

**REGIONAL
TRANSPORTATION
PLAN - FY 2003-2004**

**FOR
SOUTHEASTERN CONNECTICUT**

SOUTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

**REGIONAL TRANSPORTATION PLAN
FOR SOUTHEASTERN CONNECTICUT**

FY 2003-2004

Prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration and the Federal Transit Administration, and the Connecticut Department of Transportation. The opinions, findings, and conclusions expressed in this publication are those of the Regional Planning Commission of the Southeastern Connecticut Council of Governments and do not necessarily reflect the official views or policies of the Connecticut Department of Transportation, the Federal Highway Administration or the Federal Transit Administration.

Adopted: June 16, 2003

SOUTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS
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SOUTHEASTERN CONNECTICUT COUNCIL OF GOVERNMENTS

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RESOLUTION 03-9 ADOPTING THE FY 2003-2004 REGIONAL TRANSPORTATION PLAN

WHEREAS, the projects listed in the FFY 2003 Transportation Improvement Program for Southeastern Connecticut are consistent with the Long-Range Regional Transportation Plan; and,

WHEREAS, both the Long-Range Regional Transportation Plan and the Transportation Improvement Program are financially constrained; and,

WHEREAS, both the Long-Range Regional Transportation Plan and the Transportation Improvement Program have met the public involvement requirements, as required in the Metropolitan Planning Organizations's adopted public involvement process for transportation planning; and,

WHEREAS, this resolution is not to be construed as an endorsement or adoption of any listed project in this plan, rather, it is to be used as a planning document only; and,

WHEREAS, the Southeastern Connecticut Council of Governments believes that the best long term regional traffic solution is not necessarily the least expensive, but that all listed proposals must be evaluated on all factors, not just fiscal constraint; and ,

WHEREAS, that by agreement between the State and the Metropolitan Planning Organization, the public involvement activities carried out in the metropolitan area in response to federal metropolitan planning requirements satisfy the requirements of the Statewide Transportation Improvement Program (STIP) public involvement through a public hearing held on May 19, 2003; now, therefore,

BE IT RESOLVED, that the Southeastern Connecticut Council of Governments hereby adopts the Regional Transportation Plan for Southeastern Connecticut, FY 2003-2004.

CERTIFICATE

The undersigned duly qualified and acting Secretary of the Southeastern Connecticut Council of Governments certifies that the foregoing is a true and correct copy of a resolution adopted at a legally convened meeting of the Southeastern Connecticut Council of Governments on 18 June 2003.

Date: 06-18-03

By: 

Keith Robbins, Secretary

Member Municipalities:

Bozrah • Colchester • East Lyme • Franklin • Griswold • City of Groton • Town of Groton • Ledyard • Lisbon
• Montville • New London • North Stonington • Norwich • Preston • Salem • Sprague • Stonington •
Stonington Borough • Voluntown • Waterford

I. INTRODUCTION

THE PLANNING PROCESS

For the purpose of this document, the process of planning is defined as the rational allocation of resources to achieve certain specified objectives. The implication of this definition and, by extension, the purpose of this document, is to identify the long range transportation needs of the southeast region and to create a general policy guide for the future allocation of public resources to address those needs.

Nationwide, responsibility for developing regional transportation policy under federal guidelines is vested with the Metropolitan Planning Organizations (MPOs). In 1973, the Southeastern Connecticut Regional Planning Agency (SCRPA) was designated by the Governor as the Metropolitan Planning Organization responsible for the transportation planning in the twenty town Southeastern Connecticut Planning Region. The role of MPO was officially transferred from SCRPA to the Southeastern Connecticut Council of Governments (SCCOG) when the agency reorganized in 1993.

In FY 2001, transportation planning responsibilities in Connecticut evolved as a result of state legislative action the previous year. P.A. 01-5 created the Transportation Strategy Board (TSB) to oversee the entire statewide transportation planning process. This law divided the state into five new transportation planning regions called Transportation Investment Areas (TIAs). As a result of its location relative to I-95 and I-395, the Southeastern Connecticut region is in two TIAs, the Southeastern Corridor TIA and the I-395 Corridor TIA.

Clearly, there is evidence of the strong influence of the regional, MPO-based, transportation planning priorities in the TIA plans adopted in FY 2002-2003. By their nature, the TIA plans tend to be macro in scale as opposed to the MPO plans which, while having a macro perspective of twenty years, also include many smaller municipal "intersection-type" improvements. By contrast, the smaller projects contained in the MPO plans will have little impact on the manner in which people and goods are transported within and through the State and are of less interest to the statewide Transportation Strategy Board. Given the fiscal oversight responsibility of the TSB and its broader planning mission, it is unclear how and in what ways the new TSB-TIA transportation planning structure will influence the actual selection of projects to be implemented through the federal, MPO-based process.

In addition to the new TSB-TIA planning structure, the nature of transportation planning has changed significantly over the past twenty five years into a process whose objectives and goals sometimes only appear peripherally related to transportation. For example, energy conservation, air quality, disabled accessibility and environmental justice have added complex new dimensions to transportation issues. The Transportation Equity Act for the Twenty-First Century (TEA-21) was signed into law in 1998 and is scheduled for re-authorization in October, 2003. TEA-21 continued changes that were made in the preceding Federal Transportation Act governing the way Metropolitan Planning Organizations conduct planning activities. Likewise, for those areas like Connecticut which are not in compliance with the Clean Air Act Amendments (CAAA) of 1990, air quality

mitigation remains one of the key centerpieces of transportation planning. Finally, the Americans With Disabilities Act (ADA) and more recently the Jobs Access and Reverse Commute Program impose major new service requirements on public transportation systems in order to serve the needs of these special populations. For these reasons, this document examines not only the region's transportation needs but evaluates them against these and other factors of national, state, regional and local concern.

In passing the Clean Air Act Amendments and its subsequent revisions, Congress established a critical legislative mandate for transportation planning relative to achieving air quality standards. The passage of the Intermodal Surface Transportation Equity Act (ISTEA) in 1991 and its successor, TEA-21, in 1998, reflected Congress's intent to redirect the transportation sector's efforts to address improvements in air quality through modifications in the means by which people and goods are transported. Since the MPO plays a significant role in this process, broad interpretation of this mandate at the federal and state levels has not only resulted in changes in the transportation related products we use, it may also change the way many people travel and the decisions enabling those changes. Connecticut's own PA 01-5 reinforces this trend largely in recognition of the inability of our present transportation system to adequately function into the future.

Air quality in the northeastern section of the United States is heavily influenced by both fixed and mobile sources, each of which are fossil fuel based. The single greatest documented case of degraded air quality from fixed sources results from pollutant transfer from mid-west electric power plants which continue to combust coal as a fuel source. In addition, for more than twenty years, mobile sources have also been recognized as a major cause of air pollution. Each combustion cycle of an internal combustion engine, using fossil fuel as an energy source, results in trace amounts of carbon monoxide, nitrous oxide, sulfur dioxide, particulate matter and hydrocarbons which, in the presence of sunlight, produces ozone. Air quality in cooler climates like the northeast is further compromised during the phase of combustion when engines are cold. Expanded use of the automobile resulting from sprawl-induced land use tends to defeat the significance of efforts to reduce the overall number of auto trips. Likewise, energy pricing has had only marginal impact on reducing trip demand. The net result is that despite a steady annual increase of vehicle miles of travel, air quality has been steadily improving as a result of technological improvements to the internal combustion engine and in the formulation of both gasoline and diesel fuel. The exceptions to this are nitrous oxide (NOX) and sulfur dioxide which are produced inversely to hydrocarbons as a combustion by-product. These compounds are the precursors of acid rain and thus far appear less sensitive to the technological improvements to fuel or to the internal combustion engine that have been so effective in improving air quality in the face of increasing vehicle miles of travel.

Over the long term, low emission hybrid fueled vehicles may eventually replace portions of the present vehicle fleet. In the short term (20 years), there will continue to be constraints on the degree to which the transportation sector will be able to build its way out of highway congestion through major capacity expansions that induce more travel. At the same time, to the extent that congestion begins to result in economic impacts that go beyond mere inconvenience, the potential for induced VMT must be balanced against more widespread adverse economic consequences. This, then, is the challenge for transportation planning in the first decade of the new millennium and it is a shared challenge regardless of the planning structure empowered to address it.

Congestion on I-95 stands out in this respect, having gone from a level that was once characterized as inconvenient to a level that is now widely recognized as jeopardizing economic growth. This situation is especially apparent seasonally and was highlighted in a 1999 report prepared by Michael Gallis sponsored by the Connecticut Institute for the 21st Century. Gallis warned that failure to address key transportation issues could render Connecticut an "economic cul-de-sac" and cut it off from the major surrounding economic markets on which it is dependent. In this context, the question now becomes whether, under the new TSB structure, Connecticut can add capacity to I-95 or attempt to reduce demand, which it must do in order to maintain its economic viability or whether that action will result in a deterioration of air quality to such an extent that it jeopardizes the imposition of federal sanctions resulting in significant financial penalties levied against the State.

A significant means by which the Federal Transportation Act continues to affect the transportation planning process involves the notion of "fiscal constraint". As a function of the funds available to underwrite the cost of many "big ticket" transportation projects, both highway and transit, this requirement has modified the nature of the projects to be formally included in a Regional Transportation Plan. Under these planning regulations, the Regional Transportation Plan must be for a twenty-year period, but it must also be limited to those projects for which there is a reasonable expectation of funding through an identified source. Since the federal government has become the primary funding source for most transportation projects, the fiscal constraint rule limits the manner in which communities and regions can use the formal federal transportation planning process as a vehicle for the expression of a grand "future vision". The fiscal constraint rule forces regions and the State to look more realistically at available resources and to focus efforts on achievable projects. In this respect, the Regional Transportation Plan has taken on the character of a financial plan to achieve transportation objectives. Consequently, this discussion demonstrates that the evolutionary nature of new laws, regulations and knowledge strongly emphasizes the need to regularly update transportation plans. For this reason, Transportation Plans in the southeastern Connecticut region have been updated annually since 1976.

Subsequent to a public hearing, the revised plan will be formally adopted by SCCOG. During this process, the Connecticut Department of Transportation (CONNDOT) will be conducting air quality and cost assessments of potentially high cost, major infrastructure improvement projects recommended in the Plan. This is necessary to ensure that regional plans meet federal conformity requirements for both clean air and fiscal constraint. In this context, it is important to note that southeastern Connecticut represents a relatively small part of an air quality region that includes most of the land area of the state. This means that transportation activities in the southeast region become part of a larger air quality mathematical model that include transportation activities in the Hartford and New Haven areas as well.

As noted above, regional transportation plans are intended to function for 20-years from their date of adoption. They may be updated or revised as frequently needed but at a minimum be updated once every three years. Throughout this ongoing process, the public continues to be regularly consulted as specific projects are drawn from the plan for implementation. The actual implementation of projects recommended in the regional transportation plan requires a parallel, but entirely separate, administrative process which is largely dependent on available federal, state, and,

in some cases, local funding as well as local political support. The document which summarizes the actual transportation project implementation process and schedule is called the Transportation Improvement Program (TIP). The TIP lists those projects drawn from the Regional Transportation Plan to be implemented over the next three-year period. The TIP is formally updated annually. However, amendments are made as needed. The TIP provides specific information about the public funding sources of those projects as well as a schedule for implementation.

Transportation projects which are privately funded fall outside of the purview of the regional planning and TIP process. However, in some unique cases, public-private funding partnerships may be created to address regional needs identified in the transportation plan. This becomes especially important where the issue of fiscal constraint is concerned as public funds become increasingly scarce and such funding partnerships emerge to fill those voids. However, privately funded transportation improvements are usually associated with new, large, residential, commercial or industrial development proposals. Other than new subdivision roads, private transportation improvements generally follow a completely separate review process overseen exclusively by the State Traffic Commission (STC). Since the regional transportation planning process is a direct outgrowth of federal funding activities, the distinction between public and private funding is critical in differentiating between activities of the STC on the one hand, and the SCCOG functioning as the MPO on the other. As major new private development occurs in southeastern Connecticut, the role of the STC in mitigating safety issues becomes increasingly more important as a factor in determining transportation system outcomes.

Over the course of the last decade, southeastern Connecticut has been subject to an inordinately large amount of development and a resultant pressure on its transportation systems. This pressure is largely the result of major reductions in the defense economy occurring at the same time as an explosion of Indian gaming and expanding tourism activities. In response to these changing conditions, CONNDOT and SCCOG have initiated a number of studies to address various transportation problems. These included two major environmental impact studies: one to examine the Routes 2/2A/32 corridors and another to examine the completion of Route 11. Likewise, in response to the growing congestion on I-95, the 1997 Legislature mandated that CONNDOT study I-95 corridor from Branford to the Rhode Island border and make recommendations for improvement by January, 1999. P.A. 01-5, signed into law in June, 2001, was initially accompanied by a \$50 million appropriation for transportation projects that would have an immediate benefit. A portion of these funds was dedicated to beginning the Environmental Impact Assessment process for capacity improvements to I-95 from Branford to Rhode Island. Another smaller sum was earmarked to conduct a marketing and feasibility study for expanding bus transit in southeastern Connecticut to coordinate with passenger, ferry and rail modes entering the region.

This discussion raises a critical point regarding the limits of the role of SCCOG. SCCOG, as the MPO, does not have the ability itself to implement its planning recommendations. As described above, the implementation of publicly-funded transportation improvement projects is an exceedingly complex activity that depends on the active cooperation of federal, state and local governments as well as the citizens affected. It is in recognition of these limitations that this plan is being prepared.

II. BACKGROUND TO THE PLAN

HISTORICAL PERSPECTIVE

Historically, urban and village settlement patterns have been the preferred settings for efficient infrastructure development. But over the last four decades, southeastern Connecticut has been evolving into a highly suburbanized setting. In a 559 square mile area, there are 20 separate municipal governmental entities and two federally-recognized sovereign native American nations, each different from the others in socio-economic character. Supporting these characteristic differences is the independent power, subject to the General Statutes granted to municipalities, to zone land and to tax it. Therefore, in understanding the complex relationship between development and transportation, each of the 20 municipalities must be viewed as mini, sub-economic systems with each using its land resources to compete with the others to attract high quality, tax-generating, enterprises. A good tax base is essential to underwrite the cost of providing high quality municipal services such as schools, police, and fire protection as well as public health services. Consequently, in addition to new suburban residential development, each municipality has sought to attract its own mix of commercial and industrial activities that would help underwrite a tax burden which would otherwise be borne entirely by residential property owners. This zoning/land development/property tax cycle has, in turn, created entirely new patterns of travel demand, often unrelated to major existing, urban-based transportation infrastructure. For this reason, the traditional efficiencies of urbanization, built upon that basic infrastructure, are rapidly changing in Connecticut through a uniquely small, municipally-based governmental structure.

Energy cost and availability is perhaps the most critical underlying factor in this complex land development and transportation equation. The availability of ostensibly low cost energy is an essential ingredient in the suburbanization process and helps support the value of marketable, developable land. Energy, in the form of fuel for automobiles and heating oil for single family homes, coupled with a reasonably well developed highway network, has enabled our nation and our region to achieve a level of personal mobility heretofore unimagined. Likewise, it has enabled those who wish to do so to move farther and farther away from the problems of the inner city in order to insure the safety and security of their families. While urban issues are widely considered to be the social driving force behind suburbanization, the achievement of those social objectives in the form of suburbanization is really being enabled by national policies on energy, transportation, housing and is being underwritten by financial lending policies which for more than half a century have favored suburban development. With its small town governmental structure based firmly in the values of home rule, Connecticut typifies the national geo-political environment in which the cycle of suburbanization has evolved. The cycle begins with the development of low cost, rural, outlying farm land for low density residential uses. This is followed by the need to support that development with both municipal and commercial services. In the last steps in the cycle, commercial and industrial uses are attracted to locate in rural settings to help offset the tax burden of the residential property owners. Finally, new jobs are created in outlying areas which require new housing, schools and infrastructure.

From the earliest history of the European settlement of southeastern Connecticut, growth and development clustered along rivers and estuaries due to the inherent difficulty of overland travel.

Since overland transportation was difficult, these bodies of water provided a fast, convenient means of travel. For this reason, it is not surprising to find early settlements along the shores of the region.

While native Americans inhabited most of the area known as southeastern Connecticut centuries before the first European immigration, the earliest non-native, European settlement in Southeastern Connecticut was about 1645. It was located on the west side of the mouth of the Thames River and was founded by John Winthrop, Jr. The settlement, originally known as "Pequot," was later renamed New London. Several years later, the New London settlement was followed by a small settlement in Stonington, which was then followed by a third settlement located at the head of the Thames River, named Norwich.

These early 17th Century village settlements were primarily dependent on agriculture. Excess amounts of produce were shipped to Boston and New York and then bartered for other needed products. By the turn of the 18th Century, New London had already become one of the most important shipping and trading centers in the colony. During the early 18th Century, the foundations of the region's overland transportation system were being laid over what was then known as "paths." By the mid-18th Century there followed the creation of a coastal post road for mail delivery.

The industrialization of the 19th Century forever changed Southeastern Connecticut. At the beginning of the 19th Century, the area was primarily agricultural. However, as a by-product of the elaborate array of rivers and streams and other water bodies around the region, by the end of the century, the economic base of southeastern Connecticut would be almost entirely industrial, dominated by the textile industry.

Early in the 19th Century, the region's inland transportation infrastructure was already well established. As early as 1792, Congress had authorized a turnpike between Norwich and New London. During the 19th Century, steam powered vessels dominated shipping and passenger service, displacing sail power. By 1840, the rudiments of intermodalism were already in evidence as steamboats arriving at Norwich from New York connected with rail lines to Worcester and Boston. At the end of the century, the region was extensively covered by rail service.

Events of the 20th Century conspired to alter the well-ordered social and economic stability that was characterized by the 19th Century mill villages. Domestic and foreign competition resulted in the eventual decline of the textile industries. Two world wars stimulated the U.S. Government to underwrite the development of a full-time defense industry in the region dedicated to the production and support of submarines for the U.S. Navy. Following the Second World War, the construction of the Interstate Highway System began to exert enormous influence on the location of development and the diversity of the regional economy. Now, in the first decade of the 21st Century, with the breakup of the Soviet Union and an end to the Cold War, the once robust market for submarines has been reduced. With lower demand for submarines, the region is undergoing yet another major transition, this time toward Indian gaming and tourism as principal industries and employers.

Southeastern Connecticut has undergone many physical and economic changes over the past 350 years. The dramatic reduction of defense-related and manufacturing employment and an equally dramatic boom in casino-related development and employment are altering, in a fundamental way,

the economic geography of southeastern Connecticut. The Mashantucket Pequot Tribal Nation is now the region's single largest employer and they are being closely followed by the Mohegan Tribe. These specific developments, and those that will likely follow as a result, have profoundly affected the perception of transportation needs by the region. In some cases, the capacity of some parts of the region's transportation infrastructure has already been exceeded and the region now finds itself for the first time contending with the notion of limits on growth in order to preserve its essential character.

POPULATION AND DEVELOPMENT

The purpose of this section of the plan is to present the key functional premise upon which this document is built: that, for the most part, settlement patterns dictate travel patterns and travel demand. The link between land use and transportation and how they interrelate is a fundamental element in regional planning because it compels the examination of land use patterns as one of the driving forces for transportation demand.

It is certainly true that the reverse of this process also occurs wherein major new infrastructure induces changes in land use. The interstate highway system is perhaps the best modern example where highway infrastructure has been the driving force for non-urban development. To a large extent, it continues to do so. Lisbon Landing, a 500,000 sq. ft. commercial mall built at Exit 84 off I-395, is a recent example of this phenomenon. However, the absence of any new major infrastructure built in southeastern Connecticut in the last four decades suggests that at least in recent times, the demand for major transportation improvements in this region is now being driven by changes in land use.

In the preceding section on Historical Perspective, it was noted that until approximately the end of World War II, densely populated urban settlements were the prevailing patterns of development for a wide range of land uses, including residential, industrial, retail/commercial, as well as for recreation and entertainment. The following data in this section will demonstrate that southeastern Connecticut evolved its own unique urban settlement pattern around the dominant physical features of the Thames River and Long Island Sound. However, since the end of World War II, a distinctly new, non-urban settlement pattern has been emerging. This new land use pattern has greatly altered almost every type of traditional travel pattern, including the home-to-work type trip which in most instances defines the major elements of our transportation infrastructure system. In fact, these cumulative land use changes have been of such magnitude that, in the relatively short period of time of only two decades, they appear to be changing the very nature and function of urban areas that have existed for several centuries. Urban communities like Norwich and New London, which were, until recently, the center of commerce and industry, are now struggling to sustain themselves. Conversely, rural communities such as Lisbon, with available land in close proximity to the interstate, are now becoming major commercial destinations. Added to these changing land use patterns are a whole new set of transportation demands created by Indian gaming and tourism. The net result of all of this change in a very short period of time appears to be a growing public awareness and concern focused on the future of both transportation and land use.

Most important is that old or pre-existing transportation infrastructure no longer functions to serve a growing portion of this new complex travel demand. The reduction of rail service as the premier vendor for the movement of goods in favor of trucking represents perhaps the best example of changes that have taken place in transportation as a result of new, post-war land use patterns. Likewise, with respect to the movement of people, where once it was possible to offer at least a portion of the resident population the efficiencies of mass transit, widespread suburban sprawl at this small, multi-municipal scale, is rapidly exhausting the efficiency for doing so in a traditional fixed-route format. This is evident with respect to both residential origins and employment destinations which were both once almost exclusively urban-based and are now no longer exclusively so.

Added to these basic changing travel demand patterns in southeastern Connecticut is the pressure now being created by the gaming and tourism industry. In daily traffic terms, the creation of Foxwoods and Mohegan Sun Casinos and the travel demand that they have generated has been tantamount to creating two entirely new cities about the size of the City of New London. With the recent expansion of the Mohegan Sun Resort, future expectations are that the Route 32 corridor will see significant development and traffic increases in the next several years. Likewise, Norwich is positioning itself to become a major tourism and transportation hub. A large marine dock was constructed in the Norwich harbor with potential rail and highway connections to points beyond. At the same time, New London continues to function as the region's primary transportation hub with its confluence of water, rail and highway systems.

From a larger perspective, the impact of these cumulative land use changes on aspects of the lives of many of the residents of southeastern Connecticut has been profound. While increased mobility is perhaps the most identifiable requirement of these decentralized land use changes, the benefits of this semi-rural lifestyle have not come without a price. Some of this price is privately borne while the rest is publicly shared. The requirement for private transportation, for example, has resulted in the necessity for virtually every family to have at least one car for each adult licensed driver. The costs of public services, too, have incrementally increased as a function of the inefficiencies of scale related to the less dense population distribution pattern. Evidence of this trend is in some degree reflected by increases in costs to local taxpayers to support such municipal services as education, police, fire protection, public health, water supply, waste collection, recreation and highway maintenance. Yet one of the most ominous, hidden, prices of this low density lifestyle is air pollution. In a sense, the vagaries of New England weather combined with this new form of low density development conspire to virtually eliminate walking and biking as suitable modes for all but recreational purposes. Here again, local zoning and subdivision regulations play a key role. By creating large-lot residential zones and then segregating commercial, institutional and other uses, there is no practical travel alternative for most trips except by car. Many subdivision regulations do not require sidewalks, preferring instead to vest the developer with the responsibility for building subdivision streets that exceed the existing conditions of many of our state arterial highways. Likewise, fixed-route transit, once the staple of public transportation, now serves only those few remaining folks in urban areas whose means or age does not permit private transportation. Emerging from this pattern of auto-dependence is a renewed appreciation for the value of walking and biking and for the desire to create pedestrian "trails" to create non-auto connections within our communities and greenways to protect fragile natural resources.

Over the course of the last four decades, the twenty towns in southeastern Connecticut have undergone some major land use and lifestyle changes. As of this writing, there does not appear to be any significant abatement of this development explosion away from our traditional urban centers, especially of the residential and commercial type. It is a trend that when combined with changes in the economy of the region, continues to burden the ability to meet travel demand. This raises a rather fundamental question. Is there an answer to this changing land use and transportation pattern that will not require some significant changes in either lifestyle or a major investment in transportation infrastructure? Perhaps not.

Figure 1 presents population growth from 1960 to 2000. It shows that the actual net population increase (in-, versus out-migration, births vs. deaths) in southeastern Connecticut has been less than 1% per year, or about 36% between 1960 and 2000. In the last decade, this historically low growth rate was reduced even further to less than .1%/year. The largest population shift has occurred in what has now become "suburban" towns, whereas towns once considered "rural" are now rapidly becoming suburbanized.

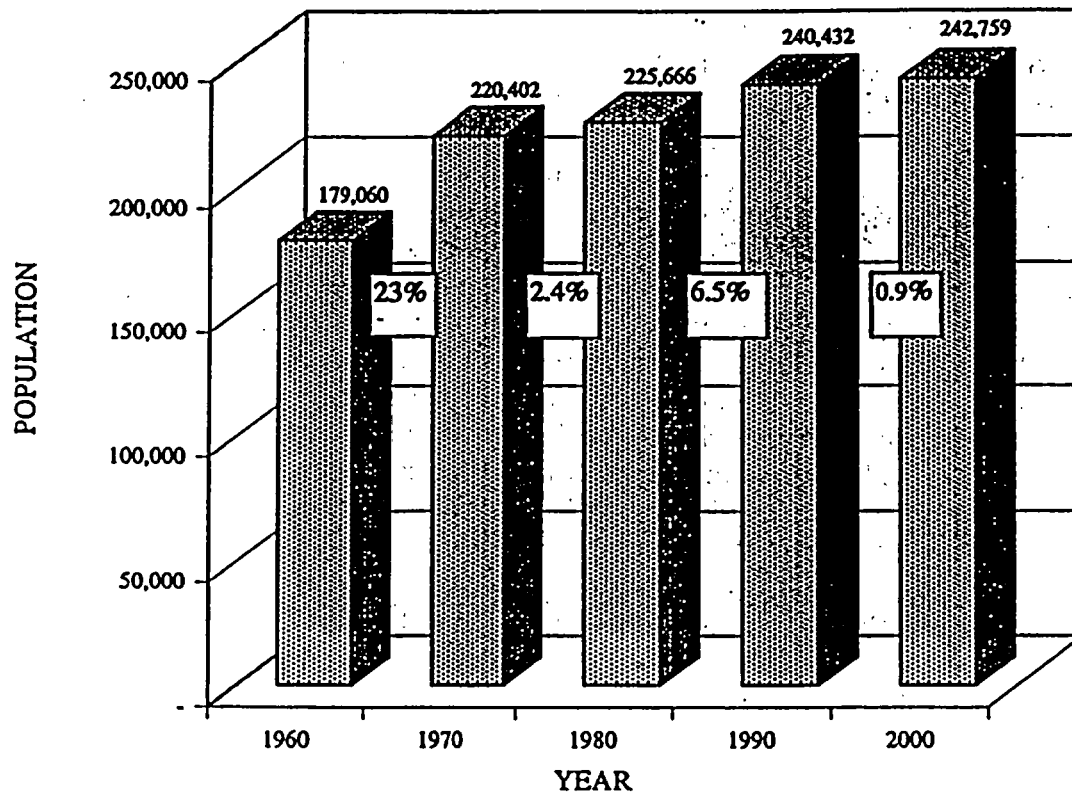
Following this changing population trend from urban to rural, Figures 2 and 3 graphically depict changes in the pattern of development between 1962 and 2000. The pattern of low density residential development is readily identifiable as suburban sprawl occurs on large lots with no sewers. Under this characteristic, on-site utility development pattern, concern for water quality becomes critically important especially since there is considerable risk that over-development will require installation of high-cost, municipal sewage treatment systems. Consequently, the corollary to a market desire for rural, low density residential development is an equally strong public ethic of "sewer avoidance."

Figure 4 graphically shows changes in the amount of land developed during this same 30-year time period. Between 1960 and 1990, the total amount of developed land was only 20.5%. But within the last decade, with only .9% population growth, these data show the rate and scale at which sprawl is occurring in southeastern Connecticut resulting in an additional 4.5% of the region's total land mass being developed.

Figure 5 highlights the growth of three types of developed land uses. These data show that while the amount of land devoted to residential, commercial and industrial uses have all increased, by far the greatest amount of land development in southeastern Connecticut has been dedicated to residential use. In this case, as Figures 2, 3 and 4 demonstrate, the majority of this new residential development is widely scattered.

