

development. Development activities will be limited and subject to stringent limitations on consumptive and depletive water use, degradation of water quality, and impacts to environmentally sensitive lands.

The **Existing Community Zone** consists of areas with regionally significant concentrated development signifying existing communities. These areas tend to have limited environmental constraints due to previous development patterns, and may have existing infrastructure that can support development and redevelopment provided that such development is compatible with the protection and character of the Highlands environment, at levels that are appropriate to maintain the character of established communities.

The **Existing Community Zone – Environmentally Constrained Sub-Zone** consists of significant contiguous critical habitat, steep slopes and forested lands within the Existing Community Zone that should be protected from further fragmentation. They serve as regional habitat “stepping stones” to larger contiguous critical habitat and forested areas. As such, they are not appropriate for significant development, and are best served by land preservation and protection. Development is subject to stringent limitations on consumptive and depletive water use, degradation of water quality, and impacts to environmentally sensitive lands.

The **Lake Community Sub-Zone** consists of patterns of community development that are within the Existing Community Zone within 1,000 feet of lakes. The Highlands Council focused on lakes that are 10 acres or greater and delineated lake management areas consisting of an area of up to 1,000 feet (depending on the protection focus) from the lake shoreline in order to protect water quality, resource features, shoreline development recreation, scenic quality and community character. A future management area is planned, encompassing the full lake watershed, for protection of the lake water quality. This zone has unique policies to prevent degradation of water quality and watershed pollution, harm to lake ecosystems, and promote natural aesthetic values within the Existing Community Zone.

In terms of the overall breakdown of the Highlands Region by each of the Land Use Capability Zones (see table *Land Use Capability Zone Map – Acres and Percentages by Zone*) the Highlands Council found that nearly 75% of the Highlands Region is either in the Protection Zone or one of the three Sub-Zones (Existing Community-Environmentally Constrained, Conservation-Environmentally Constrained, or Lake Community).

Land Use Capability Zone Map – Acres and Percentages by Zone

Land Use Capability Zone Map	Highlands Region	
	Area (acres)	Percent of Land Class
Protection	469,462	54.63%
Existing Community	146,011	16.99%
Existing Community - Environmentally Constrained Sub-Zone	32,231	3.75%
Lake Community Sub-Zone	20,695	2.41%
Conservation	70,474	8.20%
Conservation - Environmentally Constrained Sub-Zone	120,485	14.02%
TOTAL	859,358	100.00%

An analysis of the composition of land use within each of the Land Use Capability Zones (see tables *Land Use Characteristics by Land Use Capability Map Zone*) illustrate that the Protection Zone includes most of the forest, water and wetlands. The composition of the Existing Community Zone includes most of the residential, commercial and industrial uses, while the Existing Community – Environmentally Constrained Zones includes mostly forest, water and wetlands demonstrate the existence of natural resources within an otherwise developed landscape. The Conservation Zone includes the vast majority of the agricultural uses within the Highlands Region.

Land Use Characteristics by Land Use Capability Map Zone

Land Classification (2002)	Protection Zone		Conservation Zone		Existing Community Zone	
	Area (acres)	Percent of Land Class	Area (acres)	Percent of Land Class	Area (acres)	Percent of Land Class
Residential	42,124	27.16%	13,804	8.90%	84,803	54.69%
Commercial	1,668	11.06%	857	5.69%	11,550	76.61%
Industrial	689	12.80%	374	6.96%	3,987	74.13%
Other Urban	13,068	32.13%	2,890	7.10%	20,997	51.62%
Agriculture	12,686	11.56%	40,297	36.74%	2,355	2.15%
Forest	314,091	78.06%	6,699	1.66%	9,477	2.36%
Water	23,246	71.43%	924	2.84%	6,155	18.91%
Wetlands	58,411	64.84%	3,890	4.32%	3,895	4.32%
Barren Land	3,479	41.22%	737	8.73%	2,793	33.09%
TOTAL	469,462	--	70,474	--	146,011	--

