SECTION 1

—

ECONOMIC ASSESSMENT

ECONOMIC ASSESSMENT

INTRODUCTION

This section of the report deals with the results of individual models necessary to carry out the economic evaluation of the Interim State Development and Redevelopment Plan. It deals specifically and solely with the economic effects of more (IPLAN)- versus less (TREND)- controlled residential and nonresidential development.

The section is composed of three parts that describe how impacts are assessed on both macro- and microeconomic bases. As has been stated earlier, the economic evaluation is concerned with how the State Plan affects the overall economy of New Jersey and its subregions. It also focuses on the number of jobs produced under each scenario and their location, and the degree to which more or less residential and nonresidential development impacts negatively or positively on the fiscal solvency of local governments.

The Econometric Model is responsible for gross population and employment projections for the State as a whole and by region. The population and employment projection subroutine of the Land Capacity Model uses these statewide population and employment projections to determine household and employment growth by county and municipality.

The Economic Impact Model uses this information on prospective households and jobs to predict construction and steady-state job growth and its multiplier effects on particular regions of the State. The Fiscal Impact Model further translates this household and employment growth into the costs and revenues that will be experienced by individual local public service districts.

When the population and job subroutine interacts with the land capacity data base, if insufficient land to accommodate development is found, this is fed back to reduce overall population and employment projections. All results are controlled to the outputs of the Economic Impact Model at the Labor Area. This series of analyses serve to answer the questions: Will the State Plan affect economic growth? Will the plan stymie household or job growth in particular areas? Will the State Plan be hurtful to local governments?

PART I

—

OVERALL ECONOMIC CONDITIONS

ECONOMIC ASSESSMENT: PART I — OVERALL ECONOMIC CONDITIONS

THE CUPR ECONOMETRIC MODEL OF NEW JERSEY

Background

The use of a state econometric model to make TREND projections and to evaluate the economic impact of a state plan is nearly unprecedented in the planning field. An econometric model is a system of equations that predicts economic variables. An analyst might want to predict future output, income, employment, and wages in a region. In an econometric model, one equation might predict output as depending on wages, employment, and other variables. In a second equation, output may determine employment; in a third, employment and output may determine wages. Thus, the variables interact with each other, as they do in the real world. Econometric models are complex evaluation tools with good records for forecasting economic activity.

Concepts

The CUPR Econometric Model of New Jersey tracks the ups and downs of the State economy and also provides a theoretical framework to explain these changes. It is an annual model, designed for the purpose of making long-term projections, and takes full advantage of the recently available Gross State Product data. This Model is used to simulate TREND for both the short run (1995) and long run (2010). The TREND projections will indicate what is likely to happen to the State "in the absence of any plan." Because it simulates the way various economic variables interact, the CUPR Econometric Model is ideally suited to produce TREND projections for a state as diverse as New Jersey.

Characteristics of the Model

The CUPR Econometric Model is a two-tiered model consisting of two submodels, the State Model and the Labor Area[1] Model. The State Model, which explains statewide aggregates, contains 363 simultaneous equations (219 behavioral equations and 144 identities). Each behavioral equation is estimated using the ordinary least-squares regression technique. The equations represent the complex interrelationships between the various State economic and demographic variables and their linkages to the national economy. In the Labor Area Model, the key economic variables of the State's ten Labor Areas and two freestanding counties (Warren and Salem) are related to the State aggregates.

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[1] Labor Area will be used in this report to refer to New Jersey's ten official employment reporting regions and two other freestanding counties. The twelve Labor Areas include three Labor Market Areas, which are usually larger and more encompassing than any of the Labor Areas.

For substate projections, State forecasts are allocated among the twelve geographic areas using the Labor Area Model.

Two trends characterize the State's economy. First, the State's business cycle is largely determined by the national cycle. Over the last 35 years, as the national unemployment rate rose and fell, so did New Jersey's. Second, although the impact of the national cycle is substantial, there remains a significant difference between the national and the regional economies in terms of the intensity of the cyclical swings. In other words, the State economy sometimes outperforms and sometimes underperforms the national economy and, consequently, the level of the State's unemployment rate and its changes are not identical to those of the United States.

TREND FINDINGS

The TREND forecast for New Jersey and its twelve regions is produced using the CUPR Econometric Model. National forecasts used to make the State forecast come from the WEFA Group, Inc. standard short-term macro forecast of December 1990 for 1991 and 1992, and the long-term TREND forecast for Fall 1990 for 1993 through 2010. The U.S. macro forecast predicts a mild recession in the first half of 1991, followed by a moderate recovery over the next four years. After 1995 real GNP grows between 2.3 percent and 2.5 percent per year. Exhibit 1 shows that all the major economic indicators will grow more slowly in the next twenty years than has been the case for the previous two decades.

NEW JERSEY FORECAST

Summary

The TREND projections of the CUPR Econometric Model are for slow growth in the 1990s through 2005, relative to the U.S., followed by growth slightly faster than for the nation in the last five years of the forecast period. The State's share of output and income will diminish through the 1990s and then stabilize.

Non-agricultural employment, as shown in Exhibit 2, grew 1.1 million between 1970 and 1990. In the next twenty years, job growth will be just 655,000, raising non-agricultural employment to 4.32 million in 2010. Resident employment will rise by 699,000 in the next twenty years, raising it to 4.55 million in 2010. In 2010 net out-commuters will be a slightly larger proportion of resident employment than in 1990.

Population growth in New Jersey will average just over .3 percent a year in the forecast period. By 2010 population in the State will be 8.25 million, an increase of 520,000 from 1990. Growth in the labor force and civilian employment will slow to half a percent a year in 1995 to 2000 and recover to just over 1 percent a year at the end of the

EXHIBIT 1

MAJOR NATIONAL ECONOMIC INDICATORS

1970 to 2010

	1970	1975	1980	1985	1990	1995	2000	2005	2010
Real GNP ($Billion 1982=100)	$2,416.2	$2,695.0	$3,187.2	$3,618.7	$4,159.9	$4,673.2	$5,292.5	$5,952.2	$6,654.2
Non-Agricultural Employment (000,000)	70.9	77.0	90.4	97.5	110.3	118.3	127.5	135.6	142.5
Manufacturing	19.4	18.3	20.3	19.3	19.1	19.4	19.4	19.1	18.8
Labor Force (000,000)	82.8	93.8	107.0	115.5	124.9	133.5	142.7	151.2	158.9
HH Employment, Civ. (000,000)	78.7	85.8	99.3	107.2	118.0	126.4	136.3	144.7	151.8
Civ. Unemployment Rate (%)	5.0%	8.5%	7.2%	7.2%	5.5%	5.3%	4.5%	4.3%	4.5%
Population (000,000)	205.1	216.0	227.8	239.3	251.4	263.3	273.0	282.4	291.7
Labor Force/Population (%)	40.4%	43.4%	47.0%	48.2%	49.7%	50.7%	52.3%	53.5%	54.5%
Personal Income ($ Billion)	$831.8	$1,313.4	$2,258.5	$3,325.4	$4,646.0	$6,462.6	$9,063.2	$12,545.9	$17,264.4
Income per Capita ($)	$4,056	$6,081	$9,917	$13,895	$18,480	$24,545	$33,204	$44,432	$59,189
Personal Income ($ Billion 1990=100)	$2,645.8	$3,030.0	$3,558.9	$4,065.2	$4,646.0	$5,157.1	$5,764.8	$6,371.5	$7,020.0
Real Income per Capita ($)	$12,902	$14,030	$15,626	$16,986	$18,480	$19,586	$21,119	$22,565	$24,068

ANNUAL AVERAGE GROWTH RATES (%)

	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Real GNP	2.2%	3.4%	2.6%	2.8%	2.4%	2.5%	2.4%	2.3%
Non-Agricultural Employment	1.7%	3.3%	1.5%	2.5%	1.4%	1.5%	1.2%	1.0%
Manufacturing	-1.1%	2.1%	-1.0%	-0.2%	0.4%	-0.1%	-0.3%	-0.3%
Labor Force	2.5%	2.7%	1.5%	1.6%	1.3%	1.3%	1.2%	1.0%
HH Employment, Civ.	1.8%	3.0%	1.5%	2.0%	1.4%	1.5%	1.2%	1.0%
Population	1.0%	1.1%	1.0%	1.0%	0.9%	0.7%	0.7%	0.7%
Labor Force/Population	1.5%	1.6%	0.5%	0.6%	0.4%	0.6%	0.5%	0.4%
Personal Income	9.6%	11.5%	8.0%	6.9%	6.8%	7.0%	6.7%	6.6%
Income per Capita	8.4%	10.3%	7.0%	5.9%	5.8%	6.2%	6.0%	5.9%
Personal Income	2.7%	3.3%	2.7%	2.7%	2.1%	2.3%	2.0%	2.0%
Real Income per Capita	1.7%	2.2%	1.7%	1.7%	1.2%	1.5%	1.3%	1.3%

Source: CUPR Econometric Model, 1992.

EXHIBIT 2

MAJOR NEW JERSEY ECONOMIC INDICATORS

1970 to 2010

	1970	1975	1980	1985	1990	1995	2000	2005	2010
Real GSP ($ Billion 1982=100)	$86.4	$90.7	$102.6	$126.5	$146.2	$153.7	$163.5	$178.2	$197.1
Non-Agricultural Employment (000,000)	2.6	2.7	3.1	3.4	3.7	3.8	3.9	4.1	4.3
Manufacturing	0.9	0.7	0.8	0.7	0.6	0.5	0.4	0.4	0.4
Labor Force (000,000)	3.0	3.3	3.6	3.8	4.0	4.2	4.3	4.5	4.8
HH Employment, Civ. (000,000)	2.9	2.9	3.3	3.6	3.8	4.0	4.1	4.3	4.5
Civ. Unemployment Rate (%)	4.6%	10.3%	7.2%	5.7%	5.0%	5.4%	5.4%	5.0%	4.6%
Population (000,000)	7.2	7.3	7.4	7.6	7.7	7.8	7.9	8.0	8.3
Labor Force/Population (%)	41.6%	44.4%	48.8%	50.7%	52.4%	54.2%	54.9%	56.2%	57.8%
Personal Income ($ Billion)	$34.5	$51.3	$85.4	$133.3	$193.0	$243.4	$320.0	$439.1	$621.7
Income per Capita ($)	$4,796	$6,992	$11,578	$17,600	$24,968	$31,263	$40,578	$54,595	$75,358
Personal Inc. ($ Billion 1990=100)	$109.9	$118.4	$134.5	$163.0	$193.0	$194.2	$203.5	$223.0	$252.8
Real Income per Capita ($)	$15,257	$16,131	$18,244	$21,515	$24,968	$24,947	$25,810	$27,727	$30,645

ANNUAL AVERAGE GROWTH RATES (%)

	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Real GSP	1.0%	2.5%	4.3%	2.9%	1.0%	1.2%	1.7%	2.0%
Non-Agricultural Employment	0.7%	2.5%	2.2%	1.4%	0.6%	0.5%	1.0%	1.2%
Manufacturing	-2.8%	0.9%	-1.8%	-3.4%	-3.3%	-2.6%	-2.5%	-2.0%
Labor Force	1.7%	2.0%	1.3%	1.1%	0.8%	0.5%	0.9%	1.1%
HH Employment, Civ.	0.5%	2.6%	1.7%	1.2%	0.7%	0.5%	0.9%	1.2%
Population	0.4%	0.1%	0.5%	0.4%	0.1%	0.3%	0.4%	0.5%
Labor Force/Population	1.3%	1.9%	0.8%	0.7%	0.7%	0.3%	0.5%	0.6%
Personal Income	8.2%	10.7%	9.3%	7.7%	4.8%	5.6%	6.5%	7.2%
Income per Capita	7.8%	10.6%	8.7%	7.2%	4.6%	5.4%	6.1%	6.7%
Personal Income	1.5%	2.6%	3.9%	3.4%	0.1%	0.9%	1.8%	2.5%
Real Income per Capita	1.1%	2.5%	3.4%	3.0%	0.0%	0.7%	1.4%	2.0%

Source: CUPR Econometric Model, 1992.

forecast period. The ratio of labor force to population, which grew from 42 percent to 52 percent between 1970 and 1990, will increase to 58 percent in 2010. The unemployment rate will grow from 5 percent to 5.4 percent between 1990 and 1995, and decrease to 4.6 percent by 2010.

Real per capita income grew at an average rate of 2.5 percent a year between 1970 and 1990. It will fall slightly between 1990 and 1995, and grow at an average annual rate of 1.4 percent in the last fifteen years of the forecast period.

Sectoral Forecast

Manufacturing employment, as shown in Exhibit 3, declined by 260,000, or 30 percent, between 1970 and 1990. It will fall by another 40 percent in the next two decades. Manufacturing's share of non-agricultural jobs in the State was one-third in 1970. By 1990 manufacturing accounted for only 16 percent of jobs, and by 2010 the sector will have shrunk to 8 percent of the total. The major growth industries in the past twenty years have been services and finance, insurance, and real estate (FIRE). Both are expected to continue to grow in New Jersey in the next two decades, although services will grow at a much slower rate. In 1970 these two industries accounted for 20 percent of the State's employment. By 1990 that proportion had grown to a third, and by 2010 it will be 41 percent.

The transportation and utilities sector boomed in New Jersey in the 1980s with deregulation and the move of AT&T to New Jersey. However the boom is over and the sector is expected to lose jobs after 1995. The trade sector also grew rapidly in the 1980s, in conjunction with strong growth in the rest of the economy. The slowdown in the rest of the economy in the past few years has led to slower growth in the trade sector. The trend forecast shows growth in the sector remaining at an average rate of less than one percent a year through 2010.

The construction sector grew rapidly between 1975 and 1990 with the strong growth in population and strong nonresidential construction particularly in areas like the Princeton corridor and Jersey City. The combination of recession, slow population growth, and overbuilding of office space will keep the construction sector on the decline through 2000, after which there will be some resurgence. The weakness of the economy in general and the construction sector in particular is reflected in property values. Real property values fall through 2000 and recover very slowly afterward.

Public employment rose rapidly between 1970 and 1990, except in the recession in the early 1980s. It is expected to rise less than one percent a year in the forecast period until after 2005.