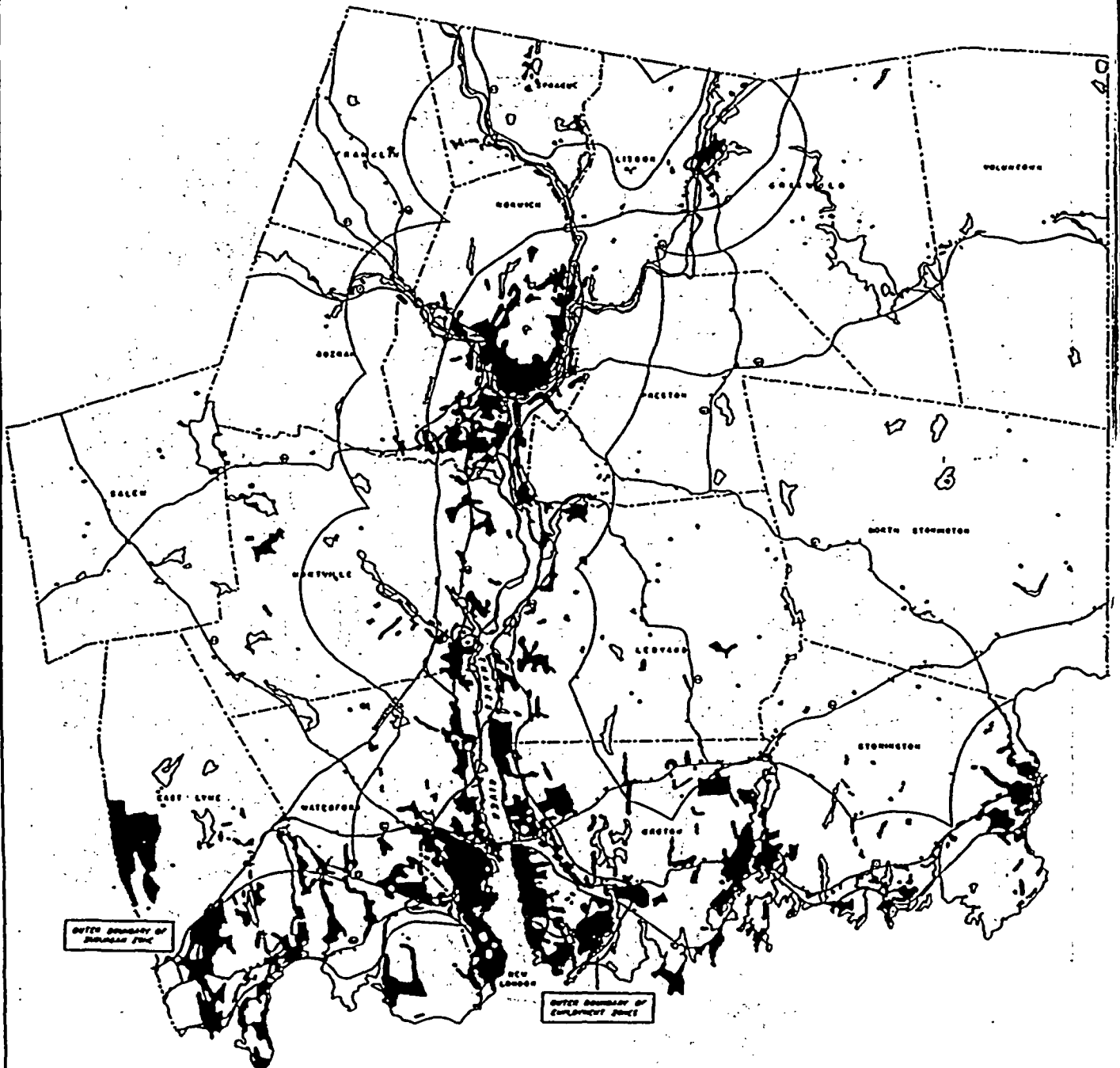
Figure 6 integrates population data shown in Figure 1 with land development data shown in Figure 4. From this, a new dimension of this sprawl pattern emerges. The picture is one of profound regional density reduction where development has occurred. The data confirm that 40 years of municipal zoning and subdivision activity, supported by financial lending institutional practices, has encouraged mostly large-lot residential development. When these municipal regulatory practices are coupled with low population growth and smaller household size, the result has been a measurable reduction in regional population density in relation to total developed land. The order of magnitude of this reduced density is more than half, from 3,826 people per developed acre to 1,734. These

**SOUTHEASTERN CONNECTICUT REGION
CHANGE IN POPULATION, 1960 - 2000**



Source: U.S. Census

SOUTHEASTERN CONNECTICUT REGION DEVELOPED LAND - 1962 (WITHOUT COLCHESTER)



Source: SCRPA



FIGURE 2

FOR PROJECT: CONN. P-3061
 PREPARED BY: EAST CONN. REGIONAL
 PLANNING BOARD FROM THE
 AND STATE PLANNING BOARD AND THE
 CONNECTICUT DEPARTMENT OF
 TRANSPORTATION

SOUTHEASTERN CONNECTICUT REGION DEVELOPED LAND - 2000

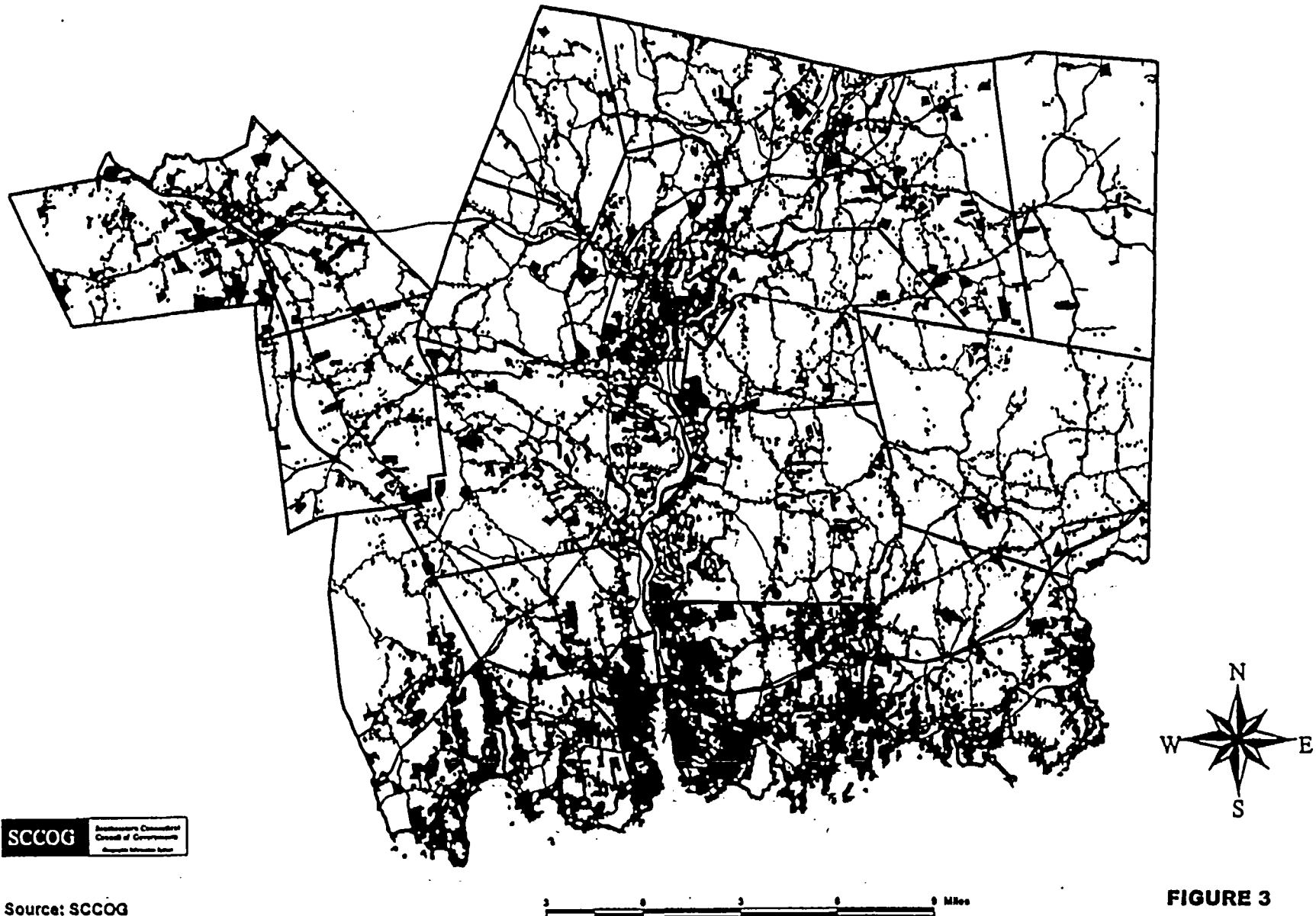
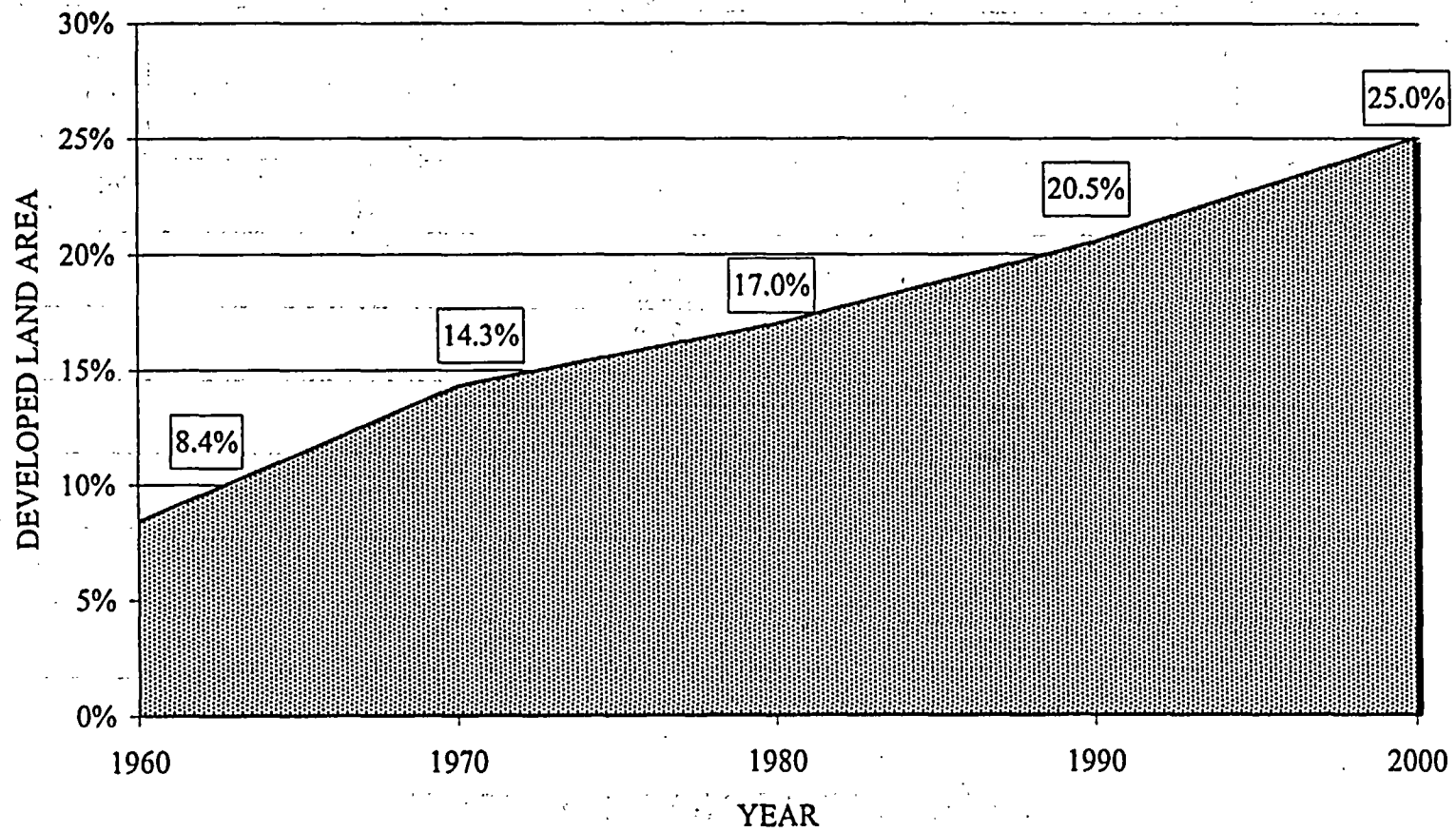


FIGURE 3

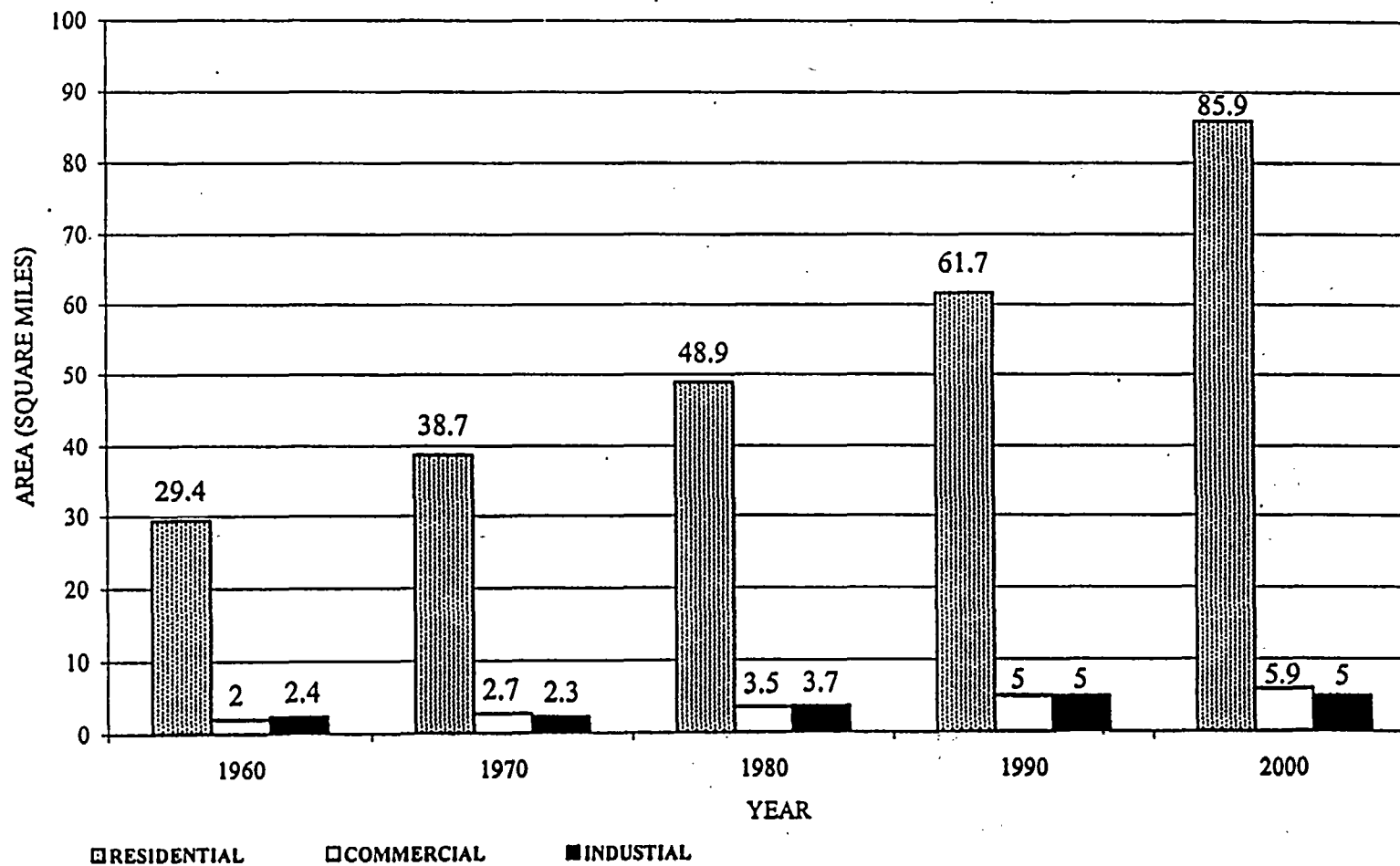
SOUTHEASTERN CONNECTICUT REGION DEVELOPED LAND AS A PERCENT OF TOTAL AREA



Source: SCCOG

FIGURE 4

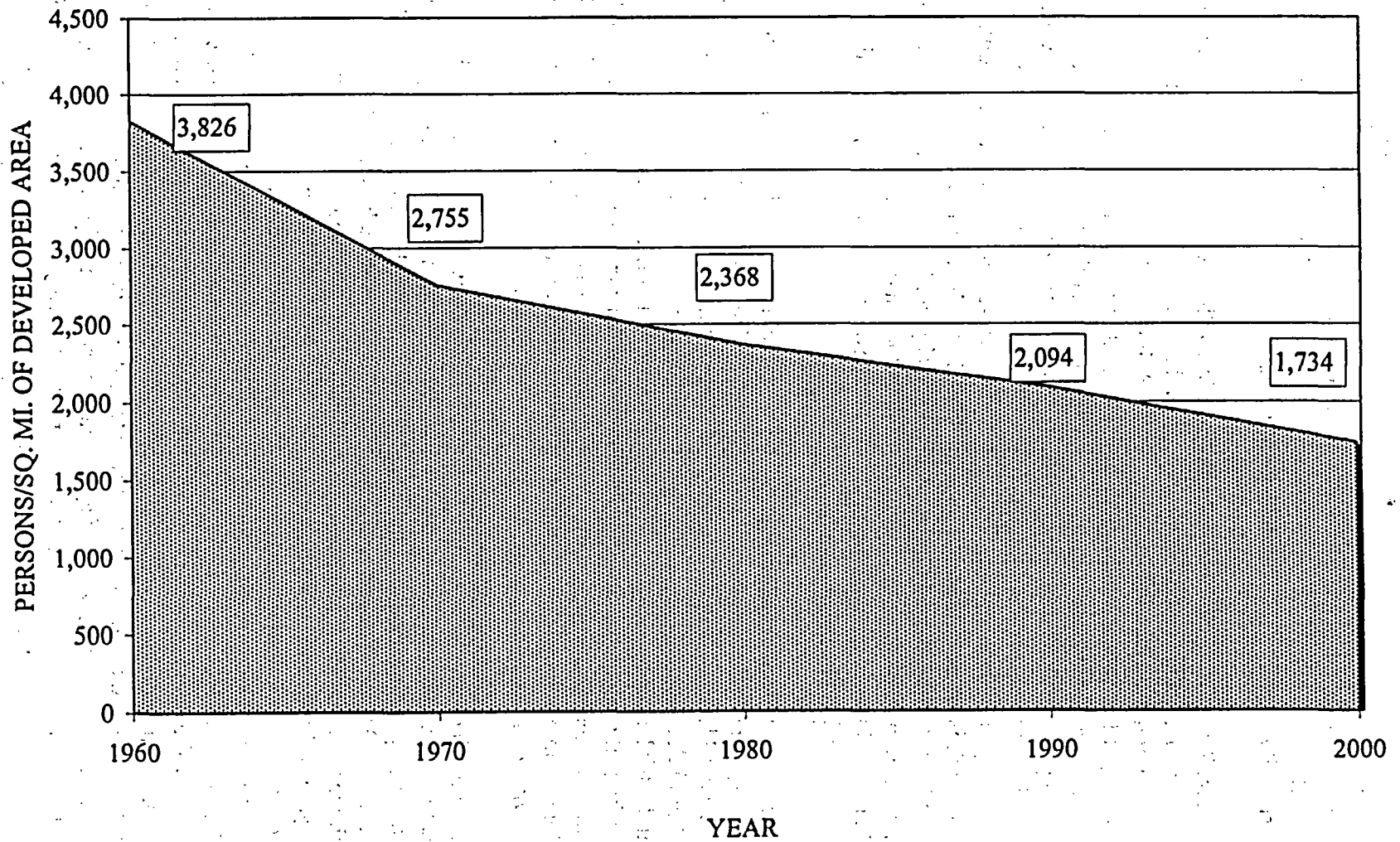
SOUTHEASTERN CONNECTICUT REGION **AREA OF SELECTED LAND USES**



Source: SCCOG

FIGURE 5

SOUTHEASTERN CONNECTICUT REGION POPULATION PER SQUARE MILE OF DEVELOPED AREA



Source: SCCOG

FIGURE 6

figures depict the quality of life/lifestyle conditions sought and defended by so many people in southeastern Connecticut, living in the state with the highest per-capita income and in the county which once had the highest per-capita defense expenditure in the nation. It is a quality of life built primarily on the large lot, single-family dwelling.

Figure 7 was developed to display the location of the region's most significant non-residential traffic generators, both in terms of employment and attractions. Table 1, which accompanies Figure 8, lists the major traffic generators. While Figure 8 shows us that the urban core generally remains the area of largest traffic generation, it also tells us that there is a rapidly growing seepage of large traffic generators being located outside the urban core. Although Crystal Mall, Foxwoods Casino, and Mohegan Sun represent perhaps the biggest examples of major traffic generators that have located outside the urban core, other smaller commercial traffic generators are emerging all along state highways in every town in the region. The strip-commercial activity along West Main Street in Norwich is one example. Cross Roads Mall in Waterford offers another example while Coogan Boulevard in Mystic offers yet another. Finally, with the opening of more than 500,000 sq. ft. of new commercial development in Lisbon in 2001 and the former Norwich Hospital site in Preston being evaluated for redevelopment, the pattern of extra-urban commercial development is very well established.

Earlier in this decade, state legislation enabling the creation of the rural Eastern Connecticut Enterprise Corridor Zone acted to institutionalize commercial and industrial suburbanization at a new rural level. The Enterprise Zone was created to enable the towns of Sprague, Lisbon, Griswold, Plainfield, Killingly, Putnam, Sterling and Thompson to attract "their share" of commercial and industrial activity away from the urban core. While the underlying legislative purpose was simply to help these communities build non-residential tax base, this was accomplished by attracting development and employment activities, such as Lisbon Landing, away from the urban core. The long term effects of this legislation is to accelerate the trend of sprawl development so that smaller towns do, in fact, get "their fair share" of tax base.

Another indicator which showcases the dominant low density suburban lifestyle that characterizes southeastern Connecticut is depicted in Table 2. This Connecticut Department of Motor Vehicle data compares changes in vehicle registrations (ownership) in the population 18 years old and older from 1980 to 2000. Comparable data from 1980-1990 established a baseline trend in each town in the region. The 2000 data continue the upward growth trend in every town in the region except East Lyme and Montville. One important cautionary note with respect to interpreting this data involves vehicles used for other than residential purposes. That is, this data represents all vehicles, including commercial, industrial/agricultural vehicles, that are registered in each town in southeastern Connecticut. However, while the addition of commercial and industrial vehicle registrations do modify the data interpretation somewhat, over time the simple dominance of vehicles in private ownership establishes a clear relationship between vehicle ownership and suburbanization. These data tell us that one of the biggest private costs of living in southeastern Connecticut is the need for each resident over 18 years of age to have access to a vehicle. Regionally, the data show that the ratio of registered vehicles/population more than 18 years of age was 1.1 in 2000, up from 1.01 in 1990. However, the extreme range of this data, especially between urban and rural communities, enhances the understanding that one of the basic costs of the suburban lifestyle is auto ownership.

17



FIGURE 7

TABLE 1

SIGNIFICANT REGIONAL TRAFFIC GENERATORS

1. Foxwoods Resort and Casino
2. Mohegan Sun Casino
3. Crystal Mall
4. New London Mall
5. Pfizer, Inc., New London
6. Norwich, West Main Street
7. Electric Boat/Pfizer
8. U.S. Submarine Base
9. Mystic Aquarium/Seaport
10. Connecticut College/Coast Guard Academy
11. Northeast Utilities/Millstone
12. Norwich Industrial Park
13. Cross Roads Mall
14. Lisbon Landing
15. Rocky Neck State Park (Seasonal)
16. Ocean Beach Park (Seasonal)
17. William W. Backus Hospital
18. Lawrence and Memorial Hospital
19. Mystic Business Park
20. Groton Commercial
21. West Mystic

TABLE 2
VEHICLE OWNERSHIP, 1980, 1990, AND 2000
Southeastern Connecticut Planning Region

	1980			1990			2000			Change In Ratio 90-00
	Reg. Vchs.	Popl.> 18	Vch/Pop> 18	Reg Vchs.	Popl. >18	Vch/Pop > 18	Reg. Vchs.	Popl.>18	Veh/Pop>18	
URBAN TOWNS:										
Groton	22,584	29,607	0.76	27,161	34,107	0.80	26,571	29,993	0.89	0.09
New London	13,561	22,640	0.60	14,998	22,772	0.66	15,205	19,814	0.77	0.11
Norwich	23,306	28,034	0.83	27,174	28,406	0.96	27,857	27,412	1.02	0.06
Urban Totals:	59,451	80,281	0.74	69,333	85,285	0.81	69,633	77,219	0.90	0.09
SUBURBAN TOWNS:										
Colchester	5,669	5,419	1.05	9,897	8,115	1.22	13,366	10,209	1.31	0.09
East Lyme	10,331	9,809	1.05	13,094	11,991	1.09	14,899	14,149	1.05	-0.04
Griswold	6,099	6,318	0.97	7,643	7,583	1.01	9,320	8,034	1.16	0.15
Ledyard	9,048	9,070	1.00	11,996	10,695	1.12	13,212	10,532	1.25	0.13
Lisbon	2,555	2,257	1.13	3,418	2,830	1.21	3,811	3,010	1.27	0.06
Montville	11,589	11,336	1.02	14,721	12,621	1.17	15,752	14,160	1.11	-0.06
Preston	3,439	3,528	0.97	4,200	3,967	1.06	4,801	3,639	1.32	0.26
Sprague	2,194	2,106	1.04	2,682	2,208	1.21	2,863	2,199	1.30	0.09
Stonington	12,009	12,114	0.99	15,316	13,489	1.14	18,357	14,022	1.31	0.17
Waterford	14,939	13,353	1.12	17,890	14,448	1.24	19,361	14,967	1.29	0.05
Suburban Totals:	77,872	75,310	1.03	100,857	87,947	1.15	115,742	94,921	1.22	0.07
RURAL TOWNS:										
Bozrah	1,742	1,491	1.17	2,597	1,762	1.47	3,145	1,804	1.74	0.27
Franklin	1,657	1,128	1.47	2,193	1,369	1.60	2,371	1,392	1.70	0.10
No. Stonington	3,349	2,887	1.16	4,531	3,564	1.27	5,161	3,736	1.58	0.11
Salem	1,866	1,604	1.16	3,143	2,345	1.34	3,925	2,722	1.44	0.10
Voluntown	1,360	1,181	1.15	2,279	1,541	1.48	2,777	1,857	1.50	0.02
Rural Totals:	9,974	8,291	1.20	14,743	10,581	1.39	17,379	11,511	1.51	0.11
REGIONAL TOTALS:	147,297	163,882	0.90	184,933	183,813	1.01	202,754	183,651	1.10	0.09

Source: U.S. Census, 2000; Ct.DMV

In this instance, the rural communities of Franklin, Voluntown and Bozrah stand out in that in these towns there are about 1.64 registered vehicles for every person 18 years old and over, up from 1.4 ten years ago. This compares with a ratio of .9 for the three urban communities of Norwich, New London and Groton, up from .81 in 1990. New London, the most densely populated community in the region, had only .77 registered vehicles for each person 18 years old and over. Yet even in New London, the growth in the last decade of registered vehicles from a 1990 ratio of .66 is noteworthy. It should be noted, in this regard, that New London has the lowest per capita income in the region and this factor may also be influencing the number of registered vehicles.

A comparison of these ratios reveals several things: First, in the existing suburban and emerging suburban (rural) communities, there is a higher likelihood of younger, two-worker households, each needing their own private transportation as opposed to the urban centers with more households with retirees. But at its core, the data reflect the need for a "back up" vehicle in the suburban and rural communities in the event that a primary vehicle is incapacitated. Overall, these data collectively emphasize that the region continues to increase its dependence on private vehicles as the primary form of personal transportation. This trend is evident even in the urbanized towns where, with perhaps the exception of New London, public transportation has not been able to make any significant impact on personal vehicle ownership. Finally, there appears to be no meaningful relationship between income and the patterns of vehicle ownership at the municipal level. This means that the pattern of vehicle ownership is driven by the suburban life-style, not necessarily the variations in income level that accompany it.

Table 3 contains vehicle availability by town, by occupied housing unit. This table further reinforces the strong relationship between suburbanization and vehicle ownership seen in Table 2. In addition, it enhances that picture by documenting the number of households with no vehicle available. The most noteworthy example of this indicator is New London, which recorded 19% of its occupied housing units with no vehicle available, down from 22% in 1990. This continued level of "transit-dependence" can be compared, with all of the rural communities, which as a group have only 2% of the occupied housing units without any vehicles available, and all of the suburban communities, which have a total of 3.7% with no cars available. These are trends that have remained virtually unchanged since 1990.

Table 3 indicates that most occupied housing units in the region have two or more cars available. Again, the universality of this pattern has significant negative implications for regional transit if for no other reason than it indicates the enormously high level of private investment that most of the region's households have in personal vehicles as a necessary by-product of this low density suburban lifestyle. Furthermore, the fact that almost one-third of the rural residences and more than 20% of the suburban residences have three or more cars available underscores and reinforces the historical trend toward personal transportation and highway utilization.

Table 4 expands the basic picture of vehicle availability into areas of vehicle utilization for commuting purposes. Table 4 reveals that almost 81% of the regional population 16 years old and older who commuted to work in 2000 did so by driving alone. This represents a 6% increase from 1990. In the suburban and rural communities, the data reveal that more than 85% of these commuters drive alone, an increase of 4% over 1990. As a corollary, use of public transportation

TABLE 3
VEHICLE AVAILABILITY, 2000
Southeastern Connecticut Planning Region

	Total Occupied Housing Units	OHU w/ No Car Avail	%	OHU w/ 1 Car Avail	%	OHU w/ 2 Cars Avail	%	OHU w/ 3+ Cars Avail	%
URBAN TOWNS:									
Groton	15,476	1,188	7.7	6,008	38.8	6,449	41.7	1,831	11.8
New London	10,181	1,961	19.3	4,610	45.3	2,912	28.6	698	6.9
Norwich	15,091	1,930	12.8	5,990	39.7	5,230	34.7	1,941	12.9
Urban Totals:	40,748	5,079	12.5	16,608	40.8	14,591	35.8	4,470	11.0
SUBURBAN TOWNS:									
Colchester	5,225	168	3.2	1,284	24.6	2,450	46.9	1,323	25.3
East Lyme	6,308	226	3.6	1,806	28.6	3,001	47.6	1,275	20.2
Griswold	4,194	176	4.2	1,320	31.5	1,759	41.9	939	22.4
Ledyard	5,283	131	2.5	1,237	23.4	2,677	50.7	1,238	23.4
Lisbon	1,525	33	2.2	389	25.5	719	47.1	384	25.2
Montville	6,426	208	3.2	1,961	30.5	2,934	45.7	1,323	20.6
Preston	1,837	65	3.5	528	28.7	834	45.4	410	22.3
Sprague	1,111	53	4.8	334	30.1	509	45.8	215	19.4
Stonington	7,665	366	4.8	2,716	35.4	3,321	43.3	1,262	16.5
Waterford	7,542	303	4.0	2,123	28.1	3,643	48.3	1,473	19.5
Suburban Totals:	47,116	1,729	3.7	13,698	29.1	21,847	46.4	9,842	20.9
RURAL TOWNS:									
Bozrah	883	20	2.3	239	27.1	381	43.1	243	27.5
Franklin	687	26	3.8	123	17.9	309	45.0	229	33.3
No. Stonington	1,833	13	0.7	449	24.5	801	43.7	570	31.1
Salem	1,358	38	2.8	217	16.0	610	44.9	493	36.3
Voluntown	952	20	2.1	176	18.5	498	52.3	258	27.1
Rural Totals:	5,713	117	2.0	1,204	21.1	2,599	45.5	1,793	31.4
REGIONAL TOTALS:	93,577	6,925	7.4	31,510	33.7	39,037	41.7	16,105	17.2

Source: U.S. Census, 2000.

TABLE 4
VEHICLE COMMUTING PATTERNS, 2000
Southeastern Connecticut Planning Region

	16 Years + Total Commuters	Drive Alone	%	Car Pool	%	Use Public Transp.	%	Mean Travel Time (min.)
URBAN TOWNS:								
Groton	20,741	15,689	75.6	2,251	10.8	384	1.8	17.2
New London	12,201	8,149	66.8	1,484	12.2	378	3.1	17.2
Norwich	17,483	13,789	78.8	2,165	12.4	616	3.5	22.1
Urban Totals:	50,425	37,627	74.6	5,900	11.7	1,378	2.7	18.8
SUBURBAN TOWNS:								
Colchester	7,704	6,580	85.4	728	9.4	90	1.1	29.6
East Lyme	8,175	7,177	87.7	632	7.7	43	.5	24.6
Griswold	5,871	4,767	81.2	844	14.3	7	.1	26.0
Ledyard	7,463	6,591	88.3	611	8.2	28	.4	21.0
Lisbon	2,157	1,918	88.9	151	7.0	0	0	23.9
Montville	8,900	7,771	87.3	831	9.3	46	.5	23.5
Preston	2,363	1,977	83.6	191	8.0	10	.4	26.9
Sprague	1,523	1,279	83.9	184	12.0	8	.5	24.7
Stonington	8,910	7,475	83.9	602	6.7	208	2.3	21.3
Waterford	9,248	7,796	84.3	777	8.4	85	.9	19.2
Suburban Totals:	62,314	53,331	85.6	5,551	8.9	525	.8	24.0
RURAL TOWNS:								
Bozrah	1,249	1,012	81.0	133	10.6	7	.5	25.6
Franklin	982	834	84.9	100	10.1	2	.2	23.8
No. Stonington	2,723	2,277	83.6	238	8.7	40	1.5	27.2
Salem	2,153	1,891	87.8	171	7.9	8	.4	26.5
Voluntown	1,332	1,105	82.9	138	10.4	0	0	29.4
Rural Totals:	8,439	7,119	84.3	780	9.2	57	.6	26.5
REGIONAL TOTALS:	121,178	98,077	80.9	12,231	10.0	1,960	1.6	23.1

Source: U.S. Census, 2000.

in the region remains relatively low for commuting purposes, with 1.6% of the resident population using any form of public transportation. However, while this figure remains low, it represents an increase from 1990 when only 1% of the population used transit to commute to work. The advent of casino transit may have contributed to this growth. Yet, at these levels, the air quality and congestion mitigation benefits from transit are negligible.

Taken together, all this data tell us that regional highway congestion is the result of a number of complex factors. In addition to the huge daily influx of tourists/gamblers and the seasonal traffic demands created by the attractiveness of the shoreline, underlying all of this special traffic demand is the effect of suburbanization and the expanding spatial disconnection between numerous origins and destinations that accompany the suburban lifestyle.

