



NJSSI: The New Jersey Sustainable State Institute

Edward J. Bloustein School of Planning and Public Policy
Rutgers, The State University of New Jersey

Otto H. York Center for Environmental
Engineering and Science
New Jersey Institute of Technology

Living With the Future in Mind:

Goals and Indicators for
New Jersey's Quality of Life

3rd Edition 2004

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Foreword

This is the third edition of *Living With the Future in Mind*, including data available through November 1, 2003. It is the first edition to be published by the New Jersey Sustainable State Institute (NJSSI). This venture began in 1995 with New Jersey Future's Sustainable State Project, through which hundreds of New Jersey organizations and individuals came together to define goals for the state and indicators with which to track progress towards those goals. New Jersey Future (NJF) published the first edition of *Living* in 1999, providing a description of the process and the goals, an explanation of how each indicator contributed to sustainability, and time series data for each indicator.

The New Jersey Department of Environmental Protection (DEP) picked up the project for the second edition of *Living*, which they published in 2000. Through an interagency working group led by DEP, the state also identified tasks that state agencies could implement to move the state towards the sustainability goals. This work was published in 2002 as *Governing With the Future in Mind*. All three of these earlier reports may be accessed through the NJSSI website, <http://www.njssi.net>.

Over time, NJF and the Governor's office decided that sustainability indicators and other activities stemming from the original project should be the mandate of a new organization, designed to be buffered from the advocacy perspective of NJF and the possible political pressures of state government. The result was the creation in 2002 of the New Jersey Sustainable State Institute, an independent policy group affiliated jointly with the York Center for Environmental Engineering and Science at the New Jersey Institute of Technology and the Bloustein School of Planning and Public Policy at Rutgers, The State University of New Jersey. The Institute was created with several purposes in mind, among them: to routinely update the sustainable state indicators; to facilitate the establishment of targets for the indicators so they can more effectively be used to guide public decision-making; and to under-

take analytical work through which to assess how the state could best reach the sustainable state goals.

Through these activities, the Institute provides information that will guide both public and private organizations to decisions that move the state towards its sustainability goals.

Updating the Indicators: About this report

This is the first update of the indicators since the Institute came to life in June of 2002. For the most part, they have been maintained as the Institute received them, with no changes in the goals and only minimal changes in the indicators. This was a deliberate choice, made out of a conviction that if the indicators are to be used effectively, we must continue to track the same measures over time. These indicators derive their credibility from the public process that developed them. The Institute expects that process to reconvene in the future, to assess whether the indicators continue to be appropriate as the state evolves.

This edition of *Living* has changed from the earlier ones in the way the indicators are presented. The objective is to explain the patterns observed; to provide additional data on factors underlying the data, to suggest causal factors that may help interpret trends, and to shed light on the complexity of what is being measured with these seemingly-simple indicators.

This is not easy to do in a summary report. Often the report raises more questions than it answers. This is the nature of indicators, though. They show trends in what is happening, letting us understand where we have come from and where we are now. From there we can begin analyzing why things are happening, and determine what we want to do next to help move our society in the right direction.



Acknowledgements

A project like this one depends on the input and assistance of many people. Mike Aucott at the New Jersey Department of Environmental Protection provided invaluable information on the sources of data for earlier editions of this report, and responded with unflagging graciousness to our many questions. Many people provided input on individual indicators, including Ruth Charbonneau and David Valiante of the NJ Department of Health and Senior Services; Sen-Yuan Wu of the NJ Department of Labor; Mike Winka and Suzanne Dice-Goldberg of the Board of Public Utilities; Joseph Fiordaliso of the NJ Department of Transportation; Paul Burt, Marzooq Al-Ebus, Kevin Berry, Jack Pflaumer, Dave Jenkins, Sandy Krietzman, Marty Rosen, Guy Watson, and Athena Sarafides of the NJ Department of Environmental Protection; Ingrid Reed of the Eagleton Institute of Politics; Martin Robins of the Voorhees Transportation Center; James Hughes and Henry Coleman of the Bloustein School, Gilda Morales of the Center for American Women and Politics; and Danilo Pelletiere of the National Low Income Housing Coalition. Their assistance has kept our data honest; any errors are due to our misunderstandings, not their information.

Mookhan Kim and Lissette Rivera, graduate students at the Edward J. Bloustein School of Planning and Public Policy at Rutgers, tracked down data, drafted text, organized spreadsheets, and performed a myriad of other tasks. They also helped keep the process fun for all of us, through endless discussions about everything from aging to travel, from childhood to graduate school, and even occasionally to sustainability indicators.

Many people provided input on the text and overall tone of this report, including Clint Andrews, Dorothy Bowers, Pam Frank, Randy Haviland, Barbara Lawrence, Lance Miller, David Moore, Matt Polsky, Mark Robson, Randy Solomon, Dan Watts, and Don Wheeler, all of the NJSSI Board. Don Beards, Bob Vogel, Robert Wolinitz, Carline Hecht, Clint Andrews, and Darren Caffery all kindly let us use their photographs.

Finally, the Institute greatly appreciates the financial support provided by the State of New Jersey and the institutional support provided by Rutgers' E. J. Bloustein School of Planning and Public Policy and NJIT's York Center for Environmental Engineering and Science, which have made it possible for us to carry out this work.

Joy E. Hecht
Executive Director, NJSSI

Note: We are grateful to the NJ Higher Education Partnership for Sustainability for providing important support during the rollout of this report.



Introduction: Sustainability and Sustainability Indicators

Why sustainability?

The terms "sustainability" and "sustainable development" came into widespread use in the 1980s, in international debates over environmental protection and economic development. In an often-quoted phrase, the World Commission on Environment and Development (the Brundtland Commission) defined "sustainable development" as "meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs."¹

The concept of sustainability is rooted in the recognition that our society, our economy, and the natural environment are interdependent. Often we tackle problems in the three areas separately, without taking into account the strong links among them, and the implications of decisions in one area for the other two. The search for a sustainable society occurs through a recognition that we must factor these implications into all of our decisions in order to ensure that we will meet future needs as well as current ones.

The economic component of sustainability is about living today at a level of income and material comfort that our descendants will also be able to enjoy. There is tension in our society about whether our current lifestyle can be sustained through new technology and well-designed policy, or whether we must cut back on our consumption to be sustainable. In economic terms, income results from investments, whether in machines (physical cap-

ital), education (human capital), or natural resources (natural capital). If we continue to invest at a steady rate, economic theory suggests that we should be able to continue generating the same income, and in economic terms we will be sustainable.

The environmental component of sustainability is about maintaining our natural resources and the quality of our environment, so that future generations will reap the same benefits from them as we do. In physical terms, the concept is fairly straightforward; pollution levels should not become worse, resources should not be used faster than they renew themselves naturally, species should not become extinct due to human activity. There is debate about how much change in the environment is sustainable; some people argue that everything should be sustained and no change is acceptable, while others feel that some change is acceptable in order to enhance human opportunities. For example, cutting down some of our forests so we have timber to build houses and open land to grow food may be acceptable to most of us. Using all of our lakes and rivers to dump untreated sewage is probably unacceptable to most of us, and the costs of preventing this are considered reasonable. Between the extremes there is a large gray area where we don't fully know the implications of our choices and we don't agree about how to make them. The tensions between the environment and other aspects of sustainability can be difficult to resolve.

¹ World Commission on Environment and Development, 1987. *Our Common Future*. (Oxford: Oxford University Press)



A strong society has cohesion, community ties and sense of unity, rule of law, and effective public and private institutions. These represent a kind of social capital, similar to economic or environmental capital, enabling us to act as a unified body to adapt to meet an evolving set of challenges. The social structure is the underpinning of the economy, and we will only be able to achieve sustainable development if we learn to understand and invest in social capital.

Social sustainability is also about achieving the values that we would like our society to sustain. Equity in access to resources, health care, education, housing, and opportunities to make a living is a key element of social sustainability, as is an equitable sharing of the burdens of maintaining the society. Strong citizen engagement is important; engaged citizens know what is going on, they participate in public debate, they vote, they know who their elected officials are and how to reach them. In sustainable communities citizens benefit from each other's economic activity rather than letting the profits go out of the community. They work in their own community, they shop at locally-owned businesses, their food may even be grown locally. Sustainable communities are resilient and can adapt effectively to change, rather than being vulnerable to shock when the world around them changes. Their residents feel safe and secure, and the community can welcome newcomers without feeling threatened by them.

Why goals and indicators?

If we want to work towards a more sustainable state, we need mileposts along the way to tell us how we are doing. Goals give us a more precise destination than simply "sustainability," which can be hard to pinpoint clearly. Indicators tell us whether we are moving towards our destination or heading the opposite way.

The Sustainable State Project brought together a broad set of elected officials, state employees, activists, business people, educators, and other New Jersey citizens to develop a set of sustainability goals. They worked for several years, capturing the interests and priorities of hundreds of people who attended meetings and provided written feedback and comment. Through extensive discussion and debate, they arrived at a consensus on eleven overarching goals and forty-one indicators with which to track the state's progress towards those goals. The indicators were selected from among a much broader set of suggestions. The participants in the process felt that they represented the best ways then available to measure quality of life and to highlight the interdependence of economic, environmental, and social systems.

The third piece in the goals-indicators system is targets that tell us what our destination is for each of the indicators. Without targets, we may know that we are generally moving in the right direction, but we don't know if we have gotten there, or how far we still have to go. The state government has developed targets for thirteen of the forty-one indicators. The Institute has been working on establishing additional targets for the energy indicators, and hopes to bring in a wide range of stakeholders to finalize them soon. Table 1 lists the sustainability goals and indicators and shows for which indicators targets have already been established.

These goals, indicators, and targets are designed for use by citizens, the media, educators, non-profit organizations, and public officials. The data in the system are not detailed enough to provide technical solutions to complex problems, but they are comprehensible enough to give us a good sense of whether we are making headway on the issues of concern to us. The ease

Table 1. Sustainable State Goals and Indicators

Goal	Indicator	Target
1. Economic vitality	1. Income	Not yet established.
	2. Unemployment	Not yet established.
	3. Productivity of labor	Not yet established.
	4. Share of New Jersey households below the poverty line	Not yet established.
	5. Gross State Product	Not yet established.
	6. Energy efficiency in the economy	Not yet established.
2. Equity	7. Equal pay across racial and ethnic lines	Not yet established.
	8. Legislators' reflection of population	Not yet established.
	9. Racial disparities in infant mortality	By 2010, reduce infant mortality to 4.3 per 1,000 for all New Jerseyans and 8.0 for blacks.
3. Strong community, culture and recreation	10. Newspaper circulation	Not yet established.
	11. Crime rate	Not yet established.
	12. Open space	Preserve 1,004,000 acres by 2002 (achieved) and 1,354,000 acres by 2010.
4. Quality education	13. High school graduation rates	Not yet established.
	14. Student/teacher ratio	Not yet established.
	15. Standardized test scores	Not yet established.
	16. Higher education	Not yet established.
5. Good government	17. Awareness of state government	Not yet established.
	18. Voter turnout	Not yet established.
6. Decent housing	19. Affordability of rental housing	Not yet established.
	20. Home prices vs. income	Not yet established.
	21. Trends in new housing	Not yet established.
7. Healthy people	22. Life expectancy	By 2010, increase life expectancy to 81.0 for whites and 76.5 for blacks.

	23. Infectious diseases	By 2010 reduce disease rates per 100,000 to 14.6 for AIDS, 2.4 for tuberculosis, and 0.5 for syphilis.
	24. Asthma	By 2010 reduce annual hospital admissions for asthma to 150 per 100,000.
	25. Occupational safety and health	By 2010 reduce occurrence of blood lead concentrations above 25 ug/dL to 70 per million.
8. Efficient transportation and land use	26. Need for road and bridge repairs	By 2010 reduce the repair backlog to \$1.3 billion.
	27. Vehicle miles traveled per capita	Not yet established.
	28. Workplace transportation options	Not yet established.
	29 Traffic fatalities	By 2010 reduce auto fatalities to 559/year and pedestrian fatalities to 78/year.
9. Ecological integrity	30. Loss of freshwater wetlands	By 2005, show a net increase in wetland acreage over 1998 levels.
	31. Nesting water bird population	Not yet established.
	32. River health	Not yet established.
	33. Marine water quality	Not yet established.
10. Protected natural resources	34. Total energy consumption	Not yet established.
	35. Farmland	Not yet established.
	36. Ocean and bay beach closings	Not yet established.
	37. Preserved and developed land	Not yet established.
11. Minimal pollution and waste	38. Greenhouse gas emissions	By 2005 reduce GHG emissions to 3.5% below 1990 levels, to 130 million tons/year
	39. Drinking water quality	By 2005 95% of public water systems will meet microbiological and chemical drinking water standards (achieved for microbiological standards)
	40. Solid waste	By end of 2000, recycle 65% of total solid waste stream and 50% of municipal waste stream.
	41. Air pollution	By 2007, there should be no unhealthy days due to ozone or fine particulates (PM 2.5) (achieved).

of understanding indicators like these means that they can be used without extensive knowledge of the field. The choice of these particular indicators reflects the priorities of the broad array of New Jersey stakeholders who selected them, and an explicit intention to direct public attention to these rather than to other issues.

Why a state system?

The state is a critical level at which to pursue sustainability. It is large enough to interest many people, without being as diverse as the country as a whole. There is enough similarity within a state, especially a small one like New Jersey, to make it useful to work at this scale. Moreover, state governments have the authority to make many decisions that affect sustainability, so everyone in the state is operating within the same policy context. This applies to many aspects of tax policy, land use planning, energy policy, transportation policy, and so on. Many of the data needed to monitor our progress are also reported at the state level, but are not available at local or regional levels.

Of course many key decisions affecting sustainability are made at other levels. New Jersey local governments have great autonomy in their decision-making, and the multitude of small communities means that different development strategies are in effect throughout the state. Federal policy affects New Jersey in countless ways. So do trends in the global economy; OPEC oil pricing decisions may have more impact on New Jersey's energy use and greenhouse gas emissions than any strategies developed by the Governor or state agencies. No one level of analysis is sufficient, we must always place our behavior in many different contexts. The state context is sufficiently rich, however, to make it a good place to begin.

Are we heading towards the goals set in the Sustainable State project?

The picture is mixed. This report presents our performance over the past ten to fifteen years, as well as letting us see what progress we have made since the last report was issued in 2000. With each update of the indicators we are primarily interested in what has happened since the last available data. However we must put them in the context of longer-run trends, to clarify whether we are observing short-term fluctuations or more solid, long-term progress towards our goals.

Economic data clearly registered the recent cyclical downturn in New Jersey, as elsewhere in the country, though New Jersey incomes still remain above the national average (Ind. 1). Unemployment rose during the recent downturn (Ind. 2) and it continues to track the national rate fairly closely. In economic terms, these data confirm that many New Jersey residents felt the pain of the recent recession.

In the environmental and land use arena, the picture is also mixed. We are producing more solid waste (Ind. 40), driving more miles (Ind. 27) and using more energy (Ind. 34) than ever. On the other hand, shellfish habitats and the quality of beaches have improved over the past decade (Inds. 33 and 36). We have seen an increase in the amount of land now protected from development (Ind. 12). Data on the total developed area (Ind. 37) have not been updated since the previous report; the updates expected next year will show whether the rate of land development has changed.

On some of the social indicators, we are clearly improving. Life expectancy has risen (Ind. 22), while hospitalizations for asthma and reported infectious diseases have dropped (Inds. 23-24). High school graduation rates have risen (Ind. 13), and though housing is still expensive, both apartment rents and home prices have become somewhat more affordable relative to incomes (Inds. 19 and 20). Voter turnout, however, has dropped (Ind. 18), as has awareness of public affairs (Ind. 17).

Does this tell us about sustainability?

So far we have considered the three aspects of sustainability independently. Do our indicators tell us anything about whether New Jersey is actually becoming more sustainable, or about the competition among our goals?

There are likely to be tensions among the indicators, to be resolved through dialogue and debate. For example, increases in income are likely to lead to increased demand for new homes, as more households can afford to buy instead of renting. Both increased income and increased opportunity to live in safe well-kept housing are considered desirable. However the land use and housing patterns typical of new construction in New Jersey lead to increased use of the automobile and increased energy consumption. Our indicators show all of these increases; in income, housing affordability relative to income, vehicle miles traveled per capita, and energy consumption per capita. This suggests that it will indeed be difficult to make progress in all areas of sustainability at once. It also suggests that the state should explicitly consider how to address this balance through the design of housing, land-use, property tax, energy, and transportation policies, rather than confronting each set of issues separately without factoring in their links to each other.

Our indicators can help us recognize such tensions by looking at whether specific pairs or groups of indicators consistently move together or in opposite directions. For instance, when we see that increased income consistently occurs with increased vehicle miles traveled and increased energy use, we recognize that we will need additional policy strategies to achieve all of our goals. Our indicators do not tell us what those strategies may be, however. They can alert us to the interplay among our goals, and they can suggest where we need to investigate further to develop solutions, but they will not define the solutions themselves.

Where do we go from here?

In the long run, indicators are useful if we use them to assess our progress towards sustainability and modify our behavior accordingly. This depends on the third piece of the indicators system, the targets. We would like to see key stakeholders come to consensus on what we want our sustainable state to look like, and how soon, in precise quantitative terms that can be measured. With such targets defined, we could all use the indicators to assess our progress. We could also hold proposed programs and policies up to the light of such targets, to see how far they take us towards the sustainability endpoint we have defined.

How does the rest of the world relate to New Jersey sustainability?

Sustainability is a global issue. It is also a community issue. What can we learn by looking at other scales?

One of the key aspects of social sustainability is equity. Our indicators let us see the inequities existing within our state, but not the much greater inequities between New Jersey and much of the rest of the world. Is it acceptable to look for strategies that sustain New Jersey's income, consumption, and energy use, if such behavior could not be sustained worldwide? If we want our state to behave in ways that could be sustained worldwide – the equity objective of sustainability – we must consider whether or how we could make our current levels of consumption sustainable.

A related issue concerns the impact of the manufacture of goods consumed in New Jersey on the states or countries where they are produced. We import electricity from other states, a significant share of it generated by burning coal. This imposes both global environmental burdens through greenhouse gas emissions and local burdens through the emission of other pollutants. Similarly, by becoming increasingly a service economy, New Jersey has reduced its direct contribution to pollution. However, the goods we consume are often produced in countries with less restrictive environmental controls or worker protections than we have in New Jersey. While occupational safety and health may be improving within the state (Ind. 25), the rate of accidents or illnesses elsewhere in the world due to production of the goods we consume may be higher than in the past. For the most part our indicators do not capture these impacts. Assessing them is quite difficult, even with quite sophisticated international data, so it is no surprise that we cannot do it here. It is important to remember them, however, when we consider whether we are actually moving towards greater sustainability.

Targets could be of two types. "Sustainability targets" will reflect our best effort to grapple with the complex specification of what we really think we must achieve if our society is to continue to survive. Although we are only working at the scale of New Jersey, the process of defining such targets should address whether they would be sustainable if the whole world adopted them. The process should also consider whether each sub-component of a sustainable state – each town, each industry – must be sustained, or whether the state may be considered sustainable if new industries replace old ones, or new cities take over the roles of older ones.

By contrast, "operational targets" are less ambitious but more feasible to define and achieve. They are based on what we think we could achieve in the medium term with an ambitious but plausible set of policy choices. For greater simplicity, operational targets might focus on one aspect of sustainability at a time, rather than trying to integrate all aspects into a single system.

The Institute's target work so far has focused on operational targets for energy. Members of the Institute staff are assessing the policy tools that could help reduce our energy consumption, the emissions from our energy use, and the risk that that energy needed to sus-

tain the economy might not be reliably available. The next step in this work is to facilitate a stakeholder process to develop consensus on appropriate targets for sustainable energy use in the state.

Over the next few years, it will be important to develop both operational and sustainability targets for New Jersey. This should involve stakeholders from a wide range of organizations and roles in the state, as well as experts who can shed light on relevant technology and policy choices. It is likely to involve refining the existing goals and indicators, as other measures may prove to be more effective to assess how far the state has come. This will be a complex process, particularly taking into account the interactions among the elements of sustainability. It may not be that hard to identify what we think would be an appropriate level of housing, public health or environmental quality for a sustainable society. However identifying such levels while also sustaining economic well-being and individual liberties will be much more challenging. It is this process that the state must tackle in coming years.

The targets will then be used to show how we are doing, and how the consumption and policy choices we make today will affect our ability to reach our targets on the schedule we set. By comparing historical trends, projections based on current choices, and targets, we can determine where we have succeeded and where we have more work to do. This should, we hope, create the public will to change our behavior now, so that New Jersey will have a chance of reaching its targets.



1. Economic Vitality

Goal: An economy that is competitive, diverse, and attractive to business; that maintains and expands assets and capital; that provides a variety of entry-, middle-, and high-level jobs; and that promotes the well-being of New Jersey's communities and its workforce.

The economy is an engine driving activity in the state, particularly our impacts on the environment and the quality of our social systems and support networks. New Jersey's economy underwent a major transition in the second half of the twentieth century, moving away from dependence on manufacturing and heavy industry, and towards dependence on advanced technology and services. With this transition, we have come to rely more on manufactured goods imported from other states and countries. While some see local (or state-level) self-sufficiency as a key component of sustainability, others focus on the potential for greater well being that can result from national and global economic interdependence.

New Jersey is, on the whole, a prosperous state. Per capita disposable income is consistently among the highest in the country, our unemployment rate is relatively low even with the recent recession and the share of households below the poverty line is consistently well below the national average. However, there is still significant income inequality, and great racial and ethnic disparity with respect to economic well-being.

What indicators came out of the Sustainable State process, and how are we doing?

1. *Per capita disposable income* continues to rise, based on the most current data available.
2. *Unemployment* rose in recent years. Services and trade continue to rise as a share of employment, while manufacturing continues to drop.
3. *Productivity of labor*, or gross state product per worker, continues to rise steadily.
4. *Share of households below the federal poverty line* has risen since 2001, although it is still well below the national rate.
5. *Gross state product* continues to rise steadily.
6. *Economic output per unit of energy consumed* continues to rise steadily.

What might we add to future indicator reports?

Our economic data capture transactions that pass through the economy – that is, anything that is sold for money. Though economic indicators are often used as if they measured welfare or the quality of life, in fact they capture only some of the elements of those elusive concepts. They do not capture the harm people cause each other – pollution or crime, for example. They also do not differentiate between things that we buy because they benefit us directly – food, housing, or gifts – and things we buy to cope with the harm we cause each other – brownfields cleanup, or security systems. More comprehensive data on these issues would provide a clearer understanding of our economic well-being.

1. Per capita Income

Why do we care?

Economic well-being is one of the three axes of sustainability and an important part of our quality of life. Disposable income is a measure of economic well being, showing how much we can spend on our homes, our food, our children's educations, or services that allow us to spend time enjoying ourselves rather than working. While some of our consumption choices can work against sustainability by harming the environment, having the option to make choices is clearly a good thing.

How are we doing?

Disposable income per capita measures the average amount of income available per household after taxes. As Figure 1.1 shows, it has risen steadily in New Jersey for half a century. As the figure also shows, New Jersey's per capita disposable income has consistently been higher than that of the nation as a whole, suggesting that we are among the best off citizens of the country economically.

What is behind these figures?

The gap between the richest and poorest is an important issue in considering income in a sustainability context. One measure of income inequality is the Gini coefficient, which ranges from 0 in a society where all incomes are identical to 1 in a society where one person earns all of the income. Figure 1.2 provides Gini coefficients for the US and New Jersey from 1969 to 1999. They show a steady widening of the income gap both in the US as a whole and in New Jersey. They also show that New Jersey was considerably more equitable than the country as a whole forty years ago, but the state has become somewhat less equitable.

What else would we like to know?

To assess the sustainability of our income growth, it would be helpful to link income trends with changing consumption patterns, so we could assess the impact of our expenditures. It would also be useful to compare our high incomes with the cost of living in New Jersey, to assess whether in fact we are as well off as we seem to be based on income alone.

Sources:

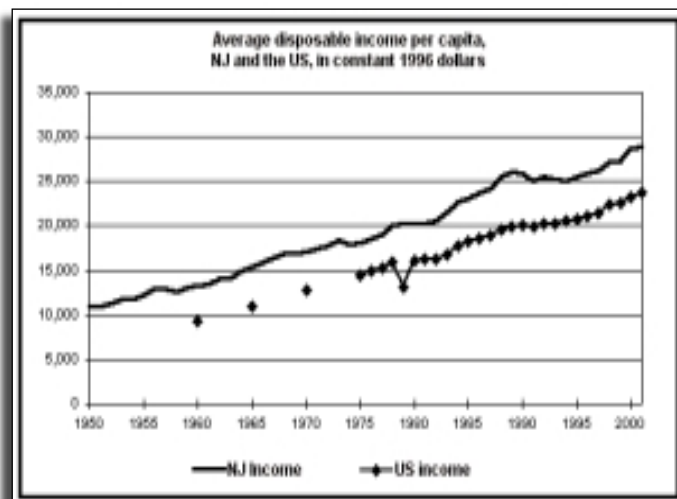


Figure 1.1

Figure 1.1

Bureau of Economic Analysis Regional Account Data, Annual State Personal Income. Constant dollars are adjusted for inflation and indexed here to make all years comparable to 1996. Available at: <http://www.bea.gov/bea/regional/spi>

Targets with which to assess state progress have not yet been established for this indicator.

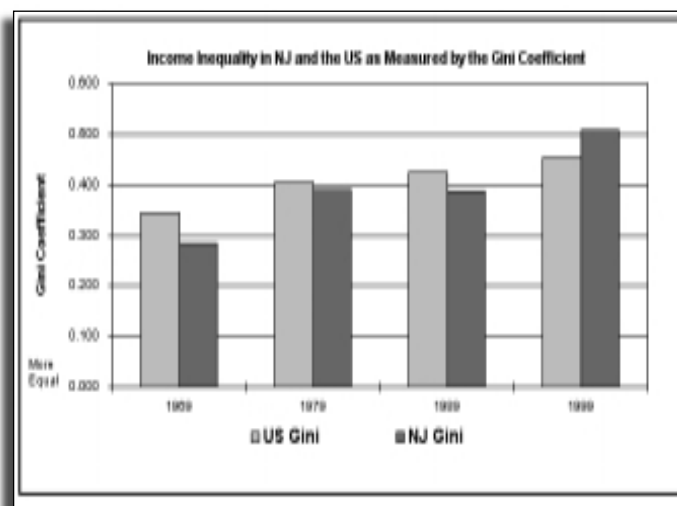


Figure 1.2

Figure 1.2

Gini coefficients for the US and NJ calculated based on Census data on households by income class. Data for 1989 and 1999 are available in the in the Census Summary File 3 (SF3), available on the web by selecting the appropriate year and file in the "All data sets" page of the American Factfinder, on the US Census website, www.census.gov. Data for earlier years are in the 1970 and 1980 Censuses of Population, Volume 1 Characteristics of the Population, volumes for the US and New Jersey.

2. Unemployment

Why do we care?

The unemployment rate measures the number of people actively looking for jobs as a share of those considered to be in the labor market. Unemployment affects individual well-being, and the rate of unemployment tells us about the health of the state's economy. High unemployment means financial hardship for individuals and families. They, in turn, are less able to buy goods and services, which detracts from the strength of the economy. Communities with high unemployment often suffer from increased rates of crime, domestic violence, and substance abuse. Moreover, communities with high unemployment will collect less tax revenue, hampering the government's ability to allocate resources to solving these social problems. Regional and ethnic disparities in unemployment rates in New Jersey may also divide us as a society, exacerbating inequity and social tension.

How are we doing?

As Figure 2.1 shows, New Jersey's unemployment rate has fluctuated widely over the past decades. Over the past decade, the state's unemployment rate has tracked fairly closely with the country as a whole, although we were slightly higher than the rest of the country prior to the 2001 low point and slightly below it since then. Only occasionally has New Jersey unemployment dipped below the 5% level historically considered to indicate full employment.¹ The key question right now, of course, is the impact of the recent recession, the September 11 attacks, and whether the current recovery will have a positive impact on employment. The annual data in Figure 2.1 show that unemployment rose sharply since 2000. Monthly data for January to August 2004, ranged from a high of 5.7% in March to a low of 5.4% in August, with an average of 5.6%, so we seem to be making some progress this year.² The 5.8% unemployment rate at the end of 2002 means that just over four million people were working in the state out of a total population of about 8.4 million.³

What is behind these figures?

