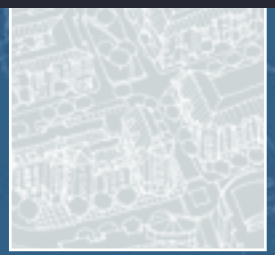
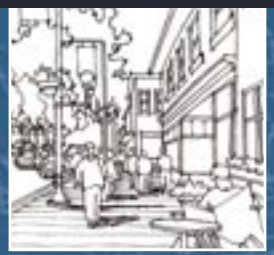
US EPA ARCHIVE DOCUMENT

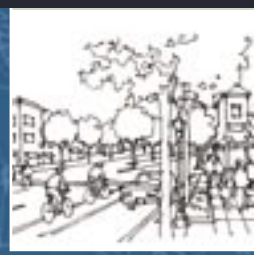
US EPA ARCHIVE DOCUMENT

Implementing the Aquidneck Island West Side Master Plan

PROMOTING GROWTH CENTERS







September 2006

ICF CONSULTING

GOODY CLANCY ARCHITECTURE PLANNING PRESERVATION

US EPA ARCHIVE DOCUMENT

Contents

SECTION ONE: **INTRODUCTION**

Charge to the team 4
Aquidneck Island: Our shared vision 5
Trends 6
New fiscal realities 9
Development in New England 9
- New England's tradition of vibrant mixed-use waterfronts 10

Keys to implementing the Aquidneck Island vision 11
- Density 11
- Design makes the difference 12

Building community requires coordinated effort 13

SECTION TWO
GROWTH CENTER: PORTSMOUTH

Melville/Weaver Cove area 20
Zoning code options 22
- Marina Village District 23
- Land uses 24
- Streets and roads 27
- Streetscape 29
- Parking 29
- Open space 31
- Density 33
- Building types 34

DESIGN GUIDELINES FOR PORTSMOUTH 40

GROWTH CENTER: MIDDLETOWN

Anchorage and Vanicek 44
Zoning code options 46
- Anchorage and Vanicek sites 47
- Land uses 48
- Streets and roads 49
- Streetscape 50
- Parking 51
- Open space 52
- Density 53
- Building types 54

DESIGN GUIDELINES FOR MIDDLETOWN 59

GROWTH CENTER: NEWPORT

North End/Pell Bridge Area 64
Current Draft Guidelines 65
Options for Design Guidelines 65
Form-based Zoning 68

SECTION THREE: **WEST MAIN AND CODDINGTON HIGHWAY CORRIDORS**

West Main Road 71
Guiding Principles 72
- Access, circulation, and corridor design 72
- Introduce a system of interconnected roads and parking 72
- Develop and implement a vision for bicyle and pedestrian circulation in the corridor 73
- Create sidewalks to support pedestrian-oriented retail and street-oriented housing 73
- Stripe bicycle lanes if sufficient roadway right-of-way is available 74
- Provide on-street parking 74

Transportation Management 75
- Develop a transportation demand management (TDM) plan 75
- Create a shared-parking and parking-management strategy 75
- Interconnect parking and work toward a system of rear access lanes 77

Putting the Pieces Together 77
- Putting the pieces together (box) 78

Coddington/J.T. Connell Highways 78

US EPA ARCHIVE DOCUMENT

SECTION FOUR: **ENVIRONMENTAL IMPLICATIONS OF IMPLEMENTING THE AQUIDNECK ISLAND VISION**

Protecting water resources 83
Redeveloping brownfield sites 87
Sustainable coastal developement 88

SECTION FIVE: **NEXT STEPS**

Next steps for all three communities 93
Community-specific next steps 96
- Middletown 96
- Portsmouth 97
- Newport 97

SECTION SIX: **APPENDICES**

The Smart Growth Implementation Assistance Program 101
EPA Team 102
Zoning Toolbox 103
Online Informational Resources 106
Green Building Guidelines 107

US EPA ARCHIVE DOCUMENT

Executive Summary

US EPA ARCHIVE DOCUMENT

On November 28, 2005, the Aquidneck Island Planning Commission released The Aquidneck Island West Side Master Plan, which was the result of years of public meetings, discussions, and visioning exercises with all the stakeholders associated with Aquidneck Island's West Side. The West Side Master Plan was produced by a broad stakeholder coalition including the Aquidneck Island Planning Commission, the communities of Portsmouth, Middletown and Newport, Rhode Island, Rhode Island Sea Grant, Rhode Island State Wide Planning Program, Rhode Island Department of Transportation, and Newport County Chamber of Commerce. The purpose of the document is to support important, common interests in shaping the future of the West Side.

Stretching from Newport Harbor north to the Mount Hope Bridge, the West Side of Aquidneck Island on Rhode Island's Narragansett Bay encompasses 5,000 acres in three island communities, including the 1,500-acre Naval Station Newport; the island's most important arterial road and commercial corridor, West Main Road; the island's most important maritime industry site; six miles of undeveloped shoreline, a nearly unique undeveloped coastal resource in the state; and agricultural and conservation land. The Navy is no longer actively using several large parcels within the West Side project area, leaving the potential for disposition of this land for development. The overarching goals of the plan are to:

- ensure a livable landscape;
- enhance social well-being;
- ensure a strong local economy;
- support multiple modes of transportation

The West Side Master Plan offers a variety of growth-shaping strategies that reflect many smart growth principles. Among the hundreds of recommendations are concepts for promoting high-quality redevelopment for commercial and mixed-use areas, retaining and enhancing open space, and preserving agricultural lands. The West Side Master Plan suggests some regulatory tools that may be adopted to achieve specific goals; it does not, however, provide the specific language needed for use in new codes and ordinances.

As one of the first steps to begin implementing the vision laid out in the West Side Master Plan, the Aquidneck Island Planning Commission and Rhode Island Sea Grant applied to U.S. Environmental Protection Agency's Smart Growth Implementation Assistance Program to help them develop options and tools for achieving the West Side Master Plan visions for their communities. The EPA Team consisted of representatives from EPA's Office of Policy, Economics, and Innovation, ICF Consulting and Goody Clancy. This report summarizes their findings and presents options developed for each of the communities.

The EPA Team's discussions with town and city planning staff, municipal board and commission members and the AIPC staff resulted in a consensus that the most useful assistance under this project would be zoning options for mixed use development and design review. The AIPC and the three communities asked the EPA Team to focus on specific areas in each community that were identified in the West Side Master Plan as appropriate for development into mixed-use centers and provide zoning options to assist them in implementing the plan.

US EPA ARCHIVE DOCUMENT

The EPA Team developed approaches for mixed use zoning standards, design guidelines, and review processes in each of the three communities, including some site-specific options for future growth in the following locations: Melville/Weaver Cove area in Portsmouth; Anchorage and Vanicek sites in Middletown; and North End/Pell Bridge area in Newport. Strategies to improve West Main Road corridor, shared by all three communities, were also developed. For each of the sites, and for development review in general, the Team emphasized the importance of density, design and a mixture of uses to create the lively compact village centers envisioned by the West Side Master Plan:

- Density creates a critical mass to support pedestrian-friendly environments and provide for affordable housing.
- Design counts—for function as well as appearance. The secret to creating successful compact centers is to design higher-density uses to create human-scaled, interesting environments that put people first and find functional but unobtrusive solutions to parking and service needs.
- Diversity of land uses creates an environment that is more than the sum of its parts because the mixture of uses—housing, shops, service businesses, restaurants, public parks and plazas, offices, and other employment options—all interact to produce a dynamic place where people can accomplish many of their needs in close proximity.

The West Side of Aquidneck Island is a region rich with natural resources, strong communities, and an engaged population. In meetings with residents, staff and officials it became clear that implementing the visions described in the West Side Master Plan is seen as a key opportunity to enhance the existing island character and help the communities to grow in healthy, prosperous ways.

US EPA ARCHIVE DOCUMENT

1

2

3

4

5

Implementing the Aquidneck Island Vision: Introduction

US EPA ARCHIVE DOCUMENT

A new community-based vision for Aquidneck Island, growing out of the West Side Master Plan, sets the stage for the growth of new, livable neighborhoods and walkable streets.

US EPA ARCHIVE DOCUMENT

Nestled in the protected, deep waters of Narragansett Bay, the three communities of Aquidneck Island have long been defined by the island's distinctive geography and coastal environment. Founded in 1639, the City of Newport was one of the most successful ports in colonial America, sharing the island with the rural towns of Middletown and Portsmouth. Newport's exceptional harbor attracted the US Navy—which established a naval base and, in 1884, the Naval War College—and wealthy summer visitors during the Gilded Age of the late nineteenth century. A continuing Navy presence, tourism, a deep maritime tradition now most evident in the yacht-building and -servicing industry, and the persistence of the horticultural industry continue to define Aquidneck Island's economy. While Newport retains much of its historic character, Middletown has developed into a suburban community, and Portsmouth's rural and maritime identity is challenged by new upscale development that coexists with estates and nursery farms.

The West Side of Aquidneck Island stretches from Newport Harbor north to the Mount Hope Bridge, encompassing 5,000 acres in the three communities, including the 1,500-acre Naval Station; the island's most important arterial road and commercial corridor, West Main Road; the island's most important maritime industry site; six miles of undeveloped shoreline, nearly unique in Rhode Island; and agricultural and conservation land. The Naval Station is entirely located on the West Side, accounting for nearly one-third of the plan area. The Navy is no longer actively using several large parcels within the West Side project area, leaving the potential for disposition of this land for development. Recognizing the opportunities and challenges facing the island, the Aquidneck Island Partnership—Aquidneck Island Planning Commission (AIPC) and its three member municipalities, Rhode Island Sea Grant, and other key public and private organizations—launched a broad-based, participatory process in 1999 to establish a common vision for the future of the West Side. The result of a six-year planning process, the West Side Master Plan provides strategies for future development of the West Side and seeks to:

Aquidneck Island

- ensure a livable landscape by maximizing open space, providing public access to the shoreline, minimizing adverse aesthetic impacts, and minimizing sprawl;
- enhance social well-being by providing educational and professional-development opportunities, adequate housing, and a strong sense of community rooted in an appreciation of the island's cultural and natural heritage;

US EPA ARCHIVE DOCUMENT

- maintain a strong local economy by providing a diversified economic base, promoting environmentally sensitive development, addressing growing demand on municipal services, and providing for a diversity of land uses and multiple-use development patterns; and

- support multiple modes of transportation by emphasizing flexible, safe, efficient transportation and ensuring consistency with the regional transportation network.

Formally presented on November 28, 2005, The Aquidneck Island West Side Master Plan received broad support from residents and local and state public officials.

Implementation of the West Side Master Plan will require many different entities to coordinate and adjust their activities to achieve the plan's goals. For example, each municipality will continue to regulate land uses within its jurisdiction, and formulating land-use regulations that further the plan's goals is one of the most important early actions that can be taken. AIPC and Rhode Island Sea Grant recognized that assistance to island communities in revising critical land-use regulations would be a key way to continue the momentum for change begun by presentation of the plan. They applied to the Environmental Protection Agency's Smart Growth Implementation Assistance Program for support in creating a regulatory framework in each community to help jump-start implementation of the West Side Master Plan. This report is the result of the EPA Team's work on Aquidneck Island.

CHARGE TO THE TEAM

The vision described in the West Side Master Plan represents the historic development traditions of New England. To help the islanders achieve their vision, the AIPC and Rhode Island Sea Grant asked EPA to suggest options and best practices for implementing this vision. The following options for development standards, guidelines, and review processes offer a range of strategies that may be of interest to the local communities as they seek to achieve more housing and transportation choices while protecting their environment.

The EPA Team started by examining Portsmouth, Middletown, and Newport's existing regulatory framework. After initial meetings with staff from each of the three communities, it was determined that the EPA Team would (1) suggest options for developing a mixed-use zone for the Melville/Weaver Cove area of Portsmouth; (2) suggest options for developing a mixed-use zone for the Anchorage and Vanicek properties in Middletown; (3) review Newport's draft design guidelines and provide options for strengthening them; and (4) outline strategies the three communities could pursue in an effort to transform West Main Road and Coddington Highway into more pedestrian-oriented retail nodes. In addition, the EPA Team agreed to prepare informational materials (a PowerPoint presentation and handouts) to summarize and describe the options developed. After the EPA Team's work is completed, municipal and planning commission staffs will use these materials to inform the public about different development choices that lie before them and strategies for achieving their vision.

Aquidneck Island and the West Side Master Plan Area *(SOURCES: WEST SIDE MASTER PLAN AND RHODE ISLAND SEA GRANT)*

US EPA ARCHIVE DOCUMENT

AQUIDNECK ISLAND: OUR SHARED VISION

In 1997, members of the Aquidneck Island community realized that open space on the island was disappearing, traffic congestion was increasing, residents were not finding high-skilled employment opportunities, and the New England character of the island was vanishing. If Aquidneck Islanders were to sustain their quality of life, they needed to develop a common vision for the future. Numerous public meetings and interviews were held, resulting in *Aquidneck Island: Our Shared Vision*. This document, published by Rhode Island Sea Grant, captured the ideas, concerns, and hopes for the island. The vision shared by the majority of the islanders included:

- a livable landscape, defined by a network of open space, access to the coast, and new development that complements the Island's character;
- social wellbeing that builds a sense of community, promotes investment in education, and celebrates the island's history;
- a strong economy that builds on high-tech industries, tourism, farming, and marine trades; and
- multiple modes of transportation that will aim to reduce congestion and connect bike paths and sidewalks.

The West Side Master Plan provides the three municipalities of Aquidneck Island with policy options, strategies, performance standards, and other ideas for implementing the stated vision. Specifically, the West Side Master Plan envisions a balanced and sustainable land-use pattern comprising "tracts of preserved open space and continued agriculture, large well-designed and planned developments, a more efficient and consolidated Naval Station Newport, concentrated mixed-use areas along the West Side's major roadways, and diverse, smaller-scale clusters of uses whose design and development predate the West Side Master Plan." Community goals that appear repeatedly throughout the plan include minimizing haphazard development and preserving open space; reusing and redeveloping former military land; promoting marina and marine-related development to enhance the existing marine industry in association with public waterfront access; and mixing uses in redevelopment and new development projects.

Portsmouth residents want to remain a rural community.

During the West Side Master Plan process citizens were asked to envision a future for the Melville/Weaver Cove area in **Portsmouth**. The result was a vision of the Cove as a prime location for a mixture of uses including a marina, compact luxury housing and mixed-income housing, limited commercial and/or light industrial activities, an outdoor performance venue, some much needed utility infrastructure (wastewater treatment plan, wind turbines), a future transit stop, trails and open space, and preservation and expansion of marine-dependent economic activities, including the boat-building and yacht-service area at Melville. The plan also calls for reconfiguration of the Burma Road/Stringham Road hairpin turn. Together, Weaver Cove and the Melville area would constitute a mixed-use "Marina Village."

During the West Side Master Plan process citizens were asked to envision a future for **Middletown.** The result was a vision of Middletown that includes redevelopment of former Navy housing at the Anchorage area into a mixed-use, mixed-income development; development of waterfront access and a new public park; and streetscape improvements and redevelopment of strip shopping centers on West Main Road and Coddington Highway to promote mixed-use development. Strip commercial development characterizes much of West Main Road in Middletown. The Town is interested in combining compact, mixed-use development with open-space preservation

US EPA ARCHIVE DOCUMENT

New development in Newport along Connell Highway is helping transform the corridor into a vital, walkable neighborhood.

if the last significant undeveloped property on West Main Road, the Vanicek site, is abandoned for farming uses and sold for development.

Newport's commercial districts tend to be characterized by the fine mix of uses typical of historic cities. Residential neighborhoods also reflect a stable, high- or medium-density character, with few locations for infill and little likelihood of major change in character. The North End/Pell Bridge area offers the city's major opportunity for significant growth and redevelopment. Development in this area occurred over the last 50 years and does not have the same character as the city's historic areas. The City has recently focused on shaping development in this area by gaining site control and creating guidelines for redevelopment. An area plan for Newport's North End is underway. Additional goals for Newport include:

- Developing the Pell Bridge/North End area as a mixed-use growth center that will continue the density of Newport's urban center with potential for mixed-use development, a waterfront park, a transit terminal and water transportation.
- Expanding multimodal transportation options at the Gateway Transportation Center with more regional bus and rail connections, a water shuttle, and making the center the terminus of bicycle and pedestrian corridors that extend throughout the plan area.
- Using Newport's secondary rail corridor (currently reserved for tourist trains) for rail service and a bike path.
- Redeveloping the Newport Naval Hospital.
- Improving streetscapes on J.T. Connell Highway.

The visions articulated in the *Aquidneck Island: Our Shared Vision* and *The West Side Master Plan* provided the guidance and backdrop for the EPA Team as it approached the requests from the three communities. These documents clearly state how the communities want to grow and now they were looking for options from the Team on how to achieve their vision.

TRENDS

The first step toward achieving the community's vision starts with current land use, housing, and economic conditions and trends. Today, the 61,000 residents of Portsmouth, Middletown, and Newport share many things: a strikingly beautiful coast, an increasingly congested road network, a strained water and sewer system, and a complex relationship with Naval Station Newport. Yet each of the communities has a different character and sense of identity. In densely built and historic Newport, 60 percent of the land area is located in historic districts. Middletown grew through suburban-style subdivisions and retail development along West Main Road and has no clear town center. In Portsmouth, which relies entirely on septic systems, residential development pressures have mounted recently, the nonresidential tax base is very small, and many residents still think of themselves as living in a rural community, despite the fact that the town counts almost as many residents as Middletown.

The Naval Station's population has decreased since the 1970s, and the Navy does not actively use some of its land and facilities. The potential for the Navy to dispose of the land in the coming years is being considered and discussed. Miles of commercial-strip development on West Main Road in Middletown serve residents from all over the

US EPA ARCHIVE DOCUMENT

The 2000 Census found the following labor force characteristics:

- Labor force living on Aquidneck: 28,770 people
- Labor force working on the island: 36,597 people
- Number of non-island residents who commuted to jobs on the island: 12,198 people
- Number of residents who commuted to jobs off the island: 6,923 people

Source: 2000 Census

island but also create traffic congestion and unappealing environments. A strong market for second homes and resorts has squeezed out much of the housing affordable to workers in the island's service and hospitality industries.

In developing possible options for implementing the West Side Master Plan, the EPA Team took into account demographic, socio-economic and land-use trends on Aquidneck Island.

Population

The island's population dropped 20 percent between 1970 and 2000, primarily because of a decline in military activities at the Naval Station and a decrease in household size. While overall population has decreased, civilian population has risen. Middletown and Portsmouth each have around 17,000 residents and Newport has 26,475. Although the population now remains stable, it is distributed more broadly and among more households with fewer people per household—conforming to national trends. Population composition has also changed with the arrival of more "empty-nester" households of affluent retirees, particularly in Portsmouth. The island's population experiences daily and seasonal peaks. As a beach, boating, and resort destination, the island (primarily Newport) is estimated to carry as many as 100,000 visitors on some summer days. Furthermore, the ratio of newer residents to longer-term residents has risen. For example, the island's public schools see a 20 percent annual turnover among students due to families' arrivals and departures. Part of this turnover reflects changes among Navy personnel.

Economic sectors

Aquidneck Island's economy comprises three sectors: military and related activities (such as the research-and-development sector); marine-related activities and boating; and tourism and hospitality. The Navy remains the largest single employer on Aquidneck, with more than 20 percent of the island's employees. Yacht building and other marine-related activities are concentrated in the Melville section of Portsmouth. Both of these sectors provide a significant number of high-skilled jobs. While tourism has long been important to the island, it remains highly seasonal, attracts many day visitors (who spend less than overnight visitors), and faces capacity limits.

Land use trends

There is high demand for residential property on Aquidneck Island, especially second and luxury homes. Rental housing is limited in relation to demand and is expensive. The most recent data for building permits show a modest number of new housing units built each year on the island, almost all of them single-family homes. Portsmouth, the most rural of the communities, was responsible for 63 percent of those building permits. While the Navy is privatizing much of its housing stock on the island, some of which it will lease back, it will likely no longer need other sites for additional housing units.

All three island communities would like to diversify their tax bases with more nonresidential development, but the prospects for substantial change in the overall amount of nonresidential development are limited. There is negligible demand for additional office or retail space; office space absorption

Large-lot housing on cul-de-sacs typifies the island's residential development in recent years.

US EPA ARCHIVE DOCUMENT

Strip shopping centers and stores surrounded by parking lots are the norm on much of Middletown's stretch of West Main Road. Mixed-use development (far right) is replacing older strip retail in communities across the country.

is estimated at no more than 20,000 square feet a year. In recent years, chain retail has increased, especially on West Main Road. While the amount of retail space will likely remain relatively stable, the type of retail will evolve to accommodate the needs and desires of a changing customer base. Small additions to the tax base may occur with expansion of the yacht-building business, and the relatively rapid rate of redevelopment in retail offers opportunities for improving the appearance of commercial corridors. Although the second-home and retiree residential market puts upward pressure on housing prices for everyone, seasonal and older residents typically cost communities less in services because they do not use the schools.

Affordable housing

A combination of factors has created an affordable housing crisis on Aquidneck Island. The robust housing market for second homes and an influx of affluent retirees have pushed housing prices beyond the means of island workers with modest incomes in service and marine—industry occupations. According to state data, in the five years between 1999 and 2004, the median price of a single-family house in Newport rose 270 percent; in Middletown, 217 percent; and in Portsmouth, 197 percent. In all three communities the median single-family price was over $340,000 in 2004, requiring a household income of over $100,000 to purchase a home. Average rents for a two-bedroom apartment in 2004 were about $1,300 in all three communities. Seventeen percent of Newport's housing units are permanently affordable to low- and moderate-income households (the highest in the state); the percentage for Middletown is 9 percent, and for Portsmouth it is 2.4 percent, a figure mostly accounted for by units for elderly and disabled residents.

The rapid rise in housing prices in all three communities mirrors trends seen throughout the Northeast and in many parts of the country. While this trend has been relatively recent (and dramatic), the sharp upturn in housing values has affected Aquidneck later than it affected many other communities in New England and across the country. One benefit of this lag is an opportunity to understand that higher housing prices unlock opportunities as well as create challenges.

Infrastructure

To accommodate new growth, the three island communities must have sufficient infrastructure—water, wastewater, and

Good prices, good neighbors

Affordable housing can be designed to reflect local architectural traditions and the layouts and unit sizes the local market needs. These award-winning affordable developments have been welcomed by their neighbors.[1]

US EPA ARCHIVE DOCUMENT

HOUSING'S IMPACT

One study estimates that the Minneapolis-St. Paul region loses out on $266 million a year in consumer spending and business-related taxes because it does not have enough housing.

Source: National Multi-Housing Council

transportation. Particularly within the Portsmouth area, infrastructure issues will need to be resolved as the communities plan for new growth.

NEW FISCAL REALITIES

Smaller households with far fewer children, higher densities, and sharply higher housing prices have combined to reverse one of the long-standing assumptions held by most communities in New England and many other parts of the country—that only commercial development can strengthen a community's fiscal health. A recent study conducted by Connery Associates (a nationally known Massachusetts planning firm) in conjunction with Goody Clancy, for the City of Somerville, indicated that by the early 2000s housing prices in that traditionally blue-collar community had risen to such an extent that multifamily housing could produce fiscal benefits roughly comparable to those delivered by office and research development.

This new parity allowed the city to revise its development guidelines for major new projects. While previous planning had called almost exclusively for office and other commercial development on larger sites to strengthen the community's fiscal base, the revised planning permitted development to be more responsive to market conditions and shifted its focus to planning and design qualities that new development should embody. This new planning has enabled developers to respond to market preferences for housing—and at the same time helped the community develop more new housing to support new and existing Main Street retail districts. Organizations such as the Massachusetts Citizens Housing and Planning Association and the Boston-area Metropolitan Area Planning Council have produced comparable information that demonstrates the far more favorable fiscal impact associated with higher-density, multifamily, housing.

Well-designed new housing can often yield fiscal benefits similar to those of commercial development—a dramatic shift from previous decades, when commercial development generated the most municipal revenues.

DEVELOPMENT IN NEW ENGLAND

Compact and dense forms of residential and commercial development, walkable communities, a strong sense of identity and place, and the preservation of open space are not new concepts in New England, as classic villages and towns throughout the region exhibit many of these same attributes. Historic communities throughout Rhode Island have long featured a mixture of land uses adjacent to one another that allowed people to move easily and quickly from home to work, shopping, schools and other destinations. As with the rest of the country, however, new communities throughout the region departed from this compact and mixed form of development when the idea of segregating land uses from one another took hold in the early twentieth century. Continued single use development has led to what many people experience in most New

US EPA ARCHIVE DOCUMENT

England communities on a daily basis: traffic congestion, long commutes, and sedentary lifestyles enforced by reliance on automobiles as a result of the separation of land uses. Now, many communities in the region wish to return to an updated version of the traditional New England model of a compact town or village center, albeit one that offers the convenience and amenities of modern life.

Changing demographics and household composition in New England have created a need for a more diverse mix of housing types and densities. Accelerated patterns of low density development in the region, however, fall increasingly short of meeting the housing needs of shrinking household sizes. Many people have accepted typical low-density suburban development as the norm and continue to fear density, yet they long for more traditional mixed-use neighborhoods with a strong sense of community, short trips to work, and people-friendly streets and parks. Many people fail to recognize that density is often the key to achieving the very qualities that make communities livable. The very streets and towns that New Englanders enjoy most are those within walking distance of large pockets of density that support active street life.

NEW ENGLAND'S TRADITION OF VIBRANT, MIXED-USE WATERFRONTS

The waterfronts of New England cities and towns offer distinct contrasts between active, mixed-use waterfronts—devoted to fishing and other maritime industries, tourism, or a mix of both—and serene, often pristine rocky shores and beaches, often just a short distance away. These waterfronts are characterized by high densities—densities that are similar to those found in the communities' downtowns and town centers—and have a surprisingly wide mix of uses.

This historic accommodation of density and mixed uses, long predating the current willingness to explore these qualities, arose from a sense that waterfront land is scarce and valuable. The value of waterfront land led to an assumption that it should be subject to intensive use, with high expectations of resulting public benefit. Historically, such activities ranged from maritime industry to supporting tourism to providing local amenities and other values that emerged over time.

WANT MORE INFORMATION?

The Vermont Forum on Sprawl and the Conservation Law Foundation published *Community Rules: A New England Guide to Smart Growth Strategies*. The guidebook addresses local planners, concerned citizens, and others who want to achieve smart growth in their communities through better planning, zoning, and permitting. Its strategy tips cover planning, regulation, and public investment, and it offers examples from across the region. You can find out more about it at **http://www.vtsprawl.org/resources/publications/communityrules.htm.**

The downtown riverfront in Providence.

New England has no pure industrial waterfronts. Fishing ports also accommodate restaurants, public walkways, shops, and, increasingly, housing. Tourist-dominated waterfronts are devoted to marinas, boat tours, stores, hotels, restaurants, and similar uses—and again increasingly also accommodate housing—but at the same time often harbor pockets of fishing, boat repair, and other maritime businesses.

While some communities actively discourage tall buildings near waterfronts, most communities have historically focused on other issues, such as preserving views and protecting unique waterfront features, and have permitted heights in keeping with those found in nearby downtowns and town centers. Attitudes toward height near waterfronts differ within New England and across the US. For example, in Boston and much of Massachusetts, newer regulations call for buildings to step down as they approach the

US EPA ARCHIVE DOCUMENT

waterfront. In contrast, the 2004 guidelines for redevelopment of Providence's Capital Center District—the city's most significant development initiative—call for heights to rise as they approach the two rivers that border the district to insure vitality and to provide visual markers of the rivers' importance. Parking and other uses that do not benefit directly from waterfront proximity, access, and views are increasingly discouraged along waterfronts.

While Rhode Island contains a range of waterfront types, Newburyport in Massachusetts is a typical waterfront community that illustrates how a vibrant, mixed-use waterfront, can support the community's economic, environmental, and amenity goals.

Defined by its distinctive coastal environment, Newburyport has long enjoyed success as a highly desirable destination that comprises a rich mix of uses. Among the strategies it has employed:

An example of mixed use development in Newburyport, Massachusetts.

- protection of marine-dependent uses, such as boat yards and marinas from residential encroachment;
- creation of a new framework of public streets and paths to protect water views and extend access to the water's edge;
- creation of a vibrant new mixed-use district on the waterfront;
- introduction of design guidelines and zoning amendments to ensure that new development reflects the town's historic character;
- extension of a two-mile Harborwalk to link neighborhoods to waterfront parks and the downtown; and
- expansion and enhancement of an existing waterfront park to engage the water's edge.

KEYS TO IMPLEMENTING THE AQUIDNECK ISLAND VISION

The communities of Portsmouth, Middletown, and Newport participated in developing options for implementing the Aquidneck Island vision and created the West Side Master Plan, which describes a vision of how they want the island to grow in the face of development pressures. As a summer resort and tourism destination, the island also contends with the positive and negative impacts of seasonal changes in population. The West Side shows the results of past land-use decisions that promoted single use, low-density development, but it also harbors important undeveloped or underutilized coastal areas. Through the West Side master-planning process, the communities and people of Aquidneck Island expressed their confidence that new growth and development can reverse past trends while preserving open space. Successful new development would balance the need for auto access with the creation of places that are pedestrian-friendly, designed at a human scale, and encourage multiple modes of transportation.

Three key issues—higher residential densities, the role of design, and the fiscal implications of mixed-density/mixed-use development—address the physical, socio-economic, and fiscal implications of more compact forms of development involving a wider range of housing types and businesses in a coastal setting such as Aquidneck Island.

DENSITY

Density through well-designed compact developments creates lively and attractive places to live. Newport's historic community character is a typical dense New England small city. Classic New England villages and towns have compact civic and retail centers with apartments above shops and small-lot residential neighborhoods radiating from the center. Today, more people understand that to achieve their communities' goals and create vibrant places to live, their

US EPA ARCHIVE DOCUMENT

Taking a closer look at density

Many people who think they dislike density find that the real issue is design quality. As Americans around the country have discovered, housing and mixed-use development can be dense yet very appealing—the key is good design.

7–12 UNITS/ACRE

15–25 UNITS/ACRE

30–50+ UNITS/ACRE

communities need different types of density. They cannot thrive over the long term with only one development choice. To achieve this balance, many communities are concentrating development in key locations, offering residents the opportunity to live in different types of neighborhoods, walk, drive or ride transit as they choose, and enjoy great places to live. Executed well, density can:

- create walkable neighborhoods
- support housing choice and affordability
- expand transportation choices
- support community fiscal health
- improve security; and
- protect the environment.

Compact development can also jump-start local economies. Many communities have lost businesses not because of regulations and high taxes, but because they lack enough housing for their workers. In the past, workers followed jobs. But these days, jobs often follow workers, who, in turn, follow housing. New Hampshire estimates that its housing shortage will annually cost up to 2,800 jobs, $121 million in reduced personal income, and $33 million in lost state and local revenues.[2]

DESIGN MAKES THE DIFFERENCE

Design is not simply about style or surface. Urban design is the way we arrange streets, parks, buildings, and parking areas into villages, neighborhoods, and cities. Good design creates a safe, comfortable, stimulating, and sustainable environment in which people can live, work and play. The public has an interest in design because private design decisions affect the character and experience of public places. That's why many communities have established design guidelines and standards to shape development and growth in their communities.

