TECHNICAL APPENDIX

A

PUBLIC INPUT ON LAND USE ISSUES

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Gauging Public Perceptions of Land Use

Much of *Land Use 2025* flows from the opinions of the general public, state leadership and planning professionals on land use trends, community values and growth priorities. Beginning in early 2000, gathering this information included several major efforts: a public opinion survey, a televised "Town Meeting," and a series of regional meetings with local planning officials. Findings from each of these were reported in a series of technical papers. In 2003, interviews were conducted with several dozen Rhode Island planning practitioners.

Telephone Survey (2000)

In January 2000, Statewide Planning and two partners conducted a public opinion survey on growth issues. Over the course of five days, January 24-28, the Research Center in Business and Economics at the University of Rhode Island conducted a telephone survey of Rhode Island residents to determine their *growth priorities*, i.e., Rhode Islanders' concerns about future growth in the state and the kinds of communities they valued. Of the 1,380 persons contacted, 452 usable responses were obtained, a response rate of 34 percent.

The survey sought input in three areas: growth concerns for the coming five years, important factors in choosing where to live, and land use priorities. Key findings ((32)), mirroring concerns for the next five years, were that:

- The greatest levels of concern were directed to protecting drinking water, cleaning Narragansett Bay, keeping taxes down, and improving the quality of life.

- Whether a respondent lived in Newport or Providence, was affluent or poor, or was old or young, *clean water* was of the highest concern.

- In order of priority, Rhode Islanders were most concerned with environmental issues, followed by economic growth, and then transportation. In fact, *environmental issues were considered twice as important as either economic growth or transportation.*

Regarding what was important in choosing where to live, the single most important factor was *good schools.* This was followed by public water and sewer, and a sense of neighborhood and community.

Significant differences were found among Rhode Islanders in what was important in choosing where to live:

- *Renters* were more concerned with convenient transportation than were homeowners.

- *Women* rated neighborhood schools, and a short commute to work, more highly than men did.

- *Those with more education* were more concerned with being near a bus line while those with lower education were more concerned with good schools, a sense of neighborhood, and being able to walk to schools and shops.

- *Single respondents* rated convenient transportation as more important than did those who were married.

- *Urban residents* rated access to parks and recreation, good schools, and public transportation higher than rural residents. Urban residents also valued the ability to walk to shops, a short commute to work, and a sense of neighborhood highly. Rural residents rated having a large lot as more important.

- *Region of the state* had a large impact on the priorities respondents placed on choosing where to live. Providence residents valued access to parks and recreation, public water and sewers, easy access to highways and buses, a short commute to work, and the ability to walk to schools and shops as more important than did respondents in other parts of the state.

Land use priorities were measured by a series of twelve questions. Responses ranged from "(1) strongly agree" to "(5) strongly disagree." We found that Rhode Islanders:

- Subscribed heavily to the Yankee philosophy of reuse. The two items generating the highest agreement related to redevelopment and reuse of older cities and buildings.

- In general, want to limit new development (but not too much) and protect open space (more than they want to limit development). They don't think people should be able to build wherever they want, and disagree with the statement, "There is too much attention paid to protecting open space."

On the important issue of priorities given costs, respondents said they were willing to pay the bill for their priorities. Four items in the questionnaire checked if respondents continued to agree when it was clear that this would require the use of tax dollars or could involve inconvenience. Respondents,

however, seemed more willing to bear financial costs through taxes than to bear personal costs such as increasing housing density.

The Best and the Worst

The questionnaire included four open-ended questions to determine what people thought were the best and worst things about their community and about Rhode Island in general.

When asked what they liked most about their community, people said they valued "quiet," closely followed by community/neighborhood.

When asked what they liked least about their community, respondents most frequently cited roads and traffic. This was followed by overbuilding/too many people, taxes, and congestion.

When asked what they liked most about the state, beaches and the ocean topped the list, followed by scenery, size, and sense of community. People mentioned politics, taxes, roads, corruption, and schools when asked what they liked least about the state.

Televised Town Meeting (2000)

On February 28, 2000, Statewide Planning and eight partners and sponsors conducted a televised Town Meeting, *Growth Challenges for the New Millennium – Balancing the Options.* Carried live on Channel 10 and Cox Cable, this hour-long program brought together approximately 80 community leaders, agency representatives and citizens to begin a dialogue on significant growth concerns. Viewers were offered an opportunity to participate with questions and comments submitted by phone and e-mail links.

Regional Planner Workshops (2001)

Five regional workshops were held in July 2001 to engage community planning officials, including planning staff and planning board members, in discussions of major land use issues facing their communities. The workshops also solicited their ideas on future directions for state land use policy. What follows is a summary of the problems, issues, and policy recommendations that were raised at the workshops. They are presented in the order of frequency that occurred in the workshops.

Growth Management

The most frequently mentioned policy concerns were those related to *growth management.* This is an extremely broad issue, and comments ranged from specific local options and observations to suggestions for far-reaching state policy changes. Nearly one-third of all comments received were associated with growth management issues.

The two major problems respondents cited were that the rate of growth in many communities is more than they can accommodate, and that communities do not have sufficient capabilities, in general, to manage growth. Major issues included the present pattern of growth overburdening infrastructure such as schools and road capacity, and resulting in detrimental changes in community character.