EXHIBIT 3

NEW JERSEY NON-AGRICULTURAL EMPLOYMENT

1970 to 2010

IN THOUSANDS

	1970	1975	1980	1985	1990	1995	2000	2005	2010
Total	2606.1	2700.2	3060.9	3414.3	3665.4	3767.1	3871.0	4066.9	4320.1
Mining	3.2	2.7	2.3	2.4	2.2	1.8	1.4	1.2	1.0
Contract Construction	120.3	99.4	111.5	141.1	148.4	143.7	128.0	158.0	199.2
Manufacturing	860.8	748.0	781.2	712.9	599.6	506.6	444.4	392.2	355.4
Trans. & Utilities	182.2	174.3	194.5	226.1	237.4	245.9	244.6	240.8	237.1
Trade	537.9	599.2	680.4	813.2	877.3	909.2	944.3	988.2	1043.6
Finance, Ins. & R.E.	116.5	135.3	158.1	194.9	240.0	287.3	340.4	399.3	464.9
Services	410.4	471.2	603.1	792.6	988.7	1073.3	1147.2	1235.7	1319.2
Government	374.8	470.2	529.8	531.1	571.8	599.4	620.7	651.6	699.7

ANNUAL AVERAGE GROWTH RATES (%)

	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010
Total	0.7%	2.5%	2.2%	1.4%	0.5%	0.5%	1.0%	1.2%
Mining	-3.3%	-3.2%	0.9%	-1.7%	-3.9%	-4.9%	-3.0%	-3.6%
Contract Construction	-3.7%	2.3%	4.8%	1.0%	-0.6%	-2.3%	4.3%	4.7%
Manufacturing	-2.8%	0.9%	-1.8%	-3.4%	-3.3%	-2.6%	-2.5%	-2.0%
Trans. & Utilities	-0.9%	2.2%	3.1%	1.0%	0.7%	-0.1%	-0.3%	-0.3%
Trade	2.2%	2.6%	3.6%	1.5%	0.7%	0.8%	0.9%	1.1%
Finance, Ins. & R.E.	3.0%	3.2%	4.3%	4.2%	3.7%	3.4%	3.2%	3.1%
Services	2.8%	5.1%	5.6%	4.5%	1.7%	1.3%	1.5%	1.3%
Government	4.6%	2.4%	0.0%	1.5%	0.9%	0.7%	1.0%	1.4%

PERCENT OF TOTAL

	1970	1975	1980	1985	1990	1995	2000	2005	2010
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Mining	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Contract Construction	4.6%	3.7%	3.6%	4.1%	4.0%	3.8%	3.3%	3.9%	4.6%
Manufacturing	33.0%	27.7%	25.5%	20.9%	16.4%	13.4%	11.5%	9.6%	8.2%
Trans. & Utilities	7.0%	6.5%	6.4%	6.6%	6.5%	6.5%	6.3%	5.9%	5.5%
Trade	20.6%	22.2%	22.2%	23.8%	23.9%	24.1%	24.4%	24.3%	24.2%
Finance, Ins. & R.E.	4.5%	5.0%	5.2%	5.7%	6.5%	7.6%	8.8%	9.8%	10.8%
Services	15.7%	17.4%	19.7%	23.2%	27.0%	28.5%	29.6%	30.4%	30.5%
Government	14.4%	17.4%	17.3%	15.6%	15.6%	15.9%	16.0%	16.0%	16.2%

Source: CUPR Econometric Model, 1992.

LABOR AREA FORECAST

The CUPR Econometric Model includes a subregional model of the ten Labor Areas in New Jersey and two freestanding counties. The areas are: Atlantic City, Bergen, Camden, Jersey City, Middlesex-Somerset-Hunterdon, Monmouth-Ocean, Newark, Passaic, Trenton, Vineland-Millville-Bridgeton (Cumberland County), and Warren and Salem Counties. These will be used to describe the growth of subregions of the State. Also within the State are recognized commuter-based housing regions. There are six housing groups of two to four counties, as follows (see Exhibit 4):

NORTHEAST	NORTHWEST	WEST CENTRAL	EAST CENTRAL	SOUTHWEST	SOUTH–SOUTHWEST
Bergen	Essex	Hunterdon	Monmouth	Burlington	Atlantic
Hudson	Morris	Middlesex	Ocean	Camden	Cape May
Passaic	Sussex	Somerset		Gloucester	Cumberland
	Morris	Warren		Mercer	Salem

As the commuter-based housing regions will be used to describe substate conditions elsewhere in this report, macro trends in these areas will also be discussed using this regional breakdown.

Population

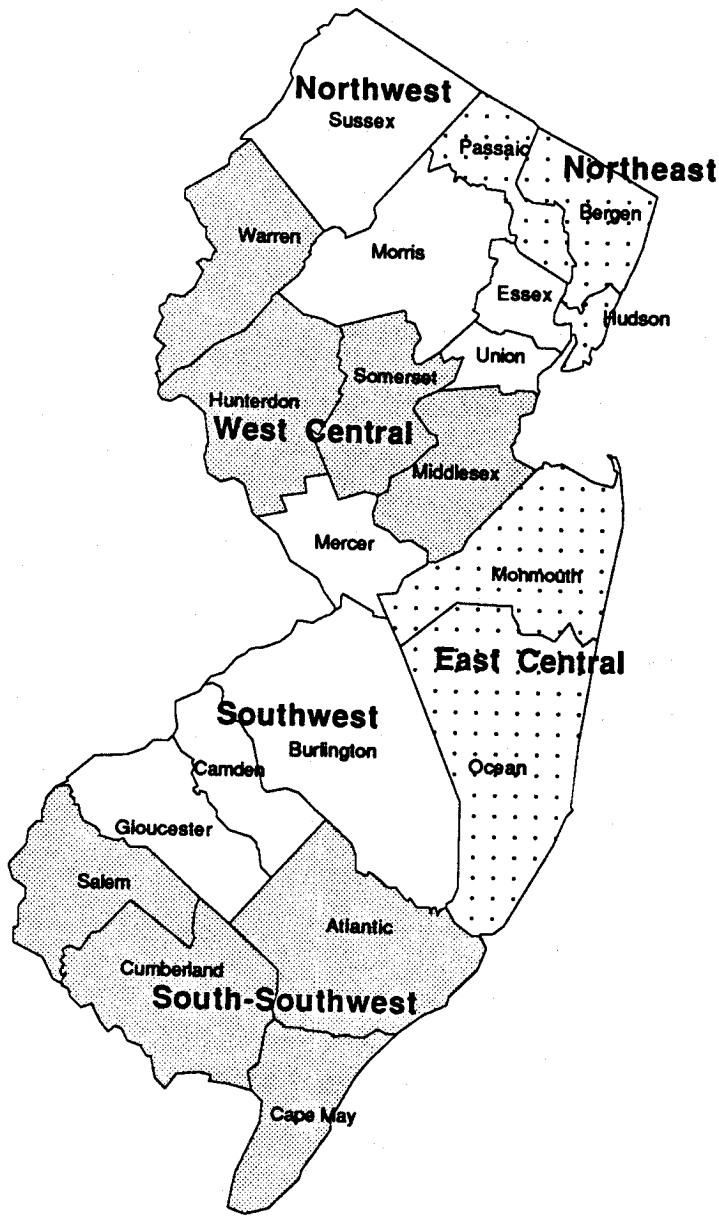
Between 1970 and 1990 population grew in all the Labor Areas of the State except the four in the New York metropolitan area. The fastest population growth areas were Atlantic City (36 percent), Middlesex-Somerset-Hunterdon (20 percent), and Monmouth-Ocean area (47 percent). Population growth in all the areas outside the New York area was 775,000, or 23 percent. The population loss in the four areas near New York City ranged from a low of 2 percent in Passaic County to a high of 9 percent in the Jersey City area. The total loss was 248,000.

These same trends are present by region. The population for northern New York City-influenced regions (Northeast and Northwest) declined by 75,000 to 100,000 (0.4 percent) each; the East Central, West Central, and Southwest regions increased by 200,000 to 300,000 (0.8–1.0 percent) persons each; and the South-Southwest region increased by 100,000 (1.0 percent).

In the forecast period growth rates, as shown in Exhibit 5, will tend to be cut in half in areas where they have been highest—particularly Atlantic City, Camden, Monmouth-

EXHIBIT 4

COMMUTER-BASED HOUSING REGIONS IN NEW JERSEY



NORTHEAST	NORTHWEST	WEST CENTRAL	EAST CENTRAL	SOUTHWEST	SOUTH-SOUTHWEST
Bergen	Essex	Hunterdon	Monmouth	Burlington	Atlantic
Hudson	Morris	Middlesex	Ocean	Camden	Cape May
Passaic	Sussex	Somerset		Gloucester	Cumberland
	Union	Warren		Mercer	Salem

Source: New Jersey Council on Affordable Housing (COAH)

EXHIBIT 5

POPULATION BY LABOR AREA AND REGION

1970 TO 2010

LABOR AREA	In Thousands			Average Annual Change (%)		Percent of State (%)		
	1970	1990	2010	1970-1990	1990-2010	1970	1990	2010
Total	7171.0	7730.3	8250.2	0.4%	0.3%	100.0%	100.0%	100.0%
Atlantic City	234.6	319.4	374.5	1.6%	0.8%	3.3%	4.1%	4.5%
Bergen	897.1	825.4	796.2	-0.4%	-0.2%	12.5%	10.7%	9.7%
Camden	952.1	1128.0	1247.5	0.9%	0.5%	13.3%	14.6%	15.1%
Jersey City	607.8	553.1	595.5	-0.5%	0.4%	8.5%	7.2%	7.2%
Middlesex-Somerset-Hunterdon	851.9	1019.9	1176.6	0.9%	0.7%	11.9%	13.2%	14.3%
Monmouth-Ocean	670.3	986.3	1152.3	1.9%	0.8%	9.3%	12.8%	14.0%
Newark	1936.6	1824.3	1758.2	-0.3%	-0.2%	27.0%	23.6%	21.3%
Passaic	460.8	453.1	471.2	-0.1%	0.2%	6.4%	5.9%	5.7%
Trenton	304.1	325.8	356.2	0.3%	0.4%	4.2%	4.2%	4.3%
Vineland-Millville-Bridgeton	121.4	138.1	155.7	0.6%	0.6%	1.7%	1.8%	1.9%
Warren	74.0	91.6	102.6	1.1%	0.6%	1.0%	1.2%	1.2%
Salem	60.3	65.3	63.7	0.4%	-0.1%	0.8%	0.8%	0.8%

REGION	In Thousands			Average Annual Change (%)		Percent of State(%)		
	1970	1990	2010	1970-1990	1990-2010	1970	1990	2010
Total	7171.0	7730.3	8250.2	0.4%	0.3%	100.0%	100.0%	100.0%
Northeast	1965.7	1831.6	1862.9	-0.4%	0.1%	27.4%	23.7%	22.6%
Northwest	1936.6	1824.3	1758.2	-0.3%	-0.2%	27.0%	23.6%	21.3%
West Central	925.9	1111.5	1279.2	0.9%	0.7%	12.9%	14.4%	15.5%
East Central	670.3	986.3	1152.3	1.9%	0.8%	9.3%	12.8%	14.0%
Southwest	1256.2	1453.8	1603.7	0.7%	0.5%	17.5%	18.8%	19.4%
South-Southwest	416.3	522.8	593.9	1.1%	0.6%	5.8%	6.8%	7.2%

Source: CUPR Econometric Model, 1992.

Ocean, and Warren County. The Jersey City and Passaic areas are expected to regain population, while Salem County will show a minimal loss. The highest growth areas in the forecast period, with annual average growth of .8 percent per year, will be Monmouth-Ocean and Atlantic City. By 2010, the four Labor Areas near New York City will hold 44 percent of the State's population, compared with 54 percent in 1970 and 47 percent in 1990.

By region, for the comparable twenty-year forecast period, only the Northeast region is in decline. This region declines by 65,000 over the period or 0.2 percent annually. All other regions show growth. In the East Central, West Central, and Southwest regions this amounts to 150,000 to 160,000 persons for the period. In the South-Southwest region population growth is 45 percent of the above level; in the Northeast region it is 20 percent. Thus, the twenty-year projection shows substantial population growth in the middle portion of the State, slower growth at the two extreme ends of the State, and some decline in the Northwest portion.

Employment

Employment grew in all the Labor Areas except Salem County between 1976 and 1990. As shown in Exhibit 6, the fastest growth areas tended to be the same as those with the fastest population growth. A similar scenario is evident for regions.

The TREND forecast is for declines in employment in Passaic throughout the period, in Newark through 2000, and in Atlantic City after 1995. Camden, Middlesex-Somerset-Hunterdon, and Monmouth-Ocean will be the major growth areas of the State; Vineland–Millville–Bridgeton (Cumberland County) will also undergo significant growth in the future, adding 17,000 jobs on a 1990 base of 59,600. By 2010, 55 percent of jobs in the State will be outside the New York metropolitan area, compared to 43 percent in 1976, and 50 percent in 1990. The Middlesex-Somerset-Hunterdon and Monmouth-Ocean areas are the big gainers in the State's economy. Between 1990 and 2010 they add 301,100 jobs on a base of 885,400. Together they account for nearly half of expected job growth in New Jersey.

The regional employment forecast shows reasonable annual growth in the Central regions of the State with less growth in the extreme northern and southern portions. The Northwest Region shows no growth.

Camden is the only Labor Area expected to have more goods-producing jobs in 2010 than it had in 1990. All areas will have more service-producing jobs in 2010 than in 1990.

EXHIBIT 6

EMPLOYMENT BY LABOR AREA AND REGION

1976 TO 2010

LABOR AREA	In Thousands			Average Annual Change (%)		Percent of State (%)		
	1976	1990	2010	1976-1990	1990-2010	1976	1990	2010
Total	2753.7	3665.4	4320.0	2.1%	0.8%	100.0%	100.0%	100.0%
Atlantic City	91.2	174.9	181.1	4.8%	0.2%	3.3%	4.8%	4.2%
Bergen	361.2	458.8	533.7	1.7%	0.8%	13.1%	12.5%	12.4%
Camden	297.1	451.2	629.8	3.0%	1.7%	10.8%	12.3%	14.6%
Jersey City	232.4	248.6	311.2	0.5%	1.1%	8.4%	6.8%	7.2%
Middlesex-Somerset-Hunterdon	339.9	547.7	738.4	3.5%	1.5%	12.3%	14.9%	17.1%
Monmouth-Ocean	204.8	337.7	448.1	3.6%	1.4%	7.4%	9.2%	10.4%
Newark	792.1	937.6	931.1	1.2%	0.0%	28.8%	25.6%	21.6%
Passaic	178.5	196.1	163.6	0.7%	-0.9%	6.5%	5.4%	3.8%
Trenton	150.8	197.0	239.4	1.9%	1.0%	5.5%	5.4%	5.5%
Vineland-Millville-Bridgeton	52.9	59.6	76.6	0.9%	1.3%	1.9%	1.6%	1.8%
Warren	27.7	33.1	43.2	1.3%	1.3%	1.0%	0.9%	1.0%
Salem	25.1	23.1	23.8	-0.6%	0.1%	0.9%	0.6%	0.6%

REGION	In Thousands			Average Annual Change (%)		Percent of State (%)		
	1976	1990	2010	1976-1990	1990-2010	1976	1990	2010
Total	4791.9	5653.5	6288.7	0.8%	0.5%	66.8%	73.1%	76.2%
Northeast	772.1	903.5	1008.5	0.8%	0.6%	10.8%	11.7%	12.2%
Northwest	792.1	937.6	931.1	0.8%	0.0%	11.0%	12.1%	11.3%
West Central	367.6	580.8	781.6	2.3%	1.5%	5.1%	7.5%	9.5%
East Central	204.8	337.7	448.1	2.5%	1.4%	2.9%	4.4%	5.4%
Southwest	447.9	648.2	869.2	1.9%	1.5%	6.2%	8.4%	10.5%
South-Southwest	2207.4	2245.7	2250.2	0.1%	0.0%	30.8%	29.1%	27.3%

Source: CUPR Econometric Model, 1992.

Personal Income and Property Values

Personal income, as shown in Exhibit 7, grew historically in most Labor Areas, at 8–10 percent per year. It is expected to grow at an annual average rate of 6 percent between 1990 and 2010. Income growth will be strongest in Middlesex-Somerset-Hunterdon and Monmouth-Ocean. The areas with least growth in personal income are the four Labor Areas within the New York metropolitan area, and Salem County, which is essentially stagnant in terms of both population and employment during the next two decades.