WANT MORE INFORMATION?

Check out *Creating Great Neighborhoods: Density in Your Community*. A joint publication of the National Association of Realtors and EPA, the publication highlights the importance of design in higher-density neighborhoods through a series of case studies and practical tips. It's available free at **http://www.epa.gov/smartgrowth/pdf/density.pdf**.

Design standards may be written into performance standards, incorporated into special-use permit processes, or created as stand-alone advisory documents. Design guidelines and standards are intended to provide detailed guidance for developers about a local government's desired development forms. Design standards that support the community's vision for future development could include the following concepts:

US EPA ARCHIVE DOCUMENT

Placing parking beneath new housing—now financially feasible due to rising housing values—can free up 50% or more of a site for open space or other uses.

- be written primarily for people, not cars;
- promote connections to—rather than isolation from—adjacent areas;
- provide visual interest and variety;
- balance higher densities with open-space amenities;
- include a variety of housing types;
- mix uses where feasible; and
- incorporate architectural elements that reflect the character of the community.

Design guidelines and standards with visual examples like drawings or photographs help developers understand what is acceptable and unacceptable to the community and facilitate consistent findings by municipal staff and project review boards. They should never be drawn so tightly, however, as to preclude creativity.

Compact development and higher-density development can be designed to be compatible with a wide variety of community-character types. Although many Americans confuse "high-density" and "high-rise," design strategies can create strikingly different built environments with the same overall density:

- single-family detached: 7–12 units/acre
- single-family with secondary unit: 17–24 units/acre
- multiple units with single-family appearance: 8–22 units/acre
- townhouses: 10–40 units/acre
- multifamily elevator buildings: 21–236 units/acre

Higher housing values make it possible for developers to invest more in the quality and character of the housing they develop and thus enable communities to achieve greater quality in building design and site planning. The benefits extend to a greater degree of amenity—including more open space, more mixed-use development, and investment in street trees and other streetscape elements.

One of the most striking changes higher housing values have brought about has been the ability to place parking below new housing—often as a level of parking beneath a building—rather than locating it in surface lots. The immediate benefits—which include freeing 50 percent of more of a site for other uses—can be translated into dramatic contributions toward more livable communities, including more open space, a wider variety of housing options, and a more attractive and pedestrian-friendly public realm. These features, and others such as the use of high-quality materials, are discussed in greater detail in the Design Guidelines.

BUILDING COMMUNITY REQUIRES A COORDINATED EFFORT (MIXING USES)

Historic communities have long had a mixture of land uses adjacent to one another so that people could easily and quickly go from home to work, shopping, schools and other destinations. The idea of separating and isolating housing from other land uses developed in the early twentieth century as a way to protect residential areas from the smoke, dirt, and smells of manufacturing during the industrial age. This separation of

Denver is creating a new mixed-use community with housing priced for a variety of income levels on the site of its former airport, Stapleton Field.

US EPA ARCHIVE DOCUMENT

uses became the standard, even when there were no noxious activities to protect against. Today people experience traffic congestion, long commutes, and sedentary lifestyles enforced by their isolation from multiple destinations as a result of the separation of land uses. More and more communities are returning to the vision of a diversity of land uses blended together in compact town or village centers, where people can live, work, study and play in close proximity.

As discussed above, design often makes the difference in creating compatibility between higher-density districts and surrounding areas. Appropriate site planning and design can maintain views and the overall scale and character of a coastal community, so long as proponents of new development approach their project as a long-term addition to the existing neighborhood. This can mean working with the neighbors and community officials and staff to explore creative ways to protect upland views and blend new construction into the established vernacular.

Diversity of land uses also means providing a variety of housing choices. Finding a high-quality home in a safe neighborhood, convenient to jobs, good schools, and other daily needs, can sometimes be more difficult than we expect. Different kinds of homes in safe neighborhoods with many amenities, such as public transit, shops, restaurants, parks, churches, and schools, may be more expensive because more people want to live there. Those who can't afford to live in these neighborhoods may find themselves heading to far-flung exurbs for a place they can afford, or living in a more convenient location where they don't feel safe after dark. No one should have to sacrifice safety for convenience. Safe, affordable housing is a key aspect of diversity in any community.

Well-designed mixed-use development can be achieved through coordinated planning, design guidelines, and zoning.

Communities that want to ensure the availability of a range of housing choices have options. For example, when Denver's old Stapleton Airport was being redeveloped into a neighborhood with homes, offices, schools, and shops, citizens ensured that it include houses for every price range. As a result, nearly every street in Stapleton includes a wide variety of housing types at different prices, so that everyone from the receptionist to the CEO of a company can comfortably live in the same neighborhood. There are apartments for people with limited incomes, including retirees. Many residents live close enough to their jobs to walk to work, and many children can walk to one of the development's several schools.

Soaring housing prices on Aquidneck Island have made affordable housing a pressing concern. As is the case across New England, sharply rising construction costs have combined with the environmental vulnerability of much of the region's undeveloped land, as well as other factors that limit the amount of land available for housing development, to drive up housing prices.

US EPA ARCHIVE DOCUMENT

In 2005 the average cost of creating a unit of newly proposed subsidized housing exceeded $300,000 in the Boston region. One way in which Boston and other communities have secured funds to support development of affordable housing is to require that developers use internal subsidies—taking some of the profit from market-rate housing to underwrite the costs of providing more affordable units within the same development. A similar approach involves allowing developers to pay into a housing trust fund from the sale of market-rate units and then using the fund to create new housing affordable to working families. Until recently the number of cities that required internal and cross subsidy, also known as "inclusionary zoning," was relatively short and included communities like Boston and Cambridge. In recent years a much longer list of New England communities have required developers to provide 10–20 percent of newly developed housing units as affordable housing.

[1] Middle photo of Newport Heights from "Newport Heights Replaces Housing of Last Resort" *Affordable Housing Finance*, August 2005.

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

1

2

3

4

5

Growth Centers

> Portsmouth

> Middletown

> Newport

US EPA ARCHIVE DOCUMENT

Implementing the Aquidneck Island Vision: Options for Each Municipality

The EPA Team's discussions with planning staffs as well as board and commission members and the AIPC staff determined that the most useful assistance under this project would be zoning options for mixed-use development in Portsmouth and Middletown and review of design guidelines for Newport. The AIPC and the three communities asked the EPA Team to focus on specific areas in each community that were identified in the West Side Master Plan as appropriate for development into mixed-use centers and provide zoning options to assist them in implementing the plan. This section responds directly to those requests.

US EPA ARCHIVE DOCUMENT

Planning to create a place means planning for buildings, parking, and transportation, and for how all three will work together for the people using them.

US EPA ARCHIVE DOCUMENT

Planning to create a place means planning for buildings, parking, and transportation, and for how all three will work together for the people using them.

PORTSMOUTH

MELVILLE/WEAVER COVE AREA

The Melville/Weaver Cove area contains the existing Melville Marine Center, surrounded by large parcels of private undeveloped land and abandoned tank farms. Emerging development in this area can be guided to create the kind of well-planned growth center described in the West Side Master Plan: one that combines employment, housing, recreation, and public uses while preserving the unique physical assets that make this area so appealing. Portsmouth residents have emphasized that they want their community to be diverse and walkable with waterfront access.[1]

While the West Side Master Plan described a basic vision for the Melville/Weaver Cove area focused on creating a walkable village district with marine uses, it did not describe the physical development that supports this goal. The EPA Team, drawing heavily from the sketches, goals, and performance standards articulated in the West Side Master Plan and from conversations with residents, planners, and the AIPC during the December 2005 site visit, created a concept vision for this area, which envisions a Marina Village District, composed of three sub-districts as follows.

1. **Weaver Cove Village** includes land on both sides of Shoreline Drive south of the most southerly parcel boundary with frontage on Maritime Drive and Regatta Road.

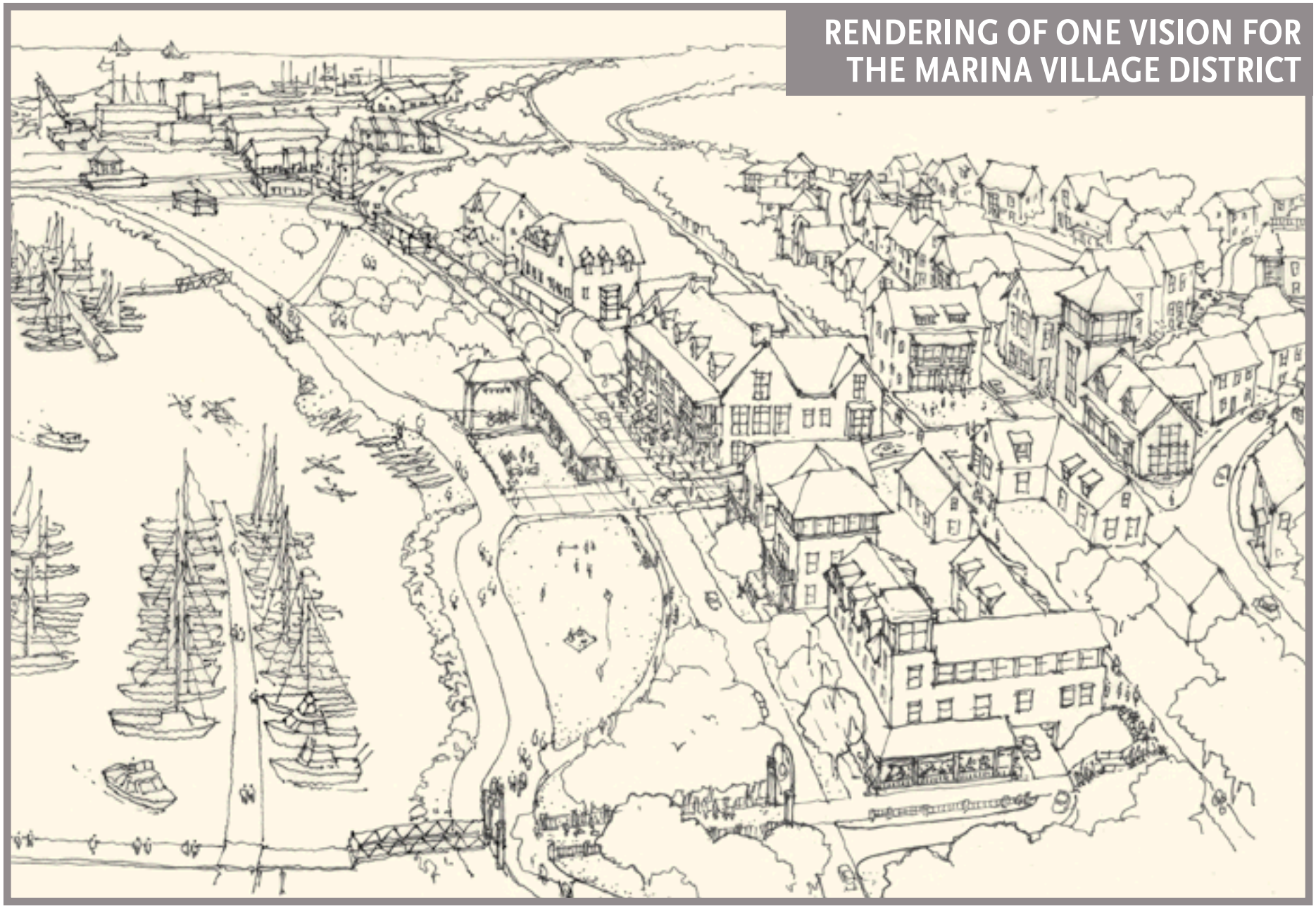
Weaver Cove concept illustration

2. **Melville Marine Center** includes the land north of Weaver Cove Village and the area identified as Tank Farm #1 in the West Side Master Plan.
3. **Tank Farm #2** includes the area identified in the West Side Master Plan as being occupied by the Navy Tank Farm on a hill east of Weaver Cove.

The Marina Village District described in this section builds off and allows for expanding existing neighborhood resources, such as the existing marine industries. The district

US EPA ARCHIVE DOCUMENT

RENDERING OF ONE VISION FOR THE MARINA VILLAGE DISTRICT



US EPA ARCHIVE DOCUMENT

could ultimately become a destination area for tourists, marine workers, and other island residents. Each of the sub-districts, while functioning slightly differently from one another, work together to bring cohesion, identity, and vitality to the area.

Aerial of the Melville/Weaver Cove area

The following sub-sections provide general guidelines and information that Portsmouth planners may want to consider incorporating into any zoning changes for the area. The possible zoning options are organized as follows: (1) general characteristics of the Marina Village District mixed-use neighborhood; (2) land uses; (3) streets and roads; (4) parking; (5) open space; (6) density; and (7) building types, including sub-sections mixed-used, residential, and industrial buildings. The final sub-section describes possible design guidelines for mixed-use and residential buildings. In reading the following sections keep in mind that together they work to create a lively, walkable district connected with vibrant Narragansett Bay.

ZONING CODE OPTIONS

The Portsmouth planners and the Aquidneck Island Planning Commission asked the EPA Team to provide options to the community for codes that support the vision for the Melville/Weaver Cove area. This section describes practices that have helped other communities achieve visions for lively, walkable, and successful mixed-use districts. These provisions are provided as options for Portsmouth to consider as development moves forward in this area.

It is helpful to keep in mind some basic guiding principles as a foundation for realizing the community's vision for these sites. (See sidebar.)

There are several important elements that Portsmouth planners will need to refine when creating the final code for the Marina Village District. One element is the location of transition zones—those areas that help the Marina Village District blend seamlessly

Looking broadly at designing and coding for a new neighborhood, Portsmouth residents and planners should first consider the fundamental elements of the sites.

- What is the circulation plan? Streets, paths, and trails need to be laid out to promote walkability and access between coast and town. The street network needs to be gridded with appropriate widths – village center streets are broader with wide sidewalks, while neighborhood residential streets are narrower to calm traffic and create a sense of place.
- How is parking addressed? Is on-street parking allowed in order to provide a buffer for the pedestrian? Are parking lots hidden behind buildings?
- How are buildings and houses designed? How do they interface with the street? Do the buildings invite pedestrian activity or discourage it?
- What is the mix of retail, residential, civic, and open space that Portsmouth residents are looking for? What will the market support?
- Does parking balance summer demand with neighborhood character? Does it support boat transport where needed?

US EPA ARCHIVE DOCUMENT

into surrounding neighborhoods and blend the three sub-districts. For example, for the Melville Marine Center to blend into the Weaver Cove Village, the zoning code for the Marine Center could allow for live-work units or other type of multi-family housing and flexible retail space at the edge of the Marine Center district. Conversely, these transition zones could also be located within Tank Farm 2 and Weaver Cove districts. Each subdistrict needs to transition into the other subdistricts and into the surrounding neighborhoods.

Another element to consider in developing a zoning code for the this area is future market conditions. Some communities have chosen to allow for more flexible zoning, e.g., allowing other permitted uses in the code in order to allow for easier transition to other uses. This often allows for land uses that seek the "highest and best" use from a market perspective. For example, if oil prices continue to climb, the marine industry may begin to lag, while the housing market or another industry may begin to soar. By allowing flexibility in the zoning code, the market will seek efficiencies, and the marine center could then easily transform to other, higher performing, uses if necessary. Variances and other zoning barriers would not be necessary.

However, some communities place a value on their character, which can often include an industry that may not be as profitable as other land uses. Preserving farm land is a good example of this: farming may not always be the most profitable use for a piece of land yet the community values its farming heritage and therefore includes various zoning barriers in the zoning regulations in order to preserve farming. The same values may apply to the marine industry. Clearly, a working waterfront and marine-related uses is important to Portsmouth's character and history. By not allowing non marine-related uses, Portsmouth planners would help preserve the marine industry heritage of the area.

The Marina Village District should contain a variety of active, pedestrian-oriented uses.

1. MARINA VILLAGE DISTRICT: A TOWN CENTER MIXED-USE DISTRICT

The purpose of a mixed-use neighborhood for the Marina Village is to provide (1) a pedestrian-oriented area with a mixture of commercial, retail, residential, and marina uses that are integrated in close proximity; and (2) an innovative and stimulating environment that encourages walking and access (physical and visual) to the Bay.

General Characteristics

Successful mixed-use districts usually include many of the characteristics listed below.

- Mixed-use districts combine a number of uses, including residential, retail, marina, office, service, civic uses and open space.
- Mixed-use areas have a variety of local-serving businesses and other commercial establishments integrated with a variety of residential housing types and densities.
- Mixed-use areas are organized to allow appropriate integration, while protecting lower intensity residential neighborhoods and allowing easy access from these neighborhoods.
- Land uses generally transition in intensity from the commercial center to surrounding lower intensity residential neighborhoods.
- Districts are pedestrian oriented places, serving as the focal point and identity for any current or future surrounding neighborhoods.
- Uses located on the ground floor

US EPA ARCHIVE DOCUMENT

that stimulate pedestrian activity are encouraged.

- Large retail uses respect the small scale pedestrian and block pattern of the mixed-use district. Given the wide range of large and small retail uses, Portsmouth planners could define these qualitative adjectives with numbers that match their vision for the area.
- Large office and institutional uses are limited and are designed in a way that enhances the pedestrian oriented development pattern of the district and supports the overall vision.
- Streets and roads are developed and maintained in a well-designed, interconnected system that serves all transportation modes (driving, walking, biking) and create multiple mobility options.
- Neighborhood and district streets are designed as pedestrian-focused with trees, pedestrian amenities, and lighting.
- Streets tend to be narrower, designed for slow traffic of moderate speed, balancing the needs of auto circulation with the convenience and enjoyment of a walking community.
- Buildings and open space are designed to take advantage of public views to and from the water.
- Surrounding neighborhoods contain moderate densities that form a transition and link between surrounding lower density residential neighborhoods and heavier intensity commercial or light industrial / employment areas.
- Transition between buildings types are mid-block to ensure that complementary building heights face each other across streets.
- The structure of town center mixed-use districts may vary, yet they are typically one of two primary types:
  1. *Nodal:* Nodal centers generally focus on a civic space such as a square, plaza, village green or commons.
  2. *Linear:* Linear mixed-use areas generally feature "main streets": mixed-use retail streets sometimes ending on a civic space, such as a park or plaza.

All types of residential uses are allowed in the Marina Village District.

These ideas could be incorporated into the code to encourage these characteristics in the Marina Village District.

2. LAND USES

The designation of uses can support Portsmouth's vision of a compact, traditional residential marine-focused village. Other New England and U.S. communities that have achieved successful mixed-use districts have a mixture of businesses that are appropriate for a range of users including pedestrians and cyclists. These communities have frequently permitted, conditional, and prohibited uses like those that follow below.

Note: While the following permitted, conditional, and prohibited land uses could be applied to the entire Marina Village District, which includes the three sub-districts, more specific land use designations could be considered for each of the sub-districts to ensure that they maintain their unique attributes and contribute to the vitality of the whole district. In general, a successful mixed-use zone has zoning elements encourage that allowable uses, while distinguishing a few that are conditional or prohibited.

Permitted

A variety of land uses are appropriate to the mixed-use district including:

- Local-serving retail and restaurants
- Service businesses

US EPA ARCHIVE DOCUMENT

- Small offices and clinics
- Civic uses
- Daycares
- Parks and other small recreation areas
- Marinas, including sale, maintenance, and repair of boats and related supplies
- Stores for sale of marine supplies
- Limited boat storage
- Lodging, such as hotels, bed and breakfasts, spas

Conditional

The following uses are generally allowed under certain conditions within a mixed-use district:

- Marine industrial: boat building, etc.
- Large scale office (second floor and above, only)
- Places of worship and assembly; shared or joint use parking required (see "Parking" sub-section below)
- Large scale institutional uses (public services uses only allowed)
- Labs and medical research (not allowed on ground floor)
- Restaurants over 10,000 sf; shared or joint parking required (see "Parking" sub-section below)

Prohibited

The following uses are generally not allowed uses within the mixed-use district:

- Auto Uses (sales, storage, parts or maintenance or car wash)
- Drive-throughs
- Self Storage or Long Term Storage
- Kennels (exterior yards)
- Food Manufacturing or Processing (except that consumed on site)
- Industrial and other uses not compatible with intent of district
- Outdoor self-storage except for boats

Weaver Cove

In the West Side Master Plan, Portsmouth residents said they envision Weaver Cove as a primary activity center for the area that the EPA Team is calling the Marina Village District. Weaver Cove then will be the core of the mixed-use area. Given its coastal and marine character, Portsmouth residents and planners may want to actively seek the following land uses for this area:

- Stores for sale of marine supplies, limited boat storage
- Small scale, boutique non–marine-related retail stores and service businesses
- Eating and drinking establishments
- A range of residential units; such as apartments, condos, townhouses, multi-family housing, house boats; and live-work units
- Public, cultural and entertainment
- Civic uses, such as schools, libraries, municipal buildings
- Galleries, museums, theaters
- All types of lodging
- Parks and other small recreation areas

Melville Boat Basin

Melville Marine Center

The Melville Marine Center currently supports a range of marine industry uses. The West Side Master Plan envisions future development that will augment the existing businesses. As such, the primary use will be marine related. Land uses that are particularly well suited to the marina center vision include:

- Marine-dependent retail, wholesale or manufacturing uses, such as marinas, marina-related offices, boat storage, boat

US EPA ARCHIVE DOCUMENT

building, and water taxi, shuttle, or ferry services
- Heavy industrial including boat building, painting, and fiberglassing
- Small-scale eating and drinking establishments
- Office uses accessory to the marine industry use

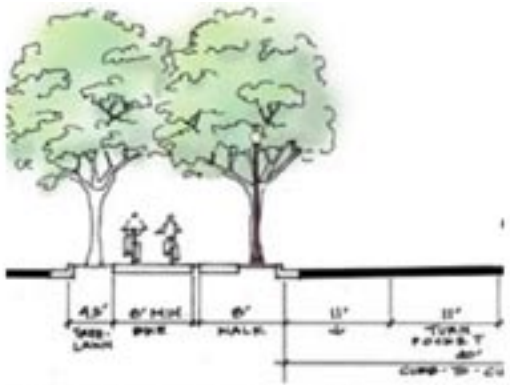
Land uses that probably don't support the vision well include:
- Non-marine related/dependent retail and service businesses with footprints of more than 10,000 sf
- Single-family detached housing

These uses may tend to, over time, drive out the marine uses that Portsmouth seeks to preserve.

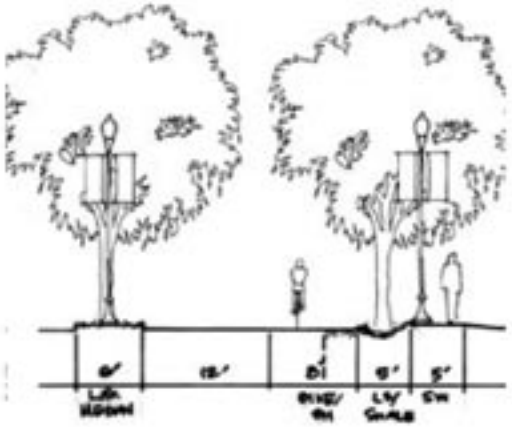
Tank Farm #2

Once the environmental cleanup has been completed, the West Side Master Plan envisioned the Tank Farm #2 site as a residential neighborhood with limited retail, office, and light industrial uses that has connections to both the Melville Marine Center and the Weaver Cove area. It is common for successful town centers to have higher density residential areas that support the core retail and employment areas and also help transition into surrounding lower density neighborhoods. To best achieve this vision, Portsmouth residents and planners may want to actively seek the following land uses:

- A range of residential housing, including: apartments, townhouses, condos, multi-family housing, limited single-family detached housing on small lots (6 to 10 units per acre and above), live-work units, and accessory dwelling units
- Retail stores and service businesses serving the neighborhood
- Eating and drinking establishments



Bike paths can be integrated with roadway design (top) or separated as dedicated pathways (bottom).



serving the neighborhood
- Limited marine and non-marine related office space
- Parks and other small recreation areas
- Boat storage

3. STREETS AND ROADS

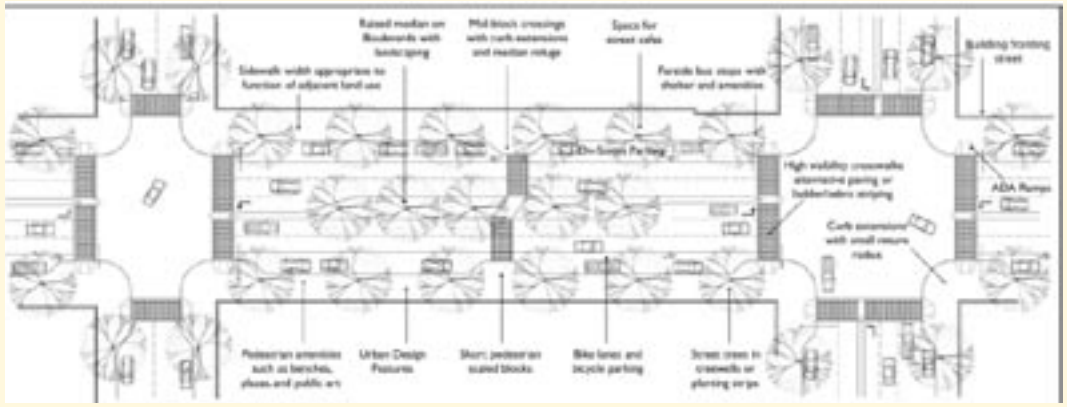
Successful neighborhoods have streets and roads that are developed and maintained in a well-designed, interconnected system that serves all transportation modes (driving, walking, biking) and creates multiple mobility options. Well designed streets and roads are critical to meeting a number of the goals articulated in the West Side Master Plan, such as increasing walkability and creating mixed-use neighborhoods.

The purpose of this section is to help Portsmouth planners and residents create a detailed framework of attractive streets that foster walkability, are designed to the scale of pedestrians and accommodate bicyclists as well as vehicles for the Marina Village District. (These characteristics could also apply to the Melville Marine Center if Portsmouth decided to create transition zones and to ensure that any future development in the marine area could be flexible for any future use.) Streets that achieve these goals in a village context share the following characteristics:
- Mixed-use districts are organized by a grid of streets.
- Streets connect to each other to provide

US EPA ARCHIVE DOCUMENT

easy circulation within the site and connect to the adjacent streets outside the district to provide the high levels of connectivity between districts in existing and planned neighborhoods.

- A well-designed, interconnected system of roads, streets, and paths are developed and serve all transportation modes to create multiple mobility options.
- Mixed-use districts have shorter, more frequent blocks to encourage walkability and foster more pedestrian-friendly environments. New blocks have a perimeter no greater than 1,500 feet and many have maximum block sizes of 200-600 feet with any block dimension over 400 feet requiring a mid-block alley. Many communities have done successful development and redevelopment with these block sizes in part because they help create a more inviting pedestrian environment.
- Neighborhood and district streets are designed with trees, vegetation, grass, and other pedestrian amenities, such as lighting, that buffer the sidewalk from the street. Use native, coastal (salt-tolerant) vegetation where possible.
- Sidewalks are generally 8 feet in residential areas and 12-16 feet in the retail core area. Note that two to three feet or more of these sidewalk widths is generally reserved for trees, benches, and other amenities. These amenities are important to creating inviting pedestrian experiences in both retail and residential areas.



MAKING STREETS FRIENDLIER FOR PEDESTRIANS

In spring 2006, the Institute for Transportation Engineers (ITE) released a draft version of guidelines intended to promote walkable streets. Developed jointly with The Congress for the New Urbanism, *Context-Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities* draws on recent experience to present new, pedestrian-oriented approaches to street design for traffic engineers, municipalities, and developers. Available on ITE's website, ***http://ite.org/bookstore/rp036.pdf.***

- Well-planned, and interconnected pedestrian and bicycle routes are maintained and expanded within and between the new neighborhood and surrounding neighborhoods and open spaces.
- The frontage along all four sides of a block are lined with buildings with windows and doors, rather than surface parking lots, to make the environment more attractive to pedestrians.
- Mixed-use districts have narrower streets, which move traffic efficiently, but in a way that balances needs of auto circulation with the convenience and enjoyment of a walking community.
- Traffic-calming measures—such as curbside parking and landscaped "bulb outs" at street corners—are used to maintain appropriate speeds and support a desirable living environment.

Streets and roads play a critical role in carrying out a community's vision for a more walkable village or town center. Supporting walkability and mixed-use activity has implications for each street type as detailed below.

Primary Street - Collector

Primary access to Weaver's Cove will likely

US EPA ARCHIVE DOCUMENT

be provided by a street slightly larger than a neighborhood street (a collector). This street will probably be Shoreline Drive and it could be designed as the primary retail street within the Marina Village. Designing Shoreline Drive as a "complete street," e.g., a street that provides for all modes with no one mode interfering with the operation of another mode (see the new ITE guidelines described in box), can help fulfill walkability and mixed-use goals. The precise design of Shoreline Drive, among other things, is dependent on how much density is placed in the heart of Weaver's Cove.

The collector streets in Weaver's Cove and, depending on the final design, parts of the Melville and Tank Farm #2 areas, are good candidates for the primary retail streets. They are well positioned in terms of having adequate traffic and surrounding density to draw in customers. Keys to success in a retail environment such as this include: buildings built to the sidewalk for at least 80 percent of their linear street frontage and sidewalks lined with trees to shade pedestrians.

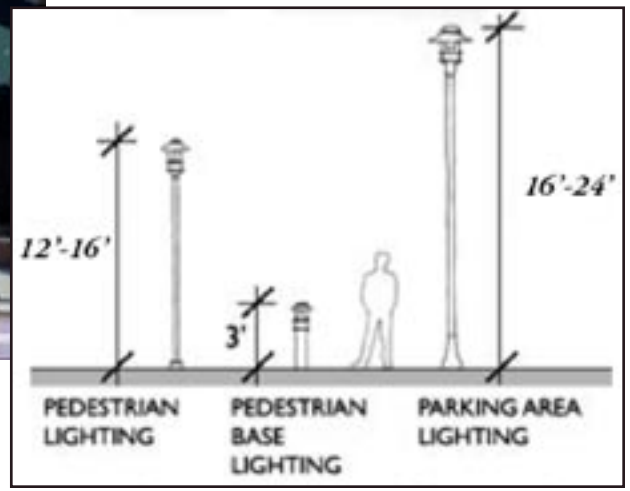
Collector streets like the ones in the Marina Village generally include two travel lanes and a left-hand turn lane with on-street parallel parking on both sides. Bicycle lanes in each direction are encouraged. In mixed-use areas, sidewalks are generally 12 to 16 feet with street trees required and outside seating encouraged.

Neighborhood Streets (local streets)
Design of neighborhood streets is critical. New connecting streets can be narrow neighborhood streets, designed for a mostly residential area with low traffic volume at slower speeds. Sidewalks, on-street parking, and strips of grass, trees, or other vegetation between the sidewalk and the street make them comfortable for all travelers. Each design element supports a more pleasant neighborhood street for both driver and pedestrian. The narrow lanes and on-street parking encourage drivers to drive slowly and look out for oncoming cars. The on-street parking and vegetation between the sidewalk and street protect the sidewalk to make bikers and pedestrians feel more comfortable.

