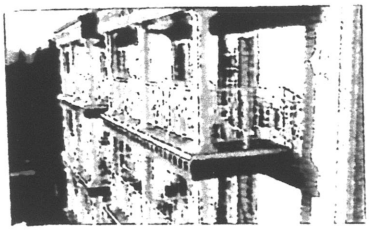

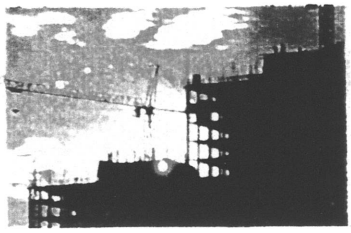

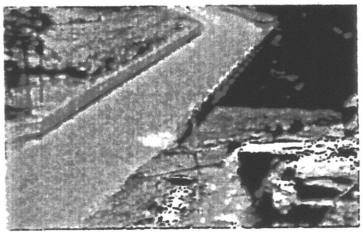

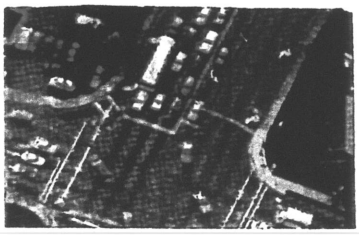

Toward a Decade of Balanced, Quality Development

Dover Master Plan Update
Economic And Land Use Analysis

July 1998

applied economic research aer

Development Consulting • Market Analysis • Regional Economics • Real Estate Appraisals
109 Court Street • Laconia, New Hampshire 03246 • Telephone 603/524-1484

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Dover Master Plan
Economic and Land Use Analysis:
Summary

The attached report presents the findings of an economic and land use analysis addressing Dover's probable development patterns over the next ten years. It was prepared by Applied Economic Research with assistance from Whiteman and Taintor (land planners) under contract to Dover's Planning Department. It is intended to serve as a part of the City's update of its 1988 Master Plan.

Findings

Dover is in a much-improved economic position relative to where it was when the 1988 Master Plan was formulated:

- The pace of residential development in the city has slowed to one-fifth its prior rate.
- The city has attracted a significant share of the region's nonresidential development.
- Two major economic initiatives set forth in the 1988 plan—the ETP zone and Enterprise Park--have proven to be successful.
- In 1988 the City had one of the highest tax rates among seacoast cities. Its tax increases since 1988, while substantial, have been the lowest among seacoast cities. Now the city's tax rate is next to lowest among the seacoast cities.
- Downtown Dover has maintained a viable, if not optimal, occupancy rate and has successfully weathered the loss of several major employers.

This performance, which represents a reversal of prior trends (in which the city was adding too many residential units and not enough nonresidential tax base) is especially commendable in that it occurred in the midst of the worst recession since the 1930s. The city's success is in part attributable to implementation of the recommendations in the 1988 Master Plan.

A More Challenging Decade Ahead

A continuation of these recent favorable trends would work to Dover's advantage. But a continuation is unlikely unless the City changes some of its economic and land use policies. There are two major reasons Dover will have a difficult time securing as favorable a development pattern over the next decade. Both are centered in emerging trends in the broader Seacoast economy, over which Dover has no control.

Rising Pace of Residential Development. Part of the reason the pace of residential development slowed in Dover, is that the recession generated a substantial. but temporary, housing glut in the seacoast region. The area's economic recovery has now absorbed virtually all of this excess supply. That excess housing inventory enabled the region and Dover to realize rising nonresidential investment without the need to accommodate much new housing.

With an unemployment rate of 3 percent or less and with a current near-shortage of housing, the pace of housing development is poised to increase sharply during the coming years. We estimate the seacoast region will need almost 20,000 new housing units over the next decade to accommodate anticipated growth. With good services, 10,000 acres of vacant land, affordable existing housing and good accessibility to regional employment centers, Dover is already experiencing more housing development pressure than at any time in the past decade. These pressures will intensify if, as we expect, the Seacoast economy continues to expand.

Our analysis indicates that if the region expands as we expect, and if Dover does not modify its policies, the pace of new residential construction could average over 300 new units a year during the next decade. This is 50% higher than the city's long-term average and a six-fold increase over the 50 units a year experienced during the past decade.

Dover cannot avoid assuming a reasonable share of the region's housing development . Furthermore, new housing adds labor that draws new enterprises to the city and generates population growth that supports retail prosperity and expansion. New also housing provides an important source of new residents and community leadership.

Nonetheless, the emerging residential pressures are substantial, equal to or greater than in the booming 1980s and will challenge Dover's ability to grow at a comfortable pace and in a fiscally sound manner.

Competition for Nonresidential Investment. The second important fundamental challenge Dover faces is increased competition for the region's commercial and industrial development. Our studies confirm that with very few exceptions nonresidential development more than pays its way in New Hampshire. Virtually all Seacoast communities realize this and are aggressively trying to attract new nonresidential investment, as pressures mount to ease the burden on residential taxpayers. The competitive environment has never been as intense. Communities that were once cool to new enterprises are now staffing economic development departments, rezoning land to allow nonresidential uses and improving their infrastructure to fit the needs of industrial and commercial enterprises.

Dover's successful efforts to diversify its tax base will be more difficult to achieve in the face of this more intense competition. Many firms have a preference to be close to Interstate 95 and there is a natural bias that favors those communities east of I-95 (Portsmouth, Hampton and Rye, for example). Dover has substantial assets that are competitively strong, but changes will have to be made to increase the inventory of

industrial land and to improve the performance of downtown, if Dover is to compete successfully in the next decade.

Fiscal Imbalance. As part of this analysis we estimated the cost and revenue impact assuming the region's growth fit our expectations and assuming the city were to get its recent share of housing, industrial and commercial development.

The results are disheartening. Because of strong residential pressures and more competition for commercial/industrial investment, the city's development pattern would be out of balance if the city doesn't take conscious action to shape future growth. Our estimates indicate that the cost of servicing that growth would exceed revenues to the tune of over $2 million per year. There would be other costs, as well, in the form of increased traffic, and increased pressures to expand infrastructure.

If this were to occur, Dover as it has come to be known would not be lost, but it would be lessened. With appropriate development policies, our analysis has demonstrated that this fiscal unbalance can be avoided.

Toward a Balanced, Quality Development Future: Policy Recommendations

Our recommendations are driven by a single goal: to help Dover achieve balanced, fiscally sound, quality development over the next decade. Our recommendations will help Dover:

- Achieve a healthy mix of residential and nonresidential development that helps stabilize the city's tax rate and does not excessively penalize existing taxpayers.
- Attract a diversity of housing types, including higher-end single family units.
- Fit new development into the city's existing infrastructure of roads, schools and utilities, before extending services to new areas.
- Enhance the downtown investment climate.
- Secure a fair share of new retail development, both as a convenience to residents and to diversify the city's tax base.

Toward these ends, the principal recommendations we have to offer are set forth in the following paragraphs.

Image Enhancement

There is an unjustifiable and unfavorable disparity between Dover's image in the seacoast marketplace and its assets for both residents and businesses. The city is better than many think. Although economic development typically focuses on recruiting new investment

(and we recommend this for Dover, as well), Dover can achieve much by narrowing the gap between what it *is* as a community and what it is *seen to be*. In short, Dover is no longer a "mill town" and it needs to blow its own horn more convincingly. A successful effort would generate higher property values and more successful business recruitment.

We recommend a formal, professional, structured image enhancement effort jointly undertaken by the City, major businesses/banks and the Chamber of Commerce. That effort could emphasize Dover's history, its successes, and its role as a colonial port city and could renew links to other New Hampshire port communities. Perhaps the theme "Dover: New Hampshire's Other Port City" could rally interest.

Industrial Development

The current supply of vacant industrial land is grossly inadequate to accommodate Dover's opportunities. Dover has about 10,000 acres of vacant land, of which only 250 acres are industrial zoned upland. This is less land than Dover needs for the next decade, much less for its long-term future. Unlike many communities, Dover has additional land, now zoned residential, that appears capable of supporting new industrial, office and retail development. We identified over 1000 acres of land that qualifies for potential rezoning from residential to nonresidential use.

If Dover does not move immediately to rezone some or all of this land, it runs the risk of forever losing it to residential development in the face of the intense pressure outlined above. A single poorly placed residential subdivision can preclude nonresidential development from hundreds of acres. The City would pay a significant penalty were this to occur. Areas we recommend the city consider for rezoning to industrial uses are set forth in Section V of this report.

Enterprise Park II

Also important to Dover's industrial future is the need to replicate the success of Enterprise Park, a prime example of how a municipality and private enterprise can cooperate to their mutual benefit. We see no signs that private investors are ready to invest in speculative industrial land development in Dover. In fact, they expressed to us a clear reluctance to do so in the face of public industrial development efforts throughout the region.

Enterprise Park is already half full, despite the recession. The City and DIDA should identify and acquire a site now, and develop the site when demand warrants.

Site Inventory and Promotion

The city's economic development office keeps aware of major available sites and does a good job of promoting them. There are, however, a variety of smaller sites capable of supporting in-fill development that remain overlooked by private investors. The city should inventory and promote these sites to the development and brokerage communities.

Improving Downtown's Investment Climate

Our analysis indicates that Dover's retail role is continuing to erode as major national retailers locate in Newington and Portsmouth. Its performance in the regional retail market has been disappointing. Dover residents are spending an increasing portion of their earnings in nearby communities.

Dover lacks large tracts of vacant commercial land in heavy traffic areas. We have endeavored to identify such sites in both 1988 and again in 1998—without much success. We recommend rezoning the balance of the area north of Weeks traffic circle and some land on Dover Point to commercial use to provide sites for smaller enterprises.

We recommend an examination of existing commercial and office zones to identify areas that can be expanded to encourage more retail development. This includes areas along Central Avenue now zoned office that are close to business zones.

Downtown Dover is especially important to the city's role in the regional retail marketplace. We recommend the following steps to improve the Downtown investment climate:

- Update and then implement the parking analysis, which is now five years old, taking into account the differing needs of shoppers, downtown employees, through traffic that might be induced to shop, downtown services, and downtown residents.

- Improve downtown management and promotion through retaining a professional downtown manager, funded through the formation of a special district.

- Formally apply for the New Hampshire Main Street Program.

- Continue and expedite the riverfront development program, in accord with the Riverfront Concept Plan that integrates public access and private investment. A mixture of public, nonresidential, marina, and residential uses at a medium density is in Dover's best interest.

Residential Development

Dover needs to guard against becoming inundated with residential development and needs to encourage higher valued residential investment. Of a total of 5,250 acres of vacant upland, some 4,600 acres are zoned for residential uses.

We believe that if the pace of new development exceeds 200-250 new units per year (Dover's long-term average), Dover should carefully consider imposing a development-timing ordinance. The recent pace has been about 50 units per year and, as such, the imposition of such an ordinance is probably premature.

As to attracting higher valued investment there are several steps the city can take. First, Dover has an exceptional amount of water frontage capable of supporting high valued residences. It is not at all unusual to find such waterfront residences valued at over $1 million in other seacoast settings—the equivalent assessed value of a 28,000 square foot new manufacturing facility. Dover needs to:

- Establish waterfront protection areas as a floating zone for waterfront parcels within a specified distance (500 or 750 feet, for example) from the Cocheco and Bellamy rivers and from Great Bay. Special setbacks, landscaping and density provisions would assure investors that their residences would be protected.

- Adopt large lot (two to five-acre), single family zoning in near-water settings to maintain rural character and environmental quality.

- Eliminate the inclusion of wetlands from residential lot density calculations citywide, for both environmental and density reasons.

- Consider the imposition of an urban boundary, beyond which sewer and water will not be extended, even at a developer's cost, so as to maintain lower density neighborhoods and a cost-effective utility infrastructure.

- Review the density and setback provisions of Dover's residential zones so as to encourage quality development.

- Examine and modify the city's cluster zoning provisions in light of the environmental quality and sewer/water/road requirements.

Public Facilities

Dover has a Capital Improvement Program that factors in growth-generated needs for expanded services and facilities. The new Middle School will generate capacity to accommodate enrollment increases. The city's sewerage treatment plant has substantial capacity. Although there are pockets of congestion, particularly in downtown, its roads provide a generally acceptable level of service, and a transportation component of the Master Plan will examine these issues.

Two services need attention in the short-term and their strained capacity could be further taxed by new development: water supply and recreation. Both should be addressed in more detail in subsequent Master Plan analyses.

Zoning Considerations

This economic and land use analysis has endeavored to comprehensively review the city's development policies in an effort to achieve balanced, quality development over the next decade. Interspersed throughout the various recommendations are suggested

areas for the city to consider for possible rezoning. The objective of these rezoning considerations is to ensure an adequate supply of industrial and commercial land to accommodate anticipated growth, and to enhance the quality of residential development occurring in the city.

The major areas we identified for possible rezoning include:

- *Tolend/Watson* Road. A total of just under 150 acres of land currently zoned R-40 north of the intersection of Tolend and Watson Road. This area may be appropriate for rezoning to the ETP designation.

- *Tolend Road/Littleworth Road.* This area includes a total of 564 acres of land currently zoned R-20 and R-40. It is potentially appropriate for industrial zoning.

- *Bellamy River/Mast Road/Route 108.* This area includes a total of just under 350 acres of land currently zoned R-40 that is potentially appropriate for industrial/commercial rezoning.

- *Dover Point Road.* This area includes a total of approximately 20 acres of land straddling Dover Point Road, adjacent to existing business zones, which is currently zoned R-12 and is potentially appropriate for rezoning to business uses.

- The area north of Weeks Circle lying between the B-5 and B-3 zones, which should be considered for rezoning to business uses. This area is currently zoned R-12.

- An area west of Sixth Street on either side of Whittier Street, currently zoned R-12, which may be suitable for the ETP zoning category.

- An area on Central Avenue located adjacent to the existing B-3 zone and currently zoned office, may be more suitable for retail use.

In addition to these rezonings, the city's zoning ordinance needs to be updated. What is called for is a careful examination of definitions and allowed uses within the existing zones. Many of the designated uses are outdated, some are confusing and there are new business types that are not included in zones where they might be appropriate. Furthermore, innovative new zoning devices are emerging which permit a mixture of commercial uses. Beford's Village District, which permits a performance-based combination of residential and nonresidential uses on single parcels is an example of emerging zoning concepts that may be appropriate for some Dover settings. There are also some zone boundaries that could be adjusted to ensure full utilization.

Along the same lines, the city's multifamily zone should be re-examined, as noted above, from the standpoint of the permitted density. In some cases, the permitted density may

be excessive, resulting in higher density, lower valued units than would be the case if lower density limits were set.

Finally, we note the provisions outlined above with respect to protecting the value of Dover's waterfront residential sites on its rivers and on Great Bay. This includes careful consideration of density provisions, an overlay waterfront protection zone and the elimination of wetlands and density calculations city-wide. It may be appropriate for the city to consider a larger lot zoning designation for some areas adjacent to the waterfront—possibly a two or five-acre minimum lot size.

SECTION I. DOVER'S RECENT ECONOMIC PERFORMANCE AND ITS ROLE IN THE REGIONAL ECONOMY

This section of the report reviews major trends in Dover's economic performance and evaluates its performance relative to the regional economy. For purposes of this analysis, the regional economy is defined as the New Hampshire portion of the Portsmouth-Dover-Rochester metropolitan area as defined by the U.S. Bureau of the Census. Generally, this area extends from Seabrook to Portsmouth along the coast, and then inland to Exeter and Rochester to the Maine border.

A Favorable Performance

Measured by virtually all economic indicators, Dover's economy has performed extremely well. This is especially heartening given that the focus of this analysis is on economic trends since 1988. Since 1988, employment growth at the regional level was slowed by the New England-wide recession, the closing of the Pease Air Force Base and substantial job cutbacks at the Portsmouth Naval Shipyard.

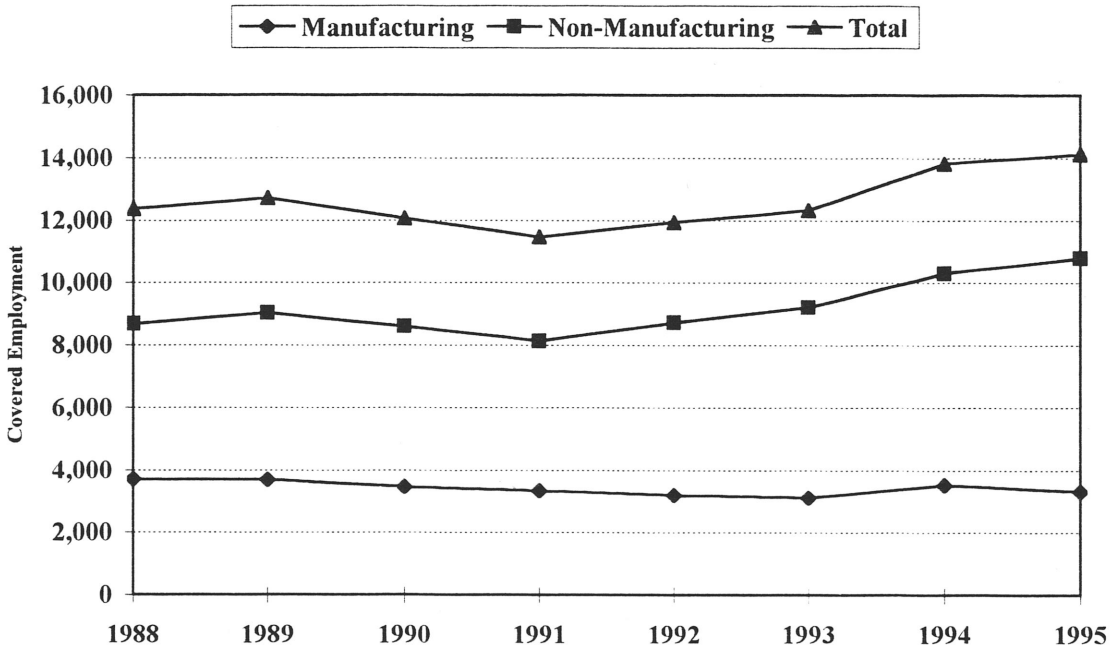
Despite these regional setbacks, Dover's economy is healthier now than when AER analyzed it for the 1988 Master Plan. A significant part of this health is due to successful implementation of the 1988 Master Plan goals, which called for the city to more vigorously pursue nonresidential development and to slowdown the rapid pace of residential construction.

Employment Trends and Characteristics

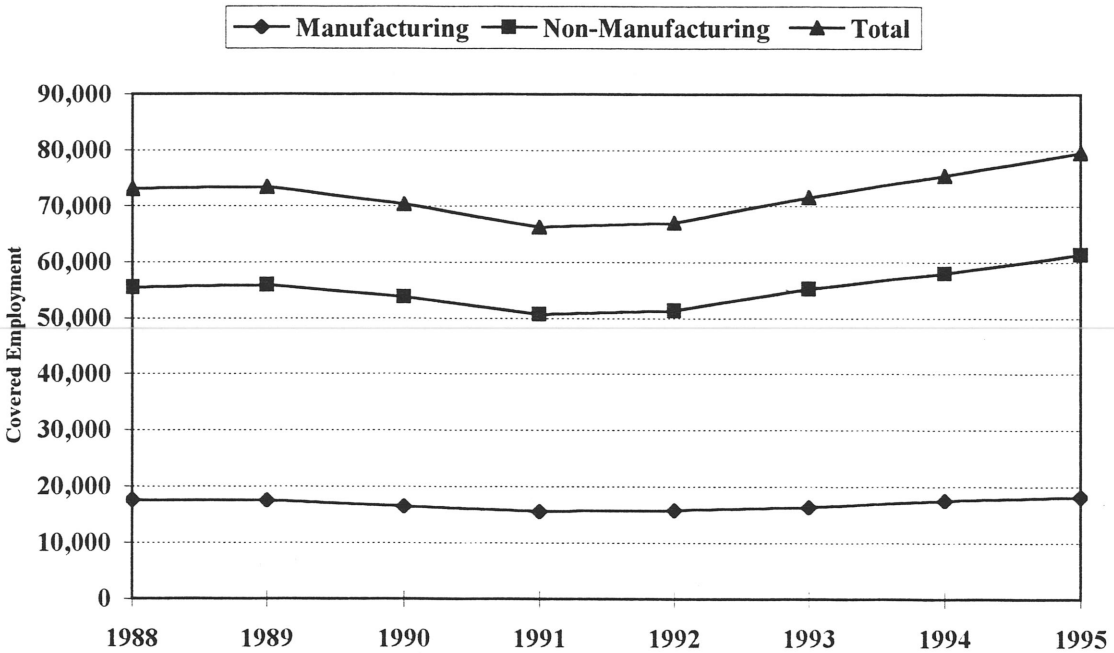
Figure 1-1 depicts employment trends in Dover and the regional economy since 1988. The important trends to note are:

- Between 1988 and 1995, Dover added over 2,000 new jobs, despite the recession that prevailed during much of this period. Most of this job growth has occurred since 1991 in the form of new nonmanufacturing employment, particularly in the office sector as a result of the Liberty Mutual facility moving into the city.

Figure 1-1 City of Dover Employment Trends



Portsmouth-Rochester PMSA Employment Trends



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- Manufacturing employment during this timeframe was stable within the city, which is, in itself, somewhat of an accomplishment in view of manufacturing job losses statewide.

- The city's employment base shifted to a service employment concentration.

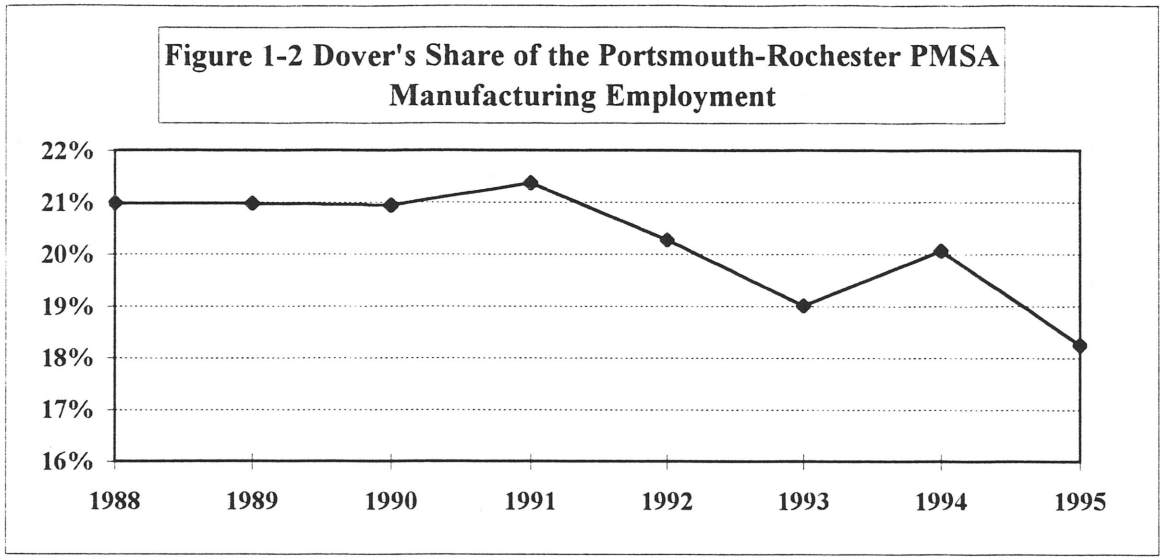
Figure 1-2 examines Dover's share of regional employment activity. Although the city's share of regional manufacturing employment fell since 1988, its share of nonmanufacturing employment rose sharply. Overall, employment in the city grew at a faster pace than in the region. In 1988, Dover was capturing just over 15 percent of the region's nonmanufacturing employment. Its share of total nonmanufacturing employment rose to nearly 18 percent by the end of 1995. As a result of this growing nonmanufacturing employment base, the city's share of the seacoast region's total covered employment job base increased between 1988 and 1995.

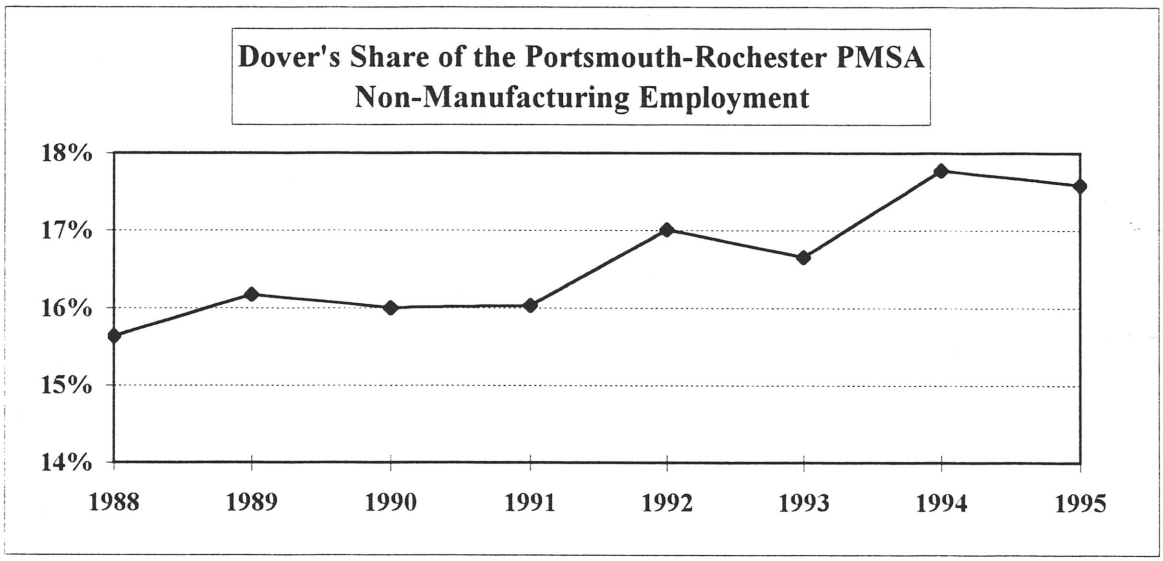
Unemployment

Unemployment trends also reflect the significant changes that occurred in the regional and state economies since 1988. In 1988, unemployment rates were exceptionally low (under 3%)for the city of Dover, the seacoast region and the state of New Hampshire. As seen in Figure 1-3, the unemployment rates rose sharply in April of 1991. As a result of the economic recovery, unemployment rates in all three areas (the city, the region and the state) have recovered handsomely with an unemployment rate in mid-1996 at the 3 percent level. This level remains in force as of mid-1988.

Population Trends

Dover's population is currently 26,000. In both the 1960s and 1970s, Dover added an average of about 150 new residents per year. During the 1980s, as a result of strong employment growth (particularly at the regional level) Dover's population growth rose to just over 250 new residents per year (2,500 during the decade, see Figure 1-4). Population growth slowed during the early part of the 1990s, back to the level experienced during the 1960s and 1970s. This is attributable to the slower employment growth experienced regionally, partly as a result of the loss of the Pease closing and cutbacks at the shipyard.