Land Classification (2002)	Existing Community - Environmentally Constrained Sub-Zone		Conservation - Environmentally Constrained Sub-Zone		Lake Community Sub-Zone	
	Area (acres)	Percent of Land Class	Area (acres)	Percent of Land Class	Area (acres)	Percent of Land Class
Residential	64	0.04%	2,211	1.43%	12,063	7.78%
Commercial	4	0.03%	76	0.51%	920	6.10%
Industrial	0	0.00%	51	0.96%	277	5.15%
Other Urban	691	1.70%	1,137	2.80%	1,892	4.65%
Agriculture	591	0.54%	53,665	48.92%	101	0.09%
Forest	23,443	5.83%	44,632	11.09%	4,052	1.01%
Water	1,284	3.94%	662	2.03%	274	0.84%
Wetlands	5,524	6.13%	17,547	19.48%	819	0.91%
Barren Land	630	7.46%	503	5.96%	298	3.53%
TOTAL	32,231	--	120,485	--	20,695	--

Land Classification (2002)	Highlands Region	
	Area (acres)	Percent of Land Class
Residential	155,069	18.04%
Commercial	15,076	1.75%
Industrial	5,378	0.63%
Other Urban	40,675	4.73%
Agriculture	109,695	12.76%
Forest	402,394	46.82%
Water	32,545	3.79%
Wetlands	90,086	10.48%
Barren Land	8,440	0.98%
TOTAL	859,358	100.00%

Part 7. Landowner Fairness

The Highlands Act recognizes that implementation of the Regional Master Plan, which directs and guides future development, inevitably has an impact on landowner expectations regarding future land use potential. The Act provides several mechanisms that seek to mitigate such impacts, including, but not limited to transfer of development rights, exemptions, waivers, and land acquisition. The transfer of development rights, exemptions and waivers are discussed below. Land acquisition is detailed in Sections 1 and 3.

Subpart a. Transfer of Development Rights

Transfer of development rights (TDR) is a land use tool that permits the transfer of development potential from areas identified for preservation, called sending zones, to areas that are more appropriate to accommodate increased growth, called receiving zones. Landowners in the sending zones receive compensation for the transferable development potential of their property that has been restricted in support of preservation. Payment for this lost development potential comes from purchasers who buy credits representing the lost development potential of parcels in the sending zones. The credits then entitle the purchaser to build in a receiving zone at a density greater than that permitted in the existing zoning.

TDR has become an increasingly popular land use tool to preserve lands containing sensitive resources, whether those resources are environmental, agricultural, or historical. In New Jersey, TDR programs have been established for a number of purposes, including preserving farmland to maintain agricultural viability, and protecting ecologically important lands to maintain ecosystem health and high water quality.

Importantly, TDR recognizes that the development potential of a parcel of land may be separated from the other rights of property ownership, such as the right to possession, mineral rights, or the right to exclude others. TDR also recognizes that this development potential is transferable from one specific parcel to another. Once a parcel's development potential is severed, the parcel is encumbered with either a deed restriction or conservation easement generally limiting its future use to its current use in perpetuity. Underlying ownership of the encumbered parcel remains with the existing landowner until he or she decides to transfer the parcel. As for the transferred development potential, once it has been redeemed, (i.e. it has been used to increase development density or intensity in a receiving zone) it can never be used again.

There are a number of essential elements to any TDR program. The first is the identification of sending and receiving zones. Sending zones represent the areas which a municipality or regional entity desires to protect. They are the areas from which development potential is transferred or sent out. Receiving zones represent those areas that will accommodate the transferred development potential. These zones should have the infrastructure capacity, ecological integrity, and real estate market to support increased development and its attenuating growth impacts. Generally, both sending zones and receiving zones are identified at the outset of a TDR program and are incorporated into the overall zoning scheme as either specific zone districts or overlay zones. Sending zone identification tends to be the simplest step in establishing a TDR program because there is usually consensus regarding the need to protect specific resources. Identification of receiving zones tends to be more difficult. In addition to determining whether a potential receiving zone has the ecological integrity and infrastructure capacity to accept increased development, there is often the political challenge of overcoming reluctance to accept additional growth. Through careful planning and public input, however, these challenges may be overcome.

Another basic component of any TDR program is a determination of what development rights are going to be severed from sending zone parcels and available for sale and use in receiving zones. The process of defining what these rights are and how many rights should be given to a particular lot is known as allocation. Once these rights are defined, often expressed in the form of credits they serve as a mechanism for the TDR development potential that is restricted on the sending zone parcel.

A TDR program must also have a process for recording, transferring, and tracking TDR credits from a parcel in a sending zone to their use in a receiving zone. Frequently, a TDR program will use a conservation restriction or easement to set forth the land uses that are prohibited and permitted on the parcel.