The major policy recommendations were to:

- Redevelop, revitalize, and reuse urban areas. Promote infill development.
- Designate growth areas and priority investment areas.
- Provide communities with more authority and tools to control and shape development.
- Adopt a statewide program to provide municipalities more funding for open space, affordable housing, and historic preservation.

Local Capacity

The second most mentioned problem was *local capacity*. This reflected the frustration of local officials who feel there is a significant gap between land use planning in theory and reality, i.e., the ability of communities to implement what they know from theory to be the best land use practice. In their view, both project-specific development review and long-term planning require a greater level of knowledge, information, and resources than are available on the municipal level.

One-fourth of the comments related to issues involving local capacity. The major issues were:

- Workloads are overwhelming local officials. Communities are forced to react on a case-by-case basis rather than act proactively.
- Communities do not have adequate tools or technical expertise.
- Local boards and commissions generally lack training in planning and development principles, or in their legal powers and authority.

The major policy recommendations were to:

- Provide communities with more technical assistance.
- Provide local boards and commissions with more education and training.
- Provide communities with model ordinances, best practices, forecasting models, etc.
- Promote regional cooperation and information sharing.

Traffic/Transportation

The third most mentioned issue was *transportation and traffic.* There was widespread agreement that there should be improved efforts to link transportation and land use planning. Workshop participants said traffic congestion has been worsening, and cited this as the major problem. The major issues were:

- Land use is a local prerogative, but effective transportation planning and implementation requires a regional approach.
- There is a reinforcing synergy whereby new development requires improved or expanded roads, which allows for more development, which increases traffic and requires more improvements/expansion.

The major policy recommendations were to:

- Utilize corridor planning.
- Plan for areas of high-density development and mass transit in a unified fashion.
- Improve public and intermodal transportation systems.
- Better coordinate state transportation decisions and local land use decisions.

Regional Planning

Regional growth planning, open space, water supply and *aesthetics* tied for fourth in frequency of mention. Although in many respects a subset of growth management, there was enough emphasis on the need for a regional approach to warrant a separate category.

First, regional planning. The major problems were that development in one community can affect surrounding communities without the surrounding communities having any input, and that some issues can only be effectively addressed on a regional basis. Workshop participants recognized four major issues:

- Large-scale projects have regional impacts.
- Effective transportation planning requires consideration of a large geographic area.
- Water supply requires planning based on the service area, not municipal boundaries.
- Policies appropriate for one area of the state may not be suitable for other areas.

The major policy recommendations were to:

- Encourage and support regional planning efforts.
- Plan transportation, water supply, and open space protection regionally (between and among municipalities) and statewide.

- Promote inter-municipal consistency in the local comprehensive plans. Cities and towns should sit down together as regions to do updates to their comprehensive plans.
- Develop state policies taking into consideration regional differences.

Open Space

Open space protection was mentioned both in terms of being a successful policy and in the need to do even more. The major problem identified in the workshop is that the demand for open space on the local level exceeds the current supply. The major issues were a lack of funding and the lack of success of development schemes designed to preserve open space (e.g., cluster development).

The major policy recommendations were to:

- Maintain or increase funding by the state, or by targeting the real estate transfer tax for open space.
- Provide technical assistance to assure that cluster development provides for meaningful open space. Additionally, communities need to consider new subdivision alternatives such as "conservation design."
- Provide incentives for conservation corridors, greenways, or other priority areas.

Water Supply

Workshop participants agreed that *water supply* should be a priority in determining the placement and intensity of future development. Development is occurring on an incremental basis without sufficient attention, they said, to the long-term supply of drinking water. Increasing numbers of people are living in vulnerable water supply regions.

The major policy recommendations were to:

- Relate the level of allowable development to water supply.
- Provide more information to communities regarding the quantity and quality of water resources.
- Promote communication between towns and the Water Resources Board; encourage local familiarity with Water System Supply Management Plans.

Aesthetics

A surprisingly passionate issue, *aesthetics* and the broader issue of *community character* were mentioned as sources of ongoing frustration for many communities. There was widespread support for policies that would promote more attractive development that would enhance each community's individual character. Unattractive and unimaginative development was seen as detracting from local character and the

perceived quality of life. At issue were sprawl leading to a sameness in architecture and design, and new commercial development occurring in the same old unattractive designs.

The major policy recommendations were to:

- Give communities the authority/justification for establishing architectural design regulations.

- Give greater attention to policies and strategies for a "visually pleasing environment," such as model ordinances on design review and amortization provisions for signs.

Affordable Housing

The eighth topic that received multiple comments was *affordable housing*. It was always mentioned in terms of inadequate supply. Major issues feeding the problem were that high-cost replacement housing was effectively removing smaller, affordable homes from the community housing stock, and that affordable housing was very difficult to achieve under current market conditions.

The major policy recommendations were that:

- Communities maintain the current number of affordable housing units. The best opportunities were by subsidizing existing structures.

- Municipalities need to reconcile their Comprehensive Plans' support for affordable housing with their zoning regulations.

Taxes

The ninth and final topic area was taxes. Participants agreed there was too much dependence on property taxes for local revenue. Issues arose from there being little or no alternative to the present system and from local land use decisions being based primarily on the effect they would have on property tax revenue. The major policy recommendation was to consider regional tax sharing.

