9,910	62%	11,555	72%	12,021	75%
Tchoutacabouffa	48,472	9,712	20%	11,146	23%	11,757	24%
Gulfport/Biloxi	57,251	48,975	86%	52,587	92%	53,527	93%
Pass Christian	17,241	13,273	77%	15,096	88%	15,550	90%
Bayou Portage	30,246	14,840	49%	17,287	57%	18,322	61%
Jourdan River	30,912	917	3%	1,069	3%	1,134	4%
Wolf River	164,982	6,448	4%	7,518	5%	7,975	5%
Total	**698,169**	**187,315**	**27%**	**210,283**	**30%**	**217,988**	**31%**

CEI and staff analysis, 1999.

Table K.3-8
Jackson County Population Growth Allocation by Watershed for the No-Action Alternative

Watershed Sub-unit	Total Population Capacity	Distributed Population 2000	% of Total Capacity 2000	Distributed Population 2005	% of Total Capacity 2005	Distributed Population 2010	% of Total Capacity 2010
Bangs Lake	7,848	1,072	14%	1,170	15%	1,277	16%
Bayou Cassote	45,135	34,536	77%	35,584	79%	36,401	81%
Davis Bayou	22,391	14,117	63%	15,170	68%	16,213	72%
Old Fort Bayou	95,974	23,048	24%	24,892	26%	26,475	28%
Tchoutacabouffa	38,212	4,597	12%	4,975	13%	5,365	14%
Graveline Bay	25,241	7,276	29%	7,779	31%	8,325	33%
Bluff Creek	215,224	6,683	3%	7,296	3%	7,963	4%
Escatawpa River	185,952	18,957	10%	20,494	11%	21,947	12%
Pascagoula River	166,394	28,222	17%	30,535	18%	32,663	20%
Total	**802,370**	**138,508**	**17%**	**147,894**	**18%**	**156,628**	**20%**

CEI and staff analysis, 1999.

Table K.3-9
Jackson County Population Growth Allocation by Watershed for the Proposed Action or its Alternatives

Watershed Sub-unit	Total Population Capacity	Distributed Population 2000	% of Total Capacity 2000	Distributed Population 2005	% of Total Capacity 2005	Distributed Population 2010	% of Total Capacity 2010
Bangs Lake	7,848	1,072	14%	1,301	17%	1,422	18%
Bayou Cassote	45,135	34,536	77%	36,536	81%	37,191	82%
Davis Bayou	22,391	14,117	63%	16,449	73%	17,345	77%
Old Fort Bayou	95,974	23,048	24%	26,805	28%	28,320	30%
Tchoutacabouffa	38,212	4,597	12%	5,454	14%	5,896	15%
Graveline Bay	25,241	7,276	29%	8,449	33%	9,067	36%
Bluff Creek	215,224	6,683	3%	8,114	4%	8,868	4%
Escatawpa River	185,952	18,957	10%	22,253	12%	23,773	13%
Pascagoula River	166,394	28,222	17%	33,142	20%	35,349	21%
Total	**802,370**	**138,508**	**17%**	**158,504**	**20%**	**167,232**	**21%**

CEI and staff analysis, 1999.

By 2010, the population growth allocation model shows that the added increment of population resulting from the Proposed Action or its alternatives absorbs only 2 to 3 percent of each of the three counties' total population capacity. Several conclusions can be drawn from the population growth allocation model. First, the three-county region appears to have sufficient developable areas to support the projected population growth by 2010. Second, current development constraints (i.e., environmentally sensitive areas) are not severe enough to force development into new areas at a greater rate. Overall, future growth is possible without undue impact on environmentally sensitive areas, making sustainable development levels possible into the future (CEI and staff analysis, 1999).