Many TDR programs utilize a TDR credit bank to support program administration. The bank serves as the clearinghouse for information regarding the program and administers the recording, transferring, and tracking of TDR credits. In addition to serving these administrative functions, the bank may also assist sellers and purchasers of TDR credits by providing or serving as a buyer or seller of last resort of TDR credits, or guaranteeing loans utilizing the TDR credits as collateral. The existence of a TDR credit bank establishes a degree of credibility for a TDR program particularly where the bank is able to purchase and sell credits. A TDR program relies on landowners and developers to see that there is a market for the credits, and that those credits have value. In some instances, the bank does not actively buy and sell TDR credits, but instead facilitates private transactions between buyers and sellers.

With the adoption of the Highlands Act, the State Legislature authorized the Highlands Council to establish a Highlands TDR program. This program is to be regional in scope and is to be premised on the resource assessment and smart growth component of the Regional Master Plan. The framework and parameters of the program, called the Highlands Development Credit Program, are detailed in Chapter IV, Goals, Policies and Objectives.

Establishment of the Highlands Development Credit Program has been shaped by a number of circumstances. First and foremost, the program is guided by the TDR provision of the Highlands Act. This provision includes an initial requirement that the program be consistent with the State Transfer of Development Rights Act unless otherwise stated by the Highlands Act. The provision also requires that, in establishing the program, the Council:

- Identify sending zones and voluntary receiving zones (Section 13.b and c);
- Working with municipalities, identify centers, designated by State Planning Commission as voluntary receiving zones (Section 13.d);
- Develop advisory or model TDR ordinances (Section 13.f);
- Conduct a real estate analysis of the Highlands Region (Section 13.g);
- Set the initial value of a development right (Section 13.h(1)); and
- Give priority consideration to any lands that comprise a major Highlands development that would have qualified for the third exemption under the Highlands Act but for the lack of a necessary State permit. (Section 13.h(2)).

Second, the Highlands Development Credit Program has been influenced by the history and experiences of other TDR programs, particularly those in New Jersey such as the Pinelands Development Credit Program administered by the New Jersey Pinelands Commission and Pinelands Development Credit Bank.

Third and finally, program development has been affected significantly by circumstances unique to the Highlands Region. One of the first considerations is the scale of the program. Although not the largest TDR program in terms of number of acres in which development potential can be transferred, the Highlands Development Credit Program will certainly involve the largest number of municipalities. Within the Highlands Region, 88 municipalities may participate. The Highlands Act also allows for the additional 130 municipalities outside of the Region (land within the seven Highlands counties) to serve as voluntary receiving zones. Consequently, a total of 218 municipalities may be involved in the program

Given the geographic scope of the Highlands Region, another significant consideration is the varying real estate market values that exist across the seven counties. For example, vacant property in Warren County as of 2004 had an average equalized assessed value of \$15,452 per acre. In Bergen County, the comparable value was more than five times greater, averaging \$84,964 per acre. Significant real estate market variability also exists among municipalities within a given county. It has been essential to consider these varied real estate values in developing the program.

Finally, significantly affecting program development is the fact that any receiving zones in the Highlands Development Credit Program are strictly voluntary. As noted above, the ability to develop with TDR credits in receiving zones establishes the demand for those credits. Without receiving zones, a market-based TDR program will not succeed. The Highlands Council has not been authorized to mandate specific receiving zones

which municipalities must accommodate; the Highlands Council may only recommend areas that are appropriate but which the municipalities are under no obligation to accept. Fortunately, the Highlands Act provides a number of incentives to encourage municipal participation as receiving zones, and the Highlands Council has established a Receiving Zone Feasibility Grant Program to help defray costs incurred by municipalities that want to explore establishing such zones.

The technical basis and additional background information on the Highlands Development Credit Program can be found in the Highlands Council's *Transfer of Development Rights Technical Report*.

Subpart b. Exemptions and Waivers

The Highlands Act provides for seventeen (17) exemptions from the provisions of the Act. If a project or activity falls within one of these seventeen exemptions, the project or activity is exempt from the Highlands Act, the Highlands Preservation Area rules adopted by the New Jersey Department of Environmental Protection (NJDEP), the Regional Master Plan, and any municipal master plan or development regulations that are revised to conform to the Regional Master Plan.