In the period from 1970 to 1990 property values in New Jersey rose approximately twice as fast as the price level. This is a reflection of the large increase in population and the office building boom of the 1980s. The rise in property values, as shown in Exhibit 8, was particularly rapid in Atlantic City, with the advent of casino gambling. Other Labor Areas with large increases in property values were Monmouth-Ocean, Middlesex-Somerset-Hunterdon, and Warren County, which experienced the greatest gains in the State in both population and employment.

Historically, personal income shows an 8–10 percent annual growth across all regions. It is highest in the central part of the State, followed by the State's edges. The same exact trend occurs for property value, except that its annual change is about two absolute percentage points higher.

In the forecast period property values in the state are expected to rise at an annual average rate of 5.9 percent, less than 30 percent faster than the price level. Values will rise fastest in the Jersey City area, with its new office complexes and population influx. Property values in Newark and Passaic, also in the New York metropolitan area, will continue to grow slowly in comparison to the rest of the State, as employment shrinks or grows slowly in those Labor Areas. Property values in the Trenton and Camden areas and Atlantic City will grow at average annual rates of 6.6 percent, reflecting some resurgence in their central cities and continuing strong population growth.

The forecast of personal income and property values by region parallels historic distributions. The only major exception is as noted for Labor Areas—that it takes place at 65 percent of the prior period annual level. Thus income and property values are increasing but at decreased rates.

EXHIBIT 7

PERSONAL INCOME BY LABOR AREA AND REGION

1970 TO 2010

LABOR AREA	In $ Millions			Average Annual Change (%)		Percent of State (%)		
	1970	1990	2010	1970-1990	1990-2010	1970	1990	2010
Total	$34,548.6	$193,004.0	$621,770.2	9.0%	6.0%	100.0%	100.0%	100.0%
Atlantic City	$938.9	$7,717.9	$26,577.3	11.1%	6.4%	2.7%	4.0%	4.3%
Bergen	$5,437.7	$26,425.2	$76,495.3	8.2%	5.5%	15.7%	13.7%	12.3%
Camden	$3,747.2	$23,266.6	$73,626.1	9.6%	5.9%	10.8%	12.1%	11.8%
Jersey City	$2,702.8	$10,514.5	$28,433.8	7.0%	5.1%	7.8%	5.4%	4.6%
Middlesex-Somerset-Hunterdon	$4,094.2	$27,812.5	$100,669.9	10.1%	6.6%	11.9%	14.4%	16.2%
Monmouth-Ocean	$3,086.2	$25,255.3	$102,159.1	11.1%	7.2%	8.9%	13.1%	16.4%
Newark	$10,055.7	$47,989.8	$139,786.3	8.1%	5.5%	29.1%	24.9%	22.5%
Passaic	$2,105.6	$10,121.2	$29,317.4	8.2%	5.5%	6.1%	5.2%	4.7%
Trenton	$1,338.7	$8,393.0	$28,016.8	9.6%	6.2%	3.9%	4.3%	4.5%
Vineland-Millville-Bridgeton	$471.9	$2,280.2	$6,757.1	8.2%	5.6%	1.4%	1.2%	1.1%
Warren	$309.8	$2,073.7	$7,155.6	10.0%	6.4%	0.9%	1.1%	1.2%
Salem	$259.8	$1,154.2	$2,775.5	7.7%	4.5%	0.8%	0.6%	0.4%

REGION	In Thousands			Average Annual Change (%)		Percent of State (%)		
	1970	1990	2010	1970-1990	1990-2010	1970	1990	2010
Total	$34,548.6	$193,004.1	$621,770.2	9.0%	6.0%	481.8%	2496.7%	7536.4%
Northeast	$10,246.1	$47,060.9	$134,246.5	7.9%	5.4%	142.9%	608.8%	1627.2%
Northwest	$10,055.7	$47,989.8	$139,786.3	8.1%	5.5%	140.2%	620.8%	1694.3%
West Central	$4,404.1	$29,886.2	$107,825.5	10.0%	6.6%	61.4%	386.6%	1306.9%
East Central	$3,086.2	$25,255.3	$102,159.1	11.1%	7.2%	43.0%	326.7%	1238.3%
Southwest	$5,086.0	$31,659.6	$101,642.9	9.6%	6.0%	70.9%	409.6%	1232.0%
South-Southwest	$1,670.6	$11,152.3	$36,109.9	10.0%	6.1%	23.3%	144.3%	437.7%

Source: CUPR Econometric Model, 1992.

EXHIBIT 8

PROPERTY VALUES BY LABOR AREA AND REGION

1970 to 2010

LABOR AREA	In $ Billions			Average Annual Change (%)		Percent of State (%)		
	1970	1990	2010	1970-1990	1990-2010	1970	1990	2010
Total	$55.4	$515.4	$1,626.9	11.8%	5.9%	100.0%	100.0%	100.0%
Atlantic City	$2.1	$30.9	$110.9	14.4%	6.6%	3.8%	6.0%	6.8%
Bergen	$9.6	$83.6	$267.3	11.4%	6.0%	17.3%	16.2%	16.4%
Camden	$5.1	$45.8	$164.4	11.6%	6.6%	9.3%	8.9%	10.1%
Jersey City	$3.1	$24.9	$94.5	10.9%	6.9%	5.7%	4.8%	5.8%
Middlesex-Somerset-Hunterdon	$7.3	$78.1	$240.1	12.6%	5.8%	13.1%	15.2%	14.8%
Monmouth-Ocean	$5.7	$75.0	$230.1	13.8%	5.8%	10.3%	14.5%	14.1%
Newark	$15.7	$122.2	$341.7	10.8%	5.3%	28.3%	23.7%	21.0%
Passaic	$3.4	$24.9	$73.9	10.4%	5.6%	6.2%	4.8%	4.5%
Trenton	$1.9	$18.4	$66.3	11.9%	6.6%	3.5%	3.6%	4.1%
Vineland-Millville-Bridgeton	$0.6	$3.7	$12.0	9.8%	6.1%	1.0%	0.7%	0.7%
Warren	$0.5	$5.5	$17.9	12.5%	6.1%	0.9%	1.1%	1.1%
Salem	$0.3	$2.4	$7.8	10.4%	6.2%	0.6%	0.5%	0.5%

REGION	In Thousands			Average Annual Change (%)		Percent of State (%)		
	1970	1990	2010	1970-1990	1990-2010	1970	1990	2010
Total	$55.4	$515.4	$1,626.9	11.8%	5.9%	0.8%	6.7%	19.7%
Northeast	$16.2	$133.5	$435.7	11.1%	6.1%	0.2%	1.7%	5.3%
Northwest	$15.7	$122.2	$341.7	10.8%	5.3%	0.2%	1.6%	4.1%
West Central	$7.8	$83.6	$258.0	12.6%	5.8%	0.1%	1.1%	3.1%
East Central	$5.7	$75.0	$230.1	13.8%	5.8%	0.1%	1.0%	2.8%
Southwest	$7.1	$64.2	$230.7	11.7%	6.6%	0.1%	0.8%	2.8%
South-Southwest	$3.0	$36.9	$130.7	13.3%	6.5%	0.0%	0.5%	1.6%

Source: CUPR Econometric Model, 1992.

HOW DO THE BASIC FINDINGS COMPORT WITH INTUITIVE FEELINGS?

The TREND forecast is in line with what one would expect given the probable continued slow growth in the national economy and the relatively high costs in the State and region in comparison with other areas of the country. The former will keep growth rates lower than in the 1970s and 1980s, while the latter will keep down in-migration of both jobs and population from other areas in the country. The continued shift of population and jobs away from Newark and Passaic seems reasonable in light of the predicted continuing steep decline in manufacturing, as does the continued shift towards Middlesex-Somerset-Hunterdon and Monmouth-Ocean in the central part of the State. The predicted growth in the Jersey City area reflects both strong immigration and the city's recent efforts to attract finance and service industries. The tapering off of growth in the Atlantic City area shows that casino gambling has reached its short-term critical mass and even at this level is far from being recession-proof.

IMPLICATIONS OF FINDINGS

Some of the major findings of the TREND forecast are:

- a shift in the major population and job centers of the State from the northeastern New Jersey area towards the central and southern parts of the State, particularly towards the Middlesex–Somerset–Hunterdon and Monmouth–Ocean areas
- a further shift in the industrial composition of the economy away from manufacturing and towards finance and services
- a faster rate of increase in resident employment than employment by place of work
- very slow increases in property values in the near term
- State current operating expenditures that will tend to grow more rapidly than tax revenues after 1995

The northeastern New Jersey area will have unused capacity in infrastructure, and perhaps in housing and industrial buildings, while the central Middlesex-Monmouth region will need new construction of infrastructure and housing. The continuing shift away from manufacturing is serious, implying a need for retraining of older workers, while the shift towards finance and services implies a need for educating the work force in new kinds of skills. The faster growth in resident employment than employment by place of work means that out-commutation will increase. Thus, means of transportation, whether highway or mass transit, will have to keep up with growth in commuters. The slow growth in property values means that local governments, which depend on property taxes for much of their revenue, will be constrained. The expected slow growth in personal income will keep growth in the gross income tax and sales tax slow, further constraining growth in the operating budgets of both the State and local governments.

APPENDIX

A Rerun of the Econometric Model: The Effects of IPLAN'S Infrastructure Savings on the State Economy

RERUNNING THE ECONOMETRIC MODEL TO VIEW THE SECONDARY EFFECTS OF THE INFRASTRUCTURE SAVINGS ENGENDERED BY IPLAN

As indicated in *Report I: Research Strategy—Research Design, Model Descriptions, Case Study Profiles, Variable Selection* at Section 1, Part I, the CUPR Econometric Model would be rerun to view outcomes on the State if it was found that significant differences existed between TREND and IPLAN in any particular component of the assessment. The most significant area of difference is found in infrastructure costs. The more compact development patterns of IPLAN could save the State of New Jersey $1.3 billion in infrastructure costs. While this is a benefit of the State Plan, its implications should be worked through a macro model to view the secondary effects of such savings. It is important to note that this is not the IPLAN projection at the statewide level, but rather a measure of its potential effects. No similar projection was made for any debit or credit incurred by TREND.

RERUN FINDINGS

The RERUN forecast, which shows the effects of reduced infrastructure costs for New Jersey and its twelve Labor Areas, is produced by the CUPR Econometric Model and the Labor Area Model. The RERUN forecast uses TREND as its foundation and is an IPLAN-based savings forecast for the New Jersey economy. However, assumptions about three variables—expenditures on infrastructure, current government expenditures, and personal income taxes—are changed to reflect the findings of the various infrastructure models. The CUPR Road, School Capital Facilities, Water Cost, and OSP Wastewater Cost Models find that $1.3 billion less State infrastructure spending is needed under IPLAN than under TREND because IPLAN implies more concentrated development. The CUPR Econometric Model assumes spending by the State government for infrastructure, including roads, water and sewer infrastructure, and school capital facilities, is reduced by $65 million per year between 1990 and 2010, for a total reduction of $1.3 billion by 2010.[1] The CUPR Econometric Model further assumes that three-quarters of the savings is shifted to higher current government expenditures, while one-quarter results in lower State taxes.

According to Exhibit A–1, total population will be 0.1 percent less under RERUN (8,241,300) than under TREND (8,250,300) by 2010. Population grows by 9,000 fewer people (1.7 percent) under RERUN than under TREND during the next twenty years. That is, population growth will be reduced from 520,000 to 511,200. Thus, growth will be about 450 people less each year statewide. Total non-agricultural employment might also be

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[1] CUPR Road Model—$740 million; School Capital Facilities Model—$180 million; Water Cost and OSP Wastewater Cost Model—$440 million.

EXHIBIT A–1

MAJOR ECONOMIC INDICATORS

RERUN VERSUS TREND

	RERUN 1995	TREND 1995	PERCENT DIFFERENCE	RERUN 2010	TREND 2010	PERCENT DIFFERENCE
Non-Agricultural Employment (thousands)	3,764.4	3,767.1	-0.1%	4,308.5	4,320.1	-0.3%
Manufacturing	506.6	506.6	0.0%	354.8	355.4	-0.2%
Private Non-Manufacturing	2,655.7	2,661.1	-0.2%	3,248.7	3,265.0	-0.5%
Government	602.1	599.4	0.5%	705.0	699.7	0.8%
Resident Employment (thousands)	3,987.5	3,990.4	-0.1%	4,533.7	4,545.2	-0.3%
Gross State Product ($82 million)	$153.5	$153.7	-0.1%	$196.3	$197.1	-0.4%
Personal Income ($ million)	$243.2	$243.4	-0.1%	$620.1	$621.8	-0.3%
Population (thousands)	7,785.4	7,786.2	-0.0%	8,241.3	8,250.3	-0.1%

Source: CUPR Econometric Model, 1992

slightly less under RERUN than TREND. There will be 4,308,500 employees in the State under RERUN, compared to 4,320,100 under TREND—a difference of 11,600, or 580 per year. There will be fewer jobs under RERUN because of the assumption that there will be less contract construction. With less construction spending, there will be fewer construction jobs and, through the multiplier, fewer jobs in industries that are related to construction—services, manufacturing, and others. Although it is also assumed that there will be more government jobs because of increases in current government expenditures, the overall effect is slightly negative because government jobs have a smaller multiplier than those in construction. Consistent with these findings about population and employment, the CUPR Econometric Model forecasts that total personal income growth will be 0.4 percent less under RERUN than TREND.

LABOR AREA FORECAST

The Labor Area Model predicts major economic variables for New Jersey's twelve Labor Areas.

Population

The population of Middlesex-Somerset-Hunterdon and Vineland grow at about the same rate under both scenarios (Exhibit A–2). Elsewhere, growth is about 0.01 percent per year less under TREND. Newark will have 1,756,300 people under RERUN, compared to 1,758,200 under TREND, a difference of 0.1 percent. Other Labor Areas show similarly small variations between TREND and RERUN. By 2010, population in Bergen will be 900 lower under RERUN; in Monmouth-Ocean it will be 1,200 lower. In most other Labor Areas, the difference between TREND and RERUN will be less than 0.1 percent.

Employment

As with population, the differences between TREND and RERUN employment for Labor Areas are small (Exhibit A–3). Non-agricultural employment will grow at about 0.01 percent each year less under the RERUN scenario. By 2010, Bergen will have 1,500 fewer jobs out of a total of 533,700, for example. Warren will have 200 fewer jobs.