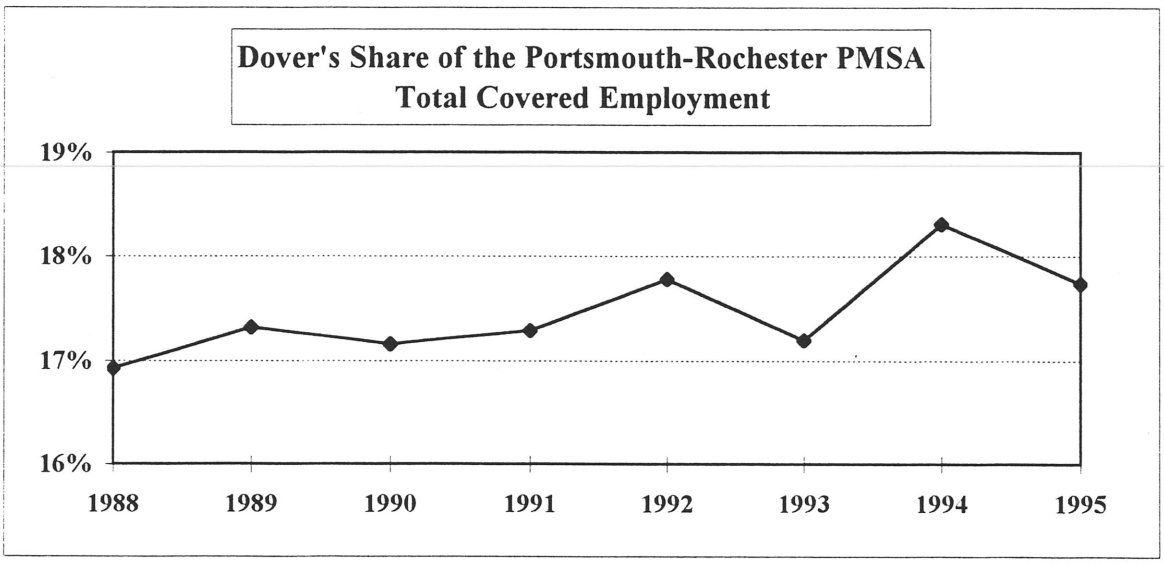


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Figure 1-3
Unemployment Rate

	Apr-88	Apr-91	Apr-96
City of Dover	2.8%	5.8%	3.3%
Portsmouth-Rochester PMSA (NH P	2.8%	5.9%	3.5%
State of New Hampshire	2.7%	7.3%	3.7%

Source: NH Employment Security

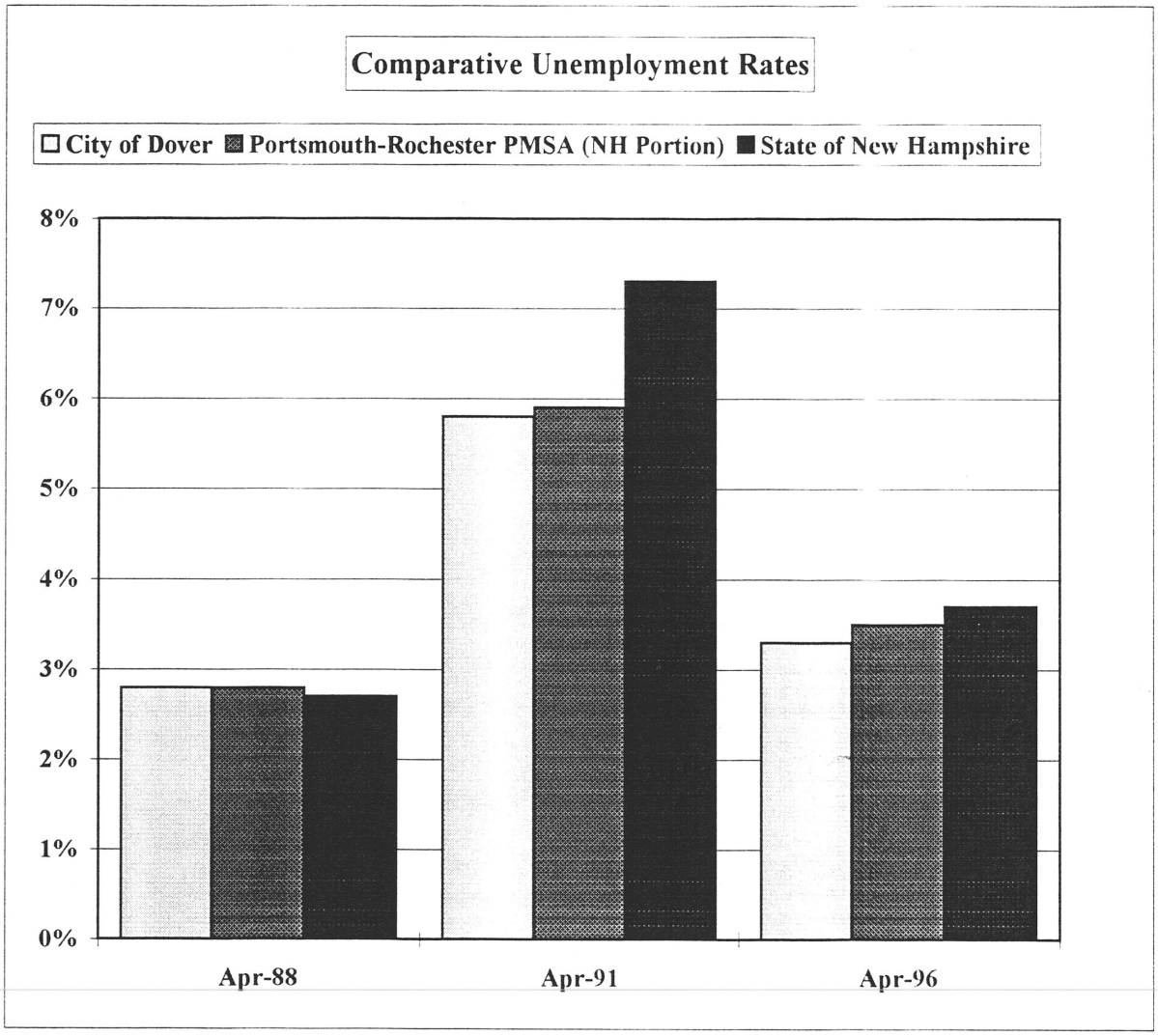
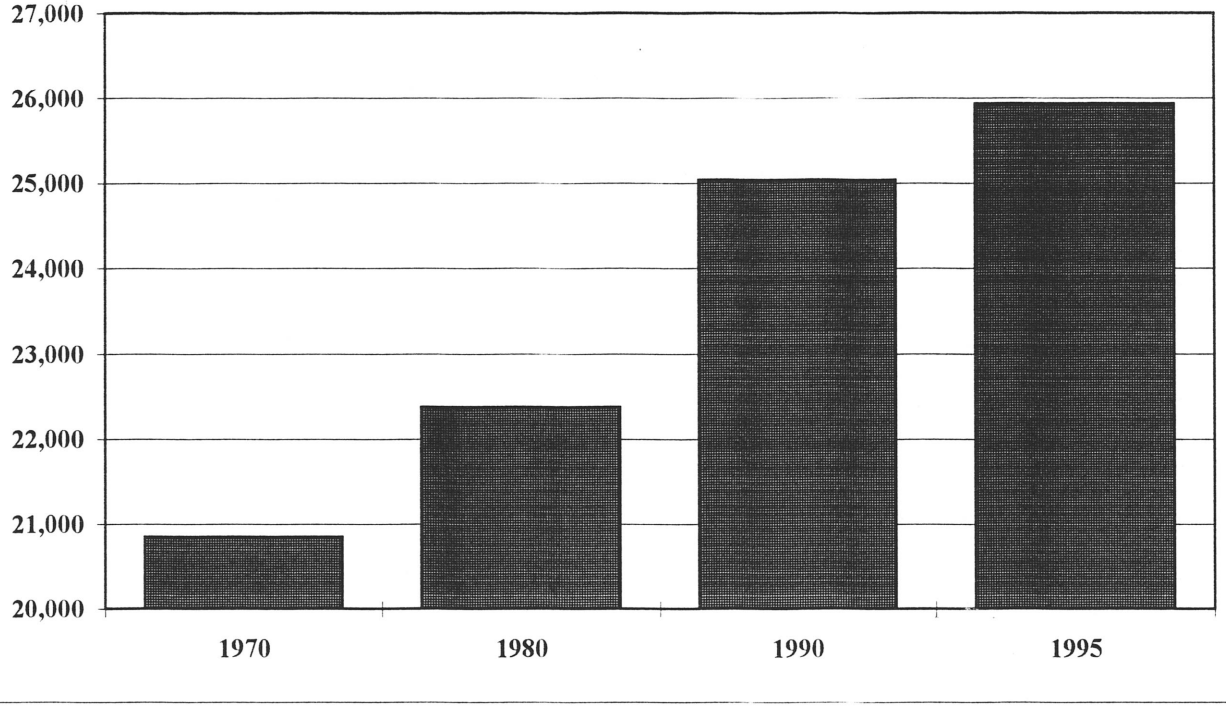
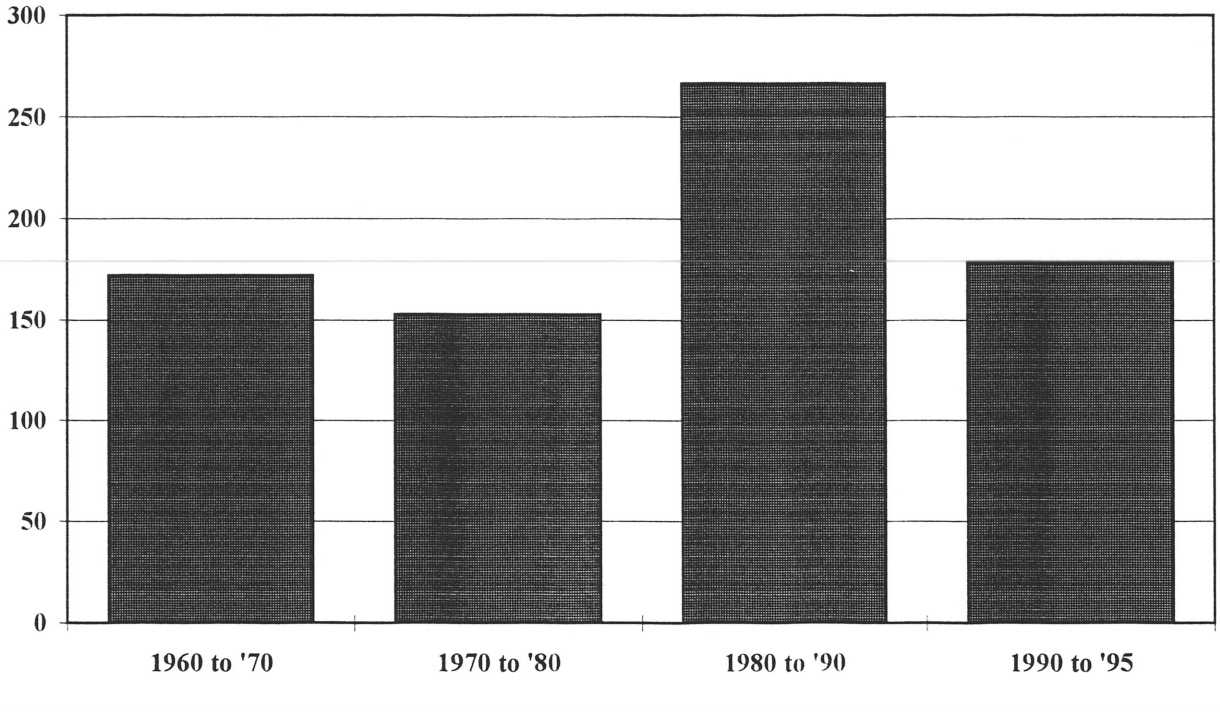


Figure 1-4 City of Dover Population



City of Dover Average Annual Population Change



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Housing Trends and Activity

As of the 1990 census (the most recent comprehensive inventory of the city's housing units) there were a total of 11,300 housing units in Dover, of which 10,345 were occupied. The mix in occupancy in Dover was evenly split between owner-occupied and renter-occupied units. In contrast, the housing inventory at the regional level is more strongly tilted toward single family units, which represent 63 percent of the region's 1990 occupied housing units.

In both the 1970s and 1980s, the pace of new housing construction in Dover favored rental units. As a result, the inventory of rental units in the city grew from just over 2,000 units in 1970 to approximately 5,000 rental units by 1990 (Figure 1-5).

Dover's share of the region's housing activity was strongly tilted toward multifamily units, particularly during the 1980s. Between 1980 and 1990, Dover captured approximately 14 percent of the total housing construction occurring in the region. It captured almost 25 percent of the region's increase in rental units, but only 8 percent of the region's increase in single family units (Figure 1-6).

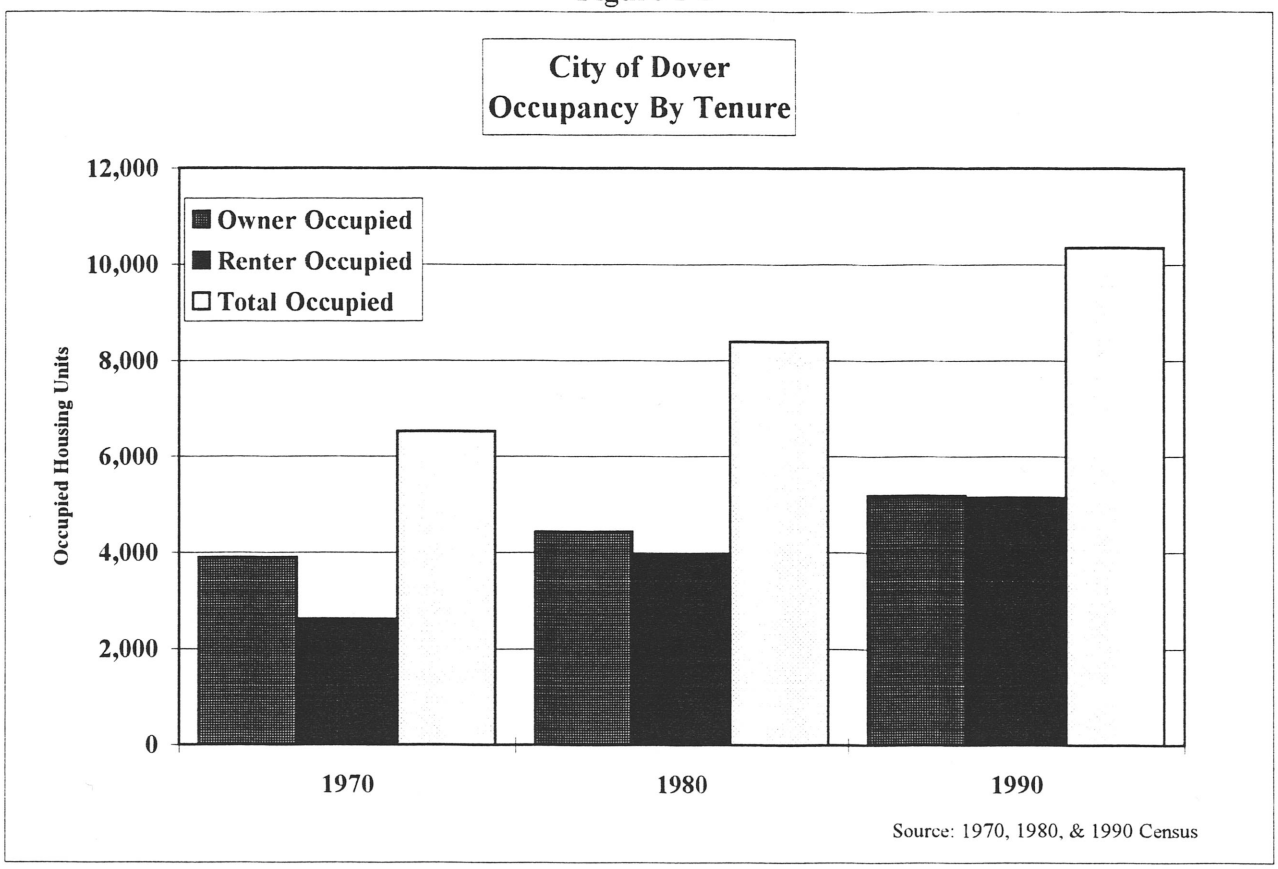
Figure 1-7 examines trends in the city's housing inventory and shows a significant bulge in the middle part of the 1980s, wherein the city authorized almost 700 new housing units in 1986, by far the peak year of activity in Dover. Since 1990, the pace of new units authorized by building permits has slowed considerably, averaging approximately 50 new units per year. Since 1990, in contrast to the 1980s, most of the activity has been in the form of detached single family ownership units. This is a market-driven phenomenon. There has been relatively little opportunity at either the city or regional level to construct new condominiums or new rental units through the middle of the 1990s.

Examining Dover's share of regional housing activity shows that the city's share of new single family activity has been comparatively low. Dover has been capturing less than 10 percent of the region's new single family units, with but a few exceptions in the middle of the 1980s (Figure 1-8).

Income and Poverty Status

With the significant amount of multifamily construction activity occurring, it is conceivable that Dover would assume a disproportionate share of the region's poverty

Figure 1-5



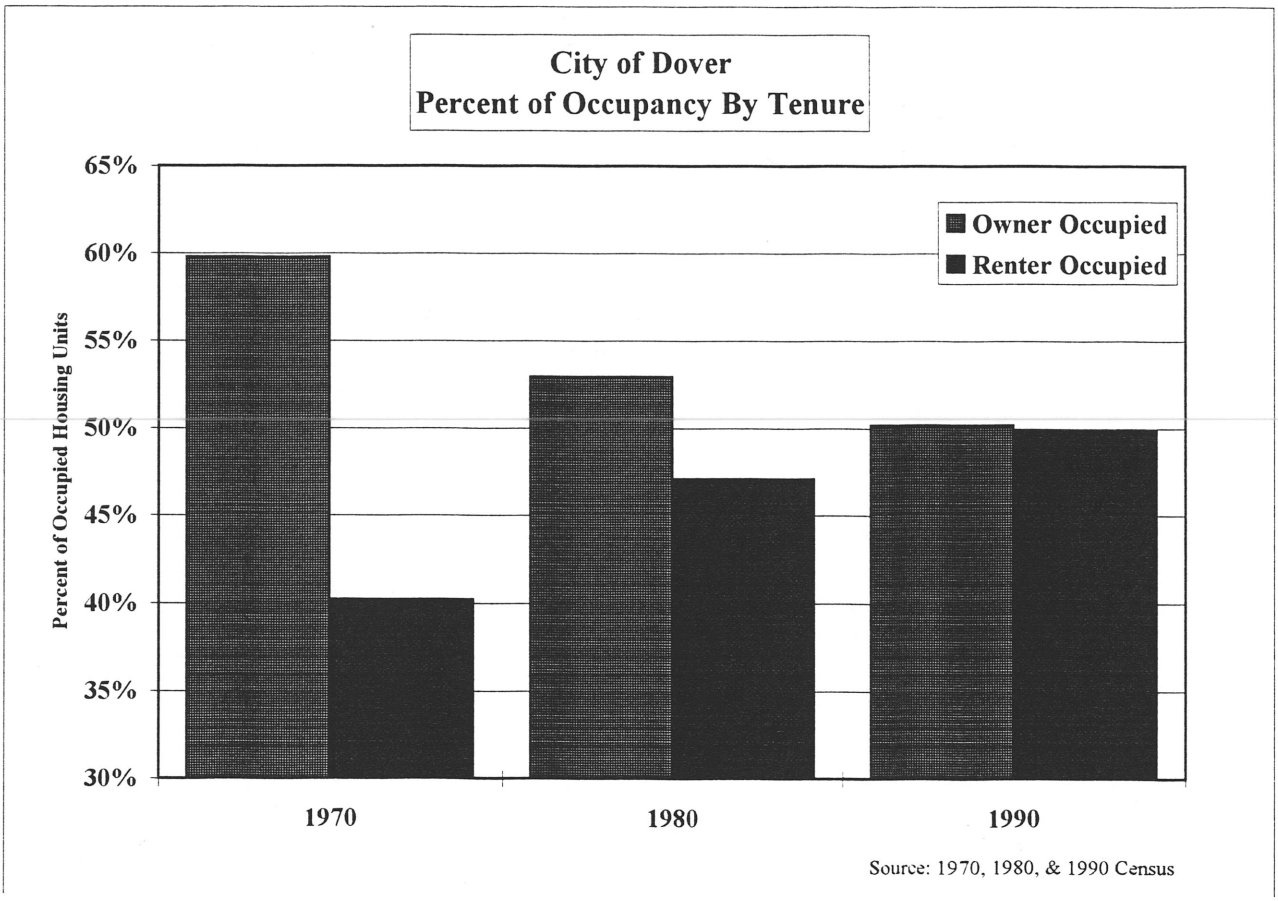


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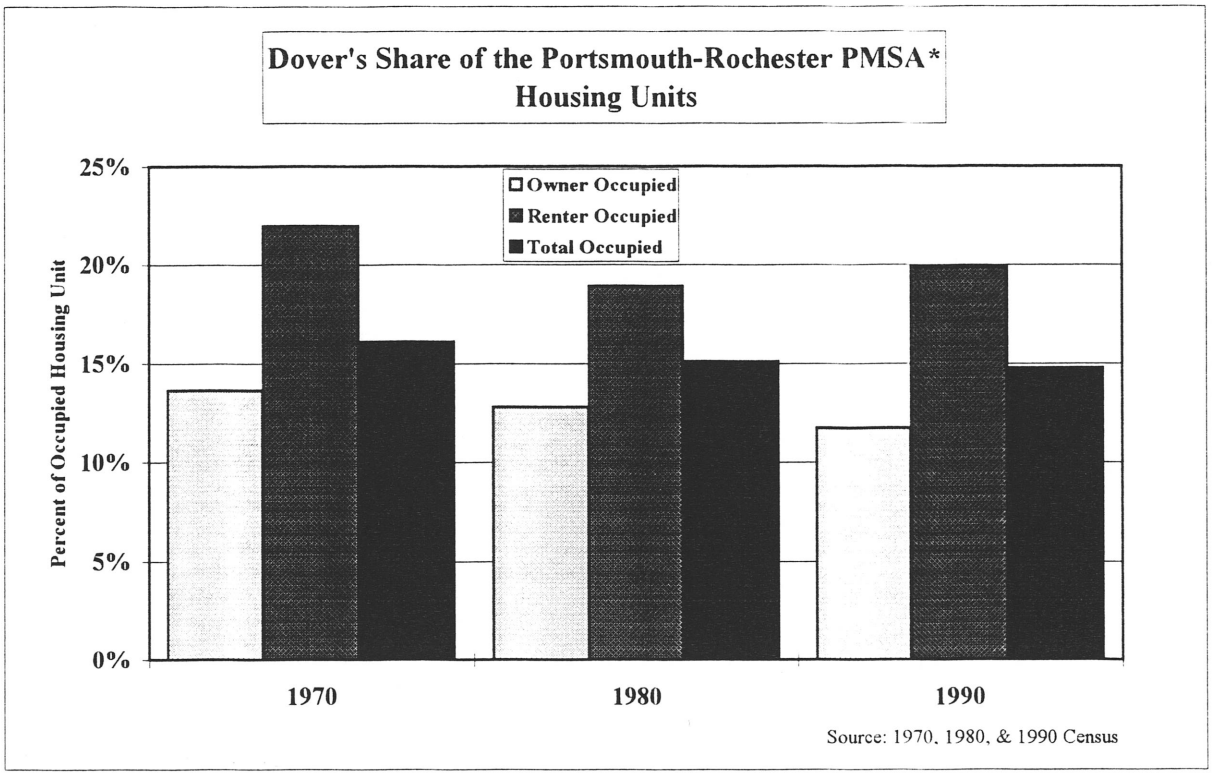
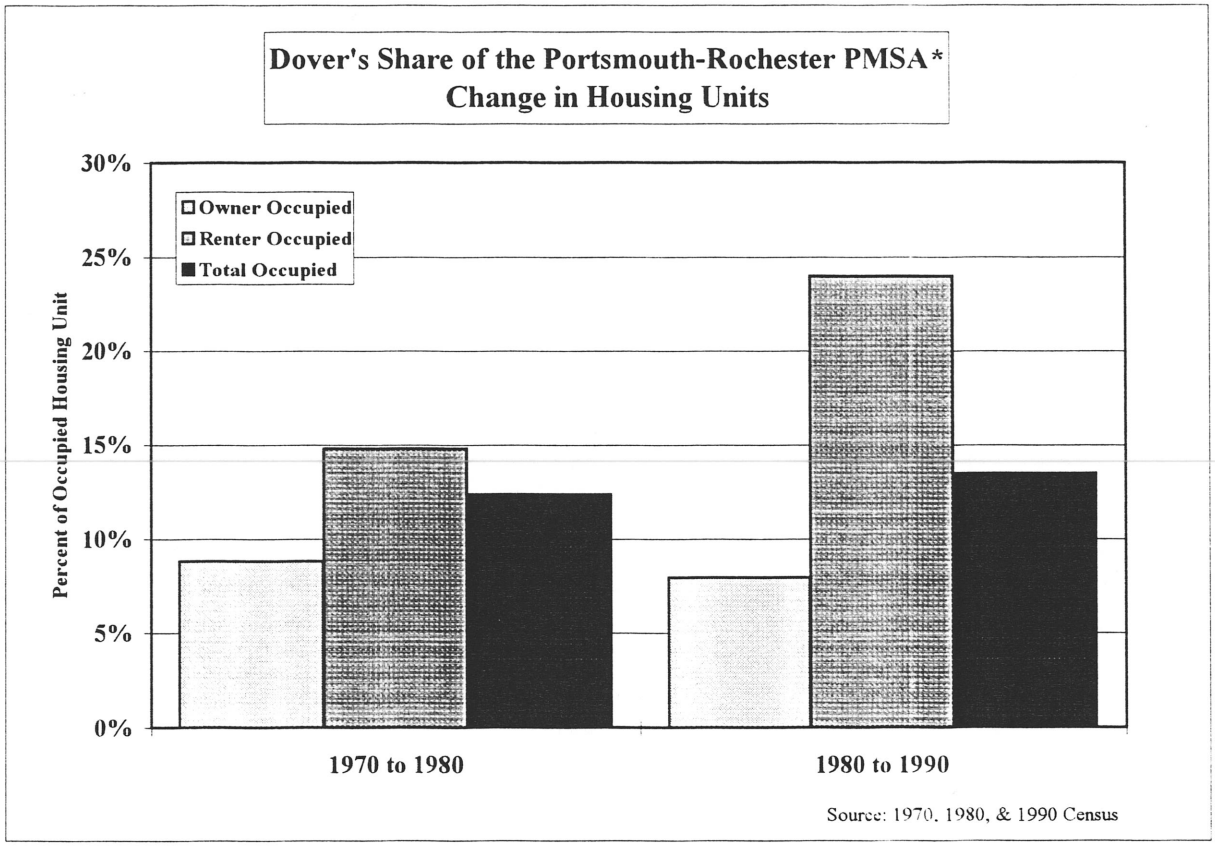
Figure 1-6





* NH Portion of the Portsmouth-Rochester NH-ME PMSA

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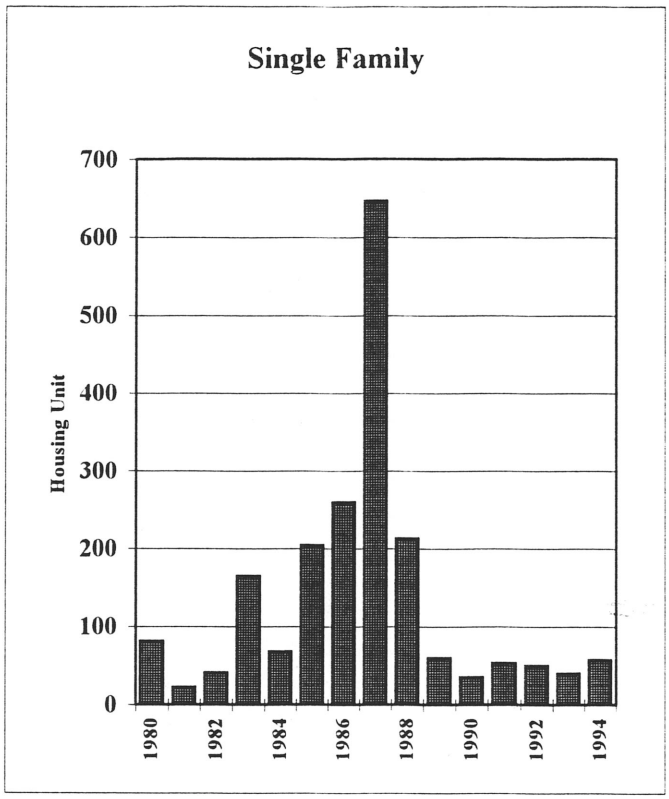
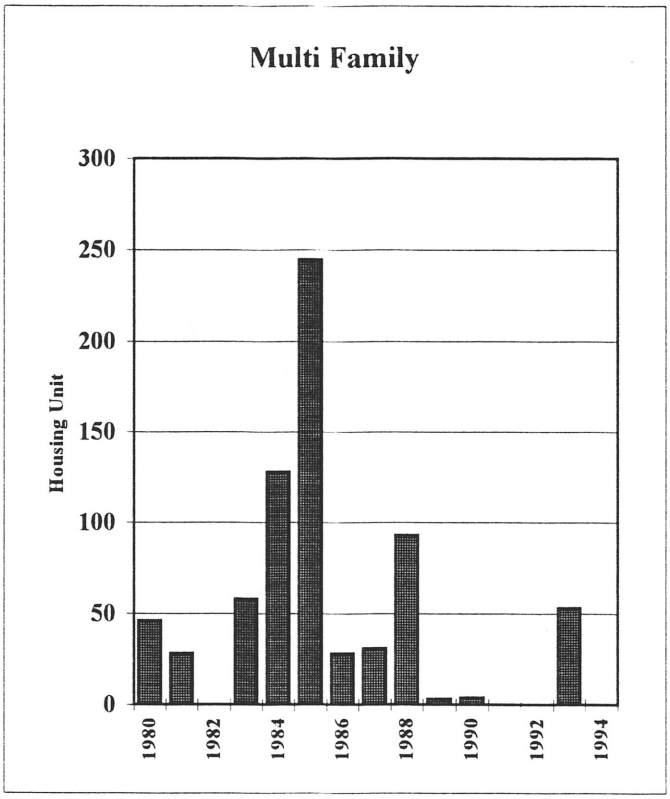
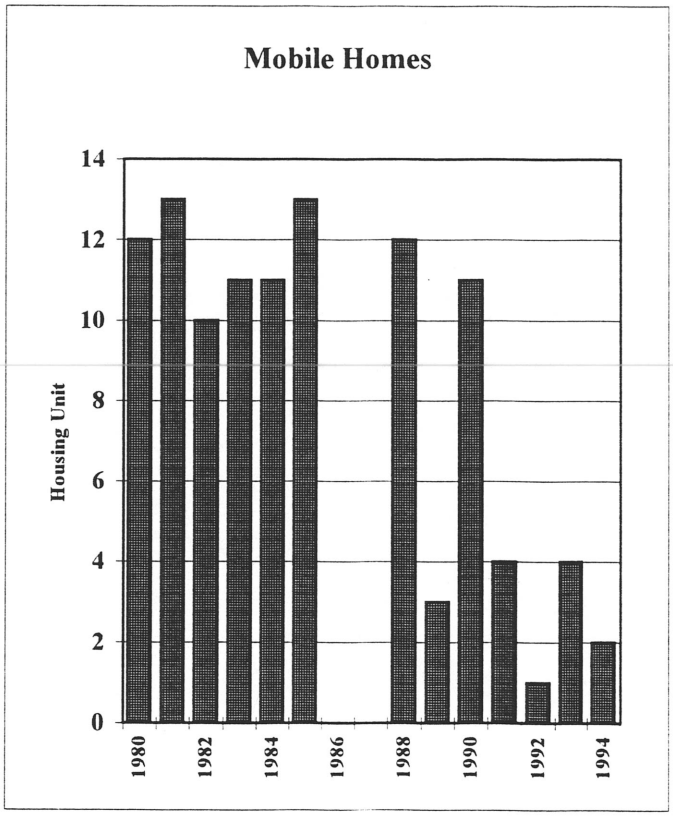
Figure 1-7 CITY OF DOVER
NEW HOUSING UNITS AUTHORIZED BY PERMIT