Data on employment by sector complement the unemployment rate by shedding light on the structure of our economy. Figure 2.2 shows that New Jersey is increasingly a service-based state, which is consistent with the growth of high-tech industry. Between 1991 and 2001 the service sector grew steadily. Wholesale and retail trade grew except for the last year of the time series, when it held constant. Manufacturing, on the other hand, has declined in absolute terms and, of course, as a share of employment.

What else would we like to know?

The unemployment rate does not tell us about underemployment, which exists when people are in very low-productivity positions or below their skill level. It also does not account for those who have given up on finding a job and dropped out of the labor market, nor does it include those who choose not to hold paid employment for family or other personal reasons. Information about these questions would provide a clearer understanding of employment in the state.

¹ Like any other market, the labor market is composed of buyers (employers) and sellers (job-seekers). For the well-being of the economy as a whole, both must be able to find what they need in the market. Although it may seem counterintuitive, it is desirable to always have some people looking for work; otherwise businesses would not be able to find employees when they wish to expand, and economic change or growth would not be possible. While there is controversy over this definition, economists have historically considered 95% employment to be the maximum the economy can sustain, or "full employment."

² Bureau of Labor Statistics, http://data.bls.gov/servlet/SurveyOutputServlet?series_id=LASST34000004&data_tool=EaG. As of September 2004, when this report went to press, data were available through August 2004.

³ <http://www.wnjp.in.net/OneStopCareerCenter/LaborMarketInformation/lmi16/release1.htm#press>

INDICATOR 2

Sources:

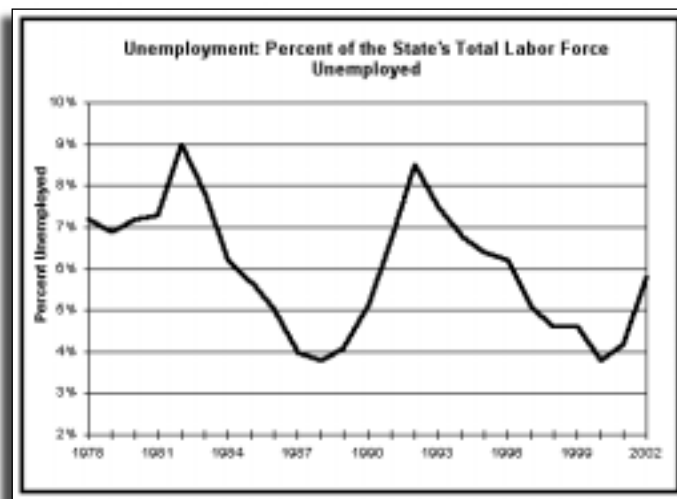


Figure 2.1

Figure 2.1

NJ Office of Labor Planning & Analysis, Labor Market Information, Unemployment and Labor Force Estimates, Historical Data. Available at: <http://www.state.nj.us/labor/lra/>

Targets with which to assess state progress have not yet been established for this indicator.

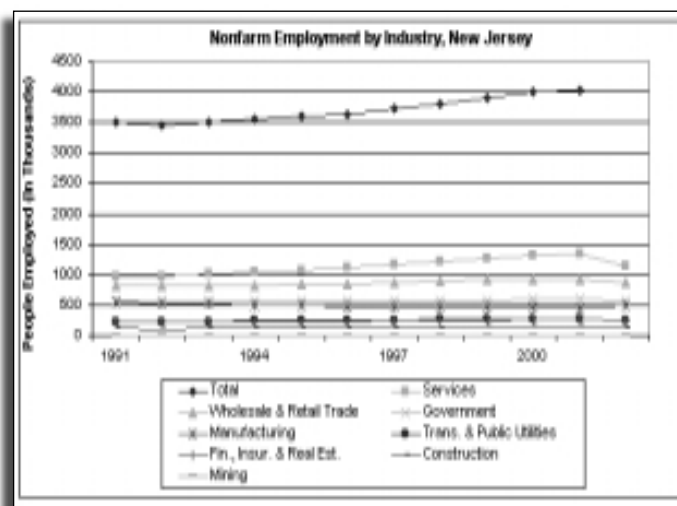


Figure 2.2

Figure 2.2

Current Employment Statistics Survey, http://www.bls.gov/ro3/fax_9582.pdf

3. Productivity of Labor

Why do we care?

Productivity measures the value of output relative to the resources used to produce it. It is closely related to well-being. The more productive we are, the more efficiently we are using our resources, because we can generate more output from the same quantity of input. For employees, this can mean higher incomes and higher living standards. For business, it can mean more output with the same inputs, and therefore more profit or more resources to reinvest in growth and the ability to remain competitive in national or global markets.

How are we doing?

As Figure 3.1 shows, labor productivity in New Jersey increased during most of the last fifteen years, from \$52,100 in 1986 to \$69,800 in 2001. In 2001, it dropped slightly to \$69,600. This drop is likely to be a result of the current recession, which began with a drop in GSP not immediately matched by drops in employment. Since 1986 New Jersey productivity has been below US productivity, but it almost caught up by 2001. It has also been less volatile than the US figures.

What is behind these figures?

Labor productivity is calculated as Gross State Product (GSP) per full-time-equivalent worker in the state's economy. If GSP grows faster than employment, labor productivity will increase. This can reflect several possible changes in the economy. Workers might be better educated or managed, so each person produces more. Employers might be pushing them to work harder and produce more, as often happens at the end of a recession when demand grows but employers are reluctant to hire additional workers. It could reflect introduction of more efficient production technology.

If employment decreases, the impact on GSP, and therefore on employment, will depend on which workers become unemployed. If the least productive ones are laid off, productivity will rise, whereas if highly-skilled people lose their jobs productivity is likely to drop. Job losses due to increased productivity are

understood in two quite different ways; for the unemployed, they are a serious problem, while from a growth perspective they can be understood as freeing up labor for new enterprises.

The relationship between sustainability and changes in labor productivity depends on what caused the change. If labor becomes more productive with no increases in other inputs – say because workers are more motivated – then we are more sustainable because we are using resources more efficiently. Increases in labor productivity due to more consumption of other inputs, wasted natural resources, or more pollution, are not sustainable.

What else would we like to know?

To understand the links between productivity and sustainability, it would be good to know what drives productivity growth. This would require both a sectoral breakdown of the productivity measures, and data about use of other inputs into production in each sector. This would show us both where the change has actually occurred and what might be causing it. It would also be good to know who benefits from increased productivity; is the surplus used to pay higher wages, to invest in expanding the business, or to increase profits?

INDICATOR 3

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

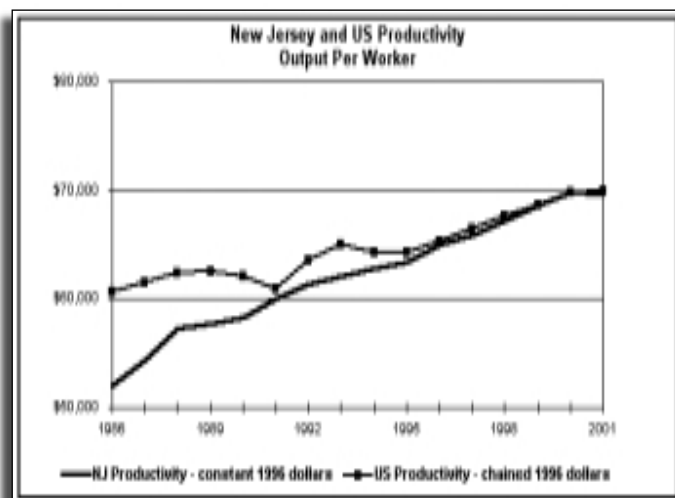


Figure 3.1

Figure 3.1

Productivity figures calculated from output and employment figures. New Jersey GSP data are from the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data, <http://www.bea.gov/bea/regional/gsp>. NJ employment data are also from BEA, through <http://www.bea.gov/bea/regional/reis/default.cfm>. US GDP data are from the BEA at <http://www.bea.gov/bea/dn/gdplev.xls>. US employment data are from the US Department of Labor at <http://data.bls.gov/servlet/SurveyOutputServlet>.

Constant dollars are adjusted for inflation and indexed here to make all years comparable to 1996. Chained dollars likewise adjust for both inflation and changes in sectoral composition.

4. Share of New Jersey Households Below the Poverty Line

Why do we care?

Poverty data offer an important way to evaluate New Jersey's economic well being. In addition to the burden on individuals, high poverty rates impose costs on the state welfare system and slow the economic growth of the community and state as a whole. Poverty often occurs along with poor health, decreased economic opportunity, higher crime rates and other factors that reduce quality of life and inhibit economic growth.

How are we doing?

As Figure 4.1 shows, the percent of New Jersey residents living under the poverty line increased in the early 1990s to a high of 10.6 percent in 1994, and then decreased through the rest of the decade to 8 percent in 2000. New Jersey poverty rates roughly paralleled national ones, though they were not as high.

What is behind these figures?

This indicator measures the share of households in the state below the federally defined poverty line. The poverty line varies with the age and size of the household; in 2000, a family of four with one wage earner making \$8.20/hour was considered to be at the poverty line. For comparison, New Jersey's minimum wage is \$5.15/hour, so a family of four would have to have more than one minimum-wage worker to live above the poverty line. Moreover, the poverty line is defined at the federal level, while the cost of living varies from state to state and is quite high in New Jersey. The national poverty level may therefore underestimate the income required to live in New Jersey.

There is considerable racial and ethnic imbalance in poverty levels. As figure 4.2 shows, Blacks and Hispanics account for a disproportionate share of people living below the poverty line, though the gap has decreased somewhat since the mid-1990s. The racial and ethnic inequity compounds the threat to sustainability posed by the state's poverty level, and must be specifically addressed in any program targeting poverty in New Jersey.

What else would we like to know?

The poverty line is defined in terms of the income needed to support a household with one wage earner. It would be useful to determine how many New Jersey households have only one wage earner and how many of them are living below the poverty line.

INDICATOR 4

Sources:

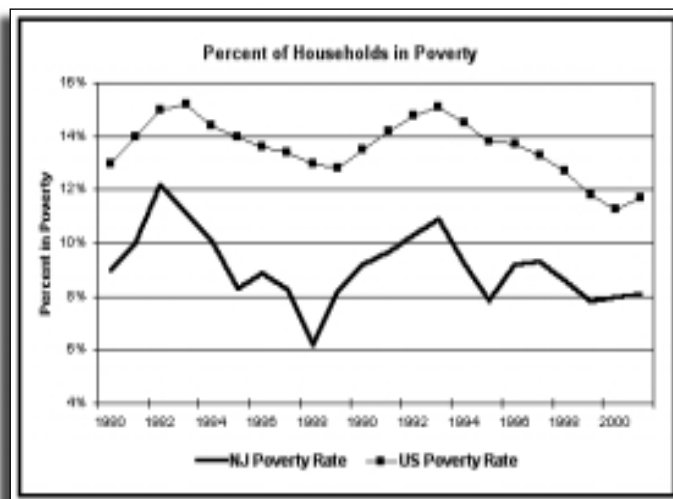


Figure 4.1

Figure 4.1

U.S. Bureau of the Census - Historical Poverty Tables - Current Population Survey, Table21, Number of Poor and Poverty Rate, by State. Available at <http://www.census.gov/hhes/poverty/histpov/perindex.html>

Targets with which to assess state progress have not yet been established for this indicator.

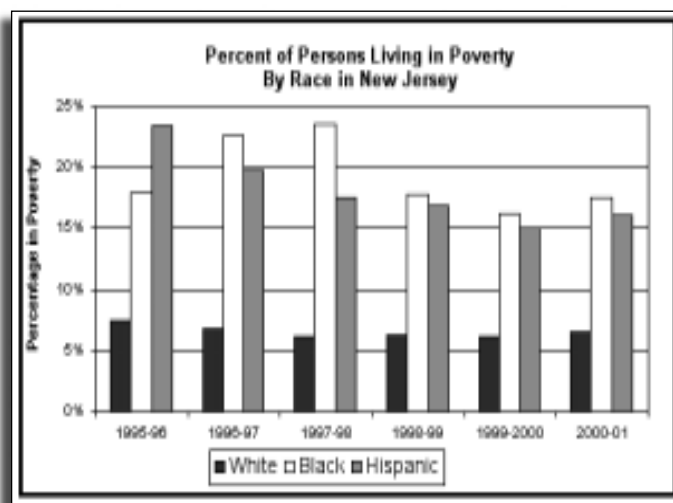


Figure 4.2

Figure 4.2

Available at <http://www.wnjp.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi19/S2.pdf>

5. Gross State Product (GSP)

Why do we care?

The Gross State Product (GSP) measures everything that is bought and sold in the state. It is important because it is closely related to how much money we have to spend, new jobs likely to be created, and other aspects of the material well-being of our citizens. GSP, like Gross National Product, is often criticized because it is used as if it measured overall welfare, when in fact it only measures our material success. For example, if we have a high GSP but we are polluting our environment and spending a lot on environmental health, we might feel that our economic growth has made us less rather than more sustainable. This does not make GSP a useless measure; however, we should not expect it to tell us more than it really does.

How are we doing?

As Figure 5.1 shows, New Jersey's GSP has increased sharply since the mid-1980s, though it declined slightly in 2001. All else being equal, this longer-term trend is a good thing. However, all else is not equal. Increased GSP is sometimes associated with increased environmental harm, or conversion of natural resources to wealth at an unsustainable rate.

What is behind these figures?

Many additional details can help us understand the significance of these figures. It is useful to know which sectors of the economy have generated the economic growth, since different sectors generate different amounts of employment and pollution.

Most of the state's growth over the past decade has been in services, finance, insurance, and real estate.¹ With the exception of real estate, these are sectors that cause little direct harm to the environment, because their primary input is labor and they do not directly cause pollution. In contrast manufacturing, which can be highly polluting, has declined over the past decade. If we are still purchasing as many manufactured goods as in the past, then we may simply have exported the pollution associated with them to the states or countries from which we import the goods.

What else would we like to know?

A great deal of additional information is needed to determine exactly how a given economic growth pattern affects sustainability. This will depend on how the growth occurs, what we are consuming, and many other factors not directly related to the structure of the economy.

Moreover, although in fact it measures production, GSP – like Gross National Product – is often used as a proxy for welfare. Development of actual measures of welfare is difficult, because they are necessarily quite subjective. More work in this area is needed if we are to have indicators that actually tell us how well off we are.

In addition, a significant portion of the state's GSP is attributable to the real estate sector. The environmental impacts of growth in the real estate sector are complex. New Jersey's sprawling land use pattern has significant impacts on transportation and retention of open space. New developments can be designed to impose less harm on the environment and to encourage more sustainable transportation patterns. The impacts of growth in the real estate sector on sustainability as a whole are very complex questions requiring additional analysis.

¹ For data on GSP by sector, see U.S. Department of Labor, Bureau of Labor Statistics Fax-on-Demand, Philadelphia Regional Office - Information Staff (215) 597-DATA (597-3282)/ Fax (215) 861-5720/ FAX-ON-DEMAND (215) 597-4153 9582.
http://www.bls.gov/ro3/fax_9582.pdf

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

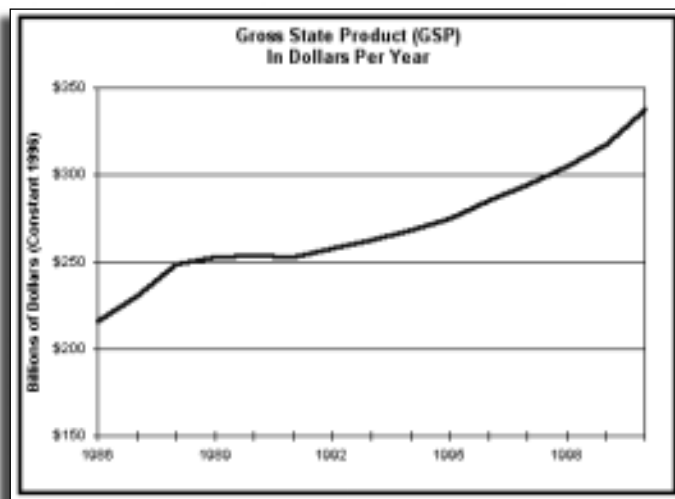


Figure 5.1

Figure 5.1

U.S. Bureau of Economic Analysis, Regional Economic Accounts, Gross State Product, Interactive tables. <http://www.bea.gov/bea/regional/gsp/>

6. Energy Efficiency in the Economy

Why do we care?

Energy efficiency measures the output of our economy relative to the amount of energy we use. It is closely linked to sustainability in several ways. Energy is a major input into productive activity such as manufacturing, transportation, agriculture, and electricity generation, as well as into consumption in our homes and cars. The more efficient we are – i.e. the less energy intensive our economy – the less we spend on energy; so greater energy efficiency is clearly desirable.

Energy makes our lives easier, but its creation and use often hurt the environment. Combustion of oil, gas, and coal generates air pollution and greenhouse gas emissions; nuclear power poses risks associated with waste disposal, accidents, and terrorism; waterpower alters the natural flow of rivers; wind turbines consume land, affect views, and may pose a risk to migratory birds. The extraction of coal, oil, and other fossil fuels directly hurts the environment, requiring additional costs for environmental protection. Clearly the less energy we use, the lower the environmental costs that we face.

Our energy sources themselves put us at risk. Fossil fuels are fixed in supply; while there is debate about whether we are actually in danger of running out, greater energy efficiency will put off this concern. Moreover, we rely heavily on imported oil, putting our economy and our country in a vulnerable position. Understanding our energy use and its sources will help us manage our dependence on other countries.

How are we doing?

As Figure 6.1 shows, New Jersey's energy efficiency has improved over the past fifteen years. Our Gross State Product has grown much faster than our energy use, so our energy efficiency has risen. This is good news, since it means that we are receiving the benefits that come from economic activity, while reducing the societal and environmental harm that can be associated with energy use. However, many people feel that we should be doing much better than we are.

What is behind these figures?

We can understand this trend better if we disaggregate the data to see where the improvements have actually occurred. Figure 6.2 presents data on energy use in three major areas: residences, transportation, and commercial and industrial activities. The bottom line shows the number of people served per thousand BTUs of residential consumption, which has stayed virtually constant from 1975 to 1999. The middle line shows vehicle miles traveled (VMT) per unit of energy. This increased slightly between the mid 1980s and the peak of 119 in 1993, and has declined sharply since then. This may be due to the recent trend towards sport utility vehicles and other large cars, which certainly will not help us to achieve such efficiencies in the future. The top line shows Gross State Product divided by energy use in commercial and industrial activities, a very broad category that includes manufacturing, stores, offices, schools, hospitals, government agencies, and so on. The dramatic increase in energy efficiency may reflect shifts in the state economy from manufacturing to service activities. To the extent that this is the case, we may simply be exporting our energy use to other states or countries, rather than actually decreasing our consumption.

INDICATOR 6

Sources:

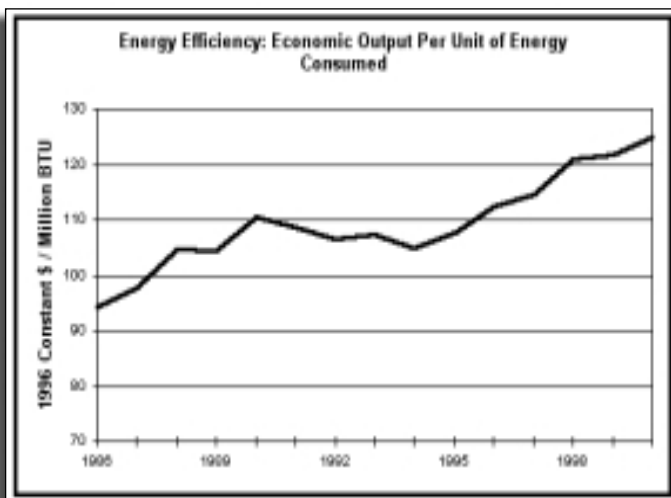


Figure 6.1

Figure 6.1

Data provided by Michael Aucott, NJ Department of Environmental Protection, based on U.S. Energy Information Agency data.

Michael.Aucott@dep.state.nj.us

Constant dollars are adjusted for inflation.

BTUs are British Thermal Units.

Targets with which to assess state progress have not yet been established for this indicator.

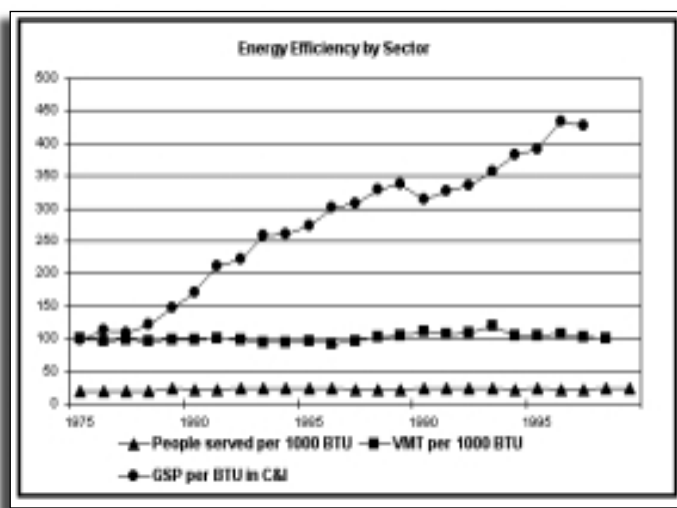


Figure 6.2

Figure 6.2

U.S. Energy Information Agency, Individual State Data, New Jersey

http://www.eia.doe.gov/emeu/states/_states.html - to search for data by state.

http://www.eia.doe.gov/emeu/states/sep_use/total/use_tot_nj.html - to find these data. Table 7, Energy Consumption Estimates by Source, Selected Years, 1960-2000, New Jersey

BTUs are British Thermal Units

VMT is Vehicle Miles Traveled

\$GSP is Gross State Product

C & I is Commercial and Industrial energy use.



2. Equity

Goal: A more equitable distribution of the positive and negative products of civilization among New Jerseyans, from north to south, urban and rural, men and women, and among all classes and races. This includes fair access to healthy environments, good healthcare, quality education, governmental decision-making, economic opportunity, and natural and cultural amenities.

Equity is one of the fundamental values that define the social component of sustainability as it is understood in New Jersey and many other places. For many people, a society that does not provide equal opportunity to all social groups is not one that we want to sustain. Greater equity would not only benefit those who are now disadvantaged; it would benefit everyone in the society. Unequal access to education, jobs, and other routes to prosperity and freedom of choice contribute to crime, homelessness, excess dependence on public services, social tension, and an increasingly polarized society.

What indicators came out of the Sustainable State process, and how are we doing?

7. *Pay equity across racial and ethnic lines* appears to have worsened for both women and minorities.
8. *Legislators' reflection of the racial, ethnic, and gender composition of the population* has largely improved over the past thirty years, although the position of women has worsened recently.
9. *Racial disparities in infant mortality* have remained constant, although all infant mortality rates have declined over the past decade.

What might we add to future indicator reports?

Data on the income distribution in New Jersey are difficult to come by, yet they are fundamental to track our progress towards a more equitable society. Detailed state-level breakdowns of income by household for intercensal years would make it easier to track equity over time. We also need a better understanding of inequity, if we are to solve the problems; why do race or ethnic background correlate with voting rates, school performance, or infant mortality rates? Perhaps even more fundamentally, we need a deeper understanding of what it will take to achieve a more equitable society and whether tradeoffs might be required to achieve it.

7. Pay Equity

Why do we care?

We want to live in an equitable society, where people are paid based on their work, not their gender, race, or ethnicity. People who suffer from discrimination based on traits that have nothing to do with their skills are less likely to feel ownership of their society, less likely to work to make it a better place. A society in which everyone feels like a welcome and equal participant, on the other hand, will be more sustainable, and better able to grow, evolve, and adapt to change.

How are we doing?

We still have considerable pay discrepancies across gender, racial and ethnic lines. This indicator compares the hourly wages of women and men and of whites, blacks, and Hispanics. As Figures 7.1 and 7.2 show, men earn more than women, and whites earn more than blacks or Hispanics. While all incomes rose over the past decade, women's position relative to men worsened and then returned to its original level. The positions of blacks and Hispanics have worsened substantially relative to whites over the same period. New Jersey is becoming less rather than more equitable, as measured by paychecks.

What is behind these figures?

Interpreting these inequities is difficult. While discrimination may explain them, historically, women and minorities have had less education than white men. Whatever the explanation, these data show significant inequities in our society.

Table 7.1

	Wages of each group divided by average wages for all workers		
	1990	1995	2000
<i>by Sex</i>			
All Males	113.04%	115.64%	111.67%
All Females	88.33%	86.55%	88.32%
<i>by Race</i>			
White	102.04%	102.94%	103.83%
Black	91.89%	82.53%	80.19%
Hispanic	82.50%	69.61%	70.44%

We can learn a bit more from the data themselves. Table 7.1 compares the wages in each group to average wages, showing the inequity in the wage distribution. If all groups were paid at the same rate, the wages of each group would be 100% of the average wage. A lower percent means that a group is paid less than average, while a higher percent means they receive more. The trend in the share earned by each group shows whether wage rates are becoming more or less equitable.

The positions of women and minorities relative to men and whites worsened between 1990 and 1995, as evidenced by the decline in their share of wages. While the equity position of women and Hispanics improved between 1995 and 2000, Hispanics were still worse off at the end of the decade than at the beginning. The equity position of blacks dropped steadily throughout the decade.

If education and skill levels are unchanged, then discrimination may indeed be a factor causing women and blacks to earn less than males or whites. In the case of Hispanics, whose share in the population rose since 1990, education and skills may be the explanation. Recent immigrants often have both language problems and lack of education, making it harder for them to earn money than immigrants who have been here longer.

What else would we like to know?

Understanding the causes of inequity is important; otherwise we won't know how to change it. Data on wage rates controlled for education and language skills would show us the extent to which New Jersey's problem is discrimination – which is illegal – or other differences that we can work to change through public education.

Sources:

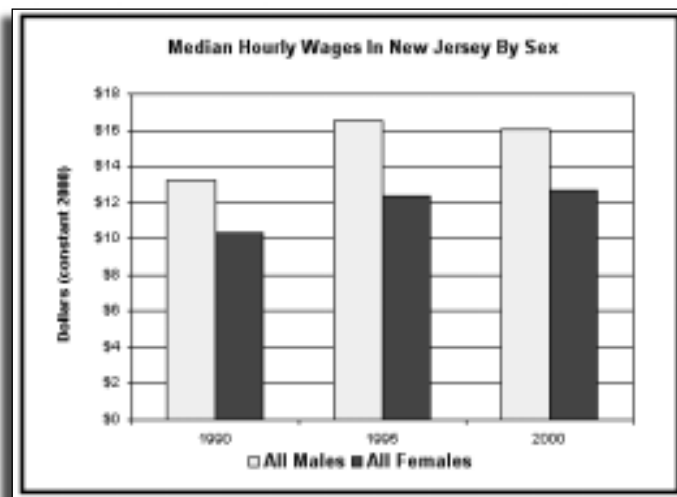


Figure 7.1

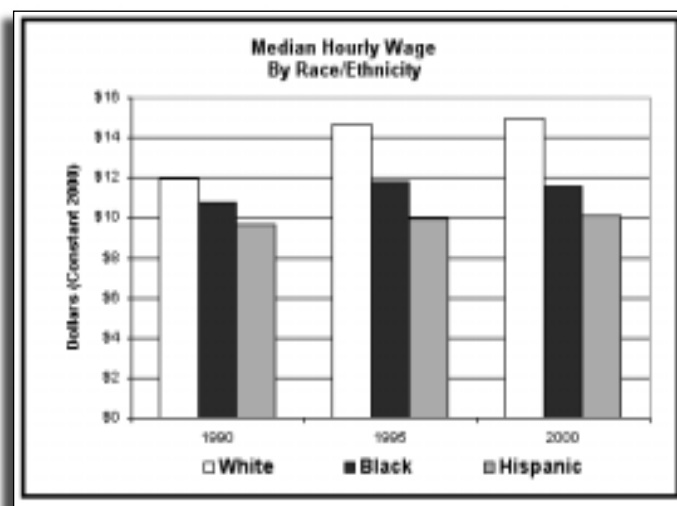


Figure 7.2

Figure 7.1 – 7.2

Current Population Survey (CPS) Earnings Microdata, 1990 1995 and 2000. Data provided by Sen-Yuan Wu, NJ Department of Labor, tel. 609-292-0077, email sywu@dol.state.nj.us

Targets with which to assess state progress have not yet been established for this indicator.

8. Legislature's Reflection of the Composition of the Population

Why do we care?