Interviews with Planning Leaders (2003)

During the latter part of 2003, Statewide Planning staff conducted interviews with several dozen leaders in Rhode Island's planning and development community. Included were members of the Technical Committee and State Planning Council, community planning directors, representatives of state agencies, and the leadership of planning-related nonprofit organizations. Statewide Planning conducted the interviews, which usually involved an organization's supervisors and technical staff. The objective of the interviews was to gather information, expertise, and a wide range of perceptions about

current land use conditions and on Rhode Island's land use system. At each interview, the staff were asked, "From your vantage point, relative to land use, what would you like to see in five years? What would you like to see in ten years?"

Several general themes arose in the interviews. First was the sense of urgency that unfortunate land use changes are occurring in the state, and at a newly accelerated rate. Second was great dismay at the impact of current land use trends. One person commented, "Parts no longer look like Rhode Island… sprawl is overwhelming the historic landscape." Also there was concern with the social impacts of current development patterns. One planner said, "It's very important that diversity is not happening in the suburbs."

The third theme was the need for Rhode Island planning to be smart, practical, and efficient. Many planners spoke of the need to address the zoning, to connect our goals and policies "to the ground," and to use current technology such as GIS mapping. Finally, many state and local planners spoke about stress on the professionals and their departments. They commented on how complicated the land use field has become and how much their staffs are strained administering current regulations.

In spite of the current planning challenges, all of the persons interviewed agreed that a strong state Land Use Plan, "a real guide plan," could be a major positive development.

Land Use 2025 *Brainstorming Session (2003)*

On November 20, 2003, more than sixty planners assembled for a day-long brainstorming session on the new State Land Use Plan. They included members of the State Planning Council and Technical Committee and community planners. They discussed existing conditions and Statewide Planning's findings from research and public outreach, including the recent interviews. The session affirmed these findings and endorsed a three-part organizational framework for *Land Use 2025*. As suggested by Land Use staff, this framework would be based on issues of greenspace, community design, and infrastructure

TECHNICAL APPENDIX

B

RESIDENTIAL LAND NEEDS

Introduction

We know that the number of housing units will grow in Rhode Island over the next two-and-a-half decades. We know, too, that the land needs of housing will expand. The question is 'by how much?'

This paper attempts to provide a general answer to the question: What will be the likely magnitude of housing demand and demand for residential land in Rhode Island to the year 2025?

This inquiry is relevant from a planning perspective because, for a number of purposes, it is very useful to have projections of housing and residential acreage growth. However, this paper considers in only a cursory way the nuances that play such a significant role in the complex issue of housing need, such as housing affordability.

The issue of affordability has been the subject of much discussion and new legislation in the General Assembly. The *2004 Affordable Housing Act* set new state and local housing planning requirements which require both levels of government to project future growth and develop strategies to accommodate current and future housing needs. Many of those strategies will be based upon land management approaches that attempt to address increased density.

The housing and residential acreage projections made in this paper are based on statewide population projections, by age, prepared separately by the Statewide Planning Program. Historical data provide the base for assumptions about household size, which are then applied to the population projections, yielding projections for number of households. Another approach, based on the age of the householder rather than number of persons-per-household, is also used for comparison.

Finally, the acreage distribution for housing units in the state that existed in 1995 is applied to the projections for numbers of units to estimate how much additional land will be needed for housing in 2010, 2020, and 2025. Various alternate acreage distributions are also played out.

The accuracy of the projections made here depends in part on the accuracy of the statewide population projections on which they are based. Substantial change in the expected patterns of in-or-out migration will obviously affect housing demand. Further, because they are based on resident population and consider only year-round housing units, these projections do not include seasonal housing units that may be a very significant component of land demand in coastal areas of the state.

Providing housing for all residents

Housing is an essential requirement of society, and its foundation is the land. Providing a sufficient variety of quality housing to meet the needs and desires of the state's current and future population is a key objective of land use planning and reflects the goals of the *State Housing Plan*.

From a land capability perspective, it is important to consider the different physical and resource impacts of various types of housing development, and to balance housing needs and desires with the capacity of the land to accommodate development in a sustainable manner.

a. Demand for housing

With lower fertility, more one-person households, and changes in the age distribution of the state's population, the size of the average household* has fallen from 2.7 in 1980 to 2.5 in 2000. Actual increase in the number of occupied year-round housing units between 1980 and 2000 was 67,165 units, a growth rate of 18 percent in twenty years.

This trend means that even if total population size stood still, there would be more households. In particular, continuation of the drop in average size of household that occurred between 1980 and 2000 will greatly affect housing demand. For example a population gain of 100 in 1980 translated into 37 additional housing units, while the same population gain in 2000 meant the need for 40 additional units.

But this does not fully explain the disparity in growth of population and housing that occurred in Rhode Island in 1980 to 2000. During this period, there was an increase in population of about 101,000, while about 67,000 housing units were built. Each additional person was accompanied by about 0.66 housing units!

If household size (and the percent of the population in group quarters) is kept constant at the 2000 level, the number of year-round occupied housing units would grow from 408,424 in the year 2000 to 434,605 in 2025, a growth rate of over six percent over 25 years, amounting to an additional 26,182 housing units.