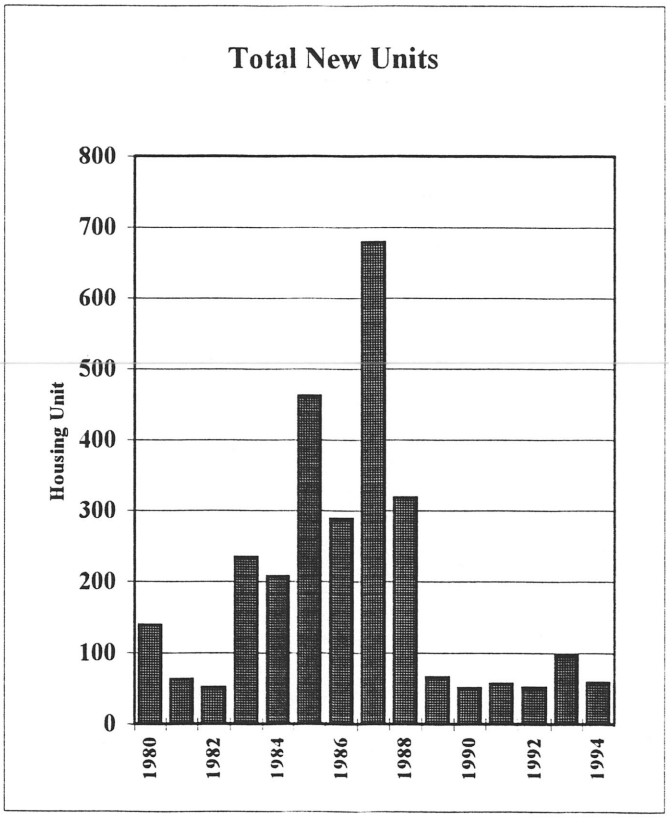


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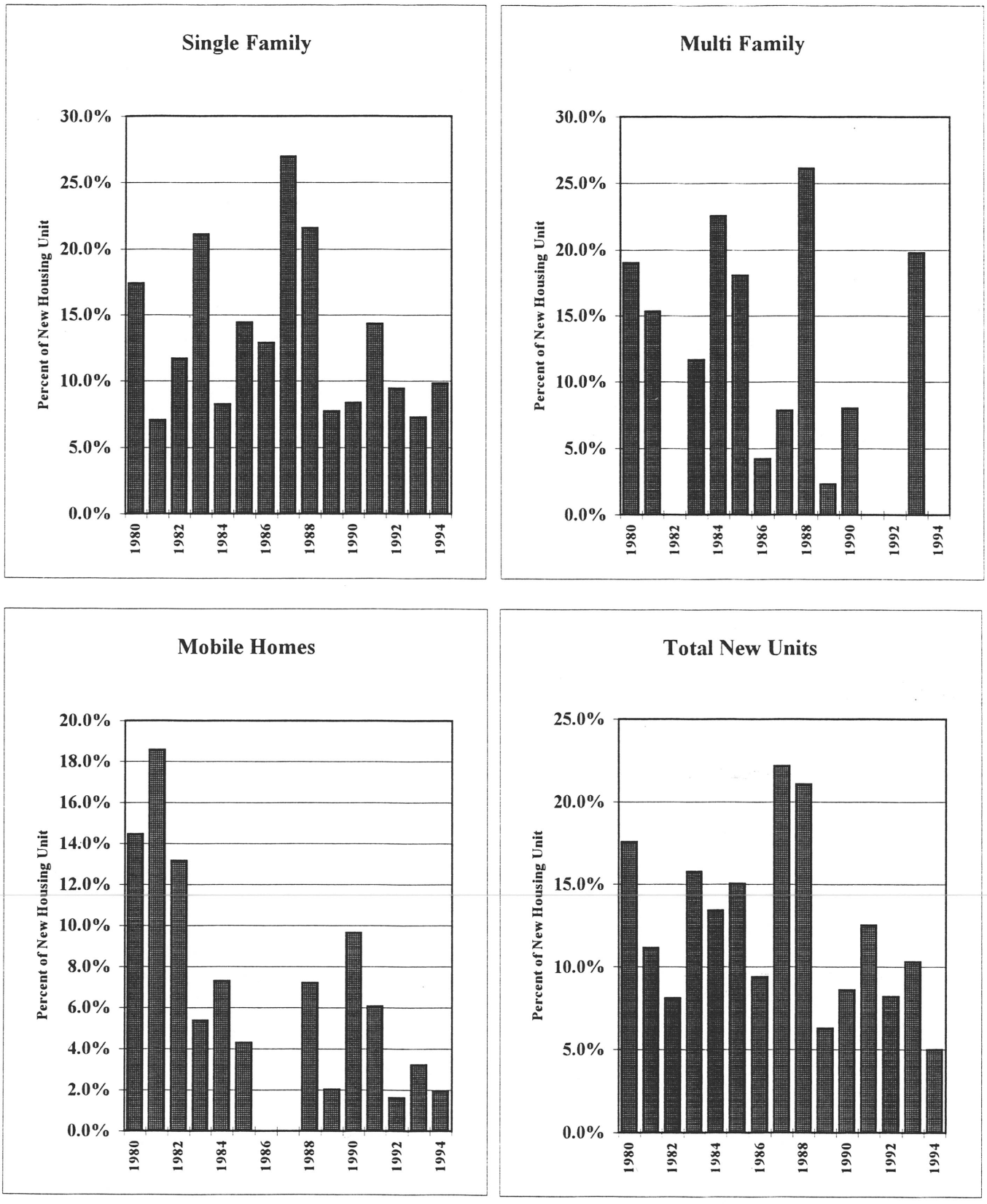
Figure 1-8 CITY OF DOVER SHARE OF PORTSMOUTH-ROCHESTER PMSA* NEW HOUSING UNITS AUTHORIZED BY PERMIT



* New Hampshire Portion of Portsmouth-Rochester PMSA

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population. In fact, this has not occurred. Dover's share of the region's poverty population fell from just over 21 percent to under 19 percent between 1980 and 1990 (Figure 1-9), the period of rapid multifamily development in Dover.

Nonetheless, primarily as a result of the preponderance of rental and affordable single family housing in the city, Dover's household income distribution is tilted toward the lower income categories (Figure 1-10). For example, nearly 18 percent of Dover's households fall in the "under $15,000" income range, in contrast to only 14 percent of the region's households. At the other end of the income spectrum, only 12 percent of Dover's households had an income of over $75,000 in 1996. The comparative regional figure was 16 percent. This smaller share of higher income households is probably attributable to Dover's mix of single family units, which tends to favor affordable single family housing units as compared to the more luxurious single family housing units found elsewhere in the region in communities such as Hampton, Rye and Portsmouth.

Property Tax Rate Trends

A major concern in the 1988 Master Plan and a continuing concern in this update is the city's property tax rate. Figure 1-11 shows that the city has achieved a competitive property tax rate. Among the larger seacoast communities (Dover, Rochester, Portsmouth, Somersworth and Exeter), Dover had the second highest property tax rate equalized for assessment differences in 1988. In 1995, Dover had the second lowest property tax rate among the five comparative seacoast communities (Figure 1-11). This improvement in the city's competitive property tax rate is attributable to a variety of factors including:

- More careful management of the city's finances and investments.
- The development of Enterprise Park as a city venture.
- The de-emphasis of residential construction activity in the city's mix of new development.
- A generally more modest pace of development activity which placed less strain on city services.

Figure 1-9

Income Below Poverty Level

City of Dover	Number		Percent of Population		Change	
	1980	1990	1980	1990	#	%
Persons	2,504	2,287	11.4%	9.4%	-217	-8.7%
Families	397	355	7.0%	5.6%	-42	-10.6%

Portsmouth-Rochester MSA (old def.)*	Number		Percent of Population		Change	
	1980	1990	1980	1990	#	%
Persons	11,869	12,143	9.5%	7.3%	274	2.3%
Families	1,998	2,128	6.0%	4.8%	130	6.5%

Dover's Share of Ports.-Roch. MSA*	1980	1990
Persons	21.1%	18.8%
Families	19.9%	16.7%

Source: 1980 & 1990 Census

* NH Portion of the Portsmouth-Rochester NH-ME MSA, Old definition (prior to 1994) of MSA does not include towns of Brentwood, East Kingston, Epping, Kensington, and Hampton Falls.

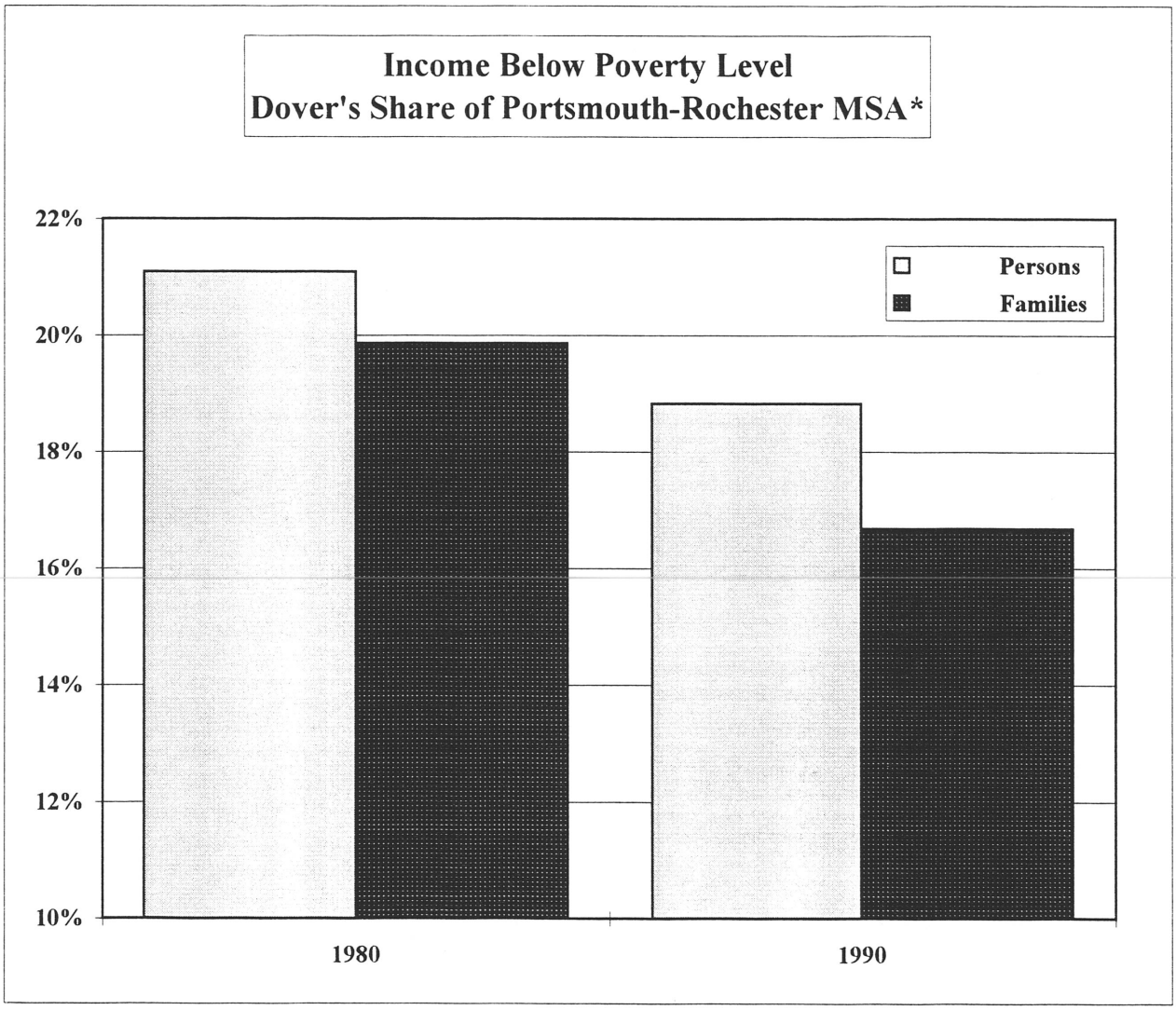

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Figure 1-10 Comparative Household Income Distribution

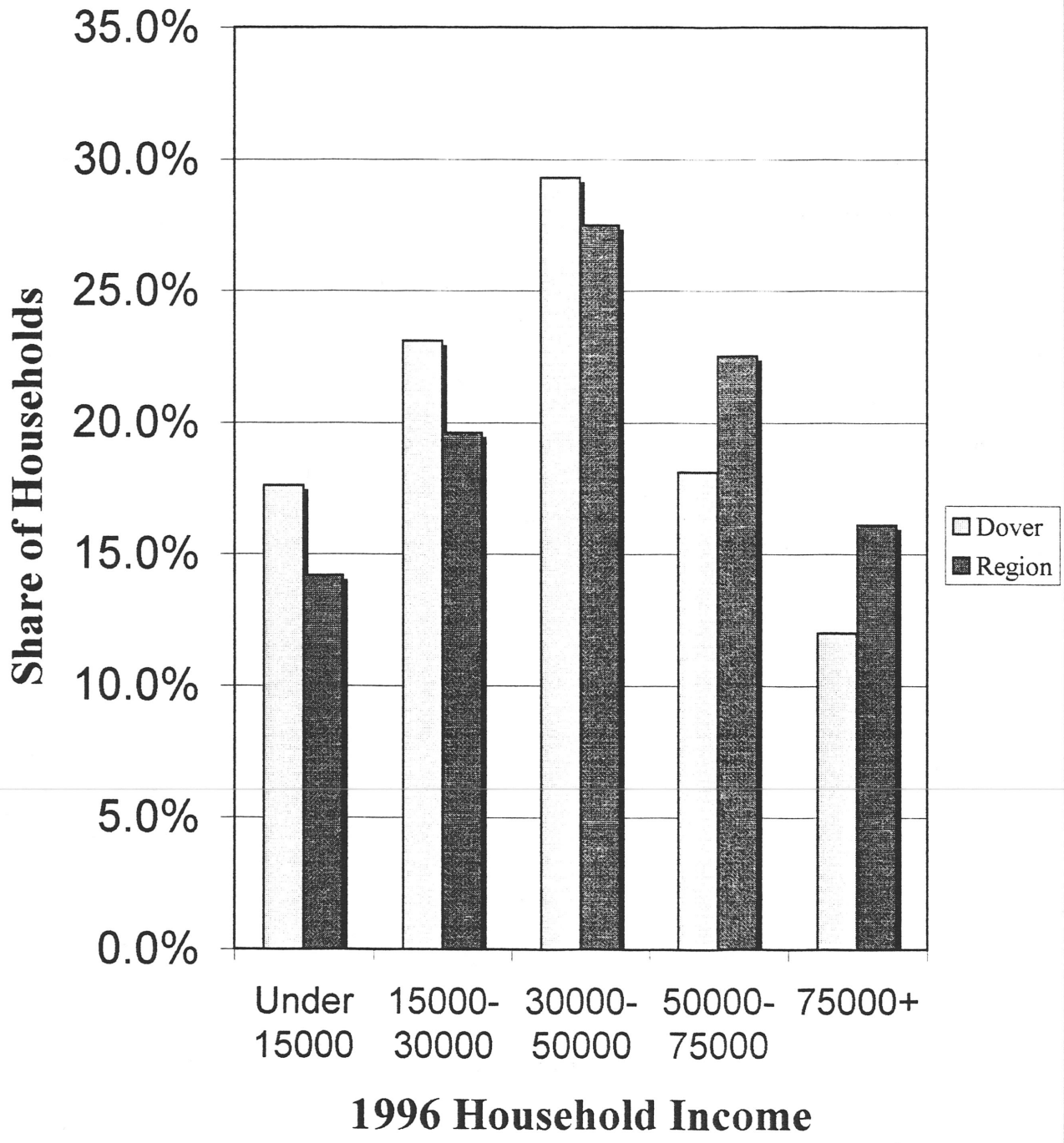

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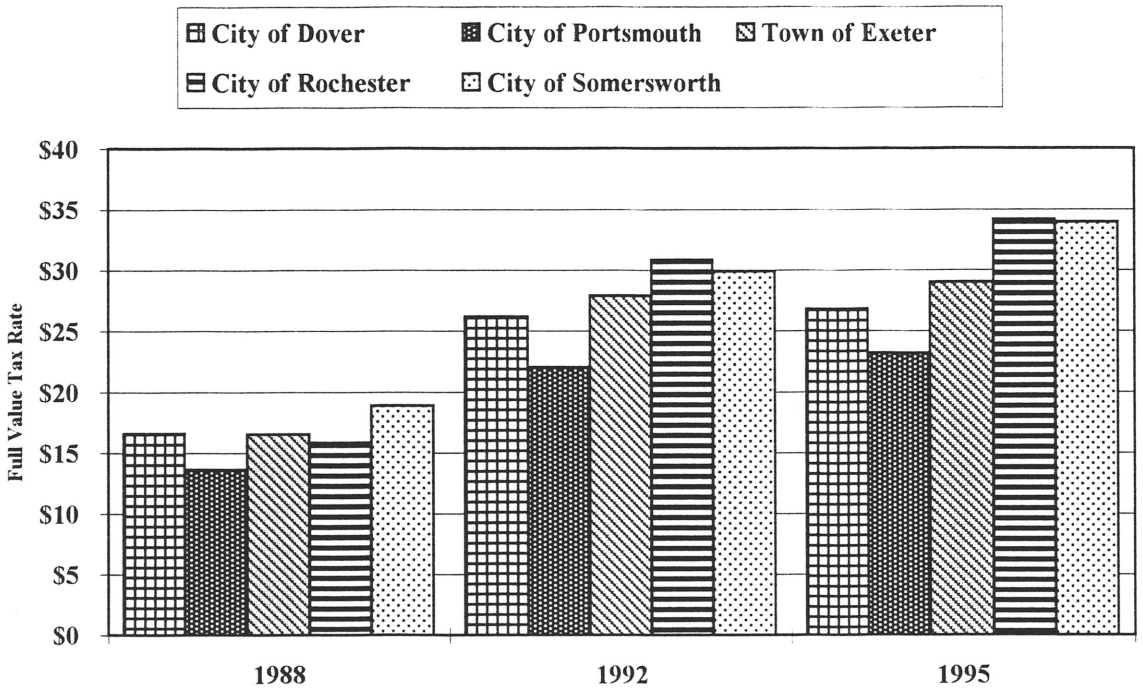
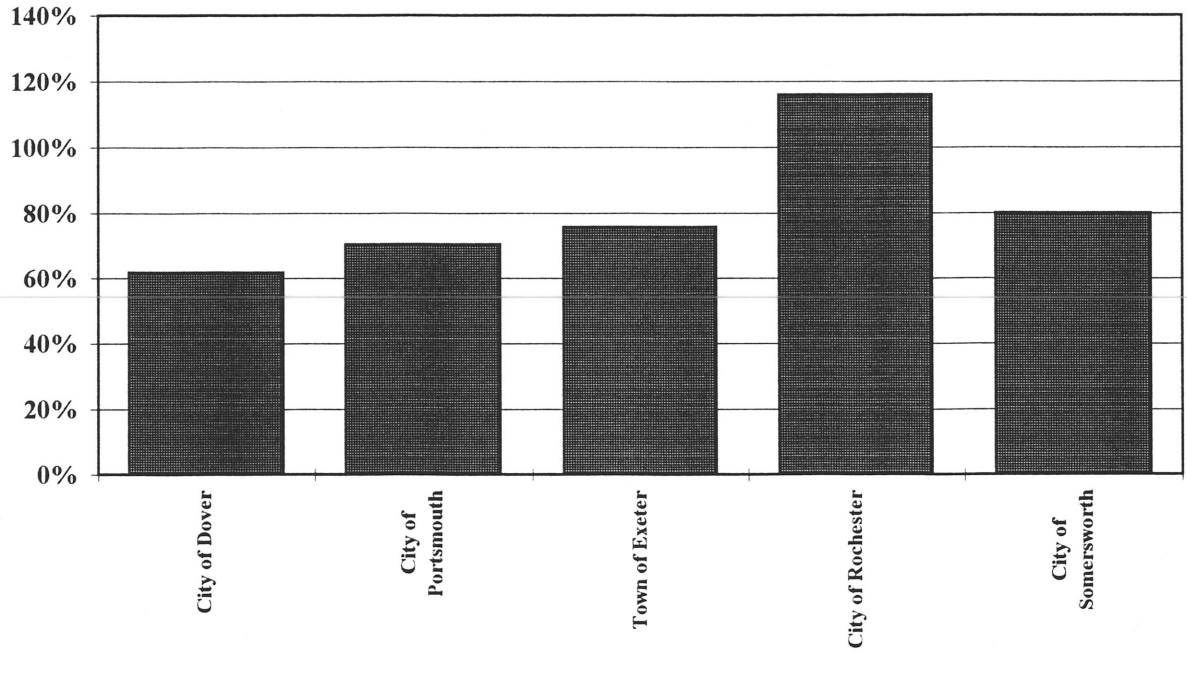
Figure 1-11 Comparative Tax Rates



Change in Full Value Tax Rate 1988 to 1995



Source: State of NH Department of Revenue Administration

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It is certainly true that Dover's property tax rate increased significantly between 1988 and 1995, rising by just over 60 percent. This was the lowest increase, however, among the comparative seacoast communities (see bottom portion of Figure 1-11).

SECTION II. ECONOMIC AND LAND USE PROJECTIONS: CURRENT TRENDS AND POLICIES SCENARIO

This analysis presents projections of Dover's future economic activity and the resulting land requirements through the year 2010.

Methodology

The methodology incorporated into this analysis includes the following major steps:

- A projection of regional economic growth;
- A projection of Dover's share of regional activity;
- Calculation of projected Dover growth based on its share of projected regional activity;
- Estimation of future land requirements to accommodate projected growth.

Because of the data necessary to complete the economic component of the projections, 1995 is used as the base year of the analysis. As such, the projections portray anticipated activity for the 1995-2005 period. Should subsequent Master Plan requirements dictate a different timeframe, average annual change can be computed and applied to the targeted timeframe.

The projections in this section of the report reflect anticipated seacoast regional growth and Dover's share of that growth under what might be termed a "worst case" scenario, under which Dover captures a sizable share of the region's residential development. This assumption anticipates no change in Dover's growth policies. In fact, Dover's policies would probably be altered before this scenario was realized—either as a function of the Master Plan process or a reaction to substantial residential growth at some time during the next decade.

Section IV of this analysis presents an alternative set of projections that moderate the rate of residential growth in anticipation of revised policies.

Regional Growth Projections

As noted in Section I of this report, the seacoast regional economy has been performing exceptionally well, despite the major challenges imposed by the loss of Pease Air Force Base and continuing cutbacks at the Naval Shipyard. Particularly encouraging has been a recent uptick (since 1991) in the region's manufacturing employment base. This rise in manufacturing employment has been complemented by continuing strong growth within the nonmanufacturing employment sectors.

The prospects for the seacoast economy are favorable:

- The region's infrastructure (its highway system, sewer, water, etc.), have the capacity to accommodate growth. This is not the case in other parts of the state, the Nashua region for example.

- The region offers a diversity of attractive lifestyle opportunities. As the economy becomes more footloose and more amenity-oriented, this diversity becomes an important selling point anchoring the region's economic future. The cultural diversity of downtown Portsmouth, ocean-front seacoast living in Rye, Hampton and Seabrook, college-town living in Durham and Exeter, small-city living in Dover and Rochester and abundant rural lifestyle opportunities throughout the region provide "something for everyone." In the summer of 1997, *Money* magazine identified the seacoast region as the fifth most livable area in the nation, reflecting a variety of economic and lifestyle factors.

- The region has excellent accessibility to Boston, including the high-tech Routes 128 and 495 corridors. This places Boston's cultural amenities and its airport within easy striking distance of the New Hampshire seacoast.

- The Pease International Tradeport has achieved a healthy development pace. The recent resolution of land transfer issues promises that the Authority will have sufficient land resources to accommodate considerable growth over the next decade. Pease is frequently cited as the nation's premier example of successful base deregulation.

Based on these favorable factors, the outlook for the seacoast's regional economy is exceptionally bright. Like the rest of New Hampshire and New England, the seacoast suffered through a pronounced recession between 1989 and 1992. A repeat of this recession appears extremely unlikely. The region no longer has too many eggs in the defense, or any other single basket, and has replaced its defense jobs with a variety of major manufacturing and nonmanufacturing employment opportunities that are less vulnerable to a downturn in any one industry.

As of mid-1988, the major possible curb on the region's growth is labor force availability. Currently, the region's unemployment rate is hovering around 3 percent. During the post-recession recovery, the region has managed to add jobs without experiencing a pronounced increase in housing development. Today, most of the inventory of unsold housing units has been absorbed and future growth will require a commitment on the part of the region's communities to accept higher levels of residential development and the higher school enrollment that necessarily follows. Although no clear pattern has emerged, anecdotal evidence strongly suggests that the region's communities, like communities elsewhere in the state, are concerned about the fiscal impact of new residential growth. Widespread adoption of stringent growth control measures region-wide could have the

effect of blunting the region's employment growth, and, therefore, the prospects for nonresidential growth.

Table 1 sets forth projections of regional employment, population, housing and retail sales. The basic premise of this projection is that the region will experience somewhat stronger employment growth over the next ten years than during the past ten (which included the pronounced recession). This is primarily as a result of the effect of the Pease closing, which suppressed job growth during the past decade. Population growth and housing growth are expected to follow the pattern established in the overall 1985-95 period.

A note about projected employment growth is in order. Nonmanufacturing employment growth is expected to occur at about the same pace as that experienced during the long-term 1985-95 period. Manufacturing employment growth, however, is expected to reverse past losses and register a net gain over the next ten years. The principal reason for this is that during the past decade, the region passed through a significant manufacturing employment transition, in which manufacturers of mini-computers and defense-related contractors experienced a sharp downturn in demand and a resultant reduction in employment. As noted above, the region's manufacturing employment base is more diverse today and less vulnerable to single industry declines. The second element supporting higher future manufacturing growth is the successful performance of the Pease International Tradeport. Pease now has considerable land resources (approaching 1,000 acres) available for future employment growth. The PDA staff is committed to bringing in higher-paying manufacturing and related jobs, and we believe this effort will be successful. In fact, even during its start-up phase, Pease has been a success, accounting for about 4,000 jobs in the region since 1992.