A sustainable society is one in which everyone participates in public decision-making by electing people who can accurately represent their perspectives. While an individual of any race or gender may serve the interests of others well, it is both fair and healthy for our democracy when our elected officials reflect the makeup of the population they serve. Inequalities can result when minorities and those who live in poor areas do not have equal representation. Moreover, a diverse elected body suggests that all groups in the society have access to the political process, since they can get their own representatives elected.

How are we doing?

The New Jersey state legislature has 120 members, 40 in the Senate and 80 in the General Assembly. The number of female members has grown significantly, but still remains extremely low, at 16.7 percent in 2003. Although that does represent significant growth compared to 3.3 percent in 1971, New Jersey earns 39th place in national standings.¹ According to the 2000 Census, the female population of New Jersey is 51.5 percent of the whole population.

The percentage of Latino state legislators also remains proportionately smaller than our Latino population. In 2000, the Latinos accounted for 13.3 percent of the state's population, but in 2003 the share of Latinos in the state legislature was only 5.8 percent. This is a significant increase, given that the first Latino representative was only elected in 1985, but we still have a way to go to achieve proportionality.

One group has made significant progress in the past two decades. The number of African American state legislators today is nearly proportional to the size of our black population. The 2000 Census found that African-Americans comprised 13.6 percent of the state, while their share of the legislature was 13.3 percent in 2003.

Although we have made some progress, most of the minority representatives in the State Legislature are in the 80-member General Assembly. The 40-member Senate is still composed largely of white males. In 2003, there were no Latinos in the Senate, and only 12.5 percent of the members were women. Because General Assembly members are often elected to the Senate later in their careers, this disparity may lessen in the future.

What else would we like to know?

These data must be considered in relation to data on voter registration and turnout, both overall levels and differences in those levels across communities, in order to assess whether higher voting rates lead to more representative government. It will also be interesting to consider how other elected and appointed positions, such as local officials, reflect the composition of their communities. We must also consider the design of electoral districts. It is easier for minority candidates to be elected in districts with a high concentration of minorities than if the minority populations are scattered throughout the election districts.

¹ Center for American Women and Politics, Rutgers University, <http://www.rci.rutgers.edu/~cawp/facts/map.html>

² Dept. of Labor data (Indicator 7) refer to Hispanics and blacks, legislative data refer to Latinos and African Americans (Indicator 8).

INDICATOR 8

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

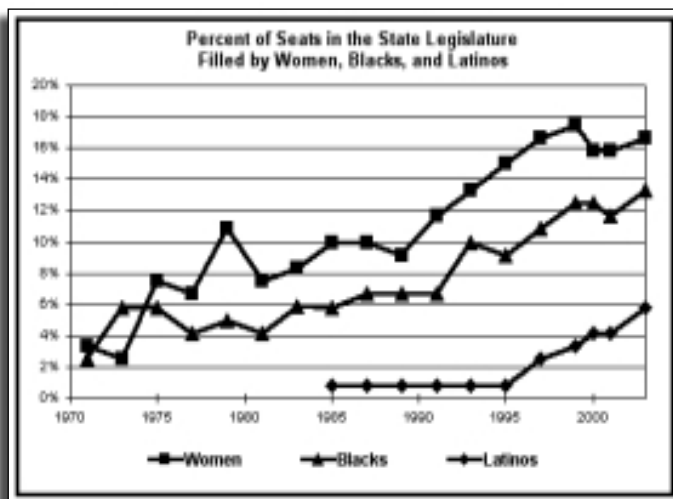


Figure 8.1

Figure 8.1

Data provided by researchers at the Center for the American Woman and Politics, Rutgers University.

9. Racial Disparities in Infant Mortality

Why do we care?

High infant mortality rates are a sign that pregnant women and newborns are not receiving adequate nutrition and medical care. Racial disparity in these rates shows inequity in access to care. Since good nutrition and medical care before birth and in the first year of life are crucial to healthy mental and physical development throughout our lives, this disparity can carry through far beyond infancy.

How are we doing?

As Figure 9.1 shows, the infant mortality rate in New Jersey has been declining for more than a decade, from 9.4 deaths per thousand in 1989 to 6.4 in 2001. While we are doing better, the data suggest that additional efforts will be needed to achieve the state targets of 4.3 for all New Jerseyans and 6.4 for blacks by the 2010 deadline. Moreover, we are not reducing the racial discrepancies; a black infant in New Jersey is more than three times as likely to die before his or her first birthday than a white infant.

What is behind these figures?

The overall decline in infant mortality is largely attributed to improved treatment for premature and low birth weight babies. During the past three decades, the combined impact of technology and the evolution of medical science resulted in improved infant health. However, the disparity between whites and blacks persists, raising questions as to whether black and white infants have equal access to neonatal technology.¹ Moreover, some New Jersey data show that less than 50 percent of pregnant black women receive adequate prenatal care whereas 73 percent of pregnant white women receive adequate care.²

These discrepancies are typically correlated with socio-economic status, poverty, substandard and overcrowded housing, poor nutrition, and reduced access to health services. Addressing other social inequities may, therefore, help in reducing the inequity in infant mortality rates.

What else would we like to know?

More information, at a minimum on cause of death, is needed to understand the best strategies for reducing racial disparity in prenatal care. Without that understanding, we may be unable to reduce the high infant mortality rates among black households. We would also like to have data that disaggregate infant mortality rates for Hispanics as well as for non-Hispanic whites and blacks.

¹ <http://www.state.nj.us/health/fhs/bim.htm>

² "America's Health: United Health Foundation State Health Rankings 2002" <http://www.unitedhealthfoundation.org/shr2002/states/NewJersey.html>

INDICATOR

9

Sources:

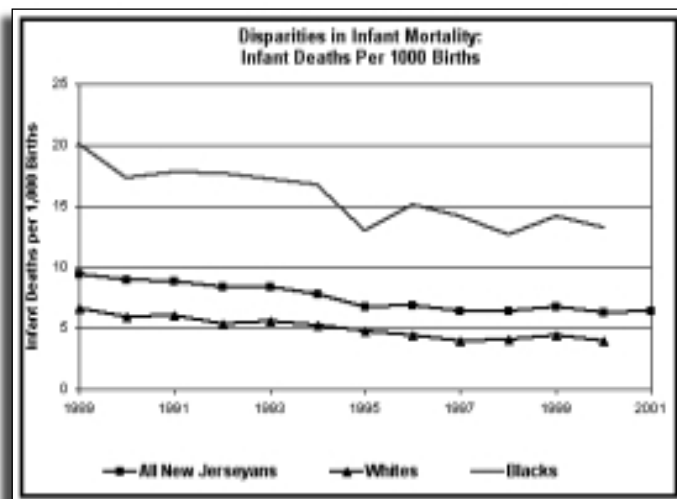


Figure 9.1

Figure 9.1

Data for all New Jerseyans, from New Jersey Center for Health Statistics, New Jersey Health Statistics 2001, Preliminary death statistics, <http://www.state.nj.us/health/chs/stat01/morto1prelim.pdf#m51> Data disaggregated by race from New Jersey Center for Health Statistics, New Jersey Health Statistics 1989-2000, <http://www.state.nj.us/health/chs/stat00/morto0.pdf#m41>

Target:

By 2010, reduce the infant mortality rates to 4.3 for all New Jerseyans and 6.4 for blacks.

Current levels:

All New Jerseyans, 6.4 (2001), Blacks 13.2 (2000)

Who set the target:

New Jersey Department of Health, *Healthy New Jersey 2010*, <http://www.state.nj.us/health/chs/hnj2010vol2.pdf>



3. Strong Community, Culture, and Recreation

Goal: Create or enhance within New Jersey communities a positive sense of local identity and individual belonging, which promotes respect among neighbors, increases everyone's feelings of safety and security, and provides abundant cultural and recreational opportunities

Most of us would like to sustain a society where we all feel safe and at home in a community that provides opportunity for recreation and culture. New Jersey offers a wealth of cultural events, recreation opportunities, festivals, ethnic celebrations, and other opportunities to enjoy the richness and diversity of our communities. Quantifying the sense of community ownership and participation is difficult, however; readily available measures may not do full justice to this complex issue.

What indicators came out of the Sustainable State process, and how are we doing?

10. Per capita circulation of New Jersey newspapers is decreasing steadily.

11. Violent and non-violent crime rates rose in the 1970s, and have largely declined since then.

12. Protected open space has risen steadily since the 1960s.

What might we add to future indicator reports?

An array of other measures may give us a richer understanding of New Jerseyans' commitment to and sense of ownership of their communities; voluntarism, home ownership rates, attendance at civic meetings, readership of local newspapers, reliance on alternate news sources, how frequently people move, even whether they know their neighbors. The share of businesses that are locally owned or their share in local employment may shed light on community sustainability. The share of people who work in the town where they live may provide insight into the strength of ties to the community; the ratio of jobs in the community to residents may shed some light on whether it is even possible for people to work where they live (or live where they work).

10. Newspaper Circulation

Why do we care?

Newspaper readership is important because of the nature of the New Jersey news market. Sandwiched between Philadelphia and New York, the state's major television and radio broadcasts come from those two cities. While their national and international news is of general interest, their local news focuses on issues facing the cities rather than those facing New Jersey. Consequently, New Jersey newspapers are the major source of information about what is going on within the state.

Reading local and regional newspapers fosters community awareness, and encourages people to take ownership of and engage with their towns. Local papers help people know who their neighbors are, and what their elected officials are doing. They provide the information to enable people to get involved with local decision-making and disputes.

How are we doing?

Per capita newspaper readership in New Jersey has declined steadily since the 1980s, as television viewing has gone up. Figure 10.1 provides data based on the newspapers' estimates of their own circulation. We do not have updated data on this indicator, as they are no longer publicly available.

What is behind these figures?

A recent Star-Ledger/Eagleton poll sheds additional light on the consequences of lack of newspaper readership.¹ The poll, which is documented further in Indicator 17, found that people who read newspapers know more about local events than those who do not. This is based on asking which party controls key positions in state government. Only 43 percent of those who do not read newspapers knew that the governor is a Democrat, whereas between 64 and 76 percent of those who read a newspaper knew his party; the more often they read the paper, the more likely they were to know. Among non-readers, watching more television news does not increase the chance of knowing the governor's party. These results suggest that the decline in newspaper readership is associated with a decreased awareness of public affairs in New Jersey.

To some extent, the internet may be replacing newspapers as a source of information. However, local governments and citizen associations are often less effective than state or national ones in using the internet to get out their messages. Moreover, the poll found that many of the people who have replaced newspapers with television are less educated, and therefore less likely to have internet access. While the internet can provide an incredible wealth of information to those interested and sophisticated enough to seek it out, it is not likely to provide the broad awareness of public affairs that newspapers did in the past.

What else would we like to know?

Updated information about newspaper readership would, of course, be of considerable interest, as would be a better understanding of how corporate ownership of local newspapers affects their coverage and presentation of local issues. Beyond this, however, what we are really interested in is an indicator of public awareness of and engagement with the community. Designing such an indicator will be a challenge for the future.

¹ The Star-Ledger/Eagleton-Rutgers Poll, June 2003. "Political Knowledge in New Jersey or If Ignorance Is Bliss, We're One Happy State." Eagleton Institute of Politics. Cliff Zukin and Patrick Murray. <http://slerp.rutgers.edu/releases/143-7.pdf>

INDICATOR 10

Targets with which to assess state progress have not yet been established for this indicator.

Sources:



Figure 10.1

Figure 10.1

Data provided by Michael Aucott, NJDEP (Michael.Aucott@dep.nj.state.us), based on newspaper estimates of their own circulation.

11. Crime Rate

Why do we care?

The ability to live in a safe community is an important element of sustainability. If we are afraid on our streets or in our own homes, we cannot be comfortable in society. Moreover, crime is an indicator of deeper social and economic issues. An increase in the crime rate may result from a decrease in job opportunity, economic stagnation, inadequate education, or inadequate policing.

How are we doing?

Figure 11.1 shows the trends in violent and non-violent crime rates in New Jersey since the late 1960s. Violent crimes consist of murder, rape, robbery, and aggravated assault. Nonviolent crimes consist of burglary, larceny-theft, and motor vehicle theft. As the figure shows, the rate of violent crime has been relatively stable over the past forty years, while the rate of non-violent crimes rose sharply in the early 1980s and has dropped significantly since then. New Jersey experienced its highest rates of both nonviolent and violent crime in the early 1980s.

What is behind these figures?

The causes of fluctuations in the crime rate are difficult to pinpoint. The recession of the early 1980s, one of the highest periods of unemployment in many years, may have significantly contributed to the peaks at that time. In 1980, the unemployment rate for the state was 7.2 percent, (see Indicator 2 for more on unemployment).¹ The poverty rate was also increasing in the early 1980s, climbing to over 12 percent by 1983 (see Indicator 4 for more on poverty).

The entire country experienced a decrease in crime in the 1990s, so we cannot attribute the change in New Jersey to the policing policies of a particular local government or police force. The possible link between crime and periods of falling prosperity would suggest that we might have expected an upswing in 2002; however, there was in fact a slight decline from 2001 to 2002.

What else would we like to know?

To reduce crime, we need a better understanding of how it relates both to other social indicators and to public policies to control it. We may also be interested in measuring the perception of crime; whether people feel unsafe may not be directly related to the actual level of threat. Crime rates vary greatly between urban, suburban, and rural areas, as well; better data on where crimes occur and who the victims are will also help us understand who is actually at risk, so we can better target our protection efforts.

Sources:

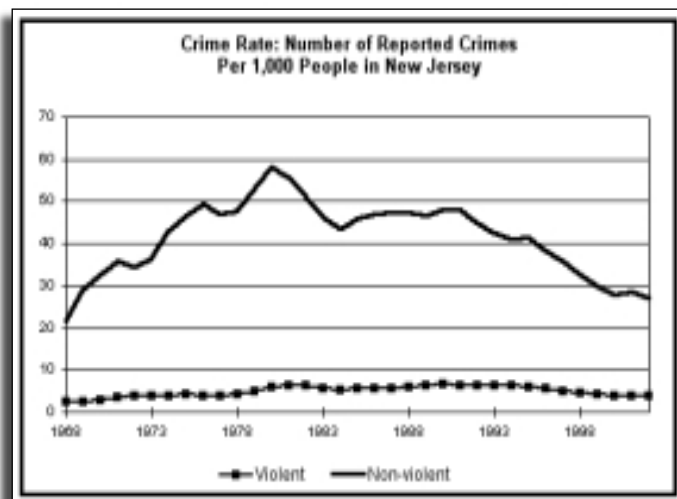


Figure 11.1

Figure 11.1

NJ Division of State Police. Uniform Crime Report, Crime Index for the State, <http://www.state.nj.us/lps/njsp/info/stats.html> for general crime information. http://www.state.nj.us/lps/njsp/info/ucr2002/pdf/2002_sect2.pdf for most current data.

Targets with which to assess state progress have not yet been established for this indicator.

12. Open Space

Why do we care?

Open space helps keep the garden in the Garden State. Our rapid population growth has converted our farmlands and forests to suburban development, roads, and other paved surfaces. This is a cause for concern for many reasons. Open space protects the natural environment by providing habitat for wildlife. It absorbs rainfall, rather than sending it into the storm sewers and rivers; this minimizes the risk of floods and sedimentation of our waterways. It provides recreation on land and water. By protecting open space while it is still relatively inexpensive, we can ensure that there will be room for parks and natural areas when development does occur.

How are we doing?

Since 1966, New Jersey has almost tripled its permanently protected non-agricultural open space, which includes lands managed by federal, state and local governments, interstate agencies and nonprofit organizations. Some of these lands are available for public use, while others are privately held and have easements or other legal measures in place to ensure that they cannot be developed. By 2002, about 1,066,000 acres of open space were permanently preserved, exceeding the target for that year of one million acres of preserved land. Based upon the estimated 4,984,880 acres of land in New Jersey, this represents 22 percent of the state's lands.

What is behind these figures?

Most of the acres preserved since 1970 were acquired through the Department of Environmental Protection's Green Acres Program. In 1998, New Jerseyans voted to establish the Garden State Preservation Fund, which builds on the efforts of the Green Acres program by providing a stable source of capital to preserve one million acres of the state's remaining open space.

Indicator 37 contrasts the amount of protected land in the state with the amount that has been developed. The juxtaposition of these two figures is less encouraging than this indicator alone. Without ongoing conservation programs, we could reach a point where all land in the state is developed except that which is explicitly protected.

What else would we like to know?

The data do not indicate the quality of nature in open spaces, whether the sites have been cleared of vegetation or contaminated by pollutants, what kinds of habitat they provide to wildlife, or whether they can be used by the public; they simply indicate the area. They also do not shed light on the debate over whether it is more important to preserve the maximum quantity of open space, or open space in areas where very little is left – even if the latter may be much more expensive. Knowing what we are protecting and where it is would give us a richer understanding of what we are accomplishing with our open space dollars. Knowing the roles of state government, local government, and private organizations in land protection would also contribute to our understanding of these trends.

INDICATOR 12

Sources:

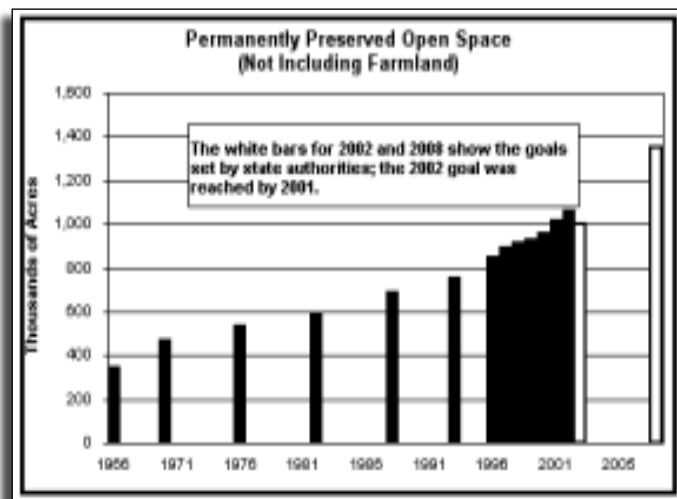


Figure 12.1

Figure 12.1

Data on protected land through 2000 are from New Jersey Department of Environmental Protection. Land and Natural Resources. New Jersey's Environment 2000.
<http://www.state.nj.us/dep/dsr/njenv2000/Land%20Resources.pdf>

Current data may be obtained from Bob Stokes, Chief, Planning and Information Management Bureau, NJDEP Green Acres Program, (609) 984-0495, Bob.Stokes@dep.state.nj.us.

Target:

By 2002, preserve at least 1,004,000 acres of open space

By 2008 preserve at least 1,354,000 acres of open space

Current (2002) level:

1,066,000

Who set the target:

Governor Whitman's 2nd Inaugural Address, January 1998.



4. Quality Education

Goal: A quality, lifelong education equally accessible to all New Jerseyans, whereby individuals learn to be critical thinkers and engaged citizens with an understanding of and respect for the systems that support civilization (social, economic, and environmental); and which provides students with the knowledge and skills necessary for employment and personal fulfillment.

Quality education enables individuals to improve their lives, and gives them a wide range of choice in how they earn their living, spend their time, and occupy their minds. Quality education is also the foundation of a productive economy, an engaged and committed citizenry, and a fully functioning society. New Jersey's performance has been mixed. On the one hand, our per-pupil expenditures on primary and secondary education are among the highest in the nation, and we have been a leader in new educational initiatives such as charter schools and standards-based reform. On the other hand, groups in the state have spent years arguing in the courts about the economic disparities between poor and rich school districts, and the resulting court-ordered expenditures have yet to be fully implemented.

What indicators came out of the Sustainable State process, and how are we doing?

13. *High school graduation rates* have fluctuated widely over the past fifteen years. After significant drops between 1997 and 1999, they rose sharply in 2000 and 2001.
14. *Teacher-student ratios* have improved markedly in the past five years, in part due to a federal program, which provides support to the states to hire more teachers.
15. Percent of 11th grade students meeting minimum proficiency standards has risen marginally over the past ten years.
16. *Access to higher education*, measured as undergraduate enrollment in New Jersey colleges and universities as a share of state population, has changed little in the past two decades.

What might we add to future indicator reports?

Income inequality in New Jersey is accompanied by significant inequity in access to quality education, which the state has committed substantial resources to redress. As those expenditures bear fruit, it will be important to compare the performance of students in targeted districts with the rest of the population to see whether these expenditures help solve the problems. Education is also about adults as well as young people. Information on adult literacy, the share of people in the community who do not speak English, and opportunities for people to return to school later in life are important additional measures of our educational system. Public support for education is a major concern as well; tracking federal, state, and local expenditures on public education will be important in the future.

13. High School Graduation Rates

Why do we care?

High school graduation is an essential first step to having a life of choice and economic opportunity. With recent advancements in technology, demands for highly skilled, trained and educated employees have steadily increased. As a result of these changes, a high school education is a minimum in the labor market, and is a requirement for accessing various forms of higher education and training. In a sustainable society, everyone has as much opportunity as is possible for them, so high school graduation rates are a useful measure of what will be available to our young people later in life.

How are we doing?

Graduation rates are calculated by comparing the number of students in the graduating class with the number of entering ninth graders four years earlier. They have fluctuated considerably over the past fifteen years, from below 80% to almost 90%. In contrast, the national average in 2000 was only 69%, so New Jersey's performance is comparatively good even at its worst.¹

What is behind these figures?

The causes of these fluctuations are not clear. Conventional wisdom holds that when the economy is strong and jobs are plentiful, graduation rates decrease, while in a tough economy they rise, as students do not have lucrative alternatives to staying in school. Our data only partially fit this pattern, though if it does hold then we should expect to see further increases in graduation rates when more data become available in the next few years.

Figure 13.2 compares the racial composition of the 2000 graduating class with the composition of the population aged 15-19. These data are not entirely precise, because the racial categories in the census population data are different from those in the education data; thus this figure covers 99.8% of high school graduates but only 97.5% of the population. The information it shows is nevertheless interesting. Hispanics are graduating from high school at less than the rate we would expect based on their representation in the population; they account for 11% of the graduating class but 17.3% of the high-school age population, or about 63% of the rate we would expect. Blacks are graduating at about 90% of the expected rate. Whites and Asians, on the other hand, are graduating at higher than the expected rate, at 116% and 117%, respectively.

What else would we like to know?

Additional information about the considerable fluctuations in graduation rates over time would be valuable for understanding how to improve high school education.

INDICATOR 13

Sources:

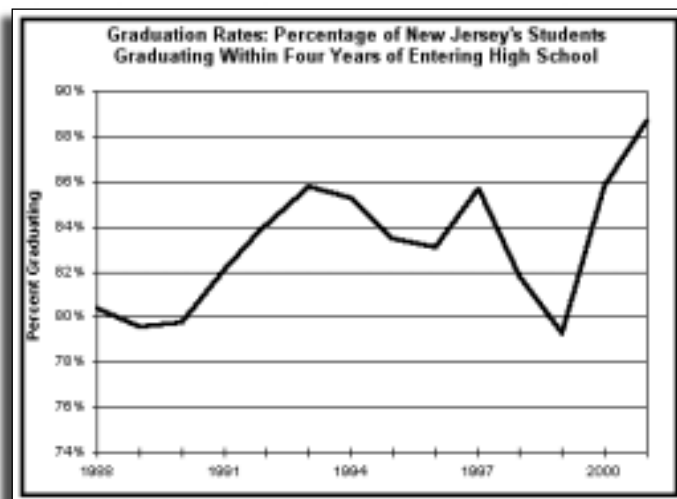


Figure 13.1

Figure 13.1

New Jersey Department of Education, Vital Education Statistics, Section IV High School Graduate Information.
<http://www.state.nj.us/njded/data/vitaletoc.htm>.

Targets with which to assess state progress have not yet been established for this indicator.

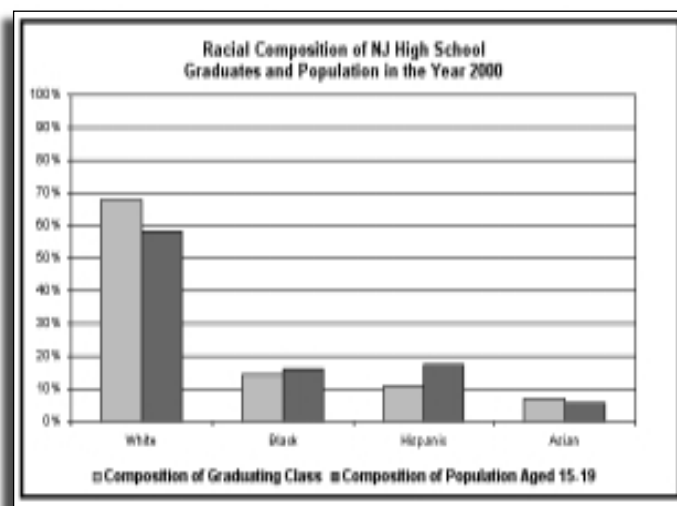


Figure 13.2

Figure 13.2

Graduation rate data from New Jersey Department of Education, New Jersey Vital Education Statistics – 1999-2000, Table 20.
<http://www.state.nj.us/njded/data/vitaletd/9900/vitaletd9900-s4.pdf>

Population data are from the 2000 Census, Summary File 2 (SF 2) 100-Percent Data, Quick Tables, Table QT-P1, Age Groups and Sex: 2000. They can be accessed through the "detailed data" links at <http://factfinder.census.gov>. data" links at <http://factfinder.census.gov>.

14. Student/Teacher Ratio

Why do we care?

Interaction between students and teachers is one of the most important elements of the educational process. When students and teachers can communicate easily, the students are likely to be more engaged in what they are learning, and teachers will be better able to identify problems and encourage progress.

The student-teacher ratio is used to assess the potential for such interaction. It does not directly measure class size, as it is calculated based on the total number of full-time equivalent teachers, including those who teach special classes such as music or gym, and those who teach in much smaller special education classes. Nevertheless, this ratio is a reasonable proxy for average class size and student-teacher interaction.

How are we doing?

As Figure 14.1 shows, the student-to-teacher ratio for New Jersey public schools rose in the early 1990s and then dropped from a high of 14.2 in 1996 to 13.1 in 2001. In comparison, the ratio for the nation as a whole was 15.9 students per teacher in 2001, down from 17.3 in 1991, so New Jersey is doing well by national standards.

What is behind these figures?

From a policy perspective, it is important to know whether the ratio dropped because the number of teachers rose or the number of students declined. In fact, both figures rose over the past ten years, but the number of teachers rose faster than the number of students. In New Jersey, the student population grew by 20.2 percent between 1991 and 2001, while the number of teachers grew by 24.8 percent.¹

Since 1999, this pattern has been strengthened by a Federal initiative to reduce class size in the public schools, enacted under Title VI of the Elementary and Secondary Education Act.² This program provided funds to the states to enable local school jurisdictions to hire additional teachers, with the goal of reducing class sizes in the early elementary school grades to no more than 18. The program also places a strong emphasis on teacher training, since teachers moved from large to smaller classes may be able to apply new teaching techniques. In fiscal year 2001, the funding for this initiative was \$1,623 million, of which New Jersey received \$37 million or 2.28%.³ This program has since been subsumed within the No Child Left Behind Act of 2001.

What else would we like to know?

These figures give us averages for the state as a whole, but do not show us the variation among schools or towns. It would be useful to see how student-teacher ratios vary across jurisdictions, and to link that to income, racial composition, and school performance, to understand better how we can improve education in the state.

¹ *Tabb, E.D. 2002. Public School Student, Staff, and Graduate Counts by State: School Year 2000 – 01, NCES 2002-348. National Center for Education Statistics. U.S. Department of Education. <http://nces.ed.gov/pubs2002/2002348.pdf> Table 10, Public School Membership and Total Teachers, by State.*

² *Class Size Reduction Program Guidance <http://www.ed.gov/offices/OESE/ClassSize/guidance.html>*

³ *Class Size Reduction Final FY 2001 Allocations <http://www.ed.gov/offices/OESE/ClassSize/CSAllocation/cs-usa.html>*

Sources:

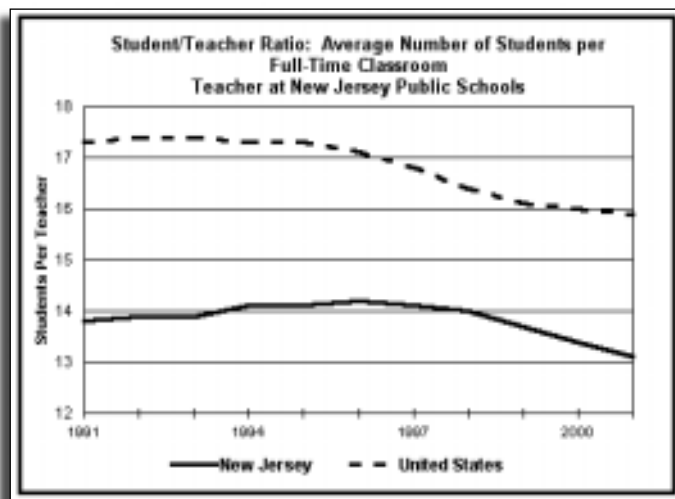


Figure 14.1

Figure 14.1

New Jersey data from NJ Department of Education – New Jersey Education Statistics – Vital Education

Statistics, <http://www.state.nj.us/njded/data/vital/d/0102/vitaledo102-s5.pdf>

US data from US Department of Education, National Center for Education Statistics, <http://nces.ed.gov//programs/coe/2001/section4/indicator38.asp>

Targets with which to assess state progress have not yet been established for this indicator.