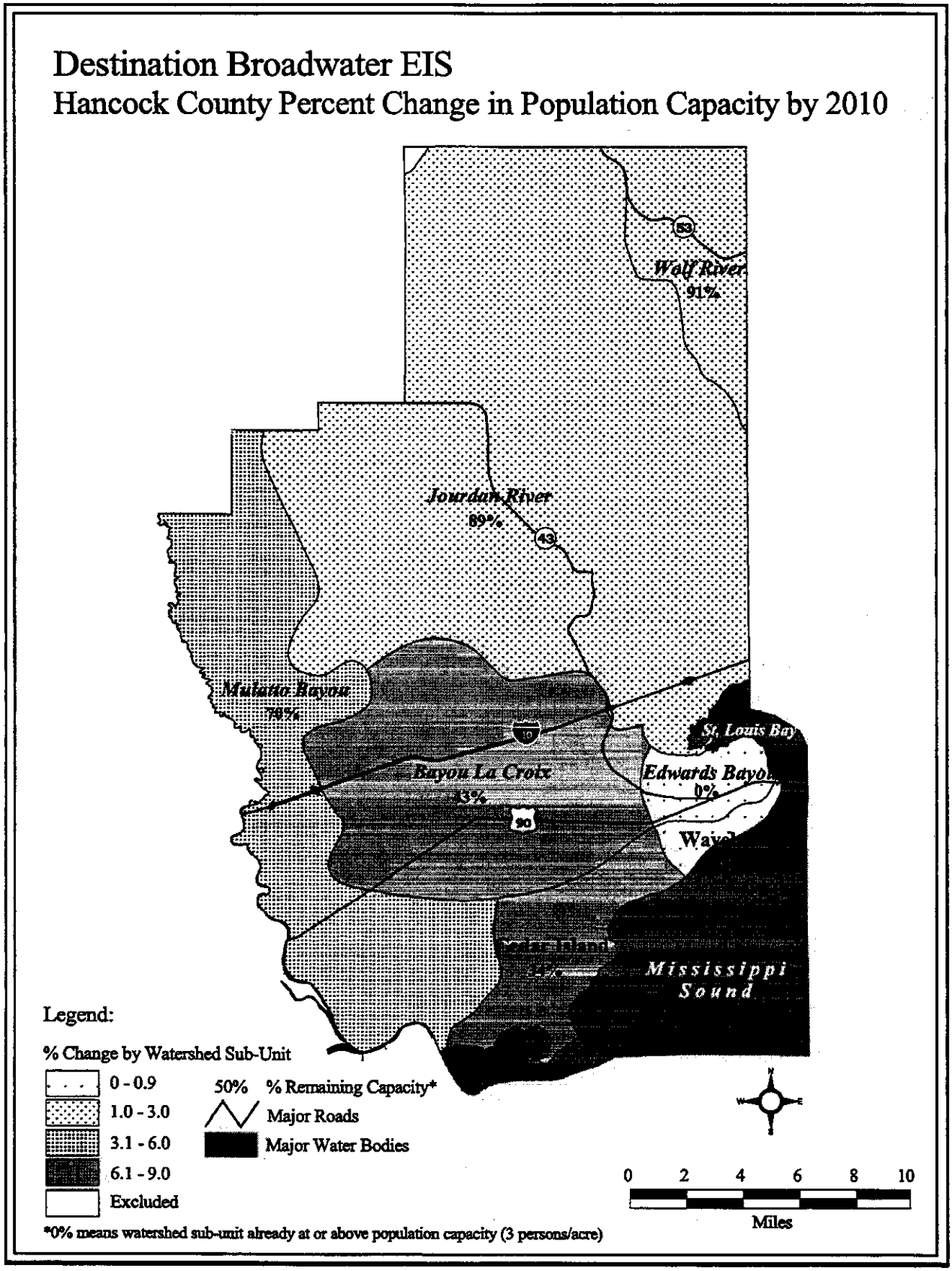


Figure K.3-1: Hancock County percent change in population capacity by 2010 due to population increase from the Proposed Action or its Alternatives