Personal Income

Exhibit A–4 shows that differences between TREND and RERUN in personal income will also be relatively small. Growth rates will be nearly the same under the two scenarios. Between 1991 and 2010 overall income growth is only 0.2 percent less under RERUN conditions than under TREND. These small differences are reflected in Labor

EXHIBIT A–2

LABOR AREA POPULATION FORECAST UNDER RERUN
(in thousands)

	1990	1995	2000	2005	2010
Atlantic City	319.4	331.5	343.1	356.6	374.1
Bergen	825.4	810.0	803.6	798.5	795.3
Camden	1,128.0	1,146.8	1,172.7	1,205.9	1,246.2
Jersey City	553.1	564.3	574.4	584.1	594.8
Middlesex–Somerset–Hunterdon	1,019.9	1,036.8	1,059.5	1,107.8	1,175.3
Monmouth–Ocean	986.3	1,029.0	1,064.0	1,103.8	1,151.1
Newark	1,824.3	1,793.0	1,773.0	1,764.0	1,756.3
Passaic	453.1	450.4	454.5	461.3	470.7
Warren	91.6	93.3	95.6	98.7	102.5
Salem	65.3	64.1	63.6	63.4	63.6
Trenton	325.8	326.9	334.7	343.4	355.8
Vineland	138.1	139.5	143.3	147.3	155.6
New Jersey	7,730.1	7,785.4	7,881.9	8,034.8	8,241.3

Source: CUPR Econometric Model, 1992

EXHIBIT A–3

LABOR AREA EMPLOYMENT FORECAST UNDER RERUN
(in thousands)

	1990	1995	2000	2005	2010
Atlantic City	174.9	184.0	183.0	180.9	180.7
Bergen	458.8	470.0	482.3	505.0	532.2
Camden	451.2	486.7	522.1	570.7	628.1
Jersey City	248.6	258.4	269.6	287.9	310.4
Middlesex–Somerset–Hunterdon	547.7	584.1	612.0	663.9	736.4
Monmouth–Ocean	337.7	361.5	383.6	412.9	446.9
Newark	937.6	920.0	908.8	916.9	928.6
Passaic	196.1	180.3	169.5	165.1	163.2
Warren	33.1	34.8	36.6	39.5	43.0
Salem	23.1	22.4	22.2	22.8	23.8
Trenton	197.0	202.9	211.5	223.9	238.8
Vineland	59.6	59.3	62.0	66.7	76.4
New Jersey	3,665.4	3,764.4	3,863.2	4,056.3	4,308.5

Source: CUPR Econometric Model, 1992

EXHIBIT A–4

LABOR AREA PERSONAL INCOME FORECAST UNDER RERUN
(in millions)

	1990	1995	2000	2005	2010
Atlantic City	$ 7,717.9	$ 10,009.5	$ 13,329.5	$ 18,474.1	$ 26,507.3
Bergen	26,425.2	32,538.3	41,662.2	55,590.8	76,293.9
Camden	23,266.6	29,096.0	38,067.4	52,064.3	73,432.2
Jersey City	10,514.5	13,451.8	17,043.2	21,792.5	28,358.9
Middlesex–Somerset–Hunterdon	27,812.5	35,782.3	48,307.1	68,488.0	100,404.9
Monmouth–Ocean	25,255.3	33,361.7	46,237.4	67,428.1	101,890.2
Newark	47,989.8	59,015.4	75,738.6	101,335.3	139,418.3
Passaic	10,121.2	12,479.6	15,993.4	21,327.0	29,240.2
Warren	2,073.7	2,761.7	3,673.9	5,042.8	7,136.7
Salem	1,154.2	1,348.5	1,655.7	2,112.9	2,768.2
Trenton	8,393.0	10,614.6	14,092.1	19,524.1	27,943.1
Vineland	2,280.2	2,780.6	3,588.2	4,782.2	6,739.3
New Jersey	$193,004.0	$243,240.2	$319,388.8	$437,962.1	$620,133.2

Source: CUPR Econometric Model, 1992

Areas: by 2010, annual income growth in Warren and Trenton will be about 0.01 percent slower under RERUN. Other Labor Areas show similarly small differences between the two scenarios.

NEW JERSEY FORECAST

Summary

The RERUN projections of the CUPR Econometric Model almost exactly parallel and are 99.8 percent of the magnitude of the TREND projections. They call for slow growth in the 1990s through 2005 relative to the U.S., followed by growth slightly faster than for the nation in the last five years of the forecast period. The State's share of output and income will diminish through the 1990s and then stabilize. The differences between TREND and RERUN are quite small.

Under RERUN conditions, job growth over the next twenty years will be 643,100, raising non-agricultural employment to 4.31 million in 2010. Resident employment will rise by 687,700 in the next twenty years, increasing to 4.534 million in 2010. The total non-agricultural employment in 2010 under RERUN is 99.8 percent that of TREND. In 2010, net out-commuters will be a slightly larger proportion of resident employment than in 1990. This finding is similar to that for TREND.

Population growth in New Jersey will average just over 0.3 percent a year in the forecast period. By 2010, population in the State will be 8.24 million, an increase of 511,200 from 1990. Again, this is 99.8 percent of the total population for TREND in the year 2010. Growth in the labor force and resident employment will slow to half a percent a year in 1995 to 2000 and recover to just over 1 percent a year at the end of the forecast period. This is analogous to the finding for TREND.

Real per capita income will fall slightly between 1990 and 1995, and grow at an average annual rate of 1.4 percent in the last fifteen years of the forecast period. This is unchanged from the TREND finding.

Sectoral Forecast

Manufacturing employment declined by 260,000, or 30 percent, between 1970 and 1990. It will fall by another 40 percent in the next two decades. There is only a 600-job decrease in manufacturing jobs in RERUN versus TREND. Manufacturing employment under RERUN to the year 2010 is 99.9 percent that of TREND.

Government will add 4,300 jobs in RERUN versus TREND because of the assumption that the cut in infrastructure costs will allow the State government to add to

current services expenditures. These losses and gains are barely perceptible vis-à-vis TREND.

HOW DO THE BASIC FINDINGS COMPORT WITH INTUITIVE FEELINGS?

The RERUN forecast based on IPLAN infrastructure savings is in line with what one would expect in comparison with TREND. There are very minor differences in population, employment, and income projections. If none of the decreases in infrastructure expenditures were made up for with increases in current operating expenditures, the macroeconomic effects could be as much as twice as strong. However, this would still be only about a .02 percent per year difference between TREND and RERUN employment and population growth.

IMPLICATIONS OF THE FINDINGS

Some of the major findings of RERUN versus TREND are:

- a small decrease in the shift of the job center towards the Middlesex–Somerset–Hunterdon and Monmouth–Ocean areas

- a slight moderation in the shift in the industrial composition of the economy away from manufacturing and towards finance and services

PART II

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ECONOMIC IMPACTS OF PROJECTED GROWTH

ECONOMIC ASSESSMENT: PART II — ECONOMIC IMPACTS OF PROJECTED GROWTH

BACKGROUND

The Economic Impact Model is used to determine the differences in impact that two development scenarios—TREND and IPLAN—will have on employment and unemployment situations in the various areas of New Jersey.[1] This undertaking is the second component of the economic assessment of the Interim State Plan.

The Economic Impact Model uses the outputs of the Housing Demand/Supply Model and the Econometric Model. Its own routines are used in the comparison of alternative development scenarios, particularly with respect to the ability of a development scenario to meet the Interim Plan's goal of revitalizing urban areas. This is interpreted in terms of the ability to place new jobs in high unemployment areas.

CONCEPTS

How the Model Works

The Economic Impact Model projects and compares the number of jobs that residential construction and the construction and operation of nonresidential facilities will generate under TREND and IPLAN. It does not include agricultural employment. It then examines and compares the effects that such job creation under TREND and IPLAN will have on the unemployment situation in the various political jurisdictions in New Jersey.

EMPLOYMENT

The Economic Impact Model performs through the following steps:

- Determine the construction jobs that are generated by residential development under TREND and IPLAN by applying the projected number of construction labor-hours generated per $1,000 of construction value to the projected value of residential development at the municipal level as determined by the Housing Demand/Supply Model for TREND and IPLAN.
- Determine the construction jobs that are generated by nonresidential development by applying the projected number of construction labor-hours

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1 Rutgers University, Bureau of Government Research (BGR) classifies communities in New Jersey into ten categories. Representing the developed urban areas are: Major Urban Center, Urban Center, Urban-Suburban, Seashore-Resort, Rural Center, Urban Center (Rural). Representing the suburban undeveloped areas are: Suburban, Suburban-Rural, Rural Center (Rural), and Rural. (See *Report I: Research Strategy—Research Design, Model Descriptions, Case Study Profiles, Variable Selection* at Section 2, Part II.)

generated per 1,000 square feet of new nonresidential space to the projected new nonresidential space at the municipal level. New nonresidential space is determined on the basis of the increase in total employment that is projected for the municipality under TREND and IPLAN.[2]

- Determine the number of permanent industrial, office, and retail jobs that will be generated, also on the basis of the increase in total employment that is projected for the municipality under TREND and IPLAN.

UNEMPLOYMENT

The impacts of job creation under TREND and IPLAN on the unemployment situation in various municipalities of the State are determined as follows:

- Unemployment rates for various municipality types (Urban Center, Suburban-Rural, and so on) of the State are projected for 1995 and 2010 on the basis of the projected labor force in these areas and the projected residual unemployment that will exist there in the event that the newly created jobs will be held by otherwise unemployed local residents.
- The changes in unemployment rates between 1990 and 1995 and between 1900 and 2010 under TREND and IPLAN are computed by municipality and aggregated by municipality types. The changes projected under TREND are compared with those projected under IPLAN. The differences between these changes reflect the differential potential of the two scenarios to alleviate unemployment, particularly in high unemployment areas.

Basic Model Inputs and Outputs

The basic inputs for the Economic Impact Model are:

- value of residential construction in a municipality
- labor-hours per $1,000 of residential construction value
- increase in total employment in a municipality in the projection period
- proportions of industrial, office, and retail employment in total employment in a municipality
- current unemployment rate and current labor force in a municipality

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[2] Employment is projected at the municipal level using regressed covered local employment controlled by the projections of total employment at the Labor Area level from the CUPR Econometric Model.

The basic outputs of the Model are:

- construction jobs generated by new residential and nonresidential development in municipalities of New Jersey
- permanent industrial, office and retail jobs that will be generated under TREND and IPLAN in municipalities of New Jersey
- projections of unemployment and unemployment rates under TREND and IPLAN

EXPECTED DIFFERENCES BETWEEN TREND AND IPLAN

It is expected that total *statewide* employment generated by residential and nonresidential development will not be noticeably different under IPLAN than under TREND. This is because there will be about the same amount of aggregate household and employment growth under the two scenarios and thus a similar requirement to construct shelter for these new residents and employees. There will be some difference in the form of the structures under IPLAN, i.e., more single-family attached and multifamily units for residential construction, and possibly more mixed-use development for nonresidential construction. The amount of space per resident and employee, however, will not change perceptibly.

It is expected, however, that there will be a significant difference in job generation by municipality. This local difference in job generation will be paired with unemployment rates by municipality to determine which scenario generates jobs to the most job-depressed areas. The Model investigates this possibility by comparing total jobs generated by the construction and operation of nonresidential facilities in the designated Urban Centers, closer-in Suburbs, and Rural areas of the State under the two different scenarios.

CRITICAL ASSUMPTIONS AND PARAMETERS

1. Construction productivity and construction cost will increase at the rates observed in the past. It is expected that construction labor will cost more per hour, but fewer labor-hours will be required to construct a set amount of residential and nonresidential space. In the Economic Impact Model, construction cost is projected to increase annually at a rate equal to the average annual rate of change in the 1980-1987 period of the U.S. Department of Commerce Composite, Federal Housing Administration Composite, and the Turner Construction Company Deflator. In addition, employee-hour requirements per deflated dollar for various types of new construction are projected to decline at the rates that have been observed by the U.S.

Bureau of Labor Statistics during the 1958-1976 period.[3] The parameters used in the Economic Impact Model are as follows:

CONSTRUCTION LABOR-HOURS GENERATED
(PER $1,000 OF RESIDENTIAL CONSTRUCTION VALUE AND PER 1,000 SQUARE FEET OF NONRESIDENTIAL SPACE)

Type of Construction	1990	1995	2010
Residential	14.5	13.1	9.9
Office	516	452	258
Industrial	555	477	242
Retail	516	452	258

2. While the number and location of the new jobs may change over time, the sectoral composition of the new employment remains unchanged. In each municipality the percent distribution of employment among industrial, office, and retail sectors is assumed to remain the same over time in both development scenarios. In the determination of new industrial, office, and retail jobs that will be created in an area, the Economic Impact Model multiplies total new employment in the municipality (which is generated by a regression line fit to the past and extended to the future for TREND and IPLAN), by the sectoral percentages appropriate to the municipality, and sums the results for all municipalities in the area.

3. The vacancy rate of the housing stock remains unchanged in 1990, 1995, and 2010. This assumption permits the projection of the total of new housing units that will be built during the 1990-1995 and 1990-2010 periods on the basis of the projections of new *occupied* housing units that are generated by the Housing Demand/Supply Model.

4. Construction cost is a determinate fraction of the total sales price of new homes. It is assumed in the Economic Impact Model that construction cost constitutes 34 percent of the total sales price of new homes. Furthermore, this percentage is assumed to remain unchanged between 1990 and 2010. This assumption permits the determination of construction cost on the basis of new housing values.

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[3] See, for example, Robert Ball, "Employment Created by Construction Expenditures," *Monthly Labor Review*, December 1981; and Barbara Bingham,"Labor and Material Requirements for Commercial Office Building Projects," *Monthly Labor Review*, May 1981.

5. The new space that will be developed in a particular sector may be determined on the basis of the number of new employees and the average amount of space that an employee in the sector will need. In the Economic Impact Model, the space need per worker is 667 square feet in the industrial sector, 400 square feet in the retail sector, and 285 square feet in the office sector.

TREND FINDINGS

Construction Jobs

The projection of construction jobs under TREND is presented in Exhibit 1. New residential and nonresidential development is expected to generate 7,877 construction jobs annually between 1990 and 2010, the majority of which are for development that will take place in Suburban communities (2,674 jobs) and Suburban-Rural communities (2,617 jobs). The gains in construction jobs among Rural Centers and Urban Centers are modest (47 and 77 per year, respectively). The Major Urban Centers, on the other hand, are expected to lose construction jobs at the rate of four jobs per year between 1990 and 2010.

Permanent Employment

Projections of new jobs created under TREND are presented in Exhibit 2. Between 1990 and 2010, there will be 653,600 new jobs in New Jersey, the majority of which will be created in Suburban communities (319,550 jobs) and Suburban-Rural communities (154,680 jobs). The employment gains in Urban-Suburban communities will also be significant (108,638 jobs). In contrast, the Major Urban Centers are projected to lose 18,581 jobs in the 1990-2010 period.[4]

Unemployment

Projections of unemployment are presented in Exhibit 3. The number of people who are unemployed in New Jersey will decline from 184,062 in 1990 to 156,470 in 2010, representing a reduction of 27,593 persons over the period. If all the new jobs are taken by residents of the communities where these jobs are created, nearly half of the decline in unemployment (13,090 jobs) will take place in Suburban communities, while nearly one-fifth of the number of formerly unemployed workers will be residents of Urban-Suburban areas. Under TREND, the Major Urban Centers will have more unemployed people in 2010 than is the case today.

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4 Only the most significant community categories of gain or loss are discussed here.