15. Standardized Test Scores

Why do we care?

Performance on standardized tests provides some understanding of how many students are acquiring basic skills in reading, mathematics, and writing. This indicator matters both because it gives us some understanding of whether our students are being educated, and because it tells us whether our schools are performing well enough to meet our needs.

How are we doing?

Figure 15.1 shows the percent of students in the regular curriculum (excluding those in special education or with limited English proficiency) who passed each section of the 11th grade High School Proficiency Test (HSPT) between 1993 and 2000. While there has been some fluctuation, the rates have not changed significantly over that period. There is a large gap among races in performance on these tests; as Figure 15.2 shows, white students do much better than blacks or Hispanics on average.

What is behind these figures?

Tracking performance on standardized tests in New Jersey is difficult, because over the past twenty years no one test has been given consistently to public school students. The HSPT, on which this indicator is based, has sections on reading, mathematics, and writing, and students must pass all three to receive a high school diploma. If they fail a section, they may receive additional instruction and take that portion of the test over.

In 2001, the High School Proficiency Assessment (HSPA) replaced the HSPT. It is designed to assess mastery of the material included in the Core Curriculum Content Standards and Workplace Readiness Standards. The HSPA consists of two sections – language arts literacy and mathematics – and students must pass both to receive a high school diploma. Once the new standards have been fully implemented, they will permit reliable comparisons across jurisdictions. However, the results may not be consistent with historical data, since both the curriculum and the tests will have changed. The first data for the HSPA, from March 2002, show 90% of students proficient in language arts and 76.8% proficient in mathematics.¹

What else would we like to know?

What we really care about in this indicator is how well we are educating our students – both to assess what they are learning and to assess how effective our educational systems are. Standardized tests may be the most efficient way we have developed to track performance on a large scale, but it is well understood that they lead to teaching to the test, and that some students perform much better in an educational setting that is not organized around standardized testing.

¹ Data for the High School Proficiency Assessment are available on the NJ Department of Education website at http://www.state.nj.us/njded/schools/achievement/2003/hspa_state.htm

INDICATOR 15

Sources:

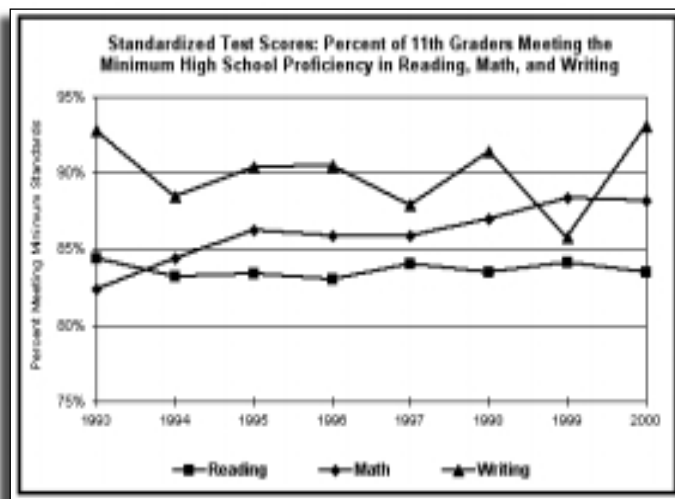


Figure 15.1

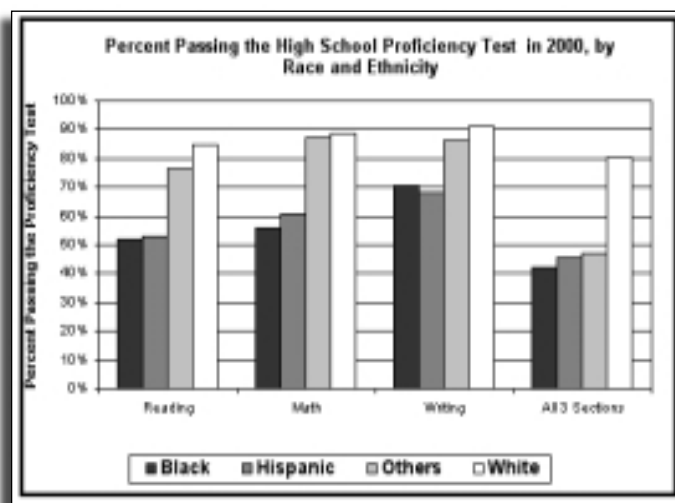


Figure 15.2

Figure 15.1

Summary data through 1999 are available from the New Jersey Department of Education – New Jersey Education Statistics – New Jersey Statement Assessment Reports <http://www.state.nj.us/njded/schools/achievement/index.html>. Summary data for the 2000 HSPT are not available on the web. They are produced by the Office of Evaluation and Assessment and may be requested through the NJDED Public Information Office. Detailed 2000 HSPT results by school are available on the web.

Targets with which to assess state progress have not yet been established for this indicator.

Figure 15.2

New Jersey Department of Education, New Jersey Education Statistics, January 2002 New Jersey Statement Assessment Reports, Table entitled "Detailed charts on the statewide assessment data by race/ethnicity, gender and socioeconomic factors", data on 11th grade testing in: <http://www.state.nj.us/njded/schools/achievement/2002/detail.pdf>

16. Higher Education

Why do we care?

This indicator measures undergraduate enrollment in New Jersey's colleges and universities as a share of state population. It can be important to sustainability for several reasons. If our higher education systems are strong, we will have a large pool of educated labor in the state, making it easy for dynamic industries such as high technology and pharmaceuticals to locate and expand here. A strong educational system will also offer enough educational opportunity to keep our students in the state, so they can choose to stay in the region where they grew up, rather than having to go elsewhere to be educated and pursue their dreams. There are differences of opinion, however, as to whether the share of enrollment in in-state schools actually measures access, or is simply a reflection of student choice.

How are we doing?

As Figure 16.1 shows, enrollment per capita has risen since 1965, but has remained relatively stable since 1975. The fluctuations since 1975 reflect change in the economy as a whole. When the economy is doing poorly and unemployment is high, more students enroll in college, whereas when the economy is strong, some students choose jobs over school. A comparison with Indicator 2 on unemployment shows that the fluctuations are exactly the same in those two graphs. The most recent employment downturn occurred in 1998, and students have come back to higher education since then.

What is behind these figures?

Data on the number of New Jersey students going to college out of state, and the number of out-of-state students studying in New Jersey, show that the state is a net exporter of students. About 29 percent of the state's high school graduates go to college out of state, while just under 92 percent of students at New Jersey institutions came from within the state. Not surprisingly, 98 percent of community college students are in-state, while 76% of students at private colleges are in-state. Interestingly, only 31.5 percent of students at religious institutions are in-state, suggesting that New Jersey is a major supplier of religious higher education to the region.¹

Figure 16.2 shows the racial breakdown of enrollment at NJ colleges and universities. The share of white students in New Jersey colleges and universities, at 65.8% in 1994 and 59.1% in 1999, is considerably lower than their share among high school graduates, which is estimated at 85%.² Although we lack full information to know for sure, this may suggest that white students are more likely to go out of state than minorities. It also suggests that the in-state schools are targeting a population that may not have the resources to leave home for college. Without additional data, however, and an explanation of the large "other" category, we cannot be sure whether these hypotheses are correct.

What else would we like to know?

Our data are not detailed enough to really answer the questions we are asking about our higher education system. We would like to know who goes out of state, and who comes in, and why they make these choices, to really assess whether New Jersey high school students have access to the higher education options they want.

¹ New Jersey Commission on Higher Education – *The Sixth Annual Systemwide Accountability Report*, Table 8, "Undergraduate Headcount Enrollment, by State Residence and Institutional Type." <http://www.state.nj.us/highereducation/ar06.pdf> or <http://www.state.nj.us/highereducation/reports.htm>

² Jay Green, April 2002, "High School Graduation Rates in the United States – Revised" Prepared by the Manhattan Institute for Policy Research, for the Black Alliance for Educational Options. http://www.manhattan-institute.org/cr_baeo.pdf Table 1

INDICATOR 16

Sources:

Targets with which to assess state progress have not yet been established for this indicator.

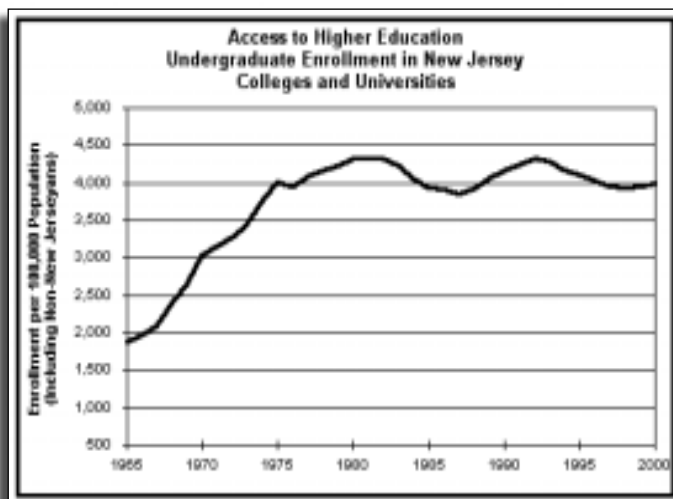


Figure 16.1

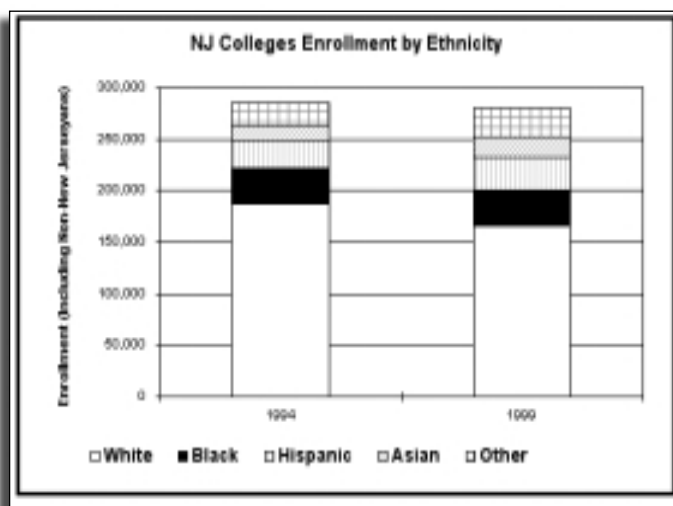


Figure 16.2

Figure 16.1

New Jersey Commission on Higher Education – The Sixth Annual Systemwide Accountability Report, Table 6, page 18, "Total Headcount Enrollment" <http://www.state.nj.us/highereducation/aro6.pdf> or <http://www.state.nj.us/highereducation/reports.htm>

Figure 16.2

New Jersey Commission on Higher Education, "Status of Minorities in New Jersey Higher Education October 2000" <http://www.state.nj.us/highereducation/minority-tat.htm>



5. Good Government

Goal: A statewide system of governing that is efficient, effective, trustworthy, and responsible to citizens and their needs; and that actively promotes good citizenship and effective participation in decision-making.

New Jersey has played a prominent role in shaping American democracy, both in the founding of the country and in the more recent past. The state has taken a lead with landmark legislation and policies on sex offenders, land-use planning, energy efficiency, and other issues. However our citizens are generally ill informed about their own representatives, and voter turnout is decreasing. As our society and the choices that our representatives must make become increasingly complex, the lack of citizen awareness is an increasingly serious problem.

What indicators came out of the Sustainable State process, and how are we doing?

17. *Percent of survey respondents who knew which party controls the legislature* has fluctuated between 40% and 60% since the 1970s.
18. *Voter turnout* in both national and local elections has dropped since the 1960s.

What might we add to future indicator reports?

We know that voter turnout is low, but we are not sure why, or how to change it. Information about confidence in government and government performance may shed light on these questions. Indicators on government action, sensitive as they would be, could be a useful measure of whether the performance of public officials is improving. Indicators that capture the ease of routine transactions with the government might also be interesting; how long it takes to register a car, how long we wait on hold when we call the unemployment office, how long it takes to get a reply to a routine query emailed to the public information office of a state agency, how hard it is to find information on a state website. A broader concern is the relationship between the process of governing – how we choose our representatives – and what the government accomplishes. Future indicators may focus on government accomplishments in identifying and solving problems as well as the process by which it operates.

17. Awareness of State Government

Why do we care?

This indicator shows how many survey respondents living in New Jersey knew which party was in control of the State Legislature. It is a proxy for assessing the health and vitality of our democracy. Our elected legislators make decisions for us about public policy issues that affect all of us. In a sustainable society, people take responsibility for ensuring that their elected officials are indeed serving their interests. If we do not even know which party is in charge, it is difficult for us to hold government responsible for its decisions or to have a basis for our voting decisions.

How are we doing?

As Figure 17.1 shows, knowledge of government has been dropping since the mid-1970s. In the most recent survey, 2003, it was only 20 percent. The particularly low figure in 2003 is partly due to the change in how the question was asked. Because the State Senate is equally divided between Republicans and Democrats, the questions about both the Assembly and the Senate gave three choices – Republican control, Democratic control, or equally divided – rather than only two as in the past. This may have confused respondents who knew that one house was equally divided but did not know which one.¹

The ability to identify at least one U.S. senator from New Jersey has also dropped. Almost two-thirds of New Jersey residents could not name one U.S. senator in 1998, according to the Eagleton Institute poll through which these data are collected. Again, this is the lowest value recorded in this survey over thirty years. This question was not asked in 2001, so we do not know how this value has evolved.

What is behind these figures?

The decreasing knowledge of government may mean that we are losing ground for civic participation and effective political process. When people are disengaged from the political process, it can decrease our capacity to detect and solve public problems through governmental action.

What else would we like to know?

The ability to name the governing party or senators only represents a small part of civic engagement. Many other measures might also capture sense of ownership of community decisions or participation in society. Creating these measures, however, is difficult; it is a task for future editions of this document.

¹ The Star-Ledger/Eagleton-Rutgers Poll. 2003. Political knowledge in New Jersey <http://slerp.rutgers.edu/releases/143-7.pdf>

Sources:

Targets with which to assess state progress have not yet been established for this indicator.

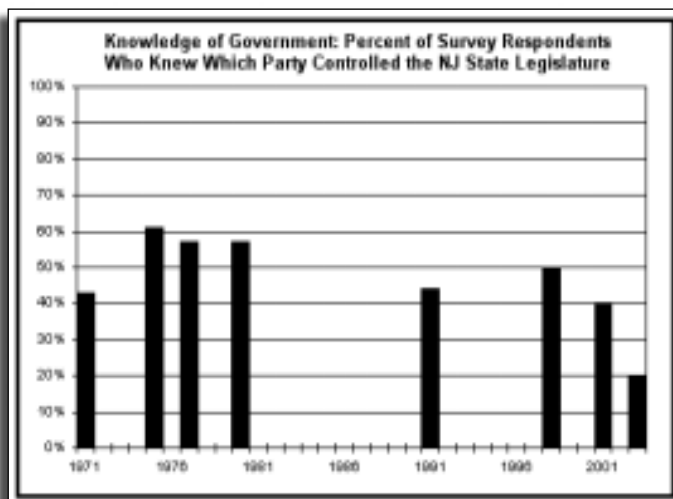


Figure 17.1

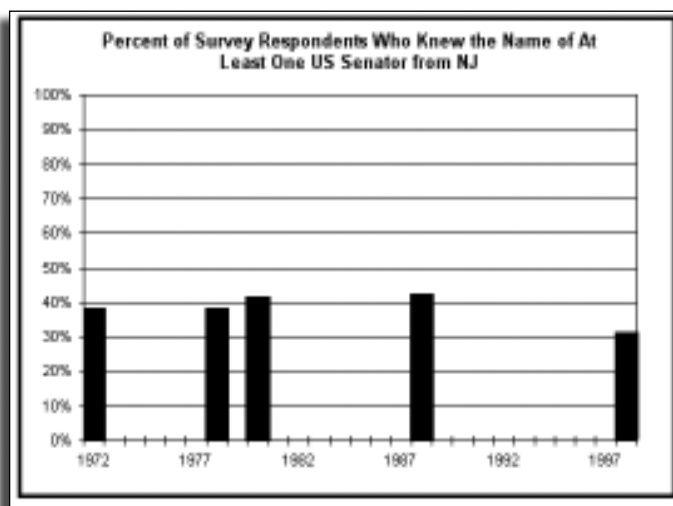


Figure 17.2

Figure 17.1

Eagleton Institute of Politics, Survey on Political Knowledge in New Jersey, Released

Figure 17.2

June 1 2003.
<http://slerp.rutgers.edu/retrieve.php?id=143-7>

18. Voter Turnout

Why do we care?

Voting is the fundamental way that we exercise our right to self-government. Voter turnout is the basic measure of how many of us are exercising this right. By voting, we express our desires and set our priorities for less poverty, more jobs, a cleaner environment, less crime, and better education. When we vote, we fulfill an opportunity that few people have had throughout history, and for which people in this country and others have fought and died.

How are we doing?

Figure 18.1 shows voter turnout in presidential and state legislative elections, respectively, from 1967 to 2000.¹ While turnout for presidential and gubernatorial elections is much higher than for state legislative elections, all voter turnout rates have declined. Turnout for presidential elections dropped from 87% in 1968 to 69% in 2000. Turnout for state legislative elections dropped from 64% in 1967 to 31% in 1999.

What is behind these figures?

The voter turnout rate measures the proportion of registered voters who actually come to the polls. It does not tell us the share of eligible voters who are registered, however. Finding ways to increase voter registration rates has been a national challenge for decades. The enactment in 1993 of the National Voter Registration Act, or "motor voter," was an effort to make registration easier. This law calls on the states to adopt a uniform registration system, and to permit voter registration as part of applying for a drivers' license. Motor voter has increased voter registration in New Jersey, from 71.43 percent of those eligible in 1996 to 75.48 percent in 2000.²

This increase in registered voters may partly explain the dropping turnout rates, if voter turnout drives or motor voter register people who actually are not interested in voting. The steep decline in turnout for state legislative elections between 1995 and 1999 supports this hypothesis. However, while lowering barriers to voter registration is important, there are probably other causes of low voter turnout as well.

¹ The state legislature turns over every two years, in odd years. This graph only includes the election years that were not gubernatorial election years, i.e. 1967, 1971, 1975, and so on.

² Federal Election Commission. *The Impact of the National Voter Registration Act on Federal Elections 1999 – 2000. Table 1. Voting Age Population and Voter Registration.* <http://www.fec.gov/pages/nvrareport2000/nvrareport2000.htm>

INDICATOR 18

*Targets with which to
assess state progress have
not yet been established
for this indicator.*

Sources:

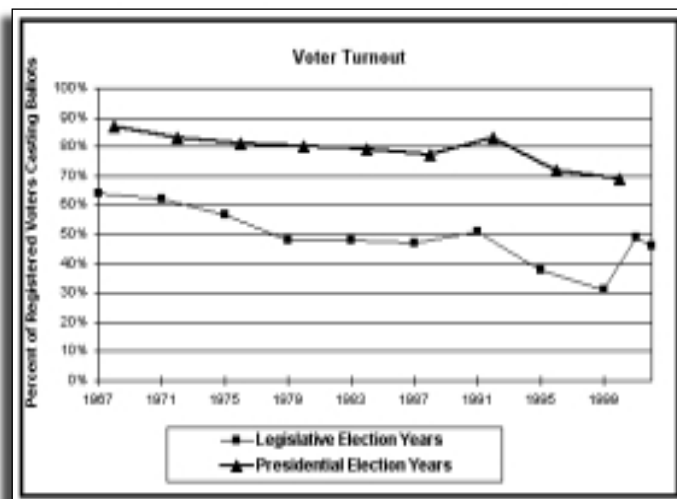


Figure 18.1

Figure 18.1

2002 data at: http://www.state.nj.us/lps/elections/elec2002/2002g_turnout.pdf

2001 data at: http://www.state.nj.us/lps/elections/elec2001/2001g_turnout.pdf

Earlier data in the Manual of the Legislature of New Jersey, 2001, "Statewide Voter Turnout Since 1970," p. 877

General information on elections and voter turnout is at <http://www.state.nj.us/lps/elections>



6. Decent Housing

Goal: A variety of desirable housing options for all New Jerseyans, at every income level.

Sandwiched between two large cities, New Jersey's housing and development patterns are increasingly dominated by suburban sprawl. Relative to New York home ownership is relatively affordable, which leads urban households to move to New Jersey when they are ready to buy homes instead of renting. As the state's population has grown, development has spread further into the rural areas, which are increasingly being suburbanized. Housing options continue to be dominated by low density single family development. Although housing prices have risen in the past decade, they have risen more slowly than income, which means that our housing options have increased in recent years.

What indicators came out of the Sustainable State process, and how are we doing?

19. *Affordability of rental housing* has improved in the past decade, although a significant share of households still cannot afford fair market rents with 30% of their income.
20. *Affordability of home-ownership* has improved steadily over the past decade. The home-ownership rate has also increased, although not as steadily as its affordability.
21. *Trends in new housing construction* show slight increases in the shares being built in rural and urban areas relative to suburban areas. The vast majority of new construction continues to be outside of urban areas.

What might we add to future indicator reports?

We have information about housing quantity, but not about its quality; this is a major gap in our knowledge. Data on overcrowding would complement existing indicators as well. The sustainability of the state's housing patterns is also strongly influenced by the area of housing consumed per person. A simple average value would not be informative, since overcrowded immigrant households would balance out the large homes being built in newly suburbanized areas. However, it could be interesting to track the share of people consuming more than a certain level of residential area.

19. Affordability of Rental Housing

Why do we care?

Affordable housing is an essential element in the well-being of New Jersey's citizens and the economic success of the state. The lack of affordable housing hinders economic growth, since without affordable housing for employees, it is difficult for firms to maintain their workforces. Our economy is held back when significant numbers of our citizens have little money to spend and invest due to the high cost of housing. However, most of all housing is a fundamental need of all people. Living in expensive, poorly maintained housing makes it difficult for families to improve their lives and those of their children, much less contribute to the community.

How are we doing?

Although conventional wisdom holds that the affordable housing stock is at risk throughout the United States, New Jersey rents have become somewhat more affordable during the last decade. As Figure 19.1 shows, more renters could afford both one bedroom and two bedrooms units in 2000 than in 1989.¹ The share rose from 53% to 64% for one-bedrooms, and from 46% to 56% for two-bedrooms. However, despite these increases, some 40% of New Jersey renters still can't afford fair market housing, which is clearly a matter for major concern. In 2000 New Jersey ranked 39th among 51 states in affordability for two-bedroom units, and 43rd for one-bedroom units.

What is behind these figures?

Figure 19.1 shows the share of renting households that can afford "fair market rent" with 30 percent of their income. This follows the generally accepted rule of thumb that a household should pay no more than 30 percent of its annual income on housing. Fair market rents are estimated each year for use in the Section 8 rent voucher program² which subsidizes the rents of low-income households. They include rent plus all utilities except telephone. They are generally set at the 40th percentile point for rents for apartments of a standard size and quality within the geographic area under consideration. For example, the rents for all standard two-bedroom apartments in one city would be ranked. The fair market rent would be the level of rent at which 40% of the apartments are cheaper and 60% are more expensive.

The vacancy rate in rental housing gives some idea of the pressure on the rental market, and the difficulty of finding any housing. As Figure 19.2 shows, rental vacancies in New Jersey have been well below the US average for most of the past fifteen years. In 2002, New Jersey ranked 45th in the nation in vacancies, indicating an extremely tight market.

¹ This calculation is not available from the National Low Income Housing Coalition for 2001 or 2002.

² Section 8 refers to the part of the United States Housing Act of 1937 that created this program.

INDICATOR 19

Sources:

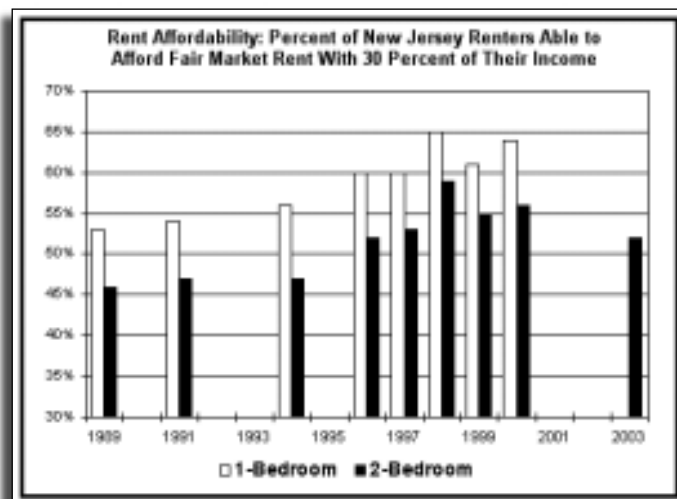


Figure 19.1

Figure 19.1

National Low Income Housing Coalition, 2000, "Out of Reach

The Growing Gap Between Housing Costs and Income of Poor People in the United States"

<http://www.nlihc.org/oor2000>

Targets with which to assess state progress have not yet been established for this indicator.

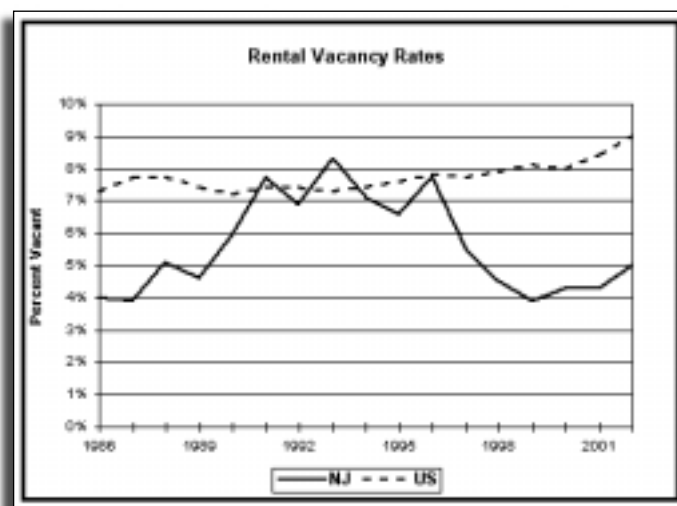


Figure 19.2

Figure 19.2

U.S. Census Bureau, Housing Vacancies and Homeownership Annual Statistics: 2002

<http://www.census.gov/hhes/www/housing/hvs/annual02/anno2t3.html>

20. Home Prices vs. Income

Why do we care?

Homeownership is both a family and a social goal in the United States. For the family, homeownership offers a degree of security not usually available when renting. It helps families accumulate financial equity, which they might not otherwise be able to do. From the community perspective, homeownership establishes residents as long-term stakeholders in the area, contributing to a sense of civic responsibility. When people own their homes, they are more likely to invest funds in physical improvements, and to invest time in social programs that help build cohesiveness in the community.

How are we doing?

The comparison between home prices and personal income offers an interesting way to evaluate the feasibility of home ownership. As Figures 20.1 and 20.2 show, both per capita personal income and home prices have risen significantly between 1990 and 1999. However, the rate of growth of per capita personal income is faster than that of housing price; over the nine-year period personal incomes rose 39.6%, while home prices rose 29.3%. While New Jerseyans often regard home prices as exorbitant, in fact we were better able to afford them at the end of the decade than we were at the beginning.¹

What is behind these figures?

The availability of housing is a major consideration for businesses deciding where to locate. The home vacancy rate shown in figure 20.3, gives a sense of how easy it is to purchase a home in the state. It has been quite low in New Jersey for the past decade, fluctuating between 0.7% and 2.0% between 1986 and 2002, as Figure 20.3 shows. By comparison, the national average has been significantly higher than the New Jersey rate for most of that period.