On internal streets, sidewalks, benches, pedestrian-scale lighting, and other streetscape amenities create a comfortable and safe pedestrian environment. The street could be 8 feet wider if the town wants to allow parking on both sides of the street.

Alleys
Alleys play an important role in building a pedestrian-friendly environment and are encouraged where feasible. Placing parking at the rear of a site and providing vehicle access to it with alleys strengthens residential and mixed-use streetscapes. This arrangement minimizes driveways and curb cuts along the street and increases the space available for community-building features such as porches, stoops, storefronts, and entrances.

Elements such as lighting, signage, seating furnishings and awnings make for an attractive streetscape.



3. STREETSCAPE

Successful mixed-use neighborhoods generally have the following streetscape design improvements that enhance the pedestrian

US EPA ARCHIVE DOCUMENT

environment:

Lighting

Street lights are scaled for lighting the pedestrian way at approximately 16' tall and at intervals of 50 feet. Two level lights are appropriate within commercial areas. Additional lighting may include building and signage lighting as well as accent uplights on buildings or at landscaping.

Street Trees

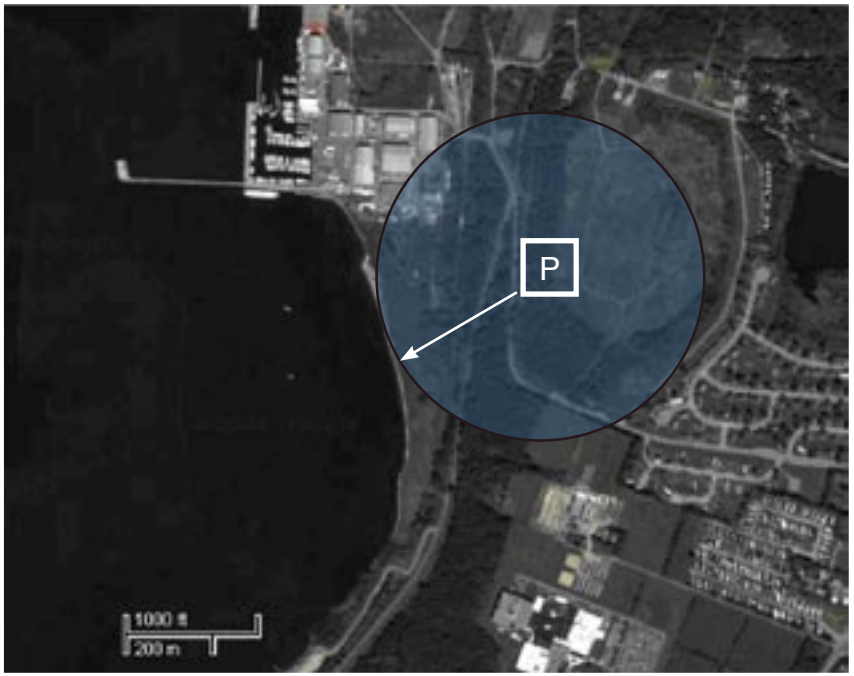
Street trees are placed approximately at intervals of 25 feet within tree wells with grates or hard pack pervious material. (Spacing may vary depending on species; use native coastal trees where possible.) There are bulb outs with accent trees at intersections and mid- block crossings.

Intersections

Pedestrian crossings are clearly designated with wide striping at a minimum and for crossings at retail streets accent paving such as interlocking pavers, brick in accent bands or scored and sand blasted concrete are strongly encouraged.

Sidewalk Design

Sidewalks are a minimum of 8 to 16 feet wide and wider on retail streets and as deemed appropriate. Where seating is encouraged a minimum of 16 feet is desired. Accent paving such as interlocking pavers, brick in accent bands or scored and sand blasted concrete are strongly encouraged along retail/mixed-use pedestrian walks and crossings.



Shared parking placed at the south end of Tank Farm #2 would be within a ¼-mile walk of both the village and the beach, and also much of the housing on the Tank Farm #2 site.

Signage

Street signage is consistent with pedestrian lighting and coordinated as part of street furniture.

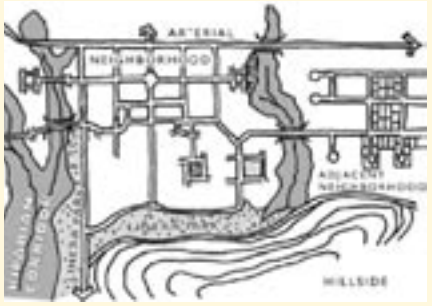
4. PARKING

Parking plays a central role in determining the character and function of any development. This will be particularly true of any effort to develop a compact, walkable, characteristically New England waterfront community at Weaver Cove. Other communities who have successfully created a lively, pedestrian-oriented environment did so, in part, by minimizing the prominence of parking.

The blank slate of much of Weaver Cove is an opportunity to provide parking from the beginning that strongly supports the community vision. Detailed parking guidelines for this development are beyond the scope of this report. The following general guidelines for parking at this site are drawn from strategies used in other mixed-use districts.

- Allow parallel parking in the entire district. Use the supply of parallel parking spaces when calculating overall parking needs. Not all parking spaces need to accommodate all kinds of vehicles and trailers.
- Allow for shared parking facilities. This will likely require regulatory and institutional arrangements to manage and fund a shared parking facility.
- Allow developments to meet a portion of their parking requirements off site. Off

US EPA ARCHIVE DOCUMENT



Open space systems provide strong edges and natural separations/ connections between neighborhoods and can be incorporated throughout Marina Village District.

site parking needs to paired with good pedestrian links and drop-off areas and/or shuttles to facilitate access for people and deliveries.

- Provide parking dedicated to public access i.e. neither residential or commercial.
- Avoid placing parking along the waterfront edge. Locate parking as far from the waterfront as is feasible to reduce the impact of stormwater runoff on coastal resources, and to allow for other uses near the waterfront.
- Use pervious pavement for stormwater infiltration or vegetated swales to collect stormwater from surface lots.
- Screen parking so that it is not visible from public access points along the water.
- If the site has parking, then locate parking at the rear or rear-side of buildings. Further, wrap retail, office, or residential buildings around surface parking to "hide" it from pedestrian activity.
- Surface parking does not front on major public streets.
- Divide parking lots into fields of no more than 40 spaces.
- Use structured parking where appropriate to maximize open space and/or use mix.
- Plant parking lots with trees in linear strips and peninsulas that provide sufficient room for healthy tree growth. Plant sufficient trees to provide shade over 50 percent of a lot within 10 years.
- Screen parking lots with either perimeter landscaping, including shrubs maturing to at least 4 feet, or opaque fencing at least 4 feet tall with shrubs or vines planted against the fence.
- Landscaping should be able to deal with sea spray and potential saltwater flooding if in the floodplain.
- Provide and designate pedestrian routes from the parking lot to destinations.

Whether provided on-site or off, parking requirements need to be carefully set as part of a comprehensive access and circulation plan for the village. Traditional requirement formulae such as "x spaces per restaurant table" are not particularly relevant to a community such as that envisioned for Weaver's Cove. If the vision is for a community in which a significant number of people, whether residents or visitors, make trips by other than chaining single-occupant auto trips, then the access and circulation plan needs to tailored to that vision, and parking needs set accordingly. Neither parking minimums nor maximums per site are necessarily the best tools with which to implement this vision; even with a shared parking facility, site-based standards encourage thinking in site-based terms, rather than in district-wide terms.

Increasingly, communities of the type Weaver Cove would like to become provide and manage shared facilities whose size is set as part of an overall access and circulation plan. Some of the parking demand typically met on site continues to be met on-site, some in shared public or private facilities (including on-street), and some is met through other transportation options, including walking, shuttles, etc. For guidance and resources on both form and management of such parking solutions, see the recent EPA document Parking Spaces/Community Places (**http://www.epa.gov/smartgrowth/parking.htm**) and the Victoria Transport Policy Institute site (**http://www.vtpi.org)**.

Meeting the parking needs at the district level can provide substantial advantages, including:

- Substantially improve design flexibility for each parcel, both physically and economically (for example, it would allow much more compact, walkable designs without requiring potentially prohibitive

US EPA ARCHIVE DOCUMENT

underground parking at each parcel);
- Accommodate peak-period parking demands while not over-parking the village itself during off-peak periods; and
- Economically and aesthetically accommodate any seasonal vehicle storage needs.

5. OPEN SPACE

Much of the development envisioned in Portsmouth is on greenfield sites located near or adjacent to Narragansett Bay. Open space can preserve viewsheds, maintain coastal resources, and provide corridors for habitat, recreation, and stormwater and flood plain management. All of these are critical to Aquidneck Island's ecosystem, economy, and quality of life. The West Side Master Plan addresses this issue through its performance standards for open space preservation, green buildings, low-impact development, and sustainable site planning. In addition to the performance standards, some zoning options may include the following general ideas:

- Enable/promote developments that reflect the natural features of Portsmouth's landscape and its traditional community patterns.
- Pay special attention to environmentally sensitive areas and trail design.
- Ensure that trails do not impact wildlife movement corridors, wetlands or regional drainage systems.

Guidance for specific types of open space may include:

Watershed / Wildlife Corridors
- Natural corridors such as drainage corridors or habitat corridors are used to define edges of neighborhoods within communities and are integrated into the overall open space structure of the community. These may be natural features, when defined as sensitive habitat area, or may be integrated into active linear parks, golf courses, or other active recreational open space.
- Greenways with trails and paths line riparian corridors, drainage swales and retention areas, connecting natural open space with active open space destinations such as parks, schools, recreation fields, and open lands.

Open Space / Development Edges
- Development adjacent to open space systems fronts the open space with public access, while protecting the natural environment as much as feasible. If properly designed and protected the land/water interface can provide excellent habitat for plants and animals.
- Edge treatment is a combination of one-sided street frontage or integration with active parks, schools or other open space.
- Walking paths and bike paths are included.
- Regional open space systems help link neighborhoods and provide an opportunity to define the edge of a neighborhood.

Waterfront
- Public access to and along the coast is included in all path provisions
- Other natural open space systems, bike paths, and parks are connected to the

Weaver Cove

US EPA ARCHIVE DOCUMENT

extent possible.

- Adjacent development is permeable to allow coastal access. That is, there is perpendicular access at regular intervals so development does not interfere with access.

Community Parks

- Creative design and use of a wide variety of community parks for the community's residents and visitors are promoted, including smaller neighborhood and pocket parks.
- Active community parks contain multiple sports fields, community buildings and other active play areas.
- Community parks are easily accessible from residential neighborhoods while providing appropriate buffers to adjacent neighborhoods.
- Appropriately located, well designed parking is provided at community parks.

ENHANCING COMMUNITY SPACE THROUGH DENSITY BONUSES

Many communities use density bonuses to encourage developers to provide other amenities for the community. For instance, a reasonable program could offer developers a 25 percent density bonus for buildings that meet criteria that support the vision of the West Side Master Plan. Some possible conditions could include: provision of residential parking below the building; inclusion of retail or other active uses along at least 75 percent of the frontage on a major street; the provision of affordable housing units; a contribution to an open-space fund, regional land trust, or comparable entity. Where firm height limits are in place, maximum height may be granted only after filling bonus conditions.

Sub-districts

The characteristics for open space in the Marine Village Center District provide a guide for open space planning in each of the three sub-districts. Additional ideas for the sub-districts include the following:

Weaver Cove:

- The hillside residential village area includes small parks, overlooks, and plazas linked to the street and pedestrian network.
- The shoreline has continuous coastal buffer and public access.

Melville Marine Center:

- The most important open space in the Melville Marine Center is the waterfront. Public access to the waterfront will be sought either through managed access or via adjacent lands.
- Land is reserved for a public park on the peninsula north of the Bend Boat Basin.

Tank Farm #2

- A public green or common is created to organize the village space and provide a gathering space.
- Recreational areas—including a playground, tot lot and athletic field—are located near residential units and have easy pedestrian and bicycle access.

A well designed village district allows for a wide range of housing types (above) and densities (right)

US EPA ARCHIVE DOCUMENT

6. DENSITY

Small retail opportunities can also allow for residential units on upper floors.

Densities will vary somewhat within the Marine Village Center District. As discussed throughout this report, a certain level of density is required to support the critical massing of uses necessary for a compact, walkable community that embodies the characteristics desired for with Weaver Cove Village. The residents of Portsmouth have clearly laid out their vision for a compact, walkable, mixed-use neighborhood in this area and to achieve that vision, denser development will play a critical role. Other communities who have successfully created the type of Marina Village District that Portsmouth envisions have found concentration of mixed-use development is necessary to support businesses, infrastructure, and recreational opportunities.

Creating a mixed-use district will require new thinking about density. Traditionally, planners will zone for density in residential and non-residential buildings. Residential developments are commonly described as a certain number of houses per acre and non-residential densities as a minimum or maximum floor-to-area ratio (FAR). A mixed-use district will sometimes combine these densities in the same building, e.g., buildings that have both retail and residential uses. Another way to think about densities in a mixed-use district is determining densities for the district's "core," or primary activity center, and then stepping down densities to surrounding neighborhoods. This type of pattern is often called a "wedding cake," since the highest densities are in the center. Reducing densities as one travels from the center provides blending or transition zones into surrounding neighborhoods. For develoment adjacent to the coast, the central area, or the area with the highest densities, will often be the highest part of the development and a short distance inland from the coast. This will allow the buildings that step down to the coast to have coastal views. The result, if done well, is a mixed-use neighborhood that blends into and works well with the surrounding uses.

Core Densities

Successful, walkable, mixed-use districts in other U.S. communities generally have

US EPA ARCHIVE DOCUMENT

a residential density in the core of at least 20 units per gross acre and up to 40 units an acre. For non-residential uses, FAR will range from 1 to 3.5. These ranges will allow developers to build some residential only, retail or office only, or a mixed-use building. The exact percent of different land uses, such as residential, retail, office, civic, is dependent on the community's vision for the core and prevailing economic trends.

In general, buildings in the core are between two and six stories, depending on their location within the neighborhood. Similar to density bonuses, a height bonus (10 to 25 percent) could be allowed in return for providing such things as: residential parking below the buildings and contributions to a town open-space fund, affordable units, or a regional land trust. Where firm height limits are in place, maximum height may be granted only after filling bonus conditions.

Ground floors are reserved for retail and consider upper levels for residential uses. Generally in the core, residential densities can be achieved with a mix of single-family row houses, some row-house flats, and possibly some lower-rise multifamily housing. Having a maximum of 3.0 FAR, which represents three fully developed floors of retail or office, gives Portsmouth planners an option of limiting building height to 3 stories or allowing 1-2 additional floors of residential units.

UNDERSTANDING FLOOR AREA RATIO (FAR)

The Floor Area Ratio (FAR) or Floor Space Index (FSI) is the ratio of the total floor area of buildings on a certain location to the size of the land of that location. Thus, an FSI of 2.0 would indicate that the total floor area of a building is two times the gross area of the plot on which it is constructed. The Floor Area Ratio can be used in zoning to limit the amount that can be built in a certain area. A builder can plan for either a single-story building consuming the entire allowable area in one floor, or a multi-story building that rises higher above the plane of the land, but which must consequently result in a smaller footprint than would a single-story building of the same total floor area.

By combining the horizontal and vertical limits into a single figure, some flexibility is permitted in building design, while achieving a hard limit on at least one measure of overall size. One advantage to fixing this parameter, as opposed to others such as height, width, or length, is that floor area correlates well with other considerations relevant to zoning regulation, such as total parking that would be required for an office building, total number of units that might be available for residential use, total load on municipal services, etc. These amounts tend to be constant for a given total floor area, regardless of how that area is distributed horizontally and vertically.

Stepping Down From the Core

As development steps down from the mixed-use center, densities should decrease accordingly as they transition into residential neighborhoods. Communities with successful mixed-use neighborhoods generally find that retail uses decrease significantly to those uses that support neighborhood functions, such as dry cleaners, day cares, or pharmacies. There is less vertical mixing, e.g., multiple uses in one building, and more horizontal mixing, e.g., multiple uses next to each other. Accordingly, residential densities step down to 10-20 units an acre and will see fewer multi-family buildings and more townhomes, live-work units, limited single family detached homes (generally at the very edge of the mixed-use district) and accessory dwelling units. Non-residential uses are likely to be in the .7 to 1.5 FAR range. The edge of the mixed-use district is primarily lower density

Retail with Office/Residential above and surface parking behind.

US EPA ARCHIVE DOCUMENT

residential housing in the range of 6-12 units/acre as the mixed-use zone blends into the surrounding single use residential neighborhoods.

Density step-downs are easy to envision on flat sites. Incorporating them into hillside sites takes more ingenuity but can still be done. It may be that not all buildings will have water views, which may help create housing opportunities at various price levels.

7. BUILDING TYPES

Mixed-Use Buildings

The purpose of this section is to describe some common characteristics of building types that other communities have used to develop successful mixed-use districts in coastal areas. Building types discussed in this section include mixed-use, residential, and industrial buildings. Design guidelines for mixed-use residential buildings are included at the end of the Portsmouth sub-section.

A. Mixed-use Retail/Office Or Residential With Surface Parking

Retail mixed-use buildings are comprised of ground floor retail space with commercial or residential uses above. Retail mixed-use buildings are required along the primary pedestrian retail street. The intent of this building type is to add intensity to the development site and vitality to the street level with active uses.

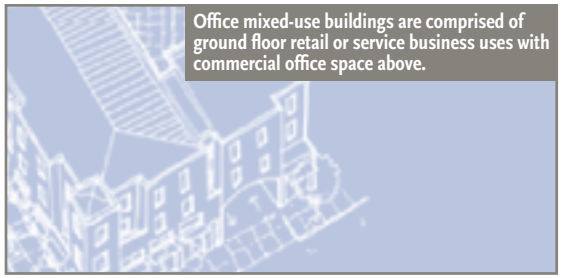
Site Planning

Site planning describes the orientation of the development to existing and adjacent uses as well as how the structures and space of the development functions as a place. This includes a discussion of building location and context, how the structures will meet the right-of-way including public sidewalks and the street and transitions and buffering (when necessary) among adjacent uses. Mixed-use buildings with surface parking tend to have the following site planning characteristics:

- Buildings are located and oriented to the street up to the "build to line."
- Buildings are located on the corners of blocks so as to define intersections.
- Entries are located on street frontage with secondary entries from the parking area.
- Parking is located to rear of site and never at primary street corners.
- Sidewalk widths will vary according to the sub-district and will be guided by the necessity of providing appropriate space for pedestrians to contribute to the overall pedestrian character of the district.

Building Design

The location and orientation of buildings is as important to the physical construct of the community as the use of the structure, if not more so. Depending on the location in the hierarchy of the community, buildings take on different roles to create spaces and orient people in their use and interactions among



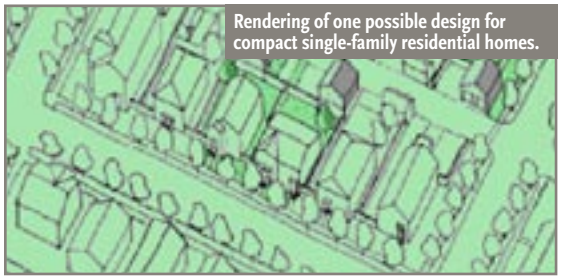
Office mixed-use buildings are comprised of ground floor retail or service business uses with commercial office space above.

streetscapes and clusters of buildings. In addition to the site planning characteristics discussed above, mixed-use buildings with surface parking located in village settings share important aspects of building design:

- Buildings have maximum setbacks or build to lines to ensure the continuity of the street fabric. The setbacks are generally 5 feet along the retail main street and a maximum of 15 feet along residential streets.
- Retail frontage accounts for approximately 90 percent of a building's ground floor facade.
- Retail storefronts are semi-recessed at entries. Entries are between 25' and 50' apart.
- Retail frontage is approximately 75 percent transparent storefronts.
- Facade treatments are consistent with design guidelines: Particular attention is given to craftsmanship and detailing within the pedestrian zone regarding materials and finishes.
- Retail frontage have entry canopies, awnings, or arcades (where specifically required) for pedestrian protection and shading.

US EPA ARCHIVE DOCUMENT

Note that the Coastal Management Resources Center (CRMC) has building setbacks and requirements for undisturbed buffers (Section 140 and 150, Coastal Resources Management Program), which are determined by the shoreline, proposed use, and water type.



Rendering of one possible design for compact single-family residential homes.

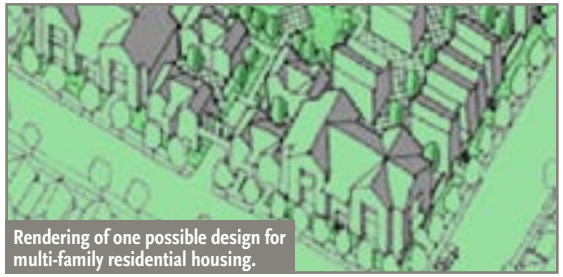
B. Mixed Use Retail/Office Or Residential With Podium Or Structured Parking

Office mixed-use buildings are comprised of ground floor retail or service business uses with commercial office space above. The greater intensity of use generally requires either above grade parking structures or below grade podiums or a combination of both. The intent of this building type is to provide substantial intensity of development which supports surrounding uses while maintaining a pedestrian quality.

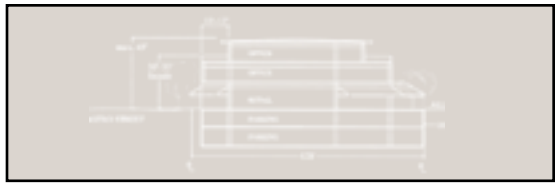
Site Planning

In successful mixed-use village environments, mixed-use buildings with structured parking tend to be oriented on the site as follows:

- Buildings are located and oriented to the street at the build to line.
- Buildings are located on the corners of blocks so as to define intersections.
- Entries are located on street frontage with secondary entries from the parking area.
- Parking is accessed to rear of site and never located at primary street corners. The subgrade parking podium or structures are accessed from side streets or alleys.
- Parking structures are located behind retail or office buildings.



Rendering of one possible design for multi-family residential housing.



Office building with underground parking.

Building Design

Numerous communities have successfully developed mixed-use buildings with structured parking. Those buildings have the following building design characteristics:

- Buildings have wider sidewalks where retail occurs or is landscaped where business/office uses front the street (business or office use is prohibited or a conditional use at ground level).
- Retail and service commercial space is designed to retail storefront standards to

Good design allows this duplex to fit nicely with surrounding housing types.

US EPA ARCHIVE DOCUMENT

allow for expansion of retail uses.

- Parking structures are designed to provide a facade with characteristics similar to an office building.

Residential Housing

The EPA Team wanted to provide additional detail on various residential building types to give Portsmouth planners and residents an idea of the broad range of options and designs available. By providing a larger range of housing types, communities can begin to use their resources more efficiently, better accommodate the housing needs of all residents and help aging residents remain in their homes—all goals expressed in the West Side Master Plan.

Accessory units can be placed over an attached or detached garage. Accessory buildings should exhibit the same architectural detail and materials as the single family home.

Portsmouth residents said they wanted to increase the supply of affordable housing in their town. Doing so will help ensure the long-term economic sustainability of the Marina Village District, Portsmouth, and even Aquidneck Island and will ensure that long-time residents can age with the community, that their children can stay in the community, and that newer residents can move to the island. Other communities in the U.S. seeking to increase the availability of affordable housing have benefited from providing a range of housing types and price points to residents.

A. Multi-Family Residential

This type of housing includes 3 to 4 stories over a secure parking podium and generally has approximately 40 to 50 units an acre either as a rental or homeownership opportunity. In the proper location, this prototype could place the urban-oriented person near urban amenities such as shopping, entertainment and employment centers, as well as (future) transit access.

Rendering of multi-family townhomes.

Site Planning

Village supportive multi-family housing generally has the following characteristics:

- These buildings have common open spaces, such as semi-private secure courtyards.
- These buildings have maximum setback requirements to keep building form and street pattern consistent.
- The ground floors of building frontages on all residential streets are be primarily occupied by active residential uses such as living spaces and unit / building entries.
- Buildings orient facades, and locate access and landscaping so as to reinforce the street as the primary organizing element.
- Buildings are sited to take best advantage of the neighborhood's amenities – parks, open spaces, tot lots, and access to retail and services.

Building Design

Pedestrian friendly multi-family residential buildings support good siting with design elements that often include:

- Ground floor living spaces that are raised off the level of the street to provide privacy (3 to 4 feet in keeping with regional design principles)
- Units that range from 600 sq. ft. one bedroom to 1,800 sq. ft. three bedrooms.
- Buildings that are typically accessed through a common entry with an elevator and stair core to a series of double loaded corridors.
- Primary building entrances that are oriented towards streets, parks or pedestrian plazas.

US EPA ARCHIVE DOCUMENT

- Ground floor units which have individual entries directly from the street.
- Walk up 3-story buildings.
- Parking that is structured either above or below ground, oriented behind liner apartments, or shared with other facilities. Parallel parking spots will be part of the calculation of parking needs.

B. Multi-Famliy Townhomes

These townhouses emulate a full range of amenities comparable to a single family product in an attached setting at 14-24 units / acre. The townhouses provide for private open space usually in the rear yard with a detached or attached two car garage.

Site Planning

Appropriately scaled townhomes typically include the following site characteristics:

- Townhome developments usually are organized around a large semiprivate open space that provides for quality landscaping, tot lots and building buffer space.
- Maximum setbacks keep building form and street pattern consistent.
- Townhomes have attractive entry and porch areas raised above the street level.
- Townhomes are sited to take best advantage of the neighborhood urban amenities – parks, open spaces, tot lots, and access to retail and services.
- Parking is structured, shared, and/or wrapped by liner townhomes.
- Alleys for parking and service are encouraged

Building Design

Design elements that complement quality siting include:

- The 2-story units range in size from 850 sq. ft. two bedroom units up to 1,800 sq. ft. three bedroom units.
- Building articulation and design is informed by structural elements such as columns, roof lines and window fenestration, as well as functional elements such as locations of entries, circulation spaces and special rooms.
- Roof forms and pitches of new residential structures are similar to forms and pitches commonly found in nearby neighborhoods.

C. Accessory Dwelling Units

Allowing accessory buildings can effectively double the density of an existing single family lot with little visual effect in an established residential neighborhood setting. Typical units range from 400 sq. ft. studios to 900 sq. ft. two bedroom units. This prototype can be placed throughout Portsmouth and Aquidneck Island in existing single family neighborhoods, especially in residential neighborhoods with a service alley.

Site Planning

Numerous communities have used accessory dwelling units to support vibrant mixed-use districts. Site placement of those units is important, they are generally situated as follows:

- These units are placed over an attached or detached garage, as a stand alone carriage house, or in the basement or attached directly to the existing house.
- Parking is handled on site in either the driveway or in the garage.
- Street parking is allowed and is part of the calculation of parking needs.

Building Design

Accessory dwelling unit design usually:

- Exhibits the same architecture detail and materials as the single family home.
- Use on-street parking if they are under 500 sq. ft.

US EPA ARCHIVE DOCUMENT

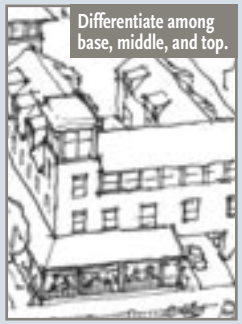
US EPA ARCHIVE DOCUMENT

DESIGN GUIDELINES FOR MIXED-USE BUILDINGS

Design guidelines can be an effective tool for specifying the context established in the zoning and development requirements. While zoning refers to the types of the uses, bulk regulations and setbacks, design guidelines help to provide a consistent feel and defined sense of place. It provides a set of considerations to help define the character of the village. Specific elements could include the following.

- *Establish a building's overall appearance on a clear and pleasing set of proportions.*
- *In general, differentiate between the base, middle, and top levels of a building.*
- *Employ simple yet varied masses, and emphasize deep openings that create shadow lines and provide visual relief.*

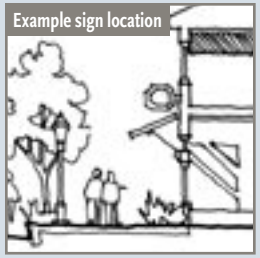
Melville Boat Basin


Differentiate among base, middle, and top.

- *Design attractive buildings that add richness and variety to the district, including creative contemporary architectural solutions and high-quality materials appropriate to the waterside village setting.*
- *Provide a clear set of building openings; use windows and doors to unify a building's street wall.*
- *Avoid uninterrupted blank walls along all building façades; the use of opaque and highly reflective glass is also discouraged. To enhance street activity, locate shops, restaurants, cafes, consumer services, or community uses on the first floor of buildings along Burma/Shoreline Drive.*
- *Use design elements such as multiple storefronts, display windows, exterior light fixtures, awnings, and canopies to add interest and give human dimension to street-level building façades. Awnings and canopies extending over the sidewalk are encouraged.*
- *Signage is an integral and very noticeable part of a commercial use. Collectively, signage influences a street's character. Signs can be compatible with their building, neighboring buildings, and the character of the district as a whole. Wall signs, projecting building signs, and suspended arcade signs are encouraged for retail and commercial establishments.*
- *Locate utilities, service, and trash away from residential uses and pedestrian paths, and screen these functions from view with enclosures which are consistent with the architectural design of the building.*

Interpret references to period architecture in a contemporary manner.

Example sign scale

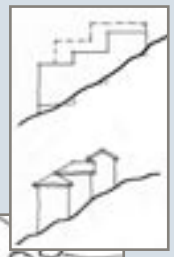

Example sign location

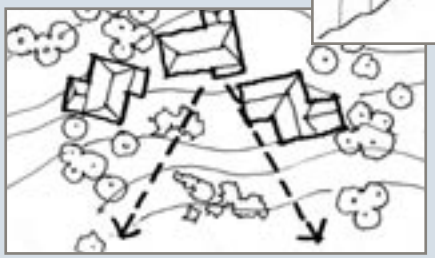
US EPA ARCHIVE DOCUMENT

DESIGN GUIDELINES FOR **WEAVER COVE**

The vision for Weaver Cove is a mixed-use village. To achieve this vision, Weaver's Cove will need higher density and fairly high intensity of uses. Portsmouth may want to establish the maximum height for buildings in Melville at 45 feet and a minimum height of at least 2 stories to ensure the appropriate form for the village center. Neighborhood streets that lead away from the village center typically become narrower the further away from the center they are. Setbacks, lot coverage and height also mirror this scale. Other elements to consider include:

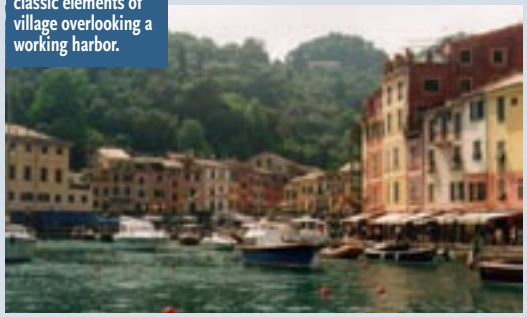
- *Locate and orient buildings and uses to provide public access and contribute to a continuous pedestrian environment along the water.*
- *An arcade or colonnade along the sidewalk edge enhances pedestrian comfort, provided street and/or retail continuity is not unduly interrupted.*





- *Design building volumes to maintain a human scale; in general, break down the scale and massing of larger buildings.*
- *Use building height and massing techniques that are sensitive to topography and to the preservation of views toward the water from upper floors and nearby public rights-of-way.*

Building location and orientation help create a continuous pedestrian environment along the water.