If the number of persons per household were to continue its downward slide, various assumptions about the magnitude of that slide would greatly affect projections of housing growth. Assuming a decline to 2.3 persons per housing unit, the projection for the number of housing units in 2025 would be 472,397, or an increase of some 64,000 units over 2000. Clearly assumptions of household size will greatly affect forecasts of housing need.

b. Influences on household size

Housing growth between 1980-2000 of 18 percent far outstripped the shallow 10.7 percent growth in the state's civilian population. Why? A major force in accelerating housing demand was the dramatic change in the age composition of the state's population.

Growth in the number and proportion of the population in the age sector primarily associated with household formation, decline in the number of children, and increases in the number of elderly, are all factors contributing to smaller household size. These changes reveal themselves in figures showing the age composition of the population over time.

* *It is important to note that a household, in terms of statistical count, is not equivalent to a family. The Census Bureau identifies two major categories of households: family (which must include a householder and at least one other person related through marriage, birth, or adoption) and non-family households (composed of a householder living alone or with non relatives). The number of households is always the same as the number of occupied year-round housing units, since the definition of a household is essentially a person or persons occupying a housing unit.

Lifestyle changes which affect household composition, such as single-parent families, divorce rates, single adult households, changes in preferences for number of children, and so on, are less predictable, and with the exception of fertility rates are not apparent in age composition data. It is useful to know, therefore, that the vast majority of the decline in household size can be attributed to change in the age composition of the population.

Table 1 below compares the under-18 and 18-and-over components of household size for the national and state populations, and Table 2 compares the overall average household size.

Table 1

AVERAGE POPULATION PER HOUSEHOLD
BY AGE COHORT
RHODE ISLAND AND UNITED STATES
1980 - 2000

	1980		1990		2000	
	RI	US	RI	US	RI	US
Total Households	338,590	80,766,000	377,977	91,947,410	408,424	105,480,101
Average Population						
Per Household:						
Under 18 Years *	0.72	0.79	0.60	0.69	0.60	0.68
18 Years & Older **	1.98	1.97	1.96	1.94	1.87	1.91

* Households with one or more people under 18 years of age.
** Households with no people under 18 years of age.
Source: U.S. Census Bureau

Table 2

NUMBER OF PERSONS PER HOUSEHOLD
RHODE ISLAND AND UNITED STATES
1980 - 2000

	1980	1990	2000
Rhode Island	2.70	2.55	2.47
United States	2.76	2.63	2.59

Source: U.S. Census Bureau

The steep drop in the average number of children per household between 1980-2000 is apparent for both the nation and Rhode Island. While Rhode Island's average household size has been lower than that for the nation-as-a-whole it has moved in step with the national figure.

The importance of the decline in the number of children per household is even more evident in the table below, which breaks down the average persons-per-household figures into seven age groups. By far the largest change that took place in the under-15 age group and the increase in the over 45 age group..

Table 3

POPULATION PER HOUSEHOLD
BY SPECIFIED AGE COHORT
RHODE ISLAND
1980 AND 2000

	1980		1990		2000	
Total Households	338,590		377,977		408,424	
Age	Number in Households	Per Household	Number in Households	Per Household	Number in Households	Per Household
Under 15 years	191,678	0.57	304,961	0.81	206,779	0.51
15 - 19 years	80,134	0.24	59,774	0.16	63,077	0.15
20 - 24 years	80,703	0.24	74,619	0.20	62,037	0.15
25 - 34 years	144,120	0.43	170,804	0.45	138,069	0.34
35 - 44 years	98,232	0.29	146,105	0.39	168,205	0.41
45 - 64 years	200,594	0.59	184,045	0.49	228,764	0.56
65 years +	117,698	0.35	139,787	0.37	142,572	0.35

Source: U.S. Census Bureau

The 1990-2000 period was characterized by decline in the age sector associated with household formation combined with sharp declines in the youngest age groups. At the same time the number and proportion of the elderly grew. That is, less young families were forming the needed housing; fewer babies were born to expand household size. More older people meant the likelihood of more single-person households (although a significant number in this age sector also withdraw from the household population to retirement and nursing facilities, as suggested by the percent of the 65 and older age group not in households as shown in Table 9).

Comparing projected change in the age composition of the Rhode Island population over the next 25 years, as presented in Tables 4 and 5, reveals a decreasing number and proportion of the population in the household formation age sector (25-34 years) through 2025, with the exception of the period 2010-2020. The number and proportion of children in the 0-14 age groups is projected to decline only slightly during the period. The 65 and over population is expected to continue grow substantially and within that group the 75 and older sector will continue very strong growth. Projected decline in the middle age sectors suggests that some existing housing will be "freed up" for new households.

Table 4

CHANGE IN POPULATION
BY SPECIFIED AGE COHORTS
RHODE ISLAND
1980 - 2025

Age groups	1980-1990	1990-2000	2000-2010	2010-2020	2020-2025
0-4	+ 10,458	- 3,073	- 1,832	+ 9,002	- 110
5-14	- 12,506	+ 20,138	- 15,991	+ 2,674	+ 9,672
15-19	- 19,035	+ 4,583	+ 6,901	- 7,858	- 1,603
20-24	- 4,780	- 13,267	+ 11,060	- 7,698	+ 448
25-34	+ 27,268	- 33,298	- 13,136	+ 18,573	- 7,283
35-44	+ 48,496	+ 22,693	- 30,436	- 12,536	+ 11,933
45-64	- 17,226	+ 45,224	+ 67,899	- 6,307	- 21,687
65-74	+ 8,650	- 11,932	- 183	+ 36,782	+ 13,494
75+	+ 13,985	+ 13,787	- 2,850	- 102	+ 11,932