III. GOALS AND OBJECTIVES

Creating liveable communities through smart growth has emerged as a focus of interest in southeastern Connecticut and in the state as a whole. Smart Growth is a development policy that does the following: (1) gives priority to development locating where the infrastructure to support it already exists, (2) develops a new transportation strategy that more effectively moves people and goods, (3) gives high priority to cleaning up brownfields and attacking blight, and (4) preserves undeveloped open space and agricultural land. The advancement of the topic implies that many communities now perceive that their livability is being jeopardized either by internal or external factors and that policy changes need to occur to make them more liveable in the future. Often, these notions of liveable communities are intermingled with the phrases "quality-of-life" and "a vision of the 21st Century". As part of these explorations, more and more people are gradually beginning to appreciate the subtle difference between the phrases "standard of living" and "quality of life" especially as it relates to the automobile, the time demands of the suburban lifestyle, highway congestion and deteriorating air quality. Smart growth, while often difficult to define, does at least attempt to focus attention on the need to balance conservation and development. The dilemma is that smart growth, is not inherently compatible with the 169 town political structure of Connecticut.

Given this setting, in order to develop goals to help guide regional planning for future transportation infrastructure investment, it becomes essential to ascertain some sense about a vision of a "liveable regional community" for the 21st Century and how that might be achieved. These are especially important questions in a diverse region like southeastern Connecticut which is undergoing some rather extensive changes in economic development and land use. At the same time, the region is trying to retain the quaintness of village character that for centuries has made it a desirable place to live and work.

During the process of updating the 1997 Regional Conservation and Development Policy Guide, a survey of Planning and Zoning Commission members found that the predominant residential suburban development pattern, as depicted through the zoning regulations, continues to be supported by most towns. This survey was followed up by a comprehensive region-wide zoning study, *Zoning in Southeastern Connecticut*, November 1999, which utilized a computer-based Geographical Information System as a tool to analyze zoning relationships. That study found that 85% of the region is zoned residential and that 49% of the region is zoned for R-80 or higher. In Connecticut, this large lot residential zoning pattern is generally characterized by self-contained, on-site water and septic systems. Coupled with this residential pattern are large separations between residential, commercial, industrial and institutional land uses in order to promote and protect residential property values. The need to functionally link these separate land uses and provide optimum access opportunities is now accomplished almost exclusively through use of the automobile and supported by a well-developed, well-maintained system of highways. In this typical suburban setting, auto use, even for incidental trips, has become the norm rather than the exception since it has become impractical and in many instances unsafe to walk, ride a bike or use traditional transit. It is now widely recognized that the suburban land use pattern, with its dependence on the automobile, is the one of the many causes of degraded air quality.

At the same time, while continuing to support suburban development patterns through the legal

powers of zoning, residents of southeastern Connecticut appear to be expressing an increasingly high level of dissatisfaction with the fact that "their" highway capacity, air quality and personal safety is being consumed by those people visiting the region for gaming, tourism and recreational purposes or simply passing through. The tension between residents of the region consuming highway capacity as a matter of right and non-residents doing the same as a matter of privilege creates confusion with respect to transportation investment goals. Confusion exists because the suburban lifestyle, with its large, legally imposed separation of land uses, continues to be dependent upon the automobile and a well-functioning regional highway network in order to enable people to conveniently get to their many varied destinations. Simply changing patterns of transportation investment into mass transit, without also changing land development patterns, will ultimately not prove effective.

For long range planning purposes, the regional perception appears to be highly fragmented and localized, especially with respect to highway improvements. Citizens in the eastern portion of the region surrounding the Route 2 corridor oppose the proposal to construct a limited access by-pass of Routes 2 and 2A, while citizens on the western side of the region are equally adamant in support of the completion of such a roadway in the form of Route 11. In each case, both groups cite "quality-of-life" issues to support their respective cause. Underlying this diverse perception is the universal recognition that Connecticut's "central artery", I-95, is increasingly breaking down, from Greenwich to Stonington, and requires immediate attention. This is especially critical for southeastern Connecticut's economy which is increasingly dependent on tourism.

How these political realities become reconciled into a coherent planning policy is unclear. Given the diverse political setting in which the MPO planning process exists and the need for it to be responsive through an active citizen involvement process, transportation planning goals and policies in the twenty-first century at the regional level may simply become a function of popular politics rather than being technically derived through analytical, performance-based criteria. In the wake of the September 11th, 2001 terrorist attack, many pre-existing considerations have been overtaken by matters of national security. In this new setting, it is even more crucial that a transportation investment consensus be achieved. Given the order of magnitude of the cost of any one of the aforementioned projects, it is clear that the public resources will simply not be available to fund them all, even over a twenty-year period, despite the fact that these needs are real. Quite simply, this means that either, a) new public-private financial partnerships will have to be created to share the financial burden of these projects, or b) hard decisions will have to be made regarding the priorities for infrastructure investment over the next twenty years as they relate to regional need and the politics of perception.

General Goals:

1. Through the planning process, encourage major transportation infrastructure investments that are primarily directed toward supporting public safety, reducing congestion and where practical, long-term sustainable economic development opportunities.
2. Ensure that, to the fullest extent practicable, infrastructure investments are environmentally balanced, safe, efficient and modally integrated.
3. Develop a regional transportation system that meets the needs of all segments of the resident population as well as visitors, regardless of age, income, or disability, providing access to all parts

of the region and to important points beyond its borders.

4. Reduce congestion and increase highway capacity by giving priority to non-automotive (transit) improvements.

Objectives:

1. Safety

- Make public safety improvements for all existing transportation modes the highest priority.
- Eliminate all regional road locations from the State's high accident frequency list.
- Where necessary, provide traffic operations improvements for better and safer traffic flow and for the efficient movement of people and goods on the region's highway system.
- Expand the existing incident management system for the interstate highway network into an Intelligent Transportation Systems architecture to minimize response time for all accident victims, to address any environmental contamination that may result and to alert drivers to use alternative roads to minimize disruptions to traffic flow.

2. Efficiency

- Insure that funding priorities are given to projects directed toward maintaining existing highways, bridges and transit as opposed to the construction of new infrastructure except where absolutely necessary.
- Reduce the need for unnecessary trips by encouraging intelligent land use planning through a regional pattern of development that is both compatible with the natural environment and which can be serviced efficiently and economically with necessary public facilities.
- Develop alternative modes to single-occupant highway transportation, including minibuses, ferries, special vehicles, bicycle and pedestrian ways, and rail.
- Encourage the control of access on heavily-traveled corridors through the use of shared driveways. Where possible, encourage and support municipal efforts to develop access management policies and plans, especially for land abutting the region's major arterial highways.
- Encourage local planning and zoning commissions to require larger frontage and setbacks for property along heavily traveled corridors.
- Strive to provide effective coordination of all modes of transportation through schedules and the provision of multi-modal terminals.
- Establish an efficient, affordable public transportation system which meets the needs of the regional population as well as the tourism industry.
- Improve signage on the region's highway network to reduce unnecessary travel time.
- Expand and improve SEAT service.
- Encourage the revival of passenger rail on the N.E. Central and Providence and Worcester lines.
- Consider development of water taxis at the mouth of the Thames River in concert with existing ferry service.

- Retain and expand Shoreline-East rail service to New London.

3. Effectiveness

- To the extent practicable, ensure that infrastructure investments avoid adverse impacts on residential property values and on the quality-of-life of the residents of established neighborhoods.
- Ensure that transportation facilities avoid adverse impacts on historical, open space, recreational and watershed areas and structures, while at the same time providing accessibility to them.
- Promote the expansion of ridesharing through car pooling, van pooling and the increased use of commuter parking lots.
- Encourage land use patterns that enable bicycling and walking wherever possible, or that may be served by public transit.
- Encourage innovations in work schedules, such as flex-time, staggered work hours, work at home and the four-day work week, where these appear to be feasible.
- Utilize the Council of Governments to develop a close working relationship among member communities for the purpose of identifying opportunities to deal effectively with transportation problems.
- Insure that there is effective citizen participation in all phases of the transportation planning process.

IV. HIGHWAYS

The following paragraphs review the major highways in southeastern Connecticut as shown in Figure 8. The information was based on studies conducted by CONNDOT and SCCOG and on discussions with officials and citizens in the towns and cities of southeastern Connecticut.

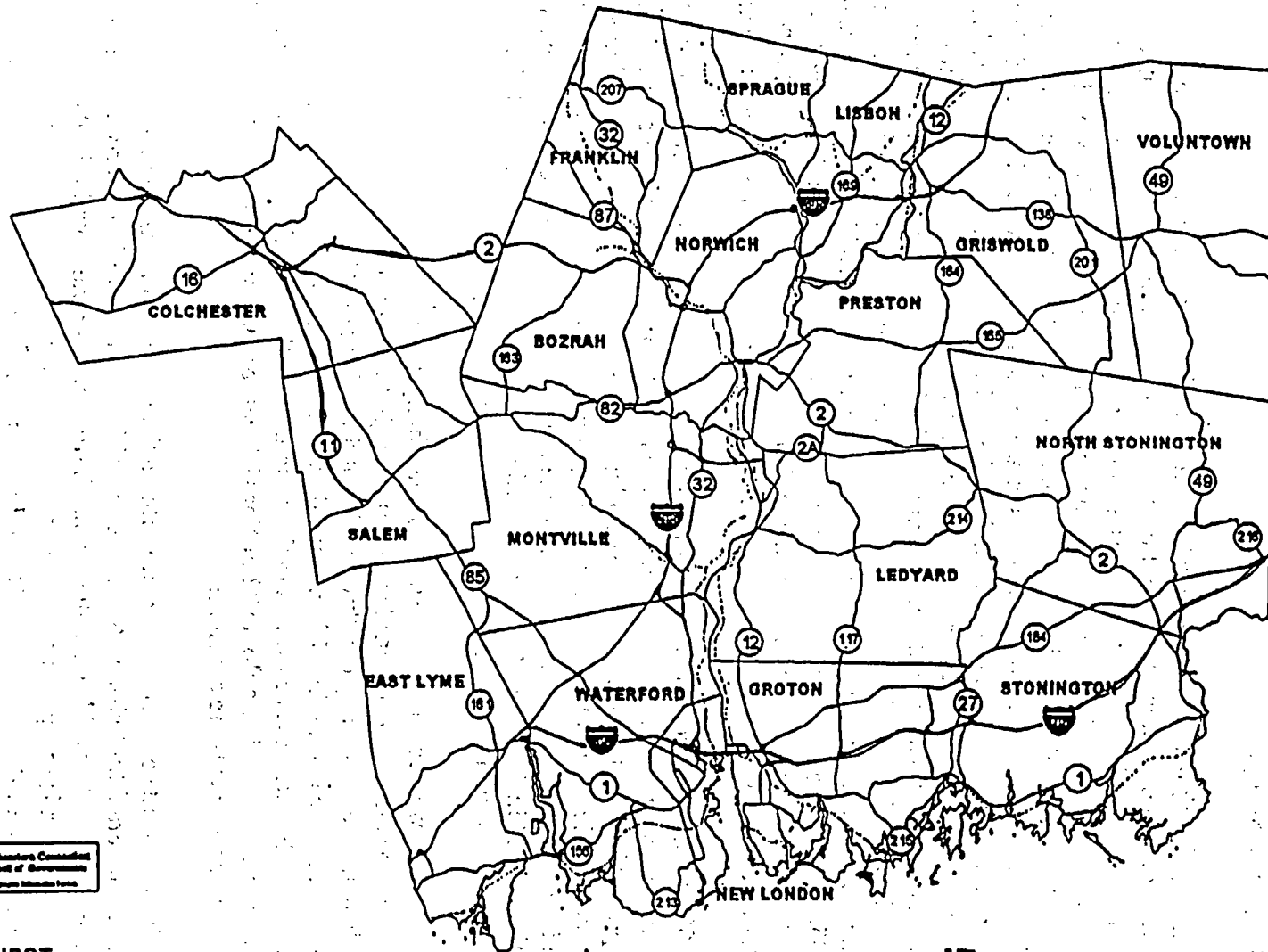
North/South Corridor, West of Thames River: This corridor extends between Norwich and New London. It is served by I-395 and the parallel Route 32. The interstate highway is the main north-south link in the system of four-lane facilities that connect the urban centers of Norwich and New London by way of Route 82 (West Main Street in Norwich), I-395 (through Montville), and Routes 693 and 32 (through Waterford and into New London).

Historically, traffic volumes on Route 32 through Montville declined somewhat when the tolls were removed on I-395 during the mid-1980's, but development in eastern Montville in recent years has generated traffic to the extent that average daily volumes now exceed 14,000 vehicles on this section of highway. Use of the road will undergo extensive changes in the coming years largely as the result of new development attracted to the area because of the Mohegan Sun Casino. At present, congestion is confined mainly to two areas where economic activity has been allowed to expand without adequate controls on access to properties abutting the highway. This has resulted in poorly-defined intersections and driveways addressed as part of an access management project overseen by SCCOG. Future improvement opportunities on Route 32 may include widening in isolated sections but will mainly be limited to access consolidations, channelization and signal improvements.

North/South Corridor, East of Thames River: Route 12 serves north/south local and through traffic east of the Thames River between Norwich and Groton. Except for the section of the highway located in Norwich, the road can be considered a reasonably adequate arterial highway under present conditions of demand. However, the amount and type of future traffic growth will undoubtedly call for improvements in various locations along this important highway. While the opening of the bridge over Poquetanuck Cove marked a major step in the improvement of traffic flow and safety on this section of the highway, the future disposition of the Norwich Hospital property, at the intersection of Routes 12 and 2A, will potentially have a significant impact on this roadway. Development at the former hospital site will undoubtedly require improvements to the Mohegan-Pequot Bridge and may warrant the construction of a by-pass of Route 2A and development of mass transit to serve the site. Average daily traffic volumes in the Montville vicinity of Route 2A are now in excess of 23,800.

The section of Route 12 through Groton has the highest traffic volumes and highest number of accidents in this corridor. It also has four or more traffic lanes between Crystal Lake Road and Route 1. But congestion continues to occur because of frequent turning movements at the numerous intersections and driveways to businesses and residential development along the frontage. Major traffic generators such as the Groton Square shopping center, US Submarine Base and the USS Nautilus Memorial and Submarine Force Library and Museum have added significantly to congestion in this corridor. Completion of the reconstruction of the interchange with Route 184 will help alleviate some of the congestion at this point in the roadway. Other than driveway consolidations and access management techniques, future improvement opportunities in this section of Route 12 appear limited.

SOUTHEASTERN CONNECTICUT REGION MAJOR HIGHWAYS



SCCOG Southeastern Connecticut Council of Governments
Regional Information System

Source: CONNDOT

FIGURE 8

Another north/south route paralleling Route 12 east of the Thames River is Route 117. Land use along much of this road is residential. It extends from Route 2 in Preston to Route 1 in Groton. The reconstruction of this route between Ledyard Center and Route 184 in Groton now provides a good alternative to the busy Route 12 for commuting workers and others traveling between Groton and towns to the north. With the completion of the Mystic Marriott, additional commercial development can be expected in the vicinity of I-95 although no major improvements to this roadway are envisioned at this time.

East/West Corridor: I-95 is the most heavily traveled corridor in the region. It is the main highway for travelers along the Atlantic coast from Florida to Maine. With future development potential all along this corridor, increases in congestion on this route are inevitable. Likewise, Routes 1 and 156, which served as the main through-routes prior to the completion of I-95, also continue to see growth in traffic. As the volume-to-capacity ratio on I-95 approaches 1.0, service levels will continue to deteriorate. Serious consideration must now be given to adding lanes from the Connecticut River to the Rhode Island border and finding transit solutions to reduce traffic. A CONNDOT study of the I-95 corridor from Branford to the Rhode Island border was completed in 1999. It confirmed that capacity improvements all along I-95 were needed. This recognition was followed by Section 16 of Connecticut P.A. 01-05, in which funds were appropriated to begin the planning and environmental studies to determine the most practicable way to improve the capacity of I-95. SCCOG vigorously supports the need for improvements to this highway and has made it one of the top plan priorities. I-95 improvements also are among the top priorities of the Transportation Strategy Board and the two Transportation Investment Areas in which SCCOG is located.

In 1999-2000, safety concerns on I-95 resulted in the development of an Incident Management Program to insure continued traffic flow, the well-being of victims and the affected environment. This project is being followed up by the development of an Intelligent Transportation System (ITS) to monitor traffic flow and alert drivers to disruptions in flow as a result of accidents. In the interim, there is an immediate safety need to eliminate the bottleneck on I-95 between Exits 82 and 82A. Solutions could include the addition of a third lane and/or closing the Vauxhall Street access and egress ramps. Action is also needed in the short-term to modify the ramps at Exit 74 in East Lyme.

Two other east/west corridors serve the more northerly part of the region. One of these is the Route 82/Route 165 corridor. This corridor passes through the entire northern part of the region, entering in Salem in the west, passing through Montville, Bozrah, Norwich, Preston, Griswold, and Voluntown before exiting into Rhode Island. Generally the corridor is not heavily traveled when compared with other travel corridors in the region. With the exception of Route 82 in Salem at the termination of Route 11 and Route 82 in Norwich east of the intersection of Route I-395, no major capacity improvements are envisioned.

The other east/west corridor serving the northern tier of the region's municipalities comprises Route 207 from the Franklin/Lebanon town line to Baltic, and Route 138 easterly from Baltic, through Sprague, Lisbon, Griswold and Voluntown. Traffic on this rural corridor is also light, attributable to low demand and perhaps in part to the poor condition of the road between Baltic and Jewett City. The intersection of Routes 138 and 169 in Lisbon needs to be reconstructed. However, relatively low traffic volumes and few accidents do not presently make this a high priority.

Northwest/Southeast Corridors: Two major routes serve the region in this direction. These are

Route 2 and Routes 11 and 85. Route 2 enters the region near its western extremity in Colchester and passes through eight towns before reaching its eastern terminus in the Pawcatuck section of Stonington. Routes 11 and 85 are the main routes of travel between Route 2 in Colchester and New London, passing through Salem, Montville and Waterford.

Through-traffic on Route 2 from the Hartford/Glastonbury area remains a difficult regional traffic problem to solve. This is due, in large part, to the huge demand created by the Foxwoods Resort and Casino. One option to by-pass the bottleneck in Norwich is to re-route traffic south on I-395 to Route 2A. While this ostensibly solves the congestion problem in Norwich, a second highway bottleneck exists in the village of Poquetanuck in Preston. The solution to this problem, identified by CONNDOT as part of the Route 2/2A/32 Environmental Impact Study, is to create a limited access by-pass of Route 2A. However, this solution is currently being opposed by the Town of Preston.

Since 1992, Foxwoods Casino has had a significant impact on traffic in the region. The facility attracts an average of more than 25,000 vehicles per day. On peak days this number can double. Routes 2 and 2A have clearly borne the brunt of the increased traffic but there is also a noticeable increase in volumes on other roads as well. Traffic going to the casino from the western part of the state uses I-395 and Route 2A through the Poquetanuck section of Preston to get to Route 2, while traffic from the east, on I-95, uses Exit 92 at Route 2 in North Stonington to get to the reservation. Traffic approaching from the northeast, on I-395, exits at Route 164 in Griswold to get to Route 2. As the number of people employed both on and off the reservation increases (now about 13,000) and as patrons become more familiar with the area, the secondary road system has been exploited as offering less congested routes of travel to and from the gaming center. This is resulting in heavier volumes on these narrow roads. Likewise, local residents are increasingly using the secondary road system in order to avoid congestion on the main arterials. Citizen concern about the changing pattern of both the primary and secondary roadway use in this section of the region is widespread. However, there continues to be strong public resistance to making major highway improvements simply for the convenience of casino patrons. Independently, interest has been expressed by the Town of Preston in developing the Preston City area in the vicinity of Routes 164 and 165 as a village center. This long term development objective is somewhat in conflict with the growing volumes of gaming traffic on Route 164 headed toward Foxwoods. Preston is recommending intersection modifications along Route 164, both above and below the intersection with Route 165. Of immediate concern will be the realignment of the intersection of Route 164 at Old Shetucket Turnpike and Amos/Northwest Corner Roads.

Route 2 is constructed to arterial standards between Norwich and Route 201 in North Stonington with 12-foot lanes and 8-foot shoulders in each direction. Easterly of this point, it lacks the needed lane or shoulder width and alignment to accommodate traffic in a safe and efficient manner. Recommendations for reconstruction between Route 201 in North Stonington and its intersection with I-95 in Stonington are now a part of an Environmental Impact Study. Thus far, however, there has been no regional or local consensus to make major improvements to Route 2 other than adding shoulders. Between I-95 and Route 78, Route 2 has been improved to four lanes. Again, access to and from Route 2 to abutting properties is of continuing concern as the volume of this roadway approaches its capacity. Finally, the termination of Route 2 where it intersects with Route 1 in Stonington remains a high frequency accident location. This complex intersection should be considered for future signalization or other structural modifications to improve safety and traffic

flow.

Over the next several years, as the region continues to develop as a major tourism destination, traffic is expected to more than double, and in some cases triple, on many area roads and to be substantially increased on others. Enterprises on property abutting I-95 in North Stonington (once proposed for a theme park) may heighten the need to consider improving other roads, especially those that link Mystic to Foxwoods. One of these is Route 201 in North Stonington between Route 2 and the Stonington town line.

The seasonal traffic congestion occurring on Route 85 in Salem, Montville, and Waterford is not likely to diminish significantly until Route 11 is completed. Although year-round traffic in the Route 85 corridor is presently moderate, with average daily traffic of less than 13,000 between Route 82 and the Montville town line, it reaches intolerable conditions on summer weekends when recreation traffic in this corridor reaches its peak. CONNDOT is in the process of finalizing the Environmental Impact Statement required before permits for the project can be issued. SCCOG supports the EIS's recommendation for the creation of a low impact arterial parkway built on new location, accompanied by a greenway and has made it a cornerstone of this plan.

Traffic Volumes: In FY 1998, a SCCOG study analyzed traffic volumes on all the arterials and expressways in the region. The original study focused on traffic during the period from 1980 through 1996. Traffic volume data on the locations identified in the 1998 study have been updated annually as shown in Table 5. Figure 9 depicts the percentage change in traffic volumes on the region's major roads between 1992-2001. This nine-year period was chosen because it represents the period of greatest growth in traffic beginning with the opening of Foxwoods Casino in 1992. The data show that growth in traffic volumes on the Route 2 corridor, especially that section from Norwich to Stonington, were extraordinary beginning in 1992 when Foxwoods Casino opened. However, the effect of Mohegan Sun can now be seen with traffic volumes on Route 2 now showing reductions from peak years.

Traffic volumes on Route 85 between Salem and Waterford are also of interest since both the Route 2 and Route 85 roadway segments are presently the subject of Environmental Impact Studies. The data continue to show that average annual traffic volumes of critical segments of Route 85 remain modest by comparison to comparable traffic volumes on Route 2 east of Norwich.

Figure 10 depicts the history of Average Daily Traffic Volume Growth just north of Exit 80 on Route I-395 in Norwich for a 10 year period from 1993 through 2002. These data were presented primarily to show the dramatic increase in traffic volumes on this roadway beginning in October, 1996 with the opening of the Mohegan Sun Casino. The figure shows a steep increase in daily traffic between September, 1996 where approximately 45,000 vehicles/day used the road, to a volume of about 53,000 vehicles/day after the casino opened in October. Traffic volumes dropped slightly for the remaining two months of the year. However, for each year thereafter, monthly volumes beginning in January are consistently clustered in a higher tier, now at almost 55,000 cars/day. By August, ADT's now exceed 65,000 cars/day. This strongly suggests that the Mohegan Sun has had a lasting impact on the use of this roadway that, unlike I-95, shows no distinct seasonal pattern.

By comparison, Figure 11 depicts Average Daily Traffic Volume trends just south of Exit 89/Allyn Street on I-95 in Groton for the period between 1991 through October, 2002. These data represent

TABLE 5

TRAFFIC VOLUMES AT SELECTED LOCATIONS: 1992 - 2001

ROUTE	TOWN	LOCATION	1992 ADT	1996 ADT	2001 ADT	% CHANGE 92 - 01
1	EAST LYME	UPPER PATTAGANSETT TO RTE 161	12500	11700	12600	1%
1	WATERFORD	CROSS RD TO RTE 156	13800	11700	12800	-7%
1	WATERFORD	RTE 156 TO WILLETS AVE	25300	24900	25600	1%
1	NEW LONDON	NEW LONDON TL TO RTE 643	18300	15000	14200	-22%
1	GROTON	SOUTH RD TO RTE 117	16600	15000	16300	-2%
1	GROTON	RTE 215 TO ALLYN ST	6200	6200	6200	0%
1	STONINGTON	W JCT 1A TO E JCT 1A	6200	6300	7000	13%
1	STONINGTON	RTE 1A TO RTE 234	10400	9600	10400	0%
1	STONINGTON	RTE 234 TO RTE 2	16500	16300	18000	9%
1	STONINGTON	RTE 2 TO RI STATE LINE	23200	21100	23300	0%
2	COLCHESTER	EB FR RTE 149 TO MILL HILL RD	21000	26000	31300	49%
2	COLCHESTER	EB FR RTE 354 TO CHESTNUT HILL RD	12100	17000	21400	77%
2	LEBANON	COLCHESTER-LEBANON TL TO SCOTT HILL RD	12400	16800	21400	73%
2	BOZRAH	EB FR RTE 163 TO EB TO RTE 608	14500	19600	23700	63%
2	NORWICH	EB JCT RTE 2A EB EXIT I-395	21000	25900	26800	28%
2	NORWICH	LAFAYETTE ST TO BROADWAY	20700	20900	20800	0%
2	PRESTON	NORWICH-PRESTON TL TO RTE 117	11200	14600	12000	7%
2	PRESTON	LINCOLN PARK RD TO RTE 164	16000	23500	19700	23%
2	LEDYARD	RTE 164 TO PRESTON-LEDYARD TL	16400	27200	24500	49%
2	NORTH STONINGTON	LEDYARD-NORTH STONINGTON TL TO RTE 201	14200	26200	18800	32%
2	NORTH STONINGTON	RTE 627 TO RTE 184	15700	25800	20300	29%
2	NORTH STONINGTON	RTE 184 TO RTE I-95	13300	21500	19200	44%
2	STONINGTON	RTE 49 TO RTE 78	21000	21500	21000	0%
2A	MONTVILLE	I-395 TO RTE 32	16800	20900	38200	127%
2A	MONTVILLE	RTE 32 TO MONTVILLE-PRESTON TL	15500	18800	23800	54%
2A	PRESTON	RTE 12 TO RTE 117	6800	9900	12700	87%
11	SALEM	WITCH MEADOW RD TO SALEM-COLCHESTER TL	7100	6800	9100	28%
12	GROTON	RTE 184 TO CRYSTAL LAKE RD	30000	26200	28400	-5%
12	GROTON	CRYSTAL LAKE RD TO GROTON-LEDYARD TL	14100	13500	15600	11%
12	LEDYARD	HURLBUT RD TO MILITARY HWY	10600	11000	13300	25%
12	LEDYARD	RTE 214 TO LEDYARD-PRESTON TL	12000	12400	14200	18%
12	PRESTON	JCT OF RTE 2A TO NORWICH-PRESTON TL	8400	8500	8100	-4%
12	NORWICH	BOSWELL AVE TO RTE 97	14600	13800	14500	-1%
12	LISBON	BUNDY HILL RD TO NB I-395	5300	4800	5500	4%
12	GRISWOLD	MCKENNA AVE TO GRISWOLD-CANTERBURY TL	4900	5000	5000	2%

TABLE 5

TRAFFIC VOLUMES AT SELECTED LOCATIONS: 1992 - 2001

ROUTE	TOWN	LOCATION	1992 ADT	1996 ADT	2001 ADT	% CHANGE 92 - 01
27	STONINGTON	MYSTIC SEAPORT TO COOGAN BLVD	17400	14700	12400	-29%
27	STONINGTON	RTE 234 TO STONINGTON-GROTON TL	6600	6800	8100	23%
32	WATERFORD	WATERFORD-NEW LONDON TL TO RTE 693	31300	28300	29200	-7%
32	MONTVILLE	WATERFORD-MONTVILLE TL TO RTE 163	11100	10600	10000	-10%
32	MONTVILLE	RTE 163 TO RTE 2A	12400	12200	14200	15%
32	NORWICH	DUNHAM ST TO RTE 82	6900	6000	7700	12%
32	FRANKLIN	NORWICH-FRANKLIN TL TO RTE 87	14500	19200	19300	33%
32	FRANKLIN	RTE 87 TO RTE 610	10500	14100	13400	28%
32	FRANKLIN	RTE 610 TO RTE 207	8400	10400	10100	20%
49	NORTH STONINGTON	STONINGTON-NORTH STONINGTON TL TO I-95	3700	4000	3900	5%
49	NORTH STONINGTON	GRINDSTONE HILL RD TO VOLUNTOWN TL	1000	1400	1600	60%
49	VOLUNTOWN	VOLUNTOWN TL TO RTE 165	1000	1400	1600	60%
49	VOLUNTOWN	WYLIE SCHOOL RD TO STERLING TL	900	1000	1300	44%
82	SALEM	RTE 11 TO RTE 85	7800	8700	10100	29%
82	SALEM	RTE 85 TO RTE 354	3400	3800	4100	21%
82	MONTVILLE	RTE 163 TO MONTVILLE-BOZRAH TL	4700	5900	5800	23%
82	NORWICH	MONTVILLE RD TO I-395	9800	15700	20600	110%
82	NORWICH	I-395 TO DUNHAM ST	19800	22900	26000	31%
85	WATERFORD	JEFFERSON AVE TO PHILLIPS ST	18600	13900	16900	-9%
85	WATERFORD	I-95 TO CRYSTAL MALL	27900	23400	29100	4%
85	WATERFORD	I-395 TO WATERFORD-MONTVILLE TL	10400	10600	12700	22%
85	MONTVILLE	MONTVILLE-WATERFORD TL TO RTE 161	10400	10600	12700	22%
85	SALEM	MONTVILLE-SALEM TL TO RTE 82	11100	12000	12800	15%
85	SALEM	RTE 82 TO SALEM-COLCHESTER TL	3400	3400	4500	32%
87	FRANKLIN	BOZRAH-FRANKLIN TL TO CHAMPION RD	3600	4300	5100	42%
95	EAST LYME	ROCKY NECK CON TO RTE 161	51300	60400	71300	39%
95	WATERFORD	NB FR PKWAY S TO NB EXIT TO PKWAY S	49200	53300	62500	27%
95	GROTON	GROTON-NEW LONDON TL TO RTE1	109600	113800	122700	12%
95	GROTON	RTE 349 TO RTE 117	66100	71800	77000	16%
95	STONINGTON	RTE 27 TO RTE 234	44500	49600	53300	20%
95	STONINGTON	TAUGWANK RD TO RTE 2	36200	40800	43500	20%
95	NORTH STONINGTON	RTE 49 TO RTE 216	25400	28600	37100	46%
97	NORWICH	RTE 169 TO I-395	7200	6300	6600	-8%
97	SPRAGUE	SALT ROCK RD TO SCOTLAND TL	1000	1200	1400	40%
117	GROTON	RTE 1 TO I-95	13400	13900	13900	4%