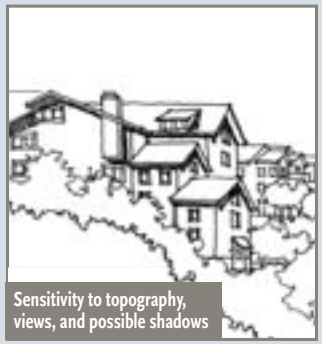
Santorini in Greece (above) and San Remo in Italy (below) exhibit the classic elements of village overlooking a working harbor.

US EPA ARCHIVE DOCUMENT

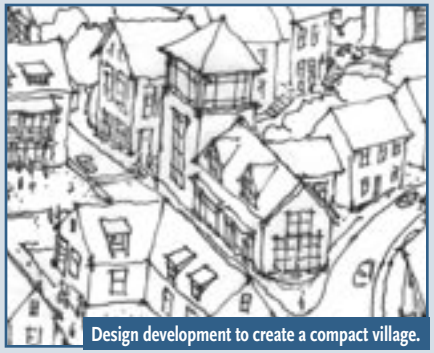
DESIGN GUIDELINES FOR **TANK FARM #2**

This sub-district is envisioned as a higher density mixed-use area characterized by an interconnected street network and clear connections to the Melville Marine Center sub-district. Portsmouth planners may want to establish height limits of 55 ft or 5 stories for both residential and mixed-use structures. Because of massing, townhouse or attached residential may be limited to 35 ft and 3 stories. Other elements include:

- *Maximizing views*
- *Designing this area to create a compact, village-like environment of connected streets with buildings oriented toward the streets and not a campus with isolated buildings set within lawns and parking lots.*
- *Connecting streets to provide easy circulation within the site and, if possible, connecting to the street grid outside the mixed-use district.*
- *Providing for connections to adjacent development, rather than isolating buildings or groups of buildings from neighboring development by dead-end streets, gates, parking lots, or inaccessible open space.*



Sensitivity to topography, views, and possible shadows



Design development to create a compact village.

US EPA ARCHIVE DOCUMENT

DESIGN GUIDELINES FOR **RESIDENTIAL HOUSING**

These guidelines for site planning and building massing will contribute to achieving the West Side Master Plan by helping to create an attractive residential setting in Melville/Weaver Cove. They allow for privacy while encouraging social interaction and respecting nearby, less-intensive residential areas.

- *Locate the entries of residential buildings on pedestrian ways that are part of a network leading to the waterfront or on narrow vehicular streets to create the character of a hillside village.*
- *Orient parking and garage access to the rear of residential buildings in alleys.*

Residential units should have individual entries.

- *Avoid blank walls along streets or pedestrian ways.*
- *Encourage individual entries to each unit if possible and entrances to apartment buildings no more than 25 feet apart, serving a small number of units.*
- *Provide private patios or other open space for ground-floor units, with appropriate landscaping and/or fencing to preserve privacy while creating an attractive appearance to the street.*

Use windows, balconies and bays to provide visual interest.

Provide private space for ground-floor condo units.

US EPA ARCHIVE DOCUMENT

ANCHORAGE AND VANICEK MIXED-USE DISTRICTS

The Anchorage and Vanicek sites can help Middletown shift its civic, residential, and commercial environment as envisioned in the West Side Master Plan.

Middletown serves as the transition between the urban center of Newport and the rural nature of Portsmouth and now seeks to become a growth center for the island. Middletown residents participated in a visioning process for how and where they want their community to grow and develop. The resulting vision included:

- redeveloping the former Navy housing at the Anchorage area into a mixed-use, mixed-income development;
- creating waterfront access and a new public park;
- implementing streetscape improvements and redevelopment of strip shopping centers on West Main Road and Coddington Highway to promote mixed-use development; and,
- ensuring that if the Vanicek site, the last significant undeveloped property on West Main Road is sold for development, then compact, mixed-use development is pursued in conjunction with open-space preservation.

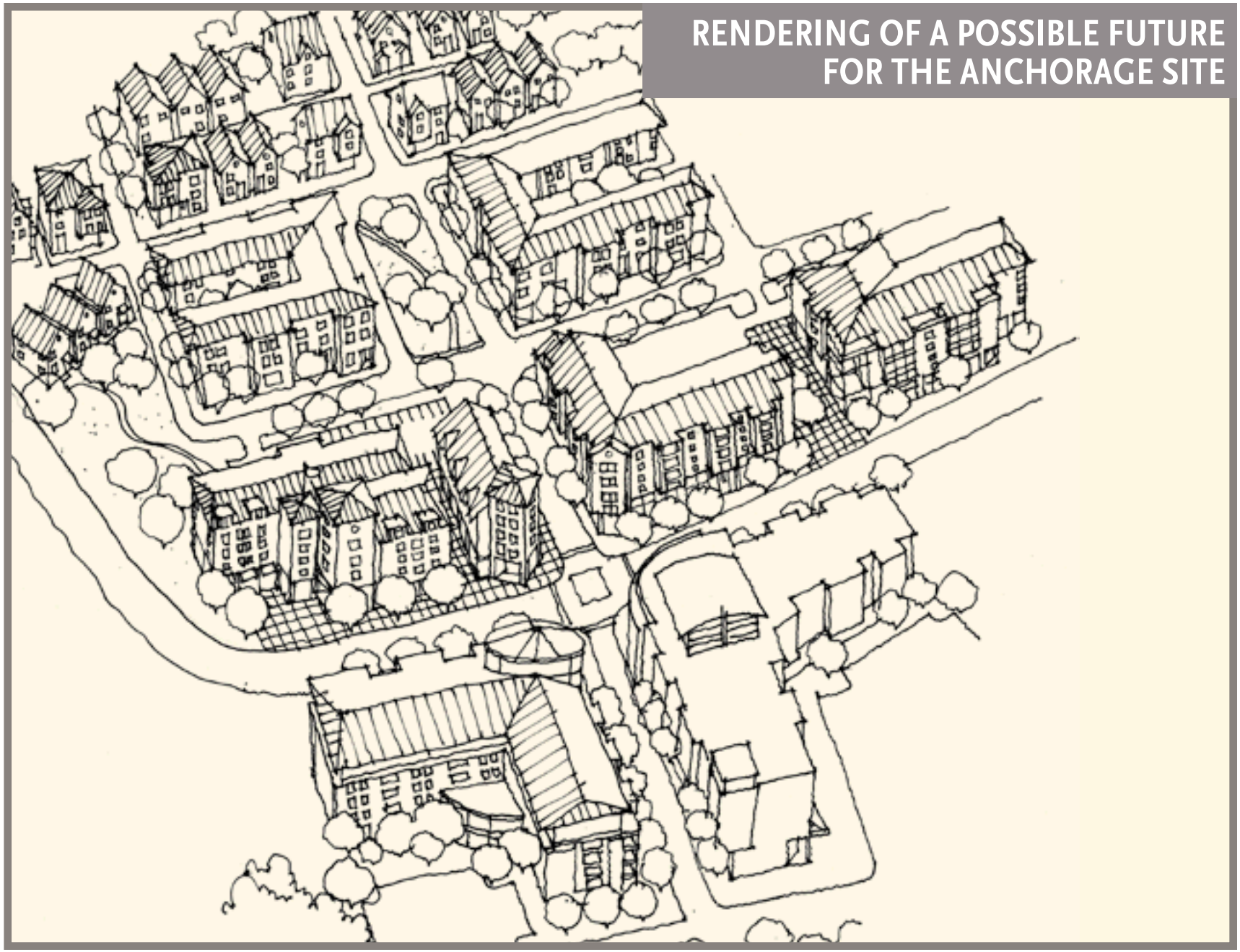
The EPA Team was asked to develop mixed-use options for the Anchorage and Vanicek sites, options that implement what the Middletown residents said they wanted in the West Side Master Plan. Carefully shaped development on the Anchorage and Vanicek sites can help fulfill residents' aspirations for the kind of walkable, mixed-use activity center that has traditionally served as the heart of communities across the U.S.

Anchorage illustrative concept plan

The following sub-sections provide general guidelines and information that Middletown planners may want to consider incorporating into any zoning changes for the area. The possible zoning options are organized as follows: (1) general characteristics of the Anchorage and Vanicek mixed-use neighborhoods; (2) land uses; (3) streets and roads; (4) parking; (5) open space; (6) density; and (7) building types, including sub-sections mixed-used and residential buildings. The final sub-section describes possible design guidelines for mixed-use and residential buildings. Together, these will add up to a lively, walkable district.

US EPA ARCHIVE DOCUMENT

RENDERING OF A POSSIBLE FUTURE FOR THE ANCHORAGE SITE



US EPA ARCHIVE DOCUMENT

ZONING CODE OPTIONS

The Middletown planners and the Aquidneck Island Planning Commission requested that the EPA Team provide zoning code options to the community on how mixed-use development could be permitted in the Anchorage and Vanicek sites. This section provides concepts and language that residents and the town council of Middletown could use to implement its broader vision for this area. The following code options are applicable for:

- The **Anchorage Mixed-Use District** would apply to the area occupied by former and current Navy housing off Coddington Highway; the adjacent parcels abutting West Main Road occupied by town-owned athletic fields, the library, and the elementary school; and the commercial parcels across West Main Road.

- The **Vanicek District** would extend over the Vanicek site and adjacent parcels that face West Main Road from Brown Lane to the Corporate Place area.

To encourage development that embodies the community-building vision of the West Side Master Plan, the town will need to detail its requirements for both of these sites in its zoning code. This section describes possible zoning code options, which draw from the experience of other U.S. communities, that are intended to help ensure that redevelopment will be consistent with the goals of the West Side Master Plan. These options would help Middletown support a range of transportation and housing choices and a core of commercial and community services while preserving important open space. As such, these code provision options can provide a guidance for revising Middletown's zoning code.

Looking broadly at designing and coding for a new neighborhood, Middletown residents and planners should first consider the fundamental elements of the two sites. While the details of designing the neighborhood will be discussed in more detail in the following sections, it is helpful to keep in mind some basic guiding principles to realize the community's vision for these sites. (See sidebar.)

Taking a first, broad look at these design elements is critical to the ultimate success of a mixed-use neighborhood. In building a bookcase or a house, common wisdom is to measure twice, cut once. The same philosophy applies to building a neighborhood—look at the fundamentals twice, and build once.

Looking broadly at designing and coding for a new neighborhood, Middletown residents and planners should first consider the fundamental elements of the two sites.

- What is the street layout? The streets and roads need to be platted and built in a way that promotes walkability and neighborhood vitality. The street network needs to be gridded with widths appropriate to the type of street – village center streets are broader with wide sidewalks, while neighborhood residential streets are narrower to help calm traffic and create a sense of place.
- How is parking addressed? Is on-street parking allowed in order to provide a buffer for the pedestrian? Are parking lots hidden behind buildings?
- How are buildings and houses designed? How do they interface with the street? Do the buildings invite pedestrian activity or discourage it?
- What is the mix of retail, residential, civic, and open space that Middletown residents are looking for? What will the market support?

US EPA ARCHIVE DOCUMENT

1. ANCHORAGE AND VANICEK SITES: TWO MIXED-USE NEIGHBORHOODS

The purpose of mixed-use neighborhoods for the Anchorage and Vanicek sites is to create:

1. a pedestrian-oriented area with a mixture of commercial, retail, and residential uses that are integrated in close proximity; and
2. an innovative and stimulating environment that encourages walking.

Both Anchorage and Vanicek sites are perfectly sized and located to enable them to fulfill the visions for these sites. Other communities who have successfully created mixed-use districts have had the following general characteristics:

BOTH ANCHORAGE AND VANICEK SITES ARE PERFECTLY SIZED AND LOCATED TO ENABLE THEM TO FULFILL THE VISIONS FOR THESE SITES.

The entire Anchorage site falls within a ¼-mile walk of what could be its center.

The Vanicek site could locate its mixed-use retail center closer to West Main Road, freeing open space and putting the center of the development within a ¼-mile walk of current retail.

Characteristics

- Mixed-use neighborhoods have a variety of local-serving businesses and other commercial establishments and are integrated with a variety of residential housing types and densities.
- Mixed-use neighborhoods are organized to allow appropriate integration, while protecting and allowing easy access to/from the surrounding residential neighborhoods.
- The neighborhood is a pedestrian-oriented place, serving as the focal point and identity for any current or future surrounding neighborhoods.
- Mixed-use neighborhoods contain a combination of uses including residential, retail, office, service, civic, and open space.
- Uses are located on the ground floor to stimulate pedestrian activity.
- Auto-related uses (gas stations, auto repair and supply, etc.) are allowed only as non-prominent secondary uses.
- Large retail uses are limited and, if allowed, required to respect the small scale pedestrian and block pattern of the mixed-use district.
- Large office and institutional uses are limited, and if allowed, are located on upper floors of buildings, or located away from the center of the mixed-use center so that centrally-located ground floor space is available for more pedestrian-oriented uses.
- Land uses generally transition in intensity from the commercial center to surrounding lower intensity residential neighborhoods.
- Surrounding neighborhoods contain moderate densities that form a transition and link between surrounding lower density residential neighborhoods and heavier intensity commercial or light industrial / employment areas.
- Streets and roads are developed and maintained in a gridded, well-designed, interconnected system that serve all transportation modes (driving, walking, biking) and create multiple mobility options throughout planning areas and neighborhoods;

US EPA ARCHIVE DOCUMENT

- Neighborhood and district streets are designed as pedestrian-focused with trees, pedestrian amenities, and lighting.
- Streets are narrow and designed for slow moving traffic, balancing the needs of auto circulation with the convenience and enjoyment of a walking community.
- Building types transition mid-block to ensure that complimentary building heights face each other across streets.
- The structure of activity center mixed-use districts may vary, yet they are typically one of two primary types:
  1. *Nodal:* Nodal centers generally focus on a civic space such as a square, plaza, village green or commons.
  2. *Linear:* Linear mixed-use areas generally feature "main streets": mixed-use retail streets sometimes ending on a civic space, such as a park or plaza.

2. LAND USES

The permitted uses support and catalyze the vision of a compact, walkable, mixed-use district and help to fulfill the goals of the West Side Master Plan. While current and projected market conditions favor residential development, the development mix (e.g. the proportion of residential, office, retail and other uses) will adjust over time due to shifting demographics and consumer preferences. As a result, the town should continue to plan for the site's development recognizing future market changes and the desire to create development that reflects community goals. Other New England and U.S. communities that have achieved successful mixed-use districts have a mixture of businesses that are appropriate for a range of users including pedestrians and cyclists. These communities frequently have permitted, conditional, and prohibited uses like those that follow below.

Permitted

A variety of land uses are appropriate to a mixed-use district including:

- Local-serving retail and restaurants
- Service businesses
- Hotels
- Small offices and clinics, with public service component (under 5,000 s.f.)
- Public uses, such as libraries, schools, and other civic uses such as municipal offices
- Civic uses; public services uses encouraged on ground floor
- Daycares, galleries, museums, and similar cultural uses
- Parks and other small recreation areas

Seating areas and cafes are encouraged in the neighborhood centers.

- Residential , including multifamily rental housing, apartment condominiums, townhouse condominiums, live-work units, and limited single-family detached on small lots (6-10 houses/acre)
- Stores for sale of marine supplies

Conditional

The following uses are appropriate under certain conditions within a mixed-use district:

- Large scale office (over 10,000 s.f.; (not allowed on ground floor level)
- Places of worship and assembly; shared or joint use parking required. (See "Parking".)
- Large scale institutional uses (public services uses only allowed; over 10,000 s.f. not allowed on ground floor)
- Labs and medical research (not allowed on ground floor)
- Restaurants over 10,000 s.f.; shared or joint parking required. (See "Parking".)
- Other uses which do not add activity to street front (per zoning official)

Non-permitted

The following uses are not appropriate within a mixed-use district:

- Auto uses (sales, storage, parts or maintenance or car wash)
- Drive-throughs
- Self storage or long term storage
- Kennels (exterior yards)
- Food manufacturing or processing (except that consumed on site)
- Other types of manufacturing

US EPA ARCHIVE DOCUMENT

3. STREETS AND ROADS

Successful neighborhoods have streets and roads that are developed and maintained in a gridded, well-designed, interconnected system that serve all transportation modes (driving, walking, biking) and create multiple mobility options throughout planning areas and neighborhoods. Well designed streets and roads are critical to meeting a number of the goals articulated in the West Side Master Plan, such as increasing walkability and creating mixed-use neighborhoods.

The purpose of this section is to help Middletown create a detailed framework of attractive streets that foster walkability, are designed to the scale of pedestrians, and, wherever possible, accommodate bicyclists as well as vehicles. Other communities that have successfully created neighborhoods with a well designed neighborhood grid that allows traffic to flow, encourages pedestrian activity, and allows the neighborhood to change as social-economic conditions of the town changes have the following characteristics:

- Mixed-use districts are organized by a network of streets.
- Streets connect to each other to provide easy circulation within the site and connect to the adjacent streets outside the district to provide the highest level of connectivity between districts in the planning area.
- A well-designed, interconnected system of roads, streets, and paths is developed and maintained to serve all transportation mode and create multiple mobility options throughout the two neighborhoods;
- New neighborhood access roads take into account existing intersections.
- Shorter, more frequent blocks encourage walkability and foster more pedestrian-friendly environments. New blocks have a perimeter no greater than 1,500 feet. Consider maximum block sizes of 300-600 feet with any block dimension over 400 feet requiring a mid-block alley.
- Neighborhood and district streets as designed with trees, pedestrian amenities, and lighting.
- Well-planned and interconnected pedestrian and bicycle routes are developed within and between the new neighborhood and surrounding neighborhoods and open spaces.
- The frontage along all four sides of a block is lined with buildings with windows and doors to make the environment more attractive to pedestrians. Surface parking lots are located in block interiors and shielded by buildings.
- Develop narrower streets, designed for slow moving traffic, balancing the needs of auto circulation with the convenience and enjoyment of a walking community.
- Use traffic-calming measures—such as curbside parking and landscaped bulb outs at street corners—to maintain appropriate speeds and support a desirable living environment.

MAKING STREETS FRIENDLIER FOR PEDESTRIANS

In spring 2006, the Institute of Transportation Engineers (ITE) released a draft version of guidelines intended to promote walkable streets. Developed jointly with The Congress for the New Urbanism, "Context-Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities" draws on recent experience to present new, pedestrian-oriented approaches to street design for traffic engineers, municipalities, and developers. Available on ITE's website, **http://ite.org/bookstore/rp036.pdf**.

The Anchorage property sits on the corner of two arterials and the Vanicek property is framed by an arterial (West Main Rd.) and two collector streets. The vision for these properties includes a denser activity center in the interiors of these properties. Given their locations, a variety of street types will be necessary.

Primary Street - Collector

Access to activity centers from the arterials is provided by a street slightly larger than a neighborhood street (a collector). This street could be a "complete street," which is a street

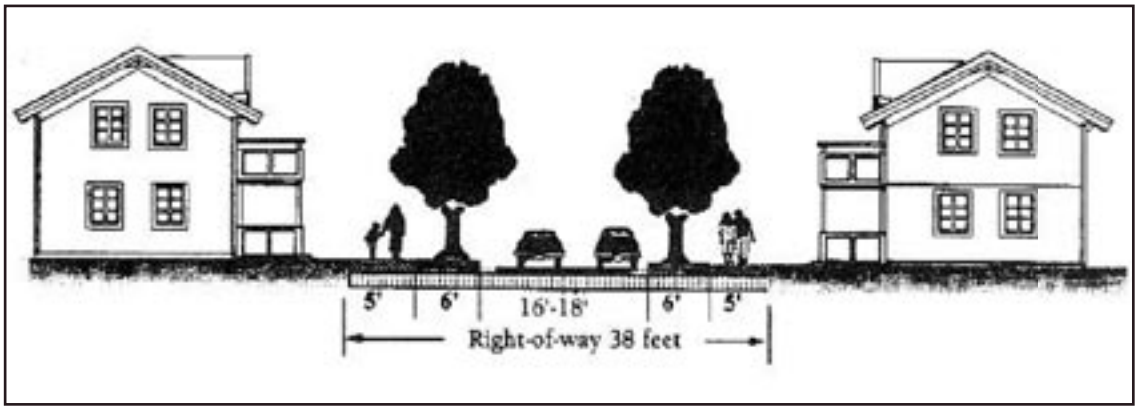
US EPA ARCHIVE DOCUMENT

that provides for all modes without one mode interfering with the operation of another mode (see the new ITE guidelines described in box on page 27). The precise design of this complete street, among other things, is dependent on how much density is placed in the activity center.

The collector streets in both sites will form the primary retail streets. Buildings in this zone are built to the sidewalk for at least 80 percent of their linear street frontage, and the sidewalks are lined with trees.

Design of each site's collector streets could include two travel lanes and a left-hand turn lane with on-street parallel parking on both sides. Bicycle lanes in each direction are encouraged. In mixed-use areas, sidewalks could be 12 to 16 feet with street trees required and outside seating encouraged. Buildings are built to the sidewalk for 80 percent or more of their linear street frontage to frame the street and emphasize its public importance.

Neighborhood Streets (local streets)
Design of neighborhood streets is critical to neighborhood livability: pedestrian and vehicle traffic flow and access. New connecting streets could be narrow neighborhood streets, designed for a mostly residential area with low traffic volume at slower speeds. They could have sidewalks, on-street parking, and strips of grass, trees, or other vegetation between the sidewalk and the street. Bicycle lanes in each direction are encouraged. The illustration below shows how one of these streets might look. Each design element supports a more pleasant neighborhood street for both driver and pedestrian. The narrow lanes and on-street parking encourage drivers to drive slowly and look out for oncoming cars. The on-street parking and vegetation between the sidewalk and street protect the sidewalk to make bikers and pedestrians feel more comfortable. Internal streets also have sidewalks benches, pedestrian-scale lighting, and other streetscape amenities for a comfortable and safe pedestrian environment. The street could be 8 feet wider if the town wants to allow parking on both sides of the street.



Sample cross-section of a neighborhood street (from Dan Burden *et al.*, Street Design Guidelines for Healthy Neighborhoods, Local Government Commission, 1999)

Alleys
Alleys play an important role in building a pedestrian-friendly environment and are encouraged wherever feasible. Placing parking at the rear of a site and providing vehicle access to it with alleys strengthens residential and mixed-use streetscapes. This arrangement minimizes driveways and curb cuts along the street and increases the amount of space available for community-building features such as porches, stoops, storefronts, and entrances.

3. STREETSCAPE

Communities that have successful mixed-use neighborhoods have the following streetscape design improvements that help enhance the pedestrian environment:

Lighting
Street lights are scaled for lighting the pedestrian way at approximately 16' tall and at intervals of 50 feet. Two level lights are appropriate within commercial areas. Additional lighting may include building and

US EPA ARCHIVE DOCUMENT

signage lighting as well as accent uplights on buildings or at landscaping.

Street Trees

Street trees are placed at intervals of approximately 25 feet within tree wells (with grates or hard pack pervious material). There are bulb outs with accent trees at intersections and mid-block pedestrian crossings.

Intersections

Pedestrian crossings are clearly designated with wide striping at a minimum. For retail streets, accent paving—such as interlocking pavers, brick in accent bands or scored and sand blasted concrete—is strongly encouraged to provide a textured surface that cues drivers to slow down.

Sidewalk Design

Sidewalks are a minimum of 8 to 16 feet wide and wider on retail streets. Where seating is encouraged a minimum of 16 feet is desired. Accent paving—such as interlocking pavers, brick in accent bands or scored and sand blasted concrete—are strongly encouraged along retail/mixed-use pedestrian walks and crossings. Two to three feet or more of these widths is generally used for trees, benches and other amenities. These amenities are important to creating an inviting pedestrian experience in both retail and residential areas.

Signage

Street signage is consistent with pedestrian lighting and coordinated as part of street furniture.

Building signage should be attractive and consistent with the building's architecture

4. PARKING

Parking plays a central role in determining the character and function of any development. This will be particularly true of any effort to develop a compact, walkable, characteristically New England waterfront community at the Anchorage and/or Vanicek sites. Other communities who have successfully created a lively, pedestrian-oriented environment did so, in part, by minimizing the prominence of parking. The following general guidelines for parking at this site are drawn from strategies used in other mixed-use districts.

- Allow parallel parking throughout both neighborhoods. Use the supply of parallel parking spaces when calculating overall parking needs.
- Allow for shared parking facilities. (For example, Middletown Public Library and JFK Elementary School, both on West Main Road.) This will likely require regulatory and institutional arrangements to manage and fund a shared parking facility.
- Allow developments to meet a portion of their parking requirements off site.
- If a site has surface parking, then locate parking at the rear or rear-side of buildings. Further, wrap retail, office, or residential buildings around surface parking to hide it from pedestrian activity.
- Do not front surface parking on major public streets.
- Divide parking lots into fields of no more than 40 spaces.
- Plant parking lots with trees in linear strips

Well designed screening at parking lots minimizes their impact on the sidewalk environment and frames the public realm in a way similar to a building.

US EPA ARCHIVE DOCUMENT

and peninsulas that provide sufficient room for healthy tree growth. Plant sufficient trees to provide shade over 50 percent of a lot within 10 years.

- Screen parking lots with either perimeter landscaping, including shrubs maturing to at least 4 feet, or opaque fencing at least 4 feet tall with shrubs or vines planted against the fence.
- Provide and designate pedestrian routes from the parking lot to destinations.

Whether provided on-site or off, parking requirements need to be carefully set as part of a comprehensive access and circulation plan for the village. Traditional requirement formulae such as "x spaces per restaurant table" are not particularly relevant to the neighborhoods envisioned for the Anchorage and Vanicek sites. If the vision is for a community in which a significant number of people, whether residents or visitors, make trips by other than chaining single-occupant auto trips, then the access and circulation plan needs to be tailored to that vision, and parking supply set accordingly. Neither parking minimums nor maximums per site are necessarily the best tools with which to implement this vision; even with a shared parking facility, site-based standards encourage thinking in site-based terms, rather than in district-wide terms.

Increasingly, communities of the type Middletown would like to become provide and manage shared facilities whose size is set as part of an overall access and circulation plan. Some of the parking demand typically met on site continues to be met on-site, some in shared public or private facilities (including on-street), and some is met through other transportation options, including walking, shuttles, etc. For guidance and resources on both form and management of such parking solutions, see the recent EPA document Parking Spaces/ Community Places (**http://www.epa.gov/smartgrowth/parking.htm**) and the Victoria Transport Policy Institute site (**http://www.vtpi.org)**.

Meeting the parking needs at the district level can provide substantial advantages, including:

- Substantially improve design flexibility for each parcel, both physically and economically (for example, it would allow much more compact, walkable designs without requiring potentially prohibitive underground parking at each parcel);
- Accommodate peak-period parking demands while not over-parking the village itself during off-peak periods; and
- Economically and aesthetically accommodate any seasonal vehicle storage needs.

Small outdoor seating areas are encouraged throughout the Anchorage and Vanicek neighborhoods.

5. OPEN SPACE

Preserving natural areas and creating recreational opportunities are a key part of enhancing community livability and are reflected in the vision of the West Side Master Plan Vision. These goals can be met on the Anchorage and Vanicek sites in Middletown by:

- Including courtyards, public greens or commons for use by neighborhood residents in residential areas. These spaces are planted with native species, designed as outdoor "rooms" rather than as undifferentiated space, and have amenities such as benches, pedestrian-scale lighting, and play structures.
- Locating neighborhood open space so that it is visible from nearby housing units and public streets in order to provide "eyes on the street" and to convey a sense of being fully public in character.

US EPA ARCHIVE DOCUMENT

- Locating no housing unit more than a five-minute walk from accessible, green open space, inclusive of publicly owned parks and playgrounds, but not including publicly owned athletic fields. This green open space is at least 250 square feet.
- Requiring pedestrian paths through all public open spaces.
- Providing open spaces and courtyards with maximum sun exposure and attractive views.

ENHANCING COMMUNITY SPACE THROUGH DENSITY BONUSES

Many communities use density bonuses to encourage developers to provide other amenities for the community. For instance, a reasonable program could offer developers a 25 percent density bonus for buildings that meet criteria that support the vision of the West Side Master Plan. Some possible conditions could include: provision of residential parking below the building; inclusion of retail or other active uses along at least 75 percent of the frontage on a major street; the provision of affordable housing units; a contribution to an open-space fund, regional land trust, or comparable entity. Density bonuses also work in areas with firm height restrictions. In those cases, a municipality grants the maximum height only if the developer meets the density bonus requirements.

6. DENSITY

Densities will vary somewhat within the Anchorage and Vanicek sites. As discussed throughout this report, a certain level of density is required to support the critical massing of uses necessary to create a compact, walkable community that embodies the characteristics associated with the vision for these two sites. The residents of Middletown have clearly laid out their vision for a compact, walkable, mixed-use neighborhood in this area and to achieve that vision, denser development will play a critical role. Other communities who have successfully created the type of mixed use neighborhoods Middletown envisions have found concentration of mixed-use development is necessary to support businesses, infrastructure, and recreational opportunities.

Creating a mixed-use district will require new thinking about density. Traditionally, planners will zone for density in residential and non-residential buildings. Residential developments are commonly described as a certain number of houses per acre and non-residential densities as a minimum or maximum floor-to-area ratio (FAR). A mixed-use district will sometimes combine these densities in the same building, e.g., buildings that have both retail and residential uses. Another way to think about densities in a mixed-use district is determining densities for the district's "core," or primary activity center, and then stepping down densities to surrounding neighborhoods. This type of pattern is often called a "wedding cake," since the highest densities are in the center. Reducing densities as one travels from the center provides blending or transition zones into surrounding neighborhoods. The result, if done well, is a mixed-use neighborhood that acts and looks like it was developed at the same time as the surrounding uses.

Core Densities

Successful, walkable, mixed-use districts in other U.S. communities generally have a residential density in the core of at least 20 units per gross acre and up to 40 units an acre and for non-residential uses, a FAR range of 1 to 3.5. These ranges will allow developers to build some residential only, retail or office only, or a mixed-use building. The exact percent of different land uses, such as residential, retail, office, civic, is dependent on the community's vision for the core and prevailing economic trends.

In general, buildings in the core are between two and six stories, depending on their location within the neighborhood. Similar to density bonuses, a height bonus (10 to 25 percent) could be allowed in return for providing such things as: residential parking below the buildings and contributions to a town open-space fund, affordable units, or

US EPA ARCHIVE DOCUMENT

regional land trust. Generally in the core, residential densities can be achieved with a mix of single-family row houses, some row-house flats, and possibly some lower-rise multifamily housing. Having a maximum of 3.0 FAR, which represents three fully developed floors of retail or office, gives Middletown planners an option of limiting building height to 3 stories or allowing 1-2 additional floors of residential units.