Source: U.S. Census Bureau (1980, 1990 & 2000)
RI Statewide Planning (projections: 2010, 2020 & 2025)

Table 5

AGE COHORT AS A PERCENTAGE OF TOTAL POPULATION
RHODE ISLAND
1980 - 2025

AGE COHORT	1980	1990	2000	2010	2020	2025
0-4	6.0 %	6.7 %	6.1 %	5.8 %	6.4 %	6.3 %
5-14	14.3 %	12.3 %	13.7 %	11.9 %	11.8 %	12.5 %
15-19	9.5 %	7.1 %	7.2 %	7.7 %	6.8 %	6.5 %
20-24	9.5 %	8.5 %	6.9 %	7.7 %	6.8 %	6.8 %
25-34	15.4 %	17.3 %	13.4 %	11.9 %	13.2 %	12.4 %
35-44	10.4 %	14.7 %	16.2 %	13.1 %	11.6 %	12.4 %
45-64	21.4 %	18.5 %	22.0 %	27.9 %	26.5 %	24.2 %
65-74	8.0 %	8.5 %	7.0 %	6.9 %	10.0 %	11.1 %
75 +	5.4 %	6.5 %	7.5 %	7.1 %	6.9 %	7.8 %

Source: U.S. Census Bureau (1980, 1990 & 2000)
RI Statewide Plannnig (projections: 2010, 2020 & 2025)

Based on the projected age composition of our population, it would appear that:

For 2000-2010, change in household size is likely to decrease. 2010 is expected to see a significant decline for the 25-34 year age group, and hence limiting the formation of new young households. The trends to fewer children will continue with a modest decrease in the 0-4 year age group while the number of elderly households will also temporarily decline.

For 2010-2020, the age composition picture changes as the number and proportion of the population in the household formation age group increases. The number of children changes direction, moving upward. The elderly population marks a period of substantial growth. Based on this information, we are projecting a modest increase in household size for this period

For 2020-25, projections call for another decline in the household formation age group. During this period growth in the number of children will be slight to moderate. The elderly population will continue to grow aggressively. The growth in the elderly cohorts will offset the flat growth in the youngest age groups and a decline in household formation age groups. As such we are projecting a modest decline in the 2020-2025 household size.

The downturn in the average household size of 0.2 persons in the 1980-2000 period was smaller than earlier decreases. Nevertheless, if household size were reduced by an equivalent amount over the projection period to 2025, the number of housing units needed would jump from the 426,849 units in 2000 to 490,548 units in 2025, a gain of 63,699 units or a 15 percent increase to the state's housing stock. This magnitude of growth is not likely to happen. We have already discussed the important changes in age composition and noted that the household formation associated with different age cohorts will offset each other. As such we do not project any change in household size over the projection period.

We also note that the amount of substandard housing continues to be a serious problem in Rhode Island in 2000 and is reversing previous trends where occurrences of substandard housing characteristics were on the decline (See Table 6). The dramatic increase in overcrowding would appear to reflect housing affordability issues.

Table 6

CHANGE IN SPECIFIED HOUSING CHARATERISTICS
RHODE ISLAND
1980 - 2000

Housing Characteristic	1980	1990	2000
Lacking Complete Plumbing Facilities	1.7 %	0.5 %	0.9 %
1.01 or More Persons Per Room	2.5 %	2.4 %	5.3 %

Source: U.S. Census Bureau

Between 1980-2000, more than twenty-six thousand year-round housing units built prior to 1940 were eliminated from the state's housing stock (see Table 7). Only 8 percent (12,469) of the year-round units built before 1940 were not occupied in 1980, compared to 8.2 percent (10,615 units) of the total year-round pre-1940 units not occupied in 2000. In short, in 2000 compared to a twenty years earlier, there were fewer pre-1940 units and more of those remaining were unoccupied.

Table 7

AGE OF YEAR-ROUND HOUSING UNITS RHODE ISLAND 1980 - 2000			
Year Built	1980	1990	2000
1939 or earlier	155,923	141,161	129,217
1940 - 1949	41,414	40,054	43,195
1950 - 1959	53,102	55,061	62,514
1960 - 1969	54,047	54,854	56,989
1970 - 1979	58,430 [1]	61,044	58,999
1980 - 1989		62,398 [2]	50,618
1990 - 1999			38,305 [3]

[1] Includes January - March 1980, [2] Includes January - March 1990,
[3] Includes January - March 2000
Source: U.S. Census Bureau

Table 7 also suggests that a number of older units originally built for seasonal use have been converted to year round use. (This would account for the greater number of year-round units built between 1940-79 enumerated in the 2000 census than in the 1980 census.)

Projections of housing need in Table 8 do not consider vacant units since, by definition, the universe considered in determining household size is confined to occupied year round units. These figures also, by definition, do not consider seasonal units.

Based on the above, on population and age composition data, and especially, on projected change in the number of children, the direction of household size is expected to be flat or unchanged between 2000-2025.

While the exact magnitude of the change in household size is difficult to predict we can use a range. The middle-range projection series calls for household size in that year to average 2.50 persons (the 2000 constant), with a high projection of 2.55 persons per housing unit and a low projection of 2.45.