EXHIBIT 1
PROJECTIONS OF CONSTRUCTION JOBS CREATED BY NEW DEVELOPMENT

TREND CONDITIONS

BGR CLASSIFICATION	BGR Code	1990-1995	1990-2010
New Jersey		8,956	7,877
Major Urban Center	3	-301	-4
Urban Center	1	108	201
Urban-Suburban	2	397	642
Seashore-Resort	0	759	538
Rural Center	7	48	47
Urban Center (Rural)	9	29	77
Suburban	4	3,173	2,674
Suburban-Rural	5	3,444	2,617
Rural Center (Rural)	8	174	122
Rural	6	1,125	963

IPLAN CONDITIONS

BGR CLASSIFICATION	BGR Code	1990-1995	1990-2010
New Jersey		8,296	7,182
Major Urban Center	3	207	327
Urban Center	1	763	656
Urban-Suburban	2	660	910
Seashore-Resort	0	1,035	736
Rural Center	7	210	175
Urban Center (Rural)	9	82	123
Suburban	4	2,358	1,931
Suburban-Rural	5	2,192	1,650
Rural Center (Rural)	8	161	114
Rural	6	628	560

INCREASE IN CONSTRUCTION JOBS AS A RESULT OF IMPLEMENTING IPLAN

BGR CLASSIFICATION	BGR Code	1990-1995	1990-2010
New Jersey		-660	-695
Major Urban Center	3	508	331
Urban Center	1	655	455
Urban-Suburban	2	263	268
Seashore-Resort	0	276	198
Rural Center	7	162	128
Urban Center (Rural)	9	-29	-77
Suburban	4	-815	-743
Suburban-Rural	5	-1,252	-967
Rural Center (Rural)	8	-13	-8
Rural	6	-497	-403

Source: CUPR Economic Impact Model, 1992

EXHIBIT 2
PROJECTIONS OF NEW JOBS

TREND CONDITIONS

BGR Classification	BGR Code	1995	2010
New Jersey		101,799	653,600
Major Urban Center	3	-13,904	-18,581
Urban Center	1	-3,473	6,621
Urban-Suburban	2	12,830	108,638
Seashore-Resort	0	1,208	2,837
Rural Center	7	1,272	8,951
Urban Center (Rural)	9	143	14,326
Suburban	4	57,762	319,550
Suburban-Rural	5	33,125	154,680
Rural Center (Rural)	8	2,547	6,673
Rural	6	10,289	49,904

IPLAN CONDITIONS

BGR Classification	BGR Code	1995	2010
New Jersey		101,799	653,601
Major Urban Center	3	-1,378	43,459
Urban Center	1	7,867	60,217
Urban-Suburban	2	24,775	172,289
Seashore-Resort	0	1,052	2,145
Rural Center	7	4,576	25,149
Urban Center (Rural)	9	143	14,324
Suburban	4	33,100	192,962
Suburban-Rural	5	22,130	102,669
Rural Center (Rural)	8	2,536	6,611
Rural	6	6,998	33,776

INCREASE IN NUMBER OF NEW JOBS AS A RESULT OF IMPLEMENTING IPLAN

BGR Classification	BGR Code	1995	2010
New Jersey		0	1
Major Urban Center	3	12,526	62,040
Urban Center	1	11,340	53,596
Urban-Suburban	2	11,945	63,651
Seashore-Resort	0	-156	-692
Rural Center	7	3,304	16,198
Urban Center (Rural)	9	0	-2
Suburban	4	-24,662	-126,588
Suburban-Rural	5	-10,995	-52,011
Rural Center (Rural)	8	-11	-62
Rural	6	-11	-62

Source: CUPR Economic Impact Model, 1992

EXHIBIT 3

PROJECTIONS OF UNEMPLOYMENT

TREND CONDITIONS

BGR Classification	BGR Code	1990	1995	2010	Change 1990-1995	Change 1990-2010
New Jersey		184,062	163,702	156,470	-20,360	-27,593
Major Urban Center	3	35,413	38,194	35,647	2,781	234
Urban Center	1	28,215	28,909	27,710	694	-505
Urban-Suburban	2	35,192	32,626	30,401	-2,566	-4,791
Seashore-Resort	0	3,339	3,097	3,257	-242	-82
Rural Center	7	3,165	2,911	2,781	-254	-384
Urban Center (Rural)	9	2,404	2,376	1,695	-28	-709
Suburban	4	47,735	36,183	34,645	-11,552	-13,090
Suburban-Rural	5	17,655	11,030	11,577	-6,625	-6,078
Rural Center (Rural)	8	2,226	1,716	2,019	-510	-207
Rural	6	8,718	6,660	6,737	-2,058	-1,981

IPLAN CONDITIONS

BGR Classification	BGR Code	1990	1995	2010	Change 1990-1995	Change 1990-2010
New Jersey		184,062	163,702	156,470	-20,360	-27,592
Major Urban Center	3	35,413	35,689	33,171	276	-2,242
Urban Center	1	28,215	26,642	25,597	-1,573	-2,618
Urban-Suburban	2	35,192	30,237	27,816	-4,955	-7,376
Seashore-Resort	0	3,339	3,128	3,284	-211	-55
Rural Center	7	3,165	2,250	2,136	-915	-1,029
Urban Center (Rural)	9	2,404	2,376	1,695	-28	-709
Suburban	4	47,735	41,115	39,742	-6,620	-7,993
Suburban-Rural	5	17,655	13,229	13,628	-4,426	-4,027
Rural Center (Rural)	8	2,226	1,718	2,022	-508	-204
Rural	6	8,718	7,318	7,379	-1,400	-1,339

ADDITIONAL REDUCTION IN UNEMPLOYMENT AS A RESULT OF IMPLEMENTING IPLAN

BGR Classification	BGR Code	1995	2010
New Jersey		0	0
Major Urban Center	3	-2,505	-2,476
Urban Center	1	-2,267	-2,113
Urban-Suburban	2	-2,389	-2,585
Seashore-Resort	0	31	27
Rural Center	7	-661	-645
Urban Center (Rural)	9	0	0
Suburban	4	4,932	5,097
Suburban-Rural	5	2,199	2,051
Rural Center (Rural)	8	2	3
Rural	6	658	642

Source: CUPR Economic Impact Model,1992

Unemployment Rates

Projections of unemployment rates for TREND are presented in Exhibit 4. Statewide unemployment rates will decline from 4.4 percent in 1995 to 4.0 percent in 2010. Unemployment rates will decline in all but one area of the State; the unemployment rate for the Major Urban Centers is expected to increase by one-sixth of a percentage point during the 1990-2010 period. Areas designated as Urban Centers-Rural (Vineland and Millville) will show the largest drop in unemployment rates (2.4 percentage points), followed by Suburban-Rural communities (2 percentage points) and areas designated as Rural Centers-Rural (1.8 percentage points).

The above findings on the distribution of construction jobs, permanent jobs among different types of communities, and the differences in the changes in unemployment rates over time under TREND comport with intuitive feelings about the location of new jobs relative to the location of high jobless areas. If current trends in land use, which encourage extensive development of Suburban areas together with the development of Rural areas, are allowed to continue, the bulk of the jobs generated by the construction of residential and nonresidential facilities as well as the jobs related to the operation of new nonresidential facilities will be created outside areas that have been experiencing high unemployment. TREND, therefore, will do little towards the alleviation of problems of unemployment in the Urban Centers, major and otherwise, of the State.

IPLAN FINDINGS

Construction Jobs

All areas in the State will gain construction jobs under IPLAN. New residential and nonresidential development is expected to generate 7,182 construction jobs[5] annually between 1990 and 2010, a sizeable part of which is from development that will take place in Suburban communities (1,931 jobs) and Suburban-Rural communities (1,650 jobs). However, the gains in construction jobs among Urban-Suburban and Urban Centers are also significant (910 and 656 jobs per year, respectively). The Major Urban Centers are expected to *gain* 327 construction jobs a year between 1990 and 2010. Projections of construction jobs under IPLAN are presented in Exhibit 1.

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[5]A slightly smaller number of construction jobs occurs under IPLAN than under TREND due to the dollar reduction in cost of single-family detached versus single-family attached and multifamily housing. There is a larger percentage of the latter two categories of housing under IPLAN versus TREND.

EXHIBIT 4
PROJECTIONS OF UNEMPLOYMENT RATES

TREND CONDITIONS

BGR Classification	BGR Code	1990	1995	2010	Change 1990-1995	Change 1990-2010
New Jersey		5.0	4.4	4.0	-0.6	-1.0
Major Urban Center	3	9.1	10.1	9.7	1.0	0.6
Urban Center	1	6.6	6.8	6.5	0.2	-0.1
Urban-Suburban	2	4.2	4.0	3.8	-0.2	-0.4
Seashore-Resort	0	6.3	5.5	4.7	-0.8	-1.6
Rural Center	7	4.8	4.5	4.4	-0.3	-0.4
Urban Center (Rural)	9	6.7	6.6	4.3	-0.1	-2.4
Suburban	4	3.8	2.9	2.7	-0.9	-1.1
Suburban-Rural	5	4.0	2.3	2.0	-1.7	-2.0
Rural Center (Rural)	8	5.8	4.2	4.3	-1.6	-1.5
Rural	6	4.6	3.4	2.8	-1.2	-1.8

IPLAN CONDITIONS

BGR Classification	BGR Code	1990	1995	2010	Change 1990-1995	Change 1990-2010
New Jersey		5.0	4.4	4.0	-0.6	-1.0
Major Urban Center	3	9.1	9.1	8.0	0.0	-1.1
Urban Center	1	6.6	6.1	5.5	-0.5	-1.1
Urban-Suburban	2	4.2	3.7	3.4	-0.5	-0.8
Seashore-Resort	0	6.3	5.4	4.5	-0.9	-1.8
Rural Center	7	4.8	3.4	3.0	-1.4	-1.8
Urban Center (Rural)	9	6.7	6.3	3.7	-0.4	-3.0
Suburban	4	3.8	3.3	3.1	-0.5	-0.7
Suburban-Rural	5	4.0	2.9	2.6	-1.1	-1.4
Rural Center (Rural)	8	5.8	4.3	4.4	-1.5	-1.4
Rural	6	4.6	3.8	3.4	-0.8	-1.2

ADDITIONAL REDUCTION IN UNEMPLOYMENT RATES
AS A RESULT OF IMPLEMENTING IPLAN

BGR Classification	BGR Code	1995	2010
New Jersey		0	0
Major Urban Center	3	-1.0	-1.7
Urban Center	1	-0.7	-1.0
Urban-Suburban	2	-0.3	-0.4
Seashore-Resort	0	-0.1	-0.2
Rural Center	7	-1.1	-1.4
Urban Center (Rural)	9	-0.3	-0.6
Suburban	4	0.4	0.4
Suburban-Rural	5	0.6	0.6
Rural Center (Rural)	8	0.1	0.1
Rural	6	0.4	0.6

Source: CUPR Economic Impact Model,1992

Permanent Employment

Statewide, the same number of new jobs (653,600) will be created under TREND and IPLAN in the 1990-2010 period. However, every area will experience a net increase in jobs in this period. Job gains are distributed fairly evenly among several groups of communities. Suburban communities claim 192,962 jobs, followed by Urban-Suburban areas (172,289 jobs). Job gains by Suburban-Rural and Urban Centers are also significant (respectively, 102,669 jobs and 60,217 jobs). Projections of new jobs under IPLAN conditions are displayed in Exhibit 2.

Unemployment

The number of unemployed people will be the same under IPLAN conditions as under TREND conditions, i.e., there will be 156,470 unemployed in 2010, reflecting a reduction of 27,592 jobless people from the 1990 total of 184,062. The largest group of unemployed people are to be found in suburban communities (39,742 people in 2010), followed by the unemployed in the Major Urban Centers (33,171 people).

All areas in the State will experience a reduction in the number of the unemployed. The largest reduction will be in Suburban communities (7,993 people), followed by the reduction in Urban-Suburban communities (7,376 people).There is a further reduction of 4,027 in Suburban-Rural communities. The reductions in Major Urban Centers and Urban Centers are also quite significant (4,860 people total). Projections of unemployment under IPLAN conditions are displayed in Exhibit 3.

Unemployment Rates

Statewide unemployment rates under IPLAN conditions will be the same as those projected under TREND conditions, i.e., 4.4 percent in 1995 and 4.0 percent in 2010, reflecting a reduction of one percentage point during the period 1990–2010. Projections of unemployment rates under IPLAN conditions are displayed in Exhibit 4.

Unemployment rates will decline in all areas of the State. Areas designated as Urban Center (Rural) will experience the largest decline in unemployment rates (3 percentage points). The reduction in unemployment rates among Seashore-Resort communities and Rural Centers will also be significant (1.8 percentage points in the 1990-2010 period), while the change among Urban-Suburban areas will be modest (0.8 percentage point).

The above findings confirm the study team's intuitive feelings about the impacts of the changes in development patterns: Channeling economic activities into established urban communities will help alleviate unemployment in these communities while not accelerating unemployment elsewhere.

COMPARISON OF TREND AND IPLAN

Construction Jobs

Statewide, a total of 35 fewer construction jobs per year will be created under IPLAN than under TREND in the 1990-2010 period. Four groups of communities—Major Urban Centers, Urban-Suburban, Urban Center, Seashore-Resort, and Rural Centers—will gain more construction jobs under IPLAN. The four groups that will gain somewhat fewer construction jobs are Suburban areas, Suburban-Rural areas, Rural Centers (Rural), and Rural areas. Comparative statistics relative to construction employment are displayed in Exhibit 1.

These findings underscore the expectation that channeling new development to Major Urban Centers, Urban Centers, and Urban-Suburban areas will lead to the creation of more construction jobs in these areas under IPLAN than under TREND. They also confirm intuitive feelings that the lower value of single-family attached and multifamily housing, which IPLAN encourages in preference to single-family detached housing, will lead to the generation of slightly fewer constructions labor-hours (thus, construction jobs) than under TREND.

Permanent Employment

While no more or less jobs will be created statewide under IPLAN or TREND, the implementation of IPLAN will lead to a different distribution of the new jobs among the various groups of communities in the State. The Major Urban Centers, which are expected to lose 18,581 jobs under TREND, will gain 43,459 new jobs under IPLAN, representing a net gain of 62,040 new jobs. The Urban Centers and Urban-Suburban areas will also benefit substantially from IPLAN, posting gains of, respectively, 53,596 and 63,651 new jobs over what can be expected under TREND conditions.

Areas in the State that will not benefit from IPLAN in terms of employment are primarily Suburban communities and Suburban-Rural communities. These communities will gain fewer jobs under IPLAN than under TREND conditions. These comparative statistics are presented in Exhibit 2.

Unemployment

Reflecting the gains in new jobs, the Major Urban Centers, Urban Centers, Urban-Suburban communities, and Rural Centers will see the unemployed population in their areas reduced to a greater extent under IPLAN than under TREND. Major Urban Centers, Urban Centers, and Urban-Suburban areas, in particular, will reduce the number of the jobless by over 7,000 people.

On the other hand, Suburban areas and Suburban-Rural areas will witness somewhat less reduction in unemployment under IPLAN. The reduction in unemployment among Suburban communities, for example, will be 5,097 lower under IPLAN. Similarly, Suburban-Rural areas will have 2,051 more people unemployed under IPLAN than under TREND. The relevant statistics are displayed in Exhibit 3.

Unemployment Rates

Reflecting mainly the impacts of the channeling of new jobs under IPLAN, all areas of the State will experience a decline in their unemployment rates. Developed Urban and closer-in Suburban areas will experience a larger decline, Suburban and Rural areas a smaller decline, in unemployment rates.

The Major Urban Centers will gain the most from IPLAN. These communities will see their unemployment rates reduced by 1.7 percentage points under IPLAN. The gain realized by Rural Centers will also be significant, These communities are projected to have their unemployment rates reduced by 1.4 percentage points under IPLAN.