Stepping Down From the Core

As development steps down from the mixed-use center, densities decrease accordingly as they transition into residential neighborhoods. Communities with mixed-use neighborhoods, generally find that retail uses decrease significantly to those uses that support neighborhood functions, such as dry cleaners, day cares, or pharmacies. There is less vertical mixing, e.g., multiple uses in one building, and more horizontal mixing, e.g., multiple uses next to each other.

Accordingly, residential densities step down to 10-20 units an acre and will see fewer multi-family buildings and more townhomes, live-work units, limited single-family detached homes (generally at the very edge of the mixed-use district) and accessory dwelling units. Non-residential uses are likely to be in the 0.7 to 1.5 FAR range. The edge of the mixed-use district is primarily lower density residential housing in the range of 6-12 units/acre as the mixed-use zone blends into the surrounding single use residential neighborhoods.

7. BUILDING TYPES

All buildings need to contribute to the mixed-use districts in Middletown. A successful mixed-use district will have a wide range of building types—some all residential, some all retail, and some that contain both. Collectively, buildings determine a neighborhood's intimacy and spaciousness through their location. Their orientation can shape outdoor space and public access. The point where a building meets the sidewalk in a commercial area is a place of interaction. Proper articulation of a building's façade will add to the richness and variety of the district. All of these dynamics work together to help achieve the goals and visions discussed in the West Side Master Plan.

The purpose of this section is to describe some common characteristics of various buildings types that other communities have used to develop successful mixed-use districts in coastal areas. Building types discussed in this section include mixed-use and residential. Design guidelines for mixed-use and residential buildings are included at the end of the section.

Mixed-Use Buildings

In this section, the EPA Team wanted to provide additional detail on various mixed-use buildings with both structured and on-site parking since it is possible that the mixed-use buildings framing the retail areas will have both surface and structured parking. A more complete discussion on parking is included in Section 3.

A. Mixed Use Retail/Office Or Residential With Surface Parking

Retail mixed-use buildings are comprised of ground floor retail space with commercial or residential uses above. Retail mixed-use buildings are required along the primary pedestrian retail street. The intent of this building type is to add intensity to the development site and vitality to the street level with active uses.

Site Planning

Site planning describes the orientation of the development to existing and adjacent uses as well as how the structures and space of the development functions as a place. This includes a discussion of building location and context, how the structures will meet the right-

US EPA ARCHIVE DOCUMENT

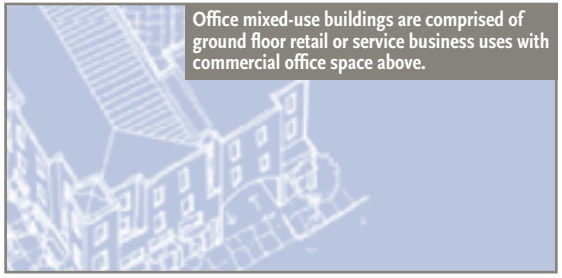
of-way including public sidewalks and the street and transitions among adjacent uses. Numerous communities have successfully developed mixed-use buildings with surface parking and those buildings had the following site planning characteristics:

- Buildings are located and oriented to the street up to the "build to line" (not to the rear parking).
- Buildings are located on the corners of blocks so as to define intersections.
- Entries are located on street frontage with secondary entries allowed from the parking area.
- Parking is located to rear of site and never at primary street corners.
- Sidewalk widths vary according to the sub-district and will be guided by the necessity of providing appropriate space for pedestrians to contribute to the overall pedestrian character of the district.

Building Design

The location and orientation of buildings is as important to the physical construct of the community as the use of the structure. Depending on the location in the hierarchy of the community, buildings take on different roles to create spaces and orient people in their use and interactions among streetscapes and clusters of buildings. Numerous communities have successfully developed mixed-use buildings with surface parking and those buildings had the following building design characteristics:

- Maximum building setbacks are incorporated to ensure the continuity of the street fabric.
- Retail frontage is approximately 90 percent of building frontage.
- Retail storefronts are semi-recessed (at entries) and are spaced at approximately 25'-50' spacings.
- Retail frontage is approximately 50 percent transparent storefronts.
- Facade treatments is consistent with design guidelines: Particular attention is given to craftsmanship and detailing within the pedestrian zone regarding materials and finishes.
- Retail frontage has entry canopies, awnings, or arcades (where specifically required) for pedestrian protection and shading.



Office mixed-use buildings are comprised of ground floor retail or service business uses with commercial office space above.

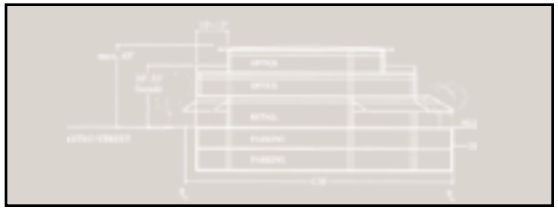
B. Mixed Use Retail/Office Or Residential With Podium Or Structured Parking

Office mixed-use buildings are comprised of ground floor retail or service business uses with commercial office space above. The greater intensity of use generally requires either above grade parking structures or below grade podiums or a combination of both. The intent of this building type is to provide substantial intensity of development which supports surrounding uses while maintaining a pedestrian quality.

Site Planning

Numerous communities have successfully developed mixed-use buildings with structured parking and those buildings had the following site planning characteristics:

- Buildings are located and oriented to the street at the build to line.
- Buildings are located on the corners of blocks so as to define intersections.
- Entries are located on street frontage with secondary entries allowed from the parking area.
- Parking is accessed to rear of site and never located at primary street corners. The sub-grade parking podium or structures can be accessed from side streets or alleys.
- Parking structures are located behind retail or office buildings.



Office Building with underground parking.

US EPA ARCHIVE DOCUMENT

Building Design

Numerous communities have successfully developed mixed-use buildings with structured parking and those buildings had the following building design characteristics:

- Buildings are set to "Build to Line" with wider sidewalk where retail occurs or is landscaped where business/office uses front the street (business or office use is prohibited or a conditional use at ground level. In places where it is allowed the design of the buildings follows the design context established by surrounding retail structure).
- Retail and service commercial space is designed to retail storefront standards to allow for expansion of retail uses.
- Parking structures are designed to provide a facade with characteristics similar to an office building.

Residential buildings should have minimal setbacks with raised entries.

Residential Housing

The EPA Team wanted to provide additional detail on various residential types to give Middletown planners and residents an idea of the broad range of options and designs available when zoning for a range of housing types. By providing a larger range of housing types, communities can begin to use their resources more efficiently, better accommodate the housing needs of all residents and help aging residents remain in their homes—all goals expressed in the West Side Master Plan.

The supply of affordable housing is a concern in communities across the country. Housing price increases are caused by a number of interacting factors, including the supply and demand for housing, the price of inputs such as labor, materials and land, and the amount of choice in the housing markets. The supply of affordable housing can be increased through mixed-use developments because often these type of developments, or districts, offer consumers a wider range of housing types, e.g., single family homes to apartments, thereby offering a wider range of price points.

Communities dedicated to creating vibrant communities tend to plan for housing that can appeal to a broad spectrum of the population. A range of housing choices can then be part of a broader program of community building that includes access to transportation choices and nearby services. A well-balanced and desirable community is one that includes a variety of housing types. These are places that retain their housing values because the amenities that exist are accessible to a variety of residents, not just a segment of the population. The key is to develop a housing program and community development strategy that promotes housing at all levels.

However, within these neighborhoods, there can be a real problem ensuring there is available housing for a community's workforce, such as its teachers, firemen, policemen, and other city employees. Government then can impact the amount and type of housing in a community through its zoning and development regulations.

One strategy employed by some communities is to provide incentives for affordable housing units. For example, Middletown could provide a density bonus of 15-percent of all units for developers that provide one affordable unit (affordable to households with incomes at <80-120-percent or less of AMI) for every ten market rate units constructed.

A. Multi-Family Residential

This type of housing includes 3 to 4 stories over a secure parking podium and generally has approximately 30 to 40 units an acre either as a rental or homeownership opportunity. Placed in the proper location, this prototype could place the urban-oriented person near urban amenities such as shopping, entertainment and employment centers.

US EPA ARCHIVE DOCUMENT

Site Planning

Numerous communities have successfully developed multi-family residential housing and those buildings had the following site planning characteristics:

- These buildings have common open spaces, such as semi-private secure courtyards.
- Maximum setbacks are required to keep building form and street pattern consistent.
- The ground floors of building frontages on all residential streets are be primarily occupied by active residential uses such as living spaces and unit / building entries.
- Buildings orient facades, and locate access and landscaping to the public streets.
- Buildings are sited to take best advantage of the neighborhood's amenities – parks, open spaces, tot lots, and access to retail and services.

Building Design

Numerous communities have successfully developed multi-family residential housing and those buildings had the following building design characteristics:

- Ground floor living spaces is raised off the level of the street to provide privacy (3 to 4 feet in keeping with regional design principles)
- Units range from 600 sq. ft. one bedroom to 1,800 sq. ft. three bedrooms.
- The buildings are typically accessed through a common entry with an elevator and stair core to a series of double loaded corridors.
- Primary building entrances are oriented towards streets, parks or pedestrian plazas.
- Ground floor units have individual entries directly from the street.
- Walk ups are allowed for 3-story buildings.
- Parking is structured either above or below ground, oriented behind liner apartments, or shared with other facilities. On street parallel parking spots is part of the calculation of parking needs.
- Siting minimizes the impact of automobile parking and driveways on the pedestrian environment, adjacent properties and pedestrian safety. Providing parking below the building is the preferred method. If this is not feasible, use techniques to minimize the impacts of driveways and parking areas:
  - > Locate surface parking at the rear or side of the lot, with no parking visible from public views.
  - > Break large parking areas into smaller ones.
  - > Minimize the number and width of driveways and curb cuts
  - > Share driveways with adjacent sites.

B. Multi-Family Townhomes

These townhouses provide a full range of amenities comparable to a single family product in an attached setting at 14-24 units / acre. The townhouses provide for private open space usually in the rear yard with a detached or attached garage.

Site Planning

Numerous communities have successfully developed multi-family townhomes and those buildings had the following site planning characteristics:

- Townhome developments are organized around a large semiprivate open space that provides for quality landscaping, tot lots and building buffer space.
- Townhomes have attractive entry and porch areas at the street level.

Building Design

Numerous communities have successfully developed multi-family townhomes and those buildings had the following building design characteristics:

- The 2-story units range in size from 850 sq. ft. two bedroom units up to 1,800 sq. ft. three bedroom units.
- Building articulation and design is informed by structural elements such as columns, roof lines and window fenestration, as well as functional elements such as locations of entries, circulation spaces and special rooms.
- Roof forms and pitches of new residential structures are similar to forms and pitches commonly found in nearby neighborhoods.
- Parking access is provided through mid-block alleys. Townhome garages open to a rear alley, not the neighborhood street.

US EPA ARCHIVE DOCUMENT

C. Single-Family Residential

Small lots for single family houses are defined as single lots ranging from approximately 4,000 to 7,000 sq. ft. each producing densities from 6 to 10 units an acre.

Middletown planners need to consider how the Vanicek property could transition into surrounding neighborhood uses. A transition zone would help development on the Vanicek property blend seamlessly into existing neighborhoods. Within this zone, compact, single-family detached housing may be appropriate. The town might aim for approximately ten percent of all residential units to be single-family detached.

In addition, allowing limited single-family housing provides more housing choice, more housing price points, and more flexibility to developers. Allowing too much detached housing will impede the development of a vibrant, diverse mixed-use district that is envisioned in the West Side Master Plan.

Site Planning

Numerous communities have successfully developed single-family detached housing in vibrant mixed-use districts and those homes had the following site planning characteristics:

- Maximum setback are required to keep building form and street pattern consistent.
- Parking is on street or in driveways. Garages to the rear.
- Alleys are encouraged for parking and service.

Building Design

Numerous communities have successfully developed single-family detached housing in vibrant mixed-use districts and those homes had the following building design characteristics:

- Parking needs are handled by a maximum one car garage, accessible through a back alley.
- Houses have small front yards defining the street edge with private enclosed back yards for family activities and minimal side yards.
- Entries are emphasized with porches which are large enough for seating.
- Building articulation and design is informed by structural elements such as columns, roof lines and window fenestration, as well as functional elements such as locations of entries, circulation spaces and special rooms.
- Front setback is a maximum of 15 feet along any street. Front setbacks are consistent. Stoops, porches, and bay windows may extend up to 5 feet into the setback.

D. Accessory Dwelling Units

Allowing accessory buildings effectively doubles the density of an existing single family lot with little visual effect in an established residential neighborhood setting. Typical units range from 400 sq. ft. studios to 900 sq. ft. two bedroom units. This prototype can be placed throughout Middletown and Aquidneck Island in existing single family neighborhoods, especially in residential neighborhoods with a predominant service alley pattern.

Site Planning

Numerous communities have successfully allowed accessory dwelling units in vibrant mixed-use districts and those units had the following site planning characteristics:

- These units are placed over an attached or detached garage, as a stand alone carriage house, or in the basement or attached directly to the existing house.
- Parking is handled on site in either the driveway or in the garage.
- Street parking is allowed and is part of the calculation of parking needs.

Building Design

Numerous communities have successfully allowed accessory dwelling units in vibrant mixed-use districts and those units had the following building design characteristics:

- Accessory buildings exhibit the same architecture detail and materials as the single-family home.
- Accessory units under 500 sq. ft. may use on-street parking

US EPA ARCHIVE DOCUMENT

Design guidelines are an effective tool for specifying the context established in the zoning and development requirements. While zoning refers to the types of the uses, bulk regulations and setbacks, design guidelines direct development as parcels and building relate to one another and provide a consistent feel and defined sense of place. It provides a set of considerations to help define the character of the village. Guiding the principles of architecture, how the pedestrian and automobiles access sites, and establishing elements of style will formalize the identity created by the character of this community.

DESIGN GUIDELINES FOR MIXED-USE BUILDINGS
ANCHORAGE AND VANICEK DISTRICTS

These guidelines for mixed-use buildings—covering site planning, building massing, and design—will contribute to creation of the attractive, cohesive pedestrian environment envisioned in the West Side Master Plan. They draw on the experience of other communities that have succeeded in creating such neighborhoods.

A. SITE PLANNING AND MASSING

The life of an active mixed-use district is closely tied to the character of its public space. Collectively through their location and orientation, buildings shape outdoor space, determining its intimacy, spaciousness, and enclosure. It is especially important to acknowledge the importance of streets as

A continuous building street wall

The taller building mass should be at and near the West Main/Coddington intersection.

public space. The point at which a building meets the sidewalk in a commercial area is a place of intense interaction. Consistent build-to lines insure that adjacent buildings reinforce the importance of public streets and establish a sense of connection and continuity among individual buildings. The goal is to reinforce a sense that these buildings represent more than individual developments; they represent building blocks that work together to form a community. Specific elements include:

1. *Development massing reinforces the desired street wall, and the taller buildings are located at and near the intersection of West Main Road and Coddington Highway*

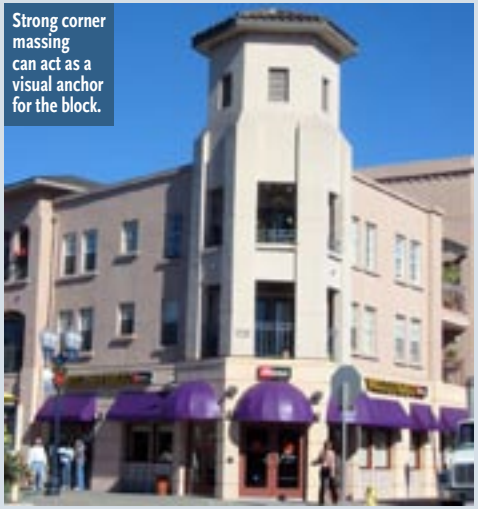
US EPA ARCHIVE DOCUMENT

DESIGN GUIDELINES FOR MIXED-USE BUILDINGS

ANCHORAGE AND VANICEK DISTRICTS

and elsewhere along West Main Road and the boulevard. These locations represent the most appropriate locations for buildings that reach the maximum height of 65 feet.

2. *Strong building forms are employed. For example, towers are used to demarcate important gateways and street corners and strong corner massing can function as a visual anchor for the block. By meeting the overall expectation of high-quality building design and maintaining height, bulk and scale compatibility with surrounding areas, new mixed-use development in these locations will serve as focal points for activity while not overwhelming the sidewalk and surrounding residential areas.*



Strong corner massing can act as a visual anchor for the block.

3. *Building heights and massing in the rest of a site is sensitive to topography, to preservation of views toward the water from upper floors and to the potential for shadows on adjacent residential development. Where appropriate, heights step down at a site's edge to be compatible with lower-scaled existing development. Meeting the intent of these guidelines will generate a variety of heights and massing that convey the district's emerging vitality while reinforcing its overall relationship to the surrounding context—generally scaling up toward mixed-use development along the major roadways and down toward adjacent existing neighborhoods, while maintaining views to the bay.*
4. *Buildings are located and oriented in a way that augments public streets and civic spaces.*
5. *Main building or shop entrances are located on street frontages, with secondary entrances allowed from the parking area. Entrances are inviting and do not interrupt street and/or retail continuity.*
6. *Clear pedestrian connections are created and are well-marked and gracious. Clearly marked pedestrian routes are provided from surface or structured parking to buildings, streets and public spaces.*

New development should provide connections to, and be visually compatible with adjacent buildings.

7. *Buildings or groups of buildings are not isolated from neighboring development with dead-end streets, gates, parking lots, or inaccessible open space.*
8. *Restaurants and cafes are encouraged to provide outdoor seating by permitting additional setbacks from the build-to line for outdoor dining.*
9. *An arcade or colonnade may be integrated along the sidewalk edge, provided that street and/or retail continuity is not unduly interrupted.*
10. *Design building volumes to maintain a human scale; in general, break down the scale and massing of larger buildings.*
11. *Any publicly owned athletic fields or recreational open space redeveloped as part of the overall design of this area is placed contiguous to the school while the frontage of West Main Road is reserved for mixed-use activity.*

US EPA ARCHIVE DOCUMENT

ANCHORAGE AND VANICEK DISTRICTS

12. *Utilities, service and trash are located away from residential uses and pedestrian paths and screen these functions from view by enclosures that are consistent with the architectural design of the building.*

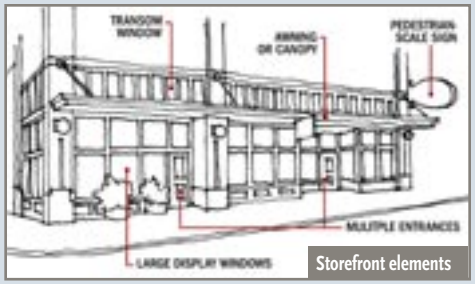
B. BUILDING DESIGN

All buildings need to make a contribution to the mixed-use district. Thoughtful proportions will contribute to coherent mixed-use building design and promote architectural unity within the retail/commercial core. A building's design will add to the richness and variety of each district. The following elements can contribute to building design's influence on both neighborhoods:

1. *A building exhibits a sense of order. For example, differentiate among the base, middle, and top levels of a building.*
2. *Employ simple, yet varied masses, and emphasize deep openings that create shadow lines and provide visual relief.*
3. *Consider each building a high-quality, long-term addition to the district; exterior design and building materials exhibit permanence and quality appropriate to a activity center.*
4. *Provide a clear set of building openings; fenestration unifies a building's street wall and add considerably to a façade's three-dimensional quality. Encourage the use of recessed windows that create shadow lines and suggest solidity.*

Maintain a high transparency along the street; at least 60% of storefronts and façades should be clear glass windows or doors.

5. *Avoid blank walls along all building façades facing a street; the use of opaque and highly reflective glass is prohibited along public streets.*
6. *Promote active, pedestrian-oriented uses with a high degree of transparency along the street. Keep 60 percent of the storefront or other street-level façade visually open by using clear glass windows and doors. Locate storefront windowsills or the top of bulkheads no higher than 30" above the sidewalk.*



Storefront elements

7. *Use design elements such as multiple storefronts, display windows, exterior light fixtures, awnings, and canopies to add interest and give human dimension to street-level building façades.*
8. *Signage is compatible with buildings, neighboring buildings, and the character of the district as a whole. Wall signs, projecting building signs, and suspended arcade signs are encouraged for retail and commercial establishments. Sign bands are integrated into the design of the building façade. Flashing or internally illuminated box signs are strongly discouraged.*

US EPA ARCHIVE DOCUMENT

DESIGN GUIDELINES FOR RESIDENTIAL BUILDINGS

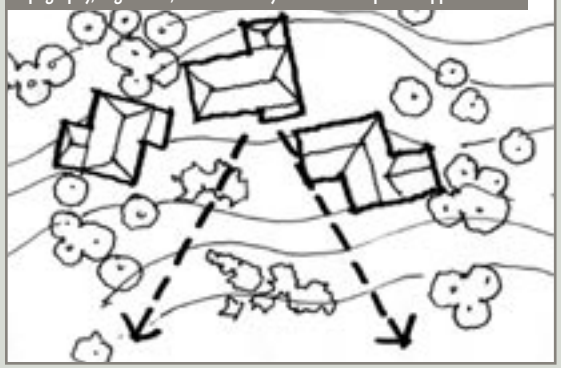
ANCHORAGE AND VANICEK DISTRICTS

These design guidelines for residential housing types will contribute to achieving the West Side Master Plan by helping to create an attractive residential setting in the Anchorage and Vanicek districts. They allow for privacy while encouraging social interaction and respecting adjacent neighborhoods.

A. SITE PLANNING AND MASSING

1. *Good building siting responds to specific site conditions and opportunities, such as location on prominent intersections, unusual topography, significant vegetation, and views or other natural features.*
2. *The experience of traveling along streets often defines a neighborhood's character. How residential buildings line or step back from the street helps determine the level of privacy for residents, as well as the amount of social interaction that occurs between residents and neighbors. Critical characteristics include:*
   - *Shallow residential street front: buildings set back a small amount from the sidewalk (maximum five feet) provide sufficient area to include site features such as stoops, and porches, which allow privacy while encouraging visual interaction with the street.*
   - *Deeper residential setback: buildings set back farther from the sidewalk (maximum 15 feet) provide sufficient privacy to permit more open porches, courtyards and garden space for ground-floor residential units. Fences can further strengthen a sense of separation from the sidewalk.*
4. *Site residential projects to maximize opportunities for creating usable, attractive, well-integrated open space. Such elements include:*
   - *Site outdoor spaces such as courtyards in accordance with the location and scale of adjacent streets and buildings; for instance, define and contain courtyards for residents through a combination of building, landscape, and other site amenities such as benches and lighting.*

Topography, vegetation, and views may all offer site-specific opportunities.



   - *Provide entry enhancement such as landscaping along public streets.*
   - *Locate and design decks, balconies and upper-level terraces to minimize the disruption of privacy.*
   - *Locate outdoor spaces to take advantage of sunlight.*
   - *Provide play areas for children.*
5. *In a successful mixed-use neighborhood, residential buildings are compatible with the scale of development for the surrounding area. Many communities have used residential buildings to help provide a sensitive transition to nearby residential neighborhoods. The following techniques can help achieve this goal:*
   - *Articulate a building's façades vertically or horizontally in intervals that relate to the scale of the pedestrian.*
   - *Reduce the bulk of a building's upper floors.*
   - *Limit the length of unarticulated façades. Building modulation and architectural features such as bay windows help reduce the apparent bulk of a building, creating shadow lines and providing visual relief. Varying roof pitches also aids in the reduction of bulk.*

US EPA ARCHIVE DOCUMENT

DESIGN GUIDELINES FOR RESIDENTIAL BUILDINGS

ANCHORAGE AND VANICEK DISTRICTS

B. BUILDING DESIGN

The residential architectural heritage of Aquidneck Island is notable, and new buildings contribute to this tradition. Other communities who have built similar mixed-use neighborhoods had design guidelines with the following characteristics:

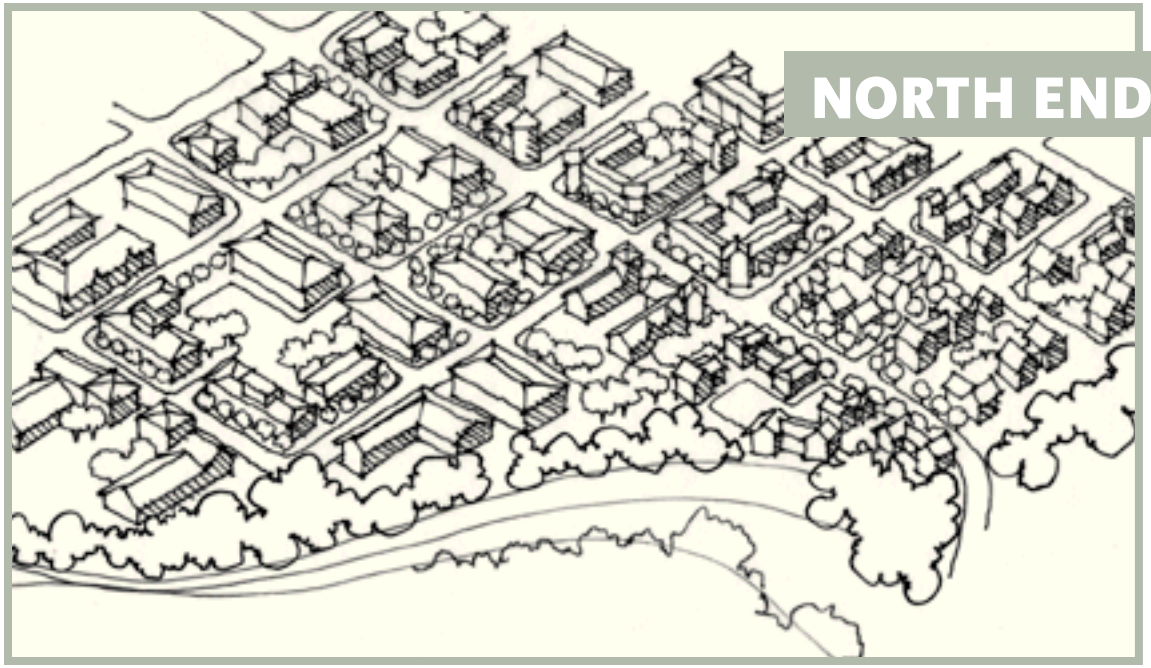
1. *Residential buildings are up to five stories and 55 feet tall at the western edge of the site where the land slopes down toward the bay. Other residential buildings could vary between 35 and 45 feet in height, with heights above 35 feet approved in return for provision of parking below the building; contributions to an open-space fund, regional land trust, or similar entity; and design review based on the guidelines contained in this document and more detailed guidelines the town may develop in the future. Office and other commercial buildings are subject to comparable height limits and be able to take advantage of comparable height bonuses.*
2. *Treat each building as a high-quality, long-term addition to the district; exterior design and building materials exhibit permanence and quality appropriate to a activity center.*
3. *Use materials, colors, and details to unify a building's appearance; buildings are built of compatible materials on all sides. Consider taking cues from the surrounding Aquidneck Island residential context, such as wood/board-and-batten and wood clapboards and shingles as accent materials.*
4. *Design architectural features that are an integral part of the building, and discourage ornamentation and features that appear "tacked on"; this applies to balconies, moldings, rafters, porches and bay windows.*
5. *Express roofs in a visually interesting manner that complements the composition of the building and the surrounding area. Employ high-quality roofing materials and give consideration to potential views of a rooftop from adjacent buildings.*
6. *In buildings that incorporate parking below the structure, use stoops, porches and landscaping to shield the parking from street view and to convey a sense of traditional character (urban housing has traditionally been located one-half level or more above adjacent public streets). To provide handicapped access, raise portions of the rear elevation to the first-floor level.*

Use buildings, landscaping, and other amenities to define courtyards.

Articulation, building features, and varied rooflines help confer human scale.

Use stoops, porches, and landscaping to shield parking built below a building from the street

US EPA ARCHIVE DOCUMENT



NEWPORT
NORTH END/PELL BRIDGE AREA

Redevelopment could create a walkable area that offers residents and visitors new housing, shopping, employment, and transit choices.

NEWPORT: NORTH END/ PELL BRIDGE AREA

Newport has a long tradition of respecting its historic roots while accommodating modern advances. As one walks through the city's narrow streets, rich in American and architectural history, its easy to understand why the City wants to continue its strong tradition as the redevelopment of the North End and the Pell Bridge Area begins. The EPA Team understands that the City has already hired a design firm to help them with the redevelopment of this area. The City of Newport requested that the EPA Team review their design guidelines for the North End. This sub-section provides that review. Before doing so however, it is useful to first review the vision for development in the North End and Pell Bridge area—it is this vision that the design guidelines seek to realize.

RESIDENTS' VISION IN THE WEST SIDE MASTER PLAN

Newport's commercial districts tend to be characterized by the fine mix of uses typical of historic cities. Residential neighborhoods also have a stable, high- or medium-density character, with few locations for infill and little likelihood of significant change. The North End/Pell Bridge area offers the major opportunity for significant growth and development. In the West Side Master Plan, participants envisioned the North End area as home to a new mixed-use compact development center, transit facility, and waterfront redevelopment that will house military-related and commercial uses. The West Side Master Plan participants envisioned the North End to include:

- Developing the Pell Bridge/North End area as a mixed-use growth center that will extend the density of Newport's urban center with potential for a mixed-use lifestyle center, a waterfront park, a transit terminal, and water transportation.
- Expanding multimodal transportation

US EPA ARCHIVE DOCUMENT

options at the Gateway Transportation Center with more regional bus and rail connections, harbor shuttle, and making the center the terminus of bicycle and pedestrian corridors that extend throughout the plan area.

- Using the Newport's secondary rail corridor (currently reserved for tourist trains) for rail service, and a bike path.
- Redeveloping the Newport Naval Hospital.
- Improving streetscape and vitality of J.T. Connell Highway.

THE CURRENT DRAFT GUIDELINES

The compact and pedestrian-friendly character of historic Newport's traditional city environment are the same qualities and sense of place that the city would like to bring to the North End. The guidelines however tend to do this by replicating or mirroring certain aspects of the historic design character found in older Newport districts.

Although Newport's historic resources provide a great source of pride for the city, it is may be desirable to allow more flexible development in the North End. The emphasis on specific historic architectural details in the draft guidelines in many ways conflicts with the very diversity of architectural styles cited as part of Newport's unique architectural heritage at the beginning of the document. With styles ranging from Federalist to Gothic Revival to Beaux Arts, the city is a museum of architectural diversity. Rather than insisting that new development in the North End be "reflective of the aforementioned styles," Newport could encourage new development and redevelopment in the North End to aspire to architectural excellence of its own time that complements the historic urban fabric of the rest of the city. In other communities successful design guidelines have been written more as performance standards than as prescriptions. They provide clarity about the kind of environment desired as an outcome, but do not tell a designer precisely how to design a building. With this thought in mind the EPA Team offers the following options for Newport's consideration.

Implementing design guidelines for the North End in Newport can improve the quality and character of developments along Connell Highway.