Source: ConnDOT

TABLE 5

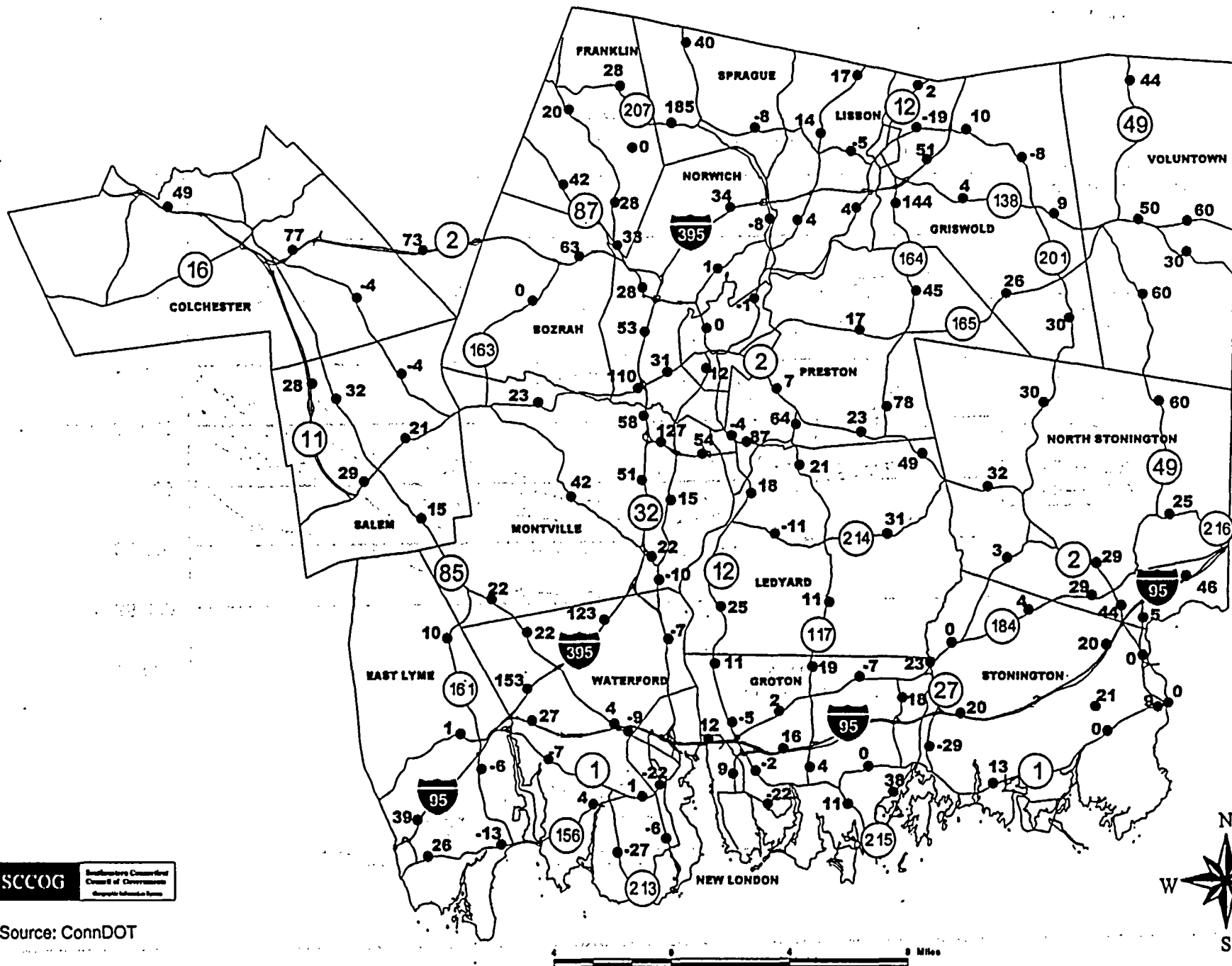
TRAFFIC VOLUMES AT SELECTED LOCATIONS: 1992 - 2001

ROUTE	TOWN	LOCATION	1992 ADT	1996 ADT	2001 ADT	% CHANGE 92 - 01
117	GROTON	GALES FERRY RD TO GROTON-LEDYARD TL	8000	10500	9500	19%
117	LEDYARD	SANDY HOLLOW RD TO COL LEDYARD HIGHWAY	7300	9400	8100	11%
117	LEDYARD	CHURCH HILL RD TO LEDYARD-PRESTON TL	3900	3900	4700	21%
117	PRESTON	LINCOLN PARK RD TO RTE 2	6100	8400	10000	64%
138	SPRAGUE	RTE 97 TO RTE 660	1300	1000	1200	-8%
138	LISBON	RTE 169 TO RTE 12	4200	3700	4000	-5%
138	GRISWOLD	EDMUND RD TO RTE 201	6800	7600	7100	4%
138	GRISWOLD	RTE 201 TO GRISWOLD-VOLUNTOWN TL	5800	5700	6300	9%
138	VOLUNTOWN	RTE 49 TO RTE 165	4000	5000	6000	50%
138	VOLUNTOWN	RTE 165 TO RI STATE LINE	1000	1100	1300	30%
156	EAST LYME	ROCKY NECK CON TO BLACK POINT RD	7400	9100	9300	26%
156	EAST LYME	BLACK POINT RD TO RTE 161	11900	10200	10300	-13%
156	WATERFORD	NIANTIC RIVER RD TO RTE 213	9400	9100	9800	4%
161	EAST LYME	INDUSTRIAL PK RD TO I-95	22200	22100	20800	-6%
161	EAST LYME	WALNUT HILL RD TO MONTVILLE-EAST LYME TL	4100	4600	4500	10%
163	MONTVILLE	RTE 32 TO ROBERTSON RD	6800	7100	8300	22%
163	MONTVILLE	ROBERTSON RD TO CHESTERFIELD RD	4800	4800	6800	42%
163	BOZRAH	SCOTT HILL RD TO GAGER RD	2400	2500	2400	0%
164	PRESTON	RTE 2 TO RTE 605	6300	10300	11200	78%
164	PRESTON	RTE 165 TO PRESTON-GRISWOLD TL	6400	8400	9300	45%
164	GRISWOLD	PALMER RD TO RTE 630	4100	9700	10000	144%
165	PRESTON	OLD JEWETT CITY RD TO RTE 605	4100	4400	4800	17%
165	GRISWOLD	PRESTON-GRISWOLD TL PACHAUG MARINA	2700	3200	3400	26%
165	VOLUNTOWN	FORGE HILL RD TO RHODE ISLAND STATE LINE	2000	2400	3200	60%
169	NORWICH	WASHINGTON ST TO HUNTERS RD	10500	10200	10600	1%
169	LISBON	NORWICH-LISBON TL TO I-395	2700	2600	2800	4%
169	LISBON	RTE 138 TO KINSMAN HILL RD	4900	5100	5600	14%
169	LISBON	KIMBALL RD TO CANTERBURY TL	3600	3700	4200	17%
184	GROTON	RTE 12 TO KINGS HWY #2	16400	16800	16800	2%
184	GROTON	FLANDERS RD TO COW HILL RD	10100	9000	9400	-7%
184	STONINGTON	GROTON-STONINGTON TL TO RTE 201	5100	5400	5100	0%
184	STONINGTON	RTE 201 TO NORTH STONINGTON-STONINGTON TL	2800	2900	2900	4%
184	NORTH STONINGTON	NORTH STONINGTON-STONINGTON TL TO RTE 2	2800	2900	3600	29%
201	NORTH STONINGTON	STONINGTON TL TO JEREMY HILL RD	3000	3300	3100	3%
201	NORTH STONINGTON	MILLER RD TO GRISWOLD-NORTH STONINGTON TL	1000	1200	1300	30%

TABLE 5**TRAFFIC VOLUMES AT SELECTED LOCATIONS: 1992 - 2001**

ROUTE	TOWN	LOCATION	1992 ADT	1996 ADT	2001 ADT	% CHANGE 92 - 01
201	GRISWOLD	NORTH STONINGTON TL TO RTE 165	1000	1200	1300	30%
201	GRISWOLD	RTE 138 TO STONE HILL RD	1300	1200	1200	-8%
201	GRISWOLD	STONE HILL RD TO I-395	3000	3200	3300	10%
201	GRISWOLD	I-395 TO RTE 12	3600	3000	2900	-19%
207	FRANKLIN	HOLTON RD TO RTE 610	2500	2300	3200	28%
207	SPRAGUE	FRANKLIN-SPRAGUE TL TO PLAIN HILL RD	1300	3600	3700	185%
213	WATERFORD	BRAMAN RD TO GOSHEN RD	5100	4100	3700	-27%
213	NEW LONDON	OCEAN AVE TO PLANT ST	8300	7800	7800	-6%
214	LEDYARD	AVERY HILL RD TO RTE117	4600	4400	4100	-11%
214	LEDYARD	SPICER HILL RD TO SHEWVILLE RD	3200	5400	4200	31%
215	GROTON	RTE 1 TO BROOK ST	7900	9100	8800	11%
215	GROTON	MOSHER ST TO RTE 1	4800	4900	6600	38%
216	NORTH STONINGTON	DENNISON HILL RD TO RTE 184	1200	1400	1500	25%
234	STONINGTON	TAUGWANK RD TO RTE 1	6100	7600	7400	21%
349	GROTON	RAINVILLE AVE TO RTE 1	24000	24200	26100	9%
354	COLCHESTER	STANAVAGE RD TO COLCHESTER-SALEM TL	2700	2600	2600	-4%
354	SALEM	COLCHESTER-SALEM TL TO RTE 82	2700	2600	2600	-4%
395	WATERFORD	EAST LYME-WATERFORD TL TO RTE 85	10000	19400	25300	153%
395	WATERFORD	RTE 85 TO WATERFORD-MONTVILLE TL	16000	26700	35700	123%
395	MONTVILLE	RTE 163 TO RTE 2A	37400	44000	56300	51%
395	MONTVILLE	RTE 2A TO MONTVILLE-NORWICH TL	38300	47200	60600	58%
395	NORWICH	RTE 82 TO RTE 2	37700	47200	57700	53%
395	NORWICH	RTE 642 TO RTE 97	29100	33500	39000	34%
395	GRISWOLD	RTE 138 TO RTE 201	19900	25500	30100	51%
610	FRANKLIN	RTE 32 TO RTE 207	2200	2200	2200	0%
614	GROTON	LAMPHERE RD TO RTE 184	5700	5600	6700	18%
649	GROTON	POQUONNOCK RD #1 TO POQUONNOCK RD #2	11200	8100	8700	-22%

SOUTHEASTERN CONNECTICUT REGION **PERCENT CHANGE IN ADT ON MAJOR HIGHWAYS, 1992 - 2001**



SCCOG Southeastern Connecticut Council of Governments
 Geographic Information System

Source: ConnDOT

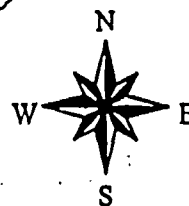
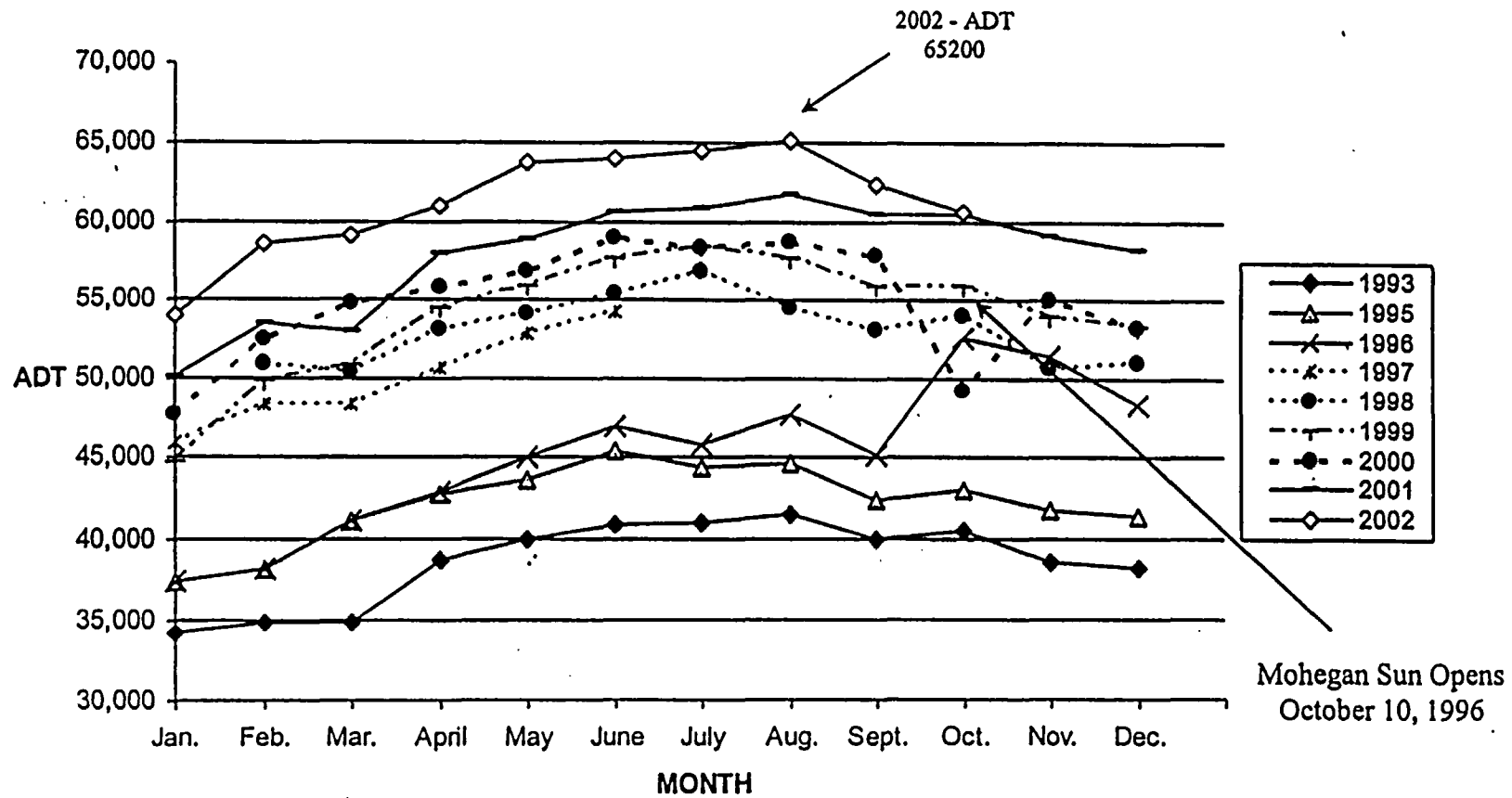


FIGURE 9

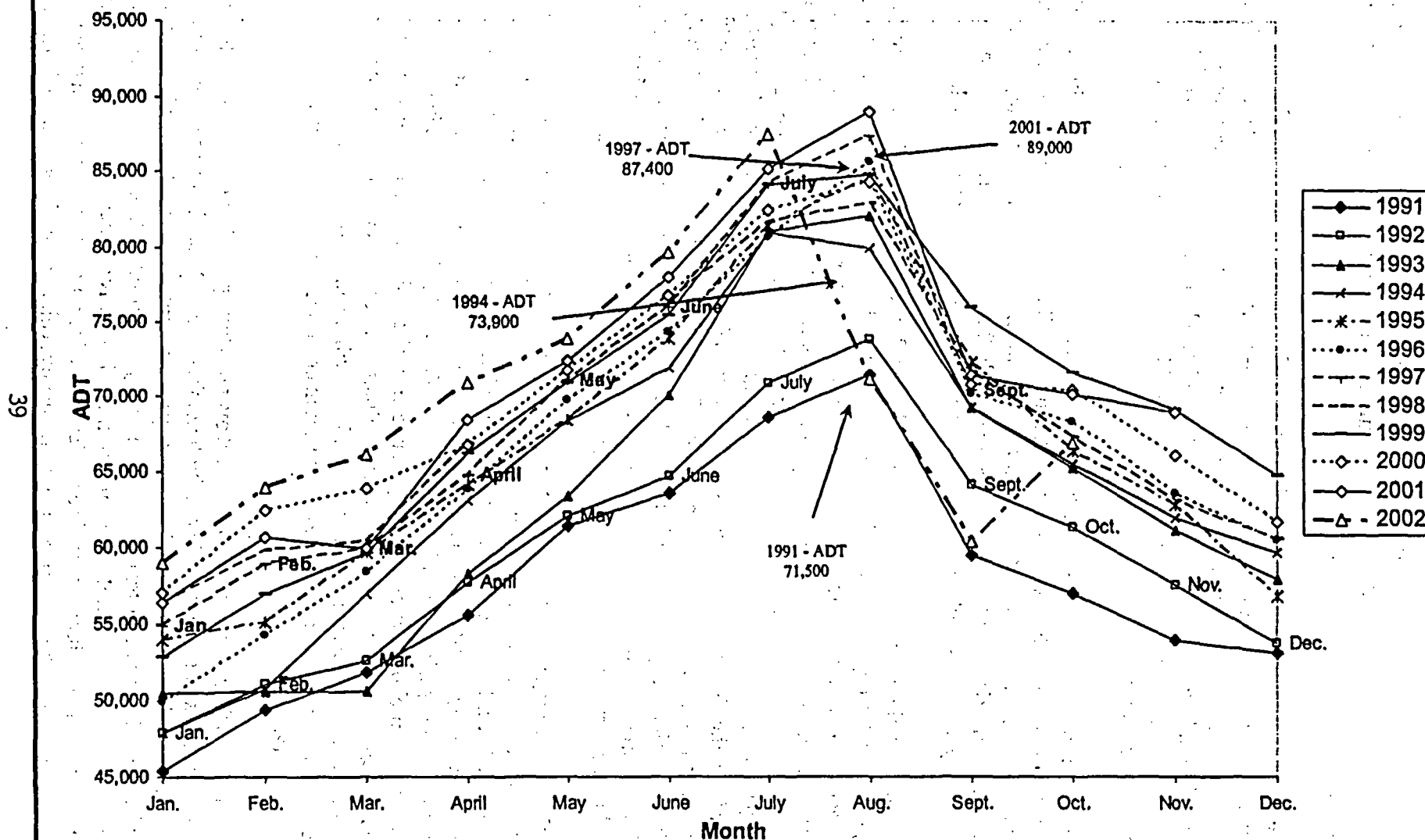
SOUTHEASTERN CONNECTICUT REGION **ADT ON I-395, NORWICH** **1993 - 2002**



Source: CONNDOT

FIGURE 10

SOUTHEASTERN CONNECTICUT REGION **ADT ON 1-95, GROTON** **1991 - 2002**



Source: CONNDOT

FIGURE 11

the highest traffic volumes in the region and show a distinct seasonal trend in summer growth in traffic. The seasonal growth in traffic in August represents an increase of 60% over the month of January.

Like Figure 10, Figure 11 shows that the opening of Foxwoods Casino in 1992 resulted in a stepped, or tiered, growth pattern relative to the use of I-95 at this location. Traffic volumes for each subsequent year following 1991 and 1992 are clustered at the upper portion of the figure. This suggests that, like Mohegan Sun, Foxwood's has had a lasting impact in this vicinity of I-95 despite the fact that each successive year has not resulted in a significant increase in traffic volumes over the preceding year.

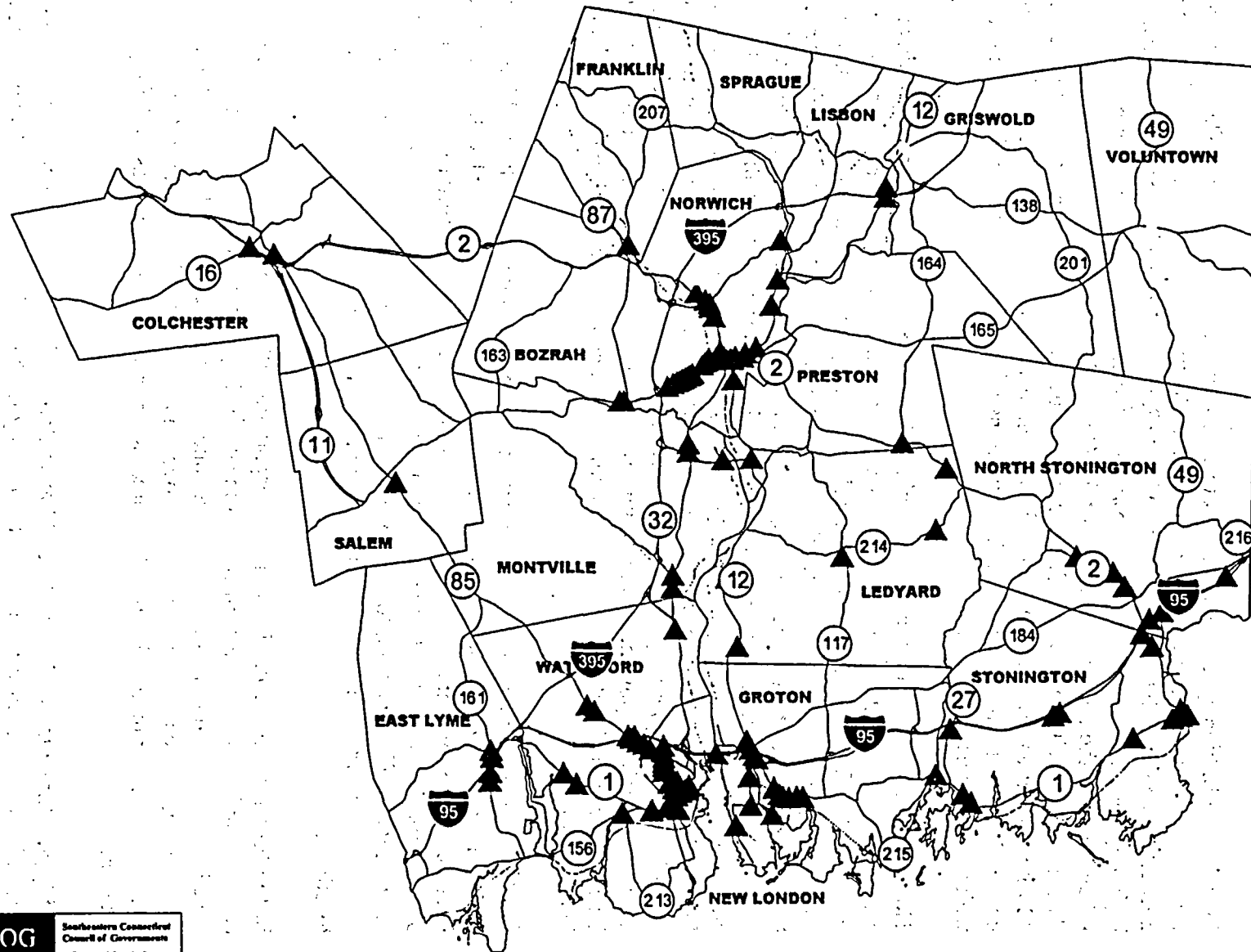
There are other road segments in the region with notable increases in traffic volumes. These include Routes 164 in Griswold, 82 in Norwich, 2A in Montville and 207 in Sprague. Increases in traffic volumes on these routes indicate residential and commercial growth in outlying areas, some of which may very well exist outside the southeast region. In this respect, shifts in employment destinations and employee origins could also explain some of this emerging traffic growth.

Significant daily traffic volumes were recorded on Routes 1, 12, and 32 that range from 16,000 to 28,800 vehicles/day. Collectively, these segments show little or no percentage change when compared to traffic volumes in previous years. As a result of many years of commercial development, these road segments appear to be approaching their effective carrying capacity and may actually represent travel obstacles that drivers try to avoid. This is also true of segments of I-95 which typically carry volumes of 65,000 to 70,000 vehicles/day. The region's highest AADT's were recorded at the Gold Star Bridge crossing the Thames River on I-95. This segment of highway carries not only through-traffic but also serves the Groton Industrial Area. At this station, AADT's of 122,700 vehicles/day were recorded in 2001. But when compared to the previous year, this traffic volume represents only a 1.4 percent increase. Generally, these levels of traffic volume suggest a condition of strained capacity warranting some degree of future concern.

High Frequency Accident Locations: Recent SCCOG studies have examined high frequency accident locations. These are the sites of a large number of automobile accidents where the number of recorded accidents exceeds the expected number of accidents. Figure 12 was constructed using data provided by CONNDOT. The high frequency accident data are provided in 3-year increments, spanning a time period from 1998-2000. The CONNDOT data uses a methodology that is built on an assumption about the relationship between traffic volume, the physical characteristics of the roadway segment or intersection and the resultant number of accidents. In this type of study setting, it is assumed that a certain number of accidents will occur. However, when the actual number of accidents recorded exceeds the expected number of accidents, the accident site is identified for further study.

Accident data for southeastern Connecticut over this time period tends to be consistent in identifying particular roadway segments where a high number of accidents frequently occur over time. While the exact location of accidents is not always consistent on a year-to-year basis, certain areas in southeastern Connecticut tend to be consistently classified as high frequency accident locations. These appear to have several factors in common. Highway segments or intersections in which there is a relatively high volume of traffic associated with intensive strip commercial development are the most likely areas to be classified as high frequency accident locations. Salem Turnpike (Route 82)

SOUTHEASTERN CONNECTICUT REGION HIGH FREQUENCY ACCIDENT LOCATIONS ON MAJOR HIGHWAYS 1998 - 2000



SCCOG Southeastern Connecticut
Council of Governments
Geographic Information System

Source : ConnDOT

FIGURE 12

in Norwich is perhaps the most illustrative example of this setting in the region, but it is not alone. Also included in this category is the Colman/Jefferson Avenue shopping area in New London, the Route 85 Crystal Mall area in Waterford as well as the Route 12/Route 1 shopping area in Groton.

In and of itself, high speed travel does not necessarily result in accidents. The more likely pattern is a location where high speed, through-traffic is utilizing the same roadway as slower speed, local traffic. Given the high traffic volumes on Route 2, east of Norwich, the relatively small number of high frequency accident locations can be attributed to the lack of abutting commercial development. Likewise, with the obvious exception of the Crystal Mall area, the majority of Route 85 through Salem and Montville is free of high frequency accident locations except at the intersection of Route 82 where turning movements associated with commercial development is in conflict with through-traffic. Responsibility for creating the conditions where these traffic conflicts occur largely rests with local land use authorities.

This pattern of automobile accidents is perhaps the best example of the very strong linkage between certain types of abutting land uses and transportation. It also reinforces the notion of shared responsibility for highway safety with local land use regulatory agencies, specifically planning and zoning commissions, which oversee the site plans of abutting commercial development. Often, in the rush to generate tax base through commercial development, issues of highway access management are overlooked or ignored by local commissions under the misguided notion that creating safe highways is entirely the responsibility of the Connecticut Department of Transportation. In the short term, adoption and implementation of strict access management plans by local commissions will go a long way toward alleviating the potential for unsafe highway conditions. This is especially important for emerging strip commercial development along arterial highways. Examples include Route 2 in Preston and North Stonington, Route 164 in Griswold and Route 16 in Colchester.

In selected areas, highway improvement projects have been completed to help address some of these problem accident areas. For instance, improvements have been completed to the Routes 85 and I-95 intersection area in Waterford as well as the Route 32 section in Waterford south of the access to I-395. This should lead to less accidents in these areas. CONNDOT also issues service memos, through its Traffic Division, for relatively simple and inexpensive corrections, such as pavement markings or warning and directional signs, to improve the safety of some high frequency accident locations.

In the broadest scope, the Regional Transportation Plan is intended to address highway safety concerns and suggest improvements. Some of the high frequency accident locations cited above have been addressed in this document. As one example, the Routes 12/184/I-95 interchange area in Groton is presently undergoing improvements. A second example is the Route 2/Route 1 intersection in Stonington. Both of these areas were previously identified as high frequency accident locations.

Bridges: Since the collapse of the Mianus River Bridge in 1983, there has been a continuing statewide emphasis on bridge reconstruction by CONNDOT. In the past two decades, special appropriations were made by the legislature for this purpose resulting in 145 bridges located within southeastern Connecticut being rebuilt or identified as needing improvement. Work is completed or underway on most of them. Table 6 depicts the status of the eighteen remaining bridges in the

TABLE 6

ConnDOT Bridge Program 2002 - 2003

Town	Route	Location	Percent Design	Advertise Date	Const Cost Including Incidentals
Bozrah	TR	Fitchville Pond	111	12/17/03	\$488,000
East Lyme	432	Four Mile River	111	11/26/03	\$192,000
Griswold	TR	Pachaug River	111	12/1/04	\$793,000
Griswold	TR	Pachaug River	111	12/1/04	\$1,098,000
Groton	US 1	Mystic River	111	6/16/04	\$13,440,000
Groton	US 1	Mystic River	111	2/19/03	\$1,800,000
Groton	US 1	Mystic River	333	12/29/99	\$3,095,195
Groton	I-95 NB	Thames River, RR, Local Rds.	333	7/7/99	\$1,455,460
North Stonington	TR	Pawcatuck River	222	11/31/03	\$368,500
North Stonington	216	Spaulding Brook	111	11/26/03	\$330,000
Norwich	2	Shetucket River	333	1/9/02	\$3,720,000
Sprague	TR	Potash Hill Rd over Little River	111	12/17/03	\$854,000
Stonington	US 1	Stony Brook	111	12/3/03	\$977,200
Stonington	US 1	Quanaaduck Cove	111	12/3/03	\$921,000
Waterford	US 1	Nevins Brook	222	7/10/03	\$999,100
Waterford	32	Brook	111		

111 - In Design
222 - Design Complete
333 - In Construction
444 - Construction Complete

region requiring reconstruction.

In 1984, the General Assembly enacted P.A. 84-254 (now known as Section 13a-175q of the Connecticut General Statutes) which provides state financial assistance to municipalities for the removal, replacement, reconstruction, rehabilitation or improvement of local bridges. Under this program, a municipality may qualify for a grant ranging from 10% to 33%, and a loan of up to 50%, to cover eligible project costs.

To qualify for the program, a bridge must carry a certified public road and be structurally deficient according to criteria developed by the Federal Highway Administration. In general, bridges are considered to be structurally deficient if the physical condition of the deck, superstructure or substructure are rated "poor" or below, or if the appraisal ratings for structure condition or waterway adequacy are rated as requiring a high priority for replacement. In the case of a culvert, it is considered structurally deficient if the overall condition of the culvert is poor.

Section 13a-175s of the Connecticut General Statutes requires the Commissioner of Transportation to maintain a list of deficient bridges and establish a priority list of eligible bridge projects for each fiscal year. The purpose of the prioritized list is to rank the bridges on the basis of need, statewide. The statewide list is updated annually and is presented in Table 7 below.