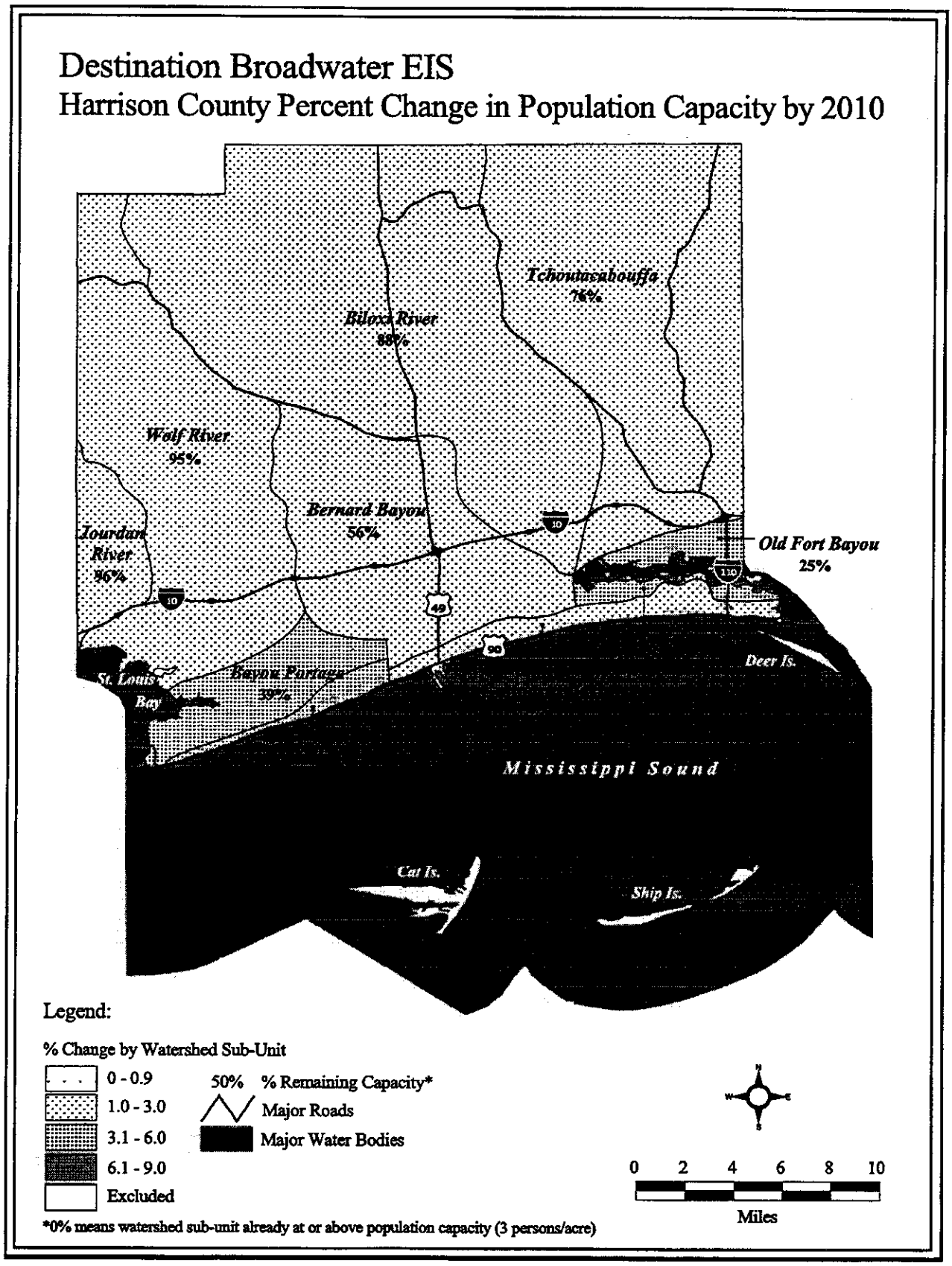


Figure K.3-2: Harrison County percent change in population capacity by 2010 due to population increase from the Proposed Action or its Alternatives

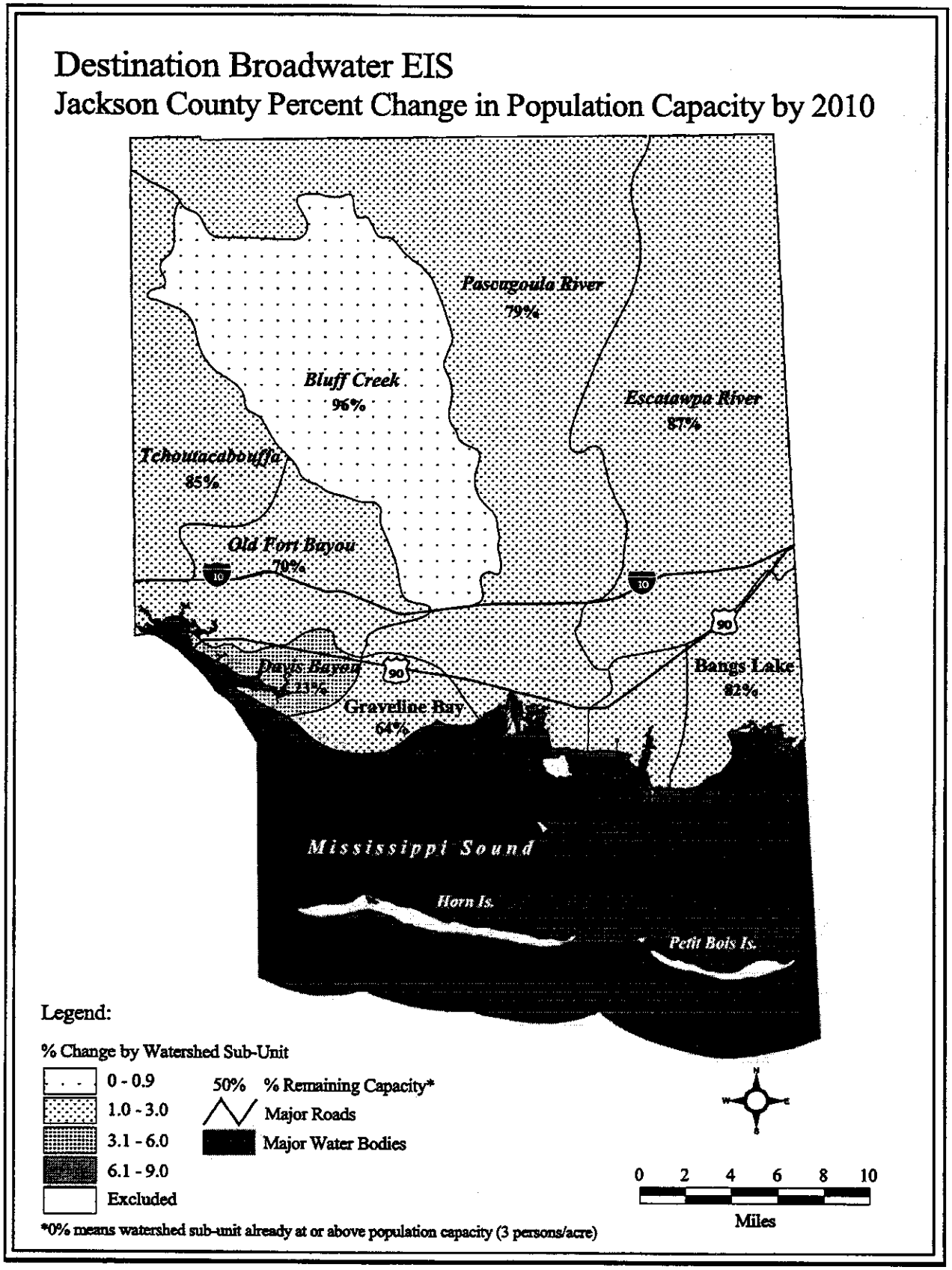
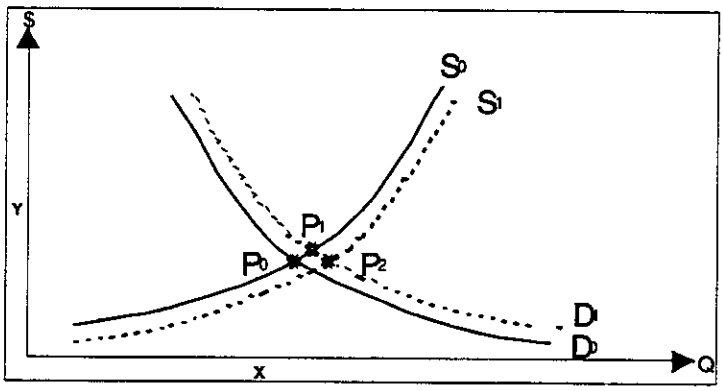