Table 8, below, translates the above discussion into numerical terms and projections of housing units for the three periods being considered.

Step One: Determine the percent of persons in each age group who were in households in 2000 in Rhode Island.

Table 8

Step 1.

HOUSING UNIT PROJECTIONS
RHODE ISLAND
2000

Age groups	2000		
	Total persons	Persons in Households	Percent in Households
0-14	207,171	206,779	99.8%
15-24	147,258	125,114	85.0%
25-34	140,326	138,019	98.4%
35-64	401,162	396,969	99.0%
65 +	152,402	142,572	93.5%

Step Two: Apply the 2000 percent in households to corresponding age groups in statewide population projections for 2010, 2020 and 2025.

Step 2.

POPULATION IN HOUSEHOLDS
RHODE ISLAND
2010 - 2025

Age groups	2010	2020	2025
0-14	189,789	202,343	211,887
15-24	140,894	128,084	127,103
25-34	125,626	144,578	137,415
35-64	435,883	418,925	409,273
65 +	140,331	175,535	199,320
Total	1,032,523	1,069,466	1,084,999

Step Three: Applying the Rhode Island series to the number of persons in households in Rhode Island projected for 2025 provides the following projections of number of housing units for the high, middle, and low projections in the series:

Step 3.

PERSONS PER HOUSING UNIT
RHODE ISLAND
PROJECTIONS FOR 2025

RHODE ISLAND 2025			
Projection of Household Size			Number of Housing Units
(a)	low	2.42	443,375
(b)	medium	2.47	434,400
(c)	high	2.52	425,781

Source: U.S. Census Bureau
RI Statewide Planning

The following table presents three sets of projections of number of housing units in Rhode Island for the years shown, based on average household sizes of 2.40, 2.45 and 2.50 in the year 2010. The assumptions of persons-per-household for the decade prior to and after the year 2010 are based on the earlier analysis, which indicated a moderate increase in persons-per-household will occur in the next period (2010-2020), followed by a period of flat to moderate decline in household size.

Table 9

PROJECTION OF HOUSING UNITS
RHODE ISLAND
2010, 2020, AND 2025

		2010		2020		2025
1. Persons-per-occupied year-round housing unit (based on text)	(a)	2.40	(a)	2.45	(a)	2.42
	(b)	2.45	(b)	2.50	(b)	2.47
	(c)	2.50	(c)	2.55	(c)	2.52
2. Population in households (the projected total state population less persons in group quarters, based on percent in group quarters, by age group in 2000)		1,032,523		1,069,466		1,072,967
3. Number of housing units (#2 divided by #1)	(a)	430,218	(a)	436,517	(a)	443,375
	(b)	421,438	(b)	427,786	(b)	434,400
	(c)	413,009	(c)	419,398	(c)	425,781
4. Change (amount of increase over previous decade)	(a)	23,551	(a)	6,299	(a)	6,858
	(b)	13,014	(b)	6,348	(b)	6,614
	(c)	4,585	(c)	6,389	(c)	6,383

Housing affordability

In making its national projections, the Census Bureau notes that "Changes in the availability of affordable housing, or in other economic conditions that might encourage young or elderly unattached persons, as well as families, to 'double up; with friends or relatives could result in a reversal of the decline in average household size "/3/.

The 1975 *State Land Use Policies and Plan* identified "lack of housing for certain types of households" as a major housing problem in Rhode Island. For the most part, in groups identified then as facing significant difficulty in obtaining adequate housing – low income household, moderate income households, large families, single person households, nonwhites, and the elderly – are the same today, despite substantial additions to the state's housing stock, shallow population growth, and higher average incomes.

Thirty years later the problem appears to be substantially worse. According to Rhode Island Housing, in 2003 Rhode Island's home prices grew faster than any other state in the country. Rents appear to be following suit. Moreover, the gap between the state's median home price and median income is now the third worst in the Northeast and ninth worst nationally.

The problem is one of historic and classic market conditions. Housing supply as not kept pace with housing demand. Between 2000 and 2002, Rhode Island ranked 50th among the sates in the rate of increase in its housing stock. This in a state where more than 80 percent of the land area is zoned for residential development.

Current zoning practices appear to represent the tendency among Rhode Island communities to require uniformly large lot sizes for single family dwellings, that are not justified by land characteristics, services available, or needs of the housing market, is generally view as an important factor contributing to the increasing cost of new and existing housing.

Further, multi-unit dwellings which can provide necessary rental units for those unable to afford a single family home are not permitted by right in many towns communities allow multi-family units only if granted a special permit by the local zoning board of review.

Large lot zoning has been justified on the basis of preserving open space, overcoming the lack of sewers and public water, and maintaining the tax base. Yet large lot zoning does not necessarily achieve any of these purposes.

Large lot zoning encourages scattered or "shotgun" development that leaves few large expanses of open areas intact. While very low densities are likely to result in lower costs for municipal facilities and services, zoning large areas for lots of about one acre often results in higher municipal expenditures than would smaller lots. This is because housing at this density usually requires urban-level services, without creating a "critical mass" of users to pay for them. As a result, those systems and services that are provided incur high per unit costs for construction, operation, and maintenance.

Increasing housing density only moderately can result in a more compact and efficient settlement pattern, likely to reduce housing cost and leave more acreage in low intensity use.