The Highlands Council conducted an analysis of four of the most important exemptions to landowners. Two of the exemptions permit the construction of a single-family dwelling on an undeveloped parcel that lawfully existed as of August 10, 2004, the enactment date of the Highlands Act. The third allows for the reconstruction and limited expansion of any building or structure for any reason within 125% of the original footprint, provided that the reconstruction does not increase the impervious surface by one-quarter acre or more. The fourth exemption permits an improvement to a single family dwelling in existence on August 10, 2004, including but not limited to an addition, garage, shed, driveway, porch, deck, patio, swimming pool, or septic system.

The analysis reveals that tens of thousands of acres throughout the Region could potentially be developed under these four exemptions; the actual potential may be constrained by existing site conditions, ownership issues, zoning and other factors. While the exemptions are one of the primary means for landowners to utilize their properties where development potential is limited by the Highlands Act, the exercise of these exemptions may result in further fragmentation of the Region's ecosystems and the construction of additional impervious surface. Given this circumstance, the Highlands Regional Master Plan addresses the need to develop programs that attempt to mitigate these impacts, including programs to encourage non-contiguous clustering, intra-local government transfers of development rights and economic incentives.

In addition to the exemptions, the Highlands Act also provides NJDEP with the authority to grant waivers from its Highlands rules on a case by case basis under certain circumstances. Under this authority, NJDEP may issue waivers (a) where a project or activity is necessary in order to protect public health and safety; (b) for redevelopment in previously developed areas as identified by the Highlands Council, provided that the areas are either a brownfield site designated by NJDEP or a site at which at least 70% of the area thereof is covered with impervious surface; or (c) necessary to avoid a taking of property without just compensation.

Part 8. Sustainable Economic Development

This part represents the Financial Component of the Regional Master Plan. It serves in support of the Highlands Act requirement for a Cash Flow Timetable that is intended to estimate and track over time the costs associated with protecting the critical resources of the Highlands Region, in terms of costs related to Plan implementation. It also evaluates potential cost savings that may be realized by State, county, and municipal stakeholders because of modifications they may undertake Plan Conformance with the Regional Master Plan.

This part also identifies the need to monitor regional economic conditions through a series of Baseline Economic Indicators and the role of the agricultural and tourism economy of the Region. The Baseline Economic Indicators provide a profile of the economic conditions of the Highlands Region in the form of demographic and economic statistics at various windows in time that may be utilized to inform variables of the Cash Flow Timetable and analyses of fiscal impact associated with various development scenarios, including Plan implementation.

Details of the regional economic development analysis are in the *Financial Analysis Technical Report*.

Subpart a. Baseline Economic Indicators

One primary objective of this component is to collect regional economic and socio-economic data from a variety of sources in order to create a consolidated Highlands economic database. The regional economic perspective can serve to support trends in economic conditions, inform economic development patterns and strategies, and provide a tracking mechanism for county and municipal economic vitality. Assessing these economic conditions is important in order to address the financial implications of regional development and implementation of the Plan.

Indicators have been identified that offer applicable data to various components of the Plan. The indicators are based on standardized, and regularly reported economic indices that are available at a regional level. It was determined that traditional economic indices and property valuation statistics will provide the best indication of the health of the regional economy. Eight categories of Highlands Region baseline economic indicators have been established, including population, unemployment, households, income, property taxes, equalized property values, land transactions and building permits. These indicators will be tracked at the municipal level on an annual basis by the Highlands Council and results will be shared with Highlands counties, municipalities, and State agencies for review and consistency. The indicators will also include an evaluation of agricultural economic metrics for the Highlands Region in coordination with the United States Department of Agriculture, New Jersey Board of Agriculture, County Agriculture Development Boards and additional sources as appropriate. The role of eco-, agri-, and heritage tourism will also be evaluated in support of regional economic development initiatives and enhancement and support of existing state, regional and local initiatives.

A protocol and tracking format, called the Highlands Economic Tracking Program was developed for monitoring these indicators. Some data may be utilized to inform elements of the Cash Flow Timetable with associated financial implications, such as land valuation and land acquisition. Monitoring this type of land use information will allow the Highlands Council to more accurately gauge future growth potential, which is key to maintaining economic health and vitality in the Region. Participation in the Highlands Economic Tracking Program will also serve to provide valuable information for evaluating shared service opportunities and capital improvement planning.