Figure K.3-3: Jackson County percent change in population capacity by 2010 due to population increase from the Proposed Action or its Alternatives

K.4 Economic Theory of Supply and Demand and Effects on Housing Market

A rapid increase in the demand for housing in the Biloxi area, compared to the historic capacity of local homebuilders, would be expected to have several types of impacts on the housing market, consistent with micro-economic theory (Dorfman, 1972). Figure K.4-1 illustrates the classic micro-economic theory of supply and demand, and can be used to illustrate these effects. In the figure, distance along the vertical (y) axis represents the price of housing, and distance along the horizontal (x) axis represents the quantity of housing units being investigated. The solid line sloping upward to the right (S_0) represents the supply of housing units in the Gulf Coast market. This is because the quantity of housing supplied by builders will increase as the market price rises. The solid line sloping downward to the right (D_0) represents the demand for housing in the Gulf Coast market. As the price of housing increases, the quantity demanded decreases. The market price (P_0) at which the supply of housing being produced is sufficient to meet the demand of households for housing is represented by the point at which the demand curve intersects the supply curve.

Figure K.4-1
Price Effects of Rapid Increase in Housing Demand



Source: staff analysis, 1999.

The impact of adding a new increment of demand to the existing supply of housing is portrayed graphically by the dashed line D_1. This line displaces the demand curve upward and to the right, signaling a rise in the quantity demanded by the new households. In the short term, the supply curve remains fixed as the supply of housing cannot move out to keep pace with demand. This causes the market price to rise from P_0 to a higher price, P_1. In response to the shape of the supply and demand curves, there are three effects:

1. Price effect — The price of housing rises throughout the Gulf Coast housing market, causing everyone in the housing market to pay more for housing. This is a cost to housing buyers, but a windfall to housing sellers. It also increases the property tax revenues of local government.
2. Price response — Some consumers are unable to pay the higher price. As a result:
   a) some number of households are crowded, or must double up, and
   b) others "spill over" from the Biloxi market, seeking housing in other, more distant, housing markets where prices are lower.

3. Supply response — In the long run, the increased housing prices in the Gulf Coast market signal an increase in the supply of homebuilders. This shifts the supply curve outward to the right, as shown in dashed line S_1. The result is a new equilibrium price at P_2 that is lower than P_1.

K.5 Net Employment Impact of Destination Broadwater

This section presents the method of analysis used to estimate the net increase of employment attributable to the Proposed Action and its alternatives.

The forecast of net employment change attributable to the Proposed Action and its alternatives is shown in Table 4.11-3 in Section 4.11. The estimate of net employment change is an important conclusion underlying the analysis of socioeconomic impact. Net employment change is the first step in a logical chain of project impacts:

1. Employment increases lead to household increases to the extent that new jobs attract labor force from outside the region to fill the job vacancies.
2. Household increases lead to new demand for locally provided housing, as well as increased consumer expenditures for goods and services.
3. Increased housing demand leads to increased demand for residential land, with associated pressure on the environment and the capacity of local infrastructure, especially roads, water, sewer, schools, parks, public safety, and community services.

Each of these impacts is addressed in various sections of this document. Each discussion relies on common assumptions about net employment increases attributable to the Proposed Action and its alternatives.

The analytic steps and data components of net employment growth are presented in Section 4.11.2 and detailed in this appendix. They are as follows:

1. The regional employment forecasts of the Mississippi Institutes of Higher Learning, considered to be the locally accepted baseline of regional growth.
2. IMPLAN input-output modeling of direct, indirect, and induced economic activity used to predict the total employment in the ROI associated with construction and operation of each alternative.
3. Growth allocation modeling prepared by CEI using a method selected by the Department of Marine Resources for allocating total regional growth to specific small areas in the ROI.

In addition, the preparers consulted published information on the regional economic impacts of casino gaming prepared by Arthur Anderson and interviewed nationally recognized economic authorities, including Klaus Meyer-Arendt, Ph.D.

Figure K.5-1 shows the IHL baseline forecast of employment in graphic form (see also Tables K.2-1 through K.2-4 located at the end of the appendix). The estimated 2000 employment for the ROI is 172,532, and the forecast employment in 2010 would be 194,230. This is a change of 21,698, or 12.6 percent. Based on the IMPLAN input-output model, the direct, indirect, and induced employment changes associated with the various alternatives during the period are shown in Table K.5-1.

Table K.5-1
Jobs Generated by the Proposed Action and its Alternatives

Employment	Direct		Indirect/ Induced		Total	
	2005	2010	2005	2010	2005	2010
Alternative 1	0	0	0	0	0	0
Alternative 2	13,223	13,145	8,168	9,501	21,392	22,646
Alternative 3	8,861	13,225	3,971	5,927	12,832	19,152
Alternative 4	12,779	13,145	6,601	7,453	19,380	20,598
Alternative 5	12,706	13,145	6,570	7,453	19,276	20,598

Source: DMA and staff analysis, 1999.