**Table 7
Local Bridge Program**

Bridges Over 20'

Town	Road	Crossing
Griswold	Carol Road	Pachaug River
Montville	Meeting House Lane	Cove River
North Stonington	Boom Bridge Road	Pawcatuck River
Norwich	Wawecus Street	Yantic River
Norwich	Pleasant Street	Yantic River
Salem	Darling Road	East Brook
Sprague	Parkwood Road	Little River/Hanover Reservoir.
Waterford	Old Mill Road	Hunts Brook

Bridges Under 20'

Town	Road	Crossing
Colchester	Starr Road	Brook
East Lyme	Society Road	Pattagansett River
Groton	Packer Road	Haley's Brook
Groton	Beach Road	Venetian Harbor
Ledyard	Stonybrook Road	Billings Avery Brook
Lisbon	Blissville Road	Brook
Montville	Derryhill Road	Brook
North Stonington	Puttker Road	Green Fall River
Norwich	East Town Street	Brook
Norwich	Hunters Road	Hunter Brook
Sprague	Lacroix Road	Beaver Brook

Source: CONNDOT

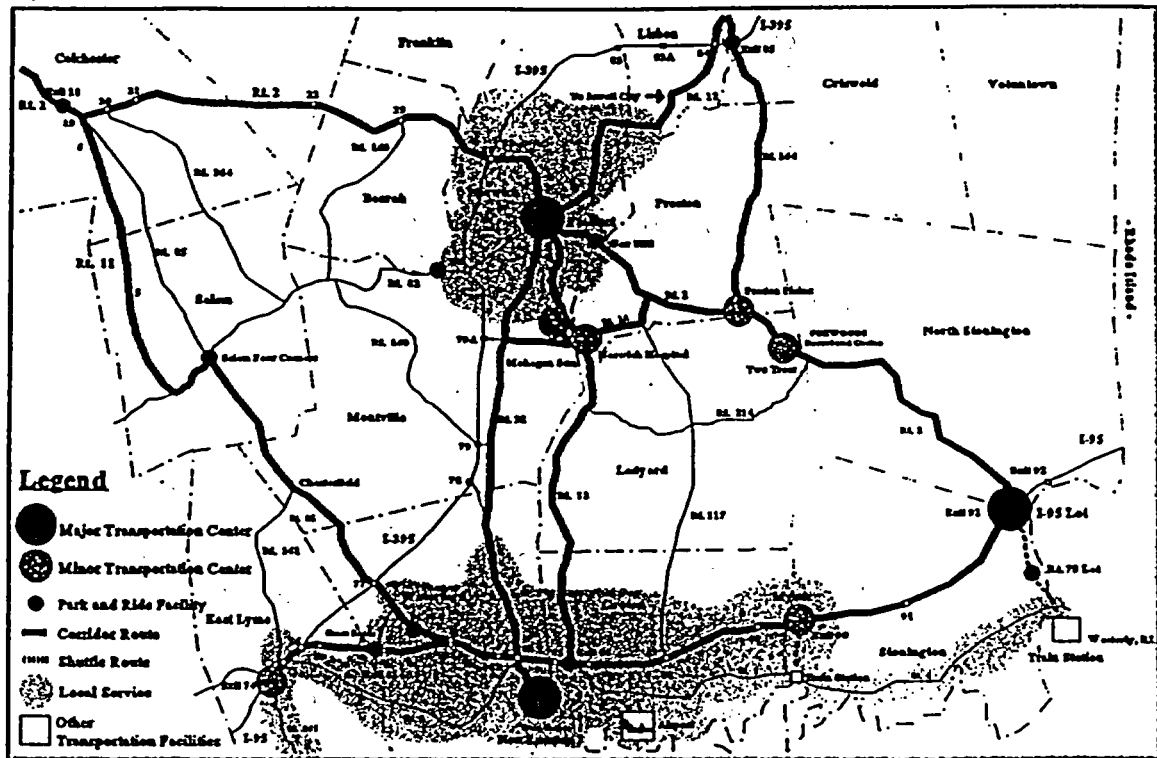
V. TRANSIT

During the last decade, the decline in defense industry economic activity and the advent of full-scale gambling casino operations in southeastern Connecticut have created unprecedented challenges and opportunities for public transportation. These economic changes have prompted exploration of a variety of new forms of public transportation. In addition to buses, public interest over the course of the last decade has been drawn to fixed-guideways, including a light rail or monorail system as well as the restoration of passenger rail service on existing freight rail lines. The feasibility of these modes has been examined in detail as part of Environmental Impact Studies (EIS) being conducted to address congestion in the Routes 2, 2A and 32 corridors as well as Route 85. In addition, in recent years CONNDOT examined the potential for passenger rail in eastern Connecticut. In both cases, despite the significant influx of tourists, fixed-guideway does not currently emerge as a feasible new transit option largely due to the low population densities in the southeast region.

Since 1980, nine towns in southeastern Connecticut have been served by the public bus system called Southeast Area Transit (SEAT). In light of the above-noted economic changes, a comprehensive analysis of SEAT's operating characteristics was conducted by SCCOG staff in 1996. This study revealed that upon the abatement of the energy crisis in 1981, the primary mass market of prospective transit users abandoned public transportation and returned to using cars. This had the effect of depleting the mass market for public transportation leaving primarily a market of transit-dependent people, a minority sector of the population in a generally suburbanized region such as southeastern Connecticut. Without widespread public support for transit, both in terms of regular users and federal, state and local financial support to underwrite the cost of service growth, SEAT service levels naturally deteriorated over the years. Furthermore, stabilization of gasoline prices during this period fueled a major housing boom that by the late 1980's resulted in even greater levels of suburban development in the region. This had the further effect of separating residential populations from the urban destinations commonly served by transit. Gradually, SEAT began to realize that the basic economic and demographic conditions that set the stage for the original development of the transit system at the height of the energy crisis in 1975 had changed so dramatically that it was time to re-orient the transit system.

During 1996-97, SEAT devised a new transit plan to address the region's expanding public transportation needs, meeting local needs as well as the new demand created by the gaming and tourism industry. A variation of that plan has now become a cornerstone of the Region's Transportation Plan. The 1997 SEAT Transit Plan, graphically summarized in Figure 13, aggressively called for 65 new compressed natural gas (CNG) buses to be added to the existing fleet of 25 Diesel buses for a total fleet of 90 buses. Under the original plan, service levels throughout the system would have been improved from 1 or 2 hour headways to ½ hour headways. In addition, the geographic area of service would have been expanded to include the towns of Colchester and Salem along Route 85, Bozrah on Route 82 and Preston and North Stonington on Route 2. The total project capital cost, in 1996 dollars, was estimated to be \$33 million of which the vehicle purchase price would be \$23.5 million. Expanding the existing SEAT building, including the addition of a compressed natural gas refueling facility, accounted for an additional \$7 million while the remaining amount was dedicated to the creation of a third regional transportation center in the vicinity of Exit 92 on I-95. Annual operating costs were estimated to be about \$20 million. However, preliminary ridership estimates of the proposed expanded transit system were conservative due to the present lack

SOUTHEASTERN CONNECTICUT REGION PROPOSED BUS SERVICE EXPANSION PLAN SOUTHEAST AREA TRANSIT (SEAT)



NOT TO SCALE



SOURCE: SOUTHEAST AREA TRANSIT

of commitment by either gaming casino and/or their Tribal owners to help underwrite the system for their employees. With combined casino employment now exceeding 20,000, a significant financial commitment on the part of the tribes is essential in order to significantly reduce the public obligation of the annual operating deficit of the expanded system. Local vocal support for an expanded regional public transit system continues to be widespread. This is due, in large part, to the dearth of realistic, achievable, cost effective alternatives to new highway construction to relieve growing traffic congestion. Local financial support for such an expansion remains constrained. Congress, as part of TEA-21, initially set aside \$4.5 million for new CNG buses in support of the expansion. However, these funds have now been programmed by the state to underwrite the replacement cost of SEAT's existing fleet in 2004 and are no longer available for expansion of the system.

During FY 2001, conceptual plans were developed to tie together regular and high-speed ferry, rail and regional bus service through the New London Transportation Center. In a study entitled Proposed Congestion Mitigation: Southeastern Connecticut Intermodal Transit Program, SCCOG suggested the development of an expanded bus system that would meet visitors arriving in New London and convey them to the region's tourist attractions and casinos. The objective in developing such a system is the realization that in order to relieve congestion on I-95, major regional transit initiatives must be taken. With the completion of the Mohegan Sun expansion in 2002, as many as 75,000-100,000 people/day may be visiting southeastern Connecticut, making the region a major, world-wide tourist destination. While the region is readily accessible by rail and ferry, regional bus service continues to be the weak link. In order to promote transit as a realistic alternative to accessing the region by automobile, providing sufficient mobility within the region by transit is absolutely essential in order to reach this tourist market. Consequently, the region is now looking to a "Disney-type" transit system of access and mobility as a regional transit model. In that setting, transit, not the automobile, becomes the dominant mode of choice simply because transit service levels are so high that convenience no longer becomes an issue. Using TSB appropriated funds, SCCOG will have a study prepared which examines the business and marketing aspects of such a system. This project is of such high priority to the region that it now becomes the fourth cornerstone of the Regional Transportation Plan.

Ultimately, institutional changes will need to be made in order to bring together all the public and private entities to support regional transit. The existing state statutes that govern transit districts were developed almost four decades ago when regionalism was in its infancy, when development patterns and transit needs were different and when public-private partnerships were virtually non-existent. As an example, under the statutes, a transit district is comprised of only representatives of the municipalities in which state subsidized (fixed schedule) transit service is provided. Towns through which transit passes can choose not to join a transit district. Of those towns which do join, rather than being egalitarian, board representation is weighted toward urban centers with towns over 25,000 population having twice the number of board representatives as smaller towns. At present, the state requires that transit systems generate at least 33% of the annual operating costs in revenue. If the regional transit system, which is comprised of many smaller municipal units of service, fails to reach this revenue threshold, the individual transit district member towns each become financially liable for their share of the revenue shortfall up to the 33% level. This municipal financial exposure is derived from the service levels that each town selects from a "menu" of available services based both on a desire to provide transit to their constituents and the ability to pay. Gaps in service frequently result from this process of municipal menu selection and problems related to provision of service is exacerbated when individual towns must decide how much financial burden can be

taken when the 33% level is not achieved by the whole system. Taken together, the self-selective, municipally-based financial structure, coupled with a state operating subsidy program which is not linked to transit performance at the route level, has created enormously inefficient and ineffective transit systems. These conditions have created decision-making policy boards whose mission, over the past two decades, has become primarily focused on minimizing municipal financial exposure and only secondarily on providing transit. As noted, this outcome is largely related to the disparity in both municipal financial exposure and differences in municipal ability or desire to provide financial support for transit. Yet when these basic municipal financial disparities are coupled with a state subsidy program unrelated to transit performance, it often results in the continuation of lower productive services, underwritten by those communities that can afford to pay, while more highly productive services are sometimes sacrificed. Both SEAT and SCCOG have been working together over the past year to address some of these institutional problems.

Of immediate concern is the need to provide a high level of seasonal transit service in the Route 27/Mystic area. Transit service along this route that connects various tourist destinations in Groton and Stonington will contribute to reducing congestion in this corridor. SEAT has secured funding for a shuttle service in the area for the summer of 2003 to test the market for the development of a more permanent service.

Paratransit: In 1992, SCRPA, SCCOG's predecessor, prepared an extensive inventory of paratransit vans and small buses owned and operated by more than thirty different public and private nonprofit agencies and underwritten by a number of different grant agency sources. A follow-up inventory conducted by SCCOG in 2002 concluded that both municipal systems for the elderly and private non-profit health and social service agency services have grown considerably in the past decade. Tables 8 and 9 summarize these findings. Coordination of this important transportation resource remains one of the region's most difficult public transportation challenges due largely to the cost of maintaining a system characterized by so much fragmentation and duplication of service. This is especially apparent in the area of capital equipment where the vast majority of these vehicles, many underwritten by public funds, not only sit idle a significant portion of the day but have become the exclusive property of particular agencies which serve a limited clientele.

Historically, efforts to address this problem have met with limited success. This is especially true in the area of transportation for senior citizens, which, as noted above, has evolved exclusively at a municipal rather than regional level. In order to address the problem of regional coordination of paratransit, in 1992 a public and private partnership was formed. At its formation, the Eastern Connecticut Transportation Consortium, Inc.(ECTC) consisted of the major private and public funding agencies which agreed to discontinue their practice of underwriting the cost of vehicle replacement for individual health, social service and senior citizen agencies and instead redirect those funds to a single operating agency, ECTC. Under this single operator model, paratransit, like regular transit in southeastern Connecticut, was expected to be reasonably well coordinated. SCCOG is a major supporter of ECTC and continues to view the development of a unified, regional, paratransit system to be of vital importance to the region. At present, SEAT subcontracts with ECTC to operate paratransit service under the Americans With Disabilities Act (ADA) as well as the Welfare-to-Work Program.

Jobs Access and Reverse Commute Program: For several years, coordination of transit resources in all of eastern Connecticut has been a top priority of SCCOG and the Southeastern Connecticut

TABLE 8

**SOUTHEASTERN CONNECTICUT REGION
INVENTORY OF MUNICIPAL PARA-TRANSIT VEHICLES - 2002**

TOWN	# OF VEHICLES	TYPE OF VEHICLES	CAPACITY	H.A.	YEAR	MILEAGE	USE	PRIMARY/BACKUP	COMMENTS
BOZRAH**	1	MB	14	YES	2002	60	S	P	
COLCHESTER		MB	16	YES	1990	144,744	S	B	
		MB	16	NO	1997	53,570	S	P/B	
		MB	16	YES	1999	44,743	S	P	
		V	11	NO	1999	22,458	S	P	
		V	11	NO	2003	100	O	P/B	
	6	V	7	NO	1999	10,600	O	P/B	
EAST LYME		MB	20	YES	2000	35,000	S	P	
	2	MB	22	NO	1991	138,000	S	P	
FRANKLIN	SEE BOZRAH								
GRISWOLD		MB	16	YES	1994	69,000	S	P	
	2	V	7	NO	2001	8,500	S	B	
GROTON-TOWN		V	10	YES	1994	62,424	S	P	
		V	13	NO	1999	43,931	S	P	
		V	10	YES	1999	43,074	S	P	
		V	13	NO	2000	35,456	S	P	
		V	13	NO	2001	20,404	S	P	
	6	MB	25	NO	2002	4,522	S	P	
		MB	23	YES	2001	45,000	S	P	
LEDYARD		V	12	YES	1996	77,154	S	P/B	
		V	12	YES	1997	75,342	S	P/B	
	3	O	4	NO	1993	106,832	S	P/B	
LISBON	1	V	6	NO	1998	53,000	S	P	
MONTVILLE		V	7	NO	1995	128,696	O	P	
		V	7	NO	1999	48,062	O	P	
		V	7	NO	1999	50,672	O	P	
		V	7	NO	2001	20,850	O	P	
		V	7	NO	2000	47,841	O	P	
	7	O	28	YES	1998	64,274	S	P	
		O	27	YES	1989	210,873	S	B	
NEW LONDON		V	14	NO	2001	8,400	O	P	
		V	7	YES	2002	7,850	PR	P	
		V	7	YES	1993	73,000	PR	B	
		V	7	YES	1995	68,000	PR	P	
		V	7	YES	1995	125,000	O	P	
	7	V	7	YES	1995	130,000	O	P	
		V	7	YES	2000	29,000	O	P	
NO. STONINGTON	1	V	6	NO	2000	5,500	S	P	
NORWICH		V	6	NO	1991	100,000	PR,O	P	
		V	8	NO	1998	89,900	O	P	
		V	9	YES	1999	78,500	O	P	
		V	9	YES	2002	5,000	O	P	
		V	15	NO	1999	75,000	O	P	
		V	15	NO	1999	75,000	O	P	
		V	9	YES	2002	5,000	O	P	
		V	20	YES	2001	17,359	S	P	
		V	18	NO	1995	70,273	S	P	
		V	19	YES	1988	133,132	S	B	
		V	4	YES	1996	28,493	S	B	
	12	O	4	NO	2002	18,788	S	P	
PRESTON		V	11	YES	1996	100,000	S	P	
	2	O	17	YES	1990	80,000	S	P	
SALEM	SEE BOZRAH								
SPRAGUE		O	27	YES	1999	980	S	B	
	2	V	8	NO	2000	250	S	P	
STONINGTON		MB	15	YES	1995	12,335	S	P	
		V	11	NO	2002	15,762	S	P	
	3	O	3	NO	1995	91,971	S	B	
VOLUNTOWN									
WATERFORD		MB	11	NO	2002	4,193	S	P	
		MB	11	NO	1993	117,927	S	P	
		MB	11	NO	1999	32,154	S	P	
		MB	11	NO	1995	110,685	S	P	
	5	O	8	YES	1995	74,369	O	P	
** Used for Bozrah, Franklin, and Salem									
Type of Vehicle: van=V; mini-bus=MB; other=O.									
Capacity: Number of seats not including driver.									
Handicapped Accessible: Yes or No.									
Year: Age of Vehicle.									
Mileage: Rounded to the nearest mile.									
Principal use of Vehicle: senior citizen=S; parks & recreation = PR; other = O.									
Primary or Backup vehicle: primary = P; backup = B.									

TABLE 9

**SOUTHEASTERN CONNECTICUT REGION
INVENTORY OF PRIVATE NON-PROFIT PARA-TRANSIT VEHICLES
2002**

AGENCY	# OF VEHICLES	TYPE OF VEHICLES	CAPACITY	H.A.	YEAR	MILEAGE	USE	PRIMARY/BACKUP	COMMENTS
ARC	10	V	8	NO	1998	95,959	O	P	
		V	9	YES	1999	85,617	O	P	
		V	9	YES	2002	10,763	O	P	
		V	15	NO	1999	111,066	O	P	
		V	15	NO	1999	98,978	O	P	
		V	9	YES	2002	4,022	O	P	
		V	15	NO	2000	94,204	O	P	
		V	8	NO	2002	9,064	O	P	
		V	8	NO	1998	86,706	O	P	
		V	8	NO	1997	141,840	O	B	
CHILD & FAMILY AGENCY	3	V	10	NO		12,000	O	P	
		V	10	NO		15,000	O	P	
		V	7	NO		25,000	O	P	
ECTC	5	MB	14	YES	2002	3,700	S	P	
		MB	14	YES	1996	78,108	O	P/B	
		MB	14	YES	1995	112,920	O	P/B	
		MB	12	YES	1994	112,797	O	P/B	
		MB	12	YES	1993	47,370	O	B	
EASTER SEALS CT.	20	V	14	NO	1992	231,914	O	P	
		V	11	NO	1999	112,356	O	P	
		V	14	NO	1999	110,485	O	P	
		V	14	NO	1997	162,831	O	P	
		V	11	NO	1993	91,709	O	P	
		V	9	YES	1995	252,080	O	P	
		V	9	YES	1989	83,381	PR	P	
		V	9	YES	1991	36,282	O	P	
		V	7	YES	1993	100,219	O	P	
		MB	6	NO	1990	178,872	O	P	
		MB	5	NO	1996	132,774	O	P	
		MB	5	NO	1996	135,434	O	P	
		MB	5	NO	1995	133,344	O	P	
		MB	5	NO	1994	104,026	O	P	
		MB	5	NO	1995	137,063	O	P	
		O	4	NO	1996	131,625	PR	P	
		O	4	NO	1995	141,955	O	P	
		MB	6	NO	2001	17,574	PR	P	
		MB	6	NO	2001	12,452	O	P	
		MB	8	NO	2001	12,998	O	P	
SEABIRD ENTERPRISES	18	V	5	YES	1993	158,089	O	P	
		V	5	YES	1999	70,559	O	P	
		V	7	YES	2000	68,533	O	P	
		V	6	YES	2001	32,350	O	P	
		V	6	YES	2001	22,208	O	P	
		V	7	YES	2001	28,278	S	P	
		V	11	YES	2002	5,764	O	P	
		V	11	YES	1997	74,456	O	P	
		V	11	YES	1997	88,519	O	P	
		V	11	YES	1999	78,786	O	P	
		V	14	YES	2000	62,063	O	P	
		V	14	YES	1999	78,202	O	P	
		V	11	YES	1998	80,478	O	P	
		V	11	YES	2001	22,674	O	P	
		V	11	YES	2002	21,630	O	P	
		V	11	YES	2002	11,441	O	P	
		V	11	YES	2002	31,667	S	P	
		V	11	YES	2002	4,495	O	P	
SEACORP INC.	8	V	8	NO	2000	37,182	O	P	
		V	4	YES	2000	43,987	O	P	
		V	7	NO	2001	33,000	O	P	
		V	7	NO	2001	32,387	O	P	
		V	7	NO	2001	36,200	O	P	
		V	7	NO	2001	42,502	O	P	
		V	7	NO	2001	37,800	O	P	
TNT	6	V	7	NO	2001	31,885	O	P	
		V	7	NO	2001	4,327	S	P	Stonington Community Center
		MB	10	YES	1988	145,000	S	B	Vision Christian Fellowship Church
		V	11	NO	2002	15,783	S	P	Pawcatuck Neighborhood Center
		O	5	NO	1995	91,971	S	P	Pawcatuck Neighborhood Center
UCFS	5	O	5	NO	1987	235,930	O	B	Warm Shelter, Westerly, R.I.
		O	6	NO	2000	43,475	O	B	Warm Shelter
		MB	15	NO	2000	39,870	O	P	
		MB	12	YES	2002	3,600	O	P	
		MB	12	YES	2002		O	P	
		V	6	NO	2002		O	P	
		V	6	NO	2001	5,658	O	P	

Type of Vehicle: van=V, mini-bus=MB, other=O.

Capacity: Number of seats not including driver.

Handicapped Accessible: Yes or No.

Year: Age of Vehicle.

Mileage: Rounded to the nearest mile.

Principal use of Vehicle: senior citizen = S; parts & recreation = PR; other = O.

Primary or Backup vehicle: primary = P; backup = B.

Workforce Investment Board, as regions around the nation address the need to provide transportation to those getting off welfare and in need of job training as well as day care for their children.

The JARC program utilizes a variety of Federal, State, and private funding sources to identify individuals in need of employment as well as employers in need of labor. Overall, this cooperative effort is commonly referred to as the "to", in the Welfare-to-Work program. Large employers in the southeast region, with difficult-to-fill second and third shift employment needs, have proven an invaluable employment resource willing to hire individuals recently off welfare with minimal job experience. Working cooperatively with transit providers, new transportation services have been initiated that link northeastern Connecticut, Windham County and the Greater Metropolitan Hartford area with southeastern Connecticut the latter of which has become the state's largest importer of labor. In the twelve months between October, 2001, and September, 2002, almost 31,000 passenger trips were provided under the JARC program. While the actual number of individuals served is considerably less, the impact of this special transportation effort has been significant especially in light of the relatively small amount of funding made available. SCCOG believes that continued financial support of the JARC program is essential.

VI. RAIL

North-south rail freight service is provided in the region's development core by the New England Central Railroad on the west side of the Thames River and by the Providence and Worcester Railroad on the east side of the Thames. Operating east-west, passenger service is provided along Long Island Sound by AMTRAK, with stops at New London, Mystic, and Westerly, Rhode Island as part of the Northeast Corridor service between Washington, D.C., and Boston.

Given the historical demands for both passenger and freight services, the region is reasonably well served by the heavy rail system as a result of the proximity of the rail lines to southeastern Connecticut. The addition of Shoreline East Service in 1996 is slowly proving to be an important addition to the array of rail services available to the region. Aggressive expansion of this service, with heavy subsidies to attract riders, has been identified as a priority through the TSB-TIA process. It is viewed as an important technique to reduce vehicle traffic on I-95.

The southeast region will potentially benefit from improved rail service as part of AMTRAK's electrification program at the same time that travel demand is increasing from gaming and tourism. The Northeast Corridor Improvement Project, now completed, was billed as being of significant importance for the region. However, to date, many of the benefits have yet to be realized. In the future, every opportunity to promote this service should be pursued, especially with respect to gaining high speed rail stops in Mystic and Westerly in addition to the existing stop in New London. There continues to be interest and possible benefit to reviving passenger rail on the New England Central line insofar as a rail service to Mohegan Sun Casino is concerned. Over the long term, rail service along the Thames River connecting to AMTRAK may prove feasible.

VII. AIR

Southeastern Connecticut has a dozen private airports within its borders, some of which consist of little more than cleared grassy strips of land. The only public airport in the region is the state-owned Groton-New London Airport whose primary role is that of a scheduled air carrier/air taxi and general aviation airport.

The Groton-New London Airport is a 490-acre regional airport primarily serving the coastal communities within 25 miles of the Town of Groton and City of New London. The facility consists of two runways having lengths of 5,000 and 4,000 feet with supporting taxiways, paved aircraft parking ramps, and FAA-contracted control tower, an instrument landing system (ILS) and free vehicle parking. In 2001, 20,314 passengers used scheduled service provided by US Airways Express and there were 75,577 total operations, which included military, general aviation and commercial take-offs and landings. However, operating data for calendar year 2002 was clearly impacted by the events of September 11, 2001 with total scheduled passengers down to 14,613 and total operations down to 69,515.

Approximately 560 full-time and part-time personnel are employed at the Airport. As part of the 1995 Master Plan, the Airport's overall economic impact to the local community was estimated to be \$167,000,000. The State of Connecticut Department of Transportation remains committed to

maximizing the airport as a viable regional facility that is attractive to the aviation community and traveling public, offers a variety of services, and aims to fill regional aviation needs.

A Medium Intensity Approach Lighting System (MALSR) was completed in 1993, which assists pilots while landing in fog or poor weather. Reconstruction of Runway 5-23 was completed in 1997, and a full renovation of the passenger terminal building including the airport restaurant was completed in early 1998. Expansion of the Connecticut Army National Guard's Aviation Classification Repair Activity Depot (AVCRAD) facility was completed in 1999. Also in 1999, Survival Systems, Inc. opened its underwater pilot training facility on state-owned property near the airport at the cost of \$2.5 million. Today, Groton-New London Airport continues to improve and expand services. The CONNDOT, together with the Federal Aviation Administration, has invested over \$5,000,000 in additional reconstruction, repavement, pilot control systems and planned renovations. Overlay reconstruction of Runway 15-53 began in 2001 and was completed in 2002 along with a new general aviation ramp. In 2002, Lanmar Aviation opened its new \$1.7 million facility consisting of eight jetpods and a main hangar to provide aircraft management, charter, and maintenance services.

Current customer services include four daily round-trip flights on USAirways Express to over 80 domestic and international destinations, two fixed base operators including Columbia Air Services and Lanmar Aviation. In addition, there is a charter operator, Action Airlines, and flight instruction is provided by Coastal Air, Inc., and Action Multi-Ratings. Avis Rent-a-Car, located in the main terminal, provides rental car, mini-van, SUV and pickup truck services. Beginning in June, 2003, Boston-Maine Airways, a division of Pan Am, will initiate daily service to Martha's Vineyard, Nantucket, Portsmouth, New Hampshire and Baltimore, Maryland.

The Master Plan for the Groton-New London Airport was updated in 1998. The plan recommended a series of improvements to be implemented over a twenty year period. Subsequent to the events of September 11, 2001, under the new Transportation Security Administration, airport security has now become a critical priority in addition to the FAA safety requirements. These new security requirements will require both increased capital and manpower investments to support the daily operations of the airport in order to ensure the safety and security of the public. Proposed airport service improvements will address projected regional transportation needs that are integrated with the area's existing ferry, interstate roadway and rail service, but will not induce increased usage of these services.

VIII. MARINE

The region's coastline abounds with harbors and inlets used extensively by pleasure and commercial craft of all types and sizes. The region boasts a commercial fishing fleet located in Stonington harbor, a day-charter, party fishing fleet in Niantic, regular commercial ferry service to Fishers Island and Block Island as well as regular and high speed ferry service to Long Island and Martha's Vineyard beginning again in the summer of 2003.

Large industrial, commercial and military facilities for marine transport are limited to the Thames River which, because of its dredged channel depth, can support such heavy marine traffic from its

mouth on Long Island Sound to its head at Norwich. The maintenance of a clear, unobstructed, dredged channel continues to be of the utmost importance to the vitality of the region's heavy marine commercial economy. Consequently, SCCOG believes that any legislative effort initiated at the federal level to prohibit dredging or the disposal of dredge spoils should be opposed.

The Admiral Shearer State Pier in New London and the adjacent Central New England Railroad Pier are the region's most important commercial marine facilities. The State Pier has been the focus of considerable study over the past decade. The most recent published study, entitled Transportation and Land Use Compatibility Study, State Pier New London, set the stage for the acquisition of several acres of private residential property adjacent to the State Pier to allow for expansion. The above study examined 5 separate land use scenarios which included the following: 1) expanded port, 2) cargo port/ferry, 3) hotel/specialty retail, 4) residential/yacht club, 5) industrial. Option 2, expanded cargo port/ferry-cruise boat terminal is considered to have the best practical/compatible marketing potential. The key elements in this plan include: 1) the construction of a new 50,000 sq. ft. warehouse, 2) construction of a new 4,000 sq. ft. terminal building for high speed and commuter ferry operation to include waiting rooms, snack bar; 3) additional parking for about 35 cars, 4) construction of 12,000 sq. ft. building for office space, 5) construction of 55,000 sq. ft. building for light industrial/warehouse use.

Recently, the State Pier has become the focal point of an effort to remove trucks from I-95 in order to reduce congestion. Given the close proximity of the Pier to I-95, exploration of the potential for the shipping of certain types of non-time sensitive goods via barge along the Connecticut coast should be vigorously pursued. A demonstration project is being developed that would test the potential for trans-shipment of containerized cargo from the port of New Jersey. This project also brings into focus the utilization of the New England Central Pier to the west with the potential for container and break bulk distribution by rail throughout New England.

Over the long term, the viability of the State Pier, in so far as increasing the number of ships and amount of cargo entering the port, is dependent on its marketing as a first class facility. Land mass, for loading/unloading, storage and berthing is of critical importance. Although land availability is highly constrained for all of the above uses, SCCOG supports the continued development and expansion of the Pier as a key economic investment strategy for the region.

Major marina and harbor improvement projects are in the advanced planning stages in both New London and Norwich. Improvements to the Norwich harbor have been made to enable Norwich to become a berthing place for a high speed ferry or other large tour boats. In New London, plans are under way to improve the Cross Sound Ferry site with bulkheading, piers, a new passenger terminal and an extension of the pedestrian walkway over the AMTRAK line. In total, these facilities are a significant regional tourism asset. They attract recreational boaters from all over the world to the coastal waters and tidal estuaries of southeastern Connecticut. Additionally, future marina and water taxi opportunities exist at various locations along the Thames River.

IX. PEDESTRIAN AND BICYCLE

According to the Federal Highway Administration (FHWA), "It is federal transportation policy to

promote increased use of bicycling, to accommodate bicycle and pedestrian needs in designing transportation facilities for urban and suburban areas, and to increase pedestrian safety."

In the years to come, several diverse factors will influence the effectiveness of the functional application of this policy for southeastern Connecticut. One key factor relates to the policy objective itself as to whether its purposes are aimed at bicycling and walking for recreation or as a means to avoid unnecessary auto usage and to promote the use of transit. If it is the former, southeastern Connecticut, with its vast amount of open space has ample off-road hiking and biking opportunities. In fact, the 1997 Regional Land Use Policy Guide Map recommends additional areas along the major rivers where trails and walkways are appropriate uses. However, these are viewed as adjuncts to the region's open space resources and are not primarily intended to enhance mobility. Assuming it is the latter, the issue immediately reverts to the inter-relationship between land use and transportation, suburbanization and lack of real transit alternatives. Expanding biking and pedestrian facilities would strengthen the region as a historic, cultural, and eco- tourism destination.

As shown in earlier sections of this plan, the suburbanization of the southeast region over the past forty years has diminished opportunities for bike and pedestrian linkages between residential settings and other basic community activities, such as schools, shopping, employment, religious institutions, banks, post office, and health care facilities, to name but a few. Reversing these land use trends will not occur quickly or easily in the foreseeable future.

Given this background and in keeping with this federal policy to promote bicycling and walking, Figure 14 and the accompanying text present recommended routes for the purpose of promoting these activities. Roadway sections included in this plan are those that have a comparatively low volume level of traffic and/or have shoulders or sidewalks where bicyclists and pedestrians can be accommodated. The text lists the routes in alphabetical order, by town. The objective is to link each town in the region with as many other contiguous towns as reasonably possible, considering the various roadway conditions. A secondary objective was to have most of these routes lead into, or away from, population centers, e.g. Norwich, New London, and Groton and prime recreational attractions.