Recent trends indicate that a manufacturing turnaround has already occurred. Between 1991 and 1995, the region experienced a growth of 2,625 manufacturing jobs, more than reversing the earlier losses that were registered between 1985 and 1991. We have projected future manufacturing growth at the 1991-95 pace for the region, resulting in higher overall job growth than over the past decade.

The central point of these projections is that the seacoast economy will remain vibrant and will probably outperform the state over the next ten years.

Dover's Historic Performance

Dover has performed exceptionally well within its regional economic setting. Table 2 examines recent growth trends in Dover and the city's share of the previously-cited regional activity (set forth in Table 1).

Table 1: Regional Growth Projections

	Trends		Change 85-95		Projected	Change	%
	1985	1995	Number	Percent	2005	1995-05	Change
Covered Employment	61,200	79,550	18,350	30%	111,258	31,708	40%
Manufacturing	20,550	18,200	(2,350)	-11%	24,758	6,558	36%
Nonmanufacturing	43,500	61,350	17,850	41%	86,500	25,150	41%
Office/Service	33,873	41,114	7,241	21%	49,900	8,786	21%
Population	175,000	190,200	15,200	9%	206,700	-16,500	9%
Total Housing Units	67,300	82,900	15,600	23%	102,100	19,200	23%
Owner Occupied	39,450	47,150	7,700	20%	61,900	14,750	31%
Renter Occupied	23,700	26,000	2,300	10%	30,400	4,400	17%
Subtotal: Occupied Units	63,150	73,150	10,000	16%	92,300	19,150	26%
	1982	1992			2005		
Retail Sales ($000)	1,009,293	2,253,795	1,244,502	123%	5,032,800	2,779,005	123%

Note: Regional long term trend of declining manufacturing employment has been reversed by more recent, 1991-95 trend, during which regional manufacturing employment expanded by 2,625 jobs, a 17% increase--see employment trends data in AER's Economic Trends Resource Materials, September 1996. Also, occupied housing units will grow slightly faster than the trend, because the trend was influenced by excessive inventory vacancy.

Table 2: Dover's Growth Trends and Share of Regional Activity

	Trends		Change 85-95	
	1985	1995	Number	Percent
Covered Employment	10,800	14,100	3,300	31%
Manufacturing	3,900	3,300	(600)	-15%
Nonmanufacturing	6,900	10,800	3,900	57%
Office/Service	5,900	9,750	3,850	65%
Population	23,450	25,950	2,500	11%
Total Housing Units	8,759	11,300	2,541	29%
Owner Occupied	5,000	5,450	450	9%
Renter Occupied	4,400	5,350	950	22%
Subtotal: Occupied Housing Units	9,400	10,800	1,400	15%
Persons per Unit	2.49	2.40		
	1982	**1992**		
Retail Sales	147,687	245,852	98,165	66%

Dover Share of Regional Activity

	1985	1995	Share of 1985-1995 Growth
Covered Employment	17.6%	17.7%	18.0%
Manufacturing	19.0%	18.1%	25.5%
Nonmanufacturing	15.9%	17.6%	21.8%
Office/Service	17.4%	23.7%	53.2%
Population	13.4%	13.6%	16.4%
Total Housing Units	13.0%	13.6%	16.3%
Owner Occupied	12.7%	11.6%	5.8%
Renter Occupied	18.6%	20.6%	41.3%
Subtotal: Occupied Housing Units	14.9%	14.8%	14.0%
	1982	**1992**	
Retail Sales	14.6%	10.9%	7.9%

During the 1985-95 period, Dover:

- Experienced a slightly faster rate of employment growth than the region has a whole.
- Experienced a slightly faster rate of population growth than the region.
- Experienced a slightly faster rate of growth in total housing units than the region, particularly for multifamily units.

The city underperformed the region in two significant categories. First, the city's share of regional retail activity dropped from 14.6 percent in 1982 to 10.9 percent in 1992 (the most recent year data is available). The city's share of retail sales growth (7.9%) lagged its share of the region's population growth (16.4%). This is attributable to the proliferation of new shopping opportunities in Newington, Portsmouth and Somersworth. In contrast, there has been relatively little major new retail construction in Dover. Consequently, Dover is exporting more of its resident shopper dollars to other seacoast communities today, than was the case ten years ago. Secondly, Dover's share of owner-occupied home construction was low, 5.8 percent versus its 41 percent share of rental inventory growth.

In projecting future economic activity in Dover, AER has modified recent trends. In doing so, Dover's share of regional activity has been held constant at its 1985-1995 share with the following exceptions:

- We expect that Dover will have strong manufacturing employment growth, but that its share of regional activity will drop slightly because part of the region's growth will be driven by development of recently transferred land at the Pease International Tradeport.
- We have reduced Dover's share of the region's office growth because Pease is proving to be a major player in this submarket, as well.
- We have reduced Dover's share of the region's retail sales growth, reflecting the increasing pace at which new inventory is being added outside of Dover. The recent opening of a Wal-Mart in Rochester and the redevelopment of the Newington Mall are examples of this phenomenon.

Table 3 sets forth the economic and housing projections for the city of Dover under the terms of this scenario. The following observations are significant:

- Dover will experience strong job growth during the decade, with a 37 percent increase in jobs.
- Dover's population growth during the decade will total 11 percent.

Table 3: Dover Growth: Modified Current Trends Scenario

	Trends		Projected	Growth	% Change
	1985	1995	2005	1995-05	1995-05
Covered Employment	10,800	14,100	19,300	5,200	37%
Manufacturing	3,900	3,300	4,400	1,100	33%
Nonmanufacturing	6,900	10,800	14,900	4,100	38%
Office/Service	5,900	9,750	13,300	3,550	36%
Population	23,450	25,950	28,700	2,750	11%
Total Housing Units	8,759	11,600	14,700	3,100	27%
Owner Occupied	5,000	5,450	7,300	1,850	34%
Renter Occupied	4,400	5,350	6,300	950	18%
Subtotal: Occupied Housing Units	9,400	10,800	13,600	2,800	26%
	1982	**1992**			
Retail Sales ($000)	147,687	245,852	392,100	146,248	59%

- This population growth results from a projected addition of 3,100 new housing units during the next decade (an average of 310 new units a year). This is in contrast to an average pace of residential development of just over 200 units a year during the 1985-95 period. As to the mix of housing units, a combination of available land resources and shifting demographics will tip Dover's future housing production towards a higher portion of the region's owner-occupied units when measured against recent trends.

Projected Residential Land Absorption

Table 4 sets forth projected residential development activity and residential land requirements based on the pace of development activity discussed above.

A significant shift in residential development patterns has occurred in Dover. This is partly the result of the city's Master Planning efforts in 1988. At that time, the city was experiencing a disproportionate share of the region's multifamily development activity and the city took steps to enhance its appeal to single family residential units and to slow down the pace of multifamily construction activity. These efforts by the city were aided by market trends which brought the pace of multifamily development activity (including both rental units and condo) virtually to a halt. During the 1980s, 22 percent of the city's housing units added were single family detached units. Since 1990, single family units represent 69 percent of the city's new units added.

The future distribution of Dover's new housing activity is not expected to be as strongly multifamily as in the 1980s, because of demographic changes that are occurring in the marketplace. Furthermore, the city now has policies that will probably discourage as fast a pace of multifamily development as occurred in the 1980s. With this in mind, we have distributed the expected 3,100 new housing units to be built in Dover over the next decade, based on the distribution during the 1980s averaged with the 1990s. That is, we believe there will be a resurgence of multifamily activity in Dover, but not to the same level as occurred during the 1980s.

Land absorption has been projected based on the density experienced by the city during the 1988-95 period. Information as to the density experienced by the city is contained in Table A-1 at the end of this section of the report.

On an overall basis, the units added between 1995 and the year 2005 will require about 3,400 acres of land, under the Current Trends scenario. Distributing this development activity by current zoning classification and the amount of vacant land in each zoning classification indicates that presuming the distribution of new single family residential activity by zoning category continues at about the same distribution as experienced between 1988 and 1995. The city has enough vacant residential land under current zoning. If development were to occur similarly to the pattern experienced between 1988 and 1995, the city would have an excess supply of R-20, RM-12 and R-40 land.

Table 4 Projected Residental Development Activity and Residential Land Requirements

Trends by Unit Type

	1980	1990	Estimated 1995	Change 1980-95		Change 1990-95	
				Units	Share of Change	Units	Share of Change
Single Family Detached	4,203	4,649	4,850	647	22%	201	69%
Single Family Attached	110	536	575	465	16%	39	13%
Mobile Home	8	369	375	367	13%	6	2%
Duplex	1,006	1,145	1,150	144	5%	5	2%
Multi-Family	3,384	4,608	4,650	1,266	44%	42	14%
Total Year-Round Units	**8,711**	**11,307**	**11,600**	**2,889**	**100%**	**293**	**100%**

Projected Growth By Unit Type

	1995	2005	Share of Growth	Growth 1995-2005
Single Family Detached	4,850	6,300	45%	1,450
Single Family Attached	575	1,000	15%	425
Mobile Home	375	600	7%	225
Duplex	1,150	1,300	3%	150
Multi-Family	4,650	5,600	29%	950
			100%	
Total Year-Round Units	11,600	14,700	3,100	3,200

Projected Land Absorption

	Units Added, 1995 2005	Units per acre	Acres Required
Single Family Detached	1,450	0.53	2,736
Mobile Home	225	0.53	425
Subtotal: Single Family +Mobile Home	***1,675***	***0.53***	***3,160***
Single Family Attached	425	5.0	85
Duplex	150	4.0	38
Multi-Family	950	9.0	106
Total	3,200	19	3,388

Single FamilyAbsorption By Residential Zone (Includes Mobile Homes)

	% of Units	Units Added	Units per Acred	Acres Required	Upland Acres Available	% Utilized
R-12	25%	420	0.92	458	488	94%
R-20	12%	200	0.85	236	394	60%
R-40	54%	900	0.40	2,234	3,396	66%
RM-8 and RM-10	2%	30	0.82	37	41	89%
RM12	3%	50	0.50	99	163	61%
RM 20	4%	70	0.80	88	112	78%
Total	100%	1,670	0.53	3,152	4,594	69%

Note: Acres available includes potentially buildable upland acres, including land with very low density single family homes and land in current use

The actual distribution of development activity by zoning classification will be structured by the city's policies. These figures are offered at this stage of the analysis merely to provide a yardstick demonstrating the ability of the city's existing single family zoning categories to accommodate anticipated growth *presuming that growth is distributed among zoning districts similarly to that pattern which occurred between 1988 and 1995.*

Projected Nonresidential Land Requirements

Table 5 sets forth a projection of nonresidential land requirements. For industrial and office uses, an employment-based methodology is utilized. For retail uses, a sales growth model is applied. In each case, density requirements set forth in the Dover Zoning Ordinance have been tempered with the density of development typically occurring in AER's experience, and reflecting the recent pattern of growth. See Tables A-2 and A-3 at the end of this section of the report. The resulting acreage requirements to accommodate Dover's nonresidential development expected over the next decade are:

Industrial Land	200 acres
Office/Institutional Land	150 acres
Retail/Commercial Land	50 acres

Land Requirements Contrasted to Currently Available Upland

The city of Dover has estimated the amount of upland acreage (excluding wetlands) falling into four principal categories:

- Vacant Land
- SFA with Acreage, which consists of residentially-zoned parcels developed at extremely low densities such that additional development can occur on the parcel.
- Nonconforming land--which consists of nonresidential land currently developed with residential properties.
- Buildable current use, which consists of land that is now in current use, but could possibly be converted to development land in the future.

Table 6 contrasts land requirements with potentially buildable land in each zoning category by land use. Table A-4 at the end of this section of the report details available vacant land resources.

In total, under the Current Trends scenario, a total of 3,845 acres of vacant land will be absorbed in the city of Dover. Vacant upland currently totals just over 1,700 acres. Including all potentially vacant upland (vacant current use and low density) totals 5,000

Table 5: Projected Office,Industrial and Retail Land Absorption

Employment Growth

	1995	2005	Growth: 1995-2005 Number	Percent
Manufacturing Employment	3,300	4,400	1,100	33%
Warehouse Employment	500	725	225	45%
Office /Institutional Employment	9,750	13,300	3,550	36%

Sqaure Feet of Building Space per Employee

Manufacturing Employment	750
Warehouse Employment	2000
Office /Institutional Employment	300

Square Feet of Building Required To Support Growth

Manufacturing Employment	825,000
Warehouse Employment	450,000
Office /Institutional Employment	1,065,000

Square feet of Building per Acre

Manufacturing	6,000
Warehouse	8,000
Office /Institutional	7,200

Acres Required To Accommodate Growth

Manufacturing	140
Warehouse	60
Subtotal: Industrial	200
Office /Institutional	150
Total: Industrial and Office	350

Retail Land Requirements

Retail Sales Growth ($000)	$	146,248
% to Existing Merchants/inflation		50%
Available to Support Growth (000)	$	73,124
Average Sales/SF	$	250.00
Square Feet Supportable		292,000
Square Feet per Acre		6,000
Acres Required		50

Table 6: Land Requirements and Available Land

	Acres Required	Vacant Acres	Total Acres Available	% of Total Acres Available
Single Family	3,152	1,309	4,279	**74%**
Multi-Family	143	161	315	**45%**
Subtotal: Residential	**3,295**	**1,470**	**4,594**	**72%**
Commercial+Office (part)	100	96	121	82%
Industrial+Office (part)	300	168	266	113%
Total	**3,845**	**1,734**	**4,981**	**77%**

"Total Acres Available" includes vacant land, current use land, and land now used at one-fourth or less minimum applicable zoning density
Vacant land does not include wetlands.
Note: Office uses are allowed in most commercial and industrial zones. 1/3 of projected office growth allocated to Commercial zoning districts; 2/3 allocated to Industrial zoning districts. Does not include ETP vacant land (243 acres) due to unique ownership and apparent lack of availability for new
unique ownership and apparent lack of availability for new

acres. As such, on an overall basis, if the city were to develop over the next ten years consistent with this scenario, 77 percent of the vacant upland in the city would be developed.

The projection indicates several major areas the city should address as it considers land use policies to guide future development:

- There is an inadequate supply of vacant industrial land to accommodate anticipated development.
- There is an inadequate supply of commercial land to accommodate anticipated development.
- The pace of single family development is excessive, particularly viewed in conjunction with the fiscal impact of new single family development (discussed below).
- Preliminary figures indicate the supply of multifamily land will be adequate to accommodate anticipated development.

For both the industrial and commercial use categories, the supply of vacant land is inadequate to accommodate needs over the next decade, much less for subsequent decades. Both categories require more land than projected use to supply users with an adequate choice of sites.

SUPPLEMENTAL TABLES – SECTION II

applied economic research aer

Table A-1 Unit Density By Zone: City of Dover
1988-1995 Subdivisions

	Units	Acres	Units per Acre	% of Units
R-12	148	161.49	0.92	30%
R-20	61	72.08	0.85	12%
R-40	246	610.67	0.40	49%
RM-10	9	10.99	0.82	2%
RM12	37	73.61	0.50	7%
Total	501	928.84	0.54	100%

Table A-2: Dover Share of Regional Activity

	1985	1995	Share of 1985-1995 Growth
Covered Employment	17.6%	17.7%	18.0%
Manufacturing	19.0%	18.1%	25.5%
Nonmanufacturing	15.9%	17.6%	21.8%
Office/Service	17.4%	23.7%	53.2%
Population	13.4%	13.6%	16.4%
Total Housing Units	13.0%	13.6%	16.3%
Owner Occupied	12.7%	11.6%	5.8%
Renter Occupied	18.6%	20.6%	41.3%
Subtotal: Occupied Housing Units	14.9%	14.8%	14.0%
	1982	**1992**	
Retail Sales	14.6%	10.9%	7.9%

Table A-2 Dover's 1988-97 Nonresidential Land Absorption By Zoning Category

Zone	Land Area (Acres)	BuildingSize	Building Area/Acre
B-1 Total	0.24	220	929
B-2 Total	2.45	24,267	9,902
B-3 Total	70.05	113,486	1,620
B4 Total	8.29	52,000	6,270
Subtotal: B Zones	**81.03**	**189,973**	**2,345**
CWD Total	**0.90**	**14,508**	**16,181**
ETP Total	**245.73**	**131,912**	**537**
I-1 Total	31.07	468,906	15,092
I-2 Total	55.20	163,184	2,956
I-4 Total	22.02	105,730	4,801
Subtotal I Zones	**108.29**	**737,820**	**6,813**
OFFICE Total	**0.98**	**8,533**	**8,721**
R-12 Total	19.57	27,600	1,410
R-20 Total	8.61	25,848	3,003
R-40 Total	37.76	90,535	2,398
RM-10 Total	0.51	704	1,372
RM-12 Total	14.88	36,516	2,454
RM-6 Total	1.00	15,350	15,350
RM-8 Total	39.14	16,772	428
Subtotal R Zones	**121.47**	**8,533**	70

Source: DoverAssessment and Building Permit Records

Table A-3: Nonresidential projects by Zoning District

Projects ID	FileNumber	Date	Map_Lot	Zone	Lot Area	Building Size	Paved Area
28	P89-59	1989	M-24	B-1	10,320	220	6,000
				B-1 Total	10,320	220	6,000
27	P89-55	1989	31-24,25,26	B-2	43,560	4,516	-
3	P88-16	1988	3-23,24,25,40,41	B-2	11,720	2,285	6,964
17	P89-08	1988	4-16,17,18,18A	B-2	15,407	3,956	11,452
8	P88-31	1988	4-29	B-2	6,228	3,560	1,435
11	P88-74	1988	6-32,40,41,42	B-2	21,786	8,600	10,638
39	P95-46	1995	9-104	B-2	8,049	1,350	-
				B-2 Total	106,750	24,267	30,489
41	P96-08	1996	28-19,19B	B-3	46,639	11,288	30,150
65	P94-05	1994	38-10	B-3	48,005	4,000	13,780
51	P89-48	1989	38-11B	B-3	68,656	2,700	37,300
56	P90-34	1990	38-25M	B-3	13,408	1,628	13,148
16	P89-02	1989	40-20,21A	B-3	128,118	6,431	6,224
29	P90-05	1990	40-43	B-3	88,567	12,650	53,405
46	P88-65	1988	6-A-2	B-3	2,613,400	68,557	710,324
				B-3 Total	3,006,793	107,254	864,331
10	P88-46	1988	26-12	B-3,I-2	44,415	6,232	8,400
				B-3,I-2 Total	44,415	6,232	8,400
55	P90-29	1990	H35,34	B4	361,237	52,000	217,800
				B4 Total	361,237	52,000	217,800
20	P89-18	1989	24-115B	CWD	39,057	14,508	2,444
				CWD Total	39,057	14,508	2,444
40	P96-03	1996		ETP	9,766,000	-	-
23	P89-25	1989	E-32	ETP	522,720	95,000	216,110
15	P89-01	1989	E-32-1	ETP	60,201	4,096	18,455
59	P91-31	1991	E33,33A	ETP	355,014	11,989	53,350
54	P90-28	1990	E33,33A	ETP		8,550	38,325
44	P96-20	1996	E-33,33A	ETP		12,277	52,818
				ETP Total	10,703,935	131,912	379,058
36	P95-24	1995	15-66	I-1	62,625	14,872	147,753
42	P96-09	1996	26-6,7	I-1	2,722	291,000	259,225
6	P88-29	1988	E-33,33A	I-1	43,560	7,924	22,096
33	P91-26	1990	G-1C	I-1	198,022	7,000	8,400
49	P89-43	1989	G-32A	I-1	231,739	55,415	37,030
26	P89-46	1989	G-3C,3B	I-1	450,061	64,595	52,708
7	P88-30	1988	H-35C-3	I-1	86,300	26,600	41,950
14	P88-92	1988	H-35C-4	I-1	278,348	1,500	192,100
				I-1 Total	1,353,377	468,906	761,262
21	P89-19	1989	26-6,7	I-2	15,407	3,956	11,451
74	95-47	1995	6-3C	I-2	368,410	80,000	43,813
38	P95-45	1995	G-6C	I-2	1,742,400	70,000	100,000
68	P94-29	1994	H-35C-4	I-2	278,348	9,228	126,552
				I-2 Total	2,404,565	163,184	281,816
60	P93-07	1993	D-1,D-11A,52A	I-4	87,120	25,200	25,700
70	P95-10	1995	D-11-3	I-4	349,830	38,000	63,000
62	P93-28	1993	D-13-1	I-4	318,903	29,750	33,191
45	P96-23	1996	D-14-3	I-4	113,918	3,780	34,179
4	P88-21	1988	H-35C,3-B	I-4	89,567	9,000	22,460
				I-4 Total	959,338	105,730	178,530
30	P90-16	1990	29-24	OFFICE	8,800	3,381	5,419
52	P90-02	1990	30-11-6	OFFICE	10,021	1,932	5,989
22	P89-21	1989	37-62	OFFICE	7,200	1,242	1,398
19	P89-17	1989	9-44	OFFICE	16,600	1,978	7,200
				OFFICE Total	42,621	8,533	20,006
73	P95-42	1995	13-23	R-12	482,208	4,700	129,000
53	P90-22	1990	13-23	R-12	361,700	22,000	87,000

Table A-3: Nonresidential projects by Zoning District

Projects ID	FileNumber	Date	Map_Lot	Zone	Lot Area	Building Size	Paved Area
72	P95-32	1995	38-32D	R-12	8,700	900	3,500
				R-12 Total	852,608	27,600	219,500
2	P88-09	1988	H-12	R-20	196,400	21,240	23,000
18	P89-13	1989	M-56B	R-20	178,594	4,608	26,064
				R-20 Total	374,994	25,848	49,064
5	P88-26	1988	45,46A,47A	R-40	1,306,800	17,000	16,000
71	P95-25	1995	F-9	R-40	217,800	10,000	-
43	P96-10	1996	K-11A	R-40	119,844	59,167	80,673
24	P89-41	1989	N-15	R-40	294	4,368	-
				R-40 Total	1,644,738	90,535	96,673
9	P88-45	1988	20-61	RM-10	22,351	704	-
				RM-10 Total	22,351	704	-
13	P88-88	1990	I-6C	RM-12	60,000	14,676	12,000
69	P94-34	1994	L-50	RM-12	588,060	21,840	48,943
				RM-12 Total	648,060	36,516	60,943
34	P93-17	1993	I-37,38,44	RM-6	43,560	15,350	16,530
				RM-6 Total	43,560	15,350	16,530
12	P88-83	1988	31-4A	RM-8	32,070	10,200	-
25	P89-42	1989	33-2	RM-8	1,653,601	2,128	220
48	P89-05	1989	4-59	RM-8	19,455	4,444	6,577
				RM-8 Total	1,705,126	16,772	6,797
				Grand Total	24,323,845	1,296,071	3,199,643

SECTION III. ESTIMATED PROPERTY TAX IMPACTS OF PROJECTED DOVER GROWTH

This section of the Dover Master Plan Economic Component presents an estimate of the fiscal impact of the level of the Current Trends growth projected in the previous section of this report. Those projections are predicated on anticipated regional growth patterns and current growth management policies in Dover.

Synopsis

The conclusion of this section of the Dover Master Plan Economic Component is that if Dover grows in accordance with the projections set forth in the previous section of this report, there will be a negative impact on the City's fiscal structure:

Projected New Assessed Value	$	354,015,000
Tax Rate 1997 (Excluding County)	$	26.10
Property Taxes Raised	***$***	***9,239,792***
Operating Expenses Allocated	$	(9,605,194)
Allocated Capital Costs Annual Debt Serv	$	(1,993,178)
Total Allocated Costs	***$***	***(11,598,371)***
Annual Surplus (Deficit)	***$***	***(2,358,580)***

The methodology and calculations utilized in reaching this conclusion are set forth in the following paragraphs.

Methodology

Section II of this Economic Component of the Dover Master Plan Update presented a series of projections of Dover's anticipated growth over a ten-year projection period. As set forth in that analysis, unless Dover modifies its growth policies, the City will realize the following levels of development activity over the ten-year projection period:

- 3,200 new housing units, including 1,450 new single family units;
- 825,000 square feet of new manufacturing space;
- 450,000 square feet of new warehouse space;
- 1.1 million square feet of new office/institutional space;

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- 292,000 square feet of new retail space.

The appropriate interpretation of these projections is that they reflect the level of development activity that will occur in Dover, based on anticipated regional trends and Dover's possible performance within its regional setting with no new attempts by the City to shape growth into desired patterns. That is, these projections reflect what may happen in Dover under existing policies and anticipated levels of regional development activity. In fact, as a result of the Master Plan process, Dover's policies will probably be modified to shape development into a more beneficial pattern.

One dimension of shaping growth is to understand the property tax implications of this "policy-neutral" Current Trends scenario. Dover, like all municipal governments, is striving to provide an appropriate level of services at an affordable cost for its residents and business community. Growth has a major impact on both revenues and expenses:

- Growth places increased demands on a municipality's operating expenses.
- Growth places demands for new infrastructure and expanded capacity of existing services.
- Growth can affect the level of service enjoyed by the City's residents, posing a hidden cost in the form of less capacity at facilities, such as parks and recreation, even in the absence of new budgetary costs.
- Growth generates new revenues in the form of increased property tax assessments and non-property tax fees/service charges.

Measuring the anticipated costs and revenues of new growth is more an art than a science. This is the case because:

- Municipalities do not maintain a cost accounting system that would, for example, isolate the cost of servicing residential versus non-residential development.
- The relationship between growth and municipal costs is complicated. For example, because of demographic trends during the 1980s, municipalities experienced rapid rates of residential growth, but school enrollment declined. In contrast, during the 1990s, growth subsided, but school enrollment rose.
- Municipal service capacity is typically added in large increments, rather than small increments. For example, when Dover built its new sewerage treatment plant, it purposely built it with substantial excess capacity to accommodate future growth. With that plant in place, Dover now has the capacity to accommodate additional development,

without incurring additional capital costs to expand the plant, *up to a point*.

These issues make it extremely difficult to measure the impact of even a single development on the community. The complexity increases exponentially when trying to evaluate the fiscal impact of ten years of projected growth--as is the case in this analysis. Some analysts adopt an approach that provides substantial detail, but frequently masks important relationships. Others opt for an approach that addresses major issues in a more understandable, but less detailed, format.

We have opted for the latter approach of a simplified, but more understandable assessment of the estimated costs and benefits of projected growth. This is for three reasons: (1) This analysis is intended to be read and understood by policy makers and residents, who probably do not have the technical background to evaluate a more complex treatment of costs and revenues; (2) our experience indicates that the more complicated models may be superficially more impressive, but a direct approach addressing major revenues/costs is still sufficiently accurate; and (3) deploying a more comprehensive model would require substantially more of the financial resources devoted to updating Dover's Master Plan--at the expense of other important elements of the Master Plan including the transportation component, the evaluation of the City's zoning ordinance and its economic development strategy.

In addressing the issues of the fiscal impact of projected growth, this model focuses on the most important issues by:

- Evaluating growth within the context of the 1997 fiscal structure of the community--including both its costs and revenues.
- Focusing the analysis on the important property tax impacts of growth. Non-property tax revenues and municipal/education costs funded by non-property tax revenues are typically proportionate to growth (motor vehicle registrations, for example). A detailed assessment of the non-property dimensions of the fiscal impact of growth in Dover would complicate the analysis greatly, without contributing significantly to the validity of the findings.

This analysis of the impacts of growth are discussed along several lines:

- The impacts of residential growth are evaluated separately from the impacts of non-residential growth;
- The impacts on municipal operating expenses are evaluated separately from the impact on municipal capital improvements and capital costs.

The following paragraphs present the result of this analysis.

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Property Tax Impact on Dover's Operating Costs

This section of the analysis reviews the impact of new residential and non-residential growth on the City's operating budget funded by property taxes. A subsequent section examines capital cost and infrastructure issues.

Residential Impacts

This evaluation of the property tax impacts of new residential development is conducted within the context of the current (mid-1998) municipal funding environment. As of this writing, the state of New Hampshire is considering alternative means to fund school costs, that could have a significant effect on Dover's cost of servicing residential development. The outcome of those deliberations, however, remains to be seen as of this writing.