The remaining steps in the analysis required informed professional judgment in order to apply modeled data to answer questions for which a degree of uncertainty is unavoidable. For instance, how much of the total employment associated with the construction and operation of the Proposed Action and its alternatives would represent net employment growth over and above the IHL forecast employment, and how much was imbedded in the growth assumptions and therefore already accounted for? In other words, to what degree would the proposed project merely be a realization of the many unspecified and indefinite sources of future employment that were summarized by IHL to account for its forecast of future employment? Also, to what degree would the Proposed Action or its alternatives displace other types of economic activity that might otherwise occur in the ROI if the applicant were not to implement the Proposed Action or its alternatives? Quantifiable answers to these questions are beyond the scope of this analysis; therefore, qualitative judgment was used to assess three possible scenarios. Lastly, sensitivity tests were used to demonstrate the acceptability of the most likely scenario.

Scenario 1

On one extreme, it could be argued that the Proposed Action and its alternatives are nothing new or unpredicted. This argument would support the position that, in the long run, all the employment associated with the project is already fully accounted for in the current employment projection. This would require the assumption that, given the direction taken by the local economy since casino gaming was endorsed by the state legislature in 1992, virtually all growth in the local economy will be directly or indirectly the result of the increase in casino gaming positions in the Biloxi area. In that case, the IHL baseline projection would be fixed and remain constant for the Proposed Action and all of its alternatives. The "new" jobs, shown in the shaded portion of Figure K.5-2, would fall entirely below the IHL baseline forecast.

This position would be very difficult to maintain because the IMPLAN estimate of the direct, indirect, and induced jobs associated with the Proposed Action and its alternatives (19,152 to 22,646) would account for virtually 100 percent of the employment gains of the entire ROI for the next decade. This would require that employment be static or declining in other sectors of the economy and that the location of employment would become increasingly concentrated towards the city of Biloxi and the Gulf coast.

Scenario 2

Another simplistic approach would be to assume that all of the direct, indirect, and induced jobs associated with the Proposed Action and its alternatives would be "new" jobs. This would mean that every employee working on-site and every new employee hired indirectly in related economic sectors, such as the food and beverage, janitorial, or laundry services, would be people who had moved to the ROI from another county or state. Similarly, all the homebuilders, grocers, and teachers that would be added locally to service consumer needs of the other "new" employees would have recently moved into the three-county region from surrounding counties or states. In that case, the new employment forecasts for the ROI for Alternative 2 would increase to 193,924 in 2005 and 216,876 in 2010. This forecast is illustrated by the upper line in Figure K.5-3.

This approach assumes a wholly unproductive local labor market characterized by some or all of the following conditions:

1. There are no locally unemployed persons in the sectors of the economy in which new jobs are available, but there are many available and qualified applicants in surrounding areas.
2. All new entrants in the labor force will be claimed by jobs not related to the proposed project.
3. Wage rates are much higher in the project area than in surrounding areas.
4. Local residents do not possess the skills needed to fill jobs created by the proposed project.
5. Housing or transportation shortages require workers to commute long distances.

Scenario 3

In reality, however, new jobs would very likely be filled by a mixture of local and "imported" workers. New workers would include young people finishing school and entering the labor market. Unemployed workers would fill many of the jobs, and some under-employed workers would accept two jobs or be drawn away from other jobs. The remainder of the jobs would be filled by workers commuting in from surrounding counties outside the immediate boundaries of the ROI. This is most likely to be the case for the direct and indirect jobs, which are diverse in location and occupational classification. It is less likely to be true of the casino and hotel jobs because of the comparative specialization in this industry and the concentration of casino and hotel jobs in the area.

For these reasons, it was decided to choose a compromise position between these two extremes. A logical way to proceed is to assume that the direct on-site employment of the Proposed Action and its alternatives would be accounted as "new" employment (above the baseline forecast) and the indirect and induced jobs would be accounted as within the currently forecast growth (below the baseline). The result is that approximately 60 to 70 percent of the total jobs associated with the proposed project are anticipated to be net employment gains compared to the baseline IHL forecast for 2010 (see Figure K.5-4).

Some sensitivity testing was done to evaluate the implications of this assumption. Clearly, the choice concerning the proportion of all related employment that is "new" employment does not bias the recommendation concerning the appropriate alternative. Since the same assumption is

proposed for all alternatives, the absolute number of new jobs would be in the same rank order for all of the allocations discussed above. The relative magnitude of employment across Alternatives 2 through 5 is similar. Alternative 1 (the No-action Alternative) is expected to require no change in the IHL baseline employment forecast for the ROI or in the number of households and population in the future.

Table K.5-2
Range of Employment Forecast Scenarios for ROI

	Scenario 1	Scenario 2	Scenario 3
Total employment in 2010	194,230	216,879	207,375
Difference from baseline forecast	0	22, 646	13,145
Difference from recommended forecast (207,375)	13,145	9,504	0

Note: Employment comparisons based on Alternative 2.
Source: Staff analysis.