Subpart b. Cash Flow Timetable

The cash flow timetable is a requirement of the Highlands Act whereby the costs to implement the Regional Master Plan and the sources of revenue to cover the costs are formally accounted for over time. One of the most important aspects of the Highlands Act is the creation of the Highlands Protection Fund. This fund is managed by the New Jersey Department of Treasury. It has been established primarily to provide financial assistance for tasks related to implementation of the Regional Master Plan, as well as to stabilize municipal budgets due to implications stemming from Plan implementation.

In each of the last four State fiscal year annual appropriations acts (2005, 2006, 2007 and 2008), the following annual appropriations were credited to the Highlands Protection Fund for an annual total of \$12,000,000:

- Regional Master Plan Compliance Aid - \$1,750,000;
- Incentive Planning Aid - \$2,650,000;
- Highland Property Tax Stabilization Aid - \$3,600,000;
- Watershed Moratorium Offset Aid - \$2,200,000; and
- Pinelands Property Tax Stabilization Aid - \$1,800,000.

1. Planning Grants

In recognition of the costs associated with municipalities and counties conforming with the Plan, the Act provided funding mechanisms to avoid placing undue financial burdens on these entities. Under Sections 13 and 18 of the Highlands Act, grants from the Highlands Protection Fund are available for distribution to

municipalities and counties that conform to the Regional Master Plan and municipalities that participate in the Highlands TDR Program. For these purposes, the Highlands Council is authorized to distribute funds only from the Regional Master Plan Compliance Aid and Incentive Planning Aid portions of the Highlands Protection Fund. The remaining funds are authorized through the Property Tax Stabilization Board and Department of Treasury. The Highlands Council has intentionally retained as much of the planning grant allocation as possible for the conformance process.

Additionally, a portion of these funds are to be used by municipalities for special projects, including the preparation of case studies on a variety of planning and environmental topics relevant to the development of the Regional Master Plan, known as Municipal Partnership Pilot Projects Grants. Topics included redevelopment, town center and transit village developments, lake management strategies, alternative wastewater treatment technologies, water management plans, growth management strategies, eco-tourism, open space preservation, and historic preservation. Most of these studies were selected to be performed based on their anticipated applicability to other towns and counties in the Highlands Region. The Highlands Council also made funds available specifically for the purpose of assisting constituent municipalities in addressing their affordable housing requirements in accordance with the New Jersey Council on Affordable Housing (COAH), including substantive certifications and third round obligations (\$12,500 per municipality for substantive certification applications and \$7,500 per municipality for third round submissions). Last, the Council made grants available to the seven Highlands counties to conduct planning necessary for the development of the Regional Master Plan including digital parcel mapping, infrastructure mapping, and an inventory of prior land use approvals. The Highlands Council also intends to award incentive grants in the future for matters such as implementation of transfer of development rights programs.

Since 2004, the Highlands Protection Fund has included State appropriations for compliance and incentive planning in the amount of \$4,400,000 per annum (\$1,750,000 per year for Compliance Aid and \$2,650,000 per year for Incentive Planning Grants). The Highlands Protection Fund has a current fiscal year (FY) 2008 total balance of \$16,412,056. In addition, municipalities that meet the conformance criteria outlined in Section 13.k. shall be eligible for a series of benefits including, but not limited to, TDR Incentive Grants of up to \$250,000 per municipality.

The Grant Awards section shown in the table *Planning Grants Timetable* outlines the various Plan Conformance Grants, TDR Incentive Grants and Special Project Grants. The table indicates the Planning Grant cash flow analysis for a period beginning FY2008 and ending FY2014. The three components to the table include grant appropriations to the Highlands Council, both anticipated as well as those currently available, anticipated grant awards, and the corresponding balance carried forward.

Plan Conformance Grants will be made available during the Plan Conformance process after the adoption of the Regional Master Plan. Adequate funding is anticipated to assist municipalities and counties for the reasonable expenses associated with updating their master plans and land use regulations. The table below serves as a framework for the Highlands Council to allocate grant funds during the Plan Conformance process. The assumptions and analysis that were utilized are discussed in detail in the *Financial Analysis Technical Report*.

2. Tax Stabilization

Another factor to be tracked by the Cash Flow Timetable is the expenditure of funds earmarked for tax stabilization purposes in the Highlands Region. The current procedures established in the Highlands Act are under review by the Highlands Property Tax Stabilization Board, which is in, but not of, the New Jersey Department of Treasury, to ensure sufficient justification and documentation of valuation changes. In FY2005, Passaic County submitted five appeals attributing a decline in property value directly related to the Highlands Act. A total of \$88,653.00 was provided to three municipalities to offset the loss in tax revenues.