If Dover does realize the projected 3,200 new housing units set forth in the previous section of this Master Plan Analysis, there will be a significant impact across a broad front of municipal services. This is particularly true for schools, which account for nearly two-thirds of Dover's property taxes.

The essential steps in analyzing the property tax impacts of new residential development include:

- Estimating the new school enrollment that will be generated by the development activity;
- Identifying the property-tax based cost of educating a student;
- Estimating municipal (non-school) property-tax funded costs per housing unit;
- Estimating the incremental assessed valuation and property taxes the new housing activity will generate.

These calculations are set forth in Table 1 on the following two pages. The conclusion of the analysis, not surprisingly, is that projected new residential development in Dover will not "pay its own way."

Under the assumptions built into this analysis, the net annual property tax impact of the projected 3,200 new housing units is an annual operating deficit of $2.5 million (rounded), or about $800 per new housing unit. This does not include additional capital costs, which are evaluated in the subsequent section of this impact assessment.

The principal reason new residential development will not pay its way in Dover is that property-tax funded school costs (estimated to be $7.2 million for 1,450 new students) will absorb essentially all of the property tax revenues generated. In addition, new residential development will impose incremental municipal service costs for services such as police and fire protection. Adding these municipal costs into the equation generates the indicated deficit.

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Table 1 Property Tax Impact of Residential Growth

Estimated Costs Funded by Property Tax

	1997	10 Year Growth
Housing Units		
2-3 family	740	50
apartments	4,468	950
condos	897	525
Mobile home	318	225
public housing	458	-
Single family	4,650	1,450
	11,531	**3,200**

Students Per Unit	**Planning Dept/GIS Existing Units**	**Northeast US New Construction**	**Dover: New Construction**
2-3 family	0.592	0.410	0.592
apartments	0.109	0.170	0.170
condos	0.124	0.260	0.260
Mobile home	0.025	0.350	0.350
public housing	0.424	not available	0.424
Single family	0.379	0.720	0.720
	0.260		

Students	**1997:Planning Dept**	**Growth-Generated Enrollment**
2-3 family	438	30
apartments	487	162
condos	111	137
Mobile home	8	79
public housing	194	-
Single family	1,761	1,044
	2,999	**1,450**

Property Taxes Raised For School Functions: 1997	$	14,911,369
Dover Students Educated	$	2,999
Property Tax Cost/Student	$	4,972.11
Incremental Property Tax Funded Education Cost	***$***	***7,211,278***
Muncipal Property Tax Funded Costs		
City Activities Funded by Property Tax	$	9,640,891
% Residential (based on current city-wide assessment data)		73%
$ Residential	$	7,037,851
Units: 1997		11750
Cost per Unit	$	599
Units Added		3,200
Muncipal Cost	***$***	***1,916,691***
Combined Municipal and School Costs	***$***	***9,127,970***

dover master plan cost of growth two schools residential

Table 1 Property Tax Impact of Residential Growth (cont'd.)

Estimated Property Tax Revenues

Assessed Value per New Unit (exclusive of land)		**Per Unit**		**Total**
2-3 family	$	60,000	$	3,000,000
apartments	$	35,000	$	33,250,000
condos	$	50,000	$	26,250,000
Mobile home	$	35,000	$	7,875,000
public housing	$	-	$	-
Single family	$	125,000	$	181,250,000
Total Increase in Assessed Value			**$**	**251,625,000**
Local Tax Rate (1997, excludint county portion			$	26.10
Incremental Property Taxes			**$**	***6,567,413***

Synopsis of Residential Impact

Incremental Property Taxes	$	6,567,413
Incremental School Costs	$	(7,211,278)
Incremental Municipal Costs	$	(1,916,691)
Net Annual Property Tax Impact	**$**	**(2,560,557)**

Some technical notes regarding the calculations incorporated into the table include the following:

- The projected mix of housing units is based on the previous Economic and Land Use Projections component of the Master Plan analysis.
- The estimated school enrollment generation per housing unit is based on a combination of (1) the Dover Planning Department's GIS Survey of school generation by housing unit in Dover and (2) figures compiled in the U.S. Annual Housing Survey reflecting school generation in new housing units within the Northeast United States. For the most part, the calculations are based on the Northeast U.S. figures, because they reflect school generation in new housing units, whereas the Dover figures reflect school generation in predominantly older housing units in Dover.
- Consistent with AER's experience in other communities, single family homes generate the bulk of the anticipated new enrollment, accounting for 1,044 out of the anticipated 1,450 new students. If the projected unit mix in Dover were to be more single family-oriented than expected, the school impacts would rise accordingly. The converse is also true.
- Property-tax funded costs per student are $5,000 per student (rounded). There are additional costs incurred, but these additional costs are offset by a combination of state grants, tuition, and federal assistance along with fees charged by the school district. This analysis focuses exclusively on costs funded by property taxes and on property tax revenues.
- Municipally funded property tax costs for services such as police and fire protection, public works, etc. are estimated to be $600 per housing unit based on an allocation of total property-tax funded municipal costs. This allocation is based on the observation that 73 percent of Dover's tax base is residential. Consequently, we have assigned 73 percent of municipal (non-school) cost to residential activities.
- Assessed valuation per unit is based on AER's estimates of the costs of new construction, drawing on the experience of Dover over the past decade. Inasmuch as the land will be taxed whether or not new units are built, the increment in assessment reflects only the estimated construction cost of new housing. Typically, municipalities predicate their assessments on a combination of methodologies, including the cost of new construction.

- The local tax rate of $26.10 is Dover's 1997 tax rate, exclusive of $2.60 per thousand, which Dover collects on behalf of the county. This county portion of the tax rate is eliminated from the calculations because Dover does not benefit from those revenues, but, rather, merely serves as a collection agency for the county.

Non-Residential Property Tax Impacts

The conventional wisdom among New Hampshire municipal observers is that non-residential development more than "pays its own way." The findings of our analysis in Dover confirm this. Under the assumptions incorporated into this analysis, if Dover were to realize the projected level of non-residential development activity, an annual property tax surplus of approximately $2.2 million would be realized prior to consideration of capital costs. (See Table 2.)

This surplus occurs because this non-residential development will pay full property taxes including both the municipal and school portion of the property tax rate, but will not impose any direct incremental school costs on the City. Those school costs that indirectly are attributable to new non-residential development (when new employees move into Dover to fill manufacturing jobs, for example) are accounted for in this analysis--within the previous residential component, discussed above.

Allocated Capital Costs

The amount of growth projected for Dover is significant enough to require infrastructure expansions. These infrastructure expansions could possibly include items such as:

- Expansion of the City's school capacity;
- New roads and improvements to the existing road system;
- Acquisition of new park land and improvements to existing park and recreation facilities;
- The acquisition of additional equipment to meet the City's public works, police and fire protection obligations;

Dover has a Capital Improvement Program addressing future capital improvement requirements. Although this Capital Improvement Program was not prepared with a specific eye toward the economic projections set forth above, it nonetheless does provide a yardstick to measure anticipated future capital improvements required to service existing and anticipated future growth.

In this analysis, AER has projected future capital costs based on the City's proposed Capital Improvement Program. It is recognized that some of these capital improvements are not specifically growth-related--they would be undertaken whether or not the City experiences growth, because they are programmed to solve existing problems. Offsetting this is the observation that the City's Capital Improvement Program was not prepared with

Table 2: Property Tax Impact of Nonresidential Growth

Estimated Property Tax Revenues

	Square Feet Added	Assessed Value per New Square Foot	Assessed Value Generated
Manufacturing	825,000	$ 30.00	$ 24,750,000
Warehouse	450,000	$ 25.00	$ 11,250,000
Subtotal:Industrial	*1,275,000*		*$ 36,000,000*
Office/Institutional	1,065,000	$ 50.00	$ 53,250,000
Retail	292,000	$ 45.00	$ 13,140,000
Total Non Residential			***$ 102,390,000***
Local Tax Rate			$ 26.10
Property Taxes Generated			**$ 2,672,379**

Estimated Property Tax Funded Costs

Cost of Muncipal Functions Funded By Property Tax	$	9,640,891
% Non Residential		27%
$ nonresidential	$	2,603,041
Dover Employment		15,000
$ per Job	$	173.54
Jobs Created		2,750
Municipal Costs Allocated	**$**	**477,224**

Synopsis

Property Taxes Generated	**$**	**2,672,379**
Municipal Costs Allocated	**$**	**(477,224)**
Net Estimated Property Tax Impact	**$**	**2,195,155**

an eye toward the extensive amount of growth that will potentially occur in Dover under the terms of these current trends growth projections. Although the latter probably does not perfectly offset the former, an extension of the City's existing Capital Improvement Program provides a reasonable indication of future growth-related capital requirements within the limited scope of this analysis.

Table 3, on the following page, sets forth the annual capital costs estimated to be attributable to growth over the next 10 years. Discussion of the table entries includes:

General Fund Capital Improvement Projects Financed by Debt. This figure is derived from the City's Capital Improvement Program, page 20. It reflects the amount of debt to be carried by the City, exclusive of state/federal grants and exclusive of enterprise funds (which are not funded by the property tax).

Annualized Capital Improvements. This is the first figure divided by the six years covered by the Capital Improvement Program.

Projection Period in Years. This Master Plan's projection period is 10 years.

Projected General Fund Capital Improvement Projects Financed by Debt. This is the annualized debt over the 10-year Master Plan projection period.

Anticipated Term and Interest Rate. For purposes of this analysis, we have presumed a 20-year typical debt issue, with a 7 percent interest rate. This interest rate is probably somewhat higher than the City would secure today, but interest rates are inordinately low as of this writing.

Annual Debt Service Constant. This is the percentage of the projected General Fund Capital Improvement Projects to be paid back each year, presuming the term and interest rate set forth above. This presumes a level payment bond issue, for the sake of simplifying the analysis.

Annual Debt Service. This is the amount of debt (principle and interest) that will be paid back each year under the terms set forth above.

Assessed Valuation of Growth. This figure includes the projected total assessment for residential and non-residential growth set forth in the previous sections of this component of the Master Plan economic analysis.

City-Wide Assessed Valuation. This is the total taxable value (net of exemptions) of all property in the City as of 1997.

Growth as a Percent of Total. The anticipated assessed valuation of the growth represents 43 percent of the city-wide valuation. This figure is utilized to apportion the annual debt service between existing taxpayers and anticipated growth.

Table 3: Capital/Debt Service Cost of Projected Growth

Assessed Valuation of Growth	$	354,015,000.00	
City-wide Assessed Valuation (1997)	$	947,901,400.00	
Growth as a % of Total		37%	
Total General Fund Capital Improvement Projects Financed By Debt	$	34,431,490	cip page 20
Annualized Capital Improvements	$	5,738,582	over 6 years
Projection period in years		10	
Projected General Fund Capital Improvement Projects Financed By Debt	$	57,385,817	
Anticipated Term (years)		20	
Anticipated Interest Rate		0.07	
Annual Debt Service Constant		0.093	
Annual Debt Service	$	5,336,881	
Growth Allocation		37%	
Annual Cost Allocated To Growth	$	1,993,178	

Annual Cost Allocated to Growth. This is the growth as a percent of total figure multiplied times the annual debt service. It represents the amount of annually debt service attributable to growth.

Based on the calculations set forth in Table 3, the annual cost of infrastructure improvements allocated to growth is $2.0 million.

Combined Operating and Capital Effects

The results of the analysis indicate an annual deficit of $2.4 million under the terms of this analysis:

Projected New Assessed Value	$	354,015,000
Tax Rate 1997 (Excluding County)	$	26.10
Property Taxes Raised	***$***	***9,239,792***
Operating Expenses Allocated	$	(9,605,194)
Allocated Capital Costs Annual Debt Serv	$	(1,993,178)
Total Allocated Costs	***$***	***(11,598,371)***
Annual Surplus (Deficit)	***$***	***(2,358,580)***

In interpreting this result, it is important to recognize that there are a multiplicity of variables influencing the analysis. Every attempt has been made to accurately assess the impacts of growth; but analyzing the financial effects of 10 years of projected growth in Dover necessarily requires simplifying assumptions.

Nonetheless, based on this analysis, Dover should modify its development controls and incentives in a way that will encourage all of the projected non-residential development (which more than pays its way). It should also modify its policies to lower the level of residential development activity. These broad policy initiatives are supported by these calculations, and are also consistent with AER's experience in analyzing the fiscal impact of growth on a project-specific basis. Under New Hampshire's current method of funding municipal services, residential development typically fails to pay its way and non-residential development more than pays its way. Despite the extensive amount of non-residential development activity projected in this analysis, the City would be worse-off financially because the burden imposed by the level of residential growth more than offsets the benefits of the anticipated non-residential growth.

Table 4: Combined Operating and Capital Impacts of Projected Growth

Projected New Assessed Value	$	354,015,000
Tax Rate 1997 (Excluding County)	$	26.10
Property Taxes Raised	***$***	***9,239,792***
Operating Expenses Allocated	$	(9,605,194)
Allocated Capital Costs Annual Debt Serv	$	(1,993,178)
Total Allocated Costs	***$***	***(11,598,371)***
Annual Surplus (Deficit)	***$***	***(2,358,580)***

New Development in Dover, 1988-1997							
		Acres	SF Built	Assessment: Buildings	Assessed Value per Square Foot	Assessment: Land	Assessment: Total
1010 totals	Single Family	908.66	1,246,686	$57,837,200	$46.39	$20,385,500	$78,222,700
1011 totals	Single Family	0.00	1,613	$62,700	$38.87	0	$62,700
1013 totals	Single Family	60.52	59,458	$3,294,600	$55.41	$2,159,100	$5,453,700
	Subtotal: Single Family	**969.18**	**1,307,757**	**$61,194,500**	$46.79	**$22,544,600**	**$83,739,100**
1020 totals	Condominiums	10.94	367,756	$15,174,800	$41.26	$5,677,600	$20,852,400
1030 totals	Mobile Homes	10.01	3,536	$111,700	$31.59	$117,400	$229,100
1031 totals	Mobile Homes	0.00	21,327	$684,000	$32.07	0	$684,000
1040 totals	Duplex	1.33	11,399	$428,800	$37.62	$113,600	$542,400
3040 totals	Nursing Homes	18.54	75,146	$3,747,200	$49.87	$251,600	$3,998,800
	Subtotal: Residential	**1010.00**	**1,786,921**	**$81,341,000**	**$45.52**	**$28,704,800**	**$110,045,800**
3110 totals	Gas Stations	1.38	2,400	$130,300	$54.29	$75,700	$206,000
3160 totals	Commercial Warehouse	4.47	17,960	$403,300	$22.46	$166,800	$570,100
3220 totals	Store/Shop	3.54	30,724	$966,500	$31.46	$477,300	$1,443,800
3222 totals	Commercial	0.00	5,758	$538,000	$93.44	0	$538,000
3542 totals	Bus Station	6.39	9,588	$365,000	$38.07	$164,800	$529,800
3410 totals	Bank	0.59	533	$125,800	$236.02	$87,500	$213,300
3250 totals	Commercial	0.32	1,680	$106,100	$63.15	$128,700	$234,800
3900 totals	Other Commercial Land	0.30	4,461	$317,800	$71.24	$101,100	$418,900
3880 totals	Outdoor Recreation	5.99	2,016	$56,800	$28.17	$47,800	$104,600
3260 totals	Restaurants/clubs	0.54	5,419	$368,600	$68.02	$168,100	$536,700
3350 totals	Car Wash	0.30	3,948	$163,800	$41.49	$101,300	$265,100
	Subtotal: Commercial	**23.82**	**84,487**	**$3,542,000**	**$41.92**	**$1,519,100**	**$5,061,100**
3400 totals	Office Building	0.92	18,333	$949,000	$51.76	$277,100	$1,226,100
3421 totals	Professional Condo	5.96	24,620	$1,193,000	$48.46	$434,900	$1,627,900
	Subtotal:Office	**6.88**	**42,953**	**$2,142,000**	**$49.87**	**$712,000**	**$2,854,000**
4000 totals	Factory	42.64	131,489	$4,017,900	$30.56	$569,300	$4,587,200
4020 totals	Industrial Office	224.20	249,948	$8,347,900	$33.40	$2,159,500	$10,507,400
4010 totals	Warehouse	10.05	44,708	$1,088,600	$24.35	$404,500	$1,493,100
4022 totals	Other Industrial	5.03	41,673	$1,054,300	$25.30	$147,800	$1,202,100
	Saubtotal: Industrial	**281.92**	**467,818**	**$14,508,700**	**$31.01**	**$3,281,100**	**$17,789,800**
9030 totals	Municipal	43.59	35,680	$5,294,600	$148.39	$523,200	$5,817,800
9060 totals	Churc	6.63	11,123	$553,400	$49.75	$209,100	$762,500
9200 totals	Non Profit	0.00	4,032	$154,500	$38.32	$39,000	$193,500
9300 totals	Other	0.00	65,025	$1,978,200	$30.42	0	$1,978,200
9310 totals	Other	5.98	26,108	$1,805,200	$69.14	$405,700	$2,210,900
Grand Tot.	**Total: All Uses**	**1,378.85**	**2,524,147**	**$111,319,600**	**$44.10**	**$35,394,000**	**$146,713,600**

newdevdovr including assess. data

SECTION IV. ECONOMIC/LAND USE PROJECTIONS AND FISCAL IMPACT: MODIFIED TRENDS SCENARIO

Section II of this report presented a series of economic and land use projections under a series of assumptions identified as the "Current Trends" scenario. This section of the report modifies those projections to reflect anticipated policy changes Dover is likely to implement, in accordance with the recommendations set forth in Section VI of this report.

More specifically, we have reduced the level of anticipated residential development to the long-term average for the city of Dover. According to census figures, Dover added 2,548 new housing units between 1980 and 1990, an average of just over 250 units per year. Looking at the 1982-1994 period, Dover authorized an average annual total of 200 new housing units per year (growth was slower since 1990 than before 1990).

In this Modified Trends scenario, we have anticipated an average annual pace of new housing construction totaling 220 units per year, a total of 2,200 units over the ten-year projection period. As previously noted, these projections should be viewed on the basis of an average annual growth and the precise timeframe of the projection period could be shifted forward, if necessary for subsequent components of the Master Plan update.

The tables at the end of this section of the report provide a parallel set of tables to those set forth in Section II of this analysis. The table on the following page contrasts the Current Trends scenario and the Modified Trends scenario. The significant difference is that the city's population growth and housing unit growth will be slower under the Modified Trends scenario than the Current Trends scenario. The total amount of residential growth drops from 3,100 units under the Recent Trends to a revised 2,200 units added under the Modified Trends scenario.

With respect to the availability of currently zoned, vacant land, we offer the following observations from the perspective of this Modified Trends scenario:

- There is an adequate supply of residentially zoned land in the city. Including the total acres available, the growth would absorb approximately 50 percent of the currently zoned, vacant upland residential land.

Comparison of Current Trends and Modified Growth Scenarios

	1985	1995	Current Trends Scenario: 2005	Modified Trends Scenario: 2005	Ten Year Growth: Current Trends Scenario	Ten Year Growth: Modifed Trends Scenario
Population	23,450	25,950	28,700	27,800	2,750	1,850
Total Housing Units	8,750	11,600	14,700	13,800	3,100	2,200
Owner Occupied	5,000	5,450	7,300	6,800	1,850	1,350
Renter Occupied	4,400	5,350	6,300	6,000	950	650
Employment	10,800	14,100	19,300	17,800	5,200	3,700
Manufacturing	3,900	3,300	4,400	4,400	1,100	1,100
Nonmanufacturing	6,900	10,800	14,900	14,900	4,100	4,100
Office	5,900	9,750	13,300	13,300	3,550	3,550
Retail Sales	147,687	245,852	392,100	392,100	146,248	146,248

- There is not a sufficient current supply of either commercial or industrial zoned upland to accommodate anticipated development.

Based on these findings, it would be prudent for Dover to rezone some areas now zoned residential to industrial and commercial categories.

Fiscal Impact of Modified Trends Scenario

Tables 7 through 10 present a fiscal impact analysis of the Modified Trends scenario described in the preceding text. This analysis of the fiscal impact of the Modified Trends scenario utilizes all the same factors as the fiscal impact analysis of the Current Trends scenario, set forth in Section III of this report. The only modification has been to adjust the anticipated growth to that reflected in the Modified Trends scenario.

The results of the analysis, which are summarized in Table 10, indicate that the Modified Trends scenario will achieve a break-even fiscal impact on the city. That is, if the city of Dover modifies its policies so as to reduce the pace of residential development such that anticipated residential growth is reduced by approximately 900 units to a revised figure of 2,200 units over the next decade, then the city will achieve a fiscal balance between the amount of industrial/commercial development occurring and the amount of residential development. As such, there would be no impact on the city's tax rate if the Modified Trends scenario were achieved.

Table 7 Property Tax Impact of Residential Growth

Estimated Costs Funded by Property Tax

	1997	10 Year Growth
Housing Units		
2-3 family	740	50
apartments	4,487	650
condos	897	325
Mobile home	318	125
public housing	458	-
Single family	4,850	1,050
	11,750	**2,200**

Students Per Unit	**Planning Dept/GIS Existing Units**	**Northeast US New Construction**	**Dover: New Construction**
2-3 family	0.592	0.410	0.592
apartments	0.109	0.170	0.170
condos	0.124	0.260	0.260
Mobile home	0.025	0.350	0.350
public housing	0.424	not available	0.424
Single family	0.379	0.720	0.720
	0.260		

Students	**1997:Planning Dept**	**Growth-Generated Enrollment**
2-3 family	438	30
apartments	487	111
condos	111	85
Mobile home	8	44
public housing	194	-
Single family	1,761	756
	2,999	**1,024**

Property Taxes Raised For School Functions: 1997	$	14,911,369
Dover Students Educated	$	2,999
Property Tax Cost/Student	$	4,972.11
Incremental Property Tax Funded Education Cost	***$***	***5,093,158***
Muncipal Property Tax Funded Costs		
City Activities Funded by Property Tax	$	9,640,891
% Residential (based on current city-wide assessment data)		73%
$ Residential	$	7,037,851
Units: 1997		11750
Cost per Unit	$	599
Units Added		2,200
Muncipal Cost	***$***	***1,317,725***
Combined Municipal and School Costs	***$***	***6,410,883***

Table 8: Property Tax Impact of Nonresidential Growth

Estimated Property Tax Revenues

	Square Feet Added	Assessed Value per New Square Foot	Assessed Value Generated
Manufacturing	825,000	$ 30.00	$ 24,750,000
Warehouse	450,000	$ 25.00	$ 11,250,000
Subtotal:Industrial	*1,275,000*		*$ 36,000,000*
Office/Institutional	1,065,000	$ 50.00	$ 53,250,000
Retail	292,000	$ 45.00	$ 13,140,000
Total Non Residential			***$ 102,390,000***
Local Tax Rate			$ 26.10
Property Taxes Generated			**$ 2,672,379**

Estimated Property Tax Funded Costs

Cost of Muncipal Functions Funded By Property Tax	$	9,640,891
% Non Residential		27%
$ nonresidential	$	2,603,041
Dover Employment		15,000
$ per Job	$	173.54
Jobs Created		2,750
Municipal Costs Allocated	**$**	**477,224**

Synopsis

Property Taxes Generated	**$**	**2,672,379**
Municipal Costs Allocated	**$**	**(477,224)**
Net Estimated Property Tax Impact	**$**	**2,195,155**

Table 9: Capital/Debt Service Cost of Projected Growth

Assessed Valuation of Growth	$	336,640,000.00	
City-wide Assessed Valuation (1997)	$	947,901,400.00	
Growth as a % of Total		36%	
Total General Fund Capital Improvement Projects Financed By Debt	$	34,431,490	cip page 20
Annualized Capital Improvements	$	5,738,582	over 6 years
Projection period in years		10	
Projected General Fund Capital Improvement Projects Financed By Debt	$	57,385,817	
Anticipated Term (years)		20	
Anticipated Interest Rate		0.07	
Annual Debt Service Constant		0.093	
Annual Debt Service	$	5,336,881	
Growth Allocation		36%	
Annual Cost Allocated To Growth	$	1,895,353	

Table 10: Combined Operating and Capital Impacts of Projected Growth

Projected New Assessed Value	$	336,640,000
Tax Rate 1997 (Excluding County)	$	26.10
Property Taxes Raised	***$***	***8,786,304***
Operating Expenses Allocated	$	(6,888,107)
Allocated Capital Costs Annual Debt Serv	$	(1,895,353)
Total Allocated Costs	***$***	***(8,783,460)***
Annual Surplus (Deficit)	***$***	***2,844***

SUPPLEMENTAL TABLES – SECTION IV

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Table 1: Regional Growth Projections

	Trends		Change 85-95		Projected	Change	%
	1985	1995	Number	Percent	2005	1995-05	Change
Covered Employment	61,200	79,550	18,350	30%	111,258	31,708	40%
Manufacturing	20,550	18,200	(2,350)	-11%	24,758	6,558	36%
Nonmanufacturing	43,500	61,350	17,850	41%	86,500	25,150	41%
Office/Service	33,873	41,114	7,241	21%	49,900	8,786	21%
Population	175,000	190,200	15,200	9%	206,700	-16,500	9%
Total Housing Units	67,300	82,900	15,600	23%	102,100	-19,200	23%
Owner Occupied	39,450	47,150	7,700	20%	61,900	14,750	31%
Renter Occupied	23,700	26,000	2,300	10%	30,400	4,400	17%
Subtotal: Occupied Units	63,150	73,150	10,000	16%	92,300	19,150	26%
	1982	1992			2005		
Retail Sales ($000)	1,009,293	2,253,795	1,244,502	123%	5,032,800	2,779,005	123%

Note: Regional long term trend of declining manufacturing employment has been reversed by more recent, 1991-95 trend, during which regional manufacturing employment expanded by 2,625 jobs, a 17% increase--see employment trends data in AER's Economic Trends Resource Materials, September 1996. Also, occupied housing units will grow slightly faster than the trend, because the trend was influenced by excessive inventory vacancy.