Recent changes to the Low and Moderate Income Housing Act are intended to get communities to look at this issue and proposed solutions by way of developing and implementing local affordable housing plans. Among other things, these plans are intended to serve as guide to the housing development community that allows them to identify the types and number of low and moderate income housing units needed by the community and the specific areas deemed suitable by the community for siting (and/or rehabilitation) of the needed units.

Implications

The above described affordability crisis has various implications for projections of number of housing units that will be added to the state's housing stock. If the affordability gap continues or grows, demand for new units among the prime household forming age sectors will remain pent up and household size will be likely to decrease more slowly or not at all. However, this prime household formation age group will experience little net growth after 2000, while the middle-age "baby boomer" group

associated with increased incomes will be growing for the first part of the projection period.

a) Acres zoned vs. acres used for housing

Table 10

COMPARISON OF DENSITY
OF LAND ZONES FOR RESIDENTIAL USE AND
LAND IN RESIDENTIAL USE
RHODE ISLAND
1995

Density Category	1995 Zoning (planned)		1995 Land Use (aerial analysis)	
	Acres	Percent *	Acres	Percent *
High: less than 1/8 ac/du	16,343	3.5 %	20,489	14.8 %
Medium-high: 1/4 to 1/8 ac/du	45,089	9.6 %	45,730	33.0 %
Medium: one acre to 1/4 ac/du	83,924	17.8 %	53,522	38.6 %
Medium-low: one to two ac/du	146,449	31.0 %	10,707	7.7 %
Low: greater than 2 ac/du	180,017	38.2 %	8,236	5.9 %
Total	471,822	100.0 %	138,684	100.0 %

* Percent of all land in specified category.
du = dwelling unit
ac = acre
Source: RI Statewide Planning

Although most residential land was zoned for densities of two acres per dwelling unit or more actual acreage in residential use in 1995 was predominantly in densities of less than one acre per dwelling unit (see Table 10).

Projecting residential acreage needs

If the numbers of projected new housing units (see Table 9) are apportioned at the same average density levels as existed in 1995, the following acreage needs would emerge:

Table 11

ACREAGE REQUIREMENTS OF PROJECTED HOUSING GROWTH
BASED ON 1995 LAND USE RESIDENTIAL DENSITIES
2025

Projection (a) for 2025 = 36,708 housing units

Assume following percent of all new year-round occupied dwelling units in each density class:

					Units
High	=	14.8	percent of	36,708	5,433
Medium-high	=	33.0	percent of	36,708	12,114
Medium	=	38.6	percent of	36,708	14,169
Medium-low	=	7.7	percent of	36,708	2,827
Low	=	5.9	percent of	36,708	2,166

Based on the above, divide the number of housing units in each density class by the median number of units in each class:

High	=	5,433	units divided by	8	du/ac	=	679	acres
Medium-high	=	12,114	units divided by	6	du/ac	=	2,019	acres
Medium	=	14,169	units divided by	2	du/ac	=	7,084	acres
Medium-low	=	2,827	units divided by	0.7	du/ac	=	4,039	acres
Low	=	2,166	units divided by	0.25	du/ac	=	8,664	acres
Total New Residential Acres							22,485	acres

Under the assumption laid out above that would continue that 1995 land use density categories to the projected housing unit need, continuation of those proportions would substantially increase the proportion of housing units in the lower density categories, we would need to add 76,359 residential acres by 2025, or almost double the amount of land used for residential. Again, this assumes the smallest household size of the three possibilities considered (i.e. the most housing units), and is the uppermost boundary of growth in this analysis.

Based on the foregoing housing growth is anticipated within the following minimum-maximum ranges:

2010	2020	2025
413,009 – 430,218	419,398 – 436,517	425,781 – 443,375

(year-round occupied housing units)

In terms of number of **additional units** projected for each period, the minimum-maximum ranges are:

2010	2020	2025
4,585 – 23,551	6,299 – 6,389	6,383 – 6,858

(year-round occupied housing units)

Using highest assumed growth in housing by allocating units in the proportion of housing density according to the 1995 zoning then the residential **total acreage requirements** will be:

215,043
(residential acres)

TECHNICAL APPENDIX

C

LAND NEEDED FOR ECONOMIC ACTIVITIES

Land Needed for Economic Activities

Much of Rhode Island's land resources in theory are allocated to support a robust and growing economy. Economic activities are dependent on the availability of suitable locations. Although the locational requirements of many business sectors are a great deal different in the Information Age from what they were in the Industrial Era, a fundamental premise is that land will still be required for them. This section attempts to provide, *based upon available projections and trends,* a baseline quantitative estimate of land needed in 2025 to accommodate economic activities.

The estimate is based upon an update and expansion of an analysis contained in another element of the State Guide Plan, the *Industrial Land Use Plan*. ((28)) The analysis incorporates the following:

- Forecasts of employment in major private sectors of the economy based upon trend (regression) analysis using employment data for 1970, 1980, 1990 and 2000 and employment projections for 2010 by the RI Department of Labor and Training, presented in Table 1 below.

- Estimates of the relative proportions of different economic activities likely to be sited on industrial *vs.* commercial land, i.e., the "industrial land share" expressed in percent, based upon sources in the *Industrial Land Use Plan.*

- Estimates of employment density for the various sectors derived by Statewide Planning and other sources. No change in employment densities over time is presumed.