Recommended Routes:

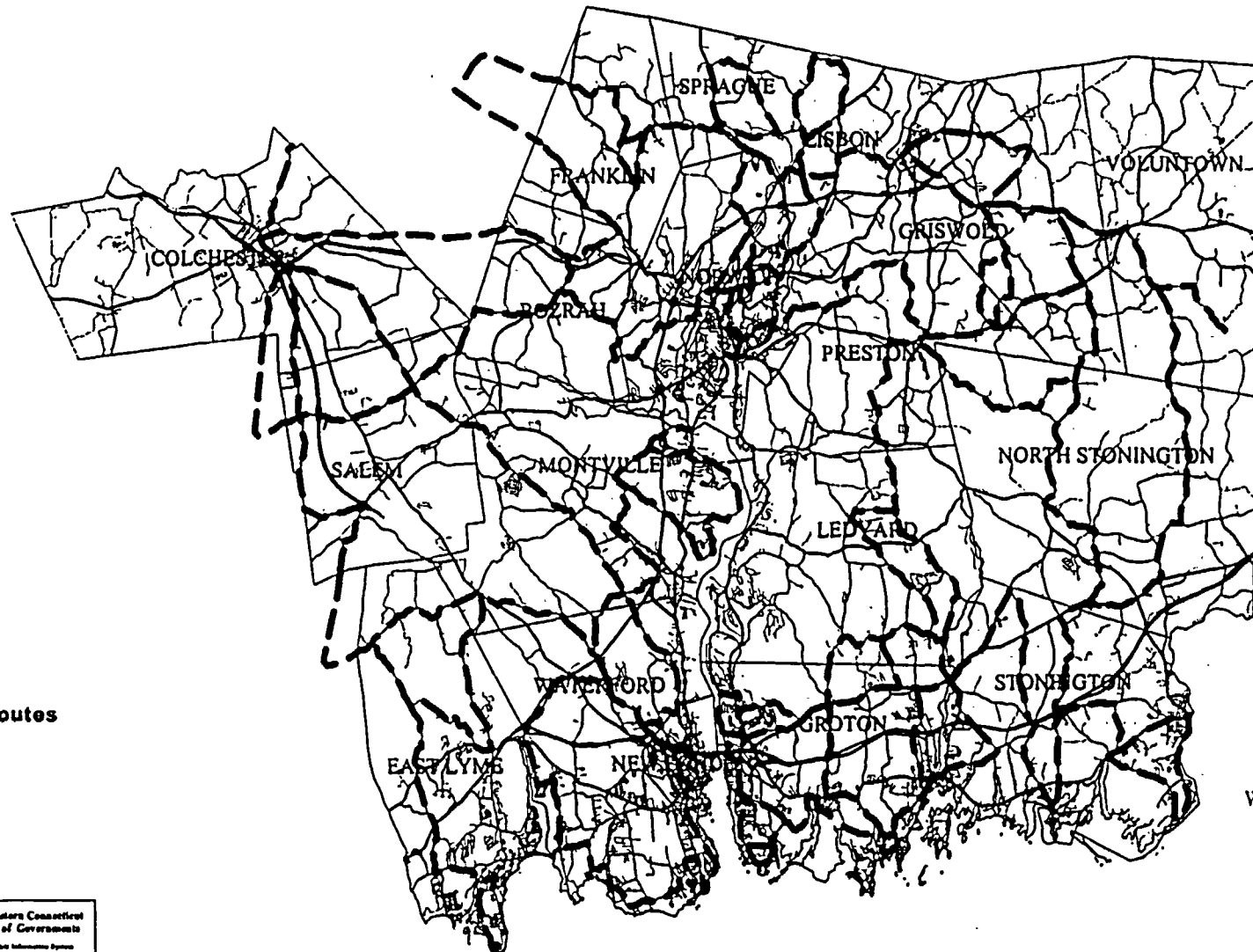
Bozrah

1. From Franklin: Route 87 to Stockhouse Road to Fitchville (S.R. 608, Old RT.2/Colchester Tnpk.) To the towns of Lebanon and Colchester.
2. From Norwich: Wawecus Hill Road to Gager Road to Bozrah Street. (RT. 163) to Scott Hill Road to Salem. South Road may be taken from Bozrah Street to connect with Norwich bicycle routes or Lake Road to connect with Salem.

Colchester

1. From Lebanon: Windham Avenue to Lebanon Avenue to Main Street (RT. 85) to Lake Hayward to Fedus Road to West Road (in Salem) to Mill Lane Road (in East Haddam) to Lake Hayward Road (back in Colchester) to Main Street.
2. From Salem: Route 354 to Marvin Road to Route 85 (north) to Main Street Colchester.
3. From center of town: Old Route 2 east (Norwich Ave.) Through Lebanon, Bozrah.

SOUTHEASTERN CONNECTICUT REGION PROPOSED BIKE AND PEDESTRIAN ROUTES



LEGEND

 **Bike Routes**

 **Roads**

SCCOG Southeastern Connecticut
Council of Governments
Regional Information System

Source: SCCOG

FIGURE 14

East Lyme

1. a. East Lyme Town line - Grassy Hill Road to Whistletown Road to Upper Pattagansett to Route 1 to Chesterfield (Route 161) to Route 85 (North) to Grassy Hill Road.
b. Montville: East Lyme Town line - Grassy Hill Road to Route 85, Montville.
2. East Lyme Town line or Route 85 Montville to Grassy hill Road to Whistletown Road to Scott Road to Route 1 (west) to North Bride Brook to West Main Street (RT. 156) east to Fair Haven Road to Old Black Point Road to the Great Wight Way and back to Niantic.

Franklin

1. From Lebanon Town Green: Route 207 to Under the Mountain Road to Plains Road to either east on Plains Road to Baltic Road to Route 207 to Sprague, or from Plains Road (east) to Baltic Road (south) to Route 32 (north) and back to Plains Road.
2. From Lebanon Town Green: Route 87 to Stockhouse Road to Bozrah.

Griswold

1. From Jewett City: Route 138 to Bethel Road to Sam Chikan Road to Lewis Road (Preston) Route 165 (north) to Brown School Road to Colonel Brown Road to Bethel Road (north) to Route 138 (east) to the Voluntown Town line.
2. Route 138 to Bitgood Road to Route 201 to Hopeville Road to Hopeville Pond State Park.
3. Route 12 to center of Jewett City to Route 201 to Hopeville Pond State Park.
4. Route 201 to Route 165 toward Preston.
5. Route 201 to North Stonington Town line.

Groton

1. Pleasant Valley Road to Lestertown Road to Military Highway to Fairview Avenue #2 to Bridge Street #1 to Mitchell Street to Benham to Eastern Point Road to Shennecossett Road around Avery Point to Plant Street to Shennecossett Road to Thomas Road to Tower to South Road to Route 1 to either Route 215 to Mystic Village, or West Mystic Avenue to Allyn Street to Mystic Street to Cow Hill Road to Route 184 (east) to Route 27 to River Road to Mystic Village.
2. Gungywamp Road to Route 184 to Stonington.

Note: The Groton 2002 Plan of Conservation and Development included the following additional routes:

- Poquonnock Road from Thames Street to Thomas Road
- Plant Street between Eastern Point Road and Shennecossett Road
- The bike path location between South Road and Route 215
- Toll Gate Road and Grove Avenue between Route 184 and Military Highway
- Colonel Ledyard Highway from Route 184 north into Ledyard
- Pearl Street, Grove Avenue, and River Road from Route 1 to Route 27 (Mystic)
- Route 1 from Poquonnock Road north and east to its intersection South Road

Ledyard

1. Shewville Road from Preston Town line to Groton Town line to River Road to Mystic Village.
2. Silas Dean Road to Shewville to Route 214 (east) (Iron St.) To Shewville Road #2 to Gallup Hill Extension to Lambtown Road to Route 117 (north) to Silas Dean or Route 117 (south) to Groton bike route.

3. Circular route: Silas Dean Road to Shewville Road to Route 214 (east) to Shewville Road #2 to Gallup Hill Road to Spicer Hill Road #2 to Spicer Hill Road #1 to Church Hill Road to Silas Dean Road.

Lisbon

1. From Occum (Sprague) to Kendall Road to Preston Allen Road (north) to Kinsman Hill Road to Route 169 (north) to Kimball Road to Sullivan Road to Westminster Road (south).
2. Route 169 to Preston Allen Road to Kendall Road (east) to Route 169 (north) to Route 138 (Newent Road) to Jewett City.

Montville

1. Old Colchester Road from Salem to the Waterford Town line.
2. Grassy Hill Road to Route 85 (south) to Turner Road to Vauxhall Street Extension to Waterford.
3. Circular route: New London Turnpike (RT. 32) from Norwich to Fitch Hill Road to Gallivan Lane to Route 32 (north) to Fort Shantok Road to Massapeag Side Road Derry Hill Road to Kitemaug Road to Massapeag (west) to Route 32 (north) to Raymond Hill Road to Fitch Hill.
4. Raymond Hill Road to Lynch Hill Road to Route 163 (west) to Maple Avenue to Jerome Road to Moxley Road to Unger Road to Hunts Brook Road to Vauxhall Street Extension in Waterford.

New London

1. From Waterford: Niles Hill Road to Ocean Avenue (south) to Neptune Avenue to Pequot Avenue to Monauk Avenue to Bank Street (east) to Blinman Street #2 to Blackhall Street to Connecticut Avenue (north) to Vauxhall Street (west) to Vauxhall Street Extension to Waterford.

North Stonington

1. From Griswold: Route 201 to Northwest Corner Road to Route 164 in Preston.
2. From Griswold: Route 49 to Route 184 (west) into Stonington.
3. Route 201 to Ryder Road to Wyassup Lake Road (south) to Rocky Hollow Road (in North Stonington) to Route 184 (New London Tpke.) to Stonington Town line.
4. Route 201 to Ryder Road to Wyassup Lake Road (south) to Rocky Hollow Road (in North Stonington) to Route 184 (west) to Route 201 to Mystic Road which turns into North Stonington Road in Stonington. Follow to Borough of Stonington.

Norwich

1.
 - a. From Marina: Shetucket Avenue to Main Street to Franklin Street to Bath Street to Broadway to Rockwell Street to McKinley Avenue to Reynolds Road to Mahan Drive to Ox Hill Road around Spaulding Pond to Mohegan Park Road to Hunters to Harland Road (RT. 169) to Old Canterbury Turnpike to Lawler Lane to Scotland Road to High Street to Baltic Street to Route 207 to Franklin to link with Town Green: Follow above directions to Ox Hill Road; follow Ox Hill Road (west) to Canterbury Turnpike (west) to East Town Street.
 - b. To Lisbon: Follow above directions to Harland Road (RT. 169) at Hunters Road and follow Hunters Road to intersection with Route 97 and Route 169 (Ponemah Mill) to Newent Road across the Lisbon Bridge.
2. To Preston: From Marina to Shetucket Street to Main Street to Franklin Street To McKinley

Avenue to Broad Street to Boswell Avenue to 10th Avenue to Central Avenue (south) to 8th Avenue over the bridge to Roosevelt Avenue to Preston.

3. To Bozrah: From Norwichtown Green (East Town Street) to New London Turnpike to Dudley Street to Cranberry Pond Road to Wawecus Hill Road to Bozrah.

Preston

1. From Norwich: Roosevelt Avenue to Old Jewett City Road to River Road to Old Jewett City Road to Krug Road to Route 164 to Route 165 (west) to Benjamin Road to Branch Hill Road to Ross Road to Route 2 (east) to Shewville Road.
2. From Griswold: Route 201 to Route 165 to Route 164 to Route 2 to Shewville Road to Ledyard.

Salem

1. From the Colchester Town line take West Road to Route 82 (east) to Darling Road to Gungy Road to East Haddam.
2. Route 354 (Old Colchester Tpke.) From Colchester to Montville.
3. West Road to Witch Meadow Road to Route 85 (south) to Rattlesnake Ledge Road to Witter Road to Scott Hill in Bozrah.

Sprague

1. Route 207 from Franklin to Route 97 at Baltic; follow to Occum across river to Kendall Road in Lisbon.
2. Route 138 to Hanover-Versailles Road to Salt Rock Road to Route 97 (south) to either Occum or Route 207 to Franklin or High Street to Norwich.

Stonington

1. From North Stonington Town line: Jeremy Hill to Taugwonk Road to North Main Street to Route 1A to Alpha Street to Water Street.
2. From North Stonington: Route 201 to Al Harvey Road to Pequot Trail to Flanders Road to Route 1A to Alpha Street to Water Street.
3. Route 201 to North Stonington Road to Route 27 to Jerry Browne Road to Mistuxit Avenue to Willow St. to Cottrell St. to Route 1 to downtown Mystic.
4. Greenhaven Road to River Road to Mechanic Street to West Broad Street to Route 1 to Auguilla to Pequot Trail.

Voluntown

1. From Griswold: Route 138 to Route 49 south toward North Stonington. (Trails through Pachaug State Forest are not paved but can be cycled on).
2. From Route 49 (south): Fish Road leads to Green Falls Pond, which has a picnic area, camping area, and a boat launch.

Waterford

1. From New London: Niles Hill Road to Great Neck Road to Goshen to Shore Road to Jordan Cove Road to Gardners Wood Road to Rope Ferry Road (west) to Niantic River Road to Oswegatchie to Route 1 (west) to Oil Mill Road to Way Road to Route 85 (south) to Douglas Lane to Vauxhall Street Extension.
2. Chapman Avenue to Pilgrim Road to Gallows Lane to Old Norwich Road to Old Colchester

Road to Montville.

Other Walkways and Bikeways

1. Norwich: Pedestrian walkway/bikeway along the Yantic River from Sherman Street to the harbor area and up the Shetucket River to Railroad Avenue to Greeneville.
2. Groton: pedestrian walkway/bikeway along Military Highway between Crystal Lake Road at the U.S.S. Nautilus to the City of Groton line just above the Gold Star Bridge. Haley Farm State Park between Noank and Poquonnock Bridge.
3. East Lyme: Pedestrian walkway/bikeway from the "bar area" by the Niantic River Bridge to Smith Street in Niantic.
4. New London: Proposed pedestrian walkway connecting Connecticut College to downtown New London.

Trails: During FY 2003, SCCOG conducted an inventory of open space with public trails and parking. The objective of the study was to identify existing large open space holdings in the southeast region that could potentially be linked through the development of a trail network. Figure 15 graphically depicts the study findings and conclusions. As shown, southeastern Connecticut already has a significant amount of open space with trails and parking that has enormous potential for linkage through a recreational trail network. In addition, the region is presently engaged in the development of an extensive greenway that will accompany/about the Route 11 extension from Salem to Waterford. The development of the Route 11 Greenway will potentially add a significant amount of new usable open space area to the region's already large complement of open space. Ideally, this will also evolve in a linear unbroken fashion that will invite utilization for bike, pedestrian and perhaps equestrian trail network.

X. INTELLIGENT TRANSPORTATION SYSTEM

As previously noted, there has been a dramatic increase in vehicular traffic on the region's highways over the past decade, especially on the interstate system. This increase in traffic, coupled with fiscal and environmental constraints on new highway construction, is compelling the utilization of emerging technologies to better manage our highway system. These emerging technologies are falling under the umbrella of what is becoming known as Intelligent Transportation Systems (ITS). While these technologies cover a wide range of sophistication, they all begin from a base of effective management of accident events, or incidents, which jeopardize traffic flow. The main building block in the process of addressing incident management is what is known as Highway Diversion Plans (HDPs). These plans presume that serious traffic flow-disrupting accidents on the interstates will occur and that when they do, plans must specifically target potential accident locations and identify alternative traffic routes. In addition, these HDP's must assign responsibility for managing traffic on the diversion routes. This includes responsibility for signal timing, signage and to monitor particular traffic locations.

ITS builds on the base of HDP's by adding closed circuit TV cameras that enable traffic at specific locations to be monitored from afar. Added to this are variable message signs that allow individuals monitoring the traffic via the remote cameras to advise motorists of upcoming tie-ups and to recommend alternative/diversion routes at pre-determined exits. Finally, the addition of low wattage

SOUTHEASTERN CONNECTICUT REGION INVENTORY OF OPEN SPACE WITH TRAILS

19

Legend

 Roads

 Municipal Boundary

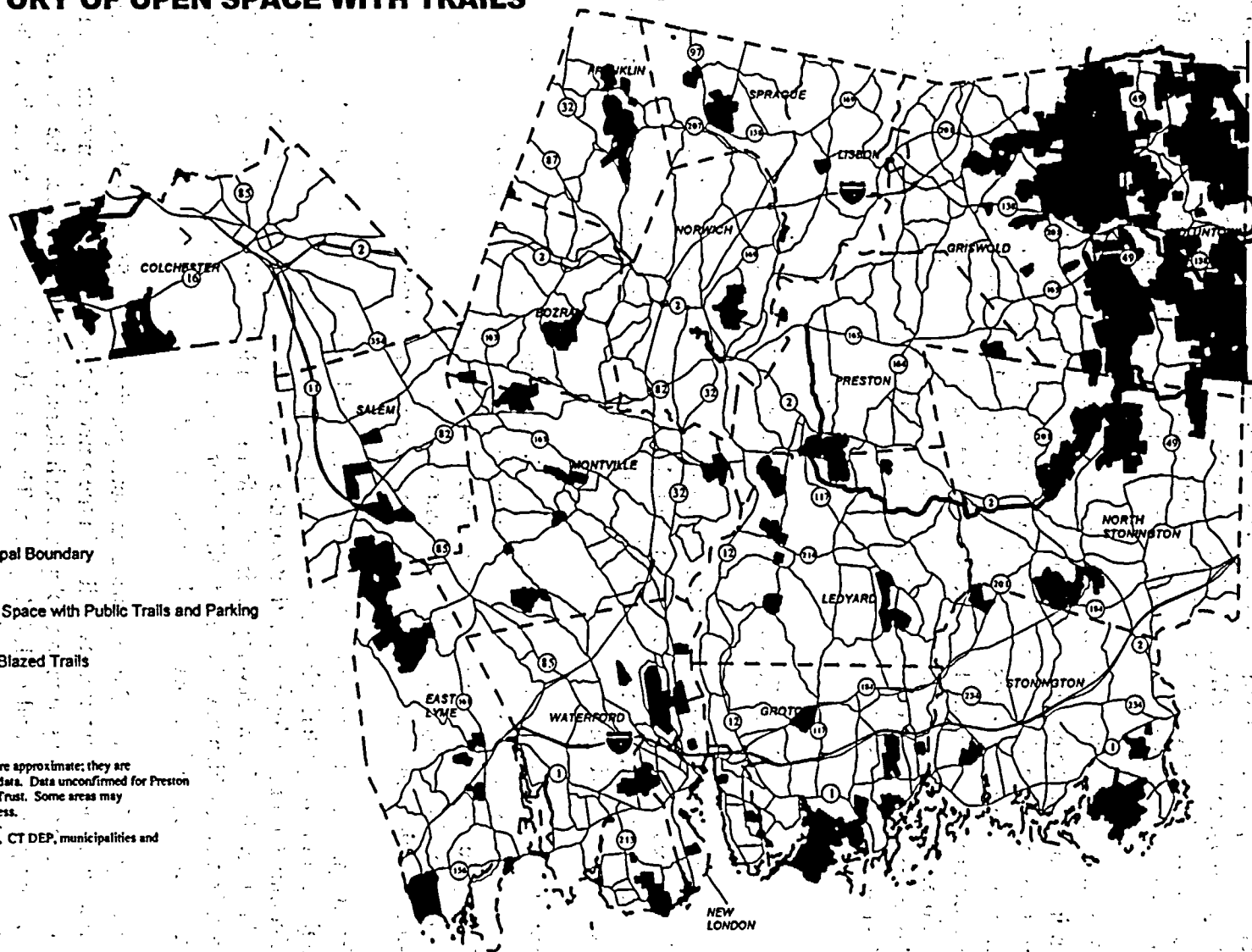
 Open Space with Public Trails and Parking

 Blue Blazed Trails

Notes: Land areas are approximate; they are not based on parcel data. Data unconfirmed for Preston and Avalonia Land Trust. Some areas may require a fee for access.

Sources: CT Magic, CT DEP, municipalities and land trusts.

August 2002



3 0 3 Miles

FIGURE 15

radio transmitters allow motorists to monitor radio stations that will give them continuous traffic information and advise them of any tie-ups..

The development of ITS in southeastern Connecticut is now well underway. In FY 2000, a HDP was prepared by, and on behalf of, the 10 towns in the region abutting I-395 and I-95. This was followed by the development of 3-phased ITS programs for the interstate corridors which, for planning purposes, extends along I-95 from the Rhode Island border westerly through Clinton.

Over the course of the next several years, an ITS "architecture" will be developed that will identify an information structure that establishes linkages between providers and consumers of highway operations information and which must conform to the nation ITS architecture standard. Figure 16 depicts Phase I of the ITS project which is expected to be implemented in 2004. It shows the location of closed circuit TV cameras, variable message signs and coverage for highway advisory radio broadcasts. Subsequent phases of the ITS program will enhance the concentration of each of the above elements. It is expected that Phase II and III of the ITS program will be implemented over the course of the next 10-12 years.

XI. RIDESHARING AND COMMUTING

Place of Work data from the 2000 Census (Table 10) has shown that 85% of job-related commuting in Southeastern Connecticut is intra-regional. Among other things, this indicates the need for a strong, continuing, commuter ridesharing promotion and parking program with amenities to make the lots as user-friendly as possible.

Ridesharing, in conjunction with the construction of commuter parking lots, remains one of the most cost-effective strategies in dealing with air quality, fuel conservation and highway congestion. During the 1980's, ridesharing promotion was focused on the region's largest employers (those with more than 150 employees). With the advent of casino gaming and other tourist activities, coincident with reductions in manufacturing activities, the emphasis of this activity has shifted.

Traditional commuter parking lots of various sizes and amenities have been located along the region's major commuting arteries based on need and funding availability. However, since the initial thrust of commuter lot development activity of the past two decades, additional information and planning technology has been developed in the form of ridesharing brokerage organizations. These organizations, which have been established throughout the state using a combination of public and private funding, help us better evaluate the impact of these programs.

Quarterly evaluation of the region's commuter parking lots by SCCOG has revealed considerable variation in their utilization as well as in the amenities provided. These amenities can include any combination of paving, lighting, telephones, shelters, bus and rail service. The region's 17 commuter lots now provide a total of 1,734 spaces. Through 2002, average use throughout the region was 863/day or about 50% of capacity. Construction of more than 470 of these spaces were paid for by the Mashantucket Pequot for their employees at lots located in the vicinity of Route 2 and I-95. Employees of Foxwoods Resort and Casino have become some of the region's most productive users of commuter parking lots.

SOUTHEASTERN CONNECTICUT REGION

PROPOSED INTELLIGENT TRANSPORTATION SYSTEM

PHASE 1

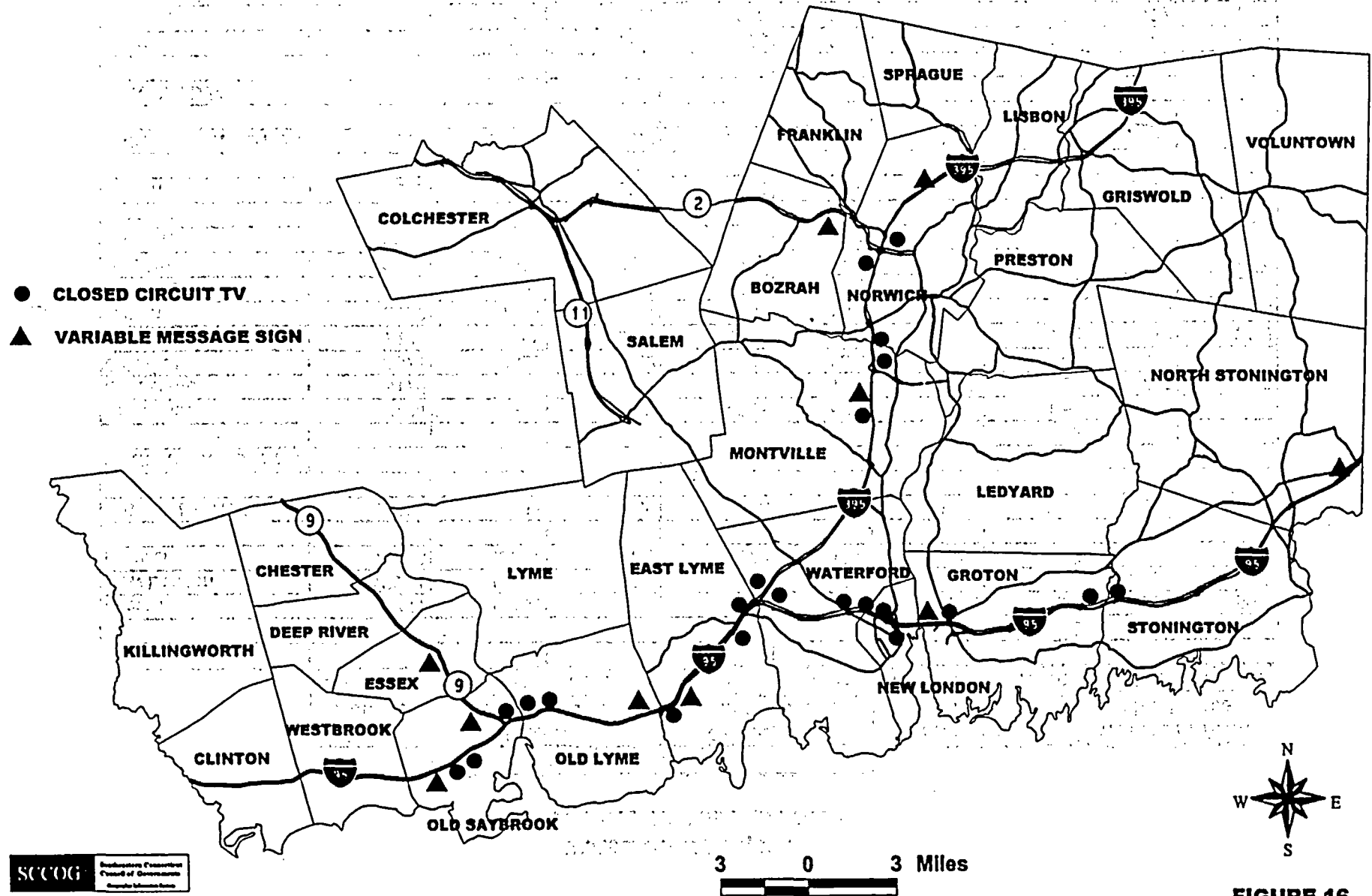


FIGURE 16

TABLE 10

PLACE OF WORK, 2000
Workers 16 Years and Over

	Total Workers 16 and Over	Worked in Connecticut							
		In New London County		Outside New London County		Worked Outside Connecticut		Worked in Town of Residence	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
URBAN TOWNS:									
Groton	20741	19165	92.4	904	4.4	672	3.2	11797	56.9
New London	12201	11374	93.2	669	5.5	158	1.3	5069	41.5
Norwich	17483	15342	87.8	1823	10.4	318	1.8	6583	37.7
URBAN TOTALS	50425	45881	91.0	3396	6.7	1148	2.3	23449	46.5
SUBURBAN TOWNS:									
Colchester	7704	3249	42.2	4341	56.3	114	1.5	1614	21.0
East Lyme	8175	6635	81.2	1305	16.0	235	2.9	1702	20.8
Griswold	5871	4882	83.2	884	15.1	105	1.8	965	16.4
Ledyard	7463	6858	91.9	371	5.0	234	3.1	1612	21.6
Lisbon	2157	1771	82.1	331	15.3	55	2.5	254	11.8
Montville	8900	7898	88.7	880	9.9	122	1.4	2125	23.9
Preston	2363	2095	88.7	225	9.5	43	1.8	423	17.9
Sprague	1523	1283	84.2	215	14.1	25	1.6	162	10.6
Stonington	8910	7456	83.7	344	3.9	1110	12.5	2814	31.6
Waterford	9248	8153	88.2	921	10.0	174	1.9	2575	27.8
SUBURBAN TOTALS	62314	50280	80.7	9817	15.8	2217	3.5	14246	22.9
RURAL TOWNS:									
Bozrah	1249	953	76.3	270	21.6	26	2.1	140	11.2
Franklin	982	762	77.6	210	21.4	10	1.0	177	18.0
North Stonington	2723	2231	81.9	170	6.2	322	11.8	424	15.6
Salem	2153	1613	74.9	508	23.6	32	1.5	233	10.8
Voluntown	1332	1126	84.5	129	9.7	77	5.8	169	12.7
RURAL TOTALS	8439	6685	79.2	1287	15.3	467	5.5	1143	13.5
REGIONAL TOTALS	121178	102846	84.9	14500	12.0	3832	3.1	38838	32.1

Source: Census 2000

The original concept of commuter parking lots was both limited to, and predicated on, the notion that most commuting was job-related and that the primary purpose of the lots was to serve employees who had regular patterns of travel. Due to dramatically changing economic circumstances, the region now finds itself in need of expanding the original "commuter parking lot" concept to include large parking lots in strategic locations that can also be used by tourists. These lots, and their larger counterparts, transportation centers, are of special importance in the expanded public transit program as proposed by SEAT. This program proposes creating direct links to high-demand tourist and gaming destinations. The creation of major parking lots is now viewed as one of the most critical elements in the long-range development of the regional transportation system. Without them, the region will be at a distinct disadvantage in its quest to address the issue of congestion without greatly expanding the capacity of the region's highway network. While environmental studies examined the most appropriate locations for these large parking lots, there remains a tension between local zoning and economic development needs which will have to be balanced with transportation system needs in order to accomplish this objective.

XII. INTERMODAL

Presently, opportunities for intermodal connections in the region are limited. In New London, an intermodal gateway center was created in the 1980's to provide a hub for marine, rail, parking, cab and bus service. The refurbished New London railroad station has become the region's main gateway for intermodal travel where long-haul rail service (AMTRAK) is linked with both long-haul bus service (Greyhound) as well as regional bus service (SEAT) and ferry service to Block Island, Fishers Island and Long Island as well as high speed ferry service to Martha's Vineyard. The intermodal facility is also extensively served by area taxicab operators. Adequate parking facilities are operated and maintained by the City of New London within a short walking distance. Construction of an overhead walkway has now received funding. This will enable pedestrians to safely cross the roadway and railroad tracks to access the railway station and ferry service from the parking garage. Expansion and maintenance of the multi-modal facility is of extreme importance to the region.

Over the long term, a number of new intermodal centers are envisioned as a by-product of the expansion of the regional public transportation system. A second intermodal gateway is in the planning stage in Norwich. The objective of this center will be to combine high speed ferry, rail, auto, pedestrian, taxi, limousine and SEAT bus service into one inter-modal facility. In addition to the Norwich and New London Transportation Centers, the SEAT plan for expansion of public transportation identified several other locations where intermodal transportation centers will be necessary. These include (1) North Stonington at Exit 92 in the vicinity of I-95 and Route 2, (2) Mystic, in the vicinity of Exit 90 of I-95 and Route 27, (3) East Lyme, in the vicinity of Exit 74 of I-95; and (4) Norwich Hospital, at Routes 12 and 2A. Presently, an inter-modal center in Mystic is under study.

Opportunities for intermodal freight connections are highest at the State Pier in New London where marine, rail, and highways all converge. Better marketing and coordination between marine, rail and truck freight at the State Pier could help reduce truck traffic on I-95. The weakest of the major intermodal linkages centers is presently at the Groton-New London Airport. There is no bus or rail linkage with Groton-New London Airport for either passengers or freight, although SEAT's plan for

expanded service will eventually connect the Airport with the rest of the bus system. Likewise, other than United Parcel Service located in Bozrah and Waterford, the region presently lacks a major trucking terminal which could, in the future, provide the necessary ingredient in the highway-rail-marine-air configuration to make the region a more viable freight distribution center. Intermodal connections, such as rail to high-speed ferry, will also become more important as the region's tourism industry matures.

XIII. ALTERNATIVE FUELS

SCCOG believes that there is a significant future role for alternative fuels, such as compressed natural gas, as a way for the region to meet the air quality standards. Consequently, SCCOG actively supports federal efforts to promote the use of alternative fuels through the Clean Cities Program and will encourage the creation of markets for alternative fuels through the conversion of public fleet vehicles.

XIV. ACCESS MANAGEMENT

Access management is a regulatory and planning process which attempts to balance safe traffic flow operations with the need to access abutting developed land. While primary responsibility for constructing and maintaining major highways rests with CONNDOT, achieving the goals of access management ultimately rests with local planning and zoning officials.