Planning Grants Timetable

Appropriations	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Total
RMP Compliance Aid	\$5,865,000	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000	\$1,750,000	\$16,365,000
Incentive Planning Aid	\$10,547,056	\$2,650,000	\$2,650,000	\$2,650,000	\$2,650,000	\$2,650,000	\$2,650,000	\$26,447,056
Total Appropriations	\$16,412,056	\$4,400,000	\$4,400,000	\$4,400,000	\$4,400,000	\$4,400,000	\$4,400,000	\$42,812,056

Grant Awards	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Total
Plan Conformance Grants	(\$3,500,000)	(\$6,000,000)	(\$4,000,000)	(\$2,750,000)	(\$2,750,000)	(\$2,750,000)	(\$2,750,000)	(\$24,500,000)
TDR Incentive Grants	(\$500,000)	(\$1,000,000)	(\$1,500,000)	(\$1,750,000)	(\$1,750,000)	(\$1,750,000)	(\$1,750,000)	(\$10,000,000)
Special Project Grants	(\$1,250,000)	(\$1,250,000)	(\$1,250,000)	(\$1,000,000)	(\$1,000,000)	(\$1,000,000)	(\$1,000,000)	(\$7,750,000)
Total Grant Awards	(\$5,250,000)	(\$8,250,000)	(\$6,750,000)	(\$5,500,000)	(\$5,500,000)	(\$5,500,000)	(\$5,500,000)	(\$42,250,000)

Net Surplus (Deficit) and Final Balances	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Total
Total Appropriations	\$16,412,056	\$4,400,000	\$4,400,000	\$4,400,000	\$4,400,000	\$4,400,000	\$4,400,000	\$42,812,056
Total Grant Awards	(\$5,250,000)	(\$8,250,000)	(\$6,750,000)	(\$5,500,000)	(\$5,500,000)	(\$5,500,000)	(\$5,500,000)	(\$42,250,000)
Balance Carry Forward	\$11,162,056	\$7,312,056	\$4,962,056	\$3,862,056	\$2,762,056	\$1,662,056	\$562,056	\$562,056

3. State Aid

While State Aid takes into account municipal, county, and school needs, the Cash Flow Timetable is primarily focused on the Municipal Government Line, as specific aid programs are directly relevant to the implementation of the Regional Master Plan. Assistance provided to municipalities as part of their State Aid allocations may include funds such as Municipal Block Grants, Homeland Security Assistance Aid, Watershed Moratorium Offsets, Extraordinary Aid, and payments in lieu of taxes for open space purchased by the State under the Garden State Preservation Trust program.

4. Land Acquisition

The Cash Flow Timetable will also track and monitor sources of funding for the Highlands Land Acquisition program. This includes grants, donations, and loans from local, State, and federal agencies, and other governmental entities and programs, such as the Transfer of Development Rights Program. In order to estimate the funds required for land preservation, the Financial Component includes an examination of recent trends in acquisition cost by existing land preservation programs, including Green Acres and the State Agriculture Development Committee (SADC).

Subpart c. Recreation and Tourism

With many areas of protected open space, panoramic views, and a rich history that spans from colonial times to the industrial era to the present, the Highlands offers residents and visitors a variety of recreational and tourism opportunities within a landscape that reflects history, exhibits scenic beauty, and provides outdoor recreational activities. Tourism is a major component of New Jersey’s economy. It is the second largest industry in the State, accounting for extensive revenue and tourism-related jobs. Strategically located between New York City

and Philadelphia, New Jersey is well positioned to take advantage of a significant tourism market. The Highlands Region, located within this market, is within a day's drive of over 20 million people.

The extensive and varied recreational, agricultural, cultural, historical, and scenic resources contained within the Highlands Region represent a substantial foundation for a regional tourism economy. It also serves the local population with many active and passive recreation facilities close to home.

Outdoor recreation and the tourism associated with it involve the interaction of people with an outdoor environment during their travel and leisure time. Outdoor recreation consists of active pursuits such as sports and games, as well as less active, more restorative activities such as walking in the woods or bird watching. Outdoor resources accommodate two types of recreation activity: resource-based recreation and facility-based recreation. A community should have a mix of resource-based and facility-based recreation opportunities for its residents.