Table 2: Dover's Growth Trends and Share of Regional Activity

	Trends		Change 85-95	
	1985	1995	Number	Percent
Covered Employment	10,800	14,100	3,300	31%
Manufacturing	3,900	3,300	(600)	-15%
Nonmanufacturing	6,900	10,800	3,900	57%
Office/Service	5,900	9,750	3,850	65%
Population	23,450	25,950	2,500	11%
Total Housing Units	8,759	11,300	2,541	29%
Owner Occupied	5,000	5,450	450	9%
Renter Occupied	4,400	5,350	950	22%
Subtotal: Occupied Housing Units	9,400	10,800	1,400	15%
Persons per Unit	2.49	2.40		
	1982	**1992**		
Retail Sales	147,687	245,852	98,165	66%

Dover Share of Regional Activity

	1985	1995	Share of 1985-1995 Growth
Covered Employment	17.6%	17.7%	18.0%
Manufacturing	19.0%	18.1%	25.5%
Nonmanufacturing	15.9%	17.6%	21.8%
Office/Service	17.4%	23.7%	53.2%
Population	13.4%	13.6%	16.4%
Total Housing Units	13.0%	13.6%	16.3%
Owner Occupied	12.7%	11.6%	5.8%
Renter Occupied	18.6%	20.6%	41.3%
Subtotal: Occupied Housing Units	14.9%	14.8%	14.0%
	1982	**1992**	
Retail Sales	14.6%	10.9%	7.9%

Table 3: Dover Share of Regional Activity

	1985	1995	Share of 1985-1995 Growth
Covered Employment	17.6%	17.7%	18.0%
Manufacturing	19.0%	18.1%	25.5%
Nonmanufacturing	15.9%	17.6%	21.8%
Office/Service	17.4%	23.7%	53.2%
Population	13.4%	13.6%	16.4%
Total Housing Units	13.0%	13.6%	16.3%
Owner Occupied	12.7%	11.6%	5.8%
Renter Occupied	18.6%	20.6%	41.3%
Subtotal: Occupied Housing Units	14.9%	14.8%	14.0%
	1982	**1992**	
Retail Sales	14.6%	10.9%	7.9%

Table 3: Dover Growth: Modified Current Trends Scenario

	Trends		Projected	Growth	% Change
	1985	1995	2005	1995-05	1995-05
Covered Employment	10,800	14,100	19,300	5,200	37%
Manufacturing	3,900	3,300	4,400	1,100	33%
Nonmanufacturing	6,900	10,800	14,900	4,100	38%
Office/Service	5,900	9,750	13,300	3,550	36%
Population	23,450	25,950	27,800	1,850	7%
Total Housing Units	8,759	11,600	13,800	2,200	19%
Owner Occupied	5,000	5,450	6,800	1,350	25%
Renter Occupied	4,400	5,350	6,000	650	12%
Subtotal: Occupied Housing Units	9,400	10,800	12,800	2,000	19%
	1982	**1992**			
Retail Sales ($000)	147,687	245,852	392,100	146,248	59%

Table 4 Projected Residental Development Activity and Residential Land Requirements

Trends by Unit Type

	1980	1990	Estimated 1995	Change 1980-95		Change 1990-95	
				Units	Share of Change	Units	Share of Change
Single Family Detached	4,203	4,649	4,850	647	22%	201	69%
Single Family Attached	110	536	575	465	16%	39	13%
Mobile Home	8	369	375	367	13%	6	2%
Duplex	1,006	1,145	1,150	144	5%	5	2%
Multi-Family	3,384	4,608	4,650	1,266	44%	42	14%
Total Year-Round Units	**8,711**	**11,307**	**11,600**	**2,889**	**100%**	**293**	**100%**

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Projected Growth By Unit Type

	1995	2005	Share of Growth	Growth 1995-2005
Single Family Detached	4,850	5,900	45%	1,050
Single Family Attached	575	900	15%	325
Mobile Home	375	500	7%	125
Duplex	1,150	1,200	3%	50
Multi-Family	4,650	5,300	29%	650
			100%	
Total Year-Round Units	11,600	13,800	2,200	2,200

Projected Land Absorption

	Units Added, 1995 2005	Units per acre	Acres Required
Single Family Detached	1,050	0.53	1,981
Mobile Home	125	0.53	236
Subtotal: Single Family+Mobile Home	**1,175**	**0.53**	**2,217**
Single Family Attached	325	5.00	65
Duplex	50	4.00	13
Multi-Family	650	9.00	72
Total	**3,375**	**0.74**	**4,584**

Single FamilyAbsorption By Residential Zone (Includes Mobile Homes)

	% of Units	Units Added	Units per Acred	Upland Acres Required	Upland Acres Available	% Utilized
R-12	25%	290	0.92	316	488	65%
R-20	12%	140	0.85	165	394	42%
R-40	54%	630	0.40	1,564	3,396	46%
RM-8 and RM-10	2%	20	0.82	24	41	60%
RM12	3%	40	0.50	80	163	49%
RM 20	4%	50	0.80	63	112	56%
Total	**100%**	**1,170**	**0.53**	**2,212**	**4,594**	**48%**

Note: Acres available includes potentially buildable upland acres, including land with very low density single family homes

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Table 5: Projected Office,Industrial and Retail Land Absorption

Employment Growth

			Growth: 1995-2005	
	1995	**2005**	**Number**	**Percent**
Manufacturing Employment	3,300	4,400	1,100	33%
Warehouse Employment	500	725	225	45%
Office /Institutional Employment	9,750	13,300	3,550	36%

Sqaure Feet of Building Space per Employee

Manufacturing Employment	750
Warehouse Employment	2000
Office /Institutional Employment	300

Square Feet of Building Required To Support Growth

Manufacturing Employment	825,000
Warehouse Employment	450,000
Office /Institutional Employment	1,065,000

Square feet of Building per Acre

Manufacturing	6,000
Warehouse	8,000
Office /Institutional	7,200

Acres Required To Accommodate Growth

Manufacturing	140
Warehouse	60
Subtotal: Industrial	200
Office /Institutional	150
Total: Industrial and Office	350

Retail Land Requirements

Retail Sales Growth ($000)	$	146,248
% to Existing Merchants/inflation		50%
Available to Support Growth (000)	$	73,124
Average Sales/SF	$	250.00
Square Feet Supportable		292,000
Square Feet per Acre		6,000
Acres Required		50

Table 6: Land Requirements and Available Land

	Acres Required	Vacant Acres	Total Acres Available	% of Total Acres Available
Single Family	2,212	1,309	4,279	52%
Multi-Family	85	161	315	27%
Subtotal: Residential	**2,297**	**1,470**	**4,627**	**50%**
Commercial	100	96	121	82%
Industrial	301	168	266	113%
Total	**2,697**	**1,734**	**5,014**	54%

"Total Acres Available" includes vacant land, current use land, and land now used at one-fourth or less minimum applicable zoning density
Vacant land does not include wetlands.
Note: Office uses are allowed in most commercial and industrial zones. 1/3 of projected office growth allocated to Commercial zoning districts; 2/3 allocated to Industrial zoning districts. Does not include ETP vacant land (243 acres) due to unique ownership and apparent lack of availability for new
unique ownership and apparent lack of availability for new

SECTION V. LAND USE CHARACTERISTICS AND TRENDS

This section of the report sets forth current land use in the city, potentially buildable vacant land and a land capability analysis of sites eligible for rezoning to nonresidential use.

Current Land Use

Table 5-1 on the following page sets forth Dover's current land use by major category, based on an analysis completed by the Strafford Regional Planning Commission. The commission identified a total of just over 17,000 acres of land (plus 1,500 acres of water) in Dover. Slightly over one-third of this, 6,159 acres, is developed. Residential uses dominate the development pattern in the city, constituting 25 percent of the city's total land and 70 percent of its developed land (see Figure 5-2).

The implication of this current land use distribution is that there are significant land resources in Dover potentially available to support new development. This point is analyzed in additional detail in the following paragraphs.

Figure 5-3 presents a current land use map of the city also prepared by the Strafford Regional Planning Commission. The map reveals a fairly typical development pattern with commercial development centered in downtown Dover and along Central Avenue. Industrial development activity is centered in southwest Dover, with a particular recent concentration in the vicinity of the Sixth Street connector. Multifamily residential development is centered close to downtown Dover and single family development is scattered on the periphery of the city.

Recent Land Absorption Trends

Between 1988 and 1997, a total of 1,400 acres of land was placed under development in Dover, according to city assessment records. Just over 300 acres of this land consisted of nonresidential development. The balance, approximately 1,100 acres, consisted of new residential development.

Figure 5-4 sets forth nonresidential land absorption based on city assessment figures. The majority of the nonresidential land absorbed fell into the ETP zone. A total of 350 acres within this zone was added as a result of the 1988 plan recommendations. These 350 acres represent 80 percent of the nonresidential land development activity occurring in Dover between 1988 and 1997. The Liberty Mutual facility constitutes the bulk of this land placed under development.[1] Figure 5-5 sets forth Dover's residential development activity between 1988 and 1997. This data is also based on city assessment records. A total of 1,000 acres of land was placed under development for residential purposes during the 10-year period. This land accommodated a total of 834 dwelling units, resulting in an overall average density of just over one acre per unit. The bottom half of the table sets

[1] The figures in Table 5-4 are based on a compilation of the city's assessment records. As of this writing, this data is being reviewed to confirm its accuracy.

Table 5-1

Dover's Current Land Use by Major Category

Use	Acres	% of Total
Commercial	247	1%
Industrial	913	5%
Institutional	298	2%
Misc.	383	2%
Residential	4,318	25%
Subtotal: Developed	6,159	36%
Vacant	10,928	64%
Total Land	17,087	

source: Strafford Regional Planning Commission

dover current land use Sheet2

Figure 5-2

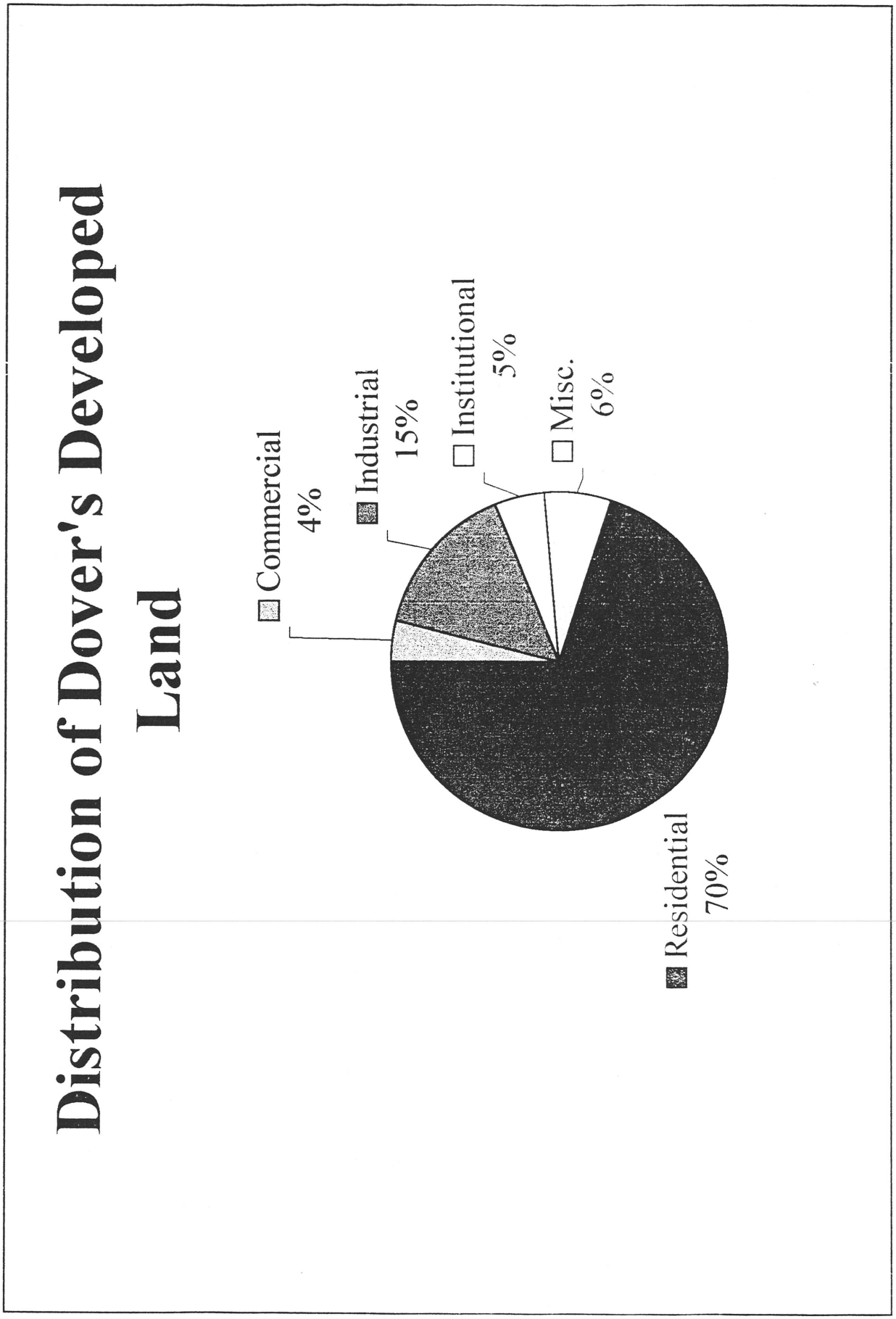
Distribution of Dover's Developed Land
Commercial 4%
Industrial 15%
Institutional 5%
Misc. 6%
Residential 70%

FIGURE 5-3

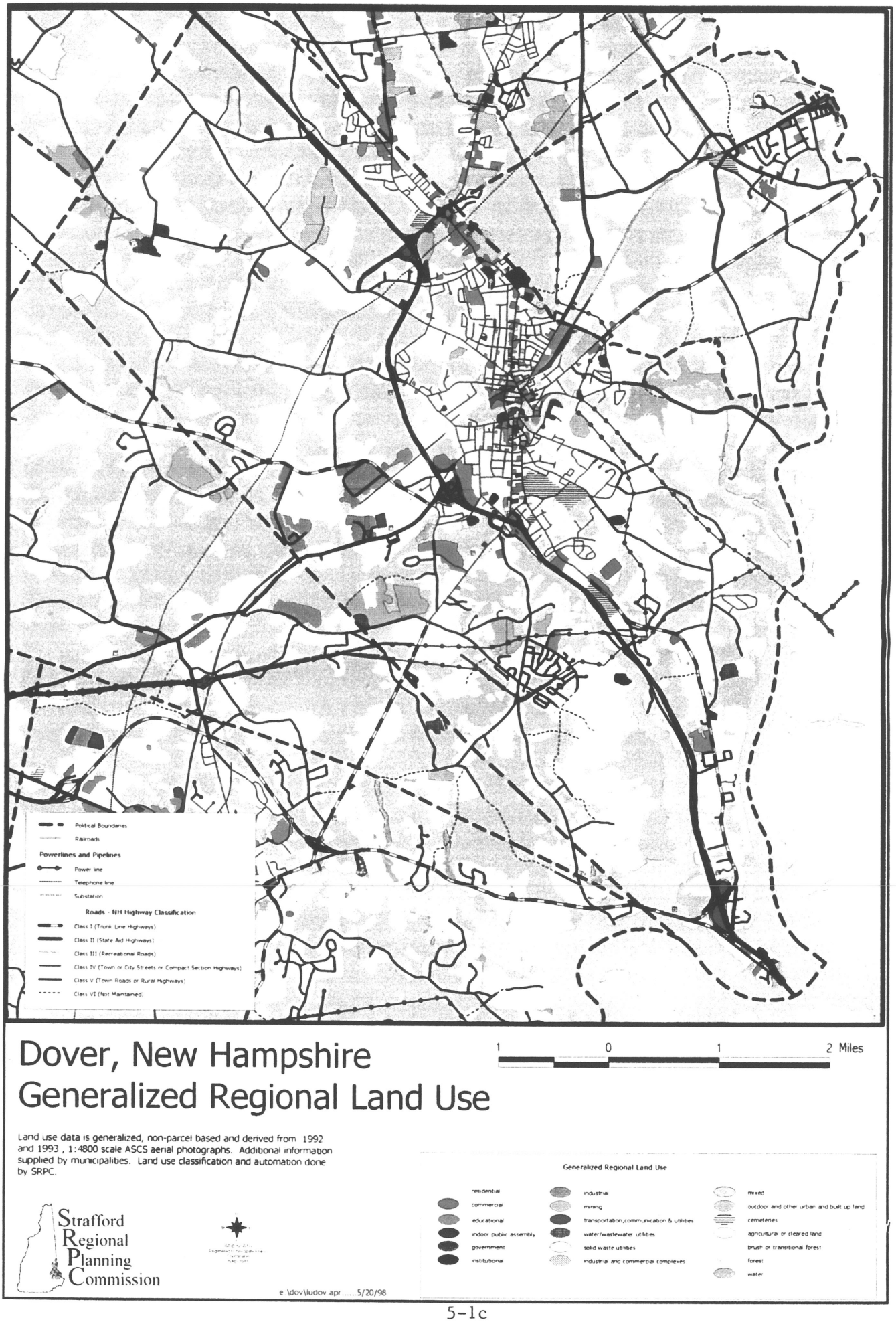
Political Boundaries
Railroads
Powerlines and Pipelines
Power line
Telephone line
Substation
Roads - NH Highway Classification
Class I (Trunk Line Highways)
Class II (State Aid Highways)
Class III (Recreational Roads)
Class IV (Town or City Streets or Compact Section Highways)
Class V (Town Roads or Rural Highways)
Class VI (Not Maintained)
Dover, New Hampshire
Generalized Regional Land Use
1 0 1 2 Miles
Land use data is generalized, non-parcel based and derived from 1992 and 1993 , 1:4800 scale ASCS aerial photographs. Additional information supplied by municipalities. Land use classification and automation done by SRPC.
Generalized Regional Land Use
residential
commercial
educational
indoor public assembly
government
institutional
industrial
mining
transportation,communication & utilities
water/wastewater utilities
solid waste utilities
industrial and commercial complexes
mixed
outdoor and other urban and built up land
cemetenes
agricultural or cleared land
brush or transitional forest
forest
water
Strafford Regional Planning Commission
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Figure 5-4 Dover's 1988-97 Nonresidential Land Absorption By Zoning Category

Zone	Land Area (Acres)	BuildingSize	Building Area/Acre
B-1 Total	0.24	220	929
B-2 Total	2.45	24,267	9,902
B-3 Total	70.05	113,486	1,620
B4 Total	8.29	52,000	6,270
Subtotal: B Zones	**81.03**	**189,973**	**2,345**
CWD Total	**0.90**	**14,508**	**16,181**
ETP Total	**245.73**	**131,912**	**537**
I-1 Total	31.07	468,906	15,092
I-2 Total	55.20	163,184	2,956
I-4 Total	22.02	105,730	4,801
Subtotal I Zones	**108.29**	**737,820**	**6,813**
OFFICE Total	**0.98**	**8,533**	**8,721**
R-12 Total	19.57	27,600	1,410
R-20 Total	8.61	25,848	3,003
R-40 Total	37.76	90,535	2,398
RM-10 Total	0.51	704	1,372
RM-12 Total	14.88	36,516	2,454
RM-6 Total	1.00	15,350	15,350
RM-8 Total	39.14	16,772	428
Subtotal R Zones	**121.47**	**8,533**	70

Source: DoverAssessment and Building Permit Records

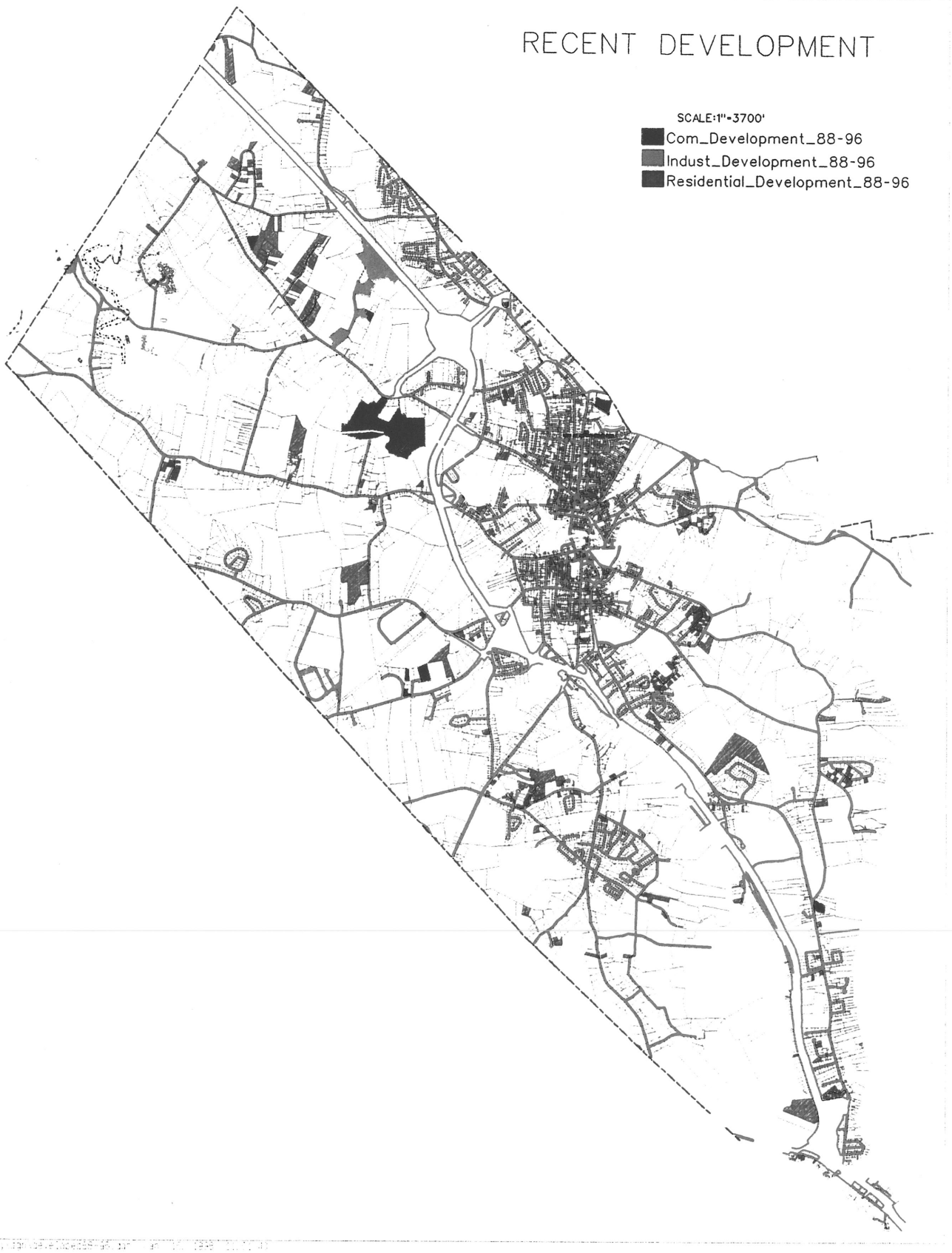
Figure 5-5

Dover's Residential Development, 1988-97

Type	Total Units Added	Acres	Square Feet Built	Assessment: Improvements	Assessment : Land	Assessment: Total
Single Family	530	908.66	1,246,686	$ 57,837,200	$ 20,385,500	$ 78,222,700
Waterfront Single Family	19	62.24	63,423	$ 3,466,427	$ 2,197,563	$ 5,663,990
Condominiums	258	14.21	371,094	$ 15,357,244	$ 5,793,261	$ 21,150,505
Mobile Homes	3	10.01	3,536	$ 111,700	$ 117,400	$ 229,100
Mobile Homes NL	20	3.34	22,506	$ 721,233	$ 39,133	$ 760,367
Duplex	4	1.33	11,399	$ 428,800	$ 113,600	$ 542,400
Total	834	999.79	1,718,644	$ 77,922,604	$ 28,646,458	$ 106,569,061

Per Unit Data:	Total Units Added	Acres	Square Feet Built	Assessment: Improvements	Assessment : Land	Assessment: Total
Single Family		1.71	2,352	$ 109,127	$ 38,463	$ 147,590
Waterfront Single Family		3.28	3,338	$ 182,444	$ 115,661	$ 298,105
Condominiums		na	1,438	$ 59,524	$ 22,455	$ 81,979
Mobile Homes		3.34	1,179	$ 37,233	$ 39,133	$ 76,367
Mobile Homes NL		na	1,125	$ 36,062	$ 1,957	$ 38,018
Duplex		0.33	2,850	$ 107,200	$ 28,400	$ 135,600

source: City Assessment Records


RECENT DEVELOPMENT
SCALE:1"=3700'
Com_Development_88-96
Indust_Development_88-96
Residential_Development_88-96

forth data on a per unit basis. Waterfront single family residences were assessed for nearly twice that of non-waterfront, single family residences. Encouraging increased development of the city's undeveloped water frontage, with appropriate environmental and density controls, represents one significant opportunity for the city to participate more fully in the seacoast's luxury housing market—a market that has by-and-large eluded the city to date.

Buildable Vacant Land

Utilizing the city's geographic information system (GIS), the city of Dover's planning staff has developed estimates of the amount of buildable land, exclusive of wetlands, in the city.

As set forth in Table 5-1, the Strafford Regional Planning Commission estimates there are a total of 10,928 acres of vacant land in the city. Significant portions of this land, however, are unbuildable, because they are wet. The city's GIS system enabled a refined estimate of vacant land by major zoning category. The results of this analysis are set forth in Table 5-6. The analysis of vacant buildable land included several categories:

> *Vacant Land*. This includes undeveloped parcels. They are coded based on the coding in the city's assessment inventory of taxable parcels. The second major category of vacant land included in the inventory is land that is listed in current use. This data was available by zoning category. The third component of the vacant land inventory consisted of parcels that include existing residential units, but have lot sizes that are four times or more the minimum requirement of the zone in which the parcel is located. In all cases, wetlands have been eliminated from the inventory and an allocation for existing development has been made.
>
> The results of the analysis, set forth in Table 5-6 indicate a total of 5,252 acres of potentially buildable land including all of the above categories. Of this total, slightly under 2,000 acres are vacant land with no development, approximately 1,000 acres consist of parcels in current use, and 2,250 acres consist of parcels with significantly lower density development than is allowed by current zoning.

Non-residential Land Capability Analysis

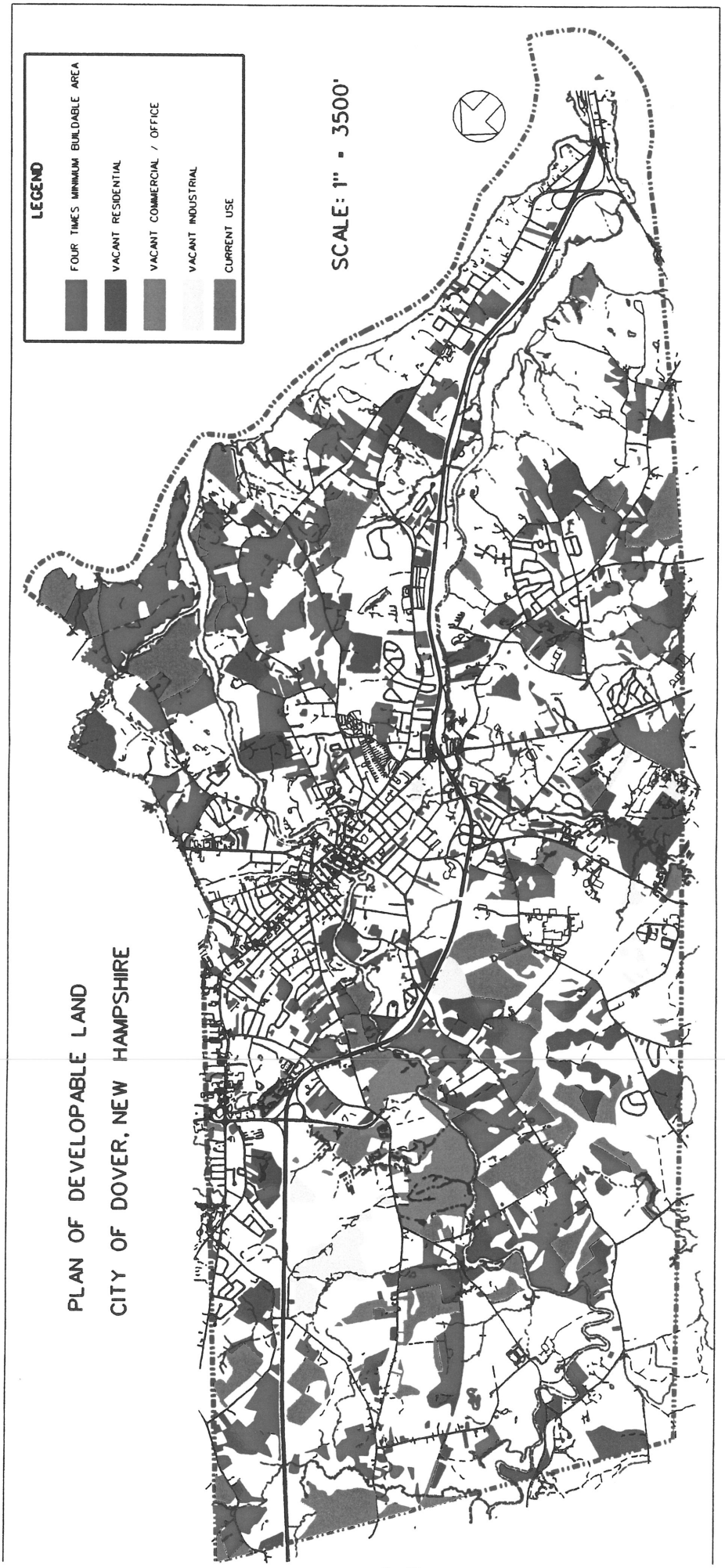
The purpose of this section of the analysis is to determine the land capability of undeveloped parcels in Dover. This analysis will assist the City in determining which areas could be rezoned to allow for a greater range of nonresidential uses. The methodology reflects an analysis of natural features in areas that are currently undeveloped or underdeveloped. Topography, soil constraints, and the locations of water features were examined in order to determine the natural carrying capacity of the area. This study does not attempt to analyze the infrastructure capacity to support additional uses. Therefore, road locations and sewer service were only examined on a general level.