As a by-product of development, a natural conflict may arise between aggressive municipal and private development interests and the need to preserve the traffic flow function of key roadways. This results from the dichotomy between the state's role to ensure safe traffic operations on the one hand, and the land use regulatory authority given exclusively to municipalities by the state under the planning and zoning statutes on the other.

The general inability to effectively regulate highway access to abutting development along key traffic corridors often compels expensive additional roadway improvements and ultimately the expansion of capacity through the creation of turning lanes, new roads and by-passes. As the consumption of the capacity of the various roadways is accelerated, poor access management practices will require more traffic controlling devices, further deteriorating the primary through-travel mobility function of the roadway. SCCOG actively supports access management and for the foreseeable future will pursue efforts to address access conflicts on all of the region's major arterial roadways. In FY 1998 and 1999, SCCOG sponsored major access management studies conducted on segments of Route 1, 2, 2A, 12, 32, 117, and 164 in the Towns of Stonington, North Stonington, Ledyard, Preston, Montville and Waterford. Those studies contain recommendations for improvements which each of the communities are in various stages of implementing. In the future, similar access management projects should be undertaken in other communities when they are requested.

XV. AIR QUALITY

The Clean Air Act Amendments of 1990 (CAAA) established a requirement that all long-range transportation plans, Transportation Improvement Programs (TIPs), and projects conform to the air quality goals set forth in the State Implementation Plan (SIP). The transportation conformity requirement, along with provisions first contained in the Intermodal Surface Transportation Efficiency Act of 1990 (ISTEA) and reauthorized under the Transportation Equity Act for the Twenty First Century (TEA-21), created fundamental changes to the practice of transportation and air quality planning for non-attainment areas.

The Clean Air Act and its regulations created six (6) non-conformity categories that were related to the date to which conformity must be achieved. These are: 1) Extreme (2010); 2) Severe (2007); 3) Severe (2005); 4) Serious (1999); 5) Moderate (1996); 6) Marginal (1993). Under this definition, Connecticut is divided into two non-conformity areas. Generally, Fairfield County has been designated as a level 3 (Severe, 2005) area, while the remainder of the state, including southeastern Connecticut, has been designated a level 4 (Serious 1999) area. This means that transportation and air quality events that occur in the Hartford and New Haven areas are not, for purposes of the act, distinguishable from events that occur within southeastern Connecticut.

The U.S. Environmental Protection Agency's (EPA) transportation conformity rule applies only to areas designated as being non-attainment or maintenance for transportation-related criteria pollutants such as Nitrous Oxides, Volatile Organic Compounds, Carbon Monoxide, and particulate matter. The conformity rule established the regional emissions analysis as the tool for determining emissions from the Regional Transportation Plans and TIPs. In regional emissions analyzes, the effects of regionally significant projects are analyzed, then their emissions effects summed. The results of the regional emissions analyzes are used to perform the conformity test of plans and TIPs.

The federal rule imparts much greater importance to Metropolitan Planning Organizations (MPOs) in the development of transportation plans and TIPs and for the selection of federally funded highway and transit projects. The rule includes a requirement that plans and TIPs be fiscally constrained. It also made provisions for project prioritization, public participation, and interagency consultation. The CAAA included the transportation conformity requirement to ensure that transportation plans, TIPs, and projects conform to health-based national air quality standards. If transportation plans, TIPs, and projects do not conform with the emissions projections of the SIP, then they cannot be approved or funded until they are revised to do so. As part of the legal process of adopting the Regional Transportation Plan, the MPO must certify conformity of the Plan with air quality standards.

XVI. ASSESSMENT OF CONFORMITY WITH TEA-21

(1) Support the economic vitality of the metropolitan area especially by enabling global competitiveness, productivity and efficiency. The foremost general goal of the plan (Section III) is focused on making infrastructure investments that are primarily directed toward supporting economic development. The vast majority of major project needs identified in the plan are metropolitan area based.

(2) Increase the safety and security of the transportation system for motorized and non-motorized users. In the aftermath of September 11, 2001, this issue has taken on increased importance in a region considered to contain an abundance of potential targets. Under specific plan goals, safety of all users of the transportation system is the cornerstone of the plan. The goal includes three objectives which address; 1) various modes, 2) specific accident locations and 3) safe movement of people and goods. In addition, new initiatives by FEMA, the Connecticut Office of Emergency Management and the Connecticut Department of Health will all contain major transportation components for the movement of people in the event of another aggressive incident.

(3) Increase the accessibility and mobility options available to people and for freight. The third general goal of this plan addresses the need to see that the transportation system meets the needs of all segments of the population. From a practical perspective, the issue of freight was first seriously addressed through the reconstruction of the State Pier in New London. Second, off-loading of freight onto barges has become a major initiative of the State Transportation Strategy Board (TSB), the state's five Transportation Investment Areas (TIA's), and SCCOG the MPO. Finally, through the MPO's support of the Eastern Connecticut Transportation Consortium, mobility options for people with disabilities is insured.

(4) Protect and enhance the environment, promote energy conservation and improve quality of life. The second general goal of this plan is to insure that infrastructure investments are environmentally balanced as well as safe, efficient and modally balanced. The specific issue of energy conservation, quality of life and quality of place is being addressed in several ways. First, the region and state continue to promote, through expansion and facility improvements, its complement of commuter lots. The use of these lots continues to be monitored quarterly by SCCOG staff to chart changes in use and determine where improvement needs may exist. Second, the SEAT bus system expansion program potentially brings together elements of clean fuel buses and improved service levels. Third, the Intermodal Connections Southeast Study is focused on reducing traffic on I-95 by transferring those trips to transit. Finally, the centerpiece of the Route 11 project is an accompanying greenway intended to protect hundreds of acres of fragile environmental resources while improving quality of life.

(5) Enhance the integration and connectivity of the transportation system across and between modes, for people and for freight. A primary goal of the plan is to insure connectivity between this region and adjacent regions within Connecticut and surrounding states. An example of a project that would address the discontinuity problem is the completion of Route 11. Connectivity is not only a highway problem but a transit problem as well. Efforts have been underway to make new interregional transit connections. The development of the Shoreline East rail service on the AMTRAK line is an example. New regional connectivity configurations are being explored for both

highways and transit as part of the MIS/EIS activities for both Route 2 and Route 11. Likewise, the new SEAT bus expansion plan has created an opportunity for public transit connections to Hartford through the FTA Jobs Access Program. Finally, the TSB-TIA process has identified rail freight connectivity to be a statewide high priority issue.

(6) Promote efficient system management and operation. The MPO and the state continue to work cooperatively to evaluate and manage each of the following: (a) highway pavement of Federal-Aid highways; (b) bridges, on and off Federal-Aid highways; (c) highway safety; (d) traffic congestion; (e) public transportation facilities and equipment; and (f) intermodal transportation facilities and systems.

(7) Emphasize the preservation of the existing transportation system. This a primary goal of the plan. Each recommendation for improvement is based on the assumption that all the existing systems (highway, rail, air, mass transit, port) will be maintained at least in their existing condition. This was of particular concern, for example, with respect to the State Pier in New London, which until several years ago was in dire need of repair to maintain it as a viable transportation facility. Concern in the plan for maintenance of other major facilities include the Mystic River Bridge, Groton-New London Airport, the Gold Star Bridge, Union Station in New London as it relates to the electrification of the Northeast Corridor rail line, as well as the existing highway network. Another pressing issue in this regard is the need to maintain an adequate channel depth in the Thames River.

XVII. TITLE VI COMPLIANCE: NONDISCRIMINATION AND ENVIRONMENTAL JUSTICE

It has been the Federal Highway Administration's (FHWA's) longstanding policy to actively ensure nondiscrimination under Title VI of the 1964 Civil Rights Act in Federally funded activities. Under Title VI and related statutes, each federal agency is required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion.

The National Environmental Policy Act of 1969 (NEPA) stressed the importance of providing for "all Americans safe, healthful, productive, and esthetically pleasing surroundings, and provided a requirement for taking a "systematic, interdisciplinary approach" to aid in considering environmental and community factors in decision making.

This approach was further emphasized in the Federal-aid Highway Act of 1970: 23 United States Code 109(h) established further basis for equitable treatment of communities being affected by transportation projects. It requires consideration of the anticipated effects of proposed transportation projects upon residences, businesses, farms, accessibility of public facilities, tax base, and other community resources.

On February 11, 1994, President Clinton signed Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The Executive Order requires that each Federal agency shall, to the greatest extent allowed by law, administer and

implement its programs, policies, and activities that affect human health or the environment so as to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations.

As the MPO, it is SCCOG's responsibility to ensure that minorities and low income individuals have equal opportunity to participate in the transportation planning process (See Goal #3,). Furthermore, in order to implement this goal, there needs to be continued monitoring to insure the following:

1. That the benefits of the funds made available for transportation are equitably distributed.
2. That the adverse impacts of projects are not disproportionately distributed to low income and minority individuals or neighborhoods.

SCCOG's strategies to ensure compliance with Title VI include the following:

A. Public Involvement

Since 1976, SCCOG and its predecessor, the Southeastern Connecticut Regional Planning Agency (SCRPA), have been responsible for regional transportation planning. Numerous strategies have been developed to ensure that all population and demographic segments of the region have equal opportunity to participate in the planning process and that no segment absorbs a disproportionate burden. These population segments include the elderly, disabled, minority, low income and others either directly or indirectly affected by proposed expenditures of public funds. Over this time period, the four public involvement techniques that have proven most successful are as follows:

1. Newsletter. SCCOG publishes a bi-monthly newsletter in which articles regularly appear on matters related to transportation. This publication is widely distributed.
2. Regular meetings. The Program Committee of the Regional Planning Commission and the Regional Planning Commission, the planning arm of the COG, hold regularly monthly and bi-monthly meetings which are open to the public. These meetings are advertised and the public is welcome to attend and participate in discussions related to transportation and land use. In addition, beginning in FY 2001, supplementing these transportation planning meetings have been the meetings of the two Transportation Investment Area (TIA) boards on which this region is represented. Several widely advertised public hearings resulted in the identification of new participants in the transportation planning process.
3. Distribution of printed material. As part of SCCOG's Affirmative Action/EEO Employment provisions, an extensive network of organizations dealing with special demographic sectors has been developed. Draft copies of reports are regularly distributed throughout this network. Additionally, this network has been significantly expanded under the Welfare-to-Work/Jobs Access and Reverse Commute Program as well as the TSB-TIA process and the Route 11 Greenway Authority Commission.
4. Formal public hearings. Annually, SCCOG conducts formal public hearings on the following:
 - a. Proposed work program for the upcoming fiscal year.
 - b. Proposed annual update of the long range Regional Transportation Plan.
 - c. Proposed annual update of the Regional Transportation Improvement Program.

- d. Proposed annual update of the State and Regional Transportation Improvement Program.
- e. Proposed annual update of the Air Quality Conformity Statement.
- f. Proposed significant modifications to any of the above at various times during the year.
- g. During FY 2001, public hearings to identify new public participants in the TSB-TIA process were also held as well as hearings on the draft Initial TIA plans for the I-395 Corridor and Southeast Corridor. These hearings are expected to become part of the regular on-going public involvement process of SCCOG. Likewise, the Route 11 Greenway Authority Commission conducted a hearing during FY 2001 and expects to conduct more such hearings as new information is gathered.

B. Monitoring.

All outside public input received from any source at any time is given immediate attention not only for its content but for its source. This process provides the feedback necessary to enable staff to evaluate the effectiveness of various outreach techniques. In some cases, where organizational linkages exist, feedback is derived through the network of organizations with whom SCCOG works on a particular project. SouthEast Area Transit, the regional bus system, is one example where this may occur. The Thames Valley Council for Community Action, the regional anti-poverty agency, is another.

Ongoing monitoring of benefits and burdens occurs at two levels: regional and local. At the regional level, it is SCCOG staff's primary responsibility to monitor benefits and burdens of major large scale projects. At the local level, this responsibility is vested in the individual chief elected officials who serve as the voting members of the Metropolitan Planning Organization (MPO) and who represent the "first line" with respect to their constituents. Additionally, local projects which emerge from the long range transportation planning to the TIP are also subject to local hearings as details emerge. One example of this process is a 1995 ISTEA High Priority project for a regional transportation center in Norwich. This project continues to be revisited as new sites are identified which modify the burdens and benefits balance. The success of the SCCOG Title VI activities can, therefore, be established by the fact that this project has not yet advanced beyond the engineering phase as a result of the interplay of the ongoing analysis of benefits and burdens as it affects transit users.

C. Supporting Demographic Documentation.

As the regional Census repository, SCCOG like its predecessor, SCRPA, prepares a detailed analysis on a block group basis of the socio-economic profile of the region's 20 towns. In the mid-1970's, this became an essential tool in developing a regional bus system to serve the area. Data on low vehicle ownership guided the need for public transportation (see Tables 2 and 3) in the urban areas and provided the basis, on a block by block level, for the development of the transit routes. SCCOG will continue this process as data becomes available from the 2000 Census.

XVIII. SECURITY

Subsequent to the events of September 11, 2001, the issue of national security has taken on added importance. This is especially so in a region such as southeastern Connecticut where security needs have long been recognized and practiced by specialized sectors, including the military and utilities. Facility-centered disaster planning occurs even more widely across the region ranging from Groton-New London Airport to incident management on the interstate system. Clearly, security is not a new issue in southeastern Connecticut.

This section of the Regional Transportation Plan is intended to explore infrastructure elements that provide redundancy in the event of a disaster. This approach is based on several assumptions. The region contains enough strategic assets that could make it the site of a terrorist attack. Further, infrastructure changes previously dismissed by the region as being too aggressive now may be warranted for consideration.

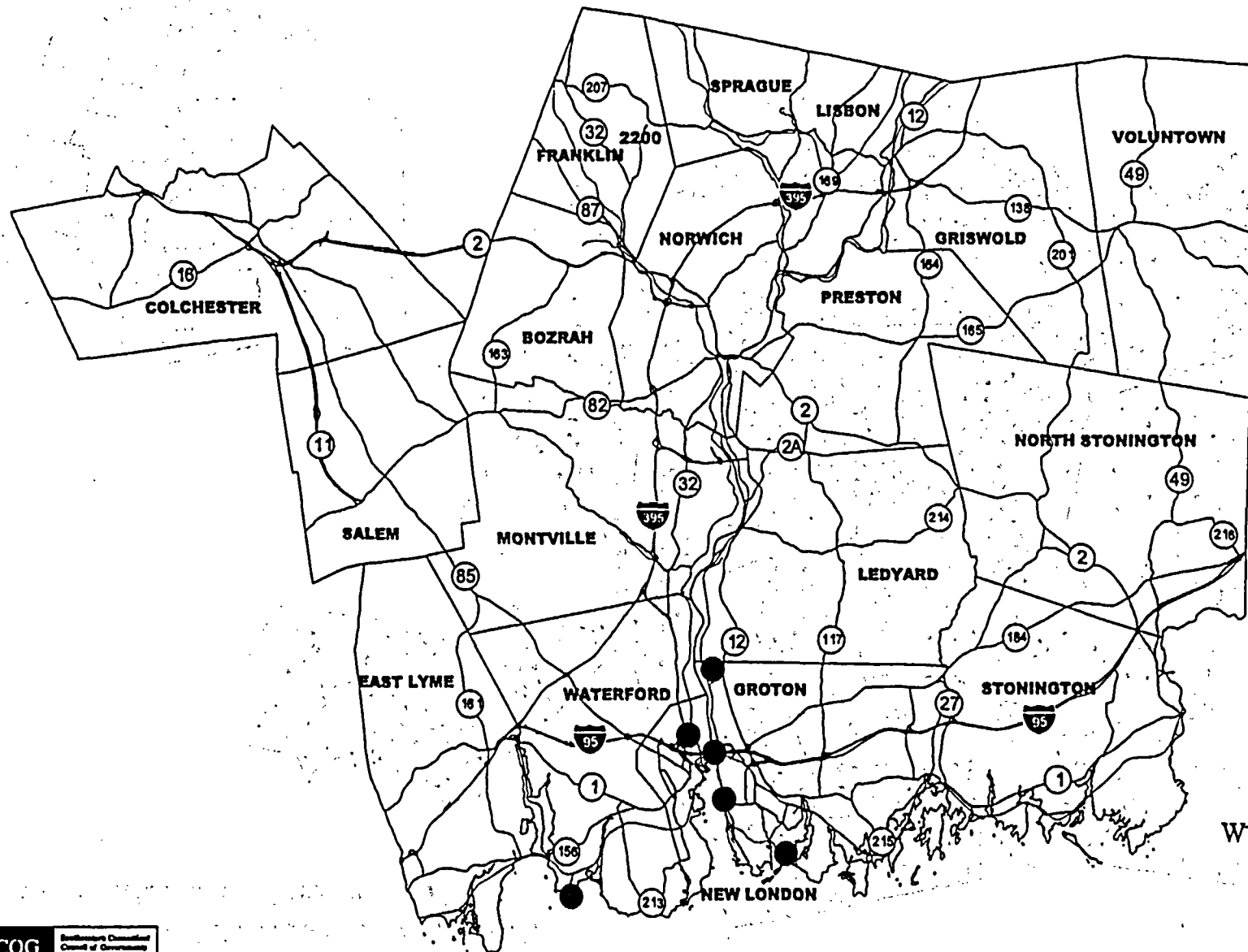
The analysis accompanying this discussion utilizes three data layers: 1) existing infrastructure, 2) population distribution, and 3) high security sites. Figure 17 depicts High Security Sites in the southeastern region. These include 1) Millstone Nuclear Power Plant, 2) U.S. Submarine Base, 3) Electric Boat Division of General Dynamics, 4) Groton-New London Airport 5) Gold Star Bridge, 6) U.S. Coast Guard Academy. A sixth site, Plum Island, is located nine miles off shore in Long Island Sound. While it is technically not in southeastern Connecticut, its proximity to the region should not be ignored. While numerous other potential sites exist (schools, hospitals, churches, casinos, etc.) none are considered having as much national or international significance as the above sites.

While the significance of an attack on each site is clearly quite different, it is immediately apparent from Figure 17 that the sites are all clustered in the southern portion of the region. When the clustering of high security sites is compared with Figure 18, Population Distribution, the full magnitude of the problem presents itself. Less apparent is the shift in population during employment hours where many workers living in outlying, suburban areas are employed in the greater New London/Groton area. Thus, while the full impact of an attack at any one or more of the high security sites can only be approximated, these figures very strongly suggest that a large portion of the region's population lives and works in relatively close proximity to these sites.

The question then becomes: Is the existing infrastructure adequate for evacuation purposes? If not, how will planned infrastructure modifications contribute to improving evacuation capacity? Finally, are there reasonable infrastructure needs that should be considered given some unknown degree of risk of attack? The discussion below addresses the adequacy of the existing transportation system to move large numbers of people in the event of some type of disaster.

I-95: Clearly, Interstate 95 is the major evacuation route in the southern sector of the region. The existing inadequacy of I-95 has already been recognized and efforts are just now under way to make capacity improvements to this section of highway. Serious consideration should now be given to adding additional lanes.

SOUTHEASTERN CONNECTICUT REGION HIGH SECURITY SITES



SCCOG
Southeastern Connecticut
Council of Governments
Regional Information System

Source: ConnDOT

0 2 4 6 8 Miles

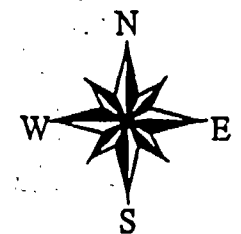
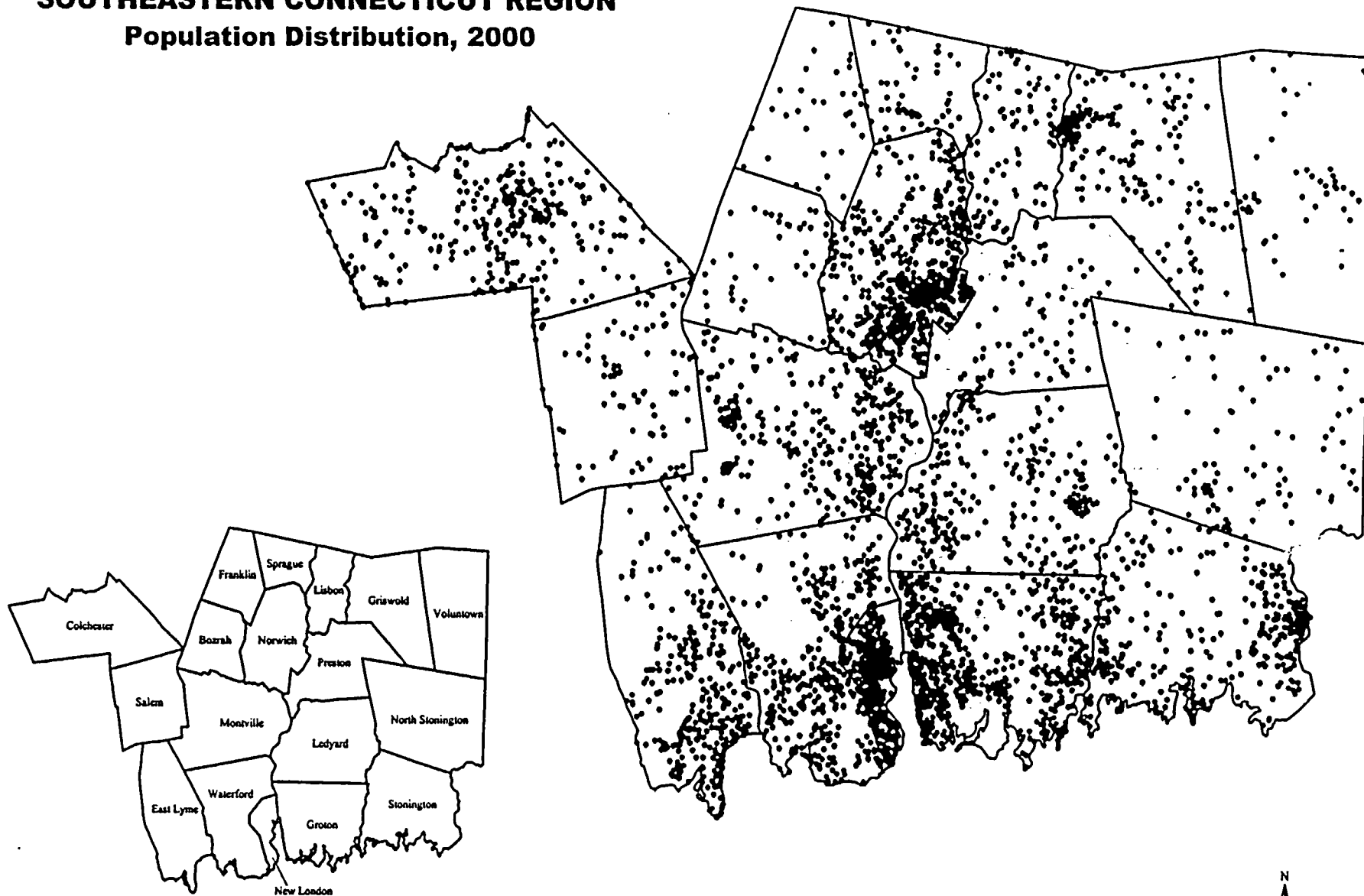


FIGURE 17

SOUTHEASTERN CONNECTICUT REGION

Population Distribution, 2000

74



1 Dot = 50 Persons



2 0 2 4 Miles



FIGURE 18

Route 11: The planned completion of Route 11 will provide additional evacuation capacity from an extremely vulnerable part of the region. This suggests that special attention now be paid to the interchange of Route 11 with I-95 and I-395 so that vehicle movements can be accommodated from any direction.

Route I-395: (See I-95 discussion above.)

State Routes 1, 156, 32, 12: It is doubtful that sufficient capacity improvements could be made to these roads given the level of abutting development. The exceptions to this are the western most portions of Routes 1 and 156, where future widening could occur. However, east of the intersect of these two highways, development abuts the road thereby creating an evacuation bottleneck in the highway network.

Water Evacuation: The coastal location of the region presents an access barrier by other than airplane or boat. It also represents an evacuation barrier by other than the same modes. The impracticality of significant air evacuation at Groton-New London Airport all but eliminates that as an option. Capacity does, however, exist for temporary evacuation by ferry from New London via Cross Sound Ferry, Fox Navigation and the Fishers Island Ferry. Given the proximity of the large employment base in New London and Groton, temporary evacuation by water may prove to be a feasible option.

Bus Transit: Over the course of the past 23 years, an underlying rationale for the purchase of large urban-type buses for the SEAT bus system has been the prospect of their deployment for evacuation of the population. However, even a cursory review of the capacity of the entire fleet, if it were deployed in such a manner, would suggest severe limitations in meeting this need. At present, the SEAT system is comprised of 25 vehicles each with a capacity of 46 seats plus standing room for 23. This yields a total fleet capacity of 1725. While not insignificant, it does reveal the limits of the bus transit system in meeting this potential need.

Thames River Crossing: Due to the bi-lateral separation of the region by the Thames River, the most significant transportation linkage in the highway system is the Gold Star Bridge. Some redundancy already exists in the form of a second span of the Gold Star Bridge over the Thames as well as the Mohegan-Pequot Bridge further north. However, for the long-term future, a third bridge span of the Thames River, midway between the Gold Star Bridge and the Mohegan-Pequot Bridge, should be studied.

XIX. FINANCIAL ANALYSIS/TOP PRIORITY PROJECTS

The preparation of a long range regional transportation plan follows a format set forth in federal regulation. Central to this format is the federal requirement for "fiscal constraint" over the 20-year spectrum of such a plan. This requirement compels a general analysis of anticipated revenues to meet the project expenses of projects depicted in the plan. Table 11, prepared by CONNDOT in 1999, presents estimated gross revenue thresholds, by region, over a 20-year period based on allocations under the Federal Transportation Equity Act for the 21st Century (TEA-21). These figures are the basis under which fiscal analysis is being conducted. Two matters are of critical note. First, the analysis excludes other non-federal potential revenue sources. This is due to the fact that compliance with the federal fiscal constraint requirement limits inclusion of other revenue sources for regional planning purposes unless those revenues can actually be documented at the time the plan is prepared. Second, and perhaps more important at this juncture, is the fact that TEA-21 is scheduled for re-authorization in October, 2003. This analysis presumes that future funding levels made available as part of the Congressional TEA-21 re-authorization process will be equal to present funding levels.

As shown in Table 11, the southeast region can optimistically expect to receive \$1,573,966,089 over the next 20 years. This gross estimated revenue threshold will be available to be used for the following types of projects: system improvements, system preservation or maintenance, projects of major statewide significance. This latter category, shown at \$745,600,000, would include such projects as improvements to I-95, completion of Route 11, and Route 2. Proportionally, 23% of the total will be for system improvements (\$187,836,269) and 77% for system maintenance (\$640,529,819). Annualized, the average allocations become \$7.4 million for improvements and \$32 million for maintenance, respectively. Experience has demonstrated that these estimates are liberal and for all practical purposes, these figures may actually over-estimate revenues by as much as 30% - 40% for the improvement-type projects.

The Regional Transportation Plan primarily focuses on matters related to system improvements. These types of projects are defined as those which are intended to improve safety, mobility, increase system productivity or promote economic growth. The emphasis on improvement-type projects, as opposed to maintenance type projects, is related to parallel responsibility of CONNDOT. Maintenance projects primarily address such needs as repaving, bridge repair or replacement and any other form of reconstruction, in place. While the bulk of the funds available under TEA-21 are for maintenance projects, these type projects tend to be managed at the state level according to need and funding availability and therefore become the primary emphasis of the state transportation planning process.

For the purpose of presentation, projects depicted in Table 12 are organized by town. Within the format, projects are further organized under 3 different schedule categories covering the 20-year time period of this Plan. First, projects shown as scheduled within a 1-3 year period do not represent the highest priority. Instead, they depict those projects that are actually in the process of implementation. These projects also appear in the Transportation Improvement Program (TIP). Fiscal constraint of projects scheduled for implementation in the TIP is a matter established in a parallel accounting process by CONNDOT and approved by FHWA. For this reason, the sum in the 1-3 year column is assumed valid. Projects shown in the 4-10 and 11-20 year categories become not only the vehicle for

TABLE 11

**ALLOCATION OF ANTICIPATED FUNDS TO CONNECTICUT PLANNING REGIONS
1999-2019**

	SYSTEM IMPROVEMENTS	SYSTEM PRESERVATION		
Distribution	Weights			
Vehicle Miles of Travel	0.25	0.25		
Congested Vehicle Miles of Travel	0.75	0		
Lane Miles	0	0.75		
PLANNING REGIONS			MAJOR PROJECTS OF STATEWIDE SIGNIFICANCE	TOTALS
Southwestern	623,299,166	389,825,819	197,121,000	1,210,245,985
Housatonic Valley	237,506,158	293,385,005	232,672,000	763,563,163
Northwestern Conn.	18,489,239	189,998,294	.	208,487,532
Litchfield Hills	70,687,455	292,345,506	.	363,032,961
Central Naugatuck Valley	325,688,250	361,122,500	253,320,000	940,130,750
Valley	48,030,145	109,610,536	.	157,640,681
Greater Bridgeport	368,519,775	297,253,281	148,505,000	814,278,056
South Central	627,286,626	703,829,919	1,080,595,000	2,411,711,545
Central Connecticut	120,919,602	239,058,893	48,700,000	408,678,495
Capitol	786,964,384	1,100,465,240	216,623,500	2,104,053,125
Midstate	95,051,053	256,228,871	.	351,279,925
Connecticut River Estuary	76,876,745	208,202,359	232,500,000	517,579,103
Southeastern	187,836,269	640,529,819	745,600,000	1,573,966,089
Windham	135,719,700	242,650,373	76,623,500	454,993,573
Northeastern	44,792,302	292,151,564	4,140,000	341,083,867
Undefined Towns	35,657,384	88,328,400	.	123,985,785
Totals	3,803,324,254	5,704,986,381	3,236,400,000	12,744,710,635

Note: System improvements are projects which enhance safety, improve mobility, increase system productivity or promote economic growth.

System Preservation are projects such as repaving roadways, bridge repair or replacement and any other form of reconstruction in place.

expressing priority but also represent the primary focus of the fiscal constraint analysis for the purposes of long-range regional planning. All projects shown in either of these time periods shall be considered meeting the fiscal constraint requirement if the total amount of revenues estimated to be available in either time period is equal to, or greater than, the total estimated cost of all the projects in that time period. As derived from Table 11, the total funds grossly available for enhancement type projects for 4-10 year time period is estimated to be \$65.8 million (7 years x \$9.4 million) while for the 10-year, 11-20 year plan time period, approximately \$94 million is estimated to be available (10 years x \$9.4 million).

The total estimated cost of all projects shown in Table 12 for the 4-10 year period is \$48.5 million while the total estimated cost of all projects in the 11-20 year period is \$47.7 million. It should be noted that there are a large number of projects shown in the plan as unfunded, with a time period designated as to be determined (TBD). Several of these projects are known to be of high, or very high, capital and operating cost. In all likelihood, if these projects were included in the Regional Transportation Plan as funded projects, it would result in the plan exceeding the fiscal constraint requirement. While these high cost projects collectively represent the expressed desires of the people of southeastern Connecticut as established through the public participation process, special funding will be needed for these projects beyond the regular finding available through traditional means. For this reason, all projects shown as unfunded and TBD are not considered a formal part of this plan for the purposes of fiscal constraint.

In addition, there are several projects whose cost is displayed in parenthesis (\$). This was done to alert the reader that the cost of these projects was not attributable toward the fiscal constraint ceiling as a result of a unique source of funds. Typical of this situation are projects which received special high priority funding through the initial TEA-21 authorization.