Table K.5-2 displays the range of employment across the two extreme outcomes. The total employment difference between Scenarios 1 or 2 versus the most likely scenario (Scenario 3) is between 13,145 and 9,504, or approximately 4 to 6 percent of the total expected employment from Scenario 3. This is well within the bounds of the expected error of estimate for forecasts of this type. Therefore, the Scenario 3 forecast is used as the basis for impact measurement in this analysis.

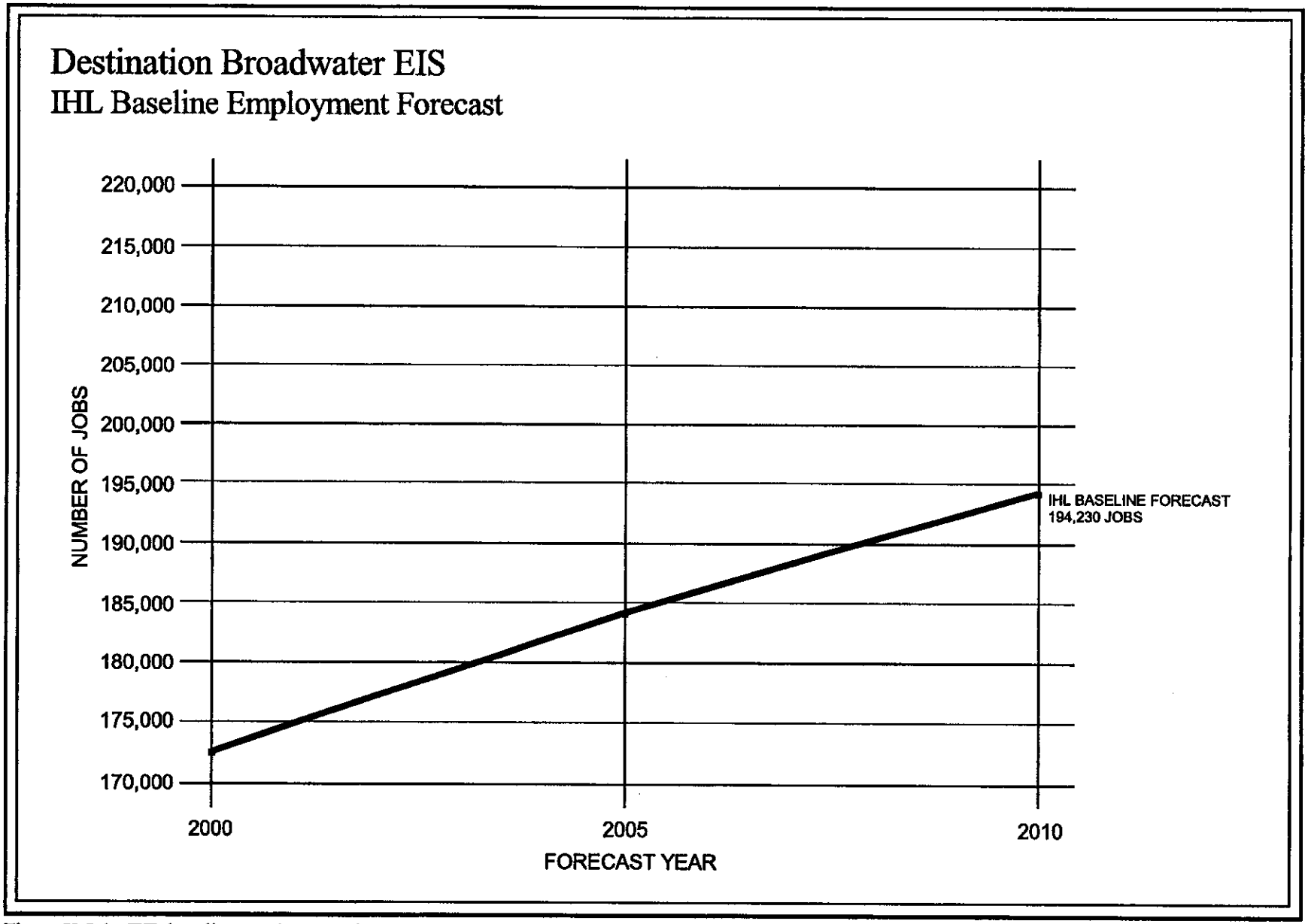


Figure K.5-1: IHL baseline employment forecast