In terms of unemployment, Rural areas and Suburban-Rural areas will not benefit as much from IPLAN. Their unemployment rates will be reduced less under IPLAN by 0.6 percentage point from what can be expected under TREND conditions.

In summary, IPLAN will generate slightly fewer construction jobs, but these jobs will be distributed less unevenly among the various areas of the State than under TREND conditions. Development under IPLAN and TREND will generate the same number of permanent jobs. However, these jobs will be channeled to the developed Urban areas of the State, in preference to the Suburban and undeveloped areas. Since the developed Urban areas are also areas of high unemployment, this channelling has the ultimate effect of reducing unemployment in these areas to a much greater extent than otherwise under TREND conditions. Thus, the distributional effects of IPLAN have great potential for revitalizing Urban and closer-in Suburban areas.

PART III

—

FISCAL IMPACTS OF PROJECTED GROWTH

ECONOMIC ASSESSMENT: PART III— FISCAL IMPACTS OF PROJECTED GROWTH

BACKGROUND

A Fiscal Impact Model is used to compare for any given year, the local public costs versus public revenues from servicing residents, workers and employees under TREND and IPLAN growth projections. The local governmental sectors examined include all municipalities and school districts of New Jersey. The analysis encompasses impacts from both residential and nonresidential development. The fiscal impact thus shows the difference between the municipal and school district expenditures to service residential and nonresidential development versus the revenues that these governments receive from this development. If costs exceed revenues, a deficit is incurred for that year; if revenues exceed costs, a surplus is generated.

The fiscal impact analysis is the third portion of the overall economic assessment of TREND and IPLAN. The population and employment subroutine of the Land Capacity Model controlled by the Econometric Model at the labor area level provides the future population and employment distribution for TREND versus IPLAN.

The Econometric Model is thus the overall guiding element for future statewide and regional growth. The two remaining models, Economic and Fiscal, are driven by the results from the Econometric and Land Capacity Models. The Economic Model identifies the construction and permanent employment generated by residential and nonresidential growth under TREND and IPLAN. The Fiscal Impact Model indicates the local fiscal consequences from residential and nonresidential development.

CONCEPTS

The Fiscal Impact Model incorporates the four procedures inherent in any fiscal impact assessment. These include: (1) determining the population for whom public services must be provided by the public sector (people, public school age children, and employees); (2) translating this population into consequent public service costs; (3) projecting the revenues received by the host governmental jurisdictions; and (4) comparing costs to revenues thereby yielding a net result. These calculations are effected through a series of inputs and outputs.

Population is determined from the Econometric and Land Capacity Models described earlier. The output of residents, public school children, and workforce by community for TREND and IPLAN then serves as input for determining the ensuing public service expenditures. To accomplish this, first each municipality's existing service costs (operating and capital) per capita and per worker are determined; in tandem each school

district's per student costs (operating and capital) are also determined. These per unit expenditures are derived for all individual municipalities and school districts in New Jersey. They are then applied to the residents, workers, and public school children by community for TREND and IPLAN that were previously calculated to yield the local municipal and school district service costs for the two scenarios.

The next step is to calculate the local revenues received by the affected governmental jurisdictions for TREND and IPLAN, respectively. This is accomplished by factoring such inputs as the anticipated growth by community for TREND and IPLAN in terms of numbers, type, and sales prices of residential units and the magnitude, composition, and value of nonresidential development. This information comes from such sources as the Econometric and Land Capacity Models and the house price subroutine of the Housing Demand/Supply Model. In addition, municipal and school district revenue characteristics are considered. These include: the property tax rate, local nonproperty income, and state aid per capita to both municipalities and school districts. The product of the local community characteristics for TREND and IPLAN (i.e. tax base, student population, etc.) multiplied by the tax rate, state aid per pupil, and so on, yields incoming revenues. Revenues are then matched against the service costs that were previously projected to yield the net fiscal impact by community for TREND and IPLAN.

In short, the Fiscal Impact Model operates through a series of linked inputs and outputs. Inputs include the residential and non-residential populations by community, existing per capita/worker/student service costs, and numerous revenue parameters. Outputs encompass public service costs, revenues, and the net difference between these two values.

TREND and IPLAN are both evaluated following the same input to output strategy. Some of the input values are anticipated to differ, however, for the two development scenarios and so will their attendant fiscal impact. Anticipated differences are discussed below.

EXPECTED DIFFERENCES BETWEEN TREND AND IPLAN

Fiscal impact is influenced by the magnitude of growth—the scale of residential and nonresidential development taking place locally. Fiscal impact is also affected by the profile of growth such as the type and value of the residential and nonresidential development. It can be expected that TREND and IPLAN will vary on some of these dimensions.

The outcome will also differ even if there are no significant differences in the magnitude and profile of growth under TREND and IPLAN because service costs are anticipated to be lower for the latter versus the former for the following reasons:

1) It is anticipated that IPLAN as opposed to TREND will distribute a larger share of the state's population to communities that have relatively more excess operating service capacity (i.e., municipalities that have historically lost population but have retained operating capacity.)

2) It is anticipated that IPLAN will distribute a somewhat larger share of the state's population to communities with reserve infrastructure capacity. This, for instance, is considered directly in the School Capital Facilities Model with results incorporated into the Fiscal Impact Model. To the extent that IPLAN versus TREND can draw on reserve infrastructure capacity because it distributes growth differently, then this is a factor lowering service costs in IPLAN's favor.

3) The above two factors concern the distribution of growth under TREND and IPLAN and the consequent impact on service costs. The land use pattern is yet another consideration. For instance, because IPLAN fosters higher density, clustered development relative to TREND, it will require somewhat fewer road improvements. (Specific results are determined in the Transportation Infrastructure Model—CUPR Road.) This has an immediate savings in terms of infrastructure costs. It also provides for operating efficiencies (i.e., if fewer roads have to be built, then road maintenance costs will be lower). To the extent that IPLAN versus TREND incorporates land use approaches that are more efficient to provide capital facilities for, then the former will most likely have lower service costs.

Thus, if there is excess capacities or service efficiencies available in municipalities and school districts and they can be drawn upon by either development scenario this will determine the outcome of lowest cost relative to revenues.

CRITICAL ASSUMPTIONS AND DATA PARAMETERS FOR TREND AND IPLAN ANALYSIS

The Fiscal Impact Model incorporates many assumptions and financial values. Some of the more significant are described below:

1. *Population and expenditure relationships.* The analysis relates public service outlays to the service population—the number of people, the size of the workforce and the count of public school children. In general, it is assumed that as the population increases, costs will rise proportionally by factoring per unit expenses (i.e., per capita outlay) as detailed shortly. Some measure of slack or excess capacity, however, is factored for communities that have historically lost population. The slack is assumed to equal 10 percent of the population decline. That is, if a community lost 100 residents over a given period of time, then it is anticipated that it could accommodate

10 new residents without additional outlay. The remaining 90 (or the entire 100 in a situation of no slack capacity) would be charged at the per unit service outlays. A similar procedure is applied for school districts. Thus, the population trend (i.e., loss) is used as a rough proxy measure of potential excess service capacity.

The same procedure is applied for both TREND and IPLAN. The two scenarios however, differ, in the distribution of the population to specific local jurisdictions.

2. *Residential and nonresidential associated municipal costs.* Before calculating per unit municipal service costs as described below, total existing service expenses are apportioned into residential and nonresidential-associated categories. This is done on the basis of the composition of the tax base, namely the averaged proportional distribution of the number of parcels and value of properties by land use category. As an example, if 10 percent of a community's parcels and 30 percent of its property tax base is nonresidential, then the averaged incidence—20 percent—of its municipal outlays would be classified as serving the nonresidential sector, with the remaining 80 percent serving the residential sector. Each of these expense groups would then be divided by the total population and workforce, respectively, to derive per unit costs.

The same allocation procedure is applied for both TREND and IPLAN.

3. *Per unit operating costs.* Per unit (i.e., per capita or per pupil) operating expenditures are determined by dividing the public service operating outlays (in the municipal case apportioned into residential and nonresidential categories) by the respective service populations—residents, workers, and pupils. The same costing procedure is applied for both TREND and IPLAN. The two differ, however, in terms of their distribution of the population to different communities and school districts. There is also a distinction with regard to lane mile additions and sewage treatment demands, which in turn affect future operating costs in these services.

4. *Per unit infrastructure costs.* In general, municipal and school infrastructure costs are also expressed on a per capita or per pupil basis derived for each municipality and school district. Infrastructure costs for TREND and IPLAN will vary as these two scenarios distribute the population to differing local jurisdictions. Infrastructure costs are further influenced from the results of the School Capital Facilities Model and other State Plan infrastructure analyses (i.e. road and sewage) for TREND and IPLAN, respectively.

5. *Revenues.* For municipal revenues, existing values were factored into the Fiscal Impact Model. This includes the municipal tax rate, municipal revenues from local nonproperty taxes as well as municipal income from intergovernmental sources. School revenues were more of an issue, however, because the allocation of a major revenue, aid from the state's Quality Education Act (QEA), is currently under review by the state's legislature and courts.

The Fiscal Impact Model applies QEA to the 1995 and latter projection periods as QEA is currently envisioned to be implemented in the future. The major allocation parameters are as follows:

a. Transition aid (intended as a temporary measure) to those districts receiving this support under the first year of QEA is phased out by 1995.

b. School districts that are phased out of transition aid by 1995 also stop receiving assistance for teacher pension and social security costs.

c. Foundation aid is increased by one-third to a group of communities referred to in the QEA program as the "Urban 30."

d. Foundation aid is increased by 25 percent to a second group of communities that are less affluent (as measured by property tax valuation and income per student), yet are not members of the "Urban 30."

This allocation of QEA was suggested from interviews with staff from the State Department of Education. These officials caution, however, that QEA's provisions are currently under review by the legislature and the courts and hence it is extremely problematic to detail its future aid distribution. The profile indicated above is the "best sense" of QEA that can currently be specified.

The same QEA and other revenue values are applied for both the TREND and IPLAN analyses. Again, however, the amounts tendered under the two scenarios will differ as they distribute the state's population to varying local communities and school districts.

6. *Adjustment to the Econometric Model.* As explained in detail in *Report I—Research Strategy* the fiscal impact results are adjusted where appropriate to the public service expenditures and revenue projections contained in the Econometric Model. This step is followed to maintain equivalency of results.

TREND FINDINGS

Projecting Population

The key figures from this first step in a fiscal impact analysis, the identification of the population to whom public services are provided, are shown in Exhibit 1. These include New Jersey's future population, workforce, and public school children. As detailed in *Report I—Research Strategy* the fiscal impact analysis does not independently determine the populations shown in Exhibit 1 but rather incorporates the respective population outputs from other Models of the Impact Assessment. Since these other Models describe their respective population projections at length a detailed presentation is not appropriate here. The population and attendant development volumes, in turn, influence ensuing public service costs and revenues. These are summarized below, first for municipal governments, then for school districts.

Municipal Expenditures, Revenues, and Net Fiscal Impact

As of 1990* New Jersey municipalities expended $5.7 billion for public operating services and capital improvements. Over time municipal expenditures increase roughly proportional to the changes in population. From 1990 to 1995, the State will increase in size by less than one percent and in parallel municipal costs rise by a similar small increment of $2 million (Exhibit 2). Over the twenty-year projection period, the State population grows by about 7 percent and municipal spending rises by a similar order of magnitude, $5.7 billion in 1990 to $5.9 billion by 2010. (Costs do not exactly track the population change because of adjustments of the fiscal impact results to the Econometric Model.)

There are considerable differences by region. The Northeast, which has a small increase of some 2 percent in population from 1990 to 2010, experiences a similar modest rise in municipal outlays from $1.47 to $1.49 billion. By contrast, the East Central region which burgeons by 17 percent in population and about a third in its workforce, experiences a near one-fifth increase in its municipal spending from $0.62 to $0.73 billion.

The next step is to calculate municipal revenues. From 1990 to 2010 the total income received by the State's municipalities will increase from $5.7 billion to $6.3 million. The basis for this (not detailed in Exhibit 2) is as follows. Property tax income will grow from $2.3 to $2.7 billion—a reflection of an enlargement of the total equalized (full

*The latest expenditures and revenue data for New Jersey municipalities that were available at the time the Fiscal Impact Model was calibrated was for the year 1988. These figures were expressed in 1990 dollars. References to 1990 in this section therefore incorporates the 1988 municipal financial statistics expressed in 1990 dollars.

EXHIBIT 1

POPULATION, HOUSEHOLDS, EMPLOYMENT, AND PUBLIC SCHOOL CHILDREN STATEWIDE AND BY REGION—TREND AND IPLAN

State/Region	(A) Population (Identical TREND and IPLAN) 1990	1995	2010	Change 1990-1995 Number	Change 1990-1995 Percent	Change 1990-2010 Number	Change 1990-2010 Percent
State Total	7,730,198	7,786,100	8,250,202	55,912	0.7	520,014	6.7
Northeast	131,539	1,824,700	1,862,900	-6,839	-0.4	31,361	1.7
Northwest	1,824,321	1,793,200	1,758,201	-31,121	-1.7	-66,120	-3.6
West Central	1,222,442	1,130,201	1,279,200	18,759	1.7	167,758	15.1
East Central	986,327	1,029,100	1,152,300	42,773	-1.3	165,973	16.8
Southwest	1,453,796	1,473,799	593,900	20,003	1.4	149,905	10.3
South-Southwest	522,763	535,100	593,900	12,337	2.4	71,137	13.6

State/Region	(B) Households (Identical TREND and IPLAN) 1990	1995	2010	Change 1990-1995 Number	Change 1990-1995 Percent	Change 1990-2010 Number	Change 1990-2010 Percent
State Total	2,794,711	2,874,156	3,202,468	79,445	2.8	407,757	14.
Northeast	672,888	682,293	726,236	9,405	1.4	53,348	7.9
Northwest	652,035	650,948	666,425	-1,087	0.2	14,390	2.2
West Central	399,082	417,388	495,827	18,306	4.6	96,745	24.2
East Central	365,717	392,535	468,386	26,818	7.3	102,669	28.1
Southwest	511,098	529,017	607,777	17,919	3.5	96,679	18.9
South-Southwest	193,891	201,975	237,817	8,084	4.2	43,926	22.3

State/Region	(C) Employment (Identical TREND and IPLAN) 1990	1995	2010	Change 1990-1995 Number	Change 1990-1995 Percent	Change 1990-2010 Number	Change 1990-2010 Percent
State Total	3,665,400	3,767,200	4,319,000	101,800	2.8	653,600	17.8
Northeast	903,500	909,300	1,008,500	5,800	0.1	105,000	11.6
Northwest	937,600	920,600	931,100	-17,000	1.8	-6,500	-0.7
West Central	580,800	619,400	781,600	38,600	6.6	200,800	34.6
East Central	337,700	361,800	448,100	24,100	7.1	110,400	32.6
Southwest	648,200	690,100	868,200	41,900	6.5	220,000	33.9
South-Southwest	257,600	266,000	281,500	8,400	3.3	23,900	9.3

State/Region	(D) Public School Children (TREND and IPLAN)* 1990	1995	2010	Change 1990-1995 Number	Change 1990-1995 Percent	Change 1990-2010 Number	Change 1990-2010 Percent
State Total	1,090,000	1,160,000	1,420,700	70,000	6.4	330,700	30.3
Northeast	228,200	239,700	279,000	11,500	5.0	50,800	22.3
Northwest	265,600	266,700	279,400	1,100	0.4	13,800	5.2
West Central	147,300	159,100	217,500	11,800	8.0	70,200	47.7
East Central	143,400	159,500	208,200	16,100	11.2	64,800	45.2
Southwest	223,600	243,900	317,400	20,300	9.1	93,800	41.9
South-Southwest	81,900	91,100	119,100	9,200	11.2	37,200	45.4

*There are slight differences between TREND and IPLAN with respect to the public school children counts by region. These differences are minor however.