The home ownership rate, measured as the number of New Jersey residents who live in owner-occupied homes divided by the total number of residents, remained largely unchanged over this time period. As Figure 20.4 shows, it hovered between 62% and 65% from the 1980s through the 1990s, and rose to 67% by 2002. The recent rise may be more a response to lower interest rates than to the increases in income relative to home prices. It could also be the result of demographic change, as maturing baby boomers interested in purchasing homes form a larger share of the state's population. During the same period, the national homeownership rate increased from 63.9% to 67.4%, which is consistent with the demographic explanation.

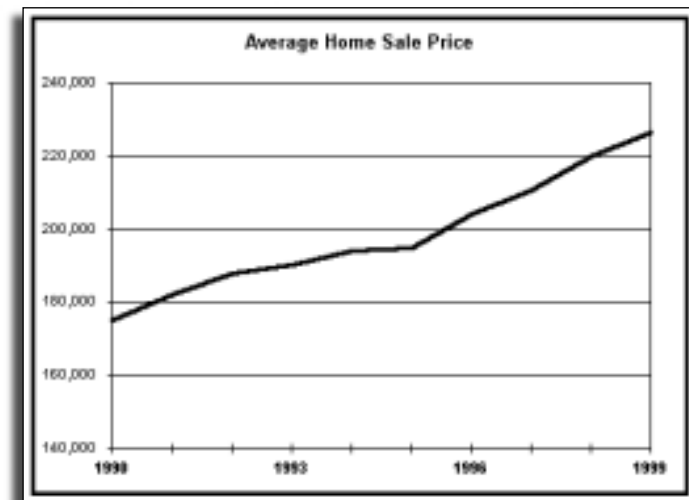


Figure 20.1

¹ Unfortunately, home price data are not publicly available after 1999, so we cannot track this comparison into the 21st century.

INDICATOR 20

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

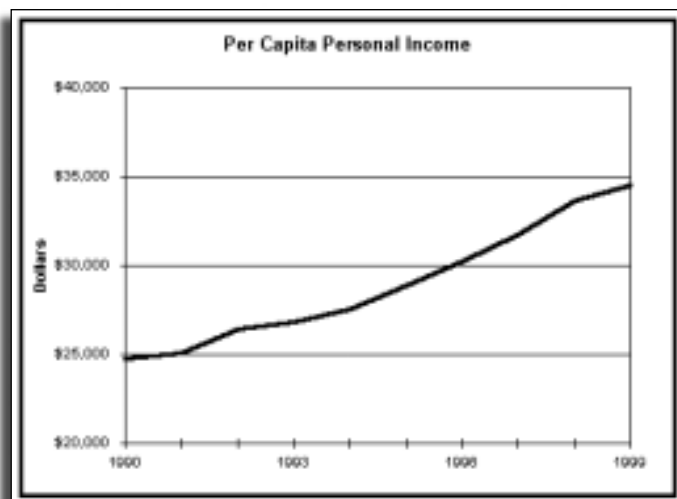


Figure 20.2

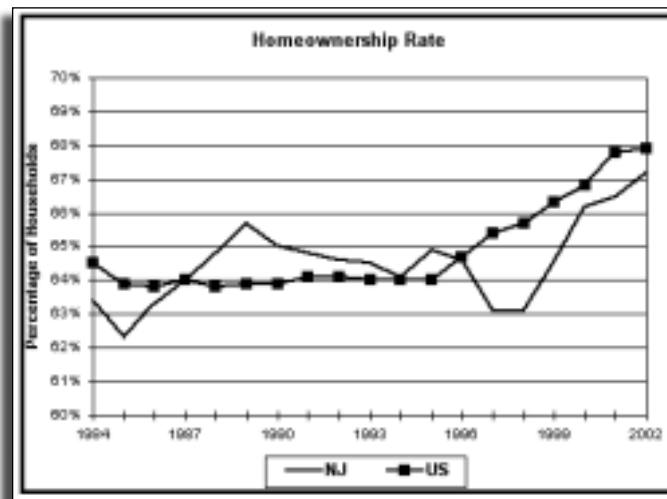


Figure 20.4

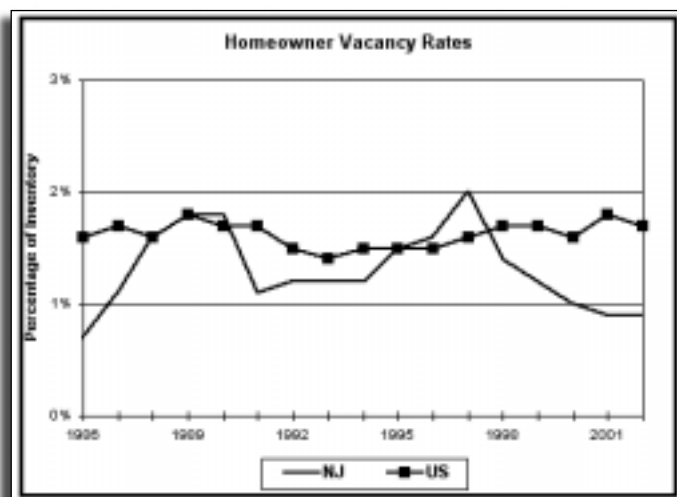


Figure 20.3

Figure 20.1

Data provided in 1999 by Dan Green, RFA/Dismal Sciences, Inc. (now called Economy.Com, located in West Chester, PA). Updates are not available.

Figure 20.2

NJ Office of Labor Planning & Analysis - Income and Poverty Data
<http://www.wnjp.in.net/OneStopCareerCenter/LaborMarketInformation/lm10/>

Figure 20.3-4

Housing Vacancies and Homeownership - Annual Statistics: 2002 - Table 13. Homeownership Rates by State: 1984 to 2002
<http://www.census.gov/hhes/www/housing/hvs/annual02/anno2t13.html>

21. Trends in New Housing

Why do we care?

This indicator shows us where new housing is being built – in urban, suburban, or rural areas. It is important because suburban sprawl is considered a major threat to our sustainability. It sheds light on how much choice we have about what kinds of housing we consume, and where. A society worth sustaining would offer a wide range of housing choices and prices in all areas, so people have many options in where they choose to live.

How are we doing?

Figure 21.1 shows the share of building permits issued for new construction or renovation in urban, suburban, and rural areas. As the large gray portions of the bars in the graph show, most building permits are issued for construction in suburban jurisdictions, but the share of suburban construction in the total has decreased steadily since 1990. The share of permits issued in urban areas has risen. The total number of building permits issued increased steadily between 1990 and 2000, from 17,524 to 34,585. In 2001 it dropped, however, to 28,267.

What is behind these figures?

This pattern suggests that interest in living in urban areas may be slowly growing in New Jersey, even as exurban development continues. The suburban and exurban development leads to more driving, more greenhouse gas emissions, more traffic congestion, more road construction, and then even more development. With these development patterns we end up converting farmland and forests into housing developments, offices, and shopping malls.

The trends in multifamily housing provide additional insight into New Jersey's changing urban form. Figure 21.2 shows the share of building permits in each type of municipality that were for multifamily housing, rather than single-family homes.¹ Not surprisingly, urban areas had more multifamily housing than suburban or rural areas.

The higher density reflected in these figures can be a mixed blessing. For some people, it is a major element in accomplishing such key policy goals as smart growth and vibrant livable cities. For others, however, who prefer rural tranquility to urban life, density goes hand in hand with congestion and a lack of privacy. Unfortunately, with a steadily increasing state population, those preferences for rural tranquility often lead to suburban sprawl and congestion that destroy the qualities that people sought in moving to suburbs or rural areas.

What else would we like to know?

These housing trends raise the question of how areas are classified as rural and suburban. Does the construction of multifamily residences in rural areas mean that those areas are, in fact, no longer really rural? Are lands being classified differently with expanding development, and has the share of the state classified as rural decreased? This question points to the limitation of this indicator as a way to really assess how much choice we have in our housing decisions. Such choice should reflect not only whether housing is single or multi-family, but also how much it costs, how accessible it is to jobs, transport, and schools, and a range of other factors.

¹ A single building permit is issued for a residential structure, whether it contains one unit or many. Consequently, the share of households living in multifamily housing will be considerably higher than the share of permits issued, since a single permit could be for anything from a duplex to a large apartment building.

INDICATOR 21

Sources:

Figure 21.1& 21.2

NJ Office of Labor Planning & Analysis -
Residential Housing Units Authorized by

Building Permits

<http://www.wnjp.in.net/OneStopCareerCenter/LaborMarketInformation/lmi18/>

*Targets with which to
assess state progress have
not yet been established
for this indicator.*

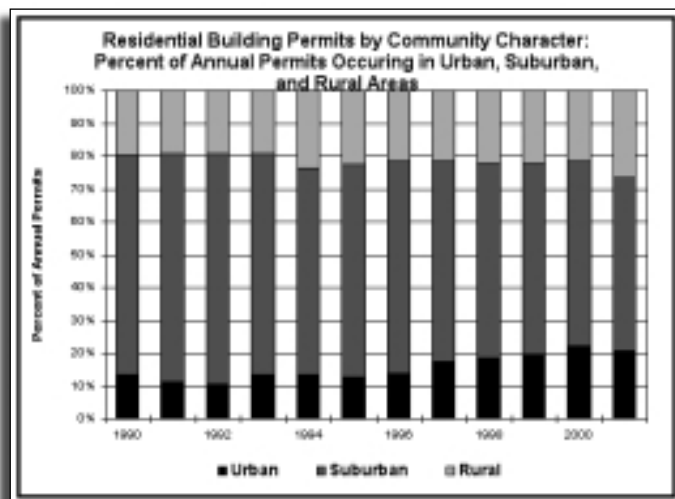


Figure 21.1

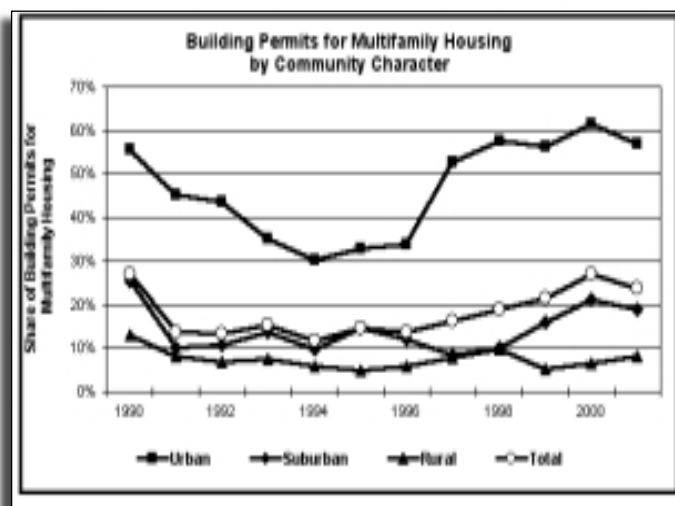


Figure 21.2



7. Healthy People

Goal: The highest opportunity for all New Jerseyans to be healthy, with equal access to high-quality health care and minimized exposure to health risks.

New Jersey is a national center of the health care industry. It houses the headquarters of some of the world's largest health care and pharmaceutical companies, which are among our largest private sector employers. However state residents are also exposed to a wide range of environmental risks. The indicators in this category measure the health consequences of those risks, rather than our progress in removing the environmental conditions that threaten us.

What indicators came out of the Sustainable State process, and how are we doing?

- 22. *Life expectancy at birth* has risen steadily for all New Jerseyans since 1990, but there remains a significant discrepancy between races, with whites living significantly longer than blacks.
- 23. *New occurrences of infectious diseases* have shown a mixed pattern since the mid-80s. AIDS dropped sharply through the 1990s, but has risen somewhat since 1998. Tuberculosis and syphilis have declined gradually since the early 1990s.
- 24. *Hospitalizations for asthma* have dropped sharply through the 1990s.
- 25. *Occupational safety and health patterns* seem to be improving slightly. Workplace fatalities declined slightly in the second half of the 1990s, while the share of workers with blood lead concentrations above acceptable levels dropped sharply since 1990. However both of these measures rose slightly at the end of the 1990s; it is too early to know whether this represents a trend.

What might we add to future indicator reports?

The links between environmental quality and health are important, and warrant better information. Indicators that identify disease clusters in relation to air quality, brownfields, water quality, or other areas of environmental concern would be valuable. Indicators that link behavior to health might also be interesting; for example, relating diet and exercise habits to causes of death or illness. Measures of physical activity and obesity among children may tell us about the future health of New Jersey's adult population.

22. Life Expectancy

Why do we care?

Life expectancy measures the average number of years of life remaining to a person at a given age. It reflects the health and well-being of our population, and our relative access to resources and services that help keep us alive. Longer lives place more impact on the environment, however, and therefore require us to take responsibility for our actions and their consequences.

How are we doing?

Figure 22.1 shows trends in life expectancy at birth from 1990 to 2000 for all New Jerseyans, and for whites and blacks separately. While all life expectancies rose slightly over the decade, they have been substantially higher for whites than for blacks throughout the decade. This reflects an array of social conditions that differ by race; infant mortality, income, access to effective medical care, access to pre-natal care, nutrition, and so on. Projection of the trends of the past ten years suggests that whites are likely to meet the 2010 target of 81.0 set by the NJ Department of Health and Senior Services, while blacks are not likely to reach the target of 76.5. This racial inequity in life expectancy across the society needs to be addressed.

What is behind these figures?

Life expectancy at birth tells us the number of years that a person born in a given year is expected to live. The average life expectancy of a baby born in New Jersey in 2000 was 77.6 years. Life expectancy increases with age, so in the same year the life expectancy of a 65-year old was over 82 years. A grandmother has already lived through many risks; having successfully bypassed them, she is likely to live longer than was expected when she was born.

New Jersey data clearly illustrate the common perception that women outlive men. Figure 22.2 compares life expectancies of men and women through the 1990s. Though men's life expectancies have improved over the decade more than women's, women still may be expected to live significantly longer than their male counterparts.

What else would we like to know?

Life expectancies are calculated based on data on births, deaths, and population. New Jersey data on deaths for races other than white and black are less available. Consequently, life expectancy estimates are available only for whites and blacks, but not for Hispanics or other racial groups. These additional data would give us a better understanding of the inequities in our state in access to health care, nutrition, safe homes and jobs, and other factors contributing to longer life.

INDICATOR 22

Sources:

Figure 22.1 & 22.2

The most current data are available on the web at New Jersey Health Statistics 2000, Table M10.

Life Expectancy at Birth by Race and Sex,
<http://www.state.nj.us/health/chs/statsoo/mortoo.pdf#m10>. Earlier data may be accessed through <http://www.state.nj.us/health/chs/hlth-stat.htm>

Target:

By 2010, increase life expectancy at birth to:

White: 81.0

Black: 76.5

Current (2000) level:

White: 80.1

Black: 74.8

Source::

Healthy New Jersey 2010,
<http://www.state.nj.us/health/chs/hnj2010vol2.pdf>

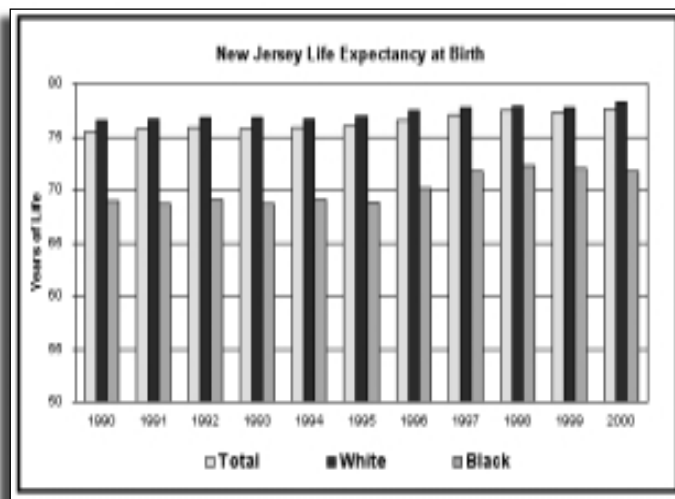


Figure 22.1

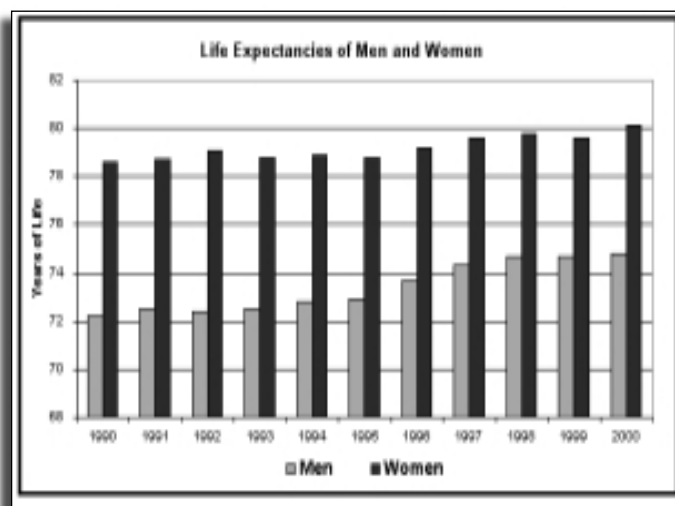


Figure 22.2

23. Infectious Diseases

Why do we care?

Infectious diseases can be a major source of illness and death. If uncontrolled, they can sweep through the society with catastrophic effects not only on public health, but social institutions and the economy as well. Social cohesion is further diminished if poor or minority families suffer more from infectious disease than middle class whites. The control of such diseases is therefore critical to sustain well-being and social stability.

How are we doing?

Figure 23.1 shows the rate of newly reported cases of three major infectious diseases in New Jersey since the mid-1980s. As it shows, the rates of some key infectious diseases have decreased since the 1980s. AIDS cases peaked in 1993, decreased through 1998, and since then have leveled off. In 2002, the rate of new AIDS cases was 16.3 per 100,000, which is about a quarter of the level of 1993, 64.1. Syphilis cases per 100,000 decreased dramatically from 22.0 in 1990 to 0.8 in 2000. Some experts have suggested that this decline may be a direct result of sexual behavior changes in response to concerns with AIDS. In addition, at 6.2 per 100,000 in 2002, verified tuberculosis cases were at their lowest level of the past 15 years.

The New Jersey Department of Health established targets for the reduction of infectious disease in their 2001 report *Healthy New Jersey 2010*.¹ By 2010, the goal was to reduce the AIDS rate to 14.6 per 100,000, the tuberculosis rate to 2.4 per 100,000, and the primary and secondary syphilis rate to 0.5 per 100,000. The Department's strategies for working towards these goals place a strong emphasis on surveillance, to make sure that public officials know of new cases and can take steps needed to prevent them from spreading further. On TB, the Department is working to ensure that those with active TB complete their treatment as prescribed, to reduce the spread of infection and prevent the development of antibiotic resistant strains. If current trends continue, these goals may be reached for tuberculosis and syphilis, but the prospect is not as encouraging for AIDS.

What is behind these figures?

In the past twenty years, some infectious diseases thought to be under control have reemerged. Tuberculosis (TB) became a problem in the mid-1980s due to the emergence of multiple drug resistant strains, an increase in its incidence among immigrants and refugees, and the high risk of disease transmission posed by individuals with dual HIV/TB infection. When patients with the disease do not fully maintain their drug regimens, the strain with which they are infected can become resistant to the drugs. When the resistant strain spreads, medications are less effective in treating new victims. The prevalence of tuberculosis in hard-to-reach populations such as drug users, those with HIV, and the homeless has made this a significant problem.

The rate of infectious disease varies significantly by race in New Jersey. As of December 2002, whites accounted for only 27% of reported adult AIDS cases, although they account for 73% of the state population. In contrast, Hispanics accounted for 17% of recorded AIDS cases as compared with 13% of the population, and blacks accounted for 56% of AIDS cases but 14% of the population.²

¹ New Jersey Department of Health and Senior Services, June 2001, *Healthy New Jersey 2010, A Health Agenda for the First Decade of the New Millennium*, pp. 177-180.
<http://www.state.nj.us/health/chs/hnj2010vol2.pdf>

² New Jersey Department of Health and Senior Services, *New Jersey HIV/AIDS Surveillance Report December 31, 2002. Table 1, NJ Adult/Adolescent AIDS Cases*.
<http://www.state.nj.us/health/aids/qtr0212.pdf>

INDICATOR 23

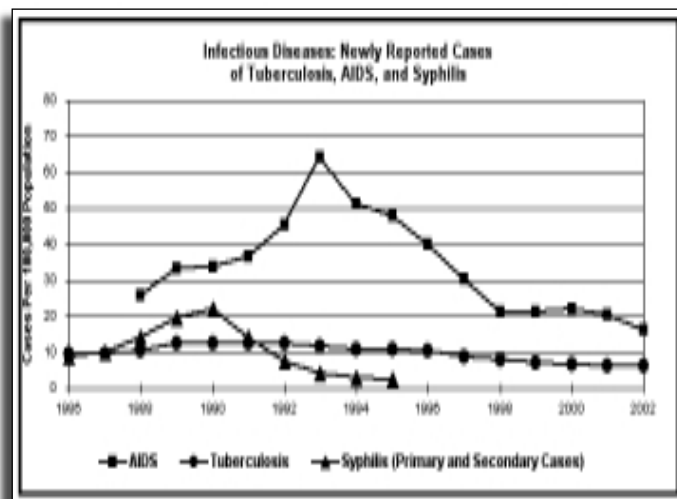


Figure 23.1

Sources:

Figure 23.1

AIDS: NJ Department of Health & Senior Services, Division of HIV/AIDS Services (DHAS), New Jersey HIV/AIDS Semi-annual Newsletter, <http://www.state.nj.us/health/aids/aidsqtr.htm> Table 1 of each issue of the newsletter provides updated data on new adult and adolescent AIDS cases.

Tuberculosis: Data through 1998 at <http://www.state.nj.us/health/cd/tbstats/tb1.htm>

Later data at <http://www.state.nj.us/health/cd/tbstats/tb12000.htm>

Syphilis: NJDHSS, Communicable Disease Program, Sexually Transmitted Disease Service, Sexually Transmitted Diseases and Tuberculosis Morbidity, <http://www.state.nj.us/health/cd/std-stats/>

Target:

By 2010 reduce infectious disease rates per 100,000 to:

AIDS:	14.6
Tuberculosis:	2.4
Syphilis:	0.5

Current (2000) rates:

AIDS:	22.2
Tuberculosis:	6.7
Syphilis:	0.8

Who set the targets?:

New Jersey Department of Health, Healthy New Jersey 2010, <http://www.state.nj.us/health/hs/hnj2010vol2.pdf>

24. Asthma

Why do we care?

Asthma is a common respiratory condition; attacks are often triggered by environmental conditions such as ozone concentrations, car exhaust, dust mites, roaches, rats and mice, and tobacco smoke. Because exposure to these conditions is a greater problem for poor households than for wealthier ones, asthma is more of a problem in low-income families than in those with the resources to avoid such conditions. It is also a particular problem for children, who are affected both in their every-day activities and in their longer-run ability to develop and thrive, both physically and emotionally. Asthma is an important indicator not only because of the direct problems it causes, but because it is linked to so many other aspects of poverty and environmental health.

How are we doing?

Figure 24.1 shows the number of reported hospitalizations for asthma per 100,000 people, from 1985 through 2002. The state has set a goal of 150 for this indicator, to be reached in 2010. The low for this figure, in 2000, was 157, and it rose to 164 by 2002, so while we are making progress, additional improvement is needed to reach the target. Asthma rates are not evenly distributed among different social groups. In 1998, the most recent year when disaggregated data were available, the rates were 101.3 for whites, 428 for blacks, and 241.6 for Hispanics, and 166 overall.

What is behind these figures?

The decline in hospitalization rates for asthma and the variation across racial and ethnic lines may indicate either a decline in asthma itself and of its triggers, or an improvement in treatment that reduces its severity and thus reduces hospitalizations. The ability to treat asthma has improved greatly, with better inhalers and other medications that actually prevent attacks. The second factor may be more likely to explain the drop in hospitalizations in New Jersey in recent years.

The discrepancies across racial and ethnic lines probably relate both to exposure and to treatment. Blacks and Hispanics are more likely than wealthier whites to be living in unhealthy housing or neighborhoods, where they are disproportionately exposed to the environmental triggers that appear to be associated with asthma. The use of inhalers or other medication to prevent or treat asthma attacks depends on regular access to medical care, however, and an understanding of how to use the medications and the importance of doing so regularly. Again, this may be less readily available to blacks and Hispanics than to whites, so more effective education systems may be needed to reduce the inequity in asthma hospitalization rates.

The state's strategies to deal with these discrepancies involve a concerted effort to provide information, counseling, and medical care to the most affected populations. These approaches are targeting people in urban areas and children, and are designed in particular to reduce school absenteeism due to asthma attacks and ensure fuller compliance with asthma prevention regimens.

What else would we like to know?

For asthma rates to be a useful indicator, we need to know whether the actual rate of asthma has dropped in recent years. Public responses to the problem will be very different if the trends are due to better access to medication rather than changes in housing or environmental quality.

INDICATOR

24

Target:

150 hospital admissions for asthma per 100,000 population by 2010

Current (2002) rate:

164

Who set the targets?:

Healthy New Jersey 2010,
<http://www.state.nj.us/health/hs/hnj2010vol2.pdf>

Sources:

Figure 24.1

Data provided by Ruth Charbonneau of the Family Health Services Division of the NJ Department of Health & Senior Services. Data on hospital admissions for asthma are based on the New Jersey Uniform Bill-Patient Summary Discharge Files (UB-92), which track causes of hospital admission. Information on obtaining extracts of the UB-92 data may be found at <http://www.state.nj.us/health/hcsa/ub92intro.htm>.

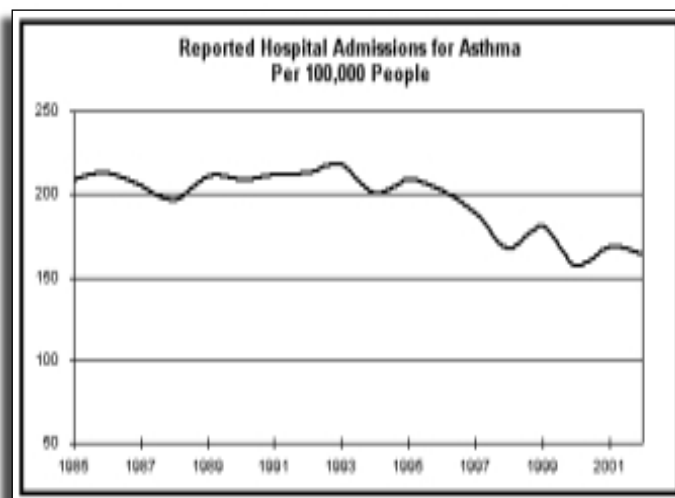


Figure 24.1

25. Occupational Safety and Health

Why do we care?

Workplace safety and health are key values that define the social aspects of sustainability. Many people see health and safety as fundamental rights that all people should be able to enjoy. Our society has done much since the industrial revolution to bring about those rights, and worker safety has improved greatly since the 19th century.

Beyond being a basic right, occupational safety and health problems impose economic costs on the affected households and society as a whole. Injuries destroy careers and undercut family livelihoods. They raise insurance rates, the cost of doing business, and the cost of goods and services.

How are we doing?

The rate of workplace fatalities has changed little over the past 20 years. As Figure 25.1 shows, workplace fatalities per 100,000 workers fluctuated between 2.5 and 4, dropping below 3 in the past five years.¹

What is behind these figures?

Workplace fatalities are due both to accidents and to ongoing exposure to environmental contaminants. While accidents cannot be eliminated entirely, they are largely preventable through a combination of engineering controls at the workplace, employer and employee training, enforcement of health and safety standards, and a proactive approach to safety.

One of the most commonly measured workplace contaminants is lead, which is tracked by measuring the level of lead in the blood of those exposed to it. In adults, a level greater than 25.0 ug/dL (micrograms per deciliter of blood, or 0.25 mg/L) is considered unsafe; the normal level in unexposed adults averages around 2.0 ug/dL. Regulations of the Occupational Safety and Health Administration (OSHA) allow people to continue working in that job as long as their blood concentrations are below 40 ug/dL. Exposure to lead can cause a range of harms, including nervous system dysfunction, renal problems, decreased fertility, and miscarriages. Moreover adults exposed to lead can bring it home on their clothes, exposing their children as well.²

Figure 25.2 shows the number of workers per million whose blood lead concentrations measured more than 25 ug/dL between 1986 and 2000. The drop in this indicator since 1990 could indicate that New Jersey has made progress in reducing lead exposure in manufacturing; on the other hand it may result from the shift in the state's economy away from manufacturing.

What else would we like to know?

The erratic jumps in lead levels in the late 1980s suggest that there may be some problems with the data for those years. Future indicator reports should also make use of the rich data available on workplace injuries as well as fatalities.