1. OPTIONS FOR DESIGN GUIDELINES FOR THE NORTH END

This section presents options for the Newport to consider as they further develop their Design Guidelines. It is arranged by Design Guideline topic area. Each topic contains content that has been useful in other Guidelines. The City can compare the elements provided below with their existing Guidelines and use those elements which are deemed to add value.

Purpose

The City of Newport may want to consider establishing a specific purpose statement for the guidelines, such as, the purpose of these design guidelines is to:

- Provide a set of guiding design principles for public officials, developers, designers and the community with which to anticipate, evaluate and encourage appropriate development;
- Give the City of Newport tools to evaluate and affect project design;
- Provide developers with clear direction as to what type and quality of development the city desires, anticipates and will approve;
- Give the community a better understanding as to what type and quality of development the city and community should anticipate and expect Newport's North End and Pell Bridge.

US EPA ARCHIVE DOCUMENT

Use

The design guidelines could be used by the Historic District Commission, the Planning Board and the City Council. Design guidelines are intended to direct the project design process toward solutions that, given site conditions and the requirements of the development program, best meet city goals and community values and expectations.

The ultimate regulatory force of the design guidelines should be determined and stated explicitly. If written well, design guidelines offer an excellent presentation of the type and quality of development the city desires, anticipates and will approve.

Applicability

A map of the area covered by the guidelines should be provided, as it is in the draft guidelines. A list of the kinds of projects covered should also be provided and might read as follows:

- All new commercial and mixed-use development.
- All multifamily housing development of more than four units.
- Renovations involving 50 percent or more of a structure.
- Renovations that expand a main or accessory structure by 1,000 square feet or more.
- Expansion of or change in parking lots, with the exception of striping and other activities that do not require construction.

Under Item 4.a, "Triggered Conformance," the draft guidelines call for design review if the cost of renovation exceeds 50 percent of the assessed value of an existing structure. This threshold could allow potentially undesirable renovations to go forward. Another approach the City may consider is to set the threshold based on the likelihood of renovation's having an impact on the public realm and adjacent properties. Using the cost of work as the trigger mechanism establishes an incentive for avoiding design review by making small, incremental changes or doing cheap work. Instead, the guidelines should present developers with the opportunity to improve their projects through the design review process. The Newport Planning Board and City staff may want to consult with local developers to incorporate incentives into the design review process.

Mixed-use projects are recommended and anticipated as part of the West Side Master Plan and the design guidelines. The draft document states that "Any mixed-use structure incorporating a commercial use is required to conform to these standards only for that part of the structure to be used commercially." This is may well prove to be an unworkable premise, since the design of a mixed-use structure is more easily and constructively reviewed as a whole. Other communities have found that it is also important to include design review of multifamily buildings over a certain number of units. As these are generally investment properties, review of these structures is consistent with review of commercial properties.

Density and Dimensional Requirements

The zoning for the area—and not the design guidelines—should set minimum lot area, FAR, and other dimensional requirements. Because the North End represents Newport's most important opportunity for significant new development, redevelopment, and expansion of the tax base, greater densities and taller buildings than are common elsewhere in the city can be considered, subject to infrastructure constraints. The design guidelines will help the city ensure that new development is compatible with the historic fabric of Newport without requiring a reproduction of the historic fabric.

Relationships Between Buildings, Other Buildings, and the Street

The relationship of one building to another and to the street is key to creating a City center that is functional, lively, and hospitable—one that complements the street life of downtown Newport. Other communities in New England that have design guidelines that support a similar mixed-use, walkable vision have the following characteristics:

- New development or redevelopment contributes to the achievement of the citizens' vision for the North End especially with regard to development:
  - heights and setbacks

US EPA ARCHIVE DOCUMENT

  - transitions to nearby neighborhoods
  - orientation on the lot or within mixed-use projects
  - nearby presence of any historic buildings.
- Development is pedestrian- and bicycle-friendly and makes provisions to accommodate existing or planned pedestrian and bicycle networks.
- Building entrances are located to promote pedestrian safety and reinforce pedestrian connections to sidewalks, paths, and public transportation stops.
- Ground-floor spaces facing streets are dedicated to uses activated by people.
- Service areas such as mechanical equipment (including rooftop mechanicals), trash handling, and loading docks are screened from neighbors and from public view.
- Buildings are designed to minimize shadow impacts on neighboring lots or open space, with setbacks in upper floors as needed.
- Building and site lighting are designed to minimize light impacts on neighboring lots.
- Large projects provide usable, public open spaces in the form of landscaped areas or plazas.
- Parking is accommodated at the rear of buildings, underground, or in structures. Structured parking should be lined with other uses.
- Buildings are built to the sidewalk or near the front property line, unless provision is made for a publicly accessible plaza, colonnade, café seating area, or similar public spaces. Buildings come to the property line on major streets to create a consistent line of buildings along the street.
- The ensemble of buildings includes a variety of roof shapes.

Building guidelines

Building design guidelines are not an attempt to design buildings. Their goal is to create a built environment: of excellent design; compatible with Newport's historic and regional character; that functions well; and that provides a framework for an attractive and lively public realm. Buildings that achieve these goals in an urban context share the following characteristics:

- Large-scale development avoids the appearance of very large, undifferentiated structures or box-like buildings surrounded by lawn or parking lots.
- Architectural elements such as bays, porches, arcades, dormers and so on are proportional to a building's size to avoid giving the building a cartoon-like appearance.
- Façades are articulated and detailed to create variety and interest.
- Ground-floor spaces facing public streets and areas are transparent, with 50–70 percent windows.
- Building entrances are at least every 75 feet and distinguished by canopies, porches, or other treatments.
- Building materials and finishes are high quality and context sensitive.
- Chain commercial building types are discouraged (chain commercial is not discouraged).
- Blank walls are not allowed at street level

Parking

- Structure or put parking underground where possible.
- Line parking structures with retail, commercial, or other uses on the ground floor.
- Plan for and design for parallel parking on the street.
- Use supply of parallel parking to calculate district wide parking supply.
- Minimize the size of entrances to parking garages or lots to allow for safe and attractive pedestrian travel.
- Reduce parking needs and impervious surfaces by creating shared parking for uses with complementary parking demands.
- Do not place parking lots (surface or structured) in front of buildings or fronting important public streets.
- Divide parking lots into fields of no more than 40 spaces.
- Plant parking lots with trees in linear strips and peninsulas that provide sufficient room for healthy growth.
- Plant sufficient trees to provide shade over 50 percent of a lot within 10 years.

US EPA ARCHIVE DOCUMENT

- Screen parking lots with either perimeter landscaping, including shrubs maturing to at least 4 feet, or opaque fencing at least 4 feet tall with shrubs or vines planted against the fence.
- Provide designated pedestrian routes from parking lots to destinations.
- A more detailed discussion on parking can be found in the following Section 3.

Open space

- Provide plazas and parks as part of a building development. Include both landscaped and hardscape elements.
- Design open spaces as outdoor rooms rather than as undifferentiated space.
- Design takes into account:
  - preference for native plants in landscaping;
  - both permanent and movable seating;
  - maximizing sun exposure in cooler months;
  - provision of shade in warmer months;
  - provision of areas with shelter from wind;
  - provision of view corridors;
  - provision of easy access to cafés or food carts; and
  - provision of amenities such as bike racks, drinking fountains, rest rooms, and trash receptacles.

2 CONSIDER FORM-BASED ZONING FOR THE NORTH END

Conditions in the North End—vacant and underutilized land and detailed master planning under way—make it a potential appropriate location to establish form-based zoning. Form-based zoning focuses less on uses and more on the physical types and relationships of buildings and streets. Form-based zoning derived from the North End Master Plan would require replacing the zoning for the North End with a regulating plan for streets and lots, building-envelope standards for façades and building relationships, and if desired, architectural standards.

This would entail a far more detailed approach to shaping the design character of the North End than a design-review process with design guidelines. A form based code would also allow future development to incorporate the urban design elements that make Newport the quality place that it is without stifling architectural innovation and diversity that is also a part of its storied past. If established, however, a form-based approach could also expedite permitting and reduce the need for special review.

US EPA ARCHIVE DOCUMENT

1

2

3

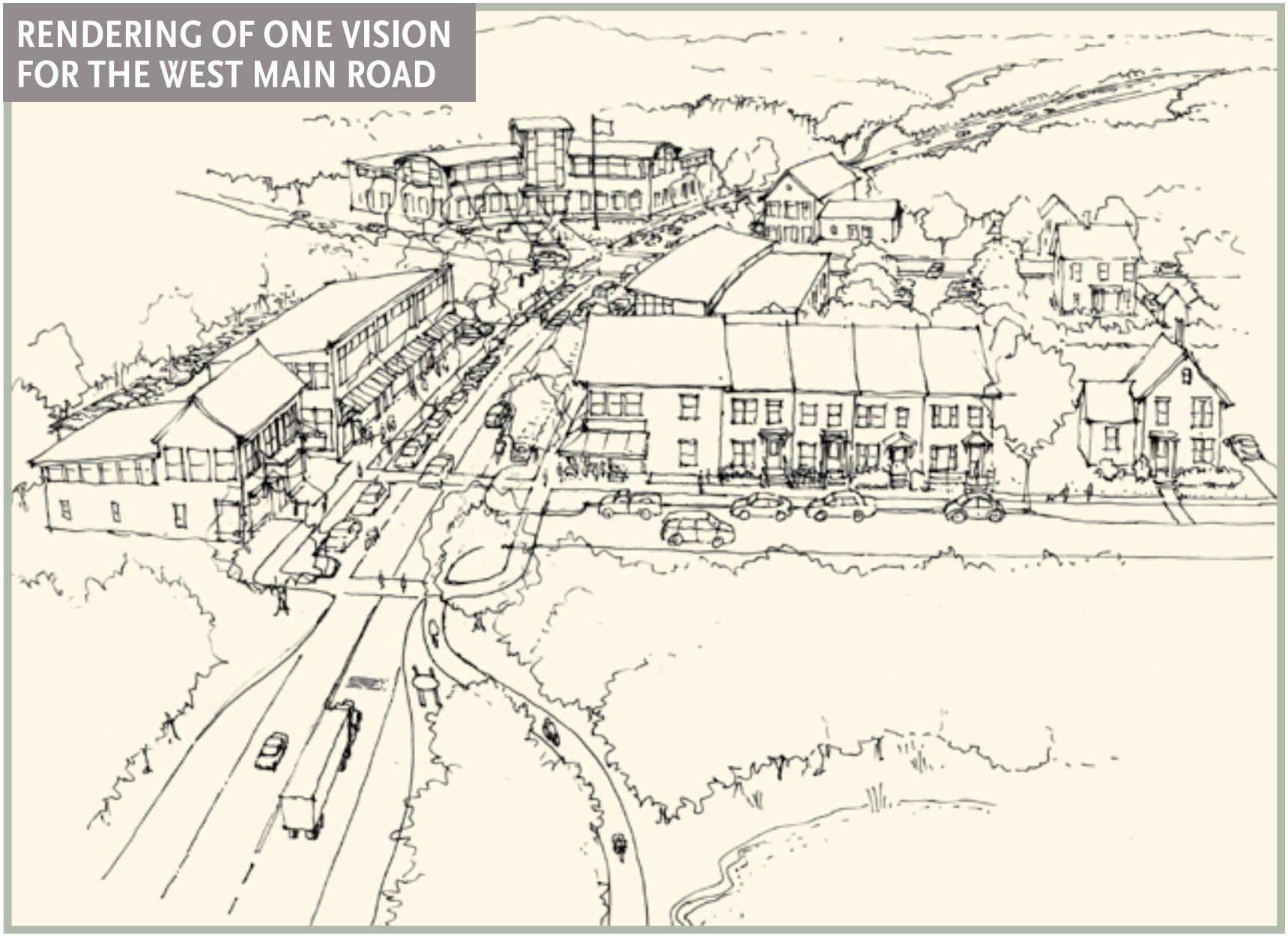
4

5

The West Main Road and Coddington Highway Corridors

US EPA ARCHIVE DOCUMENT

RENDERING OF ONE VISION FOR THE WEST MAIN ROAD



US EPA ARCHIVE DOCUMENT

WEST MAIN ROAD AND CODDINGTON HIGHWAY

Refashioning this shared corridor as a suburban Main Street with streetscape amenities and pedestrian-focused commercial centers will reinforce the commercial function of this corridor while improving its aesthetic quality and character.

As described in Section 2, community character is jointly defined by buildings and roads. In the West Side Master Plan, the residents of Aquidneck Island said they wanted to "coordinate transportation strategies as a way to increase safety, reduce congestion, and provide better options for transit, bicyclists, and pedestrians." Central to achieving this goal is changing the character of the West Main Road and Coddington-J.T. Connell Highways. As portions of the West Side Master Plan are implemented, there will be opportunities to achieve these transportation goals. For example, if the Anchorage and Vanicek properties can be developed in ways consistent with the options presented in Section 2, then the portions of the West Main-Coddington corridor on which those properties front will change to increase walkability and improve traffic flows. Such focused redevelopment at nodes, or growth centers, is anticipated in the West Side Master Plan, and concentrates limited economic and municipal energies rather than spreading them throughout the corridor. Nonetheless, successful implementation of the West Side Master Plan will require Aquidneck Island communities to address growth throughout the corridor. This section discusses options for transportation and land-use actions that would help achieve the vision both at growth centers and between them along West Main Road and the Coddington-J.T. Connell Highways.

The majority of strategies discussed in this section are transportation-related. However, in addition to such improvements, both corridors would also benefit from land-use changes, as it is the synergies between transportation and land use that create vital corridors. Those strategies are discussed in more depth in Section 2.

WEST MAIN ROAD

West Main Road has several different characteristics: in places it passes through open agricultural land and in places is dominated by strip commercial development. Although the current character of development in many places along the corridor is inconsistent with the island's goals, the retail concentrations also provide an opportunity, as retail redevelops in more rapid cycles than most other land uses. As properties turn over and are redeveloped, and as the remaining greenfield sites along the corridor fill in, the communities along

US EPA ARCHIVE DOCUMENT

The relatively rapid redevelopment cycle for retail uses creates an opportunity to guide redevelopment in more functional and attractive ways.

West Main Road have an opportunity to guide redevelopment toward more functional and attractive commercial design, and to preserve the character of residential and rural parts of the road. Doing so could over time produce both significant improvements in the function of this corridor, and encourage development more consistent with the goals of the West Side Master Plan. Specifically, the corridor represents an excellent opportunity to:

- create an aesthetically attractive corridor that projects a positive image for the individual communities and for the west side of Aquidneck Island as a whole;
- create a fully multimodal thoroughfare that improves vehicular access and circulation, maintains mobility, and improves access, safety, and convenience for transit users, pedestrians and bicyclists; and
- create centers of commercial activity rather than the strip development that serves as a barrier between activities on each side of the street.

Below, we discuss options and principles that the Aquidneck Island municipalities could use to implement the West Side Master Plan in this corridor, in a way that would help achieve its broader vision. These options would help achieve the vision through a two-level approach to the corridor as both a shared asset for the west side of the island and as a series of places with distinct character and conditions. It is likely that redevelopment in the corridor will occur incrementally. Strategies discussed below can be used to guide improvement in either an incremental or, should funds or should the opportunity become available, wholesale, manner.

It is worth noting that the Institute of Transportation Engineers (ITE) recently released *Context Sensitive Solutions for Major Urban Thoroughfares for Walkable Communities*. The publication provides substantial detail on design for major arterials such as this corridor. To ensure that investment in the corridor supports its community's vision, each community will need an access and circulation plan that integrates road improvements with its land use vision. Guidance from ITE can help each community add the necessary specificity to their existing comprehensive plans.

GUIDING PRINCIPLES[1]

ACCESS, CIRCULATION, AND CORRIDOR DESIGN

A majority of the businesses along West Main Road have their own curb cuts, contributing to congestion as vehicles enter and exit. A median would substantially smooth traffic flow and improve safety by consolidating left-hand turns and access. In the long run a median would be worth examining for portions of the corridor. In the shorter run, entrance and exit moves can be better managed using several less expensive tools.

Placing common access curb cuts at intervals of between 200 and 600 feet, as in a traditional street network pattern, is one such method. This policy can be mandatory for new development at least. The location of these cuts should be identified as soon as possible, and well in advance of development, so that development plans for and builds to them.

INTRODUCE A SYSTEM OF INTERCONNECTED ROADS AND PARKING

Access/service roads have been discussed for portions of the corridor. Any such plans should be examined closely because they may be inconsistent with the broader goals for, and conditions in, the corridor. In addition, given the current setback of much of the existing

US EPA ARCHIVE DOCUMENT

development, the right-of-way for such a plan may be difficult to assemble.

While frontage lanes and multiway boulevards are useful tools for creating high residential property values along high-volume arterials. In this case, however, pulling back development to accommodate another traffic lane would likely interfere with efforts to create an attractive, walkable, multifunction corridor. Additional development can mean more traffic, but most of the goals for access lanes can be better accomplished through other means. For instance, additional access and connection between parcels can be provided via rear and side connections. Interconnectivity would allow for auto and truck movement between parcels without putting trips on West Main Road. Further, a gridded street pattern often reduces the impact of additional traffic as it provides more choices for travel between places.

A specific study (most likely part of a larger access and circulation study) would be necessary to determine the most effective locations for such connections. For new development projects, access easements could be required, and site plans could be required to accommodate desired circulation patterns. For existing properties, securing rear and side connections would require negotiations with existing businesses and property owners. For some property owners, the benefits of improved access will be obvious. Others may require financial incentives and/or construction assistance to tip the scales in favor of additional access.

DEVELOP AND IMPLEMENT A VISION FOR BICYCLE AND PEDESTRIAN CIRCULATION IN THE CORRIDOR.

Given the goal of more walking and bicycling in the corridor, island communities will need to develop a vision for what types of walking and cycling they want to see in the corridor, and then focus limited resources on the places and facilities most important to that vision.

For example, the current understanding of walking and bicycling establishes three kinds of walking which are likely to be important in the vision for the corridor: rambling, utilitarian walking, and strolling/lingering.[2] As illustrated, each requires very different kinds of facilities and surrounding land uses. National experience suggests that a vision of pedestrian-friendliness is unlikely to produce substantial numbers of pedestrians unless the specific type of pedestrian activity envisioned is designed and provided for. Given limited funds, the island communities may wish to consider tiering pedestrian-support efforts, focusing first on the places that they designate nodes or growth centers.

CREATE SIDEWALKS TO SUPPORT PEDESTRIAN-ORIENTED RETAIL AND STREET-ORIENTED HOUSING.

The first step in providing both utilitarian and strolling environments is good sidewalk design. Access management through reducing curb cuts will also benefit pedestrians by

Three kinds of walking

Each kind of walking likely to occur in the corridor calls for different physical accommodation. In order to fulfill the vision of pedestrian-friendliness, island communities will need to require that re/development provide facilities and settings that support walking's different forms.

Rambling

Utilitarian walking

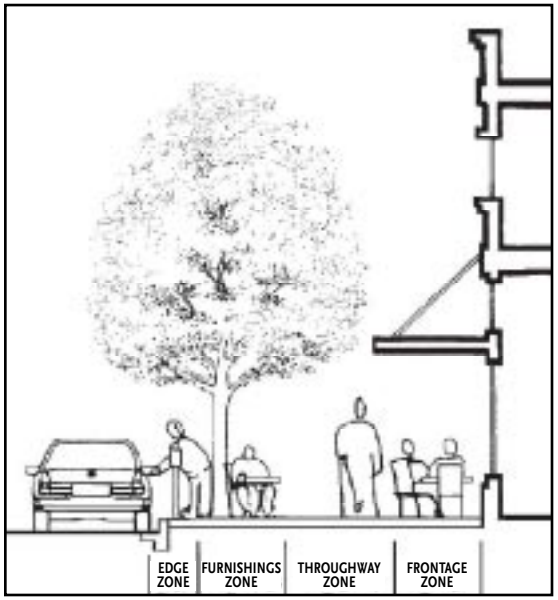
Strolling and lingering

US EPA ARCHIVE DOCUMENT

reducing potential conflicts with autos, and by improving sidewalk continuity.

To ensure that a pedestrian-supportive corridor (or nodes) develops over time, development needs to allow space for the four pedestrian-area elements:[3]

- The **Edge Zone and Furnishings Zone** are necessary to allow for curb cuts and driveway ramps that will continue to be a feature of the street for many years. These zones are also the location for street trees, planting strips, utility poles, fire hydrants, bike racks, etc. The typical dimension for this zone is 5 feet.



All four pedestrian-area elements must be provided.

- The **Throughway Zone** is for pedestrian travel and must be entirely clear of obstacles, including utility poles and driveway aprons. A minimum of 4 feet is required for accessibility. To accommodate more intensive and pedestrian-oriented development in nodes, 6-8 feet would be preferred.

- The **Frontage Zone** is adjacent to the property line that in the future of the West Main Road corridor (and/or nodes) will generally be defined by a building façade, landscaping, or a fence. Pedestrians generally do not feel comfortable moving immediately alongside a wall, so a minimum of 1′6″ is a necessary buffer. This is also the zone where pedestrians will stop to look in store windows, and it provides space for sidewalk café tables and limited storefront displays.

STRIPE BICYCLE LANES IF SUFFICIENT ROADWAY RIGHT-OF-WAY IS AVAILABLE.

Current island planning documents recognize that the West Main Road corridor is not safely bikeable. To achieve the goal of increasing bicycling, it is important to provide a dedicated facility, which in this corridor almost certainly means striping bicycle lanes. The *National Bicycling and Walking Study* and other sources have found a strong correlation between the presence of dedicated bicycle facilities and the use of bicycles for everyday trips.[4]

Example of how different transportation modes can co-exist.

PROVIDE ON-STREET PARKING AT RETAIL NODES

While on-street parking in a corridor such as this is seen as a difficult proposition, it is and important part of creating the kinds of mixed-use/retail nodes sought at intervals along the corridor.

For certain areas of the corridor, especially where nodes are planned or where a transition occurs to higher density development, the road could be designed like a traditional "Main Street." For this option, traffic could be calmed through bump-outs, pedestrian crossing signals, lanes set at 10-foot widths, and on-street parking. This is a typical model for supporting pedestrian movement while maintaining traffic volumes.

The diagram on the facing page comes from ITE's *Context Sensitive Solutions for Major Urban Thoroughfares for Walkable Communities*. It shows most of the elements discussed above.

US EPA ARCHIVE DOCUMENT

TRANSPORTATION MANAGEMENT

New development does not have to mean increased traffic and congestion, particularly in a corridor context. A mix of land uses, well connected by diverse transportation choices, can create opportunities for people to accomplish trips without an automobile.

Techniques for achieving this goal in the corridor include the following options.

DEVELOP A TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN.

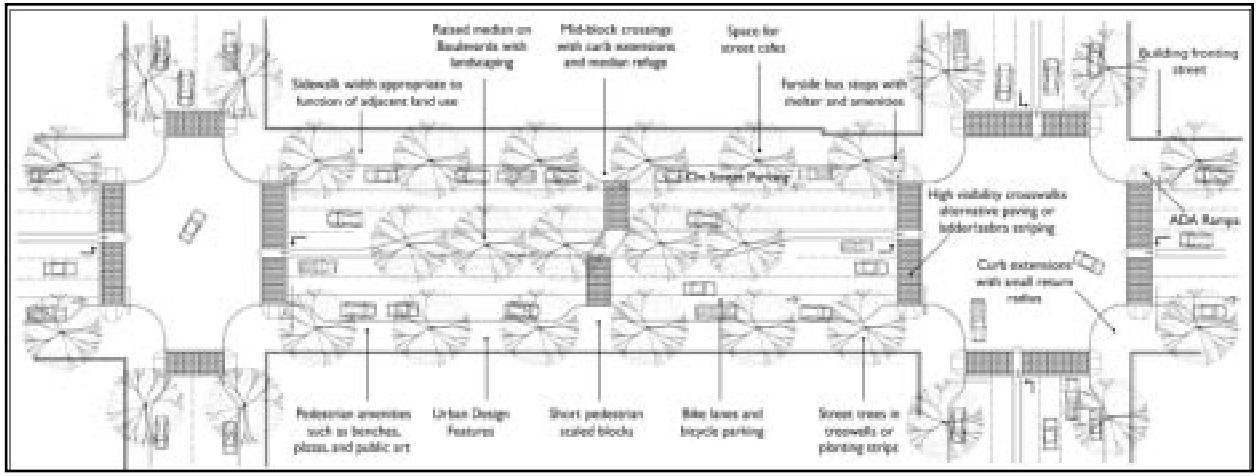
An important part of getting the largest return on public investment (past and future) in the corridor is managing transportation demand. The island has in place a variety of transportation-demand management options, from bus service to federally recognized "Best Workplaces for Commuters" employers. The next step would be to establish a corridor- or West-Side-wide TDM plan. Such a program could substantially reduce the amount of automobile traffic by accurately predicting travel demand and meeting it through a complete set of options such as transit, shuttles, car-sharing, and biking and walking.

An enormous amount of work has been done on TDM; one useful resource, with case studies, evaluations of TDM, TDM handbooks and manuals, questions and answers, is the National Transportation Demand Management and Telework Clearinghouse at **www.nctr.usf.edu/clearinghouse/index.htm.**

CREATE A SHARED-PARKING AND PARKING-MANAGEMENT STRATEGY.

Currently along the corridor each office, residence, business or retail establishment provides its own parking. This system interferes with several of the West Side Master Plan's goals:

- Parking is almost always between the sidewalk and the store, affecting the aesthetics and walkability of the corridor.
- Parking requirements substantially affect the economic viability of new and redevelopment, both by constraining potential building footprints, and by increasing the cost of development.
- Because even surface parking is increasingly expensive to provide, there is no incentive to allow or to help drivers to park once in one store's lot, and then walk to a different store—because in essence one store paid for the parking and now it is being used by a potential competitor. Instead, people drive very short distances and park at each store separately. This increases the number of short auto trips, with attendant turns and congestion.



A boulevard at a retail node with both a median and on-street parking.

US EPA ARCHIVE DOCUMENT

- Although parking does not necessarily require multiple curb cuts, its current implementation in the corridor has produced many curb cuts, to the detriment of traffic flow and sidewalk use.[6]

Many communities around the country—particularly those trying to improve the character of their commercial districts—are realizing that it makes sense to meet parking needs through a shared parking strategy. Shared parking can mean sharing it between uses with different peak demand times, such as a church and a movie theater, or office and residential. Shared parking can mean on-street or shared garages. But shared parking always means managing parking for joint goals, rather than requiring each use to provide a fixed amount on-site. Sharing parking reduces the cost of providing parking, and frees up additional land for development. This is critical for achieving high-quality development.

Shared parking means managing parking for joint goals, rather than requiring every use to fend for itself.

WANT MORE INFORMATION?

EPA recently released *Parking Spaces/Community Places: Finding the Balance through Smart Growth Solutions*. Research and reports from EPA and others show that the way we develop our communities has a major impact on the quality of the natural environment. Regions with walkable, mixed use, compact neighborhoods, towns, and cities, knit together by a robust network of transportation choices, protect human health and the natural environment. Parking policies and requirements can have a strong influence on both the built and natural environment in a community. A better understanding of the influence of parking policies is an important step toward smarter growth. Available at: **www.epa.gov/smartgrowth/pdf/EPA-ParkingSpaces06.pdf**

Best practices in parking for corridors and nodes such as West Main Road have substantially evolved over the past few years, and cannot be fully covered here. Useful resources include:

- Todd Litman, *Parking Management Best Practices*, American Planning Association, 2006.
- Donald Shoup, *The High Cost of Free Parking*, American Planning Association, 2006.
- *Parking Spaces/Community Places: Finding the Balance through Smart Growth Solutions*, EPA, 2006.

Steps toward shared-parking and "park once" strategies include:

- *Create a business improvement district* or other third-party incorporated entity to negotiate for shared parking, manage parking, and hold liability. Making shared parking work requires a forum for addressing disputes or concerns among various property owners and ensuring consistent management practices. A third-party entity may also lease parking lots from individual property owners and manage them so that motorists perceive all the parking in the district as a common pool. More important, by leasing the parking lots, the third-party entity can assume all liability for incidents that occur in the parking lots, relieving individual businesses and property owners from that burden.

- *Require that new parking facilities be shared*. Shared parking cannot be required in a zoning code, but it can be required as part of any type of conditional-use permit or negotiated plan-approval process. At a minimum, shared parking needs to be allowed as a way of meeting parking requirements.

- *Adjust parking requirements*. Communities can adopt an ordinance that allows for a significant reduction or elimination of minimum parking requirements in exchange for sharing parking or contributing an in-lieu fee.

US EPA ARCHIVE DOCUMENT

- *Manage an in-lieu fee.* Successful in-lieu-of-parking fees are set low enough to encourage their use, but not so low as to make it impossible to construct shared garages.

- *Consider impact fees.* Automobile trip generation varies more strongly with the provision of parking than with square footage of development. The island communities could consider establishing development-impact fees that relate not to type of use and developed area, but rather to type and number of parking spaces. It is straightforward to complete a nexus between shared and non-shared parking spaces and auto trip generation. These impact fees could then generate revenue for mitigating the traffic impacts of new development and at the same time encourage the sharing of parking. It would be important to ensure that the impact fees could be spent on all types of projects that cost-effectively mitigate traffic, including transit improvements and transportation demand management, along with roadway auto capacity increases.

INTERCONNECT PARKING AND WORK TOWARD A SYSTEM OF REAR ACCESS LANES.

The corridor is typical of many retail corridors in that people will often stop and park at one business, then drive a little ways and park at a second or third stop. This pattern of many relatively short trips, and frequent turns out of and into parking lots, can substantially worsen traffic in the corridor. The resulting congestion is a direct effect of single-use parcels with individual curb cuts and no interconnectivity. As discussed above, rather than treat each parcel as a stand-alone development, connections between parcels can be required or facilitated so that some trips can be made by walking and others can be made by short car trips through interconnected parking lots.

Developing and supporting a park-once strategy can help to reduce the number of short trips taken up and down the corridor. When done well, shared parking, reduced distance between destinations, and interconnected parking lots can accomplish many of the functional goals of frontage lanes with fewer unwanted urban design and cost impacts.

Redesigning just one intersection can kick-start a broader redevelopment process. Towson, Maryland, enhanced walkability, reduced congestion, and improved safety with the redesign of this intersection.

PUTTING THE PIECES TOGETHER

Strategies for implementing the visions articulated in the West Side Master Plan need to be tailored by each municipality to existing conditions and desired outcomes. Acting together and over time, the strategies discussed here can make a significant difference in the West Main Road corridor. For example, the graphic vision sequence on page 66, created by Urban Advantage, suggests the difference that just a few, incremental changes can make in the character of a corridor. Getting from the first picture to the last will require incremental changes that employ a phased approach. A single mixed-use block brought to the street can fundamentally reshape what's possible at an intersection.[7]

US EPA ARCHIVE DOCUMENT

Putting the Pieces Together

A series of incremental changes can dramatically change the character of a corridor. A single mixed-use block brought to the street can fundamentally reshape what's possible at an intersection.[7]

CODDINGTON / J.T. CONNELL HIGHWAYS

The potential for this corridor is defined largely by the surrounding current and planned land uses. At the intersection with West Main Road is the existing Naval property and the Anchorage sites. A little over a mile down the road is a major retail center. Directly across or adjacent to this center is Newport's

With this relatively short reconstruction, the city of University Place (outside of Tacoma, Washington) created corridor conditions necessary to start developing a node. In addition to substantially improving the aesthetics, the improvements produced a 7% speed reduction and a 60% crash reduction.[8]

US EPA ARCHIVE DOCUMENT

North End, for which redevelopment plans are currently being developed. Between the Anchorage sites and the retail center sits the newly redesigned Newport Heights, a community college/center, and a day care. Directly adjacent to this cluster is the site of a newly approved development for a bank with interior parking and small stores facing a feeder street. Together, these clusters make the foundation for a great neighborhood.