Figure 5-6 *Vacant Buildable Land in Dover by Zoning Category: 1998*

	Vacant	4 Times Minimum Density	Current Use	Total: All Types of Vacant Land
B-1	0	1.17	0	1.17
B-2	1.1	0	0	1.1
B-3	27.3	0	0	27.3
B-4	63.1	0.1	24.3	87.5
UMUD	1.45	0	0	1.45
O	1	0	0	1
CWD	1.8	0	0	1.8
Subtotal: Commercial	***95.75***	***1.27***	***24.3***	***121.32***
ETP	**243**	**0**	**27.3**	**270.3**
I-1	64.9	36.8	54.2	155.9
I-2	1.5	0.3	0	1.8
I-4	102	0	6.5	108.5
Subtotal: Industrial	***168.4***	***37.1***	***60.7***	***266.2***
R-12	168.9	282.3	37.2	488.4
R-20	160.3	222.3	11.7	394.3
R-40	980	1563.7	852.7	3396.4
Subtotal: Single Family	***1309.2***	***2068.3***	***901.6***	***4279.1***
RM-10	12.9	7.4	0	20.3
RM-12	77.4	73.5	11.8	162.7
RM-20	50.2	50.7	10.9	111.8
RM-8	20.4	0	0	20.4
Subtotal: Multi Family	***160.9***	***131.6***	***22.7***	***315.2***
Total: All Zones without ETP	***1734.25***	***2238.27***	***1009.3***	***4981.82***
Total: All Zones with ETP	***1977.25***	***2238.27***	***1036.6***	***5252.12***

Note: Excludes wetlands
Source: City Assessment Records and GIS System

FIGURE 5-6a


PLAN OF DEVELOPABLE LAND
CITY OF DOVER, NEW HAMPSHIRE
SCALE: 1" = 3500'
LEGEND
FOUR TIMES MINIMUM BUILDABLE AREA
VACANT RESIDENTIAL
VACANT COMMERCIAL / OFFICE
VACANT INDUSTRIAL
CURRENT USE

The analysis began with the preparation of a base map created by the City of Dover's Geographical Information System (GIS). The base map located existing zoning district boundaries and sewer lines, and identified upland areas that might provide opportunities for future economic development. These areas represent:

Parcels classified by the City Assessors office as being potentially developable residential, commercial or industrial land;

Parcels in the "current use" classifications (i.e. land used for agricultural or forestry and taxed at its use value rather than market value).

Parcels containing a single-family dwelling and at least four times the minimum lot area for the zoning district (such parcels are considered to be potential candidates for more intensive development.

The analysis primarily focused on the western half of Dover as this is the area with the greatest potential for change due to the presence of large tracts of land already zoned for nonresidential use, substantial areas with undeveloped land and proximity to the Spaulding Turnpike.

A series of overlay maps were created for the western half of town indicating development potential according to soil type and topographic conditions. The overlay maps were assembled through the use of the City of Dover's Assessors' maps and information obtained from the U.S. Department of Agriculture Soil Conservation Service.

Soils

Soils are ranked according to severe, moderate and slight limitations for various uses in community development. A rating of slight indicates that the soil has few to no limitations; soils with a rating of moderate have one or more limitations that can usually be overcome or corrected; and a severe rating indicates that use of the soils is seriously limited by a hazard or restriction that is difficult to overcome. However, it should be noted that in spite of these ratings, the soils could be used for development if the investment is made to correct the characteristics that contribute to a moderate or severe rating. The table below lists the soils that are present within the study area, the suitability for development rating and the primary characteristic that resulted in the soil receiving a moderate or severe rating.

Table 1: Soil Conditions

Limitation	Rating	Soils Series	Soil Symbol
Few to none	Slight	Charlton, Gloucester, Hinckley, Windsor	CfB, GlB, HaB, WdA, WdB
Seasonal high water table	Moderate	Deerfield, Sutton	DeB, SnB, SuB,
Slope	Moderate	Charlton, Hinckley, Gloucester, Windsor	CfC, HaC, GlC, GsC, WdC, WfC
Stones on surface	Moderate	Charlton, Gloucester	CsB, CsC, GsB
Slope	Severe	Hinckley, Windsor, Gloucester, Charlton	HbE, WdE, GsD, CfD,
Bedrock	Severe	Hollis	HcB, HcC, HdB, HfB, HfC, HdC
High water table	Severe	Leicester, mixed alluvial land, muck and peat, Rumney, Saugatuck, Biddeford, Scantic, Buxton, Swanton, Elmwood, Suffield	LcB, Ml, Mp, Ru, Sb, Be, LeB, ScA, ScB, BzB, BzA, SwA, SwB, EaA, EaB, SfC
Flooding	Severe	Ondawa, Podunk	On, Po

As seen in Table 1, most of the limitations are due to a seasonal high water table, slope, or stony surfaces for the moderate category and bedrock, high water table and flooding for the severe category.

Topography

Topography plays a role in determining a site's suitability for development. The soil table shown in Table 1, above, provides information on slope to a certain degree. The third letter of the soil symbol indicates the severity of slope.

Table 2: Soils and severity of slope

Symbol	Percent Slope
A	0-3%
B	3-8%
C	8-15%
D	15-25%
E	25-35%

While some of the soils pose limitations for development due to slope, the study area in general does not contain a large amount of land with steep slopes. For the most part, slopes range between 0-8%. However, some of the most level land is near the Cocheco

and Bellamy Rivers which results in soils with limitations due to a high water table or flooding.

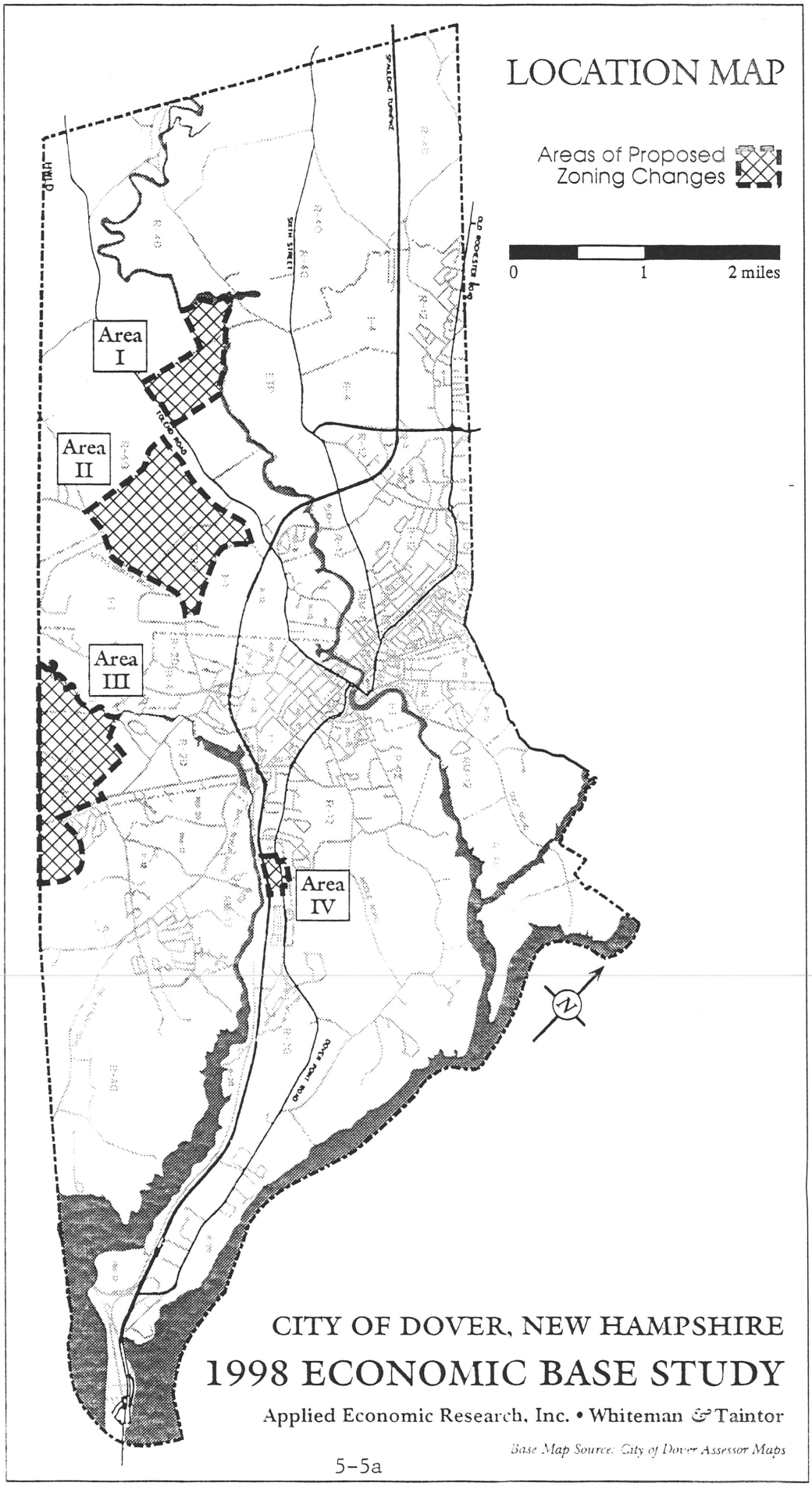
Analysis of Development Suitability

The land capabilities analysis was performed by identifying areas with prime, average and below-average development suitability based on soil and topographic conditions. The following conditions were assigned to each category:

Table 3: Development Suitability

Category	Slope	Soil Limitations	Other
Prime 1	0-8%	Slight to moderate	Non-residential zoning districts
Prime 2	0-8%	Slight to moderate	Residential zoning districts
Average	0-8%	Severe	Soil limitations can be overcome by extending nearby sewer lines.
Below Average	0-8%	Severe	Soil limitations could be overcome by sewer but parcel is outside of service areas.
Poor	Over 8%	Severe	Limitations due to bedrock, flooding or wetlands

Based on the analysis, four areas for potential zoning changes were determined (see locus map). Each of the four areas is adjacent to existing nonresidential use zones and has reasonable access to major roads. The decision to target these areas for rezoning is based on the amount of vacant, developable land; the current land use pattern; the potential to extend existing sewer lines; and the potential for expanding an existing nonresidential zone which will be less disruptive to the community than the creation of new zones in new areas of the City.
The specific characteristics of each area are described below.


LOCATION MAP
Areas of Proposed Zoning Changes
0
1
2 miles
Area I
Area II
Area III
Area IV
SPAULDING TURNPIKE
SOUTH STREET
OLD DOVER RD
DOVER POINT ROAD
CITY OF DOVER, NEW HAMPSHIRE
1998 ECONOMIC BASE STUDY
Applied Economic Research, Inc. • Whiteman & Taintor
Base Map Source: City of Dover Assessor Maps

Area I

Area I consists of approximately 147 acres of land located on Watson Road and Tolend Road south of the Cocheco River and adjacent to the existing Executive and Technology Park (ETP) district on Sixth Street. The area consists of vacant residential parcels, residential parcels with four times the minimum lot area and current use property. Roughly 68% of the combined area of these parcels (99 acres) consists of vacant uplands that could be used for development. Sewer service is provided to the existing ETP district along the Cocheco River and it may be possible to extend service to Area I to overcome some of the soil limitations that are present in this area.
It is recommended that this area be considered for rezoning to an industrial or ETP district. The parcels that are proposed for inclusion in the area to be rezoned are listed in Table 4.Table 4: Area I Parcels 2, 3

[2] The figures for "Total" area are from the City Assessors database and are available for all parcels. The figures for "Developable Upland" area were provided by the City from its geographic information system (GIS) and are available only for large developable parcels as described in the introduction to this section.
[3] Note that in some cases the indicated "developable upland" area is greater than the "total" area. This is most likely due to differences in methodology in calculating the total area. The "total" acreage is from the Assessors database which utilizes measurements from deeds while the "upland" area is from the GIS which measures areas from the digitized maps.

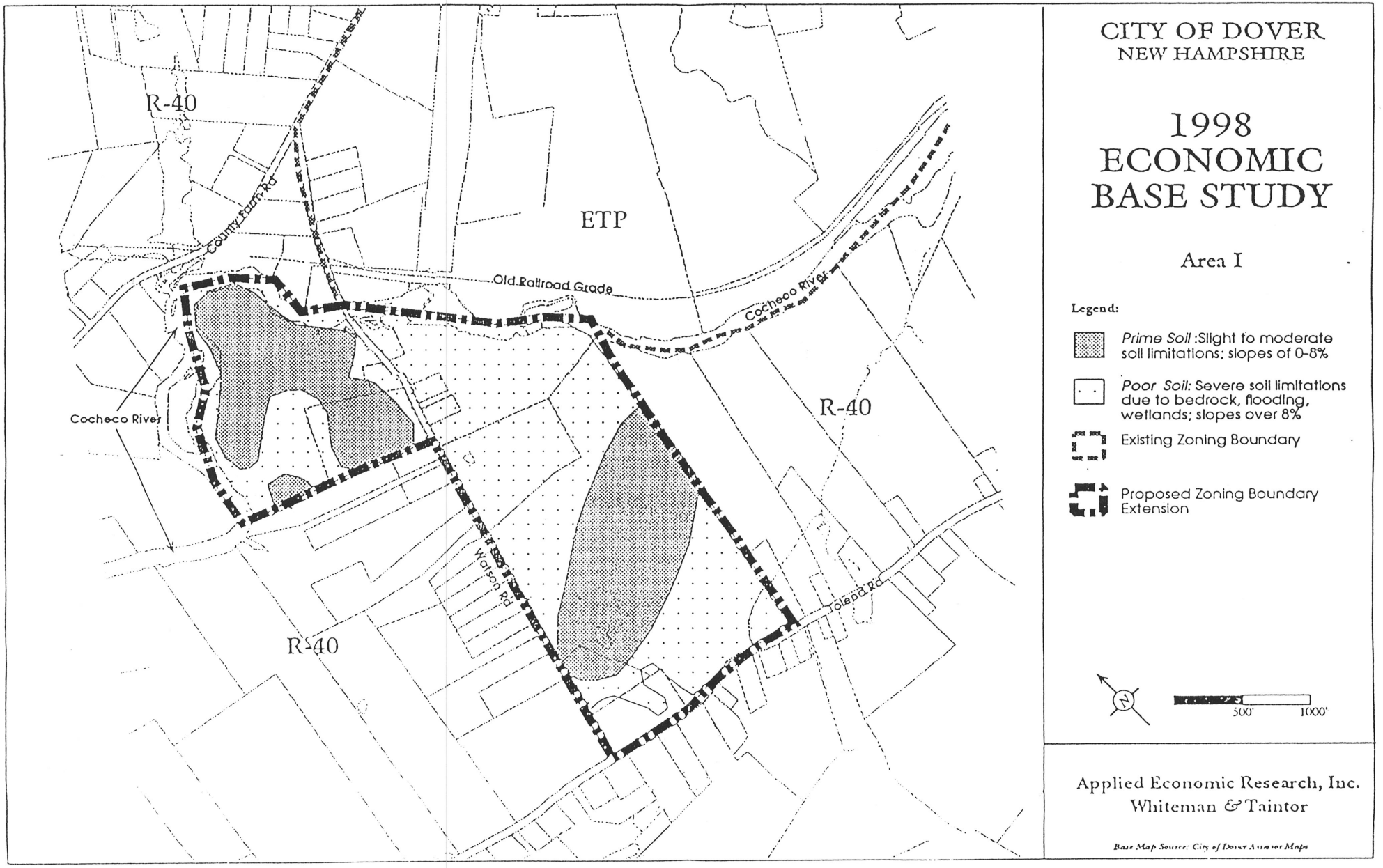

R-40
ETP
County Farm Rd
Old Railroad Grade
Cocheco River
Cocheco River
R-40
R-40
Watson Rd
Tolend Rd
CITY OF DOVER
NEW HAMPSHIRE
1998
ECONOMIC
BASE STUDY
Area I
Legend:
Prime Soil :Slight to moderate soil limitations; slopes of 0-8%
Poor Soil: Severe soil limitations due to bedrock, flooding, wetlands; slopes over 8%
Existing Zoning Boundary
Proposed Zoning Boundary Extension
N
500'
1000'
Applied Economic Research, Inc.
Whiteman & Taintor
Base Map Source: City of Dover Assessor Maps

Table 4: Area I Parcels [4, 5]

Parcel ID & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion of Parcel in Area I
C000 002000 114 Watson Rd	1010 Single Family Residence	11.0	8.5	R40	100%
C000 002A00 126 Watson Rd	1010 Single Family Residence	1.2		R40	100%
C000 002B00 Watson Rd	1300 Res Aclndv	31.0		R40	100%
E000 034000 Watson Rd	9010 NH State	0.7			100%
E000 035000 115 Watson Rd	1010 Single Family Residence	15.0	19.3	R40	100%
E000 036000 125 Watson Rd	1010 Single Family Residence	0.8		R40	100%
E000 037000 87 Watson Rd	130 Primary Residence	12.0		R40	100%
E000 038000 Watson Rd	6102 W Pine-Unmanaged	68.0	68.2	R40	100%
E000 039000 19 Watson Rd	1010 Single Family Residence	3.0		R40	100%
E000 040000 309 Tolend Rd	1010 Single Family Residence	4.1	3.4	R40	100%
TOTAL		146.8	99.4		

[4] The figures for "Total" area are from the City Assessors database and are available for all parcels. The figures for "Developable Upland" area were provided by the City from its geographic information system (GIS) and are available only for large developable parcels as described in the introduction to this section.

[5] Note that in some cases the indicated "developable upland" area is greater than the "total" area. This is most likely due to differences in methodology in calculating the total area. The "total" acreage is from the Assessors database which utilizes measurements from deeds while the "upland" area is from the GIS which measures areas from the digitized maps.

Area II

Area II is adjacent to the existing I-2 district on the westerly side of the Spaulding Turnpike, and is recommended for consideration as an expanded industrial district. The proposed area is located between Tolend Road and Littleworth Road and extends to the west to Old Madbury Road. Rezoning to an industrial zoning district would add 526 acres to the existing I-2 district. The properties consist of vacant residential parcels, residential parcels with four times the minimum lot area and current use property. Undeveloped uplands comprise approximately 55% of the area (292 acres). Sewer service in the Industrial Road vicinity could potentially be extended to the parcels in this area. For the most part, development limitations could be overcome by providing sewer service. However, it is important to note that there are several areas along the western boundary that contain bedrock and wet soils that will be extremely difficult to develop even if sewer service is provided.

CITY OF DOVER
NEW HAMPSHIRE

1998 ECONOMIC BASE STUDY

Area II

Legend:

- *Prime Soil* : Slight to moderate soil limitations; slopes of 0-8%
- *Below Average Soil* : Severe soil limitations that could be overcome by sewer but parcel is outside of nearby service area; slopes of 0-8%
- *Poor Soil:* Severe soil limitations due to bedrock, flooding, wetlands; slopes over 8%
- Existing Zoning Boundary
- Proposed Zoning Boundary Extension

N

500' 1000'

Applied Economic Research, Inc.
Whiteman & Taintor

Base Map Source: City of Dover Assessor Maps

Table 5: Area II Parcels[6]

Parcel ID & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion in Area II	Area (acres)	Upland (acres)
F000 001000 Columbus Ave.	1010 Single Family	1.9	1.9	R40	100%	1.9	1.9
F000 001001 8 Mccarthy Blvd	1010 Single Family	1.1		R40	100%	1.1	-
F000 001002 6 Mccarthy Blvd	1010 Single Family	1.1		R40	100%	1.1	-
F000 001G00 19 Columbus Ave.	1010 Single Family	0.5		R40	100%	0.5	-
F000 001H00 Columbus Ave.	1300 Res Aclndv	0.8	1.2	R40	100%	0.8	1.2
F000 001J00 37 Columbus Ave.	1010 Single Family	0.5		R40	100%	0.5	-
F000 001K00 45 Columbus Ave.	1010 Single Family	0.3		R40	100%	0.3	-
F000 001L00 25 Columbus Ave.	1010 Single Family	1.5		R40	100%	1.5	-
F000 001M00 Columbus Ave.	1300 Res Aclndv	13.9	13.3	R40	100%	13.9	13.3
F000 002000 180 Tolend Rd	1010 Single Family	63.6	43.0	R40	85%	54.1	36.6
F000 003000 210 Tolend Rd	1010 Single Family	55.0	33.6	R40	90%	49.5	30.2
F000 023000 91 Littleworth Rd	1010 Single Family	12.6	7.2	R40	100%	12.6	7.2
F000 023A00 Littleworth Rd	1300 Res Aclndv	105.0	48.1	R40	100%	105.0	48.1
F000 023B00 131 Columbus Ave.	1010 Single Family	33.9	14.7	R40	100%	33.9	14.7
F000 023C00 95 Littleworth Rd	1010 Single Family	2.5		R40	100%	2.5	-
F000 023D00 93 Littleworth Rd	1010 Single Family	1.1		R40	100%	1.1	-
F000 023E00 165 Columbus Ave.	1010 Single Family	1.1		R40	100%	1.1	-

[6] See notes to Table 4.

Table 5 (continued)

Parcel ID & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion in Area II	Area (acres)	Upland (acres)
F000 023F00 91a Littleworth Rd	1010 Single Family	2.1		R40	100%	2.1	-
F000 023G00 155 Columbus Ave.	1010 Single Family	2.1		R40	100%	2.1	-
F000 024000 73 Columbus Ave.	1010 Single Family	1.3	8.8	R40	100%	1.3	8.8
F000 024A00 83 Columbus Ave.	1010 Single Family	18.6	10.5	R40	100%	18.6	10.5
F000 025000 Columbus Ave.	7000 Farm	15.0		R40	100%	15.0	-
F000 025A00 107 Columbus Ave.	1030 Mobile Home	0.9		R40	100%	0.9	-
F000 026000 Littleworth Rd	4240 Elecsubsta	4.0		R40	100%	4.0	-
F000 026A00 69 Littleworth Rd	1010 Single Family	0.3		R40	100%	0.3	-
F000 027000 67 Littleworth Rd	1110 Apt 4-Unt	3.0		R40	100%	3.0	-
F000 028000 75 Littleworth Rd	1010 Single Family	0.9		R40	100%	0.9	-
F000 028A00 73 Littleworth Rd	1010 Single Family	1.1		R40	100%	1.1	-
F000 029000 77 Littleworth Rd	1010 Single Family	1.4		R40	100%	1.4	-
F000 030000 81 Littleworth Rd	1010 Single Family	5.0	4.7	R40	40%	2.0	1.9
F000 030A00 Lt2 Littleworth Rd	1300 Res Aclndv	12.4	11.0	R40	100%	12.4	11.0
F000 030B00 Lt3 Littleworth Rd	1300 Res Aclndv	5.1	3.1	R40	100%	5.1	3.1
F000 031000 89 Littleworth Rd	310 Pri Comm	5.9		R40	100%	5.9	-
F000 032000 87 Littleworth Rd	1010 Single Family	2.3		R40	100%	2.3	-
F000 033000 Littleworth Rd	4300 Tel X Sta	0.4		R40	100%	0.4	-
G000 024J00 Tolend Rd	1300 Res Aclndv	38.2	35.1	R20	85%	32.4	29.8
G000 024S00 Lt.2 Columbus Ave.	3900 Devel Land	1.2	1.2	R20	100%	1.2	1.2
G000 024T00 Columbus Ave. Lot E	3900 Devel Land	1.2	1.1	R20	100%	1.2	1.1

Table 5 (continued)

Parcel ID & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion in Area II	Area (acres)	Upland (acres)
G000 025000 48 Columbus Ave.	1010 Single Family	5.3	6.9	R20	100%	5.3	6.9
G000 026000 70 Columbus Ave.	1010 Single Family	4.5	4.8	R20	100%	4.5	4.8
G000 026A00 54 Columbus Ave.	1300 Res Aclndv	0.6	0.5	R20	100%	0.6	0.5
G000 026B00 Columbus Ave.	1300 Res Aclndv	1.9		R20	100%	1.9	-
G000 027000 Columbus Ave.	3160 Comm Wholesale	8.3		R20	100%	8.3	-
G000 027A00 128 Columbus Ave.	1010 Single Family	1.1		R20	100%	1.1	-
G000 027B00 86 Columbus Ave.	1010 Single Family	0.9		R20	100%	0.9	-
G000 028000 Littleworth Rd	6102 W Pine-Unm	40.4	2.9	I-2	10%	4.0	0.3
G000 028001 41 Littleworth Rd	1010 Single Family	12.1	10.0	R20	100%	12.1	10.0
G000 029000 Littleworth Rd	7000 Farm	74.4	51.3	R20	90%	67.0	46.2
G000 029A00 53 Littleworth Rd	1010 Single Family	1.1		R20	100%	1.1	-
G000 029B00 Littleworth Rd	1010 Single Family	20.0	4.9	R20	50%	10.0	2.4
G000 029C00 49 Littleworth Rd	1050 Three Family	1.4		R20	100%	1.4	-
G000 030000 59 Littleworth Rd	1010 Single Family	12.8		R20	100%	12.8	-
G000 040000 61 Littleworth Rd	1010 Single Family	0.5		R40	100%	0.5	-
TOTAL		603.8	319.7			526.3	291.6

Area III

Area III is located along the southwesterly border of the city, with the Bellamy River and Spruce Lane defining its area. It is located near the southerly edge of an I-2 district but is not directly adjacent to it, being separated from it by the Bellamy River and approximately 1,500 feet of the RM-20 district. The area contains approximately 342 acres and is a mix of parcels classified as vacant residential or vacant industrial land, along with large residential parcels (i.e., those with at least four times the minimum lot area for the district). Approximately 67 acres (20% of the total acreage) are classified as developable uplands. The area near Durham Road already contains several nonresidential uses that are classified as "non-conforming" as they predate zoning. Sewer service is provided along Durham Road and terminates just north of the proposed district. Sewer service could easily be extended into the area to overcome some of the marginal soil characteristics present in the west and east edges of the area.

It is recommended that the City consider rezoning this area to two nonresidential zoning districts: an industrial district along Mast Road and extending to the Bellamy River; and a commercial district along Durham Road (the general locations of these proposed districts are shown on the Area III map as subareas III-A and III-B, respectively).