¹ Data prior to 1991 were rounded to the nearest whole number.

² Pediatric lead exposure is a different, and potentially more serious problem than adult exposure. Children with more than 10 ug/dL of lead in their blood are considered to suffer from lead poisoning. This can lead to a range of learning disabilities and neurological damage. Childhood lead exposure typically results from lead in paint, soils, old pipes, and other indoor and outdoor sources.

INDICATOR 25

Sources:

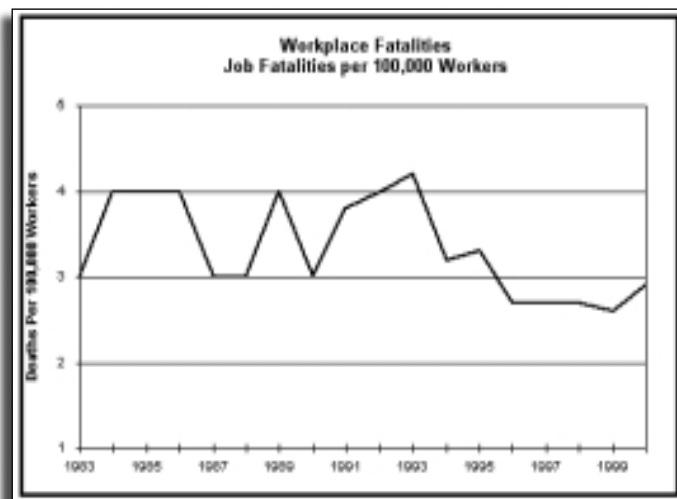


Figure 25.1

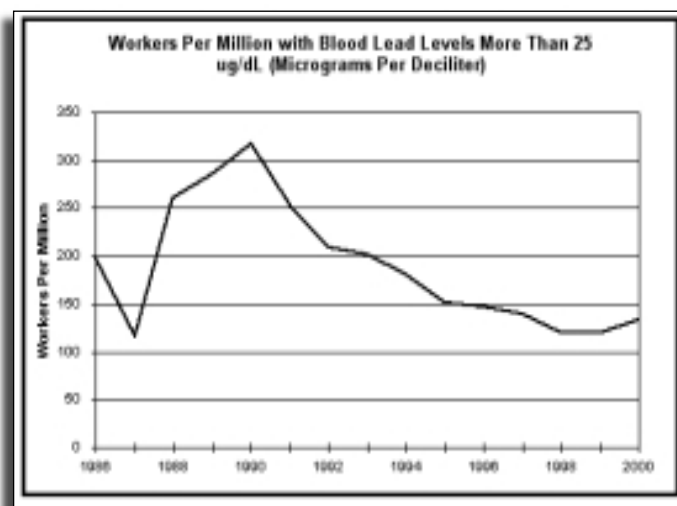


Figure 25.2

Figure 25.1

New Jersey Department of Health and Senior Services, Division of Epidemiology, Environmental and Occupational Health, Occupational Health Surveillance Program, Census of Fatal Occupational Injuries 2000 <http://www.state.nj.us/health/eoh/survweb/cfoioo.pdf>.

Figure 25.2

New Jersey Department of Health and Senior Services, Division of Epidemiology, Environmental and Occupational Health, Occupational Health Surveillance Update, April 2002

Target:

By 2010, no more than 70 workers per million will have blood level concentrations over 25 ug/dL.

Current (2000) level:

133

Who set the targets?:

Healthy New Jersey 2010, <http://www.state.nj.us/health/hs/hnj2010vol2.pdf>



8. Efficient Transportation and Land Use

Goal: A choice of efficient, convenient, safe, and affordable transportation and land use options, providing access to jobs, shopping, recreational centers, schools, airports, and rail centers.

New Jersey is a major transportation hub for the North East, with people flowing into and out of New York and Philadelphia, passengers and air freight traveling all over the world from Newark Liberty Airport, and freight coming into the country through the ports of Newark, Elizabeth, and other towns. Within the state, however, transportation has become a significant bottleneck. While many of our older cities and towns are along New Jersey Transit rail lines, most of our new residential, commercial, and industrial developments are only accessible by car. The result has been a huge increase in miles driven, miles of paved roads, energy consumption, air pollution, and traffic congestion. The strong public policy emphasis now being placed on encouraging smart growth and reducing sprawl may help reduce this problem over time, but this will not be easy.

What indicators came out of the Sustainable State process, and how are we doing?

- 26. *Need for road and bridge repairs* rose to high levels in the 1990s.
- 27. *Vehicle miles traveled per capita* are increasing steadily.
- 28. *Workplace transportation options* – the extent to which new employment centers are built in proximity to mass transit – have improved slightly.
- 29. *Traffic fatalities* have declined gradually since the 1960s.

What might we add to future indicator reports?

Our transportation problems are closely related to our land use patterns. Some people would prefer not to drive all the time, but feel they do not have a choice. Indicators on this issue might capture both the number of towns where it is possible to meet basic needs (e.g. shopping, banking, children's recreation, entertainment, eating out) without a car and the number of people who live in such communities. Other useful indicators might capture the extent to which it is possible to get around by bicycle and the amount of freight transported by truck vs. by train.

26. Need for Road and Bridge Repairs

Why do we care?

The trend in accumulated road and bridge repairs is an indicator of whether we are sustaining the state's economy, which is heavily dependent on transportation. An increase in needed repairs over time suggests that we may be heading for both physical and economic bottlenecks, as transportation may become an increasing constraint on the ability of freight and people to move to and through New Jersey. As a major transportation hub for the east coast, this is a significant concern in terms of the future of our economy.

How are we doing?

Systematic data with which to track this indicator are not available. In the past, the Department of Transportation estimated the cost of needed repairs, but they do not do so any more.¹ The most recent Statewide Transportation Improvement Program describes expected investment expenditures, but does not place this in the context of the full list of projects that are needed. Members of the DOT staff estimate the current need to be about five billion dollars worth of repairs. Significant investments would be needed for the state to meet its target of \$1.3 billion in needed repairs in 2010.

What is behind these figures?

The backlog in repairs is related to another question, whether capital funds should be spent to repair the existing transportation system or to build new infrastructure. In 1998 a Quinnipiac College Poll found that New Jerseyans believed that resources should go into repairs before they went into new construction.² The subsequent 2000 Transportation Trust Fund Reauthorization Act incorporated this strategy, directing DOT to use the funds provided to make half of the needed repairs to the state's transportation infrastructure, rather than spending those funds on new construction.

However, the trust fund has not consistently been used as planned. In 2001 a group of transportation advocacy groups brought up a complaint against DOT because its 2000 capital plan dismissed as infeasible the obligation to make half of the needed repairs. The Appellate Division of the New Jersey Superior Court ruled in their favor in spring 2003, saying that DOT had not justified its claim that this was an unrealistic objective.³ Moreover, although the trust fund is intended for capital rather than operating expenses, in 2003 some of its resources have been added to the general fund and others have been used to help meet NJ Transit's operating deficit. These trends suggest that the state is not likely to catch up on its maintenance backlog in the foreseeable future.

What else would we like to know?

More reliable estimates of the need for repairs to the state's infrastructure are necessary in order to track this indicator in the future.

¹ NJDOT FY 2004-2006 Draft Statewide Transportation Improvement Program, accessed through http://www.state.nj.us/transportation/capital_improvements.html

² Tri-State Transportation Campaign, Mobilizing the Region Issue 244, November 5 1999. "NJ Voters Back Fix-It Transportation Plan." <http://www.tstc.org/bulletin/19991105/mtr24404.htm>

³ Transportation Alternative Press Release, May 31, 2001, "Groups Sue to Enforce Transportation Law" <http://www.transalt.org/press/releases/010531suit.html>; Tri-State Transportation Campaign Press Release June 18, 2003 "Appeals Court: DOT Flunked Planning" http://www.tstc.org/press/0603_TTFdecision.html

INDICATOR 26

Target:

By 2010 reduce the backlog in road and bridge repairs to \$1.3 billion.

Current level:

\$5 billion

Who set the targets?:

NJDOT 1998 Capital Investment Strategy

Sources:

Figure 26.1

Data for 1984 to 2000 from Living With the Future in Mind, 2000 edition. Data for 2003 estimated by Joseph Fiordaliso, NJ Department of Transportation, Joseph.Fiordaliso@dot.state.nj.us, 609-530-2039

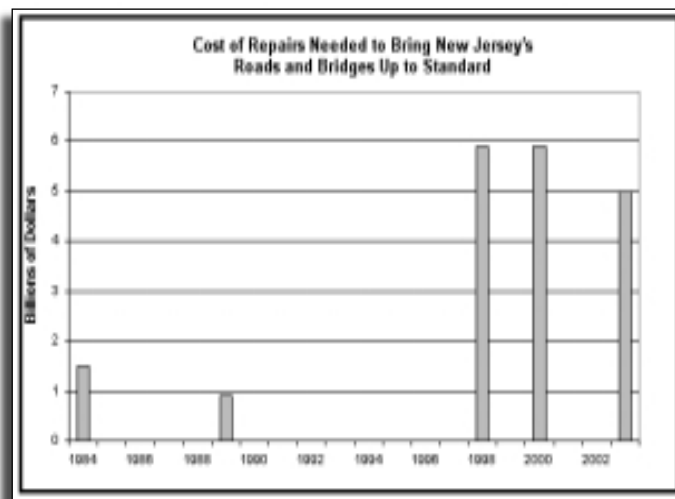


Figure 26.1

27. Vehicle Miles Traveled Per Capita

Why do we care?

Annual vehicle miles traveled (VMT) per capita on New Jersey road systems is a measure of whether the state's transportation system is developing efficiently. An increase in VMTs imposes costs on the state in many ways. Traffic congestion wastes time, which is fundamentally our most important limited resource. It delays workers, consumers, and goods, decreasing our economic competitiveness. Vehicles are also a significant source of pollution. Car exhaust is a major source of air pollution including greenhouse gas emissions. In addition, the impervious surface in roads, driveways, and parking lots increases storm runoff and storm surges, eroding streambanks and increasing water pollution and sedimentation.

How are we doing?

VMTs per capita have increased steadily over the past three decades, from about 5000 in 1965 to over 8000 in 2001. This is a discouraging trend, and one that shows no sign of change. Moreover, since this is a per capita figure, and the state's population has also risen over the same time period, the actual miles driven – and pollutants emitted – have risen at a much higher rate than the per capita figures shown in this indicator.

What is behind these figures?

VMTs are calculated for personal vehicles, and do not include buses, trains, or other mass transit. As Figure 27.2 shows the use of mass transit has increased steadily over the past ten years. However, in 2001 the average New Jersey resident still only used NJ Transit for 26.4 trips per year. Road congestion might decline if far more commuters switched from cars to mass transit. Unfortunately, this is not possible at present. The sprawling land use patterns in the state mean that a majority of commuters do not have the option of using mass transit to get from their home to their workplace. Without a change in our land development patterns, VMTs will continue to increase in New Jersey, with consequent increases in energy use and degradation of the environment.

New Jersey ranks sixth in the nation in vehicle miles traveled per capita, based on nationwide data on VMTs.

INDICATOR 27

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

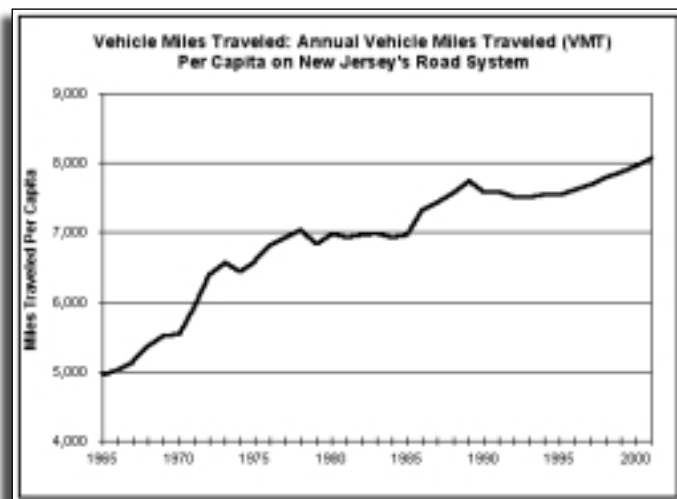


Figure 27.1

Figure 27.1

New Jersey Department of Transportation, Roadway Systems Section, Roadway data information - Public roadway mileage & VMT estimates. http://www.state.nj.us/transportation/count/vclass/mile_vmt.htm

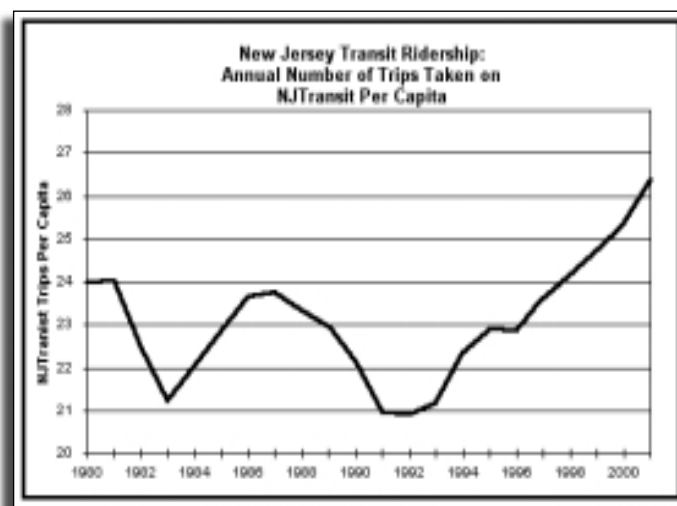


Figure 27.2

Figure 27.2

Data provided directly by the customer service department of New Jersey Transit, njt_customer_svc.@njtransit.com

28. Workplace Transportation Options

Why do we care?

This indicator tracks the location of large new office complexes according to whether they are accessible by public transit or only by personal vehicle. The location of major employment centers being developed today will be a key factor in our ability to steer land use patterns sustainably in the future. When a major development is built, new roads, homes, and shopping centers often follow. If the area is only accessible by car, the overall development pattern in the region will be car-dependent, leading to more clogged roads, wasted time, and air pollution. If new developments are transit accessible, however, the new developments that follow them may also be, contributing to revitalization of urban areas, more downtown businesses, and stronger urban areas.

How are we doing?

Unfortunately, the data underlying this indicator have not been updated since 1998. However the issue is sufficiently important that we are presenting the old data; updating this in the future is crucial to assess the impact of the recent emphasis on smart growth in New Jersey. As Figure 28.1 shows, the increase of auto-dependent office developments has outrun the increase of transit-friendly office developments. In 1990, there were 6 auto-dependent office developments and 4 transit-friendly office developments. Through 1998, the total number of auto-dependent office developments increased to 46, while the number of transit-friendly office developments summed up to 12.

What is behind these figures?

New Jersey Transit is encouraging the development of commercial activities and employment centers within walking distance of train stations, through the Transit-Friendly Communities program. A transit-friendly community is "a place that encourages transit use, decreases automobile dependency, and offers a variety of activities by incorporating commercial, residential, and civic uses within reasonable walking distance to a rail station or bus stop in a well-designed pedestrian-oriented environment."¹

NJ Transit and its partners are working with eleven towns in New Jersey to enhance areas around transit stations under this program.² They try to regenerate the vitality of downtowns and improve the quality of life of towns. This program can function as an antidote not only to the destructive impacts of the construction of large, isolated office developments on towns, but also to the possible damages of sprawl to our state.

What else would we like to know?

This indicator tells us how we are doing in a key area of New Jersey's smart growth agenda. Regular updates are crucial if we are to understand whether we are achieving our smart growth goals.

¹ Regional Planning Association. 1997. *Building Transit-Friendly Communities*. Regional Planning Association <http://www.rpa.org/pdf/tfc.pdf>

² NJ Transit http://www.njtransit.com/ne_pressrelease.jsp?PRESS_RELEASE_ID=465

INDICATOR 28

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

Figure 28.1

These data were developed for earlier editions of *Living With the Future In Mind* by the Voorhees Transportation Policy Institute, Bloustein School, Rutgers University, <http://policy.rutgers.edu/tpi/>. Updates are not available after 1998.

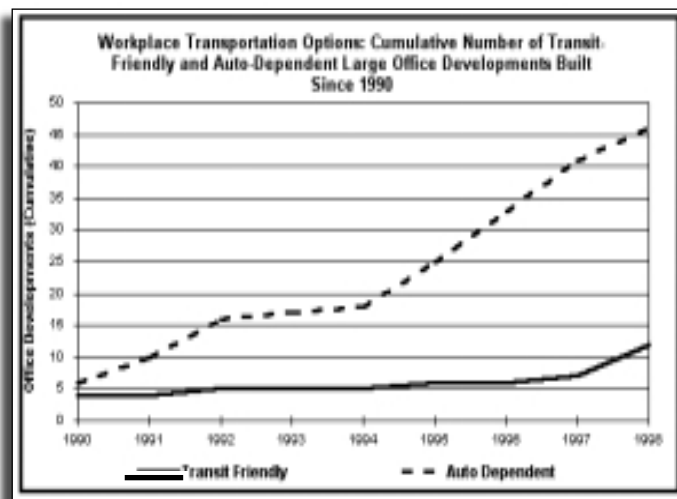


Figure 28.1

29. Traffic Fatalities

Why do we care?

Traffic accidents are one outcome of the patterns of development that have come to dominate New Jersey, and indeed the whole United States. This indicator tracks fatal traffic accidents in New Jersey.

How are we doing?

As Figure 29.1 shows, the total number of fatalities has declined from 1,352 in 1968 to 747 in 2001, a decrease of almost 50%. The number of pedestrian fatalities dropped from 358 in 1968 to 132 in 2001, a decrease of more than 60%. Achieving the Department of Transportation's targets for motorist and pedestrian fatalities presents a significant challenge.

What is behind these figures?

These decreases occurred despite a 20% increase in population and more than a 60% increase in vehicle miles traveled per person (Indicator 27) over the same time period. Explanations for this decrease may include greater vehicle safety which reduces the harm caused when accidents occur, faster and better emergency care which means more lives are saved after accidents, more use of seatbelts, and design of safer roads and reduced human-vehicle interactions.

An analysis of the causes of traffic accidents could shed light on how we can further reduce these figures. Changes in road design, such as better highways, and measures to reduce speeds in residential neighborhoods, may help. This will be particularly important for pedestrian fatalities. While the total number of fatalities has dropped in New Jersey, comparative data show that our road design makes the chance of pedestrian fatality three times greater in the US than in Germany and six times greater than in the Netherlands.¹

Human factors may be even more important. In 2001, close to 40% of the drivers in fatal accidents in New Jersey had blood alcohol concentrations above 0.01 grams per deciliter, sufficient to consider the accidents alcohol-related.² Clearly a stronger focus on drinking and driving will be necessary to reduce traffic fatalities. More education for young drivers may also help. According to the

U.S. Department of Transportation, the age group of 16 – 20 years has the highest rate of traffic deaths nationwide.³ Clearly a great deal of work already goes into driver education; research on the most effective ways to reach target groups could help it be even more effective than it already is.

What else would we like to know?

The relationship between transportation patterns, smart growth, and automobile accidents is not clear. Presumably if we all drove less, accident rates would drop. More analysis is needed, however, to determine on what kinds of roads most accidents occur. Are vehicle-pedestrian interactions a bigger problem in residential neighborhoods or on roads characterized by strip development, like Route 18 in Middlesex County? Is the solution to build more limited-access highways? The relatively uniform speeds and relative lack of turning and lane-shifting on major highways may make them safer for drivers; however the slower speeds on more accessible roads may mean that the effects of accidents are less. Interactions between cars and trucks are clearly very dangerous to the cars; exploring ways to manage truck traffic better should help reduce this portion of fatalities. More work is needed to determine how best to use the design of transportation systems to reduce accidents.

¹ John Pucher and Lewis Dijkstra. "Promoting Safe Walking and Cycling to Improve Public Health: Lessons from The Netherlands and Germany." *American Journal of Public Health*. Vol. 93 No. 9, September 2003. Final draft available at <http://policy.rutgers.edu:16080/papers/15.pdf>.

² National Highway Traffic Safety Administration – Traffic Safety Facts 2001 <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSFAnn/TSF2001.pdf>
Table 114. Persons Killed, by State and Highest Blood Alcohol Concentration in the Crash
Table 115. Drivers Involved in Fatal Crashes, by State and Blood Alcohol Concentration of the Driver
Table 116. Drivers Killed in Fatal Crashes, by State and Blood Alcohol Concentration of the Driver

³ Traffic Safety Facts 2001 – Older Population <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2001/2001olderpop.pdf>

INDICATOR 29



Figure 29.1

Sources:

Figure 29.1

National Highway Traffic Safety Administration – Fatality Analysis Reporting System <http://www-fars.nhtsa.dot.gov/>

Traffic Fatalities Target:

By 2010, reduce fatalities by 25% of 1998 level, to 559.

Most recent level (2001):

747

Pedestrian Fatalities Target:

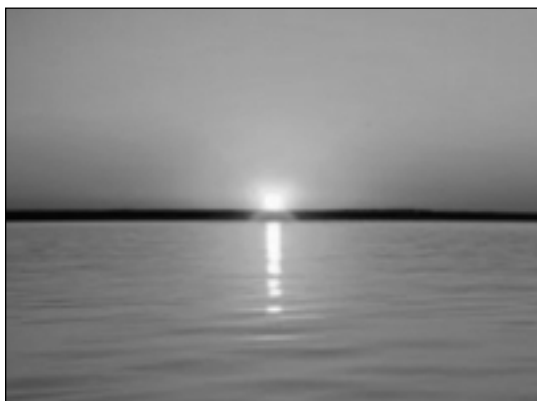
By 2010, reduce fatalities by 50% of 1998 level, to 78.

Most recent level (2001):

132

Who set the targets:

1998 NJDOT, New Jersey First: A Transportation Vision for the 21st Century.



9. Natural and Ecological Integrity

Goal: Preserve and restore New Jersey's ecosystems and the full complement of species that share the state with us.

New Jersey is a state of great natural diversity, from the mountains and forests of the northern Highlands, to the vast marshes of the Meadowlands, the barrier islands of the shore, and the unique ecosystem of the Pine Barrens. Unfortunately, much of our natural heritage has been damaged, some of it for centuries, as we have dumped wastes on the land and in the wetlands, allowed human development to encroach on the habitat of other species, and spewed pollutants into our air and water. New Jerseyans have come to recognize the value of what we are losing, and are choosing to protect land from further development, clean up toxic wastes, conserve what is left of the Meadowlands, and designate more of our rivers for the highest levels of protection. These actions may show economic payoffs, as water treatment costs drop and property values rise with the cleaner environment.

What indicators came out of the Sustainable State process, and how are we doing?

- 30. *Freshwater wetland impacts of development* have continued at the same rate throughout the 1990s.
- 31. *Nesting water bird populations* have declined over the past twenty-five years.
- 32. *River health*, based on measured dissolved oxygen levels, has improved in the past ten years.
- 33. *Marine water quality*, as measured by the share of shellfish habitat that is safe for harvesting, has improved gradually over the past twenty-five years.

What might we add to future indicator reports?

Additional data on species diversity would be useful, so we could do better at tracking the impacts of our activities. Data on human interactions with wildlife such as bear and deer may also be of interest. This information may help us find better ways to coexist with other species.

30. Loss of Freshwater Wetlands

Why do we care?

Protecting what is left of our wetlands is a key component of environmental sustainability. Wetlands are one of the fundamental building blocks of our ecosystem. Freshwater wetlands - bogs, marshes, and swamps - act as natural filters for our ground water supply, reducing the need for expensive investments in water purification. They also protect us from floods by absorbing water and releasing it slowly, which reduces the costs that we might otherwise pay for insurance and cleanup. They provide crucial habitat for migrating birds and a wide variety of other wildlife. Moreover, wetlands also serve as incubators supplying our sport and commercial fisheries. Sustaining our wetlands is an important way to protect both human settlements and natural habitat.

How are we doing?

This indicator shows the change in wetlands since the late 1980s. Permits are now required to disturb wetlands for development, and mitigation projects that build or restore wetlands elsewhere are often required. Figure 30.1 shows the number of acres for which disturbance permits were issued or mitigation required between 1989 and 1999, and the resulting net loss – the difference between disturbance and mitigation. As it shows, we are losing between 20 and about 120 acres of wetland per year, so even if all mitigation is successful, we are not sustaining our wetland resources. Since we have shown a net loss in wetlands every year since 1990, we must be moving away from the Department of Environmental Protection's target of a net increase by 2005 relative to 1998.

What is behind these figures?

Wetland loss has been going on in New Jersey for centuries. Approximately 15 percent of New Jersey's land remains freshwater wetlands, some 700,000 acres. The New Jersey Department of Environmental Protection estimates that the state lost 39 percent of its wetlands between the 1870s and the 1970s; half of that between the 1950s and 1970s.

Legislators recognized the importance of freshwater wetlands by 1970, when they enacted the New Jersey Wetlands Act of 1970. The subsequent Freshwater Wetlands Protection Act of 1987 is considered to be one of the most stringent wetland laws in the United States. These statutes provide additional protection beyond Section 404 of the federal Clean Water Act (1977). The federal law regulates the physical placement of soil, sand, gravel, dredged material or other such materials into the waters of the United States. The state laws regulate additional activities, as well as providing protection through buffer areas for freshwater wetlands.¹

Population growth and spreading land development are major causes of wetland loss in New Jersey, as elsewhere. State and Federal laws now require mitigation to offset many authorized wetland disturbances. Mitigation may include restoration and enhancement of existing wetlands, creation of new wetlands, purchases of credits from a mitigation bank, or contribution to the state's Wetlands Mitigation Fund.

What else would we like to know?

Studies are still underway to assess the success and viability of manufactured wetlands; it will be some time before we can be sure that they provide the same ecological services as natural ones. If mitigation is not successful, then authorized disturbances will essentially be the same as net loss, and we are much worse off than this indicator suggests. Moreover, these data are based on permits to legally alter and fill in freshwater wetlands; to the extent that wetlands are filled illegally or permits are issued for development that never happens, they are inaccurate.

¹ <http://www.state.nj.us/dep/dsr/wetlands/readerletter.htm> - by Martin Rosen, Director of the Division of Science, Research and Technology at the New Jersey Department of Environmental Protection

INDICATOR 30

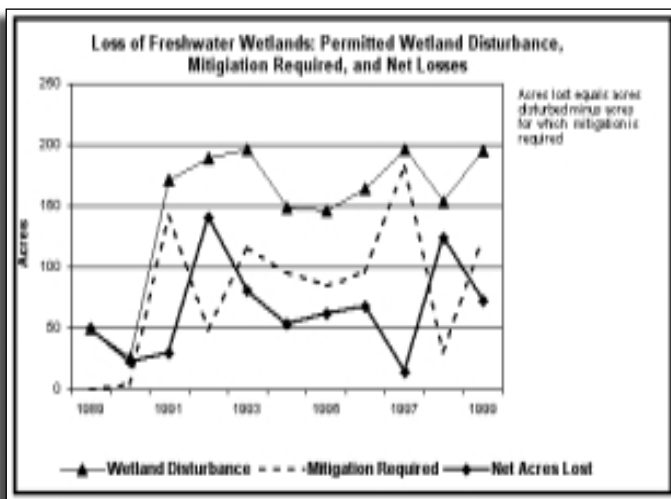


Figure 30.1

Sources:

Figure 30.1

Data provided by Michael Aucott, NJ DEP, Spring 2003.

Target:

By 2005 there will be a net increase in wetland acreage relative to 1998.

How are we doing?

We have had net losses of wetlands each year.

Who set the targets:

1998 NJDEP Strategic Plan

31. Nesting Water Bird Populations

Why do we care?

Water bird populations are an indicator of the general health of the ecosystems where they live. Water birds are generally at the top of the food chain, so if they are plentiful and healthy, then the marshes and shorelines where they live, as well as the species on which they feed, must also be healthy. They are also good indicators of pollution, because their reproductive systems are sensitive to contamination in their environment. This makes them a "plural indicator species," meaning that they tell us about their own well-being, that of the other species on which they feed, and the health of the ecosystems on which they depend.

The beaches, bays, and marshes of the Jersey shore are a strong part of our identity. They are an important economic asset, bringing in tourists from across the country. The ecosystems shelter migratory birds that attract birdwatchers from all over the world in spring and fall. The aquatic ecosystems that provide habitat to those birds also filter pollution and sediments from the water. The health of these areas and the species that inhabit them are part of the heritage of New Jersey itself.

How are we doing?