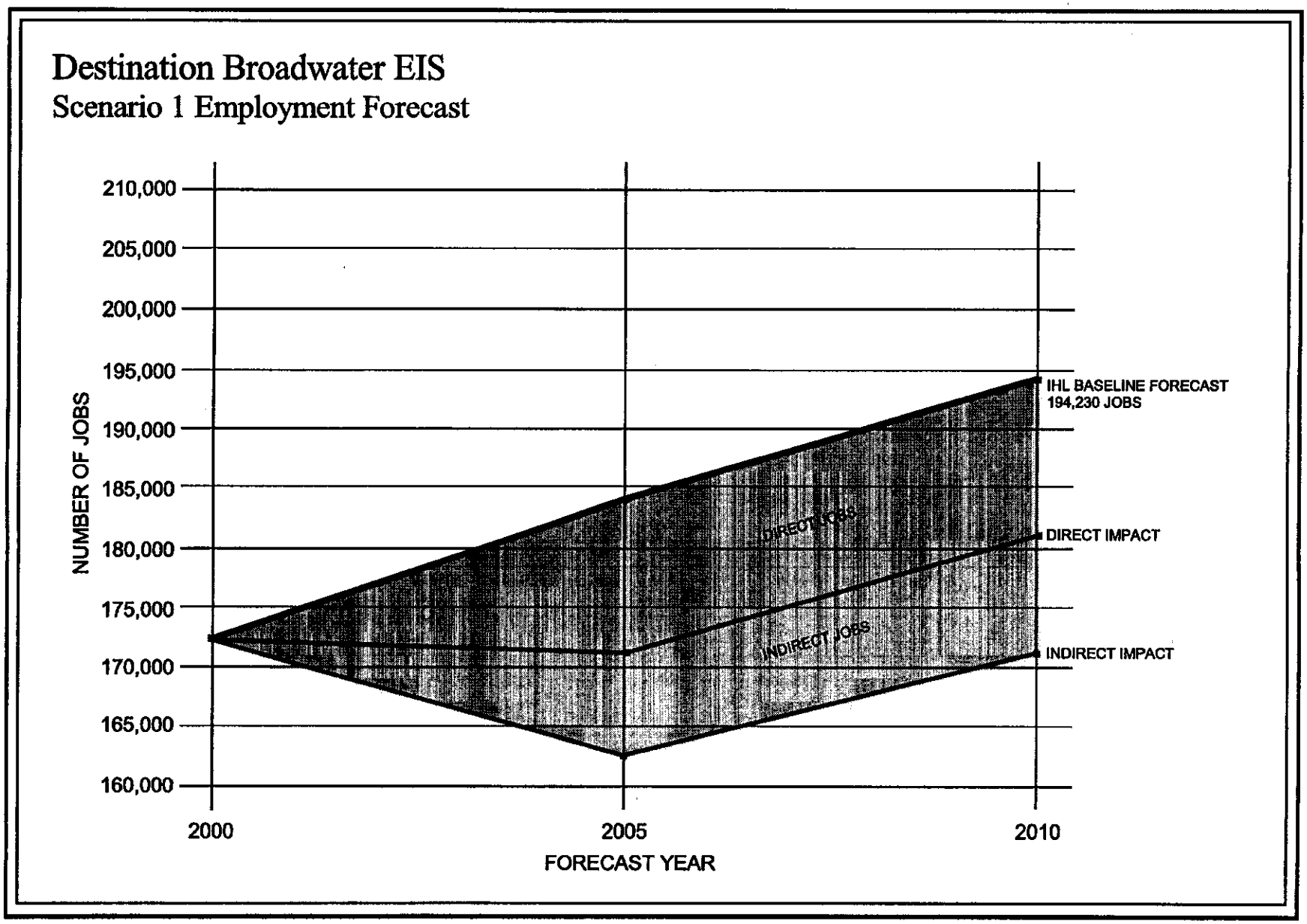


Figure K.5-2: Scenario 1 employment forecast

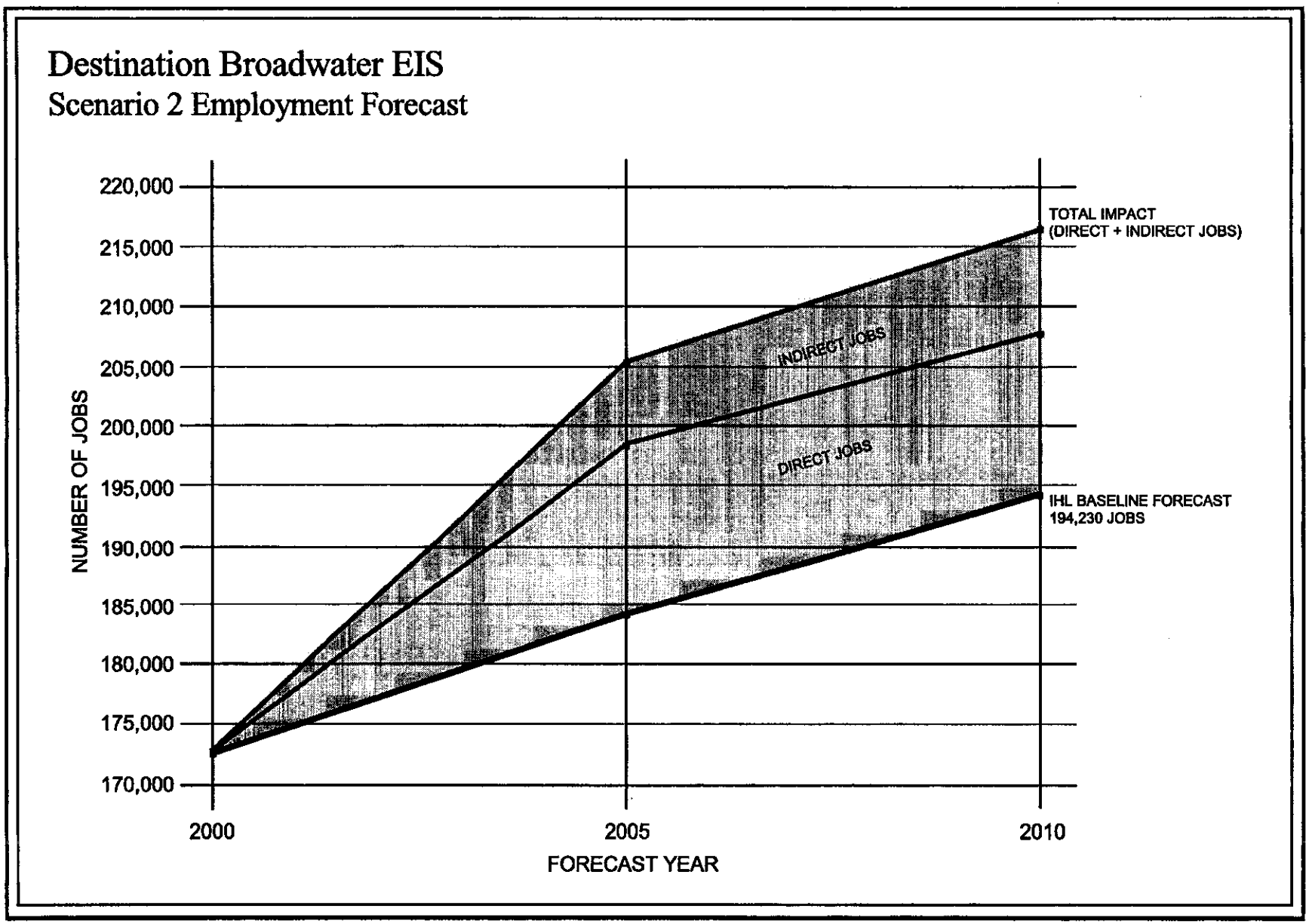


Figure K.5-3: Scenario 2 employment forecast

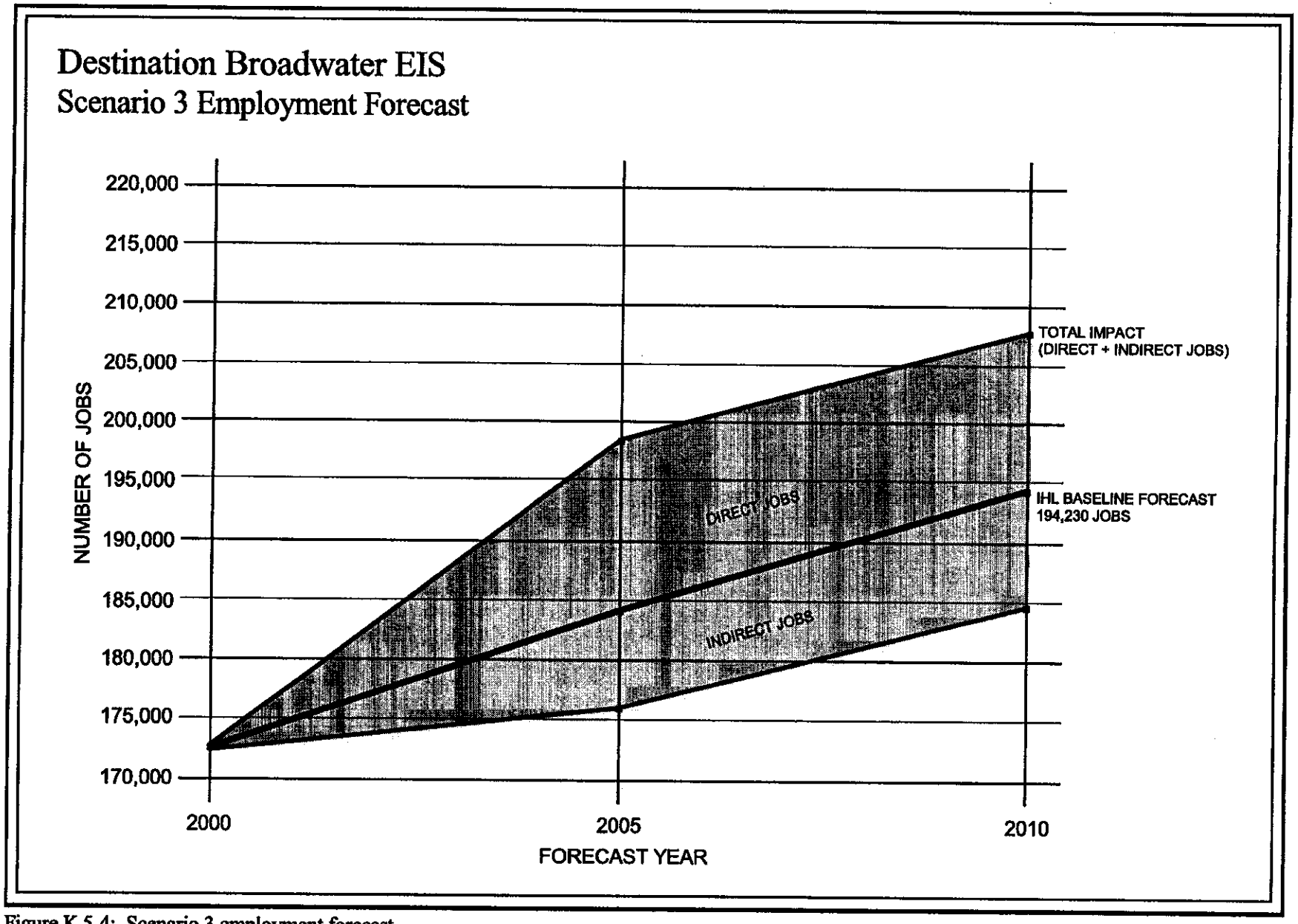


Figure K.5-4: Scenario 3 employment forecast