At the same time, consideration has been given to assigning priority to the various municipal projects. This is especially important in cases such as the urban communities which have identified many more needs than for which funding is available.

Highest Priority Projects:

Regionally, the four top priority projects include the following:

- 1) Completion of Route 11 from Salem to I-95 in Waterford.
- 2) Capacity improvements to I-95 from Branford to the Rhode Island State line.
- 3) Expansion of the regional bus system to address tourism and tourism employment demand.
- 4) Improvements to Routes 2, 2A, 32 including capacity improvements to the Mohegan-Pequot Bridge.

While the fiscal analysis demonstrates that the FY 2004 Regional Transportation Plan meets the federal fiscal constraint requirement, questions may arise as to why projects depicted as unfunded are not placed in the 11-20 year time period where ample financial ceiling exists to accommodate them. The explanation is twofold. First, many of the projects listed are not on Federal Aid roads. Second, with ample ceiling in both the 4-10 and 11-20 year time periods, SCCOG, acting as the MPO, appears to have the opportunity to advance a variety of needed projects as future needs dictate.

APPENDIX A

**PROPOSED TWENTY-YEAR FINANCIAL ANALYSIS
FOR TRANSPORTATION PROJECTS PLAN**

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
BOZRAH: State Highways						
Route 163	Intersection modifications at Route 612 and Route 2 ramps	11 - 20	TEA-21			250
Route 82	Improve sight lines at Wawecus Hill Road	11 - 20	TEA-21			1,500
Route 608	Improve drainage, various locations	11 - 20	TEA-21			1,000
BOZRAH: Town Roads						
Bozrah Street Ext	Bridge repair or replace	4 - 10	Bridge		487	
Stanton Hill	Bridge repair or replace	4 - 10	Bridge		(80)	
COLCHESTER: State Highways						
Route 16	Intersection improvements at Route 85, Town Green	4 - 10	TEA-21		1,750	
	Climbing lanes, various locations west of the Borough	4 - 10	TEA-21		500	
Route 2	Interchange improvements at Exit 17, add eastbound on-ramp, westbound off-ramp	4 - 10	TBD			
Route 85	Traffic analysis from McDonald Road to the Broadway/Amston Road Intersection	4 - 10	TBD			
COLCHESTER: Town Roads						
	Develop a comprehensive system of sidewalks to serve older dense portions of town	4 - 10	TBD			
	Interconnection of (4) Greenways with a bike/trail system	4 - 10	TBD			
	Town center parking analysis to determine needs for future development	4 - 10	TBD			
Chestnut Hill Road	Connector road from Route 354 to Chestnut Hill Road	4 - 10	TBD			
Norwich Avenue	Connector road from Norwich Avenue to Lebanon Avenue (Route 16)	4 - 10	TBD			
Cragin Road	Connector road, extension of Cragin Road to Clark Lane	4 - 10	TBD			
Town Green	Parking/stripping determination/formalization at Town Green	4 - 10	TBD			
Route 149	Construct walkway along Rte 149 under Rte 2, along Old Hartford Rd back to Air Line Trl	4 - 10	TBD			
SUBTOTAL:					2,737	2,750

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
EAST LYME: State Highways						
I-95	Ramp realignment at Exit 74 (southbound)	4 - 10	TEA-21		2,000	
I-95	Interchange improvements at Exit 75, I-395	TBD				
Route 1	Add bike lane from Route 161 to Old Lyme town line	11 - 20	TEA-21			
Route 11	Complete construction to I-95	TBD				
Route 161	Traffic Access Management Study	4 - 10	Unfunded			
Route 161	Tourist Information Center	4 - 10	Unfunded			
Route 161	Add bike lane from Route 1 to Montville town line	11 - 20	TEA-21			
Route 161	Construct sidewalks from Route 1 to Route 156	(in prog)	Town	(400)		
Route 156	Waterfront Pedestrian Walkway along Niantic Bay	(in prog)	TEA-21/DEP	(3,800)		
Route 156	Railroad Underpass for Intermediate Access to Walkway	4 - 10	TEA-21			3,000
Route 156	Pedestrian and Crosswalk improvements in Main Street District	4 - 10	TEA-21		500	
EAST LYME: Town Roads						
East Society Road	Upgrade and connect to Route 161 to create frontage road	4 - 10	Unfunded			
FRANKLIN: State Highways						
Route 32	Install traffic signal at Intersection of Route 610	4 - 10	TEA-21		80	
Route 87	Improve intersection sight lines at Murphy Road	4 - 10	TEA-21		150	
FRANKLIN: Town Roads						
Old Willimantic Rd.	Construct new footbridge over Yantic River	TBD	Unfunded			
SUBTOTAL:					5,467	5,750

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
FRANKLIN: Town Roads - Continued						
Murphy Road	Widen and improve railroad crossing	TBD	Unfunded			
Murphy Road	Widen and improve from railroad crossing to Route 87	TBD	Unfunded			
GRISWOLD: State Highways						
Route 138	Solve winter icing problem in the vicinity of the Grange Hall in Pachaug	4 - 10	TEA-21		250	
Route 201	Realign and widen between Route 12 and I-395	1 - 3	TEA-21	1,771		
Route 201	Realign northerly of the North Stonington town line	11 - 20	TEA-21			3,500
Route 201	Improve sight lines and make geometric improvements at intersection with Edmond Road	11 - 20	TEA-21			500
GRISWOLD: Town Roads						
GROTON (TOWN): State Highways						
Route 1	Reconstruct from vicinity of intersection with Poquonnock Road North to Ring Drive	11 - 20	Unfunded			10,200
Route 1 & 215	Downtown Mystic and Route 215 Streetscape Project (High Priority Funding)	1 - 3	TEA-21	(3,125)		
	Downtown Mystic & Route 215 Utility Underground Project (Phase II TCSP Funding)	1 - 3	TEA-21	(1,000)		
Route 1	Geometric improvement at intersection of Fishtown Road	4 - 10	Unfunded		(250)	
Route 1	Intersection improvements at Kings Highway to eliminate left turns	4 - 10	Unfunded		(100)	
Routes 1 & 215 (Ft Hill)	Geometric and operations improvements at intersection	4 - 10	TEA-21		750	
Route 12	Intersection modification at Crystal Lake, Gungywamp and Tollgate Rds.	4 - 10	TEA-21		600	
1-95	Provide protection against spill/pollution events in vicinity of Public Watershed/Reservoir	4 - 10	TEA-21		750	
Route 614	Reconstruct from Cow Hill Road to Route 184	4 - 10	Unfunded		(5,500)	
SUBTOTAL:				1,771	7,817	19,950

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
GROTON (TOWN): State Highways - Continued						
Route 649	Reconstruct roadway from Tower Avenue north to Route 1	11 - 20	Unfunded			(1,900)
Route 649	Reconstruct from Rainville Avenue to Tower Avenue	11 - 20	Unfunded			(3,300)
Route 649	Improve South Road underpass	11 - 20	Unfunded			(2,000)
GROTON (TOWN): Town Roads						
Railroad Underpasses	Eliminate height limitation at Poquonnock Road	4 - 10	TEA-21		3,000	
Railroad Underpasses	Improve and eliminate height limitation at Depot Road	4 - 10	TEA-21		750	
Flanders Road Area	Construct a road between Route 117 & Flanders Road to provide access to and from I-95	1 - 3	State Bond	9,300		
Military Highway	Construct walkway/bikeway along west side of road, south of Nautilus Memorial	TBD	Unfunded			
Thomas Road	Construct bikeway/walkway along West Side from Shennecossett M.S. to High Rock Rd.	1 - 3	Local	690		
Crystal Lake Road	Reconstruct from Military Highway to Route 12	11 - 20	TBD			1,600
Townwide	Complete Traffic Preemption System installation at all 46 locations	1 - 3	Local	500		
Poquonnock Road	Reconstruct from Route 1 to Route 649	4 - 10	Local		2,400	
Tollgate Road	Reconstruction from Route 12 to Route 184	4 - 10	Local		1,800	
GROTON (CITY): State Highways						
Route 349	Improve intersections on Eastern Point Road with Chester Street and Shennecossett Road	1 - 3	TEA-21	500		
Route 349	Improve radii on northeast and southeast corners of intersection with Rainville and Brandegee Avenues (coordinated with Rte. 649 project)	1 - 3	TEA-21	300		
Route 349	Increase radius at southeast corner of intersection with Benham Avenue	1 - 3	TEA-21	300		
Route 649	Sidewalk reconstruction & intersection improvements between Brandegee Ave. & Poquonnock Road (Rainville connector)	1 - 3	TEA-21	100		
SUBTOTAL:				13,461	15,767	21,550

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
GROTON (CITY): Local Roads						
Thames Street	Reconstruct from Bridge Street to Poquonnock Road	4 - 10	TEA-21		1,500	
	Complete Heritage Park Project	4 - 10	TEA-21		750	
Bridge Street	Reconstruct from 100' east of Monument Street to Thames Street	4 - 10	TEA-21		1,000	
LEDYARD: State Highways						
Route 12	Add climbing lane south of Long Cove Road	4 - 10	TEA-21		500	
	Whalehead Road intersection improvements	4 - 10	TEA-21		750	
Route 117	Access management in Ledyard Center	4 - 10	TEA-21		1,600	
Route 2	Reconstruct between Routes 164 and 214 as 4-lane boulevard	1 - 3	Private			
Route 214	Safety improvements including sight line improvements at Spicer Hill Rd. intersection	TBD	Unfunded			
LEDYARD: Town Roads						
Long Cove Road	Intersection improvements at Route 12	TBD	Unfunded			
Baldwin Hill Road	Widen from Long Cove Road to new Navy housing	TBD	Unfunded			
Shewville Road	Bridge rehabilitation	TBD	Maint			
Stoneybrook Road	Bridge rehabilitation	TBD	Maint			
LISBON: State Highways						
Route 138	Realign and widen between Route 660 and Route 12	11 - 20	TEA-21			4,500
Route 138	Reconstruct intersection with Route 169	11 - 20	TEA-21			750
Route 169	Realign and widen between I-395 and the Shetucket River Bridge	4 - 10	TEA-21		2,500	
SUBTOTAL:				13,461	24,367	26,800

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
LISBON: Town Roads						
MONTVILLE: State Highways						
Route 11	Complete construction to I-95	TBD	Unfunded			
Route 32	Realign Ice House curve and improve traffic operations from Maple Ave. to Raymond Hill Rd.	4 - 10	Unfunded			
Route 32	Warning blinker northbound approaching St. Bernard Drive	4 - 10	Unfunded			
Route 32	Construct sidewalks from Powerhouse Rd. To Route 163	4 - 10	Unfunded			
Route 85	Complete spot safety improvements	4 - 10	Unfunded			
MONTVILLE: Town Roads						
Old Colchester Rd.	Reconstruct from Oxoboxo Dam Rd. to Old Colchester Rd. Ext.; replace bridge over Oxoboxo	4 - 10	TEA-21		1,800	
Old Colchester Rd.	Reconstruction and drainage improvements from Sharp Hill Rd. to Moxley Rd.	4 - 10	TEA-21		900	
Fitch Hill Rd.	Realign intersection with Leffingwell Rd.	1 - 3	Town	(275)		
NEW LONDON: State Highways						
Route 1	Improve turning radius at northeast corner of intersection of Colman Street and Jefferson Avenue	4 - 10	TEA-21		450	
Route 1	Sidewalks, various locations	TBD	Unfunded			
I-95	Install noise barrier along south side between Norwood Avenue and Briggs Street	TBD	Unfunded			
Route 213	Install storm drains between Willetts Avenue and Bank Street	4 - 10	TEA-21		300	
Route 213	Install storm drains between Plant Street and Niles Hill Road	4 - 10	TEA-21		350	
Route 213	Sidewalks, various locations	TBD	Unfunded			
SUBTOTAL:				13,461	28,167	26,800

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
NEW LONDON: State Highways - Continued						
Broad & Colman Sts.	Intersection improvements	TBD	Unfunded		(2000)	
NEW LONDON: City Streets						
City-wide	Traffic signal synchronization study	TBD	Unfunded			
Montauk Avenue	Install drainage in east side of street between Thames and Plant Streets	TBD	Unfunded			
Ocean Avenue	Install drainage from Niles Hill Road to Glenwood Avenue	TBD	Unfunded			
Ocean Avenue	Streetscape improvements	4 - 10	Unfunded		(500)	
Bank/Montauk/Ocean	Roadway widening and turning lane improvements	4 - 10	Unfunded		(3000)	
Williams/Briggs St.	Signal and improvements	4 - 10	Unfunded		(150)	
Willetts Avenue	Right turn lane eastbound at Ocean Avenue	4 - 10	Unfunded		(150)	
Glenwood Avenue	Install drainage from Ocean Avenue to Thames River	TBD	Unfunded			
Vauxhall Street	Improve channelization in the vicinity of I-95	TBD	Unfunded			
Pequot Avenue	Reconstruct drainage outfall from Caulkins Park side of AMTRAK right-of-way to Greens Harbor Beach. Reconstruct drainage outfall from Caulkins Park side of AMTRAK to Thames River, and eliminate existing sewer. Install drainage from Maple Avenue to Greens Harbor Beach. Install drainage at the intersection with Howard, Willetts, and Shaw Streets	TBD	Unfunded			
City-wide	Curbing, resurfacing, and catch basin reconstruction	TBD	Unfunded			
City-wide	Traffic signal synchronization - closed loop system	4 - 10	Unfunded		(1500)	
Vauxhall Street	Improve intersection Phillips Street	TBD	Unfunded			
Downtown	Undertake structural repairs to the Winthrop Parking Garage	TBD	Unfunded			
Downtown	Remove all pedestrian sidewalk obstructions. Install traditional furnishings, benches, map posts, landscaping and trash receptacles. Install paving blocks as replacement for cross walks.	TBD	Unfunded			
SUBTOTAL:				13,461	28,167	26,800

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
NEW LONDON: City Streets - Continued						
Downtown	Install gateways at CBD entry points (Parade area, Tilley/Bank Street, Broad/Huntington/Gov. Winthrop Blvd., Eugene O'Neill/Gov. Winthrop Blvd.) including landscaping, paving treatments, street furnishing; directional signage.	TBD	Unfunded			
Downtown	Coordinate all signalized intersections by installing a new master controller, interconnect system and local controllers along with a retiming of each location	TBD	Unfunded			
Downtown	Public Transit Improvements. (High priority funding)	1 - 3	TEA-21			
Downtown	Pedestrian Walkway/Bikeway connecting Connecticut College, Coast Guard Academy to Downtown	1 - 3	TEA-21	1,250		
City-wide	Develop a clear, coordinated system of directional signs for motorists	TBD	Unfunded		(400)	
City-wide	Repair and/or replace pedestrian activated signals at key intersections/crossings	TBD	Unfunded			
Howard Street	Repair bridge/storm water outfall near Hamilton	TBD	Unfunded			
Vauxhall Street	Reconstruct gutter, curb; sidewalk near Perkins Street	TBD	Unfunded			
Bayonet Street	Install storm drainage between Margaret Street and Colman Street	TBD	Unfunded			
Garibaldi Square	Install storm drainage	TBD	Unfunded			
Trumbull Street	Construct sidewalk curb & storm drainage between Pequot Avenue & Naumeaug	TBD	Unfunded			
Mill Street Bridge	Install metal guard rails	TBD	Unfunded			
Jefferson Avenue	Construct sidewalk, handicap ramps	TBD	Unfunded			
City-wide	Remove and reconstruct street pavement to improve curb reveal and street gutter drainage	TBD	Unfunded			
Eugene O'Neill Drive	The public parking lots on Eugene O'Neill Drive should be repaved, striped, illuminated, landscaped, provided with edge treatments and circulation improvements	TBD	Unfunded			
South Water Street	Extend South Water Street to Sparyard Street and replace the chain link AMTRAK right-of-way fence with an ornate wrought iron fence	TBD	Unfunded			
Water Street	Elevated pedestrian bridge over AMTRAK (High Priority Funding)	1 - 3	TEA-21			
SUBTOTAL:				14,711	28,167	26,800

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
NEW LONDON: City Streets - Continued						
Tilley/Bank Street	Realign Tilley to connect with S. Water St. & reconfigure intersection of Bank St. to provide double right turn from Tilley St. to Bank St. & new synchronization	TBD	Unfunded		350	
NORTH STONINGTON: State Highways						
Route 2	Reconstruct from Route 201 to I-95 in Stonington	TBD	Unfunded			
Route 2	At Route 627 add left hand turn lanes from Route 2 onto Main St. and Old Mystic Road. Reduce radius on south side of Old Mystic Road.	4 - 10	TEA-21		225	
Route 2	Establish No Passing Zone from Route 201 N, east to I-95	TBD	Unfunded			
Route 2	East of Main Street to west of Route 184, widen to add shoulder. Add left turn lane eastbound into Dunkin' Donuts and Bess Eaton.	TBD	Unfunded			
Route 2	At Holly Green, add left turn lane, westbound.	TBD	Unfunded			
Route 2	At Route 201 south, extend eastbound right turn lane.	TBD	Unfunded		(50)	
Route 2	From Ledyard to Route 201 north, westbound, install left turn lanes at Wintechog Hill Road; eastbound, install left turn lanes at Swantown Road.	4 - 10	TEA-21		80	
Route 2	Holly Green to North Main Street, widen to add shoulder.	TBD	Unfunded			
Route 2	Holly Green to Route 201, widen to add shoulder.	TBD	Unfunded			
Route 2	Route 184 to I-95, widen to add shoulder.	TBD	Unfunded			
Route 2	At Route 201/ Ryder Road intersection, eliminate inner lane westbound and add curbing.	4 - 10	TEA-21		10	
Route 2	Caution light at Rocky Hollow Road.	TBD	Unfunded			
Route 49	Improve intersection at Babcock Road.	TBD	Unfunded			
Route 201	Improve intersection with Route 627 and Wintechog Hill Road	TBD	Unfunded			
Route 201	Realign and widen south of Route 627	TBD	Unfunded			
I-95	Add chatter strips on northbound and southbound lanes on both sides.	4 - 10	TEA-21		100	
SUBTOTAL:				14,711	28,932	26,800

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
NORTH STONINGTON: State Highways - Continued						
I-95	Add signage on I-95 southbound from Rhode Island border, for casino traffic to continue to Exit #92 at Route 2.	TBD	Unfunded			
Route 184	At Boombridge Road, addition of overhead caution, 4-way, blinking traffic light.	TBD	Unfunded			
Route 216	Reconstruct intersection at Route 184 at southbound I-95 off ramp.	TBD	Unfunded			
Vicinity of Route 184	Construct perimeter access road. (As per Access Management Plan)	TBD	Unfunded			
NORWICH: State Highways						
Route 2	Sidewalks, Route 12 to Preston town line	4 - 10	Unfunded			
	Sidewalks, east side to Mashantucket Parking Lot	TBD	Unfunded			
Route 2/32	Sidewalk replacement on Washington St., Harland Rd. to Route 82	4 - 10	Unfunded			
Route 82	Improvements from Maplewood Court to Wal-Mart	4 - 10	TEA-21		1,000	
	Widen and provide turning lanes, I-395 to Route 32	4 - 10	Unfunded			
Route 12	Improve intersections at north and south ends of Central Avenue	11 - 20	TEA-21			1,000
	Improve drainage near intersection with Boswell Avenue	4 - 10	TEA-21		250	
	Construct sidewalks in various locations at Laurel Hill	11 - 20	TEA-21			100
Route 97	Modify intersections at Route 169, Baltic Road, Bridge St., Occum Rd. & Canterbury Tpke.	4 - 10	TEA-21		3,000	
Route 642	Improve bridge over New England Central Railroad	11 - 20	TEA-21			2,000
Route 32	Sidewalks, Thamesville to Trading Cove	TBD	Unfunded			
	Sidewalks, Route 82 to Montville town line	4 - 10	Unfunded			
NORWICH: City Streets						
Lawler Lane	Reconstruct between Scotland Road & I-395	TBD	Unfunded			
SUBTOTAL:				14,711	33,182	29,900

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
NORWICH: City Streets - Continued						
Central Bus. District	Const. Regional Transportation Ctr. & supplemental parking lots (High Priority Funding)	1 - 3	ISTEA	12,000		
	Continue Heritage Walkway from Howard Brown Park to Railroad Place	4 - 10	Unfunded		(300)	
	Sidewalks, various locations	TBD	Unfunded		(300)	
	Continue Heritage Walkway from Railroad Place to Greeneville	4 - 10	Unfunded		(900)	
Dunham Street	Reconstruct from West Thames Street to Elizabeth Street	TBD	Unfunded			
Browning Road	Reconstruct from Rogers Road to Dalewood Drive	TBD	Unfunded			
Wawecus Street	Repair Bridge over Yantic River	4 - 10	Bridge		500	
Canterbury Tpke.	Reconstruct from I-395 to Occum	4 - 10	Unfunded			
PRESTON: State Highways						
Route 2	Realign and signalize the intersections at Ross Road and Mathewson Mill Road	4 - 10	TEA-21		1,400	
SALEM: State Highways						
Route 11	Complete construction to I-95	TBD	Unfunded			
Route 82	Improve drainage between Route 85 and Hagen Road	4 - 10	TEA-21		350	
Route 85	Improve traffic control at intersection with Rattlesnake Ledge Road	4 - 10	TEA-21		80	
Route 85	Correct surface drainage conditions north of Salem Firehouse	TBD	Unfunded			
Route 85	Safety improvements from Route 82 to Montville	4 - 10	TEA-21		1,500	
Route 354	Modify curve one-half mile south of Witter Road intersection	11 - 20	TEA-21			800
SALEM: Town Roads						
Rattlesnake Ledge Rd.	Install metal guide rail along steep grade one mile east of Route 85	TBD	Unfunded			
SUBTOTAL				26,711	37,012	30,700

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
SPRAGUE: State Highways						
Route 97	Install sidewalks in various locations	TBD	Unfunded			
SPRAGUE: Town Roads						
Hanover/Versailles Rd.	Upgrade 2,250 ft. of road					
	Replace 6 sets of catch basins and crossover pipe	TBD	Unfunded			
	Replace 48" brook pipe					
Westminster Road	2000' of storm drainage improvements	TBD	Unfunded			
Pot Ash Hill Road	Replace bridge over Little River	TBD	Unfunded			
STONINGTON: State Highways						
Route 1	Realign, widen, and add sidewalks from Greenhaven Road to Route 234	11 - 20	TEA-21			2,500
Route 1	Improve roadway, including underpass and intersections, from Route 2 to state line	11 - 20	TEA-21			6,000
Route 27	Improve sight lines at intersection with Route 1	4 - 10	TEA-21		1,500	
	Greenmanville Avenue Streetscape including Rossi Mill rehabilitation. (High Priority Funding)	1 - 3	TEA-21	(2,526)		
Route 184	Improve sight lines at intersection with Route 201	4 - 10	TEA-21		500	
Route 234	Improve sight lines at intersection with Farmholme Road	11 - 20	TEA-21			500
Route 234	Make drainage and spot safety improvements in various locations	11 - 20	TEA-21			1,500
STONINGTON: Town Roads						
Masons Island Road	Reconstruct between Route 1 and railroad bridge	TBD	Unfunded			
Lantern Hill Road	Modify intersection at Marjorie Street	TBD	Unfunded			
SUBTOTAL				26,711	39,012	41,200

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
STONINGTON: Town Roads - Continued						
Jerry Brown Road	Curbing, drainage, and resurfacing from Route 27 to Pequot Sepos Road	TBD	Unfunded			
Jerry Brown Road	Improve sight lines at Pequot Sepos Road	TBD	Unfunded			
Coogan Boulevard	Install sidewalks as needed	TBD	Unfunded			
Coggswell Street	Vehicular bridge connecting Coggswell to Canal Street in Westerly, RI	TBD	Unfunded			
VOLUNTOWN: State Highways						
Route 49	Realign curve in vicinity of Hodge Pond Road	11 - 20	TEA-21			1,000
Route 49	Reconstruct entire length	11 - 20	TEA-21			4,000
VOLUNTOWN: Town Roads						
WATERFORD: State Highways						
Route 85	Widen four lanes, plus turning lanes, from Harvey Avenue to Jefferson Avenue and construct pedestrian walkways from Jefferson Avenue to Harvey Avenue	4 - 10	TEA-21		2,500	
Route 85	Extend Frontage Roads to Route 85					
Route 11	Complete construction to I-95	TBD	Unfunded			
I-95	Improve expressway and frontage roads from I-395 to New London	TBD	Unfunded			
Route 1	Improve intersection at Cross Road	4 - 10	TEA-21		500	
Route 1	Improve intersection at Avery Lane	11 - 20	TEA-21			1,500
I-395	Construct off-ramp for northbound traffic at interchange with Route 693	4 - 10	TEA-21		4,500	
Route 32	Pedestrian Safety Improvements	TBD	Unfunded			
	Realign intersection with Maple & Lathrop Roads	4 - 10	TEA-21		500	
SUBTOTAL:				26,711	47,012	47,700

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
WATERFORD: State Highways - Continued						
Route 1	Reconstruct from Willetts Avenue to New London town line					
	Replace bridge over Jordan Brook					
	Pedestrian safety improvement & access management Avery Ln to New London town line	4 - 10	TEA-21		1,500	
Route 156	Intersection improvements in vicinity of Route 1 to town hall/high school entrance					
	Pedestrian and safety improvements from Route 1 to Avery Lane					
WATERFORD: Town Roads						
Cross Road	Reconstruct Cross Road Bridge at Parkway North. (High Priority Funding)	1 - 3	TEA-21	(1,823)		
SUBTOTAL				28,711	48,512	47,700

TABLE 12: PROPOSED TWENTY-YEAR TRANSPORTATION PROJECT PLAN

Project	Description	Period	Funding	Est. Cost (\$000)		
				1 - 3	4 - 10	11 - 20
AIR:						
Groton-New London Airport, CONNDOT	EIS for R/W 5-23 Safety Areas	1 - 3	FAA, State	(300)		
	Reconstruct R/W 15-33 & T/W "B"	1 - 3	FAA, State	(3,000)		
	Tree Removal Plan V.M.P.	1 - 3	FAA, State	(75)		
Groton-New London Airport, CONNDOT	Improvements to R/W 5-23 Safety Areas	TBD	FAA, State			
	Rehab Terminal Ramp	4 - 10	FAA, State		(1,000)	
	Tree Cutting	4 - 10	FAA, State		(500)	
	Rehabilitate T/W "C"	4 - 10	FAA, State		(3,000)	
MARINE:						
	Dredging of lower Thames River Channel					
TRANSIT:						
Southeast Area Transit	Expand bus fleet. (High Priority Funding)	1 - 3	TEA-21	(4,500)		
	Operating subsidy	1 - 3	State			
	Purchase various support vehicles, other facility improvements	1 - 3	FTA	2,327		
	Implement recommendations of Intermodal Connections Study for rolling stock and facilities	4 - 10	FTA			
Eastern CT Transp. Consortium	Purchase ADA Vans	4 - 10	FTA			
SUBTOTAL:				2,327		

APPENDIX B: ACRONYMS RELATING TO TRANSPORTATION

CAAA	<u>Clean Air Act Amendments of 1990.</u> A law establishing new national ambient air quality standards (NAAQS) and a timetable for their achievement. The CAAA imposes different attainment requirements on different areas of the country depending on the degree of deviation from the standard. In Connecticut, the western portion of the state, which has the worst air pollution problem, is designated under the Act as "severe" while the remainder of the state, which has less of an air pollution problem, is only designated as "serious ". Under this complex administrative structure, transportation infrastructure projects that occur in New Britain, for example, affect us in southeastern Connecticut, and vice versa.
COG or SCCOG	<u>Southeastern Connecticut Council of Governments.</u> A regional public organization created under the Connecticut General Statutes comprised of the chief elected officials of the twenty towns and boroughs in southeastern Connecticut.
CONNDOT	<u>Connecticut Department of Transportation.</u> ConnDot is the primary planning, administrative and implementation arm of the State of Connecticut for all matters relating to transportation infrastructure, including public transit. The SCCOG regional transportation planning program is conducted in cooperation with ConnDot.
EIS	<u>Environmental Impact Statement.</u> A requirement of the National Environmental Policy Act triggered by major infrastructure projects of both potentially high cost and high environmental and social impact.
FAA	<u>Federal Aviation Administration.</u> The FAA is a branch of the Federal Department of Transportation responsible for the regulation, administration and, for certain purposes, funding of airport-related planning, construction, and operations.
FHWA	<u>Federal Highway Administration.</u> The FHWA is a division of the Federal Department of Transportation. It is the main source of funding for the regional transportation planning program and for the implementation of highway infrastructure improvements.
FTA	<u>Federal Transit Administration.</u> Like FHWA, the FTA is a division of the Federal Department of Transportation. It, too, is a source of funding for both planning and project implementation. However, the primary focus of FTA is public transit.
ISTEA	<u>Intermodal Surface Transportation Efficiency Act of 1991.</u> ISTEA was a federal act which set forth the requirements under which funding was provided for transportation planning and for infrastructure improvements. The primary mission of ISTEA was the achievement of the mobile source portion of the CAAA of 1990. ISTEA was replaced by "TEA-21" in 1998.

MAC	<u>Multi-Modal Advisory Committee.</u> The MAC was a committee comprised of the chief elected officials and one other appointee from the nine towns along the Route 32 and Route 2 corridors organized to oversee the conduct of a Major Investment Study. Other participants on the MAC included key Federal and State agencies as well as both Federally recognized Indian Tribes in the region.
MIS	<u>Major Investment Study.</u> A requirement of ISTEA, the MIS was a pre-environmental impact statement process the purpose of which was to identify reasonable alternatives to meet the defined purpose and need of an identified transportation problem. TEA-21 eliminated the requirement for an MIS.
MPO	<u>Metropolitan Planning Organization.</u> An MPO is a public body, designated by the Governor, which operates under federal regulations. It is empowered to carry out the regional transportation planning responsibilities as set forth in the ISTEA. In 1974, the Southeastern Connecticut Regional Planning Agency (SCRPA), the predecessor to SCCOG, was designated the MPO for southeastern Connecticut. In 1993, this designation was transferred to the Council of Governments.
RPC	<u>Regional Planning Commission.</u> The RPC is the subunit of the Council of Governments which is responsible for conducting the council's planning program. However, final ratification of RPC proposals rests with the COG.
RTP	<u>Regional Transportation Plan.</u> The Regional Transportation Plan is a document which identifies highway, transit and other transportation needs over a twenty-year period. Its primary function is to act as the background document for the Transportation Improvement Program (TIP). Like the TIP, it is annually updated. New federal regulations restrict the inclusion of transportation projects included in the RTP to those for which there is reasonable probability that funding will be available (<u>fiscal constraint</u>). Regional transportation plans must not include any project that jeopardizes the state's ability to achieve <u>conformity</u> with the national ambient air quality standards under the State Implementation Plan (SIP).
SIP	<u>State Implementation Plan.</u> A state plan, prepared by the Connecticut Department of Environmental Protection, which depicts how the state will achieve the National Ambient Air Quality Standards (NAAQS).
STIP	<u>State Transportation Improvement Program.</u> The STIP is a three-year implementation schedule of highway and transit improvement projects for the entire state for which funding has been earmarked. Federal regulations mandate that the STIP be annually updated and be consistent with the State Transportation Plan. STIP's must also be both fiscally constrained and be in conformance with the State Implementation Plan (SIP) for air quality.
TEA-21	<u>Transportation Equity Act for the 21st Century.</u> TEA-21 is the 1998 Federal Act which replaced ISTEA.

TIP

Transportation Improvement Program. The TIP is a three-year implementation schedule of regional highway and transit improvement projects for which funding has been earmarked. Federal regulations mandate that the TIP be annually updated and be consistent with the regional transportation plan. TIP's must also be both fiscally constrained and be in conformance with the State Implementation Plan (SIP) for air quality.