New Jersey's nesting colonies of water birds have declined over the last twenty-five years. The black bar in Figure 31.1 shows the total population of nesting water birds since the 1970s. While there has been some fluctuation, it has generally declined since its peak in 1978. Some individual species are doing better, particularly great egrets, but most species have declined.

What is behind these figures?

Water birds and humans are in conflict over the same habitat. Human activity diminishes the very features that drew us to the shore in the first place. Human construction of buildings and roads, use of boats that endanger marshes and other vegetation, and pollution of wetlands and bays with chemicals and sediment disturb the birds' ecosystems. Specific factors contributing to the endangerment of New Jersey birds include loss of nesting habitat to development and erosion, disturbance of nesting activities by beach-goers and their pets, municipal beach maintenance practices that can alter habitat conditions and disturb nesting activities, and excessively high levels of predation exacerbated by human disturbance.

The human threat to water birds is not new. Herons and egrets were once almost wiped out by the millinery trade, when their feathers were prized to decorate hats. They began their comeback when laws were put in place to protect them from hunting and trapping.¹ The National Estuary Program (NEP) was established in 1987 to identify, restore, and protect estuaries and coastal wetlands throughout the United States. NEP targets a broad range of wetland issues, engaging local communities in the protection process.² However, the data suggest that these efforts have not been sufficient to protect our water bird populations.

What else would we like to know?

Our data on waterbird populations are updated only erratically, as seen in figure 31.1. Regular updates of these data would give us a better understanding of what is actually happening, and make it easier to know whether trends result from policy reform, land use change, or simply natural variation. A better scientific understanding of the needs of these species would also enable us to identify ways in which human settlements can co-exist with rather than threatening them.

¹ *New Jersey Division of Fish and Wildlife. Beach Nesting Birds.* <http://www.state.nj.us/dep/fgw/ensp/bnb02.htm>

² *EPA. Estuary Programs.* <http://www.epa.gov/region02/water/nep/>

INDICATOR 31

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

Figure 31.1

Data provided directly by Dave Jenkins, Principal Zoologist, N.J. Division of Fish and Wildlife, Endangered and Nongame Species Program, 7A Van Sykel's Rd., Hampton, NJ 08827. tel.: 908-735-9652 e-mail: nrodjenkins@nac.net

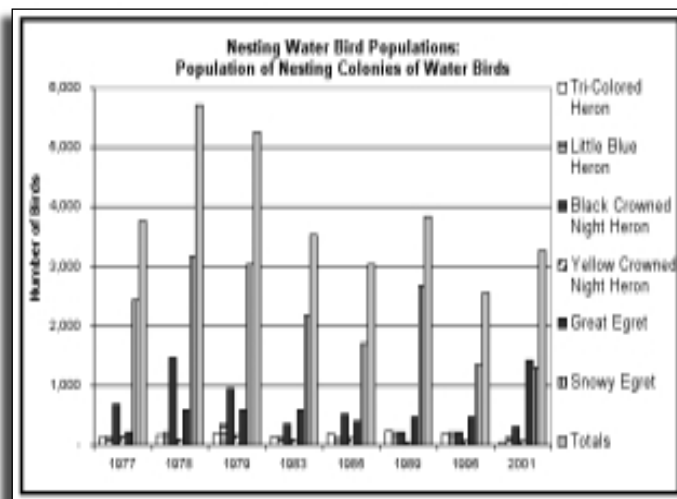


Figure 31.1

32. River Health

Why do we care?

The quality of our rivers tells us how well we are sustaining our natural systems as development spreads across the state. One frequently used measure of the quality of freshwater systems is the level of dissolved oxygen in the water. Aquatic plants, animals, and bacteria all depend on and consume the oxygen in the water. Nutrient-rich pollution from agriculture, animal waste, and lawn fertilizers leads to rapid growth of bacteria and algae, which consume the oxygen, making it difficult for other plants and animals to survive. Consequently, the level of dissolved oxygen (DO) in river systems is a simple, widely-used indicator of water quality and the ability of the rivers to support aquatic and human life.

How are we doing?

Figure 32.1 shows the share of New Jersey rivers and streams that met the state's standard for dissolved oxygen. This improved substantially between the 1980s and the 1990s. Note that each bar covers data over a several-year period, and not all periods are of the same length. In particular, the last bar overlaps with the previous one; the very high five-year average suggests that water quality is improving steadily. Data are published every two years; the next update, in 2004, will cover 2000-2002.

Populations of aquatic insect larvae and other organisms that live in streambeds – so-called "benthic organisms" – are also used to indicate the overall health of river ecosystems. These organisms are like the proverbial canary in the coal mine, because they respond to improving or degrading conditions faster than fish. Figure 32.2 shows the share of river stretches that were healthy, moderately stressed, or severely stressed based on measurements of benthic organisms. The baseline data, collected between 1992 and 1996, showed that approximately 35 percent of the tested rivers were not stressed, 52 percent were moderately stressed, and 12 percent were severely stressed. A resampling between 1997 and 2001 showed decreases in both not stressed rivers (bad) and severity stressed rivers (good).

What else would we like to know?

Much of the improvement in the health of New Jersey's rivers over the past 20 years is attributable to improvements in wastewater treatment required by the Clean Water Act of 1977. The Act made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained from the designated state agency. It also funded the construction of sewage treatment plants and recognized the need for planning to address the critical problems posed by nonpoint source pollution. To date, over \$4.5 billion in federal and state grants and loans have been spent in New Jersey to upgrade sewer systems. The Municipal Wastewater Assistance Program, a cooperative effort established under the federal Clean Water Act, and the New Jersey Wastewater Treatment Trust, have provided \$1.4 billion in low interest loans to finance drinking water and wastewater sewer system projects in the state.¹

Dissolved oxygen is not the only important measure of river quality. These data should be complemented with information on how many miles of our river system fall into the federal fishable and swimmable categories and can be safely enjoyed for recreation and food

INDICATOR 32

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

Figure 32.1

Data for 1975-1997 from NJDEP, New Jersey Environment 2000, "Clean & Plentiful Water." <http://www.state.nj.us/dep/dsr/njenv2000/CleanWater.pdf>, p. 2.

Data for 1996-2000 calculated based on data in "New Jersey 2002 Integrated Water Quality Monitoring and Assessment Report," Appendix II, Table entitled "Data Summary of Dissolved Oxygen in Non-Tidal Rivers," available at <http://www.state.nj.us/dep/wmm/sgwqt/wat/integratedlist/conventionalcharts.pdf>

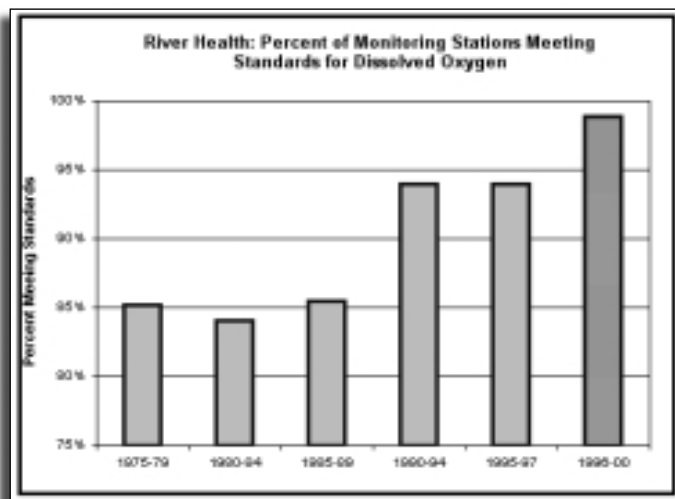


Figure 32.1

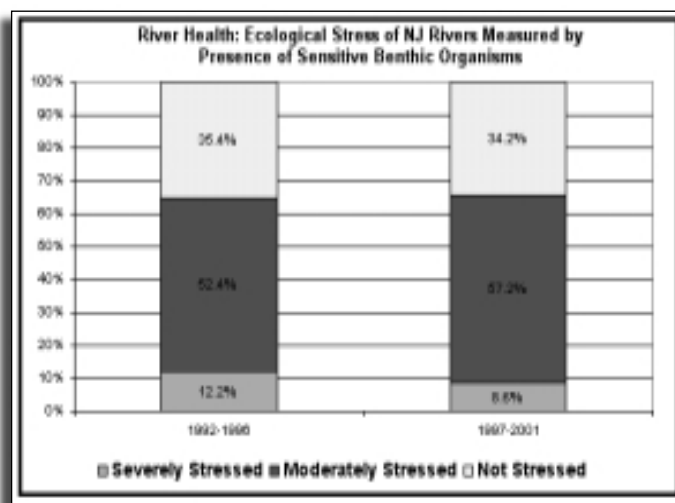


Figure 32.2

Figure 32.2

NJDEP, New Jersey Environment 2000. "Clean & Plentiful Water." <http://www.state.nj.us/dep/dsr/njenv2000/Clean%20Water.pdf>, pp. 2,3.

33. Marine Water Quality

Why do we care?

The quality of our marine ecosystems is a key aspect of our ability to sustain natural habitats as we develop our coastlines. The quality of shellfish habitat is a useful way to track the overall quality of our coastal ecosystems, because it provides a long-term, consistent indicator that is easy to measure. Shellfish eat by filtering the waters where they live, so their health is closely linked to ambient water quality. When the shellfish are safe for human consumption, the ecosystem is clean. The share of shellfish habitat deemed safe for harvesting by public officials is therefore a simple indicator of water quality and ecosystem health.

How are we doing?

As Figure 33.1 shows, New Jersey's coastal water quality has steadily improved over the past 25 years, based on the percent of shellfish areas open for harvesting. Between 1976 and 2001, shellfish areas safe enough for harvesting increased from 75 to 89 percent. The vast majority of these, about 77 percent, fully supported shellfish consumption while the remainder were available under seasonal or specially restricted conditions and therefore, partially supported shellfish consumption. New Jersey was recognized by the National Oceanic and Atmospheric Administration's National Shellfish Register as the state with the greatest amount of restored waters for shellfish harvesting for the period from 1990 to 1995.¹

What is behind these figures?

Coastal water pollution comes from both point and non-point sources. Point source pollution is discharged from factories, sewage treatment plants, and other discrete, easily identified sources. It includes both manufacturing chemicals and organic wastes. Non-point source pollution is in the water that runs off of streets and fields and into streams and storm drainage systems. In urban and suburban areas, runoff carries chemicals deposited onto the street by automobiles, soil and dust from construction sites and other unpaved areas, and lawn chemicals. In rural areas, agricultural chemicals form an important part of non-point source pollution.

The positive trend in New Jersey's coastal water quality is likely due in large measure to New Jersey's efforts under the federal Clean Water Act to improve wastewater treatment and thereby reduce the impact of point sources of pollution. Little has been done nationally or at the state level to address non-point source pollution, which is much harder to identify and therefore more difficult to regulate.

The Department of Environmental Protection has developed a Coastal Non-Point Source Monitoring Strategy to provide the data necessary to identify pollution sources and relating those sources to restrictions on shellfish harvest. The DEP has also established programs to reduce unauthorized discharges to coastal waters. Their efforts will begin to address the non-point sources of marine pollution, and should reduce emergency closures of shellfish waters due to these discharges.²

What else would we like to know?

We would like to develop a much clearer picture of the sources and impacts of non-point source water pollution.

¹ NJDEP. *Environmental Indicators Technical Report, 2nd Edition. Fish & Shellfish Consumption.* <http://www.state.nj.us/dep/dsr/eitr2001/Trends%20of%20Shellfish%20Harvest.PDF>

² *ibid.*

INDICATOR 33

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

Figure 1.2

NJ Department of Environmental Protection,
Leading Environmental Indicators Factsheets.
<http://www.state.nj.us/dep/indicators/shellfish.pdf>

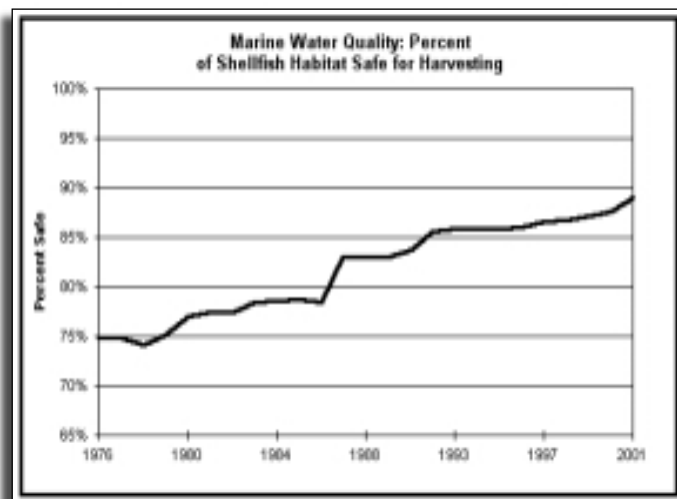


Figure 33.1



10. Protected Natural Resources

Goal: Maintain New Jersey's natural resource base.

New Jersey is not called the Garden State for nothing; we are a state rich in natural resources and once served as the agricultural source for New York and surrounding urban areas. Our beaches are also a significant resource, and have provided summer relaxation to people from all over the region for more than a century. While the Meadowlands were viewed largely as a barrier to transportation in the past, they and other wetlands are now recognized as important breeding grounds for aquatic animals and water filtration systems for rivers. We have allowed significant degradation of these resources over the past century, particularly in the last few decades. Close to 40% of the wetlands existing in colonial times have been altered, and farmland has dropped by more than half since the 1950s. While we are now working to protect the resources that remain, a great deal is left to do.

What indicators came out of the Sustainable State process, and how are we doing?

- 34. *Total energy consumption* has risen steadily in the past twenty years.
- 35. *Total acres being farmed* has declined steadily for the past half-century; however the last few years have shown this figure leveling off.
- 36. *Ocean and bay beach closings due to unhealthful conditions* dropped sharply in the early 1990s, and have continued to decline gradually since then.
- 37. *Cumulative acres of preserved and developed land* have both risen, reducing the remaining area of unrestricted, undeveloped land.

What might we add to future indicator reports?

The Department of Environmental Protection is planning increased stream buffer protection; we will want to track the results as it gets underway. The state is also strongly encouraging the cleanup and reuse of brownfields; tracking this effort will be of considerable interest. More broadly, while we have data on the physical state of our resources, we know less about the value of the services they provide. Monitoring their value would make it easier to show why protecting them is essential.

34. Total Energy Consumption

Why do we care?

Energy systems are closely tied to many aspects of sustainability. Virtually all economic activity depends on energy, some very heavily. Changes in energy price or supply have direct impacts on all sectors of the economy. Price increases can put marginal enterprises in energy-dependent sectors out of business, creating unemployment. Households will also feel the cost, if gasoline and home heating costs rise. Energy production and consumption also create pollution in the form of greenhouse gases, toxins, and radioactive waste, which harm our environment both locally and globally. Moreover our major source of energy is the combustion of non-renewable fossil fuels, which are fixed in total quantity. At current levels of energy use in western countries, our energy system is likely to be unsustainable in all of these ways.

How are we doing?

Several indicators are useful for evaluating our energy use. Total consumption, which is shown in Figure 34.1, is important from the perspectives of both pollutant emissions and fuel depletion. As the figure shows, this has risen steadily over the decades.

Per capita energy consumption is another useful indicator to track. It would not be possible for everyone in the world to consume energy at New Jersey's level. Reducing our per capita consumption is therefore in keeping with the equity aspects of sustainability. Figure 34.2 shows, however, that over the past four decades we have consumed more rather than less energy per capita. While the state is implementing policies to reduce energy consumption and shift it to renewables and clean sources, our increases in consumption have so far overtaken the impacts of those policies.

What is behind these figures?

From the perspective of pollution, it is also useful to know what our energy sources are. Figure 34.3 shows New Jersey energy consumption by fuel type since 1969. Our reliance on natural gas has risen relative to our use of oil or coal, which is good from a pollution perspective. However our reliance on nuclear power has also increased markedly. While nuclear energy is good from an air pollution perspective, many people feel that the risks and long-term disposal issues associated with its use outweigh those benefits.

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

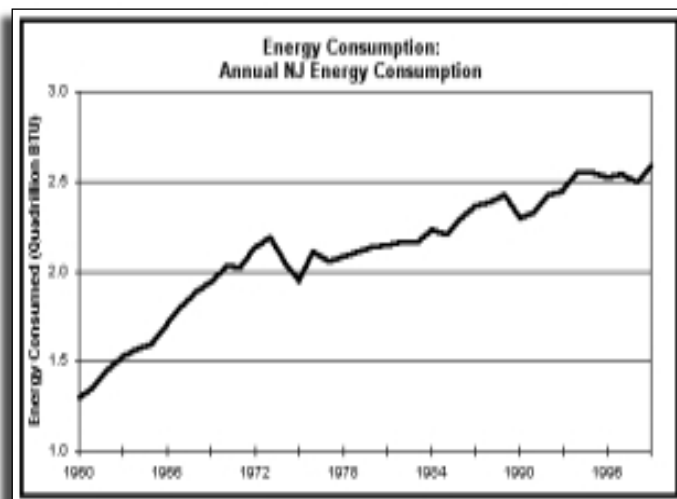


Figure 34.1

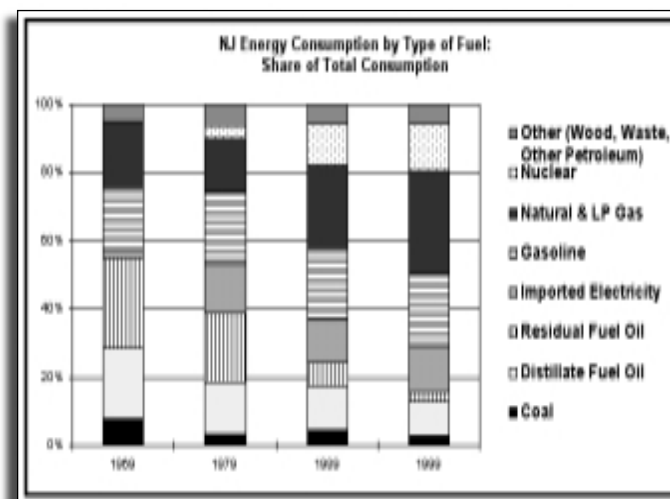


Figure 34.3

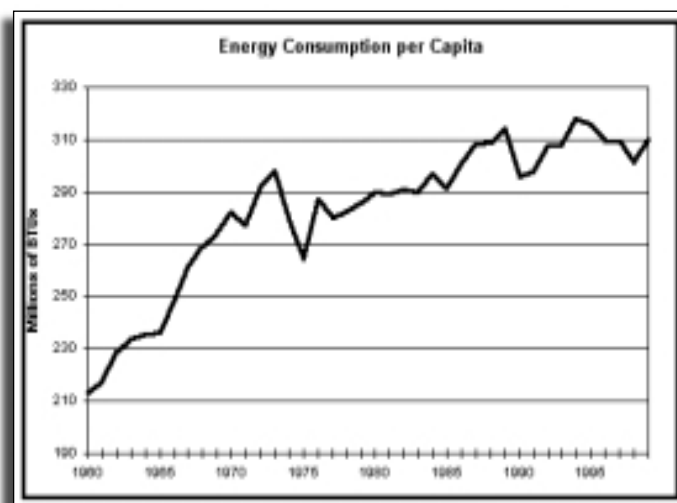


Figure 34.2

Figure 34.1

US Department of Energy, Energy Information Administration http://www.eia.doe.gov/emeu/states/_states.html (data for individual states are regenerated on request. BTUs are British Thermal Units).

Figure 34.2

Energy: US Department of Energy, Energy Information Administration http://www.eia.doe.gov/emeu/states/_states.html (data for individual states are regenerated on request)

Population: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Accounts Data, Annual State Personal Income <http://www.bea.gov/bea/regional/spi/>

Figure 34.3

Data provided by Michael Aucott, NJ Department of Environmental Protection (Michael.Aucott@dep.nj.state.us). Based on data from the US Energy Information Administration.

35. Farmland

Why do we care?

New Jersey earned its reputation as the Garden State because its soil and climate make it one of the most productive farming areas in the world.¹ The state ranks in the top 10 in production of bedding and garden plants, cut flowers, foliage plants, potted plants, and bulbs; we supply 20 percent of the nation's blueberry crop and 10 percent of the cranberry crop. Farmland is important to the state's environmental sustainability as well as to its image. It recharges our groundwater, provides habitat for wildlife, and protects our soil. Sustaining agriculture in the state is an effective way to sustain both our environmental systems and our identity.

How are we doing?

One way to track the importance of agriculture in New Jersey is to measure the share of land used for farming. As Figure 35.1 shows, this has declined dramatically over the years, although it has largely leveled off in the past five years. The size of New Jersey farms has also decreased, from an average of 123 acres in 1970 to 85 acres in 2002.

The size of the farm sector can also be measured by its contribution to Gross State Product; that is, by the value of agricultural products produced and sold. As seen in Figure 35.2, output from farming has increased over the past decade and jumped markedly in 2000, suggesting that our crops are becoming more valuable per acre. Agriculture's share in total state output has remained at an almost constant and very low level, however, at less than one quarter of one percent.

What is behind these figures?

The decrease in cultivated land in New Jersey is in large measure due to the increase in property values in much of the state. In 1999 the average per-acre value of New Jersey farmland including land and buildings was \$8,370, the highest in the country.² Often the returns from farming are not enough to allow farmers to save for college or retirement. They rely, therefore, on being able to sell their land for higher-value development when their children are ready for college or they wish to retire.

The state has introduced a number of initiatives to try to counteract these forces, which may account for the recent leveling off of agricultural land conversion. The 1999 Garden State Preservation Trust Act created the Farmland Preservation Program, through which farmers can receive capital to expand existing operations, reduce debt load, or save for retirement, in return for placing deed restrictions on their property that prohibit its development.³ However, while these programs prevent some land development, they do not require that it be cultivated, and in some cases it simply remains unused or is used for a single large "farmhouse." Thus while these programs protect open space, they do not necessarily ensure that agriculture will remain a part of the state's economy.

What else would we like to know?

To ensure the financial viability of agriculture in a state like New Jersey, we must know which crops are profitable enough to be able to compete with increased property values due to rapid suburbanization. The trends of the past decade suggest that some farmers are finding higher-value crops that let them earn more on less land; we need to know more about this trend to see what potential it offers to agriculture as a whole. We also need to know more about other land uses that may be compatible with agriculture and may offer increased returns to farmers. For example, placing wind turbines for electricity generation in fields might provide enough additional revenue to allow some farmers to keep most of their land in agriculture rather than selling it for development. We would also like to know whether the jump in output in 2000 has been sustained since then. Given the public concern about farmland being held by real estate speculators, it is important to know the share of farmland that is cultivated by its owner.

¹ *New Jersey Agricultural Statistics Service*

² *Stony Brook – Millstone Watershed Association. Watershed Management. Open Space and Farmland Preservation.* <http://www.thewatershed.org/WSM/openspacefarm.html>

³ *NJ Dept. of Agriculture New Jersey State Agriculture Development Committee. Our Farmlands, Our Future. The New Jersey Farmland Preservation Program Overview.* <http://www.state.nj.us/agriculture/sadc/overview.htm>

INDICATOR 35

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

Figure 35.1

US Department of Agriculture, Agricultural Statistics Database - Farm Numbers Section, <http://www.nass.usda.gov:81/ipedb/farmnum.htm>

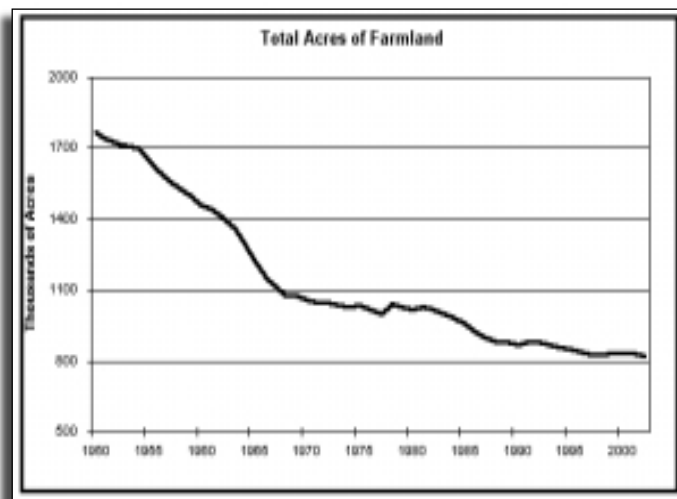


Figure 35.1

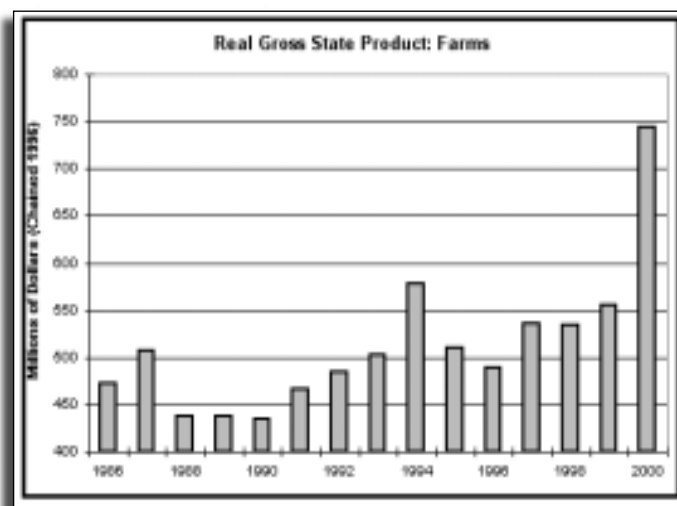


Figure 35.2

Figure 35.2

New Jersey Department of Labor. Labor Planning and Analysis. Gross State Product Data. Gross State Product for New Jersey by Industry, 1982-2000 (Millions of chained 1996 Dollars). http://www.wnjin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/lmi09/gsp_NJ00R.xls

Chained dollars are adjusted for inflation and changes in sectoral composition, making all years comparable to 1996.

36. Ocean and Bay Beach Closings

Why do we care?

Beach closings are highly visible events that can drive away potential visitors and reduce the large revenues that are otherwise generated by coastal tourism. Beaches are closed when water quality is unhealthful for humans; usually due to storm water runoff, elevated levels of bacteria or floating debris; and less frequently to failures in sewage collection and treatment systems. Clearly, such beach conditions are unsustainable both for human health and for the state's tourist economy.

How are we doing?

As Figure 36.1 shows, there has been a rapid drop in New Jersey beach closings between 1988 and 1991, and rates have largely leveled off since then. Systematic monitoring of beach closings and water quality began in 1988 in response to the high level of closings in the 1980s, so comparable data are not available to track general trends before then. However, we know that the a single treatment plant malfunction was responsible for the high levels in 1988, so the drop between 1988 and 1989 is not reflective of a greater trend. The general trend since then is improving.

What is behind these figures?

The monitoring program begun in 1988 tracks sources of the contamination causing the beach closings. Water quality measurements and aerial surveys are employed to determine if there are any illegal discharges into coastal waters or any visible water quality problems, such as algal blooms, malfunctioning sewer lines or pumping stations. It counts each day on which a beach is closed as one unit, so if a single location were closed for a month, it would be counted as 30 closings rather than one.

The rapid decrease in closings after establishment of the monitoring program suggests that there were a few problem locations that consistently closed near-by beaches. When those problems were remedied the figures dropped substantially. The remaining closures are due to occasional problems rather than consistent ones, and are therefore harder to track down and remedy. The 2001 increase in ocean and bay beach closings is attributed to repeated periods of heavy rainfall and the resulting storm water discharges. Thirty-five of the 40 ocean beach closings were associated with Wreck Pond in the town of Spring Lake. The volume of flow through that pond caused significant flows of an extraordinary amount of bacteria-laden sediment to the ocean. The beaches impacted extended through the 2 miles of Spring Lake for two days in August. The other 5 closings were precautionary. Four were in Atlantic City due to a broken sewer line and one in Long Branch due to a sewage overflow to a storm drain.¹

Most of the bay beach closings (78%) were at beaches that experience regular, predictable problems following major rainstorms. Large bird populations also contribute to increased levels of bacteria at bay beaches.²

¹ DEP. 2001. *Clean & Plentiful Water, "INDICATOR: Ocean and Bay Beach Closings"*, <http://www.state.nj.us/dep/indicators/beach.pdf>

² *ibid.*

INDICATOR 36

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

Figure 36.1

Natural Resources Defense Council, 2003, "Testing the Waters 2002: A Guide to Water Quality at Vacation Beaches" Table 2.
<http://www.nrdc.org/water/oceans/ttw/titinx.asp> (overall report) <http://www.nrdc.org/water/oceans/ttw/table2.pdf> (Table 2)

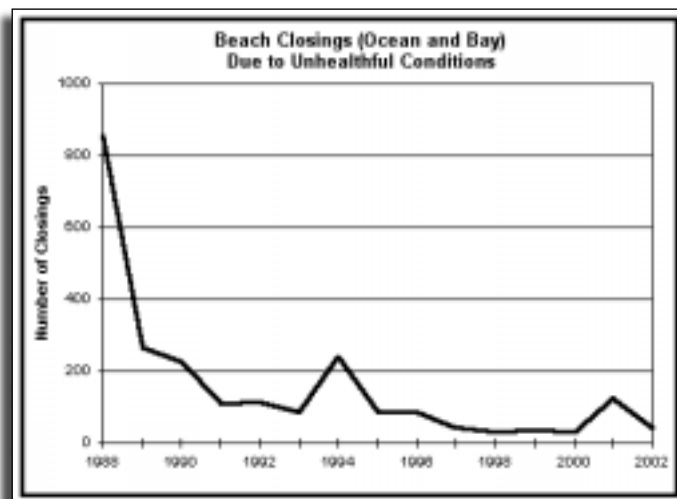


Figure 36.1

37. Preserved and Developed Land

Why do we care?