Enjoyment of resource-based recreation activities is directly linked to the health of the outdoor environment. Hikers, canoeists, cross-country skiers, and campers enjoy their experiences if the environment is clean and healthful. Fishing enthusiasts rely on clean water to support the trout they catch. If a stream's water is degraded such that fish cannot survive, fishing is in jeopardy. Resource-based recreation is dependent on a healthy environment.

Facility-based recreation is accommodated through a built facility. Typical facility-based recreation activities include indoor ice-skating, pool swimming, and sports requiring a field or court. Generally, the location of these facilities is less dependent on the natural surroundings than other forms of recreation. A tennis court can be built in the middle of a neighborhood, downtown, or in a barn in the countryside.

Agri-tourism represents an important and growing component of Highlands tourism. Agri-tourism is both a marketing strategy for farmers to expand their economic base and a recreational outlet for visitors to enjoy and share in the flavor of the farm environment. Tourist destinations associated with agricultural activities are available at approximately 60 farms which market opportunities for agri-tourism in the form of pick-your-own, farm tours, roadside markets, hayrides, corn mazes, petting farms, and Christmas tree farms. Additionally, full-scale vineyards, offer tours, tastings, grape stomping, festivals, and other tourist amenities.

The technical basis and additional background information on recreation and tourism analysis can be found in the Highlands Council's *Historic, Cultural, Scenic, Recreation, and Tourism Technical Report*.

Part 9. Air Quality

Air quality is directly correlated with on-road mobile sources such as automobiles, buses and trucks, however, air toxics also come from many other sources, including industrial facilities, utilities, commercial businesses, residential activities, and non-road mobile sources. Therefore air quality in the Highlands Region is influenced by mobile and stationary sources within and outside the Region. In 2004, 48 facilities reported releases in the Highlands Region. Five of these facilities that release more than 10,000 pounds per year of air toxics (all chemicals combined) account for over four-fifths of the point (industrial facilities and power plants) source releases in the Highlands Region. Haze consists of air pollutants from a variety of natural and manmade sources including windblown dust and soot from wildfires, fireplaces, motor vehicles, electric utility and industrial fuel burning, and manufacturing operations. Power plants located outside the State also have a great impact on air quality in the Highlands Region.

Automobiles in New Jersey contribute 40% of the airborne pollutants and more than 80% of the airborne carcinogens. Since the Highlands Region is currently an air quality non-attainment area, federal guidelines require that new transportation plans and projects do not further contribute to air quality degradation.

Under the Federal Clean Air Act (1970, amended 1990), the United States Environmental Protection Agency (USEPA) is required to set National Ambient Air Quality Standards (NAAQS) for pollutants. The USEPA has set NAAQS for six criteria pollutants, including ozone (O₃), particulate matter (PM) carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen oxides (NO_x) and lead (Pb). Portions of New Jersey are in non-attainment (exceeds the NAAQS) for ozone, particulate matter and sulfur dioxide.

Ozone occurs naturally in the upper regions of the atmosphere and is critical to shielding the earth from harmful ultraviolet radiation. However, in the lower atmosphere where breathing air occurs, ozone is a harmful air pollutant, contributing to the formation of smog. Ground-level ozone is formed when pollutants such as volatile organic compounds (VOCs) and NO_x emitted by automobiles and industrial facilities, chemical solvents, and other sources react in the presence of sunlight. The northern New Jersey-New York-Connecticut Non-attainment Area includes the Highlands Region.

Particulate Matter is a mixture of fine liquid and solid particles such as dust, smoke, mist, fumes, or soot that pollutes the air and water, causing serious health problems. Major contributors of particulates from in-State sources include diesel exhaust from on-road vehicles and wood smoke. Within the Highlands Region, Bergen, Passaic, Morris, and Somerset counties are designated non-attainment areas for PM, while Sussex, Warren, and Hunterdon counties are in attainment.

Sulfur Dioxide gases are formed when coal and oil fuel containing sulfur is burned. SO₂ emissions from upwind power plants can be transformed into particulate matter and accounts for about half of the fine particulates in New Jersey's air. High concentrations of SO₂ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Within the Highlands Region, only the municipalities of Belvidere, Harmony, Oxford, White, and portions of Liberty Township in Warren County are non-attainment for SO₂, primarily due to emissions from two power plants located in Pennsylvania. Through coordination with federal, regional, state, county and local agencies and entities and in accordance with Regional Master Plan policies the Highlands Council will monitor and support the protection of regional air quality. (See the *Transportation System Preservation and Enhancement Technical Report* for further information.)