Note: Figures may not add/subtract to indicated totals because of rounding.

Source: Population and employment projection subroutine of the CUPR Land Capacity Model, 1992; CUPR School Capital Facilities Model, 1992.

value) property tax base from under $400 billion to $600 billion. The base gains from the increment of residential and nonresidential development in the State over the two-decade period (Exhibit 1). In addition, the new population and workforce will add to municipal non-property tax income from fees, fines, permits, interest earnings, etc; these monies will increase from $3.4 billion in 1990 to $3.6, billion in 2010. The combination of $2.7 billion in property and $3.6 billion in non-property taxes tallies to the $6.3 billion available to municipalities as of 2010.

The revenue income by regions differ reflecting the varying growth that is occurring and their respective underlying revenue profiles (i.e., dependence on the property tax). For instance, municipal income in the Northwest barely changes from the 1990 base because there is little growth overall in the region over the twenty year projection span. By contrast, the burgeoning East Central area sees municipal revenues jumping from $.6 billion in 1990 to $.8 billion by 2010.

The last step is the comparison of municipal cost to revenues. These are shown in Exhibit 2 for both the State and by region for the 1990 to 2010 projection period. There is no fiscal impact for 1990 because this is the starting point where there is equilibrium between municipal spending and revenues. Annual fiscal impacts are indicated for 1995 and 2010. To place the financial effects in perspective the annual dollar municipal fiscal impacts are expressed a percentage of total municipal revenue. For instance, if this figure is minus 5 percent it means that there is a shortfall equal to one-twentieth of the total municipal income; municipal taxes would have to be raised or services/expenditures trimmed by five percent to meet the shortfall. Conversely, a surplus of 5 percent implies a financial reserve equal to one-twentieth of all revenues—a reserve that could be tapped for lowering taxes and/or improving public service quality.

For 2010, the Fiscal Impact Model indicates that municipalities under TREND will be experiencing moderate surpluses. The aggregate statewide surplus in $390 million—equal to 6 percent of the revenue base. The results differ somewhat by region. Those areas that are growing at a moderate to fast clip, especially if they are slated to receive significant amounts of nonresidential growth, do better fiscally. The variation, however, is not of a margin that is of dramatic proportions. In doing a twenty year fiscal impact projection the results should be interpreted on an order of magnitude basis. From this perspective the conclusions are as follows: By the year 2010 New Jersey municipalities should be at a slightly improved financial posture. That is they can accommodate growth at a somewhat better than break-even basis. A similar order of magnitude outcome is observed throughout the State.

EXHIBIT 2

ANNUAL MUNICIPAL EXPENDITURES, REVENUES, AND FISCAL IMPACT TREND CONDITIONS: 1990-2010

($ in 000's)

				1990-1995		1990-2010	
	1990*	1995	2010	Total	Percent	Total	Percent
STATEWIDE							
Mun. Expenditures	$5,666,100	$5,668,410	$5,930,752	$2,310	0	$264,652	5
Mun. Revenues	5,666,100	5,672,324	6,321,611	6,224	0	655,511	12
Mun. Fiscal Impact	–	3,460	390,253	–	–	–	–
Mun. Fiscal Impact (%)	–	0%	6%	–	–	–	–
NORTHEAST							
Mun. Expenditures	$1,472,979	$1,450,241	$1,490,392	$-22,738	-1	$17,413	1
Mun. Revenues	1,472,979	1,449,066	1,577,128	-23,913	-1	104,149	7
Mun. Fiscal Impact	–	-1,174	86,736	–	–	–	–
Mun. Fiscal Impact (%)	–	0%	6%	–	–	–	–
NORTHWEST							
Mun. Expenditures	$1,582,158	$1,514,764	$1,441,701	$-67,394	-4	$-140,457	-9
Mun. Revenues	1,582,158	1,521,149	1,566,899	-61,009	-4	-15,259	-1
Mun. Fiscal Impact	–	6,385	125,197	–	–	–	–
Mun. Fiscal Impact (%)	–	0%	8%	–	–	–	–
WEST CENTRAL							
Mun. Expenditures	$722,396	$749,821	$856,609	$27,425	4	$134,213	18
Mun. Revenues	722,396	726,166	852,657	3,770	0	130,261	18
Mun. Fiscal Impact	–	-2,377	-4,231	–	–	–	–
Mun. Fiscal Impact (%)	–	0%	0%	–	–	–	–
EAST CENTRAL							
Mun. Expenditures	$616,199	$651,940	$727,379	$35,741	5	$111,180	18
Mun. Revenues	616,199	668,390	792,852	52,191	8	176,653	29
Mun. Fiscal Impact	–	16,450	65,473	–	–	–	–
Mun. Fiscal Impact (%)	–	2%	8%	–	–	–	–
SOUTHWEST							
Mun. Expenditures	$798,781	$816,853	$898,847	$18,072	2	$100,066	12
Mun. Revenues	798,781	799,892	947,477	1,111	0	148,696	18
Mun. Fiscal Impact	–	-17,296	48,303	–	–	–	–
Mun. Fiscal Impact (%)	–	2%	5%	–	–	–	–
SOUTH-SOUTHWEST							
Mun. Expenditures	$473,587	$484,790	$515,823	$11,203	2	$42,236	9
Mun. Revenues	473,587	507,661	584,597	34,074	7	111,010	23
Mun. Fiscal Impact	–	22,870	68,774	–	–	–	–
Mun. Fiscal Impact (%)	–	4%	12%	–	–	–	–

* Adjusted 1988 municipal expenditures and revenues expressed in 1990 dollars (see text).

Note: Figures may not add/subtract to indicated totals because of rounding and because of data reporting; the fiscal impact percent is equal to the annual fiscal impact divided by the total annual revenues.

Source: CUPR Fiscal Impact Model, 1992.

School District Expenditures, Revenues, and Net Fiscal Impact

The flow of the school fiscal impact analysis is a mirror of that of the municipal. The population to be accommodated, in this case the number of public school children, is first determined (Exhibit 1) and then translated into the attendant need for educational service and costs. The latter under TREND are detailed in Exhibit 3.

In brief, as of 1990,* New Jersey school districts spent an aggregate of $10 billion statewide. Over time, as enrollment gains so will expenditures. From 1990 to 2010 the number of public school children will increase by some 30 percent and in tandem educational outlays will rise by the same increment from $10 to $13 billion. The biggest upward swings are not surprisingly in the areas that are growing the fastest. Thus the East Central gains half again in both students and spending from 1990 to 2010; by contrast the Northwest region has a 5 percent rise in its pupil population over the two decade span and its spending commensurately rises by about one-twentieth.

The residential growth that feeds the enrollment gains also contributes to school district income in the form of added property taxes. The State's nonresidential growth adds property tax revenues with no educational cost liability. The increment in students affects State aid and other school district income. All of these revenues are calculated at the individual school district level and then aggregated to regions and then to the State. From 1990 to 2010, total school district revenues under TREND rise from $10 billion to just shy of $12 billion—an increase of nearly one-fifth.

Since school districts expenditures are anticipated to increase by about 30 percent while revenues gain by 20 percent, a shortfall or fiscal impact deficit ensues. The results are detailed in Exhibit 3. An annual school deficit of over $1 billion is projected under TREND for 2010. To place that figure in perspective, the shortfall is equivalent to about 9 percent of total annual school district revenues. There are differences by region with the faster growing regions having a larger fiscal deficit. Again, however, on an order of magnitude basis for a twenty year projection the results by area are more alike than dissimilar. Under TREND, school districts in the future will be under moderate financial pressure from accommodating growth.

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*In this case the school expenditures and revenues from the 1991-92 school year are used because this is the first period that an important new revenue source, state aid from the Quality Education Act (QEA) is in effect. Thus references to the 1990 school year actually incorporate statistics from the 1991-92 educational period.

EXHIBIT 3

ANNUAL SCHOOL DISTRICT EXPENDITURES, REVENUES, AND FISCAL IMPACT BY REGION
TREND CONDITIONS: 1990-2010
($ in 000's)

	1990*	1995	2010	1990-1995 Total	1990-1995 Percent	1990-2010 Total	1990-2010 Percent
STATEWIDE							
School Expenditures	$10,042,651	$10,650,430	$12,995,987	$607,779	6%	$2,953,336	29%
School Revenues	10,042,651	10,087,016	11,911,203	44,365	0	1,868,552	18
School Fiscal Impact	–	-563,414	-1,084,784	–	–	–	–
School Fiscal Impact (%)	–	6%	9%	–	–	–	–
NORTHEAST							
School Expenditures	$2,143,592	$2,230,079	$2,623,785	$86,487	4%	$480,193	22%
School Revenues	2,144,592	2,144,776	2,487,207	184	0	342,615	16
School Fiscal Impact	–	-85,304	-136,578	–	–	–	–
School Fiscal Impact (%)	–	4%	5%	–	–	–	–
NORTHWEST							
School Expenditures	$2,551,464	$2,571,655	$2,706,287	$20,191	1%	$154,823	6%
School Revenues	2,551,464	2,479,001	2,544,784	-72,463	-3	-6,680	0
School Fiscal Impact	–	-92,654	-161,503	–	–	–	–
School Fiscal Impact (%)	–	4%	6%	–	–	–	–
WEST CENTRAL							
School Expenditures	$1,411,011	$1,510,027	$2,091,180	$99,016	7%	$680,169	48%
School Revenues	1,411,011	1,372,142	1,746,602	-38,869	-3	335,591	23
School Fiscal Impact	–	-137,885	-344,578	–	–	–	–
School Fiscal Impact (%)	–	10%	19%	–	–	–	–
EAST CENTRAL							
School Expenditures	$1,288,736	$1,438,845	$1,879,721	$150,109	11%	$590,985	45%
School Revenues	1,288,736	1,329,383	1,689,369	40,647	3	400,633	31
School Fiscal Impact	–	-109,462	-190,351	–	–	–	–
School Fiscal Impact (%)	–	8%	11%	–	–	–	–
SOUTHWEST							
School Expenditures	$1,930,770	$2,102,890	$2,644,674	$172,120	9%	$713,904	37%
School Revenues	1,930,770	1,987,081	2,455,830	56,311	3	525,060	27
School Fiscal Impact	–	-115,809	-188,344	–	–	–	–
School Fiscal Impact (%)	–	6%	7%	–	–	–	–
SOUTH-SOUTHWEST							
School Expenditures	$717,079	$796,934	$1,050,340	$79,855	11%	$333,261	46%
School Revenues	717,079	774,633	987,410	57,554	8	270,331	37
School Fiscal Impact	–	-22,301	-62,930	–	–	–	–
School Fiscal Impact (%)	–	3%	6%	–	–	–	–

* Indicates data for 1991-92 school year.

Note: Figures may not add/subtract to indicated totals because of rounding and because of data reporting; the fiscal impact percent is equal to the annual fiscal impact divided by the total annual revenues.

Source: CUPR Fiscal Impact Model, 1992.

IPLAN FINDINGS

Exhibits 4 and 5 effect a fiscal impact analysis for IPLAN in a parallel fashion to that just described for TREND. The starting step, the identification of the population to be accommodated, uses the same data at the regional and statewide level as TREND but there are differences in the respective allocations to individual jurisdictions

With the population identified, the Fiscal Impact Model projects the attendant public service costs. By 2010 it is estimated that municipalities under IPLAN will incur $6 billion annually in operating and capital service outlays (Exhibit 4). School districts will have to spend $13 billion yearly at this point (Exhibit 5). For both service sectors the regions growing the fastest experience the most rapid increases in outlays from the 1990 starting point.

Spending is then matched against revenues. By 2010, municipalities under IPLAN will be receiving $6.5 billion annually from all sources—the property tax, local non-property taxes, and State and federal aid. From all of these aforementioned sources, school districts will be raising $12.2 billion each year.

The difference between expenses and income is the net fiscal impact. For municipalities, statewide under IPLAN an annual surplus of $0.5 billion is projected for 2010. For school districts there is a deficit posture. By 2010 an annual deficit of $0.8 billion is incurred. The relationship of these figures to the total revenue bases for the municipal and school district sectors, respectively, and the comparison of IPLAN's fiscal outcomes to those of TREND follow.

COMPARISON OF TREND AND IPLAN

At 2010, under TREND, the fiscal impact to municipalities, is a yearly surplus of $0.4 billion. To place that figure in perspective, the annual surplus is equal to 6 percent of total revenues. With respect to school districts there is a projected $1.1 billion annual fiscal deficit under TREND or 9 percent of the total school revenue base. When the TREND municipal and school district results are combined this is an aggregate $0.7 billion deficit ($0.4 billion municipal surplus and $1.1 billion school deficit)—amounting to roughly 4 percent of the total $18.2 billion municipal and school district revenues ($6.3 billion municipal and $11.9 billion school revenues).

For IPLAN, the fiscal outcome is somewhat better. At 2010, its annual municipal fiscal surplus is $0.5 billion annually or 8 percent of the total municipal revenue base. These IPLAN municipal effects are superior to those of TREND. For instance, there is a yearly $0.1 billion municipal financial advantage for IPLAN versus TREND—a $0.5 billion versus a $0.4 billion surplus.

EXHIBIT 4

MUNICIPAL EXPENDITURES, REVENUES, AND FISCAL IMPACT BY REGION
IPLAN CONDITIONS: 1990-2010
($ in 000's)

	1990*	1995	2010	1990-1995 Total	1990-1995 Percent	1990-2010 Total	1990-2010 Percent
STATEWIDE							
Mun. Expenditures	$5,666,100	$5,673,309	$5,984,537	$7,209	0	$318,437	5
Mun. Revenues	5,666,100	5,707,689	6,487,169	41,589	1	821,069	14
Mun. Fiscal Impact	–	34,046	502,306	–	–	–	–
Mun. Fiscal Impact (%)	–	1%	8%	–	–	–	–
NORTHEAST							
Mun. Expenditures	$1,472,979	$1,449,189	$1,491,420	$-23,790	-2	$18,441	1
Mun. Revenues	1,472,979	1,458,639	1,609,668	-14,340	-1	136,689	9
Mun. Fiscal Impact	–	9,450	118,248	–	–	–	–
Mun. Fiscal Impact (%)	–	1%	7%	–	–	–	–
NORTHWEST							
Mun. Expenditures	$1,582,158	$1,517,913	$1,459,483	$-64,245	-4	$-122,675	-8
Mun. Revenues	1,582,158	1,520,644	1,565,538	-61,514	-4	-16,620	-1
Mun. Fiscal Impact	–	2,731	106,055	–	–	–	–
Mun. Fiscal Impact (%)	–	0%	7%	–	–	–	–
WEST CENTRAL							
Mun. Expenditures	$722,396	$747,641	$850,897	$25,245	3	$128,501	18
Mun. Revenues	722,396	731,080	875,890	8,684	1	153,494	21
Mun. Fiscal Impact	–	-16,561	24,993	–	–	–	–
Mun. Fiscal Impact (%)	–	2%	3%	–	–	–	–
EAST CENTRAL							
Mun. Expenditures	$616,199	$653,333	$733,363	$37,134	6	$117,164	19
Mun. Revenues	616,199	675,131	821,097	58,932	9	204,898	33
Mun. Fiscal Impact	–	21,798	87,734	–	–	–	–
Mun. Fiscal Impact (%)	–	3%	11%	–	–	–	–
SOUTHWEST							
Mun. Expenditures	$798,781	$820,311	$926,932	$21,530	3	$128,151	16
Mun. Revenues	798,781	813,014	1,023,610	14,233	2	224,829	28
Mun. Fiscal Impact	–	-7,631	96,353	–	–	–	–
Mun. Fiscal Impact (%)	–	1%	9%	–	–	–	–
SOUTH-SOUTHWEST							
Mun. Expenditures	$473,587	$484,921	$522,442	$11,334	2	$48,855	10
Mun. Revenues	473,587	509,181	591,365	35,594	7	117,778	25
Mun. Fiscal Impact	–	24,260	68,923	–	–	–	–
Mun. Fiscal Impact (%)	–	4%	12%	–	–	–	–

* Adjusted 1988 municipal expenditures and revenues expressed in 1990 dollars.