The rapid suburbanization of New Jersey is cutting down on the open space that we need for recreation, agriculture, species habitat, and refreshment of the spirit. Maintaining a balance among conflicting land uses is a key element of sustainability. Public opinion polls and voting trends show that many New Jerseyans feel that there is not enough open space in the state.

How are we doing?

As Figure 37.1 shows, both developed land and protected land have increased steadily in New Jersey. As Indicator 12 shows, New Jersey has about 1,066,000 acres of permanently protected open space, accounting for about 22 percent of the state's total of 4,746,880 acres and meeting the 2002 target. If we maintain the preservation rate of the 1990s we will meet the preservation goal for 2008 of 1,354,000 million protected acres.

Development has, however, continued apace. Between 1992 and 1997 the amount of developed land increased by 15 percent, from 1,564,600 acres to 1,778,200 acres. These figures are based on the US Department of Agriculture National Resources Inventory, which is updated every five years. Data for 2002 are not yet available; however it is likely that the amount of developed land continued to increase steadily over the past five years.

What is behind these figures?

As discussed in Indicator 12, the substantial increases in preserved land are an outcome of the state's aggressive land conservation programs and the willingness of voters to support bonds for open space purchase in many municipalities and counties. There is considerable debate over whether we should allocate land preservation resources where we can get the most acreage for our dollars, or where open space is most scarce and therefore most in need (but also usually most expensive).

The increases in developed land are not surprising given the population growth in the state. In the absence of effective policies to change our land use patterns, we could approach a time when there is little unprotected open space left in the state, and almost all land is either protected or developed. Farmland is under particular pressure from rapid development, as Indicator 35 shows. The financial returns to New Jersey agriculture are fairly low. Farmers often stand to gain more from selling their land for development than they do from cultivating it, and sometimes must do this to fund their children's education or their own retirement. Unless the public bears that cost through public programs to purchase farmland or development rights, even more land will shift from agriculture to subdivisions or shopping malls.¹ As of 1998, only 7 percent of New Jersey farmland was protected from development, leaving 93 percent open to future development.

What else would we like to know?

To understand the impact of our open space efforts, we would like to track what kinds of lands we are protecting, and where they are. We do not know, for example, whether we have preserved a full cross-section of native habitat and ecosystems.² This information will better enable us to assess whether we are really achieving our goals, or whether significant regions or types of habitat need redoubled efforts. To understand land development, we would like better detail on the relationship between increases in population and increases in developed area, particularly whether more land is developed per person now than in the past.

¹ Economic Research Service. *US Department of Agriculture. New Jersey State Fact Sheet.* <http://www.ers.usda.gov/StateFacts/NJ.HTM>

² Natural Resource Conservation Service. http://www.nrcs.usda.gov/technical/land/cover_use.html

INDICATOR 37

Open Space Target:

By 2002, preserve at least
1,004,000 acres of open space

By 2008 preserve at least
1,354,000 acres of open space

Current (2002) level:

1,066,000

Who set the target:

Governor Whitman's 2nd
Inaugural Address, January
1998.

Sources:

Figure 37.1

Data on protected land through 2000 are from New Jersey Department of Environmental Protection. Land and Natural Resources. New Jersey's Environment 2000.
<http://www.state.nj.us/dep/dsr/njenv2000/Land%20Resources.pdf>

Current data may be obtained from Bob Stokes, Chief, Planning and Information Management Bureau, NJDEP Green Acres Program, (609) 984-0495, Bob.Stokes@dep.state.nj.us.

Data on developed land are from US Department of Agriculture, National Resources Conservation Service, National Resources Inventory. The State of the Land - Land Cover/Use.
http://www.nrcs.usda.gov/technical/land/cover_use.html

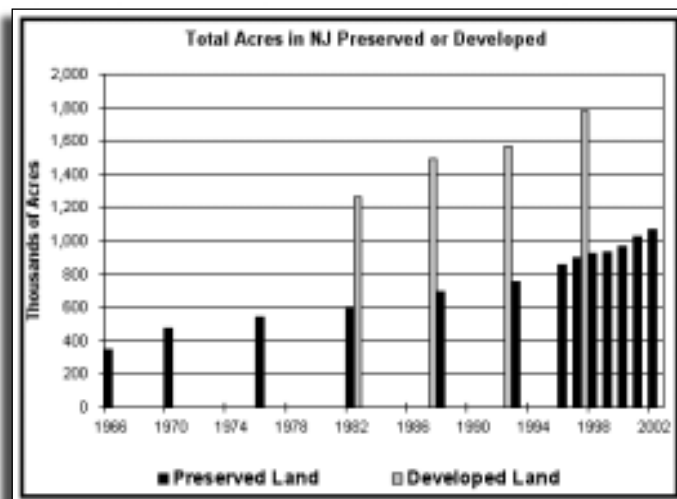


Figure 37.1



11. Minimal Pollution and Waste

Goal: Minimize the generation and accumulation of pollution and waste; maximize the use of efficient, clean, and sustainable energy sources; and increase consumer choices for ecologically friendly products.

For decades New Jersey has had a reputation as a center of industrial pollution. While we have made some headway in recent decades, we still have a long way to go before we can reverse this image. The state has many contaminated sites, rivers that we can't fish or swim in, combined sewer overflows, and unhealthy ozone levels. Toxic waste sites hinder the redevelopment of old urban areas because the required cleanup is expensive and the risk of liability is great. We are making more of an effort than in the past to find solutions to some of these problems, but we still have more to do.

What indicators came out of the Sustainable State process, and how are we doing?

- 38. *Total greenhouse gas releases* dropped in the 1980s and then rose to above previous levels in the 1990s.
- 39. *Drinking water quality* has shown little change, and is consistently at a very high level.
- 40. *Solid waste production per capita* has grown over the past fifteen years.
- 41. *Air pollution* decreased substantially from the early 1980s through the early 1990s, but has more or less leveled off since then.

What might we add to future indicator reports?

We don't know enough about how air quality affects both water quality and public health. We also don't know enough about indoor environmental quality and its relationship to asthma, elevated blood lead levels, and other health problems. We are not tracking the use of recycled products or consumption of organic foods; these are useful measures of how our citizens are helping reduce pollution and waste and support a more sustainable economy.

38. Greenhouse Gas Emissions

Why do we care?

Greenhouse gases (GHG) accumulate in the atmosphere and block the heat of the sun from escaping back into space. In the long run, this will change the climate, requiring major adjustments from all species and natural systems to adapt to the changes. In the short run, it is thought that greenhouse gas emissions are causing increasingly extreme weather patterns, which also have significant effects on human systems and the natural environment. While some greenhouse gases are emitted naturally, the consensus among international scientists is that the burning of fossil fuels is the cause of some recent global climate change, and is likely to cause considerably more in the future. Because of the costs that will be required to adapt to climate change, this is a cause for great concern in most of the world, and efforts to reduce GHG emissions are widespread. As the world's largest emitter of greenhouse gases, the US contributes about 23% of the world's emissions while representing only 5% of its population.

How are we doing?

Figure 38.1 shows New Jersey's GHG emissions over the past forty years. Our emissions dropped steadily through the 1970s and 1980s but began to climb again in the 1990s. The state has established a goal of reducing its emissions by 2005 to 3.5 percent below its 1990 level.¹ Based on trends through the 1990s, we are not on track to meet this target, though more recent data suggest that we have begun to move in the right direction.

What is behind these figures?

The state has implemented programs both to reduce consumption by improving energy efficiency and to encourage energy users to switch to non-polluting electricity sources such as solar power. These do appear to have had some effect, and probably will have more. They include voluntary emission reduction programs by industry, financial incentives for energy conservation by both individuals and businesses, and subsidies for investment in non-polluting renewable

energy to replace conventional electricity generation. The state itself has also taken the lead by purchasing a significant portion of its electricity from non-polluting renewable sources. So far these measures have combined to reduce GHG emissions by about 2.2 million tons relative to projected "business-as-usual" levels. The new programs that will come into effect in the next year through the Clean Energy Program can be expected to bring about further reductions.²

The decreases in emissions in the 1970s and 1980s are probably due to a combination of economic restructuring, energy price increases, substitution of nuclear and natural gas for coal-fired power plants, and conservation. In 1999, 88 percent of New Jersey's GHG emissions resulted from the combustion of fossil fuel. The single largest activity generating GHGs is transportation, which accounts for 35% of our emissions. Electricity generation is second, with about 20%, and industry, commercial activities, and residential use each account for a smaller share.³ This suggests that no one sector will be able to accomplish all of the reductions needed to achieve our goal. Our dependence on private automobiles is clearly a major cause of the problems, but efforts will be needed in all areas if we are to make a significant dent in our contribution to global warming.

¹ *New Jersey Sustainability Greenhouse Gas Action Plan, Published by the New Jersey Department of Environmental Protection, December 1999, www.state.nj.us/dep/dsr/gcc/gcc.htm.*

² *Data on emissions reductions through state programs provided in power point presentation by Athena Sarafides, NJ Department of Environmental Protection, Athena.Sarafides@dep.state.nj.us*

³ *Estimates of New Jersey GHG emissions provided by Michael Aucott, NJ Department of Environmental Protection. Michael.Aucott@dep.state.nj.us*

INDICATOR 38

Sources:

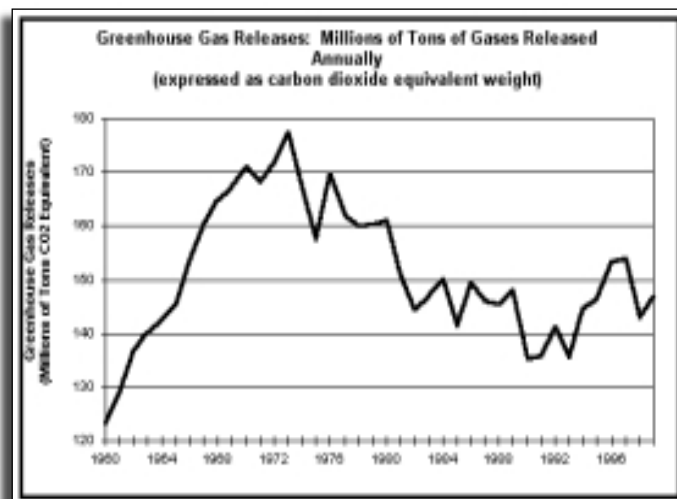


Figure 38.1

Figure 38.1

Estimates of New Jersey GHG emissions for 1960 through 1999 provided by Michael Aucott, NJ Department of Environmental Protection.
Michael.Aucott@dep.state.nj.us

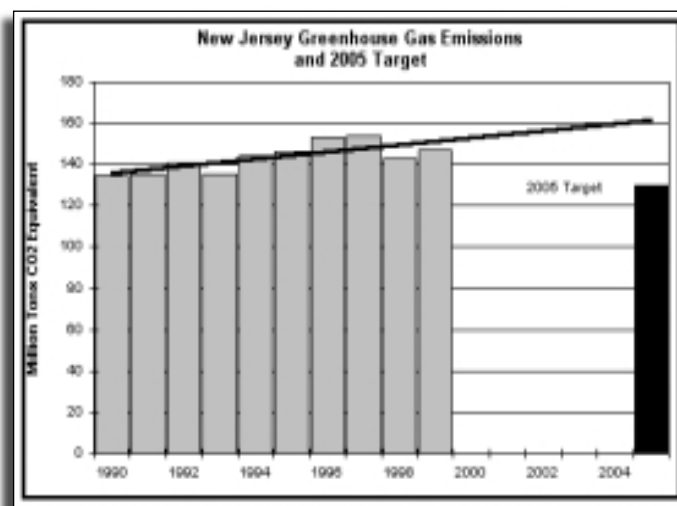


Figure 38.2

Figure 38.2

Based on estimates provided by Michael Aucott, NJ Department of Environmental Protection.
Michael.Aucott@dep.state.nj.us

Target:

By 2005, reduce GHG emissions to 3.5% below 1990 levels, or to 130 million tons of CO₂ equivalent

Most recent level (1999):

147 million tons of CO₂ equivalent

Who set the target:

NJDEP Administrative Order 1998-09 and NJ Sustainability Greenhouse Gas Action Plan

39. Drinking Water Quality

Why do we care?

Safe drinking water is a necessity for human life. A community that cannot provide water to its citizens, due to either natural or human contamination, cannot be sustained for long.

How are we doing?

Since 1995, 97 to 99 percent of community water systems¹ have met all microbiological standards, and 87 to 93 percent have met chemical standards; earlier data are not available for comparison. The state has set targets for both of these standards at 95%. We have met them for microbiological contamination and we are very close for chemical contaminants. For volatile organic compounds the figures rose from a low of 78 percent in 1985 to 94 percent in 1999. The situation has clearly improved over time.

What is behind these figures?

The major human sources of drinking water contamination are industrial pollution, urban and agricultural runoff, and industrial discharges into surface water supplies. The United States has been effective at managing point source pollution from factories and sewage treatment plants, through the Clean Water Act and other legislation. The management of runoff is more difficult. Runoff comes from thousands of small, dispersed sources, including agrochemicals that wash directly into streams in the rain, car exhaust and lawn chemicals that flow into storm sewer systems, and other small sources that are very hard to pinpoint. Natural sources are even more difficult to manage. For example, many urban streams have high levels of biological contamination from wild geese and ducks, which cannot easily be controlled.

Drinking water safety is achieved in two ways; pollution control measures to protect source water and treatment before the water is used. Drinking water quality is monitored as the water leaves the treatment plant. If the pipes through which the water travels to homes are not well maintained, additional contamination can be introduced into the water, so these data could overestimate the safety of our water.

The US Environmental Protection Agency has introduced a source water protection program for drinking water, through which each state must develop a plan for monitoring and maintaining the safety of its drinking water supplies. This program should help us compare the effectiveness and feasibility of protecting water at the source vs. treating it before we drink it. In most cases some balance between these two strategies is likely to be the most efficient way to guarantee the safety of our water supplies.

What else would we like to know?

The contaminants measured here are only a portion of those suspected to be detrimental to human health. These data do not include contaminants receiving increasing attention in recent years, such as growth hormones used in animal husbandry or antibiotics and other medications that have become common in our source waters with increased human use. Understanding the significance of these contaminants is important to ensuring that our water supply is safe.

¹ These data are for "community water systems," municipal or regional systems that provide water to most homes, businesses, and other users in the state. They do not include water quality at transient systems such as highway rest stops or from private wells

INDICATOR 39

Sources:

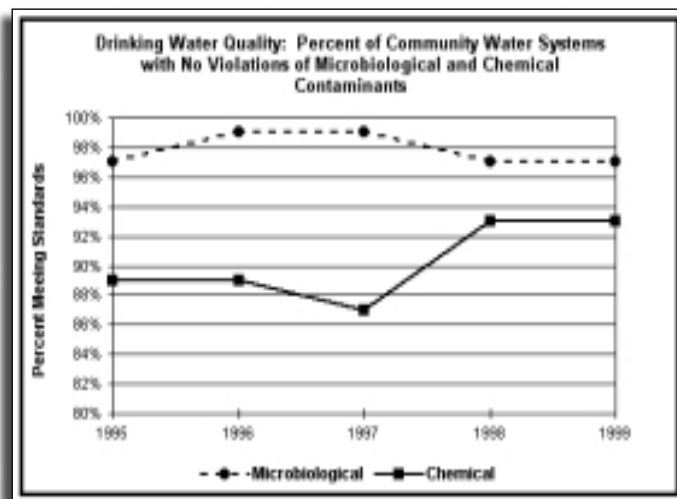


Figure 39.1

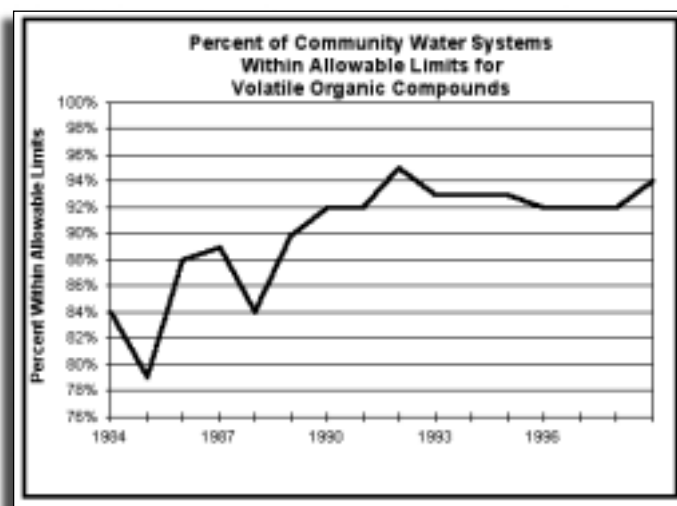


Figure 39.2

Figure 39.1

Drinking Water - microbiological and chemical compliance. Department of Environmental Protection's Leading Environmental Indicators Fact Sheets. <http://www.state.nj.us/dep/indicators/dwmicrochem.pdf>. For more information, contact Sandy Krietzman, NJDEP, Sandy.Krietzman@dep.state.nj.us

Figure 39.2

Drinking Water - VOCs. Department of Environmental Protection's Leading Environmental Indicators Fact Sheets. <http://www.state.nj.us/dep/indicators/dwvocs.pdf>. For more information, contact Sandy Krietzman, NJDEP, Sandy.Krietzman@dep.state.nj.us.

Target:

By 2005, 95% of the public water systems will provide water that meets the microbiological and chemical drinking water standards..

Current level

(microbiological): 97%

Current level

(chemical): 93%

Who set the target:

NEPPS FY 99/00 Performance Partnership Agreement

(NOTE:) target is being met for microbiological standards for community water systems

40. Solid Waste

Why do we care?

In 2000, New Jerseyans generated over 17 million tons of solid waste, of which 8.3 million tons were buried in landfills or burned in incinerators. This can lead to groundwater pollution, poor air quality, land contamination, and other forms of environmental degradation. Furthermore, political and social battles over where to locate and how to pay for waste disposal facilities have been historically contentious. Minimizing our generation of solid waste will help resolve all of these problems, contributing to sustainability from economic, social, and environmental perspectives.

How are we doing?

Data on waste generation per capita since 1985 show a cyclical but increasing trend, as Figure 40.1 illustrates. Waste generation rates are related to prosperity and increases in economic activity, so it is not surprising that we see this substantial increase over time.

What is behind these figures?

The traditional adage on solid waste is "reduce, reuse, recycle" – and only after that, throw it out. New Jersey's prosperity gives us little incentive to reduce material use in the first place, as would be the case if our incomes were lower. In countries where materials and money are scarce, packaging is a rare luxury, whereas here it is the norm.

The same is largely true for reuse. New Jersey bottlers do not reuse glass or plastic drink containers; few people reuse plastic shopping bags or bring their own containers to purchase food or other goods. Many people throw out used furniture, toys, clothes, or books rather than finding someone else who could use them. Building materials at demolition sites are often landfilled rather than reused; outdated electronics equipment is dumped with no effort to reuse the materials used to manufacture them. Few people even print or photocopy double-sided in order to reduce paper use. Reducing material consumption in the first place, or reusing materials many times, are the least expensive ways to manage solid waste, but virgin materials are too cheap – and our time perhaps too expensive – for most of us to bother.

Recycling, the least beneficial of the three options, increased substantially in New Jersey until a mid-1990s Supreme Court decision declaring certain state trash management policies to be in restriction of interstate trade had the unintended consequence of reducing recycling levels in the state.¹ The state set a recycling target of 65% by the end of 2000, which we did not achieve, as shown in Figure 40.2. Though the share of material recycled has decreased since 1997, the total amount recycled has remained high over time.

What else would we like to know?

With detailed information about the composition of our waste and recycling streams, we would be able to assess how we could improve our performance in all of these areas.

¹ *Carbone vs. Town of Clarkstown*. 511 US383 (1994).

INDICATOR 40

Targets with which to assess state progress have not yet been established for this indicator.

Sources:

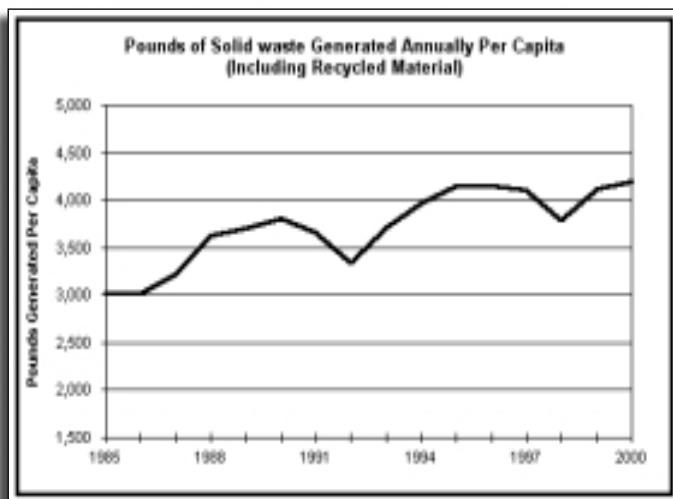


Figure 40.1

Figure 40.1

Calculated based on solid waste data from NJ DEP, Division of Solid and Hazardous Waste, "New Jersey Solid Waste Database Trends Analysis (1985 through 2000)" <http://www.state.nj.us/dep/dshw/recycle/8599trnd.htm> and population data from the Bureau of Economic Analysis, <http://www.bea.gov/bea/regional/spi/>.

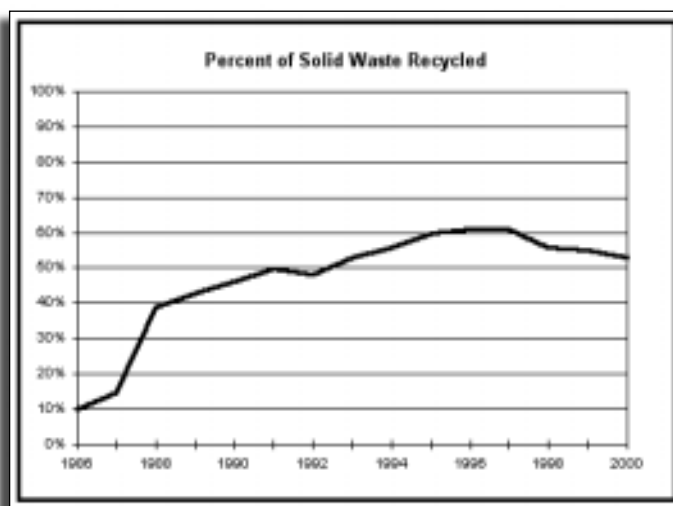


Figure 40.2

Figure 40.2

NJ DEP, Division of Solid and Hazardous Waste, "New Jersey Solid Waste Database Trends Analysis (1985 through 2000)" <http://www.state.nj.us/dep/dshw/recycle/8599trnd.htm>

41. Air Pollution

Why do we care?

A healthy environment must have clean air. If other aspects of our way of life – our use of cars, our factories and power plants, our sewage treatment systems, our cigarettes, or the paint we put on our walls – makes the air around us unhealthy or unpleasant, then we are not living in the kind of society that we want to sustain.

How are we doing?

Air quality in New Jersey has improved over the past twenty years. This indicator shows the number of days on which ground level ozone, particulate matter, or carbon monoxide was measured to be at unhealthy levels somewhere in the state. Since 1983, this has dropped markedly, by almost 90 percent. The number of unhealthy days caused by ground level ozone dropped from 62 to 11 between 1983 and 2001. In 1983 there were 12 unhealthy days caused by particulates and 19 caused by carbon monoxide; both were zero in 2001. The Department of Environmental Protection targets are to have no unhealthy days due to ozone or particulates by 2007. We achieved the particulate standard in 1999 and 2001, although not in 2000. We have made substantial headway on the ozone target, although we are not there yet.

What is behind these figures?

The improvements in air quality since the early 1980s show the impacts of the Clean Air Act and other environmental regulations that have come into effect since the 1970s. The state has undertaken a number of actions to improve air quality. In compliance with the Clean Air Act, the state has tightened its standards for emissions of particulate matter and substances that create atmospheric ozone. New Jersey set into place stringent regulations on stationary sources that emit hydrocarbons and nitrogen oxides, which generate ozone and cause smog. These sources include chemical plants, refineries, power plants, gasoline

stations, printers, and dry cleaners. In addition, the state's regulatory programs address acid rain, air toxics, and asbestos. The acid rain program has the goal of attaining reductions in emission due to fossil fuel combustion. The air toxics program regulates hazardous chemicals released into the air, including arsenic, asbestos, beryllium, mercury, radionuclides, benzene, and vinyl chloride. The asbestos program controls releases of airborne asbestos during handling, processing, and disposal of building materials containing the substance.¹

What else would we like to know?

While this indicator gives a good general impression of trends in air quality, it is important to remember that it does not tell us how much of the state was at unhealthy levels, or by how much they exceeded safe pollutant levels. A measurement just one percent above the standard will show up in this indicator the same way as levels ten times the standard. Similarly, we don't know whether only one or all 47 of the state's air quality monitoring stations registered unhealthy air quality on a given day; either way it simply shows up as a day with unhealthy air. This indicator also does not take into account the new federal air quality standards that came into effect in 1998. In fact, the state would measure much worse by those standards; however in order to retain the time series back to the 1980s, this indicator is based on the old standards.

More sophisticated indicators of air quality would show how widespread the problems are, rather than simply telling us that at least one spot in the state was not healthy on a given day. Moreover, many health problems are associated with poor indoor air quality, which is not measured in any systematic way in New Jersey. Improved data would give us a better understanding of the problems, so that we could more easily determine the causes.

¹ EPA. Region2. Programs. Air. Regulatory Programs. <http://www.epa.gov/region02/air/regprog.htm>.

Sources:

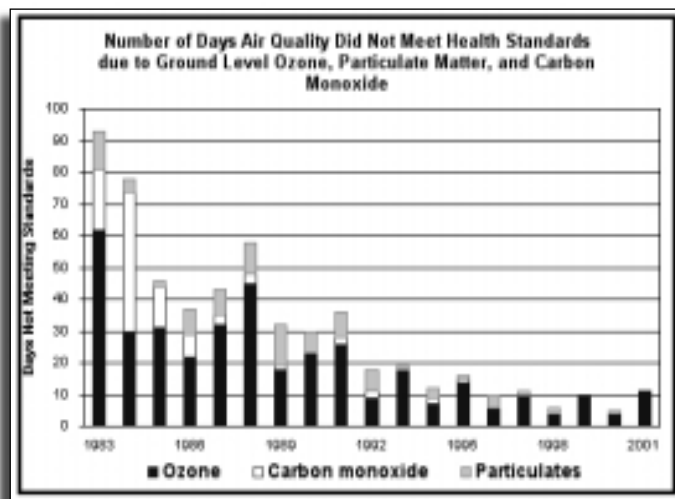


Figure 41.1

Figure 41.1

Data provided by the NJ Department of Environmental Protection, Bureau of Air Monitoring, from bamweb@dep.state.nj.us, 609-202-0138. Some of these data are available on the web through <http://www.state.nj.us/dep/airmon/index.html>

Target:

By 2007, there should be no unhealthy days due to ozone or particulates.

Most recent levels (2001):

Ozone, 11 days;
CO, 0 days;
Particulates, 0 days

Who set the target:

1998 NJDEP Strategic Plan,
NEPPS FY 99/00 Performance
Partnership Agreement

NJSSI: The New Jersey Sustainable State Institute

Edward J. Bloustein School of Planning and Public Policy
Rutgers, The State University of New Jersey

Otto H. York Center for Environmental
Engineering and Science
New Jersey Institute of Technology