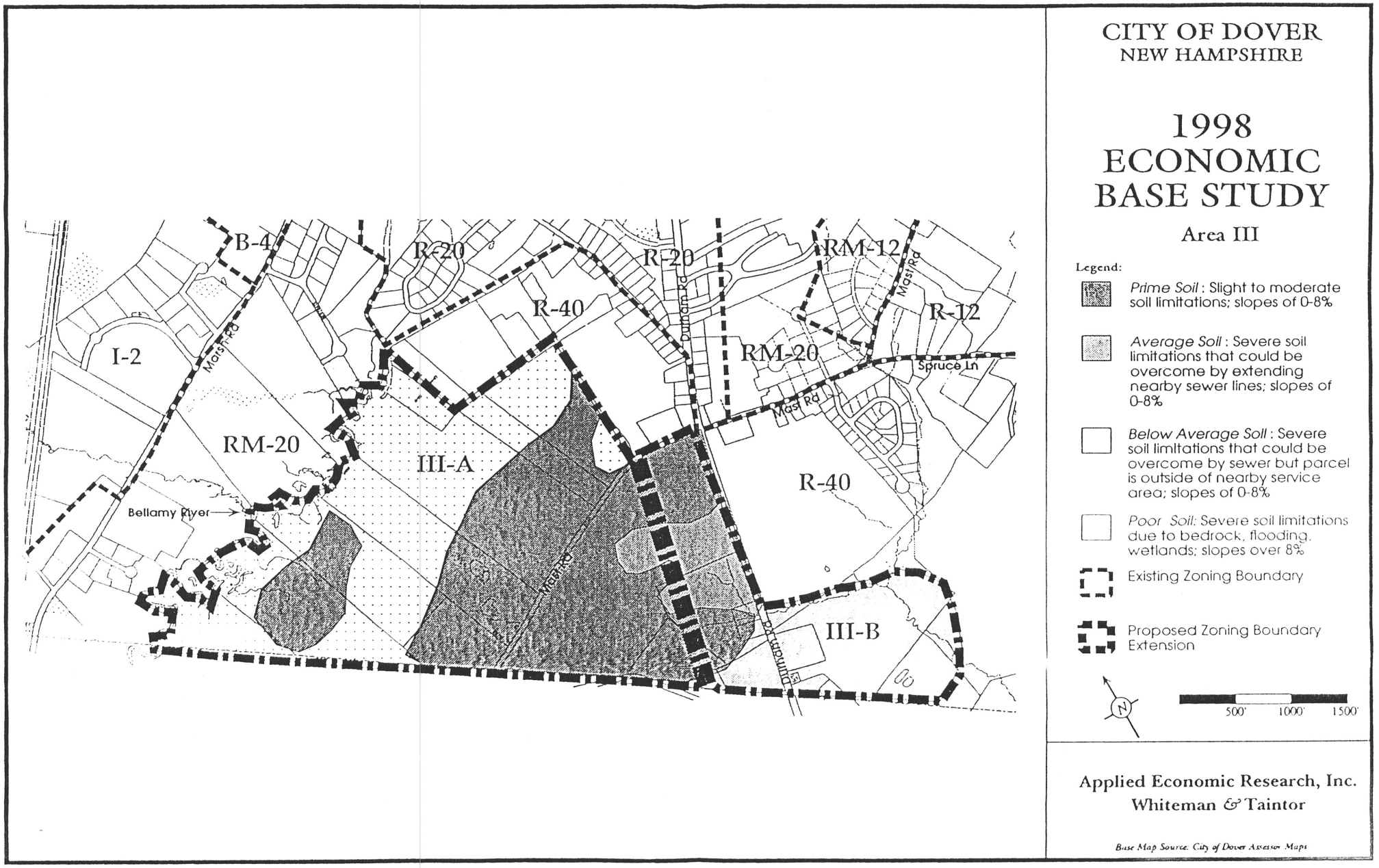

CITY OF DOVER
NEW HAMPSHIRE
1998
ECONOMIC
BASE STUDY
Area III
Legend:
Prime Soil : Slight to moderate soil limitations; slopes of 0-8%
Average Soil : Severe soil limitations that could be overcome by extending nearby sewer lines; slopes of 0-8%
Below Average Soil : Severe soil limitations that could be overcome by sewer but parcel is outside of nearby service area; slopes of 0-8%
Poor Soil: Severe soil limitations due to bedrock, flooding, wetlands; slopes over 8%
Existing Zoning Boundary
Proposed Zoning Boundary Extension
500' 1000' 1500'
B-4
R-20
R-20
RM-12
R-40
R-12
I-2
RM-20
RM-20
R-40
III-A
III-B
Bellamy River
Mast Rd
Dutton Rd
Spruce Ln
Applied Economic Research, Inc.
Whiteman & Taintor
Base Map Source: City of Dover Assessor Maps

Table 6: Area III Parcels7

Parcel ID & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion in Area III	Acres	Upland
H000 001000 317 Durham Rd	3170 Farm Bldgs	3.0		R40	100%	3.0	-
H000 001A00 20 Freshet Rd	1010 Single Family	1.2		R40	100%	1.2	-
H000 002000 275 Durham Rd	9030 Dover	14.8		R40	100%	14.8	-
H000 002A00 56 Freshet Rd	1010 Single Family	9.4		R40	100%	9.4	-
H000 002B00 291 Durham Rd	1010 Single Family	0.9		R40	100%	0.9	-
H000 003000 283 Durham Rd	1010 Single Family	1.0		R40	100%	1.0	-
H000 004000 217 Durham Rd	1010 Single Family	79.0		R40	100%	79.0	-
H000 004N00 211 Durham Rd	1010 Single Family	0.3		R40	100%	0.3	
H000 005B00 Mast Rd	1300 Res Aclndv	1.2		R40	100%	1.2	
H000 053000 Mast Rd	4100 Sand&Gravel	44.8		R40	100%	44.8	-
H000 056000 Off Bellamy Rd	1300 Res Aclndv	5.4	4.4	R40	100%	5.4	4.4
H000 058000 Mast Rd	9035 Town-Prop	54.0		R40	100%	54.0	-
H000 059000 325 Mast Rd	4100 Sand&Gravel	17.0		R40	100%	17.0	-
H000 059001 Mast Rd	4420 Ind Ld Ud	0.0		R40	100%	0.0	-
H000 059A00 325 Mast Rd	4410 Ind Ld Po	0.2		R40	100%	0.2	-
H000 060000 Off Mast Rd	1300 Res Aclndv	25.3	27.4	R40	100%	25.3	27.4
H000 061000 Mast Rd	4400 Ind Ld Dv	2.5		R40	100%	2.5	-

7 See notes to Table 4.

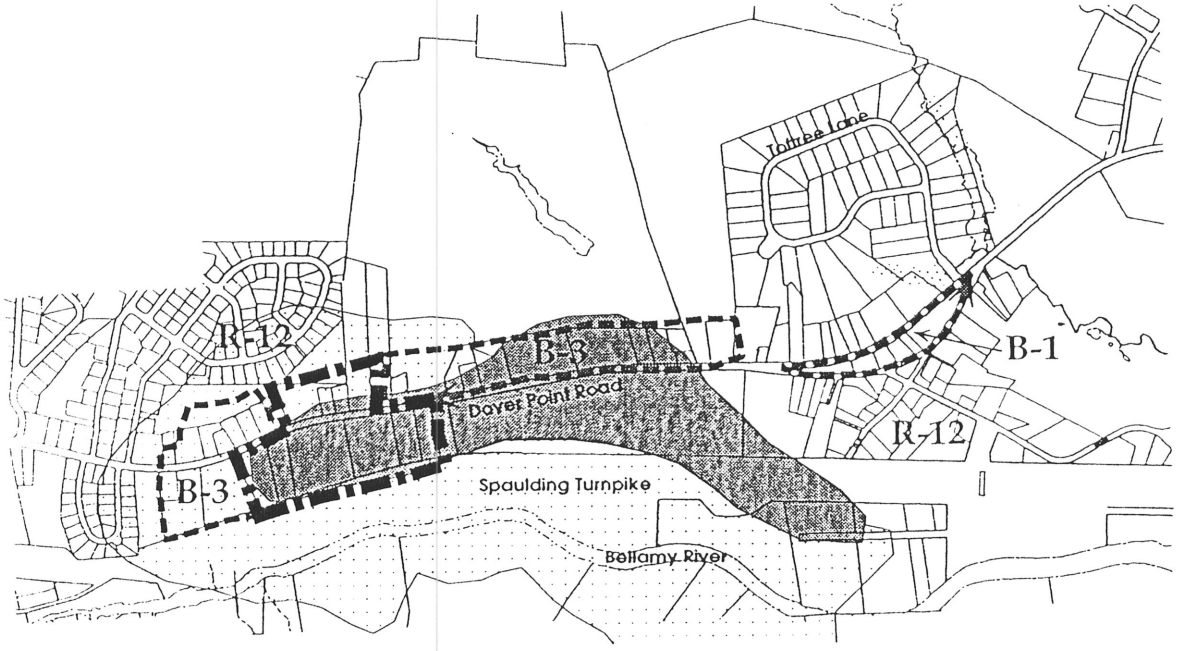
Table 6 (continued)

Parcel ID & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion in Area III	Acres	Upland
H000 062000 Off Mast Rd	1300 Res Aclndv	33.0	30.0	R40	100%	33.0	30.0
H000 063000 Mast Rd	9035 Town-Prop	11.0		R40	100%	11.0	-
I000 022D00 294 Durham Rd	3160 Comm Whse	3.7		R40	100%	3.7	-
I000 023000 Drew Rd	4230 Elec Row	1.4		R40	100%	1.4	-
I000 024000 Durham Rd	6104 Hrdwd-Unmg	10.0	9.3	R40	60%	6.0	5.6
I000 122000 282 Durham Rd	3530 Fratnl Org	30.0		R40	85%	25.5	-
I000 123000 304 Durham Rd	3160 Comm Whse	0.2		R40	100%	0.2	-
I000 129000 308 Durham Rd	4010 Ind Whses	0.6		R40	100%	0.6	-
TOTAL		350.0	71.1			341.5	67.4

Area IV

Area IV is located along both sides of Dover Point Road and adjacent to the Spaulding Turnpike on the west, and is bounded on the north and south by an existing B-3 district. The parcels in this district include vacant commercial property and residential property with more than 4 times the minimum lot area. Approximately 7 acres (58%) are classified as uplands. The area for the proposed rezoning consists of soils with few limitations and slight slopes. In addition, sewer service is provided along Dover Point Road which could be extended to the area.

Because of its location with respect to major roads and existing business districts, it is recommended that the City consider rezoning this area to a business district. Such a rezoning would add about 24 acres of business zoning, of which about 7.4 acres are currently undeveloped uplands.



CITY OF DOVER
NEW HAMPSHIRE

1998 ECONOMIC BASE STUDY

Area IV

Legend:

Prime Soil : Slight to moderate soil limitations; slopes of 0-8%

Poor Soil: Severe soil limitations due to bedrock, flooding, wetlands; slopes over 8%

Existing Zoning Boundary

Proposed Zoning Boundary Extension

N

500' 1000' 1500'

Applied Economic Research, Inc.
Whiteman & Taintor

Base Map Source: City of Dover Assessor Maps

Table 7: Area IV Parcels[8]

D Parcel I & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion in Area IV	Acres Upland	
K000 019000 Dover Point Rd		83.58			5%	4.18	
K000 019A00 28 Dover Point Rd	1010 Single Family	0.58			100%	0.58	
K000 026000 26 Dover Point Rd		3.21			30%	0.96	
K000 027000 24 Dover Point Rd		4.10			30%	1.23	
K000 028000 22 Dover Point Rd	1010 Single Family	0.33			100%	0.33	
K000 029000 20 Dover Point Rd	1010 Single Family	0.33			100%	0.33	
K000 030000 8 Dover Point Rd	1010 Single Family	0.54			100%	0.54	
K000 030A00 12 Dover Point Rd	1010 Single Family	0.5			100%	0.5	
K000 030B00 14 Dover Point Rd	1010 Single Family	0.29			100%	0.29	
K000 030D00 10 Dover Point Rd	1010 Single Family	0.5			100%	0.5	
K000 031000 11 Dover Point Rd	3900 Developable Land	0.78	1.82	R12	100%	0.78	1.82
K000 032000 13 Dover Point Rd	130 Prim. Residential	1.03		R12	100%	1.03	

[8] See notes to Table 4.

Table 7 Cont'd							
D Parcel I & Location	Use Code & Description	Total Area (acres)	Developable Upland Area (acres)	Current Zoning	Portion in Area IV	Acres	Upland
K000 034000 19 Dover Point Rd	1010 Single Family	4.13	2.66	R12	100%	4.13	2.66
K000 035000 25 Dover Point Rd	1010 Single Family	2.58	2.90	R12	100%	2.58	2.90
K000 036000 31 Dover Point Rd	1010 Single Family	1.36		R12	100%	1.36	
K000 037000 35 Dover Point Rd	1010 Single Family	0.91		R12	100%	0.91	
K000 038000 37 Dover Point Rd	1010 Single Family	0.99		R12	100%	0.99	
K000 040B00 5 Dover Point Rd	3310 Auto S S&S	3.07		B3	30%	0.92	
TOTAL		110.18	7.38			23.51	7.38

Conclusion

There is a substantial amount of vacant uplands available for nonresidential development in Dover. The areas most suitable for nonresidential development are located near the Spaulding Turnpike, adjacent to areas already zoned for non-residential use. Most of the development limitations could be overcome by extending sewer service to counteract the problems associated with soil permeability and high water tables.
The possible areas for rezoning include approximately 1,038 acres of land. Roughly 45% of the land (466 acres) is classified as developable uplands that are either vacant or in oversized residential parcels.

Table 5: Summary of Proposed Zoning Areas

Location	Total Acreage	Vacant Uplands	Vacant as a % of Total	Proposed Zoning
Area I	147	99	68%	Industrial
Area II	526	292	55%	Industrial
Area III	341	67	20%	Industrial/Commercial
Area IV	24	7	31%	Commercial
TOTAL	1,038	466	45%	

SECTION VI. ECONOMIC DEVELOPMENT AND LAND USE RECOMMENDATIONS

This section of the report presents recommendations to guide the city's economic development policies. It also presents observations on land use and zoning regulations.

The central theme guiding these recommendations is that Dover must consciously strive to balance its development to achieve a fiscally sound mix of quality development. In turn, this goal requires that the city take those steps necessary to:

- Attract its fair share of new nonresidential investments.
- Accommodate a balanced "fair share" of the region's new housing activity.
- Encourage new development where it can efficiently be served by existing facilities (roads, sewer and water, schools).
- Carefully plan the location and size of new infrastructure investments.
- Promote the city's seacoast location and excellent accessibility so as to attract higher valued residential and nonresidential investments and increase the value of the existing properties.

The Challenge

The preceding sections of this analysis clearly demonstrate the Dover is located in a vibrant regional economy. The growth the seacoast is likely to attract over the next ten years provides Dover with the "raw materials" to achieve a healthy economy and sound tax base. Furthermore, Dover has demonstrated over the past ten years that planning pays-off. The city has expanded its nonresidential tax base, slowed the pace of residential development, and maintained municipal service levels that most residents find attractive. With the same commitment during the next ten years, the city can further strengthen its economic base and expand its tax base in ways that are attractive to both its residents and business enterprises.

Dover will have to be vigilant, however, to avoid an inappropriate mix of development. Under the Current Trends scenario, set forth in Section II of this report, the city could find itself in a position where it is overwhelmed by new residential development activity. Also, the market for nonresidential investments is extremely competitive among seacoast communities. Rochester, Somersworth and Dover all have active economic development programs. Portsmouth is considering re-establishing its economic development activities and the Pease International Tradeport is now New Hampshire's most successful economic development setting.

At nearly the same time the 1988 Dover Master Plan was completed, the state and seacoast economies drifted into a very pronounced economic recession. The pace of residential construction activity fell by about 80 percent from its mid-decade peak. Our sense is that the pace of residential construction is about to increase significantly. The seacoast continues to mount impressive job growth figures and most of the once vacant housing inventory in the seacoast has been absorbed. With an unemployment rate of 3 percent or less, continued job growth will necessarily call for higher levels of residential construction.

Dover has the opportunity to act now to protect the gains achieved since drafting the 1988 Master Plan. We expect that over the next ten years, Dover will be asked to accommodate a higher level of residential development than during the past ten years. Furthermore, the competition for nonresidential tax base will be more intense among seacoast communities during the next decade, than during the past. Within this framework, Dover must be pro-active across essentially all development fronts.

Image Enhancement

There is an unjustifiable disparity between Dover's image in the marketplace and its assets for both residents and businesses. Within the seacoast region, those communities lying east of Interstate 95 tend to be favored locations for higher-valued residential and nonresidential development—Portsmouth, Hampton and Rye come immediately to mind. Reflecting this pattern, residential property values in those communities are significantly higher than in Dover. Nonresidential investors are willing to accept inferior sites in those "prime" communities vis-à-vis Dover. Consequently, nonresidential values are also lower in Dover than would otherwise be the case.

Although economic development strategies typically focus on attracting new nonresidential development, a potentially more potent tool is to enhance the value of existing properties. We sense that Dover has a significant opportunity to achieve improved property values and more attractive by enhancing its image within the seacoast marketplace.

Dover's role as a colonial seaport has been almost totally eclipsed by its subsequent role as an industrial city. Today, however, the character of Dover's economic base is changing to favor the service industry. For a variety of reasons, Dover's role as the "seacoast's other port city" has been lost. In the early days of its history, vessels were able to navigate the Cocheco River. As the minimized draft of commercial vessels rose, they were no longer able to travel up the Cocheco River to downtown Dover. Siltation may have also lowered the effective navigable depth of the river. Today, only one small boat marina remains along the Cocheco River in Dover.

This is soon to change with a significant dredging project that will increase the navigable depth of the river into downtown Dover. The city is endeavoring to capitalize on this by

its installation of a new pedestrian bridge and a river walk system to improve the amenity value of the river to the city's downtown and its residents.

But the significance of Dover's waterfront location extends beyond downtown. There are significant parcels of vacant residential land along the Cocheco and Bellamy Rivers and along Great Bay. With ocean front lots selling for as much as $1.0 million in New Castle, we cannot help but think that with the proper development controls and marketing effort, the value of Dover's waterfront residential land can be substantially enhanced over current values.

Furthermore, we believe that enhancing Dover's image, as a seacoast port community will have spin-off benefits to its nonresidential development opportunities and to the value of residential properties not located on the water.

In short, Dover has an opportunity to enhance its image within the seacoast setting that will benefit both residential and nonresidential development opportunities and also increase the value of existing land and improvements in the city.

We believe a formal image enhancement program is warranted with a coordinated approach between the city's Economic Development Office and the Dover Chamber of Commerce. Such a program would include themed special events, written materials and a press package emphasizing the city's seacoast aura. The goal of this program should be to strengthen the ties between Dover and the other coastal communities including Portsmouth, Newington, Hampton and Rye.

Industrial Development Policies

Enterprise Park, developed jointly with the city and the Dover Economic Development Corporation(DEDC), has been a success. Prior to its initiation, the city was languishing with virtually no new nonresidential development. Despite being marketed during the worst recession since the 1930s, the park has been a success, has won several awards and has contributed significantly to the city's tax base and its employment base.

One of the major questions addressed in this analysis is whether this strong intervention in the industrial marketplace continues to make sense for the city and for DEDC. Although the success of Enterprise Park is all but irrefutable, it was not at clear that intensive public intervention in the industrial land market is a continuing necessity.

Having interviewed major seacoast nonresidential developers in the course of this analysis, we believe it is paramount that the city continues to join in a partnership with DEDC to develop sites for new industrial users. In fact, a more compelling case can be made for that intervention now than was the case in 1988.

The major change in the seacoast's nonresidential development environment since 1988 is the privatization of the former Pease Air Force Base. The efforts of the Pease

Development Authority have been successful, converting several million square feet of space to private uses since its operations began in 1992. Most of these uses probably would have located outside the seacoast had Pease not been available—the amount of competition between Pease and seacoast communities is probably less than many believe to be the case. Nonetheless, the Pease International Tradeport has changed the nonresidential development landscape and will continue to influence nonresidential development patterns in the seacoast for the next decade.

Pease offers something that had previously not been available in the seacoast—readily available developable land adjacent to Interstate 95, served by utilities. There are probably between 500 and 800 acres of developable land remaining at Pease. These sites are not suitable for all prospective users, but they are suitable for a significant segment of those firms interested in a seacoast location.

Compounding the competitive situation is the active involvement of both Rochester and Somersworth municipal government in the economic development field. Furthermore, Portsmouth is considering reactivating its own economic development program.

The simple fact of the matter is that in New Hampshire's seacoast region, industrial development activity has evolved into a partnership with a strong, direct, public involvement. Dover cannot afford to turn over its industrial development activities to the private sector. Our interviews indicate the financial incentives are inadequate to attract industrial developers to Dover in the current market environment, which is dominated by public enterprise efforts in other major seacoast settings.

Consequently, we believe that DEDC and the city should continue to aggressively promote the remaining sites at Enterprise Park and to identify and acquire an additional significant site for future industrial development activity.

Inventorying Sites

Today's nonresidential investors typically operate on a much shorter time fuse than was the case in the past. Although the city's economic development office is aware of available parcels, we believe the office could serve an expanded clearinghouse function with a computerized database of available commercial and industrial sites in Dover. Although major parcels are readily identifiable, there are a number of smaller in-fill parcels potentially available to support commercial and industrial investment activities. We recommend the establishment of a computerized database of available commercial and industrial sites, in conjunction with the seacoast brokers active in the Dover market. Information on those available sites can be distributed to the broker community periodically by the city in an effort to ensure that available Dover sites are recognized.

Promotional Themes

We sense there are several important points to emphasize in the marketing of Dover for new industrial prospects. First, Dover has the single most extensive inventory of affordable building space in the seacoast. Its extensive inventory of mill space provides affordable accommodations for start-up incubator industries as well as established firms. Yet, the city has good accessibility to the Spaulding Turnpike and the Interstate and a full set of urban services including sewer and water. We believe marketing the city as "the seacoast's affordable alternative" for new and expanding enterprises would be an appropriate theme.

Additional Sites

The inventory of commercial and (especially) industrial sites in Dover is not adequate to accommodate the city's future opportunities. Unless the inventory of sites is expanded, the city will probably not be able to achieve appropriate mix of residential and nonresidential development.

We expect that over the next decade Dover will face considerable residential development pressures. Unless the city protects its prime industrial sites from those pressures, it is likely that those potential industrial sites, that are now zoned residential, will be forever lost.

Section V of this report examines areas of the city that can accommodate industrial and commercial development, but are presently zoned for residential uses. The city should immediately initiate rezoning of those sites to nonresidential use so as to preserve their ability to accommodate the nonresidential tax base that is critical to the city's fiscal health.

Improving Downtown Dover

We believe an enhanced image can pay large dividends to Dover's residential and nonresidential communities. Central to that enhanced image is a healthy downtown. One needs look no further than Portsmouth to understand the spin-off benefits of a diverse and vibrant downtown.

In many respects downtown Dover is in good shape. Its streets and walks are attractive. Its streetscape, including lighting and tree plantings, has been upgraded substantially. Despite the loss of both Liberty Mutual and Clarostat, new jobs are being created in downtown. These downtown jobs generate a captive audience for downtown retail and service firms.

Nonetheless, there are liabilities that should be addressed and opportunities that should be capitalized on to improve downtown's performance and the potential downtown offers for spin-off benefits city-wide. In the course of our research and in examining the results

of the previously conducted resident opinion survey, traffic in downtown Dover was frequently cited as a problem. We take a slightly different view of downtown's heavy traffic flows—if properly capitalized on these traffic flows provide an important source of exposure for downtown shops and services. Without discounting the wisdom of re-examining traffic patterns in downtown, we believe it is at least equally important to make sure that traffic now passing through downtown can be attracted to downtown shops and businesses.

Achieving this will probably require enhanced parking opportunities. The city has recently commissioned a limited scope parking analysis that suggested several management solutions to partially address current problems. The city's more comprehensive parking analysis is now five years old and probably needs to be revisited in light of the changes that have occurred in downtown. One major function of any parking enhancement program in downtown should be to make it extremely easy for through traffic to stop, shop and visit the services in downtown, while still accomodating the needs of longer term parkers..

Parking is important in yet another respect to downtown's prosperity. As noted above, the substantial job base in downtown Dover is an important asset. Dover's mills, however, were built before the automobile rose to prominence as the principal means of transportation. Today, they offer inadequate on-site parking for the needs of contemporary businesses. It is important that the city recognize its role in working with downtown business interests to resolve parking problems. A formation of a Parking Commission or Parking Authority would formalize the relationship between the city and downtown business interests as they mutually address downtown's parking issues.

Management, Marketing and Promotion

Shopping centers have fine-tuned the management, marketing and promotion of retail activities to a fine art. In downtown settings, these important functions are typically relegated to volunteers whose time is spread excessively thin in trying to manage a business, take care of a family and promote the downtown. This is the model that downtown Dover has pursued. We believe a more intense management, marketing and promotion effort would pay sizable dividends to both downtown business interests and the city.

Dover inquired into the National Main Street Program, recently instituted in New Hampshire, but chose not to apply in the first round. This program has proven extremely successful in downtowns across the country and we recommend that Dover apply for the program in its next cycle. Dover's downtown could benefit greatly from the structured approach to downtown management , marketing and promotion embodied in The Main Street Program and the program offers a wealth of supporting experiences that could help downtown Dover achieve its market potentials.

In view of the parking issues discussed above and the need for a staffed management, marketing and promotion effort, we believe downtown Dover needs a Special Downtown District to fund the staffing of a downtown manager's position and to at least partially fund parking solutions for the downtown. Under this format, there would a small add-on to the property tax rate within downtown to fund the management, marketing and promotion function. Initially, that function could probably be staffed on a half-time basis. Full-time staffing is preferable. Other communities, Laconia for example, have utilized the special district device to fund a portion of the cost of parking improvements, and this could work well in downtown Dover, also.

Riverfront

For the past decade, the city has recognized that the downtown riverfront represents an important, underutilized resource. The city has taken significant steps to enhance the contribution of the riverfront to the well being of downtown and the broader Dover community. These steps include relocating the sewerage treatment plant, identifying a location for the public works facility, pursuing dredging of the river to enhance its navigability, development of the River Walk Program and soliciting of private development bids for the riverfront land vacated by relocating of the treatment plant and the public works garage.

This program continues to hold the potential to substantially enhance downtown's image in the broader seacoast market. With the riverfront base building activities now well underway, it is important that the city focus on an appropriate mix of public and private interests as the riverfront development effort moves forward:

- The city should identify the public interest in the riverfront and the best way to preserve public access to the river. That is, any private investment on the city's riverfront holdings should not preclude public access to the riverfront.

- Any private investment should balance residential and nonresidential uses.

- Any private investment should build on the potential for excitement and entertainment including, for example, a place for outdoor concerts and a marina facility.

- The city should preserve public dockage opportunity to support, for example, touring and dinner cruise boats that could attract a new market segment to downtown and strengthen the tie to other port communities.

A concept plan for the riverfront has been drafted and forms the basis for examining developer proposals that are beginning to surface in conjunction with recommendations from the 1990 Task Force.

Residential Development

The results of the projections section of this work program indicate that market forces are enhancing Dover's residential appeal. On an overall basis, the seacoast market is likely to see significantly higher levels of residential development during the next ten years than during the past ten years (during which the combined effects of the recession and the loss of Pease suppressed levels of residential construction). Dover will likely feel a significant portion of this residential development pressure—it is easily accessible to the region's major employment centers, it offers good schools, its housing prices are significantly lower than in communities "across the bridge," and it has substantial undeveloped land resources zoned to accommodate residential growth. Furthermore, the city has been reluctant to impose growth limits and its professionally staffed planning function renders the development approval process more professional than the seacoast's smaller communities, where lay planning board members frequently operate without appropriate guidance.

The point of this is that Dover runs a risk of attracting a disproportionate share of the region's residential growth over the next decade. Our "Current Trends" scenario indicated that Dover could see development of as many as 3,000 new housing units over the next decade—50 percent higher than the long-term pace of residential development. Furthermore, current demographic forces and market trends are favoring the development of single family housing, which brings with it significant increases in school enrollment.

In addition to being concerned about the pact of new residential development, Dover should also give thought to the quality of the new residential development occurring. Dover has traditionally been a middle-class community. Its existing housing stock assures a continuation of this role within the seacoast market. What is less clear is whether Dover can effectively compete in the higher end single family and multifamily markets. We believe that Dover has that potential, but needs to guard from squandering its prime residential land resources.

As to the pace of development, recent years have seen an average of 50 new housing units authorized in Dover per year. This certainly is a pace of development Dover can comfortably accommodate. Historically, the pace of development in Dover has averaged 200-250 units per year.

It is important that the vitality of Dover's housing market be maintained with an adequate level of new construction. The development of new housing also enhances the resident labor force, which can be a factor in attracting new nonresidential development, including both commercial and industrial uses. Our analysis of trends and discussions with both private investors and municipal officials indicates that a pace of residential development much beyond 200-250 new units per year would be beyond Dover's comfort level in terms of its ability to adequately plan for municipal services and the significant changes that rapid development entails. Imposing growth controls today is probably premature.

It is advisable, however, that the city remain alert to the potential for residential development to exceed this perceived comfort level.

As to the quality of development, we believe that it is important to reserve large lot zoning along the city's water sites. We believe this should be the case irrespective of the availability of utilities. In fact, it may be prudent for the city to make it clear, possibly through the establishment of an urban service boundary, that utilities will not be extended to low-density, residential neighborhoods, such as in the Dover Point area.

It is also important that the city maintain the quality of its existing waterways. A watershed protection area around the existing Bellamy, Great Bay and Cocheco Rivers would establish appropriate setbacks, minimum lot size and density requirements are also appropriate. Although driven by environmental considerations, an appropriate set of controls close to the city's waterways could also yield a benefit in the form of higher quality residential development and possibly a lower pace of single family construction in the city.

For these same reasons, we recommend eliminating wetlands from lot density calculations city-wide.

Along similar lines, much of the city's multifamily zoning was developed during the 1960s and 1970s. We recommend that the city planning staff re-examine the density provisions of the city's multifamily zoning. Lower density allowances could enhance the appeal of these multifamily zones for lower density, higher valued multifamily residential development as compared to lower valued, higher density development.

Public Facilities

Public facilities will be examined in a subsequent section of the Master Plan. In the course of this economic component of the plan, however, two principal needs arose that the city will have to address in the immediate future.

Water Supply

The city needs to address water supply problems to secure an adequate, reliable supply for current and future needs. The anticipated growth Dover is likely to incur over the next decade imposes two water supply obstacles. First, the development could remove potential municipal well sites from the inventory by bringing them into the development process. Secondly, new development will require additional water capacity.

Potential well sources should be identified and acquired and existing sources should be adequately protected to the extent that existing regulations impose a potential threat.

Recreation

Recreation facilities are important to today's active population. An adequate recreation program can yield benefits in the form of higher residential property values and improved commercial and industrial appeal. During the course of our work, anecdotal evidence was presented indicating that Dover's parks and recreation facilities are being stressed by increased usage. Peripheral development at the new middle school will enhance the availability of the ball fields, but it is not clear this will adequately address the city's future needs. As part of the Master Plan process, the city's parks and recreation needs should be examined closely.