Better linking these existing clusters will serve two purposes: 1) increasing activity and vitality on the street, which is a goal of the West Side Master Plan; and 2) helping to frame the new development that is poised to come to the North End and to the Coddington Highway Corridor. The accompanying illustration and discussion shows some relatively low-cost, incremental possibilities that the Newport and Middletown municipalities could consider.

This one-mile square (see photo) contains a broad mix of uses: housing, a park, and retail/services, with substantial mixed-use development planned for the Anchorage site. Walking from Anchorage to the mall is about one mile, 20 minutes, or four quarter-mile walks. Within this area, Newport and Middletown could consider the following strategies.

Low-cost and incremental strategies could tie together new and existing nodes of development along Coddington and J.T. Connell highways, moving the corridor toward the pedestrian-friendly vision of the West Side Master Plan.

- **Ensure that the bike/walk connections throughout this area of the neighborhood work.** Walking from the redeveloped Anchorage site is roughly a mile by either of the two paths illustrated. That can be an easy bike trip or a moderate walk—and it could be an especially a nice walk through the park. A low-cost first step would be to conduct a walking/biking inventory of these neighborhoods to identify walking routes and any problem spots that could be addressed as a priority.

- **Examine strategies for increasing bicycle safety** on Coddington Highway to link the residential areas with the commercial and retail areas. Since it's a two–lane highway, this should be doable at relatively low cost.

- Given redevelopment at a) Anchorage, b) Newport Heights, c) the planned Newport Bank development, and d) near the West Main Road/Connell Highway rotary, **street, streetscape, and pedestrian and bike improvements could be justified along the whole corridor,** to serve those ¼-mile walk circles.

- Future road improvements should include considerations for **aesthetics, landscaping, and bike/ped connectivity** with landscaped medians and/or road treatment applications.

- Pedestrian access to the mall is going to be much more likely from the rear. Although there is a fence behind the mall now, there is already a desire line down the hill to east. **Removing the fence and putting in a real path down the hill and to the mall's door** would be a very low-cost first step to connecting this neighborhood.

NOTES

[1] These general strategies were developed with West Main Road in mind, although some could also be applied to Coddington Highway redevelopment.

[2] Photos and typology by Charlier Associates.

[3] ITE, *Context Sensitive Solutions for Major Urban Thoroughfares for Walkable Communities*, 2006, p. 96. Illustration: Community, Design + Architecture.

US EPA ARCHIVE DOCUMENT

[4] *The National Bicycling and Walking Study — Transportation Choices for a Changing America*; Final Report, FHWA, 1994, FHWA-PD-94-023. See also "Case Study Number 1: Reasons Why Bicycling And Walking Are And Are Not Being Used More Extensively As Travel Modes," 1994, FHWA-PD-92-041. **www.bikewalk.org/assets/pdf/CASE1.pdf.** The National Center for Bicycling and Walking has not updated this report in full, but the publication lists numerous assessment tools and case examples of states and localities that have analyzed the usage of bike lanes. For other information and resources about pedestrian and bicycle information, visit: **www.pedbikeinfo.org,** and/or **www.bicyclinginfo.org.**

[5] ITE, *Context Sensitive Solutions for Major Urban Thoroughfares for Walkable Communities*, 2006, p. 56. Illustration: Community, Design + Architecture.

[6] A useful brief discussion of these issues is Mott Smith, "Onsite Parking: The Scourge of America's Commercial Districts," Planetizen, March 31, 2006, **www.planetizen.com/node/19246**.

[7] Steve Price images, Urban Advantage.

[8] Photos courtesy University Park and Reid Ewing.

US EPA ARCHIVE DOCUMENT

1

2

3

4

5

Environmental Implications of Implementing the Aquidneck Island Vision

US EPA ARCHIVE DOCUMENT

New England communities are stewards of a rich tradition of community building that balances man and nature, land and sea.

US EPA ARCHIVE DOCUMENT

Aquidneck Island has significant upland and coastal natural resources. Important efforts at land management, conservation, and resource protection are under way to help maintain that the delicate balance among environmental health, economic vitality, and quality of life. As noted in Section 1, the rapid pace of low-density development—primarily residential—has raised challenges for preserving quality of the island's natural environment.

Research has shown that inappropriate growth and development can have profound effects on water resources.[1] Storm sewer overflows and polluted runoff from "nonpoint sources" (such as roads, agriculture, golf courses, and septic systems) are a major reason that some water bodies cannot meet Clean Water Act (CWA) standards. Every acre of woodland, meadowland, and wetland that we convert to impermeable surface in development, every vehicle we drive and park on impermeable road surfaces, adds to the difficulty of protecting the quality and quantity of our water supplies.

WANT MORE INFORMATION?

EPA recently released *Protecting Water Resources with Higher Density Development*. This study helps guide communities through the density debate to better understand the impacts of high- and low-density development on water resources. Check it out at **http://www.epa.gov/smartgrowth/pdf/protect_water_higher_density.pdf.**

PROTECTING WATER RESOURCES

As destinations grow farther apart, increased driving can raise tailpipe emissions, which have negative impacts on air quality and water quality. For example, one-third of the nitrogen found in Chesapeake Bay originated in mobile sources.

Recognizing these and other environmental implications of recent development patterns, the West Side Master Plan suggests implementing different land-use approaches from recent history that will allow the island to accommodate new growth while minimizing its environmental impacts. One approach, for example, is to focus new retail development and improvements in previously developed areas, significantly reducing new land conversion and corresponding stormwater runoff. An abandoned or underutilized shopping center is often completely impervious and is already producing high volumes of runoff. If this property is redeveloped, the net increase in runoff will likely be zero. In many cases, redevelopment of these properties can break up or remove some portion of the impervious cover, converting it to green areas or pervious road surface, which allows for some stormwater infiltration (return to the soil). Redevelopment of these properties can produce a net improvement in regional water quality by decreasing total runoff.

The recent redevelopment of a former shopping mall, Mizner Park in Boca Raton, Florida, provides an example of this type of opportunity. Redesigned from its original pattern—a large retail structure surrounded by surface parking lots—the 29-acre site now includes 272 apartments and townhouses, 103,000 SF of office space, and 156,000 SF of retail space. Most parking is accommodated in four

US EPA ARCHIVE DOCUMENT

Redevelopment of the Mizner Park mall in Boca Raton, Florida—with site amenities such as public open spaces and landscape design features like planters—helped reduce the site's overall impervious surface while significantly increasing downtown property values.

multistory parking garages. Designed as a village within a city, the project has a density five times higher than the rest of the city and a mix of large and small retailers, restaurants, and entertainment venues.[2] Most significantly, the final build-out of Mizner Park decreased overall impervious surface by 15 percent by replacing asphalt with a central park/plaza, flower and tree planters, and a large amphitheater. The redevelopment also had tremendous impact on the city's tax base. In 1990, the abandoned mall had a value of $26.8 million while the rest of downtown Boca Raton had a value of $83 million. When the project was completed in 2001, the mall—which accounts for 42 percent of downtown—had had a value of over $68 million whereas the rest of downtown was worth over $229 million.

The West Side Master Plan also discusses concentrating new development in growth centers, particularly ones with a mix of uses. Higher-density, mixed-use districts help broaden transportation choices on the island and can protect environmental quality much better than single-use development. By bringing jobs and housing closer together, and designing street networks to accommodate bikes and pedestrians, such development introduce real opportunities to increase walking and bicycling while reducing a development's impact on air and water quality. However, while increasing densities can better protect water resources at a regional, or island, scale, a poorly planned development with higher density can increase site-level impervious cover, which magnifies water-quality problems.

Three steps in particular can help ensure that higher-density development achieves its potential for enhancing environmental quality:

- Take advantage of the higher values generally achieved by denser, mixed-use, developments to **replace surface parking with structured parking.** This shift can free up as much as half of a site for a variety of uses that can include natural surfaces and other approaches to retaining and treating water run-off.

- **Integrate low -impact development (LID) practices where possible and practicable.** LID is an approach to site design that protects water resources through stormwater management practices that reduce peak stormwater flows and increase on-site infiltration, thus reducing pollutant loadings to surface waters. LID customizes natural landscaping features for each site's needs. LID tools such as permeable paves, soil restoration, or vegetated roofs, can be integrated into many aspects of the built environment.
- **Integrate site-level water management into project design.** Numerous techniques are available for improving the quality of stormwater runoff, and thoughtful site planning and building design can easily integrate them into development proposals. When combined with concentrating development—particularly if it substitutes structured for surface parking—these techniques can prevent, treat, and store runoff and associated pollutants. Many of these practices incorporate low-impact

The Low Impact Development Center offers technical information, resources, and tools at **http://www.ci.emeryville.ca.us/planning/pdf/storm-water_guidelines.pdf.**

US EPA ARCHIVE DOCUMENT

Portland, Oregon, rewards developers with a density bonus for installing green roofs (left), which reduce the volume of stormwater runoff that reaches the city's sewers. This program also suggests the advantages of site-specific strategies over traditional engineered solutions. In addition to reducing runoff, green roof treatments can extend roof life, lower operating costs, and significantly improve rooftop appearance.

development techniques (rain gardens, bioretention areas, and grass swales). Others go further by altering site-design practices—for example, by reducing parking spaces, narrowing streets, and eliminating cul-de-sacs.

Overall, we know that to fully protect water resources, communities must employ a wide range of land-use strategies based on local factors. The West Side Master Pan discussed many of these strategies: building in a range of development densities, incorporating adequate open space, preserving critical ecological and buffer areas, and minimizing land disturbance. Some site-specific strategies have spin-off benefits. They can enhance a neighborhood's sense of place, increase community character, and perform better financially. The strategies that meet multiple community objectives are generally not the traditional engineered approaches, such as detention ponds, which are often difficult to install in urban areas or on sites with land constraints.

Nontraditional approaches work best in dense urban areas because they take the existing elements of a neighborhood—such as roads, roofs, abandoned shopping malls, or courtyards— and add some engineering to landscaping elements, to help retain, detain, and treat stormwater on site. When applied correctly, these approaches address stormwater and add value to a community to help to make the neighborhood a more desirable place to live.

The city of Portland, Oregon, has been a pioneer in developing site-specific stormwater strategies to reduce stormwater runoff, enhance community character, and save money. Portland is required, under various provisions of the Clean Water Act, to reduce pollutants in its stormwater discharges and reduce combined sewer overflows. In addition to installing traditional engineered systems, the city has constructed numerous vegetative systems that are integrated with urban design as a way to minimize runoff.

As an example, city officials estimate that Portland has 25 square miles of rooftops. To eliminate some of the runoff generated from this amount of impervious surface, the city developed an eco-roof program. The program offers developers graduated density bonuses based on the size and relative scale of the eco-roof. Developers can earn as much as three square feet of additional floor area for each square foot of eco-roof area. The city estimates that an eco-roof extends roof life by at least 20 years. It estimates its own operational/maintenance savings at $0.003 annually per gallon of stormwater removed from the combined sewer system. If one of the city's industrial districts were to cover its 330 acres of rooftops with eco-roofs, the annual savings would be $480,000.

To further reduce stormwater flow, city engineers and landscape architects have installed vegetated landscape stormwater systems as integral elements of streets,

US EPA ARCHIVE DOCUMENT

parking lots, playgrounds, and buildings. These systems have helped create distinctive neighborhood features, and many community members have approached the city to ask if they could pay to have similar stormwater elements installed along their own street, parking lot, school, or store. Both the city and property owners can save money. When the Oregon Museum of Science and Industry installed bioswales in its parking lot in 1992, the museum documented savings of $78,000 in construction costs alone. If the museum qualifies for the city's stormwater-fee discount, it could save close to another $13,000 annually because most of its runoff is retained and treated on site instead of being piped to a municipal facility for treatment.

A development in Tacoma, Washington, shows the effectiveness of addressing stormwater at the site level by increasing densities. Built on the city's eastern edge in the 1940s as temporary housing for ship workers, the Salishan Housing district now serves as a public housing community of 855 units. Redevelopment will increase densities to allow 1,270 housing units (public housing, affordable and market-rate rentals, and ownership units), local retail, a senior housing facility, a health clinic, an education-technology center, and an expanded community center. An important priority of the project is restoration of water quality in the T-Street Gulch, which feeds into Swan Creek and, ultimately, the Puyallup River.

The design of Salishan redevelopment reduces impervious surface area, allows treatment of runoff on site, and restores and enhances wetlands with pedestrian paths—all while meeting density goals.

The redevelopment seeks to reduce impervious surface area, treat runoff on site, and provide areas for run-off infiltration. In addition, the developer has restored and enhanced wetlands and buffer areas along the gulch using native vegetation, and pedestrian paths have been integrated into swale and buffer areas. Planners estimate that when the redevelopment is finished, 91 percent of site runoff will be treated and filtered through bioswales located next to streets and along the T-Street Gulch, and that water flowing into the gulch from the development will be clean.

A downtown, first-ring suburb, or other land-constrained community may find it difficult to push for higher-density or infill redevelopment in the face of strict stormwater regulations. This was the issue that confronted Emeryville, an industrial city between Oakland and Berkeley, California, on the east shore of San Francisco Bay. In finding a way to balance various needs, the city has earned a national reputation as a pioneer in reclaiming, remediating, and redeveloping its decaying industrial lands.

Trees and other planted areas increase the amount of pervious surface that can absorb precipitation, slowing the release of stormwater, and adding to neighborhood appeal at the same time.

Emeryville's massive brownfield pilot program succeeded in attracting new business and residents to the city over the past decade. Its next challenge was to meet new standards for water quality and improve the environmental sustainability of continued revitalization efforts. To address this issue, the city's Planning and Building Department hired Community, Design + Architecture, Inc., to write *Stormwater Guidelines for Green, Dense Redevelopment: Stormwater Quality Solutions for the City of Emeryville.*

WANT MORE INFORMATION?

The City of Emeryville's Green Dense Guidelines are available at **http://www.ci.emeryville.ca.us/planning/pdf/stormwater_guidelines.pdf.**

US EPA ARCHIVE DOCUMENT

These guidelines, issued earlier this year, provide a vision for integrating green stormwater treatment into the site planning and building design of new development. Pedestrian-friendly parking strategies are part of the package. Solutions range from shared district-parking facilities to green roofs to containerized bio-retention gardens. All are tailored to Emeryville's unique situation: heavily urbanized sites, compacted or even contaminated soils, and a high water table.

More and more state and local governments are considering the environmental implications of development patterns. Increasing development densities is one way that communities can minimize regional impacts on water quality. In addition, there are many ways to reduce local stormwater runoff and achieve other community goals, such as enhanced neighborhood character and quality of life. By developing densely in appropriate areas and employing a wide range of site-specific stormwater strategies, communities create a win-win situation for their water resources—and for their residents.

Numerous recommendations within the West Side Master Plan call for creating mixed-use districts and increasing the walkability of the island through the use of greenways, bike paths, and other pedestrian amenities. By designing street networks to accommodate bikes and pedestrians, as well as bringing jobs and housing closer together, there are real opportunities to increase walking and biking, reduce congestion on the island's roads, and reduce development's impact on air and water quality.

REDEVELOPING BROWNFIELD SITES

The West Side Master Plan estimates that the Naval Station Newport occupies close to 1,500 acres of land on the West Side. About 10 percent of this land is thought to be brownfields—notably the four tank farms and the abandoned naval hospital. The plan proposed options for future development on these sites once these are cleaned to appropriate standards and released from Navy ownership. Brownfield redevelopment reduces risks to communities by cleaning up contaminated sites in compliance with national and state standards and processes. As outlined in the West Side Master Plan, some resources and assistance are available to help communities clean up brownfield sites and implement the visions and strategies described in the report.

One often overlooked resource in brownfields redevelopment is that of transportation investments. Over a decade ago, passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) marked a turning point in transportation policy. ISTEA gave states and metropolitan areas much-needed flexibility to set their own transportation funding priorities; it also encouraged them to pursue their transportation goals in concert with community and environmental goals. ISTEA and its successor programs have opened up opportunities to coordinate transportation planning and community land-use planning.

Transportation funding under ISTEA and its successor programs have supported a variety of activities from transit-oriented development to design of new bicycle ways, as will be initiated on the West Side by the Rhode Island Department of Transportation. Transportation funding has also supported projects linking transportation efficiency, brownfield cleanup, and economic development. Brownfield-revitalization projects that could be significantly enhanced by transportation improvements are eligible for this funding, as are transportation projects that encounter obstacles related to brownfields contamination. Eligible transportation projects include highways, roads, and bridges; public transit; rail; pedestrian and bicycle access; and recreational trails.

Effectively linking brownfield redevelopment, transportation, and better development approaches constitutes a triple win, and often results in a synergy that can achieve

WANT MORE INFORMATION?

EPA and the Association of Metropolitan Planning Organizations produced *Redeveloping Brownfields with Federal Transportation Funds.* Check it out at **http://smartgrowth.org/pdf/brownfields_tea21.pdf.**

US EPA ARCHIVE DOCUMENT

multiple goals. Because of the combined economic, community, and environmental benefits expected to result, many of these projects attract additional public and private partners, and leverage additional funding. There is significant history for this. For example, according to the 2001 report, in Lawrence, Massachusetts, transportation funds will pay for a new vehicle bridge and help to clean up a downtown brownfield; a new park and pedestrian bridge will also be created. To complete the revitalization, the city received funding from EPA's Brownfields Cleanup Revolving Loan Fund Pilot Program, local banks, a neighboring business, the U.S. Department of Housing and Urban Development's Community Development Block Grant program, and the Massachusetts Land Bank Grant Fund. The city will achieve several important goals: improving transportation access to downtown, supporting economic development, improving the pedestrian environment, and cleaning up environmental contamination.

SUSTAINABLE COASTAL DEVELOPMENT

Much of the new development envisioned within the West Side Master Plan is located adjacent to Narragansett Bay. Coastal resources are critical to Aquidneck Island's ecosystem, economy, and quality of life. How can the island accommodate new development while protecting those resources? The West Side Master Plan addresses this issue through its performance standards for open space preservation, green buildings, low-impact development, and sustainable site planning. While many of these performance standards can easily be applied to any development—coastal or inland—this section addresses particular *site characteristics* that are critical elements for a smart *coastal development*.

These coastal elements were selected to meet multiple objectives, and to serve numerous purposes, such as creating a more distinctive sense of place and protecting natural resources. Like the smart growth principles, these are elements for a community to consider implementing as many places have found they achieve better neighborhood outcomes by incorporating the elements below.

- **Public access.** Coastal communities need to ensure that there is adequate public access to the coast, a natural resource that residents of all income levels have the right to use and enjoy.

- **Shoreline buffers.** To help protect a development from wave and storm-surge inundation and maintain habitat and dynamic shoreline functions, buffers should include a no-build setback from the shore, which can incorporate well-designed passive recreational features and flood-plain-management and habitat elements.

- **Shoreline habitat.** Similarly, many shores will require shoreline stabilization. Such structures present an opportunity to create an additional amenity, such as a raised boardwalk, for the community while taking advantage of possible restoration opportunities.

- **Landscaping for multiple purposes.** A sustainable coastal development adjacent to the coast will have significant landscaping. Developers could implement a context-sensitive design that reinforces the community's sense of place and incorporates elements for managing flood plain conditions, reducing stormwater runoff, controlling shoreline erosion, protecting native/coastal species resilient to the saltwater habitat restoration, and introducing public access greenways where appropriate.

- **Promote alternatives that support water-borne transportation.** A sustainable coastal development promotes multiple transportation choices. On a coastal site, this can entail assessing possible enhancements of linked land- and water-based transportation and seeking opportunities to promote intermodal transportation.

US EPA ARCHIVE DOCUMENT

The backside of Main Street in Skaneateles, New York, a small resort town that has turned its back to the water.

- **Consider the aesthetics of the development viewed from the water.** Viewsheds to and from the water are equally important. Developers could be encouraged to prepare graphics that show how the development will look from a boat on the water. For example, the adjacent photo demonstrates a poor water-to-land viewshed. The photo on the facing page shows the backside of Main Street, Skaneateles, New York, a small resort town known for its walkable and distinctive community, but one that has turned its back to the water of Skaneateles Lake.

- **Preserve and build upon highly valued coastal community character.** Building scale, lighting designs, walkway details, and landscape architecture should promote and enhance the coastal nature of any development. Developers could be encouraged to protect historic piers and bottomland structures that are locally valued as part of the landscape and determine options for retrofitting historic structures that do not meet floodplain standards.

- **Plan seasonal and year-round uses to achieve mutual benefits.** The waterfront could be developed both to provide year-round opportunities for local residents to accommodate the needs of seasonal users. In addition, developers need to recognize and prepare for the seasonal spike in demand for housing, transportation, and water access created by non-residents.

- **Use blue belting to enhance working waterfronts and place priority on water-dependent uses.** Communities seeking new waterfront development could conduct an audit of existing water-dependent uses in the coastal blue belt, enhance opportunities for priority uses identified, and identify opportunities for enhancement of working waterfronts. Furthermore, developers and municipalities could apply the model of inclusionary-zoning requirements for affordable housing to boat-slip fees, requiring lower fees on a set ratio of slips as a means of addressing equity issues.

NOTES

[1] *The National Water Quality Inventory: 2000 Report to Congress* identified urban runoff as one of the leading sources of water-quality impairment in surface waters. Of the seven pollution source categories listed in the report, "urban runoff/storm sewers" was ranked as the fourth leading source of impairment in rivers, third in lakes, and second in estuaries. See U.S. EPA. *National Water Quality Inventory: 2000 Report to Congress.* **www.epa.gov/305b.** In addition, see Beach, D. 2002. *Coastal Sprawl: The Effects of Urban Design on Aquatic Ecosystems in the United States.* Pew Oceans Commission, Arlington, VA.

[2] Projects. Cooper Carry. July 30, 2003. **http://www.coopercarry.com/4/4e1c.html.** Also, City of Boca Raton Downtown Development website, **http://www.ci.boca-raton.fl.us/econ/downtown.cfm.**

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

1

2

3

4

5

Next Steps

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

This report presents options and strategies intended to advance the conversation within each municipality on how to achieve the vision for the community described in the West Side Master Plan. The options described in Sections 2 and 3 provide a good starting point for those conversations. This document addresses implementation at several scales—community-wide, neighborhood, development, and building—and in a manner that integrates planning and design of streets, parks, and other public spaces with the design of private development and individual buildings. The EPA Team believes that these options and strategies can function as both a guide for citizens and a set of tools for planners and developers.

- For citizens, the guidelines and standards are designed to serve as a primer on the fundamentals of urban design and a foundation for a conversation on how to begin implementing the vision laid out the West Side Master Plan. They also suggest a set of methods and techniques for applying these principles to the conditions and issues facing Aquidneck Island's three municipalities.
- Many other people—including municipal agencies, planners, developers, architects, building trades people, and others who will play a central role in implementing the West Side Master Plan—may also find this document useful. In addition to assisting in framing new zoning, design guidelines, and other tools, it can also help planning staff and public officials in the review and approval process for planning efforts and development proposals.

NEXT STEPS FOR ALL THREE COMMUNITIES

There are many examples of performance-based development regulations and review processes that have been implemented successfully in communities throughout the country. In a departure from conventional "one size-fits-all" zoning, these regulatory approaches recognize the value of context-sensitive design based on fundamental principles of urban design; peer review; and the idea that developers working with the community can result in projects that fit in well with the surrounding neighborhood. In exchange for participating in this type of review, responding to the intent of relevant design guidelines, and providing desired neighborhood amenities such as public open space or streetscape improvements, developers can receive incentives. In other communities incentives have included density bonuses for exceptionally well-designed and context-sensitive proposals; streamlined permit review for projects meeting the intent of the guidelines and standards; and departures from certain zoning requirements when community benefits are provided. As an example, a development providing a much-needed public plaza in a mixed-use district might be granted a reduction in required private open space because the plaza provides the open space in a manner that contributes to a more active street life.

Specific next steps that all communities could implement reflect lessons learned from communities across America that have implemented specific community visions. However, it is worth noting that they could represent additional costs for the three communities in terms of planning

US EPA ARCHIVE DOCUMENT

staff, more extensive community outreach, support for design review boards, and other steps. Communities that have made these investments have found that they have recovered these extra costs in the form of more attractive, livable, sustainable and valuable development and communities. Practices that the communities might consider include:

Experience has helped identify principles of urban design that help create walkable communities with a strong sense of place and broad choices in housing, services, and transportation.

1. Develop specific area plans
Before establishing new, detailed zoning for the focus areas in the communities, a good next step could be to create a specific plan for each focus area. In some cases developer interest may already exist or could arise.

2. Modify underlying comprehensive plans
In order to change zoning designations, the communities must first make sure that the proposed new zoning is compatible with their comprehensive plans and if not, amend the plans.

3. Improve military housing
In addition to land that the Navy may release for development, the Aquidneck Island communities can work with the Navy to encourage it to rehabilitate existing housing. Working with the Navy to improve its existing neighborhoods will augment and support the new compact, mix-use development outlined in the West Side Master Plan. In many ways, it would help spur implementation of many plan aspects. The Navy's rehabilitation of existing housing stock at the San Diego Naval Training Center (NTC), for example, spun off many benefits for the nearby Point Loma community. In partnership with private developers, financiers, and property management teams, the Navy built a new neighborhood of high-quality, affordable military housing on the former base.

Design makes all the difference. These duplexes enhance the neighborhood fabric in Tacoma, Washington. The Navy could follow a similar design pattern when rehabilitating existing housing stock.

The Village at NTC redevelops a 50-acre parcel of the historic facility under a larger city-led Base Reuse Plan. Designed using principles of New Urbanism and shaped by extensive public comment, the Village contains 500 affordable housing units, a seven-acre site for a future elementary school, a community center, recreational space, and the existing Navy Exchange, which functions as an corner grocery store. With well-designed public spaces, pedestrian-friendly streetscapes, and regional architectural styles, the Village integrates smoothly into the residential and commercial context around it. The Village embodies a range of smart-growth techniques. Not only is it located within three miles of downtown on an underutilized site, but it connects seamlessly to the existing urban fabric, and provides access to alternative transportation options and a public school site. Following traditional neighborhood design, auto-

US EPA ARCHIVE DOCUMENT

mobile access to the housing is from rear alleys, leaving the building fronts available for features such as porches and landscaping.

Through the public/private partnership, the Village at NTC has provided quality, affordable housing units for military families based in San Diego. Navy publications have featured it as an example of high-quality, pedestrian-friendly, traditional neighborhood design for military family housing. Two sister neighborhoods based on the design of the Village are planned for other redevelopment sites in San Diego. The Village at NTC provides a worthy model for design and process for the redevelopment of military family housing—making these attractive military neighborhoods a welcome addition to existing communities.

The Navy has also used smart growth principles in redeveloping 812 aging military houses into The Village at Serra Mesa, elsewhere in San Diego. The 144-acre site now accommodates 900 affordable housing units, a community center, recreational space, a new daycare facility, and a Navy Exchange functioning as a neighborhood grocery store.

WANT MORE INFORMATION?

EPA recently published *Turning Bases Into Great Places: New Life for Closed Military Facilities.* This guidebook discusses how to create a vision for former installations that yields housing and transportation choices, creates a mix of jobs and housing, and makes the most of such assets. Case studies throughout the document illustrate how bases closed in previous BRAC rounds have redeveloped using smart-growth principles. Check it out at **www.epa.gov/smartgrowth/military.htm.**

The Navy has redeveloped several properties in San Diego based on smart growth principles. They suggest how the Navy can support the master plan even before naval land is released for private development.

4. Create a clearly delineated process

To create a common understanding of how the planning and approval process works, guidelines should indicate at what points a development team should consult with town officials; present concepts to the larger community and regional planning or other agencies; and seek specific zoning and regulatory approvals. Developers want certainty and will be more inclined to work toward community goals if the steps they need to follow are clearly set out.

5. Create an ongoing review process

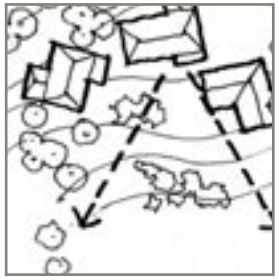
Applicants should coordinate with the town planning staff early in the planning and design process to discuss issues particular to a development site. Modifications suggested by staff review and public comments can most easily be incorporated at the conceptual stage, before significant time and effort have been spent preparing construction drawings. Photographs, site and vicinity analyses, conceptual site plans and drawings should all be submitted to show the relationship between the proposed development and adjacent properties and the surrounding neighborhood. In smaller communities like Portsmouth and Middletown, a pre-proposal conference for any project that meets a minimum size threshold can provide valuable information to both developers and communities. In more urban Newport, review and consultation requirements may be more elaborate for major projects.

For example, the Capital Center District Commission in Providence—which shares design-review and project-approval responsibility for projects within the district with the City—has a clearly articulated review process. It requires development teams to hold initial brainstorming sessions with the commission's design-review committee to foster a shared understanding of the design and use goals, unique project challenges, and other issues that will shape the planning and design process. These early discussions not only help the development team understand the commission's goals, but also have proven equally valuable in helping the commission's members understand the market and other issues that shape development decisions. In more than one instance, commission members have been able to work with the

US EPA ARCHIVE DOCUMENT

development team to resolve problems that might otherwise stand in the way of desirable design elements.

6. Develop and adopt design guidelines
Guidelines represent a particularly valuable way of conveying the underlying intent and objectives of zoning and other regulatory requirements. At the same time, they offer assurance to investors and developers that future projects will be held to the same high standards as those currently under review. Guidelines that reflect the findings of a planning process, such as the West Side Master Plan, can provide the basis for granting incentive-based height and density bonuses or other benefits. Guidelines can take many forms, from highly conceptual to highly detailed site-planning and building documents, and from a listing of mandatory elements of a zoning code to an advisory document that serves as the basis for informal review.



While standards include quantitative measures, design guidelines require qualitative interpretation. Every project is unique and requires individualized review. This process benefits from reviewers with strong design backgrounds who can interpret both the letter and the spirit of guidelines and advise regulatory bodies on the appropriateness of potential incentive bonuses or variances.

7. Maintain an ongoing dialogue with the public
Ongoing community-wide education and discussion will continue the process—inaugurated during development of the master plan—of building a strong and articulate constituency for the smart-growth and community-building principles that shaped the West Side Master Plan.

Community education should be supplemented by a clear and mandatory process of consultation with developers, including community review, to build a common understanding of the opportunities and challenges that each project presents. These consultations should be conducted in the spirit of mutual problem solving and with a clear understanding that every development carries civic responsibilities that, in turn, will benefit developers and everyone else in the communities.