- A contingency factor, set somewhat arbitrarily at 20 percent, rather than a set reserve as used in *Land Use 2010* and the *Industrial Land Use Plan*.

Table 1
EMPLOYMENT BY SIX MAJOR SECTORS, 1970-2030

Year	Total	Contract Construction	Manufacturing	Transportation, Communication & Pub. Utilities	Wholesale & Retail Trade	Finance, Insurance & Real Estate	Services
1970	265,338	14,789	120,562	15,069	70,099	15,744	29,075
1980	338,091	12,656	129,081	12,336	80,940	20,847	82,231
1990	383,289	18,754	100,040	15,501	98,096	26,831	124,067
2000	436,923	18,339	71,858	20,810	109,268	29,046	187,602
2010*	484,847	21,221	61,905	22,997	120,143	35,301	223,280
2020**	543,053	22,716	44,328	24,642	134,234	39,748	277,385
2030**	596,838	24,571	26,874	27,075	147,076	44,479	326,763

*DLT estimate for 2010
**SPP projection by regression analysis (1970-2010 est.)

Source: RI Dept. of Labor and Training (2003), plus historic data

Land Use 2010 ((19)) included a set acreage figure – 8,000 acres – as a reserve for future land use. For this analysis, the 20-percent contingency factor was substituted. This results in a slightly lower reserve figure (5,986 acres), but may be more in line with the maturing of the state's economy and continued "build-out" of its landscape.

These parameters are combined in a simple arithmetic formula to produce estimates of commercial and industrial land likely to be required in 2025 to accommodate economic activities and to meet forecasted employment levels. Table 2 provides the inputs and resulting estimates of land needed.

The analysis indicates that Rhode Island could need to devote slightly less than 36,000 acres of land (5.2 percent of total area) to support economic activities in 2025. This is a 54 percent increase over the 23,312 acres in commercial, industrial, or mixed use that existed in 1995.

It is important to understand what these figures represent and what they do not represent. They represent the total land area that is estimated to be needed on a statewide basis, based on the assumptions given, to support economic activities in 2025. The calculations are highly sensitive to the employment density assumptions, and to the contingency factor selected. The estimates look at *total* need at one point in the future, not *incremental* need in the intervening years, and they address only the demand side. If we presume that the 35,915 acres estimated to be needed in 2025 include the 23,312 acres in commercial, industrial, or mixed use in 1995, the *net* need would be 12,603 acres.

At this point, no assumptions are made relative to the characteristics of supply that should be provided to meet this demand. Issues such as what proportion of the future need should be met by reuse of abandoned or underutilized commercial/industrial sites, rather than being met by development of new employment centers, are policy considerations not included at this stage. Also, the figures are developed by a formula that is trend-based (regression analysis), and no changes in economic or land use policy that would effect major shifts in sector composition or average employment densities are considered.

Table 2
ESTIMATE OF LAND NEEDED FOR ECONOMIC ACTIVITIES, 2025

A	B	C	D	E	F	G	H	I
	Projected Employment in 2025[1]	**Industrial Land Share (%) (*ILUP* except as noted)**	**Commercial/ Mixed Land Share (%) (100%-Col C)**	**Employment in Industrial Areas (Col. B x Col. C)**	**Employment in Commercial/ Mixed Areas (Col. B x Col. D)**	**Employment Density (employees/acre) (*ILUP* except as noted)**	**Required Acres (Industrial) (Col. E / Col. G)**	**Required Acres (Comm./Mixed) (Col. F / Col.G)**
Construction	23,644	100	0	23,644	0	5	4,729	0
Manufacturing	35,601	100	0	35,601	0	20	1,780	0
Transportation, Communication & Public Utilities	25,859	95[3]	5	24,566	1,293	18[3]	1,365	72
Wholesale & Retail Trade [2]	140,655	-	-	-	-	-	-	-
Wholesale	38,962	75	25	29,222	9,740	6	4,870	1,623
Retail	101,693	0	100	0	101,693	20[4]	0	5,085
Finance, Insurance, & Real Estate	42,114	50	50	21,057	21,057	125	168	168
Services	302,074	60	40	181,244	120,830	30	6,041	4,028
TOTAL	**569,947**					**Subtotal (acres):**	18,953	10,976
						20% Contingency[5]:	3,791	2,195
						Total (Acres):	**22,744**	**13,171**
						TOTAL ALL CATEGORIES[6]:	**35,915**	
						1995 Land Use, Ind./Comm./ Mixed Acreage:	**23,312**	

_____

ILUP = Statewide Planning Program, *Industrial Land Use Plan* (2000).

1 Midpoint of 2020 and 2030 projections (see Table _____).

2 Components estimated by applying "Retail" percentage from Statewide Planning transportation model projections to total 2025 Wholesale/Retail employment estimate from regression analysis.

3 Statistics are weighted averages derived using figures given in the *ILUP* for the three separate subsectors of this sector.

4 Estimate from Natelson Co., Inc. (2001).

5 *Land Use 2010* (1989) included an 8,000 acre "reserve" factor for industrial land. A smaller "contingency factor" was deemed appropriate for this analysis.

6 Acres required include 23,000+ acres in commercial/industrial/mixed use in 1995 and assume that new growth will be at the same employment densities as past trend