Note: Figures may not add/subtract to indicated totals because of rounding and data reporting; the fiscal impact percent is equal to the annual fiscal impact divided by the total annual revenues.

Source: CUPR Fiscal Impact Model, 1992.

EXHIBIT 5

ANNUAL SCHOOL DISTRICT EXPENDITURES, REVENUES, AND FISCAL IMPACT BY REGION
IPLAN CONDITIONS: 1990-2010
($ in 000's)

	1990*	1995	2010	1990-1995 Total	1990-1995 Percent	1990-2010 Total	1990-2010 Percent
STATEWIDE							
School Expenditures	$10,042,651	$10,651,530	$12,976,221	$608,879	6	$2,933,570	29
School Revenues	10,042,651	10,163,225	12,177,318	120,574	1	2,134,667	21
School Fiscal Impact	–	-488,304	-798,903	–	–	–	–
School Fiscal Impact (%)	–	5%	7%	–	–	–	–
NORTHEAST							
School Expenditures	$2,143,592	$2,237,333	$2,573,710	$93,741	4	$430,118	20
School Revenues	2,144,592	2,162,280	2,489,810	17,688	0	345,218	16
School Fiscal Impact	–	-75,053	-83,900	–	–	–	–
School Fiscal Impact (%)	–	3%	3%	–	–	–	–
NORTHWEST							
School Expenditures	$2,551,464	$2,564,105	$2,666,884	$12,641	0	$115,420	4
School Revenues	2,551,464	2,501,425	2,618,632	-50,039	-2	67,168	2
School Fiscal Impact	–	-62,680	-48,251	–	–	–	–
School Fiscal Impact (%)	–	2%	1%	–	–	–	–
WEST CENTRAL							
School Expenditures	$1,411,011	$1,516,313	$2,066,401	$105,302	7	$655,390	46
School Revenues	1,411,011	1,377,744	1,758,743	-33,267	-2	347,732	25
School Fiscal Impact	–	-138,568	-307,658	–	–	–	–
School Fiscal Impact (%)	–	10%	17%	–	–	–	–
EAST CENTRAL							
School Expenditures	$1,288,736	$1,437,580	$1,894,451	$44,844	11	$605,715	47
School Revenues		1,333,614	1,712,136	44,878	3	423,400	33
School Fiscal Impact	–	-103,966	-182,315	–	–	–	–
School Fiscal Impact (%)	–	8%	11%	–	–	–	–
SOUTHWEST							
School Expenditures	$1,930,770	$2,099,893	$2,737,215	$169,123	9	$806,445	42
School Revenues	1,930,770	2,012,713	2,614,344	81,943	4	68,574	35
School Fiscal Impact	–	-87,180	-122,871	–	–	–	–
School Fiscal Impact (%)	–	4%	5%	–	–	–	–
SOUTH-SOUTHWEST							
School Expenditures	$717,079	$796,306	$1,037,559	$79,227	11	$320,480	45
School Revenues	717,079	775,449	983,653	58,370	8	266,574	37
School Fiscal Impact	–	-20,857	-53,906	–	–	–	–
School Fiscal Impact (%)	–	2%	5%	–	–	–	–

* Indicates data for 1991-92 school year.

Note: Figures may not add/subtract to indicated totals because of rounding and data reporting; the fiscal impact percent is equal to the annual fiscal impact divided by the total annual revenues.

Source: CUPR Fiscal Impact Model, 1992.

For schools, the IPLAN annual fiscal deficit at 2010 is $0.8 billion, representing a 7 percent share of the total revenue base. Again the outcome is relatively superior to the $1.1 billion annual deficit (9 percent of revenues) recorded for TREND. Thus, for schools there is a $0.3 billion financial advantage of IPLAN versus TREND—the difference between the $1.1 billion annual deficit of TREND versus the lower $0.8 billion fiscal loss for IPLAN.

When the municipal and school district fiscal impact results are combined the respective figures are as follows:

ANNUAL MUNICIPAL AND SCHOOL DISTRICT FISCAL IMPACT

Year/ Public Sector	TREND ($ in 000's)	%*	IPLAN ($ in 000's)	%*	IPLAN Compared to TREND ($ in 000's)	%*
2010						
Municipal	$+390,253	6	$+502,306	8	$+112,053	+2
School	-1,084,784	9	-798,903	7	+285,881	+2
Total Local (Municipal and School)	$-694,531	4	$-296,597	2	$+397,934	+2

*Fiscal impact result as percentage of total revenues.

In short, the differing land use scenarios affect, but do not dramatically alter the local municipal and school district financial consequences. For both TREND and IPLAN an overall moderate fiscal impact deficit ensues measured against the full revenue base. The size of the deficit, however, is somewhat less for IPLAN versus TREND as detailed above.

These differences in part reflect the distribution of growth to individual communities. Fiscal impact is a very local matter reflecting each jurisdiction's expenditures and revenue relationships. For instance, placing a $150,000 house in one community may result in a deficit if that community's average house price is $200,000 while conversely the $150,000 house may result in a surplus in a second locale of more modest homes. By altering where growth is locating different fiscal outcomes results from TREND versus IPLAN. Thus the fiscal impact distinction reported in this section are firstly the outcome of how growth is distributed by the two land-use scenarios and the attendant fiscal impacts in over 1,100 local jurisdictions in New Jersey (567 municipalities and 558 school districts).

Further TREND versus IPLAN distinctions that affect the financial outcome are described below.

Savings in Operating Cost

IPLAN realizes some economies in operating service costs first because it places more population in municipalities with slack operating capacity. As described earlier, historical municipal population loss is used as a measure, albeit a rough proxy, of potential excess capacity. That is, those jurisdictions that have historically lost more of its residents should be able to accommodate some measure of growth with little or no cost

Relative to TREND, IPLAN places more population in New Jersey's urban areas and older suburbs—the very areas that have historically witnessed more of a population diminution and as such have caches of operating slack capacity. For instance, municipal slack capacity under TREND is estimated at about 11,000 residents. That is across the State's municipalities growth is occurring in communities that have historically lost so much population that 11,000 new people can be accommodated without any additional operating cost. For IPLAN, the municipal slack is double that figure or about 23,000 people. What that means is that under IPLAN versus TREND there is an estimated 12,000 additional persons that can be introduced without necessitating municipal operating expenditures. The higher slack figures for IPLAN contribute to savings in public operating cost and thus favors IPLAN's fiscal impact outcome.

Another consideration is the linkage between infrastructure and operating expenses. IPLAN realizes savings in public roads and other capital improvements. These efficiencies in turn translate to certain savings in operating costs. For instance as of 1990, New Jersey municipalities incurred $330 million for maintaining local streets. In the same year, there were a total of 61,771 local lane-miles in New Jersey. Thus, the maintenance cost per lane-mile was about $5,500 per lane-mile ($338 million/61,771 local lane-miles). The Transportation Infrastructure Model—CUPR Road projects that under TREND 5,493 additional road lane-miles will be required from 1990 to 2010 while for IPLAN there will be a lower need for 3,872 local lane-miles. This implies an added future road maintenance operating expenditure of about $30 million annually for TREND ($5,500 x 5,493) and $21 million for IPLAN ($5,500 x 3,872). Thus, IPLAN saves about $10 million yearly for road maintenance operating outlays.

In short, because IPLAN is better able to capitalize on operating slack capacity and since IPLAN's infrastructure economies also result in certain operating service efficiencies. IPLAN can realize some savings in operating costs. These savings, however, must be placed in perspective to the overall fiscal impact equation. On this basis, the savings noted above are not large. First the IPLAN operating slack advantage (i.e., additional persons/pupils accommodated at no extra cost) is small relative to the size of the total incoming population for whom services must be provided. Second, the portions of

operating costs where IPLAN offers a decided advantage such as road maintenance are only a fraction of total operating costs. Thus, as of 1990, street operating expenses comprised only 6 percent of the total operating outlays. For the vast majority of municipal operating costs IPLAN and TREND are at parity. Thus, the IPLAN operating cost advantages described in this section have a positive but not overwhelming effect on the overall fiscal impact outcome.

Savings in Infrastructure Costs

Other sections of the State Plan evaluation have identified numerous instances where IPLAN can accommodate New Jersey's future growth with fewer and/or less costly infrastructure improvements. The Transportation Infrastructure Model—CUPR Road found that fewer lane-miles would have to be built under IPLAN relative to TREND. The Wastewater Cost Model identified a lesser outlay for sewage treatment facilities. The School Capital Facilities Model projected that IPLAN would require slightly fewer additional pupil spaces and consequently would demand less costly future school construction. All of these differences translate into savings for municipalities and school districts for IPLAN relative to TREND and are another factor explaining why the former has a better fiscal outcome.

Again, however, it is important to place IPLAN's infrastructure savings into perspective. First, while there are decided IPLAN economies with respect to public capital improvements especially relative to operating costs (where for most operating expenses TREND and IPLAN are at parity), capital expenses are only a small share of total public service outlays. As of 1990, municipal expenditures in New Jersey amounted to $5.7 billion of which capital costs were $.5 billion or only 9 percent of the whole. For schools, of the total 1991 school outlays of $10 billion, the capital share was $.3 billion or about 3 percent. Thus, even if IPLAN can secure large savings in infrastructure spending relative to TREND, its total fiscal impact advantage will not be that large because capital costs are only a fraction of total public sector outlays.

A second consideration is that the IPLAN infrastructure advantage is more important in certain areas versus others. Thus, while it is considerably less expensive for municipalities to provide for local roads under IPLAN versus TREND, spending for other municipal capital infrastructure such as city halls and police stations will likely be at parity. Therefore over and above the fact that municipal capital spending is only a fraction of total municipal costs, IPLAN realizes only partial savings concerning municipal infrastructure obligations (i. e., the road component). Furthermore, concerning schools, the IPLAN educational capital cost savings relative to TREND is not very large (about 3 percent).

Consequently, IPLAN's school infrastructure economy by itself only marginally influences the school fiscal impact outcome.

In sum, as with operating costs there are infrastructure savings from IPLAN relative to TREND. Both economies, however, influence but do not markedly change the financial impact. IPLAN's operating cost efficiencies are muted because they affect only a small number of operating expenses (i. e., road maintenance but not general administration, public safety, health and welfare services, etc.). Additionally, IPLAN's infrastructure savings, are dampened because even though they are generally more consequential, especially for the municipal sector than IPLAN's operating service efficiencies (where for most operating services IPLAN and TREND are equivalent) the capital portion of the overall budget is small. For these reasons one observes a better fiscal impact for IPLAN relative to TREND but with a difference that is relatively modest.

Allocation of Quality Education Act (QEA) Revenues

Another factor contributing to IPLAN's fiscal impact advantage, at least as it concerns schools, is a reflection of the allocation of state aid school revenue from the Quality Education Act. To understand the connection some brief background must be presented.

For many years most school districts throughout New Jersey received State assistance from the Equalization Aid Program. This program was criticized and challenged in court as not supporting urban school districts sufficiently since it aided mostly everyone (i. e., even wealthy suburban districts received some Equalization support). Equalization Aid has been replaced by the Quality Education Act (QEA). QEA targets assistance to what are termed the "Urban 30" and other poorer school districts; after a transition period (anticipated for 1995) many suburban districts will experience a substantial cut in support.

Relative to TREND, IPLAN is placing more growth and hence more pupils in areas that are favored by the new QEA allocation. Conversely TREND relative to IPLAN is favoring growth in areas more threatened by QEA cutbacks. While ultimately there may be some levelling off in this regard* IPLAN's fostering of growth in QEA favored locations improves its school fiscal impact outcome.

As previously concerning operating and infrastructure costs, the IPLAN versus TREND difference concerning QEA must also be placed in perspective. QEA is only one factor affecting school fiscal effects. For instance, QEA remains a much smaller revenue

*As an example, if IPLAN directs more people and jobs to the QEA "Urban 30" then their financial posture will improve (i. e., their relative property valuation per pupil will increase) and over time, as they become financially stronger, their QEA allocation will drop. This drop however will comprise a savings to the State government from a reduced intergovernmental aid obligation.

relative to the local school property tax. Thus, IPLAN's QEA's advantage should be acknowledged but it incrementally influences rather than dramatically alters the school fiscal impact results.

In summary, because IPLAN relative to TREND, realizes some savings in public operating costs, secures even larger economies in public infrastructure outlays, and serendipitously, fosters growth in QEA-favored jurisdictions, it secures a fiscal impact advantage. The above changes, however, are muted for the reasons noted such as that they affect only one component of costs or revenues and then only by a marginal amount. Consequently the IPLAN fiscal impact benefit is small, albeit a measurable one.

Under different assumptions or procedures, the IPLAN versus TREND divergence concerning the local financial outcome could change from the specific results reported here. For instance, there is likely more slack capacity in cities than are credited under the current analysis. Similarly, under the effected fiscal impact projections, new growth in cities is charged at the full existing per capita cost (less any slack). This is done despite the fact that included under the existing per capita expense in cities are outlays for expensive welfare, health, and public safety services that would typically not be demanded by nor tendered to the entering new population. If urban slack capacity would have been increased and urban per unit service costs reduced then the fiscal impact of growth in such areas would have improved. This would have increased the financial advantage of IPLAN since relative to TREND it places more growth in cities.

A change in an opposite direction would have been to alter the QEA allocations. As noted, under current provisions, QEA favors the "Urban 30" school districts. If QEA were distributed in a more level fashion, that is if most school districts received support as opposed to targeting it to districts most in need (i.e., "Urban 30"), then cities would be receiving less State school aid. In this case the fiscal impact advantage of IPLAN relative to TREND would diminish.

It is unlikely, however, that any modification in assumptions or data would reverse the overall findings of this section: IPLAN results in a slightly superior local (municipal and school) fiscal impact posture. The savings at 2010 are $100 million for municipalities and $300 million for school districts. In an era of heightened taxpayer sensitivity to costs of public services and to the tax burdens they must shoulder, the IPLAN fiscal impact advantage, while admittedly not overwhelming measured against the full sum of municipal expenditures and revenues, is most welcome. Most importantly, these are annually recurring savings on both municipal and school district accounts.