Maintaining an ongoing dialogue creates citizen champions for implementing community-based visions.

COMMUNITY-SPECIFIC NEXT STEPS

In addition to the general suggestions for following up on the options presented in this report, there are specific next steps that each island community could implement.

MIDDLETOWN

Middletown is currently considering commercial design guidelines. The town could review the draft guidelines in light of the approaches and options in this document, making changes as needed. In addition, Middletown could consider adopting zoning overlay districts for the Vanicek and Anchorage sites. An overlay zone would provide consistency in applying the town center concept described in the West Side Master Plan to sites that would be suitable for this type of development. Corresponding design guidelines would provide the contextual considerations needed for the project to relate well to the surrounding area.

US EPA ARCHIVE DOCUMENT

PORTSMOUTH

To ensure that new growth helps to achieve the vision articulated by the town and the Island's citizens, Portsmouth can explore certain issues more fully.

- **Determine what infrastructure is needed.** A first step to assuring suitable growth and development will be to assess infrastructure needs. What will be needed to support the growth policies and goals listed in the West Side Master Plan?

- **Examine the possibility of transfer of development rights.** TDR is a market-based technique that encourages the voluntary transfer of growth from places where a community would like to see less development (called sending areas) to places where a community would like to see more development (called receiving areas). The sending areas typically are environmentally sensitive properties, open space, agricultural land, wildlife habitat, historic landmarks or other places that are important to a community. The receiving areas should be places that the general public has agreed are appropriate for extra development because they are close to jobs, shopping, schools, transportation, and other existing infrastructure and services. Based on the abundance of environmentally sensitive land in Portsmouth, combined with the West Side Master Plan's goal of creating a mixed-use growth center in the Weaver Cove/Melville area, there appear to be several areas in Portsmouth suitable for sending and receiving development rights.

Active dialogue can often lead to innovative design solutions.

- **Examine possible financing strategies.** Tax-increment financing (TIF) is a useful tool for redevelopment and community-improvement projects. As federal and state funding for redevelopment has become more scarce, many municipalities have turned to this mechanism to underwrite development initiatives. TIF captures the future tax benefits of real estate improvements in a designated area to pay the cost of making those improvements in the present. Aquidneck Island's communities could use TIF funding to encourage desired mixed-use development in the growth centers identified by the master plan and along West Main Road.

- **Examine the possibility of expanding the scope of the new redevelopment agency** to include the entire area, not just the tank farms.

NEWPORT

As Newport continues to develop and refine its design standards and guidelines Newport may want to take a second look at its guidelines to ensure that it is striking the right balance between design and style. An important consideration when developing such regulations is to avoid overly prescriptive language that favors certain architectural styles while focusing on fundamental principles of good urban design, such as creating sensitive transitions in height, bulk and scale, and carefully arranging buildings, parking and open spaces on a site.

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

Appendices

a The Smart Growth Implementation Assistance Program

b The EPA Team

c Zoning Toolbox

d Online Informational Resources

e Green Building Guidelines

US EPA ARCHIVE DOCUMENT

US EPA ARCHIVE DOCUMENT

a The Smart Growth Implementation Assistance Program

Communities around the country want to foster economic growth, protect environmental resources, and plan for development. In many cases they need additional tools, resources or information to achieve these goals. In response to this need, the Environmental Protection Agency's Development, Community, and Environment Division (DCED) launched the Smart Growth Implementation Assistance Program in 2005 to provide technical assistance—through contractor services—to selected communities. With its contractor ICF Consulting, EPA assembles teams whose members have expertise that meets a particular community's needs. While working with community participants to understand their aspirations for development, the teams bring experience from working in other parts of the country to provide best practices for consideration by the assisted community. The goal of the program is to help participating communities attain their goals while producing a report that can be useful to a broad range of communities facing similar challenges.

The Smart Growth Implementation Assistance Program is designed to help communities achieve growth that supports economic, community, and environmental goals. People in communities around the country are frustrated by development that gives them no choice about driving long distances between where they work, live and shop; that requires costly public expenditures to extend sewers, roads and public services to support new development; that uses up natural areas and farmland for development while land and buildings lie empty in already developed areas; and that makes it difficult for working people to rent or buy a home because of development that focuses only on one or two costly housing types.

Smart growth strategies create new neighborhoods and maintain existing ones that are attractive, convenient, safe, and healthy. They foster design that encourages social, civic, and physical activity. They protect the environment while stimulating economic growth. Most of all, they create more choices for residents, workers, visitors, children, families, single people, and older adults—choices in where to live, how to get around, and how to interact with the people around them. When communities undertake this kind of planning, they preserve the best of their past while creating a bright future for generations to come.

SMART GROWTH PRINCIPLES

1. Mix land uses.
2. Take advantage of compact building design.
3. Create housing opportunities and choices.
4. Create walkable communities.
5. Foster distinctive, attractive communities with a strong sense of place.
6. Preserve open space, farmland, natural beauty, and critical environmental areas.
7. Strengthen and direct development toward existing communities.
8. Provide a variety of transportation choices.
9. Make development decisions predictable, fair, and cost-effective.
10. Encourage community and stakeholder collaboration in development decisions.

Source: The Smart Growth Network. www.smartgrowth.org

US EPA ARCHIVE DOCUMENT

b EPA Team

ICF CONSULTING
4316 UPTON AVE. S #304
MINNEAPOLIS, MN 55410
612-928-0788

- Will Schroeer, Vice President

GOODY, CLANCY & ASSOCIATES
334 BOYLSTON STREET
BOSTON, MA 02116
617-262-2760

- David Dixon FAIA, Principal in Charge of Planning and Urban Design
- Michael Kimelberg, AICP, LEED, Senior Planner/Urban Designer
- Steve Wolf, Senior Graphic Designer
- Larissa Brown, AICP, Chief Planner

AQUIDNECK ISLAND PLANNING COMMISSION STAFF

- Tina Dolen, Executive Director
- Teresa Crean, Senior Planner

TOWN OF PORTSMOUTH STAFF

- Robert Gilstein, Town Planner

TOWN OF MIDDLETOWN STAFF

- Ronald M. Wolanski, AICP, Town Planner

CITY OF NEWPORT STAFF

- Paige Bronk, AICP, Director of Planning, Zoning, Development and Inspections

EPA STAFF

- Lynn Richards, Project Manager, Development, Community and Environment Division

CONSULTANT

- Geoffrey Anderson, Director, Development, Community and Environment Division

RHODE ISLAND SEA GRANT

- Pam Rubinoff

Site Visit #1: December 9 and 9, 2005
Site Visit #2: March 6 and 7, 2006

US EPA ARCHIVE DOCUMENT

C Zoning Toolbox

The zoning ordinance regulates the physical development of a community. A variety of tools are available to towns and cities to help them shape development and growth. Land use regulatory approaches include:

Conventional, By-Right (Euclidean) Zoning
Conventional, by-right zoning separates land uses fosters piecemeal development. The focus of conventional zoning is to proscribe development that is not wanted rather than to provide guidance on the kind of development that is desired. It provides neither the incentives nor the flexibility to encourage creative development and gives a municipality little leverage with which to shape how an area develops or its design character. Conventional, by-right zoning is not an effective tool for creating or enhancing a mixed-use district.

Multi-Use Zoning
A municipality may establish zoning districts in which multiple uses are encouraged, often envisioned as adjacent uses rather than multi-use structures. Codes for such zones identify the range of allowed and prohibited uses, often in conjunction with special permit options and performance standards (see below). Careful attention is often given to buffering between uses that may pose a nuisance to one another.

Incentive Zoning
Development incentives may be contained in a permit process or may stand alone as a separate zoning provision. The purpose of incentives is to achieve a particular outcome; therefore, a local government will determine what benefit it wishes to receive in a particular area. This has to be a broad public benefit, such as streetscape improvements, open spaces, or the creation of more affordable housing units. Tradeoffs will be evaluated, and the local government will offer something in exchange for the improvement. For example, the zoning code for a particular type of commercial district may provide that a certain increase in height or density will be allowed in a project that creates public open space in a desired location. Incentives should be evaluated for their systemic impacts beyond the project benefits. The value of the public benefit achieved through incentive zoning must be greater than any negative impacts it will generate. This type of zoning is valuable in markets where demand is strong and incentives are meaningful. It is a way for communities to secure benefits for which there is little or no market incentive by trading off somewhat more of what is in demand.

Performance Zoning
Performance zoning differs from traditional zoning in that it requires a certain outcome but allows flexibility in how to arrive at this outcome. Performance standards have long been used for industrial zoning districts to set limits on the allowable impacts of noise, dust, vibration and similar effects of industrial activities. Today, standards are also applied to design, traffic impacts, impervious surfaces, open space, parks, buffers, lighting, and so on. Standards are associated with capacity and reflect concern with a project's impact on surrounding properties and future development goals.

Project review involves negotiation over how a developer will meet these performance standards. Often, a local government may offer tradeoffs during review in order to more closely achieve a desired outcome. If a developer exceeds some standards, other

US EPA ARCHIVE DOCUMENT

standards may be relaxed (if they are deemed to be of lesser importance to the outcome). For example, if a project exceeds the required percentage of open space or affordable units, height or density caps may be relaxed. This kind of tradeoff would eliminate the need for a developer to apply for a zoning variance and could streamline the review process.

One of the drawbacks to performance zoning is the amount of technical expertise that may be required to establish specific performance standards. In a pure system of performance zoning, allowed impacts are analyzed and standards are entirely numerical. Developers receive points based on potential impacts and have their projects approved or disapproved based on numeric scores arrive at through administrative evaluation. For this to work, all parties need to have confidence in the interpretations of the regulations by the people who evaluate the projects. Most communities, however, have found it more practical to integrate performance standards with traditional zoning regulations.

Special Permit Options with Performance Standards

Conventional zoning can be combined with special permit options that require developers seeking certain uses, amounts, or types of development to apply for a special permit and to meet performance and design standards. The special permits can also include incentives, of which density bonuses are typically of most interest to developers, to encourage certain uses or development characteristics. Special permits and performance standards provide developers with flexibility while giving municipalities a voice in shaping development. This kind of regulatory option can be useful in creating a mixed-use environment that meets local goals. It is most successful in circumstances where there is strong market demand and developers easily accept the cost of a special permit process.

Overlay District

Overlay districts, as the name implies, are superimposed on the existing underlying zoning, adding requirements because of the sensitivity or other special characteristics of the area. A zoning overlay imposes additional requirements on the base zoning of a property. All standard requirements for the zoning district apply, but further regulations are added to achieve a desired outcome in an important or sensitive area. Overlays often are used in historic districts, downtown areas, or properties that have special environmental features. Overlays may also encompass properties that have different underlying zoning categories. An overlay generally does not alter basic zoning standards, such as use, minimum lot size, and setbacks; however, it will add design requirements or performance standards that give the local government greater control over the character of properties within the overlay.

IPOD (Interim Planning Overlay District)

Interim Planning Overlay District (IPOD) zoning is used by communities to regulate development in an area where existing zoning may no longer be appropriate while the community prepares studies and plans that will result in new zoning. The purpose of an IPOD is to ensure that any development that occurs during the planning period will not be incompatible with the new planning goals. An IPOD could be used to promote a mixed-use environment while base zoning that encourages a mix of uses is developed.

PUD (Planned Unit Development) with Design Guidelines

Planned Unit Developments (sometimes known as Planned Development Districts) allow owners who meet a property size threshold to develop their property according to a master plan. The master plan is created through a negotiated process with the property owner, the municipality, and the community. The master plan typically differs significantly from underlying conventional zoning in density, mixture of uses, and other characteristics. The master plan often contains detailed performance standards and design guidelines to shape the development over time. PUDs can be confined to certain geographic areas or they can be "floating" zones that apply anywhere based on the minimum threshold requirements. A PUD can be a very successful tool in encouraging a desired mixed-use environment within a

US EPA ARCHIVE DOCUMENT

given district. However, a PUD can result in homogenous development throughout an area and requires a high investment in detailed master planning from both developers and municipal staff.

Form-Based Zoning

While conventional, Euclidean zoning focuses on the predictability of land uses, density, and dimensions, form-based zoning focuses on regulating the form of private development as it relates to the design of streets and public spaces—the public realm. This regulatory approach is therefore compatible with efforts to create a mixed-use environment: as long the form of the development meets certain standards, a variety of different uses can be accommodated. It is important that sufficient detail and guidance is included in the code itself in order to avoid the need for complex review processes and special permits. The goal is to provide sufficient clarity so that community and developers can feel confident that buildings that meet the code will be acceptable.

Pure form-based zoning codes require the development of a vision plan for the physical character of an area and include the following components: a **Regulating Plan**, **Building Envelope Standards**, and **Definitions**. In some cases, the codes also include Architectural Standards that closely regulate building design.

- The **Regulating Plan** takes the place of a traditional zoning map. It typically shows the type of building permitted on a particular site, street types, the location of public spaces, the alignment of buildings, and trees along streets. The types of buildings result from the desired design of the area as developed in the vision plan.
- **Building Envelope Standards** are prepared in the form of diagrammatic elevations and cross-sections for each of the building types and permitted variations. The standards regulate the form of the building types in terms of siting on a parcel and streets, arrangement of entrances, parking, and so on; the range of permissible dimensions; elements of a building such as windows, doors, porches, and balconies and requirements for quantity, configuration and size. Uses are also part of the building standards, either in the designation of the type of building (*e.g.*, multifamily, single-family, workplace) or in mixed-use structures (*e.g.*, ground-floor retail and upper-story office or residential uses).
- The **Definitions** explain all of the design elements in the code and are customized based on the vision plan and design plan in order to make the desired project characteristics as clear as possible.

A fact sheet on form-based codes is available at *http://www.lgc.org/freepub/pdf/land_use/fact_sheets/form_based_codes.pdf*

US EPA ARCHIVE DOCUMENT

d Online Informational Resources

For more information about smart growth tools and techniques, please visit the following websites.

> EPA's Smart Growth Program
www.epa.gov/smartgrowth

> Smart Growth Network online
smartgrowth.org

> Smart Growth America
smartgrowthamerica.org

> Smart Growth Leadership Institute
www.sgli.org

> Grow Smart Rhode Island
www.growsmartri.com

> Rhode Island State Planning Office
www.planningri.gov

> Rhode Island State Growth Planning Council
www.planning.ri.gov/gpc/default/htm

> American Planning Association—Rhode Island Chapter
www.riapa.org

US EPA ARCHIVE DOCUMENT

e Green Building Guidelines

The purpose of these "green design" standards is to protect and maintain natural resources throughout the area covered by the West Side Master Plan. Green design and construction practices significantly reduce the negative impact of buildings on the environment and on their occupants.

CHARACTERISTICS

- **Policies and initiatives:** Educational programs and government initiatives developed to provide the basis for a more sustainable way of life, one that safeguards and enhances local resources, prevents harm to the natural environment and human health, and strengthens the community and local economy.
- **Green streets** should be designed to incorporate a system of stormwater treatment and urban beautification.
- **The site** should be designed to conserve energy, deal with water and drainage, and create a sustainable environment.
- **The building** should be designed for comfort and value while using natural ventilation and conserving energy through a variety of strategies described in the green standards.

These guidelines have been adapted from a code developed for the Environmental Protection Agency by Van Meter Williams Pollack LLP, architects and planners.

RHODE ISLAND SUSTAINABILITY POLICIES AND INITIATIVES

Policies and initiative intended to promote a "green" future for Aquidneck and Rhode Island include:

The Rhode Island Renewable Energy Fund
The Rhode Island Renewable Energy Fund is dedicated to increasing the role of renewable energy in Rhode Island's electricity supply. Renewable-energy technologies harness the energy in sunlight, wind, biomass, flowing water, or the heat of the earth to make electricity in a cleaner and more sustainable manner than sources on which we have traditionally relied.

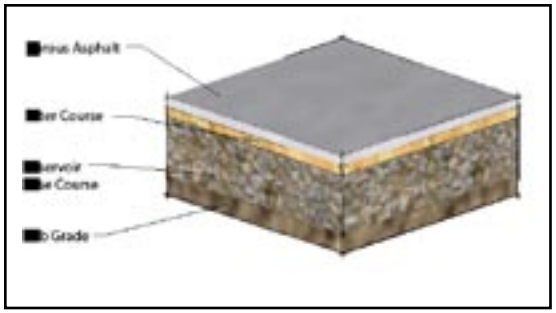
The fund, administered by the Rhode Island State Energy Office, has programs to help homeowners, businesses, and institutions in choosing and purchasing clean energy systems such as wind turbines and solar photovoltaic (PV).

Clean Energy Rhode Island
Now available for residents of Rhode Island, this program allows you to choose a clean-energy product for your home or small businesses without having to leave your current utility. Visit www.cleanenergyri.com for more information.

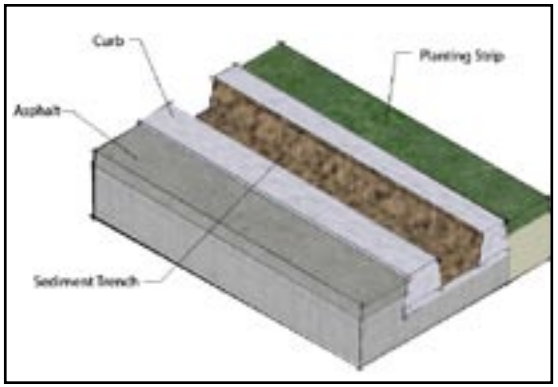
EnergyStar
EnergyStar is a program launched by the federal government to help businesses and individuals protect the environment by purchasing products with superior energy efficiency. With the help of EnergyStar, Americans reduced energy use sufficiently just in 2005 to avoid greenhouse gas emissions equivalent to those from 23 million cars—all while saving $12 billion on utility bills. Look for household and commercial products that have earned the EnergyStar label. They meet strict energy-efficiency guidelines set by the EPA and the Department of Energy.

US EPA ARCHIVE DOCUMENT

Green streets help control stormwater while creating a visible green infrastructure.



Permeable pavement: typical porous asphalt treatment



Curbs: an example of a double invisible curb with sediment trench

US Green Building Council

The Leadership in Energy and Environmental Design (LEED) Green Building rating system represents the U.S. Green Building Council's effort to establish a national standard for what constitutes a "green building." Through its use as a design guideline and third-party-certification tool, the program works to improve occupant well-being, environmental performance, and economic returns of buildings by employing established and innovative practices, standards, and technologies.

Education

Current and prospective island residents should be educated on the positive impacts of green design on their homes, their communities, Aquidneck itself, and Narragansett Bay. Many developers have discovered that green design makes an effective marketing tool. New England home buyers have shown themselves eager to purchase sustainable homes when given that option.

GREEN STREETS

Green Streets are designed to incorporate a system of stormwater treatment and urban beautification.

Street trees provide shade, improve air quality, conserve energy and water, prevent soil erosion, and help create an aesthetically pleasing public realm.

- Trees should be planted at least 2 feet from the curb.
- Trees limbs should be pruned above the vehicle travel lane to a height of 11 feet on residential streets and 15 feet on highways and commercial streets.

Permeable pavement is any load-bearing surface that can allow rain and snow runoff to filter through its underlying base layers and into the soil below. Using permeable paving represents an effective way to reduce impervious surface without limiting use.

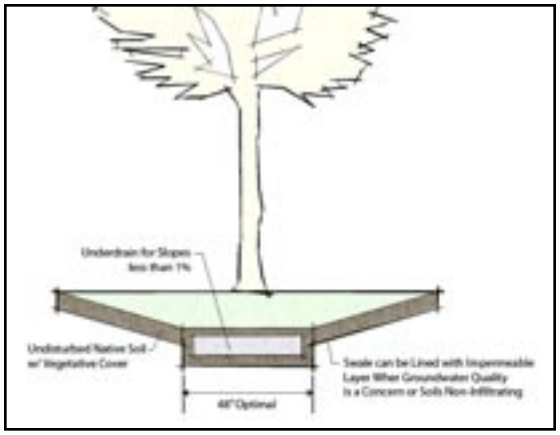
- Permeable pavement is not suitable for all areas; it should be limited to low-traffic areas such as local streets, parking strips, shoulders and sidewalks.

Curbs provide a formal separation between vehicular and pedestrian traffic. They also simplify street cleaning by providing an edge to push debris against for collection while concentrating runoff and directing it into the storm system.

Filter strips and swales provide a proven method of bioremediation that protects the quality of both groundwater and—if outfall is into a stream—runoff. Filter strips are gently sloped grassy areas that are designed to catch and treat small quantities of sheet-flow runoff. Swales look more like channels and can accommodate water flows as deep as 3 inches.

- An effective length for a swale is 200–250 feet, a size that achieves an optimal nine-minute residence time for runoff.

US EPA ARCHIVE DOCUMENT



Swale: typical treatment

- Swale slopes should be at least 1% (so that water will move across the swale) but no steeper than 6%; slopes in this range assure maximum contact between water and vegetation, and the upper limit prevents scouring.
- Filter strips and swales function best when the water they treat is no more than 3 inches deep.

Infiltration trenches perform the function of ubiquitous infiltration by collecting runoff and slowing its discharge rate.

- Trenches must be combined with filter strips, swales, or other engineered pollutant-removal solutions to protect them from clogging,

Linear detention basins provide temporary storage in areas with higher rates of runoff. In areas with suitable soils they can serve as infiltration basins, provided that adequate filtration can be introduced to prevent clogging and ensure good water quality prior to infiltration.

- These basins should only be used on low-volume, low-velocity roadways.

THE SITE

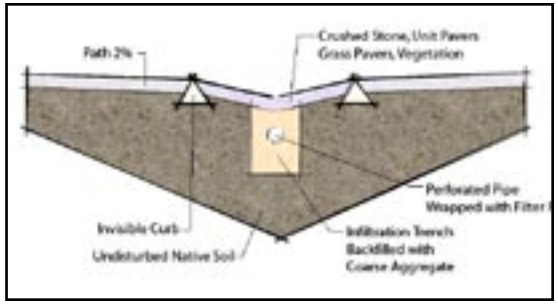
Site design should emphasize green standards in order to conserve energy, accommodate water and drainage, and contribute to a sustainable environment.

Airflow. Building sites should be situated to improve cross ventilation in warmer months. Streets should run perpendicular to prevailing wind patterns.

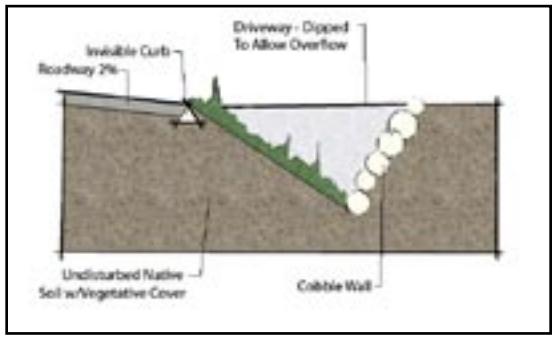
- Landscape elements should be used to improve air flow around a structure.

Solar orientation: Situate building sites to maximize wintertime solar heat gain. Streets grids should be oriented on an east-west axis in order to increase low sun-angle exposure in winter and to provide the best shading opportunities in warmer months.

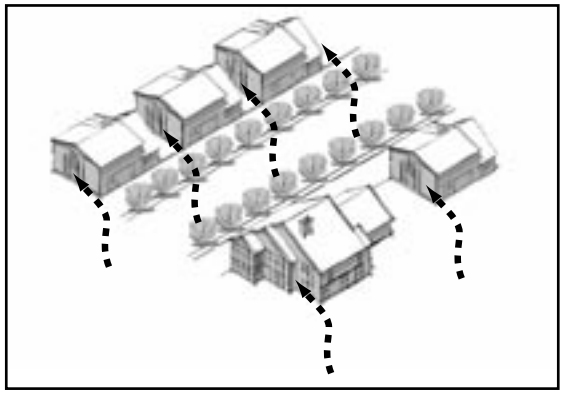
- Existing or new landscape elements should shade building and paved areas.



Typical **infiltration trench**



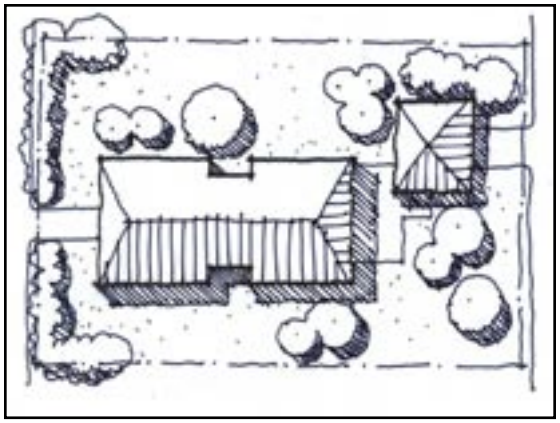
Typical **linear detention basin**



Airflow: Building sites should be situated to improve ventilation.

US EPA ARCHIVE DOCUMENT

Solar orientation: Landscape elements should shade buildings and paved areas.



Site imperviousness: No more than 15% of the site, excluding the house and garage, should be impervious.

Parking lots: At ten years, landscaping should provide summertime shade over 80% of the parking area.

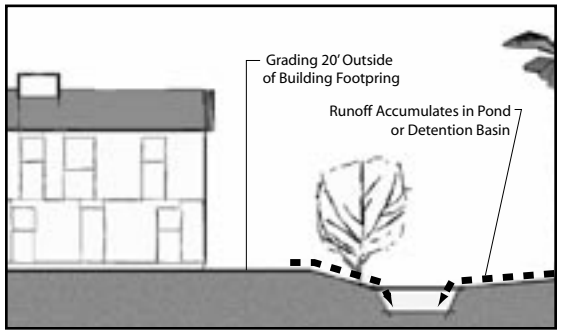
- Light-colored outdoor surfaces can reduce cooling energy use between 30% and 50% when compared to the same amount of dark colored surfaces.

Site imperviousness: No more than 15% of the site, (excluding the house and garage) should be impervious to rainwater and snow melt.

- Porous pavers are a good substitute for standard concrete or asphalt paving. They reduce impermeability without decreasing drivable area.
- Increased use of trees and shrubs instead of lawn can also reduce imperviousness on-site.

Parking lots: Landscaping should provide summertime shade over 80% of a parking area, based on anticipated tree sizes after ten years of growth.

- An overall strategy for reducing parking lot runoff entails decreasing the size of parking areas by sharing facilities (particularly among uses whose peak demands occur at different times) and building structured parking.
- Stormwater bio-retention areas, vegetated swales, and filter strips can be integrated into landscape areas and traffic islands.
- Using porous pavements can also increase the permeability of parking lots.



Water flow: The site should be sloped so that water collects in ponds or detention basins.

Water flow: Manage surface water with detention ponds, grassy swales, or dry wells.

- Grade impervious areas of site create a gradual slope away from buildings, encouraging runoff to accumulate in ponds or detention basins.
- Site grading should be limited to 20 feet outside the building footprint.

Landscaping: Drought-resistant, native plants should cover 50% of landscaped area.

- Use mulch in landscaping to minimize evaporation and reduce the need for summertime watering. Mulch has the added benefit of protecting many plants from damage caused by hard frosts.
- When an irrigation system is used, it should employ water-saving features such as drip irrigation, electronic timer, valves with manual flow control, and rain shut-off devices.

US EPA ARCHIVE DOCUMENT

THE BUILDING

Building design: Design buildings for comfort and value while using natural ventilation and conserving energy through the use of green standards.

- Provide a thermally comfortable environment that supports the productivity and well-being of building occupants.
- Provide a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of a building

ENERGY STAR Certification

At minimum, all homes should be built to the one-star level.

Energy/Water: Buildings should exceed base energy requirement by a minimum of 20%. The strategies can help:

- Use reflectors in light fixtures to maximize available light.
- Add dimmers in spaces where low-level lighting is appropriate.
- Install compact florescent lightbulbs in high-use locations.
- Install a timer for each water heater.
- Locate water heaters within a 20-foot pipe length of bathroom fixtures.
- Insulate hot water lines to a minimum of R-3.
- Photovoltaic panels are encouraged. All residences should incorporate a conduit capable of providing a permanent connection between the electric panel and future solar panels.
- All residential apartment buildings should provide a conduit for future wiring at house meters to photovoltaic panels.

Interior layout: Design floor plans to provide effective cross ventilation and air flow at body level Also:

- Layout should be designed so that activities with the highest illumination needs are daylit where possible.
- Light-colored interior finishes should be used to enhance daylight (but avoid glare).

Openings: Should be oriented to minimize heat build-up. Also:

- Operable opening should equal at least 12% of floor area with at least two located in each space.
- Inlet openings should be slightly larger than outlet openings.
- Windows should be recessed.
- High performance (low-E) glazing should be used on exposed windows.
- Operable opening should equal at least 12% of floor area with at least two located in each space.
- Exterior horizontal shading should be installed on all windows.

Energy: EnergyStar-qualified compact fluorescent lightbulbs (CFL) emit the same level of light as traditional bulbs but use 2/3 less energy and last six to ten times longer.

Openings: Windows should be recessed, operable, and coated with low-E glazing.

US EPA ARCHIVE DOCUMENT

Materials: Batt insulation

Materials: Certified lumber

Shell: The following steps should be taken to encourage natural ventilation and cooling.

- Attic or roof cavities should be vented with continuous ridge and eave vents.
- Sill vents and floor vents should be used to allow hot air to escape the building by thermal convection.
- Shading is required on at least 50% of east and west wall surfaces.
- Insulation should be installed in ceilings and attic spaces and exposed walls beyond applicable local codes and ordinances.
- Roofing and exterior wall surfaces should be light-colored.

Materials: 80% of buildings should be constructed of recyclable or recycled materials.

- Carpet should be certified with the Indoor Air Quality (IAQ) label.
- Use low-toxicity, low-solvent mastics, sealants, and adhesives to install flooring.
- Use low-VOC interior paints and finishes on walls.
- Use engineered-wood products for beams, headers, floor systems, and roof systems.
- Use galvanized steel framing used for wall systems.
- Use recycled aggregate containing crushed concrete, brick, concrete block, asphalt, glass cullet, or fly ash for foundation base and fill.
- Use formaldehyde-free, CFC-free, HCFC-free insulation.
- Use "sustainably produced" or reclaimed wood flooring—usually carrying a "certified" stamp—for finished floors.
- Use resource-efficient roofing such as metal panels or composite shingles with recycled content.
- Use materials with recycled content for fences, benches, decking, docks, retaining walls, picnic tables and landscape borders.

Construction recycling: A comprehensive approach to green construction includes creation of a jobsite waste-management plan (including reduce, reuse, recycle goals/actions).

- Recycling areas or containers should be well-marked.
- Use recyclable supplies—for example, construction fences and tarps.
- Donate excess materials should be donated to a nonprofit organization (for example, The Boston Building Materials Cooperative).
- Builder should recycle cardboard, metal scraps, clean wood, packaging, drywall and concrete/asphalt.
- Any demolition of an existing building should result in the recycling of all reusable materials.
- Grind existing concrete foundation, paths and walks for aggregate and recycle the unless it is determined they do not meet